



# CPAchem

is the world leader

in Certified Reference Materials production (Custom and Stock) with both ISO Guide 34 and ISO/IEC 17025 accreditations.

The four secrets of our success are:

- ✓ High-technology
- ✓ High-experienced staff
- ✓ High-quality
- ✓ High-speed

Our scope covers:

**Inorganic Certified Reference Materials (CRMs) for AAS, ICP, ICP/MS and Ion Chromatography**

- Custom Inorganic CRMs - Single and Multi-components
- Inorganic stock CRMs - Single and Multi-components
- ICP and ICP/MS Internal standards
- AAS and ICP Modifiers, Buffers and Reagents
- IC Eluent concentrates



### **Organic Certified Reference Materials (CRMs) for GC and HPLC**

- Custom Organic CRMs - Single and Multi-components
- CRMs acc. to ISO, EN, ASTM and EPA Methods
- Contaminant CRMs
- Single Component CRMs

### **Analytical Certified Reference Materials (CRMs) and Reagents**

- Custom Analytical CRMs
- Volumetric CRMs
- Conductivity CRMs
- pH Buffer CRMs
- Reagents



## **What makes us different?**

### **Our unique Computer-Aided-Manufacturing (CAM) Software, that:**

- Surveys the stock availability and specifies the raw material to be purchased
- Specifies the proper source and controls through bare-codes (complete traceability)
- Calculates the needed weights and controls the gravimetric process on the analytical balances
- Evaluates the final data received by the instrumental analyses and calculates the certified values and uncertainties
- Creates the labels and certificates
- Controls the products intended to be exported and prints all accompanying documents.





Trace impurities  
in the actual solution

Used starting material,  
with its purity

Short term and long  
term stability studies

Each solution is  
barcode identified

Homogeneity  
testing

Actual certified value,  
neither reported values  
of the starting materials,  
nor the calculation values

Traceable to SI

Direct calibration, not based  
on the starting materials

**Trace impurities in the actual solution**  
Below are nominal and not certified values

|    |    |         |    |    |         |    |    |         |
|----|----|---------|----|----|---------|----|----|---------|
| Ag | ND | <0.0001 | Pr | ND | <0.001  | Ta | ND | <0.028  |
| Al | ND | <0.017  | Rb | ND | <0.001  | Tb | ND | <0.055  |
| As | ND | <0.017  | Rd | ND | <0.001  | Th | ND | <0.041  |
| Au | ND | <0.005  | Re | ND | <0.001  | Ti | ND | <0.0038 |
| B  | ND | <0.004  | Rh | ND | <0.001  | Tl | ND | <0.0001 |
| Ba | ND | <0.0007 | Ru | ND | <0.030  | Tm | ND | <0.001  |
| Be | ND | <0.0007 | S  | ND | <0.001  | U  | ND | <0.001  |
| Bi | ND | <0.034  | Se | ND | <0.0015 | V  | ND | <0.005  |
| Ca | ND | <0.0025 | Si | ND | <0.075  | W  | ND | <0.0025 |
| Co | ND | <0.007  | Sn | ND | <0.043  | Xe | ND | <0.0018 |
| Cu | ND | <0.0005 | Sr | ND | <0.008  | Y  | ND | <0.0035 |
|    |    |         |    |    |         | Yb | ND | <0.0018 |
|    |    |         |    |    |         | Zn | ND | <0.0018 |
|    |    |         |    |    |         | Zr | ND | <0.0077 |

**Starting material, purity**

Density:  $\rho = 1.006 \text{ g/cm}^3$  at 20 °C  
Minimum shelf-life: 12.2015 (unopened bottle in aluminized bag)  
Date of opening: (Recommended period of use should not exceed 12 months from date of opening)

**Intended use:**  
For Laboratory Use Only  
This CRM is intended for:  
Calibration of ICP-OES, AAS  
Preparation of working reference samples  
Detection limit and linearity studies  
This statement is not intended to restrict the use for other purposes.

**Instructions for the correct use of this reference material:**  
This certified reference material can be used directly or can be diluted in an appropriate high-purity matrix. Only a clean class A glassware should be used. Do not pipet from container. Obtained concentration after dilution is a result from the multiplication of certified value of CRM concentration and dilution factor.

**Stability and storage:**  
This CRM is with a guaranteed stability under the following conditions:  
- Stored in a sealed container  
- Protected from light  
- Stored at room temperature  
- The purchaser should be notified in writing if the CRM is found to be unstable during the state period.

**Hazardous situation:**  
The normal laboratory safety procedures should be followed when handling this material.

**Level of homogeneity:**  
The material was tested for homogeneity by using the standard deviation method. The results show that the CRM is homogeneous.

**Names of certifying officers:**  
Laboratory: *Shayman*  
Manager: *Caralova*

**Certificate of Analysis**

**CERTIFIED REFERENCE MATERIAL**  
**Single-element ICP Standard Solution**

This document is designed and the certified value(s) and uncertainty(ies) are determined in accordance with ISO Guide 31<sup>(1)</sup>, ISO Guide 38<sup>(2)</sup> and Eurachem / CITAC Guides<sup>(3)</sup>

Lot N: A55200

Barcode: 83074370

Certification Date: 04.02.2014  
Date of Stability last check:

**Description of the Reference Material (CRM):**  
Solution of Calcium (Ca) concentration 1.000 g/l in 2% Nitric Acid (HNO<sub>3</sub>)

**Ref N:** 83074370

**Certified value/ Uncertainty:**  
Element: Ca  
Certified Value and Uncertainty [mg/l]:  $999.3 \pm 2.6^{(a)}$

**Method(s) of certification used:**  
CRM's calibration procedure(s):  
(a) WQP 5.15.1.1

**Concept of Certification and traceability statement:**  
This certified reference material is produced using a high-purity starting material, acid from sub-boiling and 18 MOhm deionized water.

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k = 2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%. The property of the result of a measurement whereby it can be related to stated references, usually national or international standards, through an unbroken chain of comparisons all having stated uncertainties (ISO VIM<sup>(4)</sup>). The metrological traceability is assured through calibration on ICP-OES, AAS. The calibration curve is drawn using a series of standard solutions prepared from a certified reference material traceable to SI of NIST (SRM) and of accredited according to ISO/IEC 17025<sup>(5)</sup> and/or ISO Guide 34<sup>(6)</sup> laboratories/producers. All contributions in relation to the certification of standard solutions are considered when evaluating the uncertainty.

The measurement results are traceable to SI. All analytical balances used for the preparation of the solution are calibrated yearly under an in-house procedure with analytical weights, traceable to DKD and are daily checked. The results from temperature measurement are traceable to SI. The thermometers used for solution's calibration are calibrated from an ISO 17025 accredited laboratory. The ambient conditions are controlled with a hygrometer calibrated from an ISO 17025 accredited laboratory.

CPAchem Ltd is accredited to ISO Guide 34 and ISO/IEC 17025

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78190 TRAPPES CEDEX, France  
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CPAchem's team is committed to total customer satisfaction by careful understanding what customers seek from the customer's viewpoint, producing and delivering high quality products at competitive prices, on time.

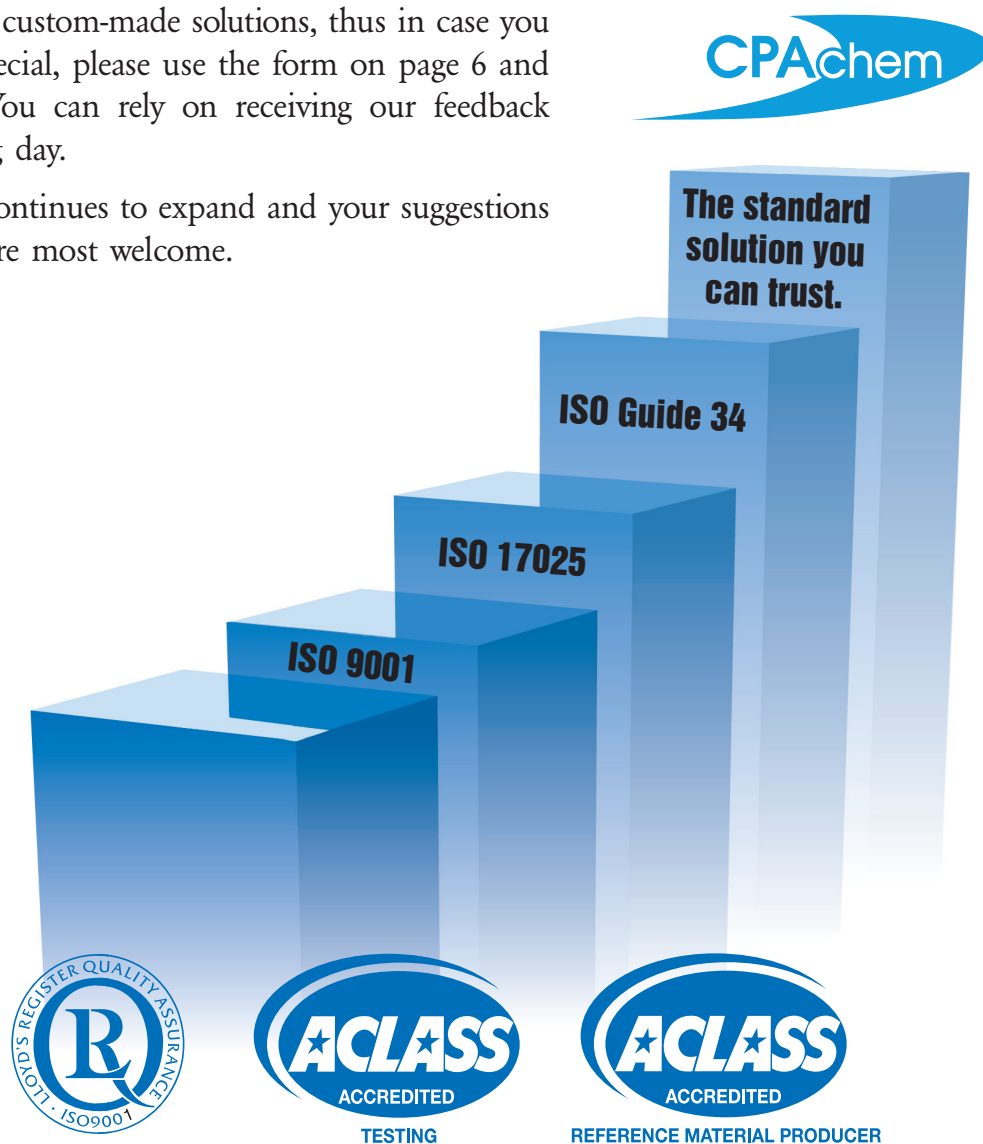
In this process we take reasonable care to ensure our employees' health and safety, and to protect the environment.

The Certified Reference Materials are produced under our quality management system that is:

- Registered to ISO 9001 Quality Management System (Lloyd's Register Quality Assurance Ltd Cert. N° SOF0368072);
- Accredited according to ISO/IEC 17025 - Testing (ACLASS Cert. N° AT1836)
- Accredited according to ISO Guide 34 - Reference Material Producer (ACLASS Cert. N° AR1835)

In addition to the products listed in the catalogue we manufacture many custom-made solutions, thus in case you need something special, please use the form on page 6 and send an inquiry. You can rely on receiving our feedback within one working day.

Our product line continues to expand and your suggestions for new products are most welcome.





# Management's statement on quality policy

The major priority of the management of ASPL at „CPA“ Ltd is provision of good professional practice and assuring the quality at all stages of Reference Materials production (calibration solutions for ICP, AAS, Ionic chromatography, HPLC, GC as well as pH buffers, conductivity solutions and solutions intended for volumetric analysis), Reagents and Pharmacopoeia products, including:

- Quality of used raw material
- Preparation and control of RM, Reagents and Pharmacopoeia products
- Homogeneity and stability tests
- Calibration/measurement at stated metrological traceability
- Assignment of property values with stated metrological traceability and assigned uncertainty evaluated according to ISO Guide 98-3 and ISO Guide 35
- Handling, transportation and storage of RM, Reagents and Pharmacopoeia products
- Customers service.

The Management System developed at ASPL is aimed at increasing the level (quality) of the offered services as well as provision of qualitative and reliable results from calibration/characterization of RM.

In order to implement its policy and in accordance with the requirements of EN ISO/IEC 17025, ISO Guide 34, EN ISO 9001:2008, normative regulations and legislation of Republic of Bulgaria the Management has defined the following directions of development:

- Production of RM according to the requirements of ISO Guide 34 and the definitions given by the Guides of ISO REMCO and ISO Guide 99
- Manufacturing and control of reagents by strictly observing the requirements of the particular Pharmacopoeia
- Strict determination and observance of clients' requirements in order to increase the degree of client's satisfaction
- Control of all measurements and calibrations during the process of RM's production in accordance with validation methods, and if required, development of new methods
- Provision of good professional practice and quality during calibration/characterization of RM
- Certification of CRM according to the requirements of ISO Guide 35 and accompanied with certificates corresponding to the requirements of ISO Guide 31
- Motivation of the managing and operative company's personnel in order to ensure quality of every single aspect of the activities in relation to production and calibration/characterization of RM, Reagents and Pharmacopoeia products as well as loyal attitude to company's clients
- Continuously improvement in the level of products and services offered as well as development of new ones considering the clients' requirements and market's demand

- Personnel's training according to the respective activities performed with regard to production of RM, Reagents and Pharmacopeia products and quality of calibration/characterization
- Determination of particular, correct and clear interrelations, competences and responsibilities during work performed between the separate sections of ASPL
- Keeping the MS in accordance with the requirements of EN ISO/IEC 17025, ISO Guide 34 and EN ISO 9001:2008, as well as continuously improvement of its effectiveness through planning and adopting the changes

The Management of ASPL at the Company declares that neither it nor the ASPL's associates are subject to internal or external financial or other influence that may negatively affect the quality and work's results.

The personnel at ASPL conscientiously performs all activities, strictly observing the confidentiality, independence and application of good laboratory practice principles.

Every member of ASPL's personnel is obliged to be acquainted with the quality documents and to apply strictly the Policy and procedures during his/her work.

MANAGER OF „CPA“ Ltd :

*Taralova*  
(Krassimira Taralova)





REQUEST FORM FOR CUSTOM-MADE  
MULTI-ELEMENT STANDARD SOLUTIONS

1. Specify the concentration of the chosen element in mg/l.

| ELEMENT                                        | CONCENTR.<br>in mg/l | ELEMENT                                               | CONCENTR.<br>in mg/l | ELEMENT                                               | CONCENTR.<br>in mg/l |
|------------------------------------------------|----------------------|-------------------------------------------------------|----------------------|-------------------------------------------------------|----------------------|
| Ag (HNO <sub>3</sub> )                         |                      | Ho (HNO <sub>3</sub> or HCl)                          |                      | S (H <sub>2</sub> O; HNO <sub>3</sub> or HCl)         |                      |
| Al (HNO <sub>3</sub> or HCl)                   |                      | In (HNO <sub>3</sub> or HCl)                          |                      | Sb (HNO <sub>3</sub> /tr.HF or HCl)                   |                      |
| As (HNO <sub>3</sub> or HCl)                   |                      | Ir (HNO <sub>3</sub> /HCl or HCl)                     |                      | Sc (HNO <sub>3</sub> or HCl)                          |                      |
| Au (HNO <sub>3</sub> /HCl or HCl)              |                      | K (H <sub>2</sub> O; HNO <sub>3</sub> or HCl)         |                      | Se (HNO <sub>3</sub> or HCl)                          |                      |
| B (H <sub>2</sub> O; HNO <sub>3</sub> or HCl)  |                      | La (HNO <sub>3</sub> or HCl)                          |                      | Si (H <sub>2</sub> O; HNO <sub>3</sub> /tr.HF or HCl) |                      |
| Ba (H <sub>2</sub> O; HNO <sub>3</sub> or HCl) |                      | Li (H <sub>2</sub> O; HNO <sub>3</sub> or HCl)        |                      | Sm (HNO <sub>3</sub> or HCl)                          |                      |
| Be (HNO <sub>3</sub> /tr.HF or HCl)            |                      | Lu (HNO <sub>3</sub> or HCl)                          |                      | Sn (HNO <sub>3</sub> /tr.HF or HCl)                   |                      |
| Bi (HNO <sub>3</sub> )                         |                      | Mg (H <sub>2</sub> O; HNO <sub>3</sub> or HCl)        |                      | Sr (H <sub>2</sub> O; HNO <sub>3</sub> or HCl)        |                      |
| Ca (H <sub>2</sub> O; HNO <sub>3</sub> or HCl) |                      | Mn (HNO <sub>3</sub> or HCl)                          |                      | Ta (HNO <sub>3</sub> /tr.HF or HCl/tr.HF)             |                      |
| Cd (HNO <sub>3</sub> or HCl)                   |                      | Mo (H <sub>2</sub> O; HNO <sub>3</sub> /tr.HF or HCl) |                      | Tb (HNO <sub>3</sub> or HCl)                          |                      |
| Ce (HNO <sub>3</sub> or HCl)                   |                      | Na (H <sub>2</sub> O; HNO <sub>3</sub> or HCl)        |                      | Te (HNO <sub>3</sub> or HCl)                          |                      |
| Co (HNO <sub>3</sub> or HCl)                   |                      | Nb (HNO <sub>3</sub> /tr.HF or HCl/tr.HF)             |                      | Th (HNO <sub>3</sub> or HCl)                          |                      |
| Cr (H <sub>2</sub> O; HNO <sub>3</sub> or HCl) |                      | Nd (HNO <sub>3</sub> or HCl)                          |                      | Ti (HNO <sub>3</sub> /tr.HF or HCl)                   |                      |
| Cs (H <sub>2</sub> O; HNO <sub>3</sub> or HCl) |                      | Ni (HNO <sub>3</sub> or HCl)                          |                      | Tl (HNO <sub>3</sub> or HCl)                          |                      |
| Cu (HNO <sub>3</sub> or HCl)                   |                      | Os (HCl)                                              |                      | Tm (HNO <sub>3</sub> or HCl)                          |                      |
| Dy (HNO <sub>3</sub> or HCl)                   |                      | P (H <sub>2</sub> O; HNO <sub>3</sub> or HCl)         |                      | U (HNO <sub>3</sub> or HCl)                           |                      |
| Er (HNO <sub>3</sub> or HCl)                   |                      | Pb (HNO <sub>3</sub> )                                |                      | V (HNO <sub>3</sub> or HCl)                           |                      |
| Eu (HNO <sub>3</sub> or HCl)                   |                      | Pd (HNO <sub>3</sub> or HCl)                          |                      | W (H <sub>2</sub> O; HNO <sub>3</sub> /tr.HF or HCl)  |                      |
| Fe (HNO <sub>3</sub> or HCl)                   |                      | Pr (HNO <sub>3</sub> or HCl)                          |                      | Y (HNO <sub>3</sub> or HCl)                           |                      |
| Ga (HNO <sub>3</sub> or HCl)                   |                      | Pt (HNO <sub>3</sub> /HCl or HCl)                     |                      | Yb (HNO <sub>3</sub> or HCl)                          |                      |
| Gd (HNO <sub>3</sub> or HCl)                   |                      | Rb (H <sub>2</sub> O; HNO <sub>3</sub> or HCl)        |                      | Zn (HNO <sub>3</sub> or HCl)                          |                      |
| Ge (HNO <sub>3</sub> /tr.HF or HCl)            |                      | Re (H <sub>2</sub> O; HNO <sub>3</sub> or HCl)        |                      | Zr (HNO <sub>3</sub> /tr.HF or HCl/tr.HF)             |                      |
| Hf (HNO <sub>3</sub> /tr.HF or HCl)            |                      | Rh (HNO <sub>3</sub> /HCl or HCl)                     |                      |                                                       |                      |
| Hg (HNO <sub>3</sub> or HCl)                   |                      | Ru (HNO <sub>3</sub> /HCl or HCl)                     |                      |                                                       |                      |

2. Specify the concentration of the chosen matrix, needed volume and quantities.

| MATRIX           | CONCENTRATION<br>in mg/l | VOLUME<br>in ml | NUMBER<br>OF BOTTLES |
|------------------|--------------------------|-----------------|----------------------|
| HNO <sub>3</sub> |                          |                 |                      |
| HCl              |                          |                 |                      |
| H <sub>2</sub> O |                          |                 |                      |
| OTHER            |                          |                 |                      |

3. Complete

Name\* .....

Company\* .....

City\* ..... State/Prov .....

Zip/Postal Code\* ..... Country\* .....

Telephone\* ..... Fax .....

E-mail\* .....

\* Required

Please, photocopy for future use and fax it to your local distributor  
or CPAchem at: +359 42 607 716

1. Specify the concentration of the chosen element in mg/l.

| ELEMENT                                   | CONCENTR.<br>in mg/l | ELEMENT                                 | CONCENTR.<br>in mg/l | ELEMENT                                   | CONCENTR.<br>in mg/l |
|-------------------------------------------|----------------------|-----------------------------------------|----------------------|-------------------------------------------|----------------------|
| Acetate                                   |                      | Hydrogen Phtalate                       |                      | Phosphate as P                            |                      |
| Ammonium                                  |                      | Iodate (IO <sub>3</sub> <sup>-</sup> )  |                      | Potassium                                 |                      |
| Ammonium as N                             |                      | Iodide (I <sup>-</sup> )                |                      | Propionate                                |                      |
| Barium                                    |                      | Lactate                                 |                      | Silicate                                  |                      |
| Benzoate                                  |                      | Lithium                                 |                      | Sodium                                    |                      |
| Bromate (BrO <sub>3</sub> <sup>-</sup> )  |                      | Magnesium                               |                      | Strontium                                 |                      |
| Bromide (Br <sup>-</sup> )                |                      | Maleate                                 |                      | Succinate                                 |                      |
| Calcium                                   |                      | Methane sulphonate                      |                      | Sulphate (SO <sub>4</sub> <sup>2-</sup> ) |                      |
| Cesium                                    |                      | 3-Methoxypropylamine                    |                      | Sulphite                                  |                      |
| Chromium (III)                            |                      | Monoethalonamine                        |                      | Tartrate                                  |                      |
| Chromium (VI)                             |                      | Monomethylamine                         |                      | Thiocyanate                               |                      |
| Chlorate (ClO <sub>3</sub> <sup>-</sup> ) |                      | Nitriлотriacetate                       |                      | Thiosulphate                              |                      |
| Chloride (Cl <sup>-</sup> )               |                      | Nitrate (NO <sub>3</sub> <sup>-</sup> ) |                      | Triethanolamine                           |                      |
| Citrate                                   |                      | Nitrate as N                            |                      | Triethylamine                             |                      |
| Cyanide                                   |                      | Nitrite (NO <sub>2</sub> <sup>-</sup> ) |                      | Trimethylamine                            |                      |
| Diethanolamine                            |                      | Nitrite as N                            |                      | Other                                     |                      |
| Fluoride                                  |                      | Oxalate                                 |                      | Other                                     |                      |
| Formate                                   |                      | Perchlorate                             |                      | Other                                     |                      |
| Glycolate                                 |                      | Phosphate                               |                      |                                           |                      |

2. Specify the concentration of the chosen matrix, needed volume and quantities.

| MATRIX             | CONCENTRATION<br>in mg/l | VOLUME<br>in ml | NUMBER<br>OF BOTTLES |
|--------------------|--------------------------|-----------------|----------------------|
| HNO <sub>3</sub>   |                          |                 |                      |
| CH <sub>3</sub> CN |                          |                 |                      |
| HCl                |                          |                 |                      |
| OTHER              |                          |                 |                      |

3. Complete

Name\* .....

Company\* .....

City\* ..... State/Prov .....

Zip/Postal Code\* ..... Country\* .....

Telephone\* ..... Fax .....

E-mail\* .....

\* Required

Please, photocopy for future use and fax it to your local distributor  
or CPAchem at: +359 42 607 716



# GENERAL SALES TERMS AND CONDITIONS

## 1. ORDERING

1.1. The orders should be placed in writing with indication of the article number, quantity (number and size of packages) and article description.

Please, state date and invoice number when referring to previous orders. This reference is meant, however, to be valid only for the nature of the product and not the Prices.

1.2. Orders placed by telephone will only become legally binding after they have been confirmed by us in writing or after we have sent the goods with invoice to the buyer.

1.3. We reserve the right to cancel or delay, in whole or partially, orders or contracts for the supply of products due to unforeseen difficulties such as a result of force major circumstances occurring either in our own laboratory (facilities) or in those of our suppliers. Such developments relieve us from the obligations previously undertaken at the time the order was accepted.

1.4. In accordance with legal regulations, we reserve the right to terminate contracts or suspend deliveries in the event of changes in the economic conditions of the customers (bankruptcy, liquidation, insolvency, company dissolution or modification, etc.). In such cases the customer will be held responsible for breach of contract.

## 2. PRICES

2.1. The Prices are in EUR, EXW Stara Zagora, Bulgaria. Invoicing will be made in Euro at the Prices applicable on the date of delivery. We do not hold any responsibility with regard to the resale policy of our clients.

2.2. In the case of a substantial cost increase occurs prior to the order delivery, we shall be entitled, after the customer has been duly informed, to surcharge this to the agreed Prices. The buyer shall have the right to cancel his order within 7 days after notification of the Price increase.

2.3. Transport cost: the transport cost for the deliveries will be charged to the client and added in the invoice to the value of the goods, thus forming the final invoice amount

## 3. DELIVERY

3.1. Delivery will be made as quickly as possible using the means of transport and courier agreed upon between us and the buyer. We cannot, however, bind ourselves to a fixed delivery period.

3.2. In the event of being hindered in the fulfillment of our obligations due to unforeseen circumstances, e.g. operational breakdowns, shortage of raw material, transport difficulties, etc. No matter such could be suffered in our facilities, by our suppliers or by the postal services or forwarding agents, the delivery period will be extended by reasonable margin provided that the supply or service is still able to be rendered. Should the above mentioned circumstances prevent the rendering of the supply then we shall be released from our obligations in such respects.

3.3. In the above mentioned cases, when the delivery period is prolonged or the supplier is released from his supply obligations, no claims for compensation or rights of cancellation arise for the ordering party.

#### **4. PACKAGING**

- 4.1. We pack our goods using the most appropriate material based on the nature of the goods themselves and the means of shipment selected.
- 4.2. We provide packaging free of charge and do not accept its return.

#### **5. GUARANTEE, NOTIFICATION OF DEFECTS, RETURN OF GOODS AND LIABILITY**

- 5.1. Upon receipt the buyer is obliged to check immediately if the goods correspond in quality and quantity to the contractual agreements. If this check is not carried out thoroughly and if apparent faults are not notified immediately, within one week at the latest from the receipt of goods, the goods will be accepted regardless such faults. Claims will not entail release from payment obligations.
- 5.2. Justified complaints will be acknowledged by Price reduction, subsequent improvement, exchange or repurchase against refund. Subsequently derived claims will be excluded.
- 5.3. Recognition can not be given to complaints against the quality of unstable products which have decomposed due to too long storage or incorrect storing conditions. We disclaim all liability for damages occurring as a result of improper handling or storage.
- 5.4. We shall not accept any returned goods without our prior agreement. Returned goods received by us without prior mutual agreement will be returned back to sender at his costs and risk.
- 5.5. Return of properly supplied goods will only be made in exceptional cases and with the proviso that the goods will be returned in their undamaged original packaging.
- 5.6. The buyer shall be responsible for observing any official regulations in relation to dealing (supply, storage, processing, trade, etc.) in individual products. We shall reject any recourse to liability in respect of damage caused by our customers through non-observance of protective legislation (e.g.. regulation concerning dangerous substances).

#### **6. PAYMENT**

- 6.1. Our invoices will be payable in advance otherwise agreed upon between us and the buyer. Once the invoice becomes due, an interest for the delay of payment is charged to the Buyer amounting the equivalent of the European Central Bank interest rate increased by 6 percentage points.
- 6.2. For bank transfers, bank drafts or girocheques, the time of receipt of payments shall be considered to be the date on which we receive the credit advice from the financial institution.
- 6.3. Where, during a provisional business relationship, the inability of the Buyer to make payment provides valid evidence of suspect reliability, we shall be entitled to cancel all current supply contracts or to request payment in advance.

#### **7. CHOICE OF DOMICILE AND COURT OF JURISDICTION**

- 7.1. All disputes between our Company and its Customers are under the jurisdiction of the Stara Zagora Court. The Stara Zagora judicial authorities will have sole jurisdiction over any controversy arising within the context of these relations.



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# AAS Standards & Modifiers







# Single-Element Standards for AAS

1000 mg/l for AAS Flame

| TYPE NAME | ELEMENT | MATRIX                           | CONCENTRATION | VOLUME | UNIT | REFERENCE    |
|-----------|---------|----------------------------------|---------------|--------|------|--------------|
| Silver    | Ag      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A001.2NPL1   |
|           |         |                                  |               | 500    | ml   | A001.2NPL5   |
| Aluminium | Al      | in 2-5% HCl                      | 1000 mg/l     | 100    | ml   | A002.2CPL1   |
|           |         |                                  |               | 500    | ml   | A002.2CPL5   |
| Aluminium | Al      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A002.2NPL1   |
|           |         |                                  |               | 500    | ml   | A002.2NPL5   |
| Arsenic   | As      | in 2-5% HCl                      | 1000 mg/l     | 100    | ml   | A003.2CPL1   |
|           |         |                                  |               | 500    | ml   | A003.2CPL5   |
| Arsenic   | As      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A003.2NPL1   |
|           |         |                                  |               | 500    | ml   | A003.2NPL5   |
| Gold      | Au      | in 2-5% HCl                      | 1000 mg/l     | 100    | ml   | A004.2CPL1   |
|           |         |                                  |               | 500    | ml   | A004.2CPL5   |
| Boron     | B       | in H <sub>2</sub> O              | 1000 mg/l     | 100    | ml   | A005.WL1     |
|           |         |                                  |               | 500    | ml   | A005.WL5     |
| Barium    | Ba      | in 2-5% HCl                      | 1000 mg/l     | 100    | ml   | A006.2CPL1   |
|           |         |                                  |               | 500    | ml   | A006.2CPL5   |
| Barium    | Ba      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A006.2NPL1   |
|           |         |                                  |               | 500    | ml   | A006.2NPL5   |
| Beryllium | Be      | in 2-5% HNO <sub>3</sub> / tr.HF | 1000 mg/l     | 100    | ml   | A007.2N1FPL1 |
|           |         |                                  |               | 500    | ml   | A007.2N1FPL5 |
| Beryllium | Be      | in 2-5% HCl                      | 1000 mg/l     | 100    | ml   | A007.2CPL1   |
|           |         |                                  |               | 500    | ml   | A007.2CPL5   |
| Bismuth   | Bi      | in 5-10% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | A008.10NPL1  |
|           |         |                                  |               | 500    | ml   | A008.10NPL5  |
| Calcium   | Ca      | in 2-5% HCl                      | 1000 mg/l     | 100    | ml   | A009.2CPL1   |
|           |         |                                  |               | 500    | ml   | A009.2CPL5   |
| Calcium   | Ca      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A009.2NPL1   |
|           |         |                                  |               | 500    | ml   | A009.2NPL5   |
| Cadmium   | Cd      | in 2-5% HCl                      | 1000 mg/l     | 100    | ml   | A010.2CPL1   |
|           |         |                                  |               | 500    | ml   | A010.2CPL5   |
| Cadmium   | Cd      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A010.2NPL1   |
|           |         |                                  |               | 500    | ml   | A010.2NPL5   |
| Cerium    | Ce      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A011.2NPL1   |
|           |         |                                  |               | 500    | ml   | A011.2NPL5   |
| Cobalt    | Co      | in 2-5% HCl                      | 1000 mg/l     | 100    | ml   | A012.2CPL1   |
|           |         |                                  |               | 500    | ml   | A012.2CPL5   |
| Cobalt    | Co      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A012.2NPL1   |
|           |         |                                  |               | 500    | ml   | A012.2NPL5   |
| Chromium  | Cr      | in 2-5% HCl                      | 1000 mg/l     | 100    | ml   | A013.2CPL1   |
|           |         |                                  |               | 500    | ml   | A013.2CPL5   |
| Chromium  | Cr      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A013.2NPL1   |
|           |         |                                  |               | 500    | ml   | A013.2NPL5   |
| Cesium    | Cs      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A014.2NPL1   |
|           |         |                                  |               | 500    | ml   | A014.2NPL5   |
| Cesium    | Cu      | in 2-5% HCl                      | 1000 mg/l     | 100    | ml   | A015.2CPL1   |
|           |         |                                  |               | 500    | ml   | A015.2CPL5   |



\* Custom Standards for AAS are available upon request.

| TYPE NAME  | ELEMENT | MATRIX                           | CONCENTRATION | VOLUME | UNIT | REFERENCE    |
|------------|---------|----------------------------------|---------------|--------|------|--------------|
| Copper     | Cu      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A015.2NPL1   |
|            |         |                                  |               | 500    | ml   | A015.2NPL5   |
| Dysprosium | Dy      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A016.2NPL1   |
|            |         |                                  |               | 500    | ml   | A016.2NPL5   |
| Erbium     | Er      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A017.2NPL1   |
|            |         |                                  |               | 500    | ml   | A017.2NPL5   |
| Europium   | Eu      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A018.2NPL1   |
|            |         |                                  |               | 500    | ml   | A018.2NPL5   |
| Iron       | Fe      | in 2-5% HCl                      | 1000 mg/l     | 100    | ml   | A019.2CPL1   |
|            |         |                                  |               | 500    | ml   | A019.2CPL5   |
| Iron       | Fe      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A019.2NPL1   |
|            |         |                                  |               | 500    | ml   | A019.2NPL5   |
| Gallium    | Ga      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A020.2NPL1   |
|            |         |                                  |               | 500    | ml   | A020.2NPL5   |
| Gadolinium | Gd      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A021.2NPL1   |
|            |         |                                  |               | 500    | ml   | A021.2NPL5   |
| Germanium  | Ge      | in 2-5% HNO <sub>3</sub> / tr.HF | 1000 mg/l     | 100    | ml   | A022.5N1FPL1 |
|            |         |                                  |               | 500    | ml   | A022.5N1FPL5 |
| Hafnium    | Hf      | in 2-5% HNO <sub>3</sub> / tr.HF | 1000 mg/l     | 100    | ml   | A023.2N1FPL1 |
|            |         |                                  |               | 500    | ml   | A023.2N1FPL5 |
| Mercury    | Hg      | in 5-10% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | A024.10NPL1  |
|            |         |                                  |               | 500    | ml   | A024.10NPL5  |
| Holmium    | Ho      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A025.2NPL1   |
|            |         |                                  |               | 500    | ml   | A025.2NPL5   |
| Indium     | In      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A026.2NPL1   |
|            |         |                                  |               | 500    | ml   | A026.2NPL5   |
| Iridium    | Ir      | in 5-10% HCl                     | 1000 mg/l     | 100    | ml   | A027.10CPL1  |
|            |         |                                  |               | 500    | ml   | A027.10CPL5  |
| Potassium  | K       | in 2-5% HCl                      | 1000 mg/l     | 100    | ml   | A028.2CPL1   |
|            |         |                                  |               | 500    | ml   | A028.2CPL5   |
| Potassium  | K       | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A028.2NPL1   |
|            |         |                                  |               | 500    | ml   | A028.2NPL5   |
| Lanthanum  | La      | in 2-5% HCl                      | 1000 mg/l     | 100    | ml   | A029.2CPL1   |
|            |         |                                  |               | 500    | ml   | A029.2CPL5   |
| Lanthanum  | La      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A029.2NPL1   |
|            |         |                                  |               | 500    | ml   | A029.2NPL5   |
| Lithium    | Li      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A030.2NPL1   |
|            |         |                                  |               | 500    | ml   | A030.2NPL5   |
| Magnesium  | Mg      | in 2-5% HCl                      | 1000 mg/l     | 100    | ml   | A032.2CPL1   |
|            |         |                                  |               | 500    | ml   | A032.2CPL5   |
| Magnesium  | Mg      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A032.2NPL1   |
|            |         |                                  |               | 500    | ml   | A032.2NPL5   |
| Manganese  | Mn      | in 2-5% HCl                      | 1000 mg/l     | 100    | ml   | A033.2CPL1   |
|            |         |                                  |               | 500    | ml   | A033.2CPL5   |
| Manganese  | Mn      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A033.2NPL1   |
|            |         |                                  |               | 500    | ml   | A033.2NPL5   |
| Molybdenum | Mo      | in 2-5% HNO <sub>3</sub> / tr.HF | 1000 mg/l     | 100    | ml   | A034.1N1FPL1 |
|            |         |                                  |               | 500    | ml   | A034.1N1FPL5 |
| Molybdenum | Mo      | in H <sub>2</sub> O              | 1000 mg/l     | 100    | ml   | A034.W.L1    |
|            |         |                                  |               | 500    | ml   | A034.W.L5    |



| TYPE NAME  | ELEMENT | MATRIX                           | CONCENTRATION | VOLUME | UNIT | REFERENCE    |
|------------|---------|----------------------------------|---------------|--------|------|--------------|
| Sodium     | Na      | in 1% HCl                        | 1000 mg/l     | 100    | ml   | A035.1CPL1   |
|            |         |                                  |               | 500    | ml   | A035.1CPL5   |
| Sodium     | Na      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A035.2NPL1   |
|            |         |                                  |               | 500    | ml   | A035.2NPL5   |
| Sodium     | Na      | in H <sub>2</sub> O              | 1000 mg/l     | 100    | ml   | A035.WL1     |
|            |         |                                  |               | 500    | ml   | A035.WL5     |
| Niobium    | Nb      | in 2-5 %HNO <sub>3</sub> / tr.HF | 1000 mg/l     | 100    | ml   | A036.5N1FPL1 |
|            |         |                                  |               | 500    | ml   | A036.5N1FPL5 |
| Neodymium  | Nd      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A037.2NPL1   |
|            |         |                                  |               | 500    | ml   | A037.2NPL5   |
| Nickel     | Ni      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A038.2NPL1   |
|            |         |                                  |               | 500    | ml   | A038.2NPL5   |
| Phosphorus | P       | in H <sub>2</sub> O              | 1000 mg/l     | 100    | ml   | A040.WL1     |
|            |         |                                  |               | 500    | ml   | A040.WL5     |
| Lead       | Pb      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A041.2NPL1   |
|            |         |                                  |               | 500    | ml   | A041.2NPL5   |
| Palladium  | Pd      | in 2-5% HCl                      | 1000 mg/l     | 100    | ml   | A042.5CPL1   |
|            |         |                                  |               | 500    | ml   | A042.5CPL5   |
| Palladium  | Pd      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A042.5NPL1   |
|            |         |                                  |               | 500    | ml   | A042.5NPL5   |
| Platinum   | Pt      | in 5-10% HCl                     | 1000 mg/l     | 100    | ml   | A044.10CPL1  |
|            |         |                                  |               | 500    | ml   | A044.10CPL5  |
| Rubidium   | Rb      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A045.2NPL1   |
|            |         |                                  |               | 500    | ml   | A045.2NPL5   |
| Rhenium    | Re      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A046.5NPL1   |
|            |         |                                  |               | 500    | ml   | A046.5NPL5   |
| Rhodium    | Rh      | in 2-5% HCl                      | 1000 mg/l     | 100    | ml   | A047.5CPL1   |
|            |         |                                  |               | 500    | ml   | A047.5CPL5   |
| Ruthenium  | Ru      | in 2-5% HCl                      | 1000 mg/l     | 100    | ml   | A048.5CPL1   |
|            |         |                                  |               | 500    | ml   | A048.5CPL5   |
| Sulphur    | S       | in H <sub>2</sub> O              | 1000 mg/l     | 100    | ml   | A049.WL1     |
|            |         |                                  |               | 500    | ml   | A049.WL5     |
| Antimony   | Sb      | in 2-5% HNO <sub>3</sub> / tr.HF | 1000 mg/l     | 100    | ml   | A050.5N1FPL1 |
|            |         |                                  |               | 500    | ml   | A050.5N1FPL5 |
| Antimony   | Sb      | in 10-20% HCl                    | 1000 mg/l     | 100    | ml   | A050.20CPL1  |
|            |         |                                  |               | 500    | ml   | A050.20CPL5  |
| Scandium   | Sc      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A051.2NPL1   |
|            |         |                                  |               | 500    | ml   | A051.2NPL5   |
| Selenium   | Se      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A052.2NPL1   |
|            |         |                                  |               | 500    | ml   | A052.2NPL5   |
| Silicon    | Si      | in H <sub>2</sub> O              | 1000 mg/l     | 100    | ml   | A053.WL1     |
|            |         |                                  |               | 500    | ml   | A053.WL5     |
| Samarium   | Sm      | in 2-5% HNO <sub>3</sub>         | 1000 mg/l     | 100    | ml   | A054.2NPL1   |
|            |         |                                  |               | 500    | ml   | A054.2NPL5   |
| Tin        | Sn      | in 2-5% HNO <sub>3</sub> / tr.HF | 1000 mg/l     | 100    | ml   | A055.1N1FPL1 |
|            |         |                                  |               | 500    | ml   | A055.1N1FPL5 |
| Tin        | Sn      | in 10-20% HCl                    | 1000 mg/l     | 100    | ml   | A055.20CPL1  |
|            |         |                                  |               | 500    | ml   | A055.20CPL5  |
| Strontium  | Sr      | in 2-5% HCl                      | 1000 mg/l     | 100    | ml   | A056.2CPL1   |
|            |         |                                  |               | 500    | ml   | A056.2CPL5   |



| TYPE NAME | ELEMENT | MATRIX                                 | CONCENTRATION | VOLUME | UNIT | REFERENCE     |
|-----------|---------|----------------------------------------|---------------|--------|------|---------------|
| Strontium | Sr      | in 2-5% HNO <sub>3</sub>               | 1000 mg/l     | 100    | ml   | A056.2NPL1    |
|           |         |                                        |               | 500    | ml   | A056.2NPL5    |
| Tantalum  | Ta      | in 2-5% HNO <sub>3</sub> / tr.HF       | 1000 mg/l     | 100    | ml   | A057.5N1FPL1  |
|           |         |                                        |               | 500    | ml   | A057.5N1FPL5  |
| Tellurium | Te      | in 5-10% HNO <sub>3</sub>              | 1000 mg/l     | 100    | ml   | A059.10NPL1   |
|           |         |                                        |               | 500    | ml   | A059.10NPL5   |
| Tellurium | Te      | in 10-20% HCl                          | 1000 mg/l     | 100    | ml   | A059.20CPL1   |
|           |         |                                        |               | 500    | ml   | A059.20CPL5   |
| Titanium  | Ti      | in 2-5% HNO <sub>3</sub> / tr.HF       | 1000 mg/l     | 100    | ml   | A061.5N05FPL1 |
|           |         |                                        |               | 500    | ml   | A061.5N05FPL5 |
| Thallium  | Tl      | in 2-5% HNO <sub>3</sub>               | 1000 mg/l     | 100    | ml   | A062.2NPL1    |
|           |         |                                        |               | 500    | ml   | A062.2NPL5    |
| Thulium   | Tm      | in 2-5% HNO <sub>3</sub>               | 1000 mg/l     | 100    | ml   | A063.2NPL1    |
|           |         |                                        |               | 500    | ml   | A063.2NPL5    |
| Vanadium  | V       | in 2-5% H <sub>2</sub> SO <sub>4</sub> | 1000 mg/l     | 100    | ml   | A065.2SPL1    |
|           |         |                                        |               | 500    | ml   | A065.2SPL5    |
| Vanadium  | V       | in 2-5% HNO <sub>3</sub>               | 1000 mg/l     | 100    | ml   | A065.2NPL1    |
|           |         |                                        |               | 500    | ml   | A065.2NPL5    |
| Tungsten  | W       | in 2-5% HNO <sub>3</sub> / tr.HF       | 1000 mg/l     | 100    | ml   | A066.1N2FPL1  |
|           |         |                                        |               | 500    | ml   | A066.1N2FPL5  |
| Yttrium   | Y       | in 2-5% HNO <sub>3</sub>               | 1000 mg/l     | 100    | ml   | A067.2NPL1    |
|           |         |                                        |               | 500    | ml   | A067.2NPL5    |
| Ytterbium | Yb      | in 2-5% HNO <sub>3</sub>               | 1000 mg/l     | 100    | ml   | A068.2NPL1    |
|           |         |                                        |               | 500    | ml   | A068.2NPL5    |
| Zinc      | Zn      | in 2-5% HCl                            | 1000 mg/l     | 100    | ml   | A069.2CPL1    |
|           |         |                                        |               | 500    | ml   | A069.2CPL5    |
| Zinc      | Zn      | in 2-5% HNO <sub>3</sub>               | 1000 mg/l     | 100    | ml   | A069.2NPL1    |
|           |         |                                        |               | 500    | ml   | A069.2NPL5    |
| Zirconium | Zr      | in 2-5% HNO <sub>3</sub> / tr.HF       | 1000 mg/l     | 100    | ml   | A070.2N05FPL1 |
|           |         |                                        |               | 500    | ml   | A070.5C05FPL5 |
| Zirconium | Zr      | in 2-5% HCl/tr.HF                      | 1000 mg/l     | 100    | ml   | A070.5C05FPL1 |
|           |         |                                        |               | 500    | ml   | A070.2N05FPL5 |

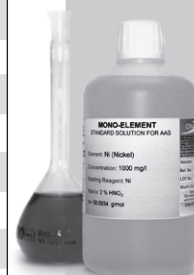
*10 000 mg/l for AAS Flame*

| TYPE NAME | ELEMENT | MATRIX                           | CONCENTRATION | VOLUME | UNIT | REFERENCE     |
|-----------|---------|----------------------------------|---------------|--------|------|---------------|
| Aluminium | Al      | in 2-5% HCl                      | 10 000 mg/l   | 20     | ml   | S102.5CPL02   |
| Aluminium | Al      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 20     | ml   | S102.5NPL02   |
| Antimony  | Sb      | in 2-5% HNO <sub>3</sub> / tr.HF | 10 000 mg/l   | 20     | ml   | S150.5N2FPL02 |
| Arsenic   | As      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 20     | ml   | S103.5NPL02   |
| Barium    | Ba      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 20     | ml   | S106.5NPL02   |
| Beryllium | Be      | in 2-5% HNO <sub>3</sub> / tr.HF | 10 000 mg/l   | 20     | ml   | S107.5N1FPL02 |
| Bismuth   | Bi      | in 5-10% HNO <sub>3</sub>        | 10 000 mg/l   | 20     | ml   | S108.10NPL02  |
| Boron     | B       | H <sub>2</sub> O                 | 10 000 mg/l   | 20     | ml   | S105.W.L02    |
| Cadmium   | Cd      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 20     | ml   | S110.5NPL02   |
| Calcium   | Ca      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 20     | ml   | S109.5NPL02   |
| Cesium    | Cs      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 20     | ml   | S114.2NPL02   |
| Chromium  | Cr      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 20     | ml   | S113.5NPL02   |
| Cobalt    | Co      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 20     | ml   | S112.5NPL02   |

| TYPE NAME  | ELEMENT | MATRIX                           | CONCENTRATION | VOLUME | UNIT | REFERENCE     |
|------------|---------|----------------------------------|---------------|--------|------|---------------|
| Copper     | Cu      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 20     | ml   | S115.5NPL02   |
| Iron       | Fe      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 20     | ml   | S119.5NPL02   |
| Lead       | Pb      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 20     | ml   | S141.5NPL02   |
| Lithium    | Li      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 20     | ml   | S130.2NPL02   |
| Magnesium  | Mg      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 20     | ml   | S132.5NPL02   |
| Manganese  | Mn      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 20     | ml   | S133.5NPL02   |
| Molybdenum | Mo      | in 2-5% HNO <sub>3</sub> / tr.HF | 10 000 mg/l   | 20     | ml   | S134.5N4FPL02 |
| Nickel     | Ni      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 20     | ml   | S138.5NPL02   |
| Phosphorus | P       | in H <sub>2</sub> O              | 10 000 mg/l   | 20     | ml   | S140.W.L02    |
| Potassium  | K       | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 20     | ml   | S128.2NPL02   |
| Rubidium   | Rb      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 20     | ml   | S145.2NPL02   |
| Scandium   | Sc      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 20     | ml   | S151.5NPL02   |
| Selenium   | Se      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 20     | ml   | S152.5NPL02   |
| Silicon    | Si      | in H <sub>2</sub> O              | 10 000 mg/l   | 20     | ml   | S153.W.L02    |
| Silver     | Ag      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 20     | ml   | S101.5NPL02   |
| Sodium     | Na      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 20     | ml   | S135.2NPL02   |
| Strontium  | Sr      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 20     | ml   | S156.5NPL02   |
| Tellurium  | Te      | in 10-20 %HNO <sub>3</sub>       | 10 000 mg/l   | 20     | ml   | S159.20NPL02  |
| Tin        | Sn      | in 2-5% HNO <sub>3</sub> / tr.HF | 10 000 mg/l   | 20     | ml   | S155.5N2FPL02 |
| Titanium   | Ti      | in 2-5% HNO <sub>3</sub> / tr.HF | 10 000 mg/l   | 20     | ml   | S161.5N2FPL02 |
| Thallium   | Tl      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 20     | ml   | S162.5NPL02   |
| Tungsten   | W       | in 2-5% HNO <sub>3</sub> / tr.HF | 10 000 mg/l   | 20     | ml   | S166.2N5FPL02 |
| Vanadium   | V       | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 20     | ml   | S165.5NPL02   |
| Yttrium    | Y       | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 20     | ml   | S167.5NPL02   |
| Zinc       | Zn      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 20     | ml   | S169.5NPL02   |
| Zirconium  | Zr      | in 2-5% HNO <sub>3</sub> / tr.HF | 10 000 mg/l   | 20     | ml   | S170.5N2FPL02 |

### Concentrate for AAS Flame

| TYPE NAME | ELEMENT | MATRIX                            | CONCENTRATION | VOLUME | UNIT | REFERENCE     |
|-----------|---------|-----------------------------------|---------------|--------|------|---------------|
| Aluminium | Al      | in 2-5% HNO <sub>3</sub>          | 10 000 mg/l   | 100    | ml   | A102.5NPL1    |
| Antimony  | Sb      | in 5-10% HNO <sub>3</sub> / tr.HF | 10 000 mg/l   | 100    | ml   | A150.10N2FPL1 |
| Antimony  | Sb      | in 10-20% HCl                     | 10 000 mg/l   | 100    | ml   | A150.20CPL1   |
| Arsenic   | As      | in 2-5% HCl                       | 10 000 mg/l   | 100    | ml   | A103.5CPL1    |
| Arsenic   | As      | in 2-5% HNO <sub>3</sub>          | 10 000 mg/l   | 100    | ml   | A103.5NPL1    |
| Barium    | Ba      | in 2-5% HCl                       | 10 000 mg/l   | 100    | ml   | A106.5CPL1    |
| Beryllium | Be      | in 2-5% HCl                       | 10 000 mg/l   | 100    | ml   | A107.5CPL1    |
| Beryllium | Be      | in 2-5% HNO <sub>3</sub> / tr.HF  | 10 000 mg/l   | 100    | ml   | A107.5N1FPL1  |
| Bismuth   | Bi      | in 5-10% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | A108.10NPL1   |
| Boron     | B       | in H <sub>2</sub> O               | 10 000 mg/l   | 100    | ml   | A105.2APL1    |
| Cadmium   | Cd      | in 2-5% HCl                       | 10 000 mg/l   | 100    | ml   | A110.5CPL1    |
| Cadmium   | Cd      | in 2-5% HNO <sub>3</sub>          | 10 000 mg/l   | 100    | ml   | A110.5NPL1    |
| Calcium   | Ca      | in 2-5% HCl                       | 10 000 mg/l   | 100    | ml   | A109.5CPL1    |
| Calcium   | Ca      | in 2-5% HNO <sub>3</sub>          | 10 000 mg/l   | 100    | ml   | A109.5NPL1    |
| Cesium    | Cs      | in 2-5% HNO <sub>3</sub>          | 10 000 mg/l   | 100    | ml   | A114.2NPL1    |
| Chromium  | Cr      | in 2-5% HCl                       | 10 000 mg/l   | 100    | ml   | A113.5CPL1    |
| Chromium  | Cr      | in 2-5% HNO <sub>3</sub>          | 10 000 mg/l   | 100    | ml   | A113.5NPL1    |



\* Custom Standards for AAS are available upon request.

| TYPE NAME  | ELEMENT | MATRIX                           | CONCENTRATION | VOLUME | UNIT | REFERENCE    |
|------------|---------|----------------------------------|---------------|--------|------|--------------|
| Cobalt     | Co      | in 2-5% HCl                      | 10 000 mg/l   | 100    | ml   | A112.5CPL1   |
| Cobalt     | Co      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | A112.5NPL1   |
| Copper     | Cu      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | A115.5NPL1   |
| Germanium  | Ge      | in 2-5% HNO <sub>3</sub> / tr.HF | 10 000 mg/l   | 100    | ml   | A122.5N1FPL1 |
| Iron       | Fe      | in 2-5% HCl                      | 10 000 mg/l   | 100    | ml   | A119.5CPL1   |
| Iron       | Fe      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | A119.5NPL1   |
| Lead       | Pb      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | A141.5NPL1   |
| Lithium    | Li      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | A130.2NPL1   |
| Lithium    | Li      | in 2-5% HCl                      | 10 000 mg/l   | 100    | ml   | A130.2CPL1   |
| Magnesium  | Mg      | in 2-5% HCl                      | 10 000 mg/l   | 100    | ml   | A132.5CPL1   |
| Magnesium  | Mg      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | A132.5NPL1   |
| Manganese  | Mn      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | A133.5NPL1   |
| Mercury    | Hg      | in 5-10% HNO <sub>3</sub>        | 10 000 mg/l   | 100    | ml   | A124.10NPL1  |
| Molybdenum | Mo      | in 2-5% HNO <sub>3</sub> / tr.HF | 10 000 mg/l   | 100    | ml   | A134.5N4FPL1 |
| Nickel     | Ni      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | A138.5NPL1   |
| Phosphorus | P       | in H <sub>2</sub> O              | 10 000 mg/l   | 100    | ml   | A140.W.L1    |
| Potassium  | K       | in 2-5% HCl                      | 10 000 mg/l   | 100    | ml   | A128.2CPL1   |
| Potassium  | K       | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | A128.2NPL1   |
| Rubidium   | Rb      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | A145.2NPL1   |
| Scandium   | Sc      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | A151.5NPL1   |
| Selenium   | Se      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | A152.5NPL1   |
| Silicon    | Si      | in H <sub>2</sub> O              | 10 000 mg/l   | 100    | ml   | A153.W.L1    |
| Silver     | Ag      | in 10-20% HNO <sub>3</sub>       | 10 000 mg/l   | 100    | ml   | A101.20NPL1  |
| Sodium     | Na      | in 2-5% HCl                      | 10 000 mg/l   | 100    | ml   | A135.2CPL1   |
| Sodium     | Na      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | A135.2NPL1   |
| Strontium  | Sr      | in 2-5% HCl                      | 10 000 mg/l   | 100    | ml   | A156.2CPL1   |
| Strontium  | Sr      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | A156.5NPL1   |
| Tellurium  | Te      | in 10-20% HCl                    | 10 000 mg/l   | 100    | ml   | A159.20CPL1  |
| Tellurium  | Te      | in 10-20% HNO <sub>3</sub>       | 10 000 mg/l   | 100    | ml   | A159.20NPL1  |
| Tin        | Sn      | in 2-5% HNO <sub>3</sub> / tr.HF | 10 000 mg/l   | 100    | ml   | A155.2N2FPL1 |
| Tin        | Sn      | in 2-5% HCl                      | 10 000 mg/l   | 100    | ml   | A155.5CPL1   |
| Titanium   | Ti      | in 2-5% HNO <sub>3</sub> / tr.HF | 10 000 mg/l   | 100    | ml   | A161.5N2FPL1 |
| Titanium   | Ti      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | A162.5NPL1   |
| Tungsten   | W       | in 2-5% HNO <sub>3</sub> / tr.HF | 10 000 mg/l   | 100    | ml   | A166.2N5FPL1 |
| Vanadium   | V       | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | A165.5NPL1   |
| Yttrium    | Y       | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | A167.5NPL1   |
| Zinc       | Zn      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | A169.5NPL1   |
| Zinc       | Zn      | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | A169.5CPL1   |
| Zirconium  | Zr      | in 2-5%HCl/ tr.HF                | 10 000 mg/l   | 100    | ml   | A170.5C2FPL1 |

### Single-Element Standard in Alcohol

| TYPE NAME | ELEMENT | MATRIX                                         | CONCENTRATION | VOLUME | UNIT | REFERENCE      |
|-----------|---------|------------------------------------------------|---------------|--------|------|----------------|
| Calcium   | Ca      | in 2% HCl /12%C <sub>2</sub> H <sub>5</sub> OH | 1000 mg/l     | 100    | ml   | A009.2C12EL.L1 |
|           |         |                                                |               | 500    | ml   | A009.2C12EL.L5 |
| Copper    | Cu      | in 2% HCl /12%C <sub>2</sub> H <sub>5</sub> OH | 1000 mg/l     | 100    | ml   | A015.2C12EL.L1 |
|           |         |                                                |               | 500    | ml   | A015.2C12EL.L5 |



|           |    |                                                |           |     |    |                |
|-----------|----|------------------------------------------------|-----------|-----|----|----------------|
| Iron      | Fe | in 2% HCl /12%C <sub>2</sub> H <sub>5</sub> OH | 1000 mg/l | 100 | ml | A019.2C12EL.L1 |
|           |    |                                                |           | 500 | ml | A019.2C12EL.L5 |
| Potassium | K  | in 2% HCl /12%C <sub>2</sub> H <sub>5</sub> OH | 1000 mg/l | 100 | ml | A028.2C12EL.L1 |
|           |    |                                                |           | 500 | ml | A028.2C12EL.L5 |
| Sodium    | Na | in 2% HCl /12%C <sub>2</sub> H <sub>5</sub> OH | 1000 mg/l | 100 | ml | A035.2C12EL.L1 |
|           |    |                                                |           | 500 | ml | A035.2C12EL.L5 |
| Zinc      | Zn | in 2% HCl /12%C <sub>2</sub> H <sub>5</sub> OH | 1000 mg/l | 100 | ml | A069.2C12EL.L1 |
|           |    |                                                |           | 500 | ml | A069.2C12EL.L5 |

Single-Element Standards in KCN

| TYPE NAME | ELEMENT | MATRIX   | CONCENTRATION | VOLUME | UNIT | REFERENCE     |
|-----------|---------|----------|---------------|--------|------|---------------|
| Gold      | Au      | 0.4% KCN | 1000 mg/l     | 100    | ml   | A965.1K.04.L1 |
|           |         |          |               | 500    | ml   | A965.1K.04.L5 |
| Copper    | Cu      | 0.4% KCN | 1000 mg/l     | 100    | ml   | 691C.1K.04.L1 |
|           |         |          |               | 500    | ml   | 691C.1K.04.L5 |

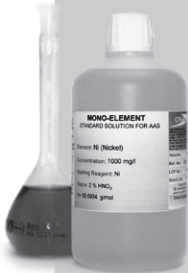
Single-Element Standard for Graphite Furnace

| TYPE NAME | ELEMENT | MATRIX                  | CONCENTRATION | VOLUME | UNIT | REFERENCE         |
|-----------|---------|-------------------------|---------------|--------|------|-------------------|
| Antimony  | Sb      | in 1 % HNO <sub>3</sub> | 20 ppb        | 50     | ml   | F1ED8.D02.1N.L05  |
| Arsenic   | As      | in 1 % HNO <sub>3</sub> | 20 ppb        | 50     | ml   | F2165.D02.1N.L05  |
| Cadmium   | Cd      | in 1 % HNO <sub>3</sub> | 0.2 ppb       | 50     | ml   | F5519.D002.1N.L05 |
| Lead      | Pb      | in 1 % HNO <sub>3</sub> | 20 ppb        | 50     | ml   | 1E9C.D02.1N.L05   |
| Manganese | Mn      | in 1 % HNO <sub>3</sub> | 10 ppb        | 50     | ml   | F4C73.D01.1N.L05  |
| Nickel    | Ni      | in 1 % HNO <sub>3</sub> | 30 ppb        | 50     | ml   | F3836.D03.1N.L05  |

Modifiers, Buffers & Reagents

Matrix Modifier for Graphite Furnace

| TYPE NAME                      | ELEMENT                                                               | MATRIX                 | CONCENTRATION  | VOLUME | UNIT | REFERENCE          |
|--------------------------------|-----------------------------------------------------------------------|------------------------|----------------|--------|------|--------------------|
| Ammonium Modifier              | NH <sub>4</sub> NO <sub>3</sub>                                       | in H <sub>2</sub> O    | 50 g/l         | 50     | ml   | MM909D.50K.W.L05   |
| Magnesium Modifier             | Mg(NO <sub>3</sub> ) <sub>2</sub>                                     | in H <sub>2</sub> O    | 10 g/l         | 50     | ml   | MM2F6A.10K.W.L05   |
| Magnesium Modifier             | Mg(NO <sub>3</sub> ) <sub>2</sub>                                     | in H <sub>2</sub> O    | 20 g/l         | 50     | ml   | MM2F6A.20K.W.L05   |
| Nickel Modifier                | Ni(NO <sub>3</sub> ) <sub>2</sub>                                     | in 1 %HNO <sub>3</sub> | 10 g/l         | 50     | ml   | MM9E04.10K.1N.L05  |
| Palladium Modifier             | Pd(NO <sub>3</sub> ) <sub>2</sub>                                     | in 1 %HNO <sub>3</sub> | 2 g/l          | 50     | ml   | MM4CF5.2K.1N.L05   |
| Palladium Modifier             | Pd(NO <sub>3</sub> ) <sub>2</sub>                                     | in 1 %HNO <sub>3</sub> | 5 g/l          | 50     | ml   | MM4CF5.5K.1N.L05   |
| Magnesium + Palladium Modifier | Mg(NO <sub>3</sub> ) <sub>2</sub> + Pd(NO <sub>3</sub> ) <sub>2</sub> | in 1 %HNO <sub>3</sub> | 10 g/l + 2 g/l | 50     | ml   | MM2323.10K.1N.L05  |
| Phosphate Modifier             | NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub>                        | in 1 %HNO <sub>3</sub> | 100 g/l        | 50     | ml   | MMCFE0.100K.1N.L05 |
| Phosphate Modifier             | NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub>                        | in 1 %HNO <sub>3</sub> | 20 g/l         | 50     | ml   | MMCFE0.20K.1N.L05  |



\* Custom Standards for AAS are available upon request.

### Ionisation Buffers

| TYPE NAME                 | ELEMENT | MATRIX                 | CONCENTRATION | VOLUME | UNIT | REFERENCE   |
|---------------------------|---------|------------------------|---------------|--------|------|-------------|
| Cesium Ionization buffer  | Cs      | in 1 %HNO <sub>3</sub> | 2%            | 100    | ml   | IB514.1N.L1 |
|                           |         |                        |               | 500    | ml   | IB514.1N.L5 |
| Lithium Ionization buffer | Li      | in 1 %HNO3             | 2%            | 100    | ml   | IB530.1N.L1 |
|                           |         |                        |               | 500    | ml   | IB530.1N.L5 |

### Reagents for AAS Flame

| TYPE NAME | ELEMENT | MATRIX                 | CONCENTRATION | VOLUME | UNIT | REFERENCE   |
|-----------|---------|------------------------|---------------|--------|------|-------------|
| Lanthanum | La      | in 2 %HCl              | 2%            | 100    | ml   | IB529.2C.L1 |
|           |         |                        |               | 500    | ml   | IB529.2C.L5 |
| Strontium | Sr      | in 1 %HNO <sub>3</sub> | 2%            | 100    | ml   | IB556.2N.L1 |
|           |         |                        |               | 500    | ml   | IB556.2N.L5 |

### Blanks

| TYPE NAME                         | MATRIX           | VOLUME | UNIT | REFERENCE |
|-----------------------------------|------------------|--------|------|-----------|
| Water                             | HCl              | 1000   | ml   | AW.5CP.1L |
|                                   |                  | 500    | ml   | AW.5CP.L5 |
| Water                             | HNO <sub>3</sub> | 1000   | ml   | AW.5NP.1L |
|                                   |                  | 500    | ml   | AW.5NP.L5 |
| High purity deionized water blank |                  | 1 000  | ml   | DI01.L5   |
|                                   |                  | 500    | ml   | DI01.1L   |

## Single-Element Standards

### Mercury Standards

| TYPE NAME     | ELEMENT | MATRIX                 | CONCENTRATION | VOLUME | UNIT | REFERENCE         |
|---------------|---------|------------------------|---------------|--------|------|-------------------|
| QC-MS Mercury | Hg      | in 2 %HNO <sub>3</sub> | 0.01 mg/l     | 100    | ml   | MSD0BC.D01.2N.L05 |
| Mercury       | Hg      | in 5% HNO <sub>3</sub> | 0.5 mg/l      | 100    | ml   | ESD0BC.K5.5N.L1   |
| Mercury       | Hg      | in 2 %HNO <sub>3</sub> | 1 mg/l        | 100    | ml   | MSD0BC.1.2N.L1    |

## Multi-Element Standards

### Multi Element Standard for Graphite Furnace

| AA Calibration Standard - 2 components |               | Reference: 0B26.3.2N.L1         |               | Reference: 0B26.3.2N.L5         |  |
|----------------------------------------|---------------|---------------------------------|---------------|---------------------------------|--|
|                                        |               | Volume: 100 ml                  |               | Volume: 500 ml                  |  |
|                                        |               | Matrix: in 2 % HNO <sub>3</sub> |               | Matrix: in 2 % HNO <sub>3</sub> |  |
| Element                                | Concentration | Element                         | Concentration |                                 |  |
| Ni                                     | 10 mg/l       | Cr                              | 3 mg/l        |                                 |  |

\* Custom Single-Element Standards and Multi-Element Standards are available upon request.

# ICP & ICP-MS Standards







# Single-Element Standards

1000 mg/l for ICP

ICP & ICP-MS STANDARDS

| TYPE NAME | ELEMENT | MATRIX                          | CONCENTRATION | VOLUME | UNIT | REFERENCE      |
|-----------|---------|---------------------------------|---------------|--------|------|----------------|
| Silver    | Ag      | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 30     | ml   | C001.2NPL03    |
|           |         |                                 |               | 100    | ml   | C001.2NPL1     |
|           |         |                                 |               | 250    | ml   | C001.2NPL25    |
|           |         |                                 |               | 500    | ml   | C001.2NPL5     |
| Aluminium | Al      | in 2-5% HCl                     | 1000 mg/l     | 30     | ml   | C002.2CPL03    |
|           |         |                                 |               | 100    | ml   | C002.2CPL1     |
|           |         |                                 |               | 250    | ml   | C002.2CPL25    |
|           |         |                                 |               | 500    | ml   | C002.2CPL5     |
| Aluminium | Al      | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 30     | ml   | C002.2NPL03    |
|           |         |                                 |               | 100    | ml   | C002.2NPL1     |
|           |         |                                 |               | 250    | ml   | C002.2NPL25    |
|           |         |                                 |               | 500    | ml   | C002.2NPL5     |
| Arsenic   | As      | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 30     | ml   | C003.2NPL03    |
|           |         |                                 |               | 100    | ml   | C003.2NPL1     |
|           |         |                                 |               | 250    | ml   | C003.2NPL25    |
|           |         |                                 |               | 500    | ml   | C003.2NPL5     |
| Gold      | Au      | in 2-5% HCl                     | 1000 mg/l     | 30     | ml   | C004.2CPL03    |
|           |         |                                 |               | 100    | ml   | C004.2CPL1     |
|           |         |                                 |               | 250    | ml   | C004.2CPL25    |
|           |         |                                 |               | 500    | ml   | C004.2CPL5     |
| Boron     | B       | in H <sub>2</sub> O             | 1000 mg/l     | 30     | ml   | C005.W.L03     |
|           |         |                                 |               | 100    | ml   | C005.W.L1      |
|           |         |                                 |               | 250    | ml   | C005.W.L25     |
|           |         |                                 |               | 500    | ml   | C005.W.L5      |
| Barium    | Ba      | in 2-5% HCl                     | 1000 mg/l     | 30     | ml   | C006.2CPL03    |
|           |         |                                 |               | 100    | ml   | C006.2CPL1     |
|           |         |                                 |               | 250    | ml   | C006.2CPL25    |
|           |         |                                 |               | 500    | ml   | C006.2CPL5     |
| Barium    | Ba      | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 30     | ml   | C006.2NPL03    |
|           |         |                                 |               | 100    | ml   | C006.2NPL1     |
|           |         |                                 |               | 250    | ml   | C006.2NPL25    |
|           |         |                                 |               | 500    | ml   | C006.2NPL5     |
| Beryllium | Be      | in 2-5% HCl                     | 1000 mg/l     | 30     | ml   | C007.2CPL03    |
|           |         |                                 |               | 100    | ml   | C007.2CPL1     |
|           |         |                                 |               | 250    | ml   | C007.2CPL25    |
|           |         |                                 |               | 500    | ml   | C007.2CPL5     |
| Beryllium | Be      | in 2-5% HNO <sub>3</sub> /HF tr | 1000 mg/l     | 30     | ml   | C007.2N05FPL03 |
|           |         |                                 |               | 100    | ml   | C007.2N05FPL1  |
|           |         |                                 |               | 250    | ml   | C007.2N05FPL25 |
|           |         |                                 |               | 500    | ml   | C007.2N05FPL5  |
| Bismuth   | Bi      | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 30     | ml   | C008.10NPL03   |
|           |         |                                 |               | 100    | ml   | C008.10NPL1    |
|           |         |                                 |               | 250    | ml   | C008.10NPL25   |
|           |         |                                 |               | 500    | ml   | C008.10NPL5    |



\* Custom Standards for ICP & ICP-MS are available upon request.

| TYPE NAME  | ELEMENT | MATRIX                   | CONCENTRATION | VOLUME | UNIT | REFERENCE   |
|------------|---------|--------------------------|---------------|--------|------|-------------|
| Calcium    | Ca      | in 2-5% HCl              | 1000 mg/l     | 30     | ml   | C009.2CPL03 |
|            |         |                          |               | 100    | ml   | C009.2CPL1  |
|            |         |                          |               | 250    | ml   | C009.2CPL25 |
|            |         |                          |               | 500    | ml   | C009.2CPL5  |
| Calcium    | Ca      | in 2-5% HNO <sub>3</sub> | 1000 mg/l     | 30     | ml   | C009.2NPL03 |
|            |         |                          |               | 100    | ml   | C009.2NPL1  |
|            |         |                          |               | 250    | ml   | C009.2NPL25 |
|            |         |                          |               | 500    | ml   | C009.2NPL5  |
| Cadmium    | Cd      | in 2-5% HNO <sub>3</sub> | 1000 mg/l     | 30     | ml   | C010.2NPL03 |
|            |         |                          |               | 100    | ml   | C010.2NPL1  |
|            |         |                          |               | 250    | ml   | C010.2NPL25 |
|            |         |                          |               | 500    | ml   | C010.2NPL5  |
| Cerium     | Ce      | in 2-5% HNO <sub>3</sub> | 1000 mg/l     | 30     | ml   | C011.2NPL03 |
|            |         |                          |               | 100    | ml   | C011.2NPL1  |
|            |         |                          |               | 250    | ml   | C011.2NPL25 |
|            |         |                          |               | 500    | ml   | C011.2NPL5  |
| Cobalt     | Co      | in 2-5% HNO <sub>3</sub> | 1000 mg/l     | 30     | ml   | C012.2NPL03 |
|            |         |                          |               | 100    | ml   | C012.2NPL1  |
|            |         |                          |               | 250    | ml   | C012.2NPL25 |
|            |         |                          |               | 500    | ml   | C012.2NPL5  |
| Chromium   | Cr      | in 2-5% HCl              | 1000 mg/l     | 30     | ml   | C013.2CPL03 |
|            |         |                          |               | 100    | ml   | C013.2CPL1  |
|            |         |                          |               | 250    | ml   | C013.2CPL25 |
|            |         |                          |               | 500    | ml   | C013.2CPL5  |
| Chromium   | Cr      | in 2-5% HNO <sub>3</sub> | 1000 mg/l     | 30     | ml   | C013.2NPL03 |
|            |         |                          |               | 100    | ml   | C013.2NPL1  |
|            |         |                          |               | 250    | ml   | C013.2NPL25 |
|            |         |                          |               | 500    | ml   | C013.2NPL5  |
| Cesium     | Cs      | in 2-5% HNO <sub>3</sub> | 1000 mg/l     | 30     | ml   | C014.2NPL03 |
|            |         |                          |               | 100    | ml   | C014.2NPL1  |
|            |         |                          |               | 250    | ml   | C014.2NPL25 |
|            |         |                          |               | 500    | ml   | C014.2NPL5  |
| Cesium     | Cs      | in H <sub>2</sub> O      | 1000 mg/l     | 30     | ml   | C014.W.L03  |
|            |         |                          |               | 100    | ml   | C014.W.L1   |
|            |         |                          |               | 250    | ml   | C014.W.L25  |
|            |         |                          |               | 500    | ml   | C014.W.L5   |
| Copper     | Cu      | in 2-5% HNO <sub>3</sub> | 1000 mg/l     | 30     | ml   | C015.2NPL03 |
|            |         |                          |               | 100    | ml   | C015.2NPL1  |
|            |         |                          |               | 250    | ml   | C015.2NPL25 |
|            |         |                          |               | 500    | ml   | C015.2NPL5  |
| Dysprosium | Dy      | in 2-5% HNO <sub>3</sub> | 1000 mg/l     | 30     | ml   | C016.2NPL03 |
|            |         |                          |               | 100    | ml   | C016.2NPL1  |
|            |         |                          |               | 250    | ml   | C016.2NPL25 |
|            |         |                          |               | 500    | ml   | C016.2NPL5  |
| Erbium     | Er      | in 2-5% HNO <sub>3</sub> | 1000 mg/l     | 30     | ml   | C017.2NPL03 |
|            |         |                          |               | 100    | ml   | C017.2NPL1  |
|            |         |                          |               | 250    | ml   | C017.2NPL25 |
|            |         |                          |               | 500    | ml   | C017.2NPL5  |

| TYPE NAME  | ELEMENT | MATRIX                          | CONCENTRATION | VOLUME | UNIT | REFERENCE      |
|------------|---------|---------------------------------|---------------|--------|------|----------------|
| Europium   | Eu      | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 30     | ml   | C018.2NPL03    |
|            |         |                                 |               | 100    | ml   | C018.2NPL1     |
|            |         |                                 |               | 250    | ml   | C018.2NPL25    |
|            |         |                                 |               | 500    | ml   | C018.2NPL5     |
| Iron       | Fe      | in 2-5% HCl                     | 1000 mg/l     | 30     | ml   | C019.2CPL03    |
|            |         |                                 |               | 100    | ml   | C019.2CPL1     |
|            |         |                                 |               | 250    | ml   | C019.2CPL25    |
|            |         |                                 |               | 500    | ml   | C019.2CPL5     |
| Iron       | Fe      | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 30     | ml   | C019.2NPL03    |
|            |         |                                 |               | 100    | ml   | C019.2NPL1     |
|            |         |                                 |               | 250    | ml   | C019.2NPL25    |
|            |         |                                 |               | 500    | ml   | C019.2NPL5     |
| Gallium    | Ga      | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 30     | ml   | C020.2NPL03    |
|            |         |                                 |               | 100    | ml   | C020.2NPL1     |
|            |         |                                 |               | 250    | ml   | C020.2NPL25    |
|            |         |                                 |               | 500    | ml   | C020.2NPL5     |
| Gadolinium | Gd      | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 30     | ml   | C021.2NPL03    |
|            |         |                                 |               | 100    | ml   | C021.2NPL1     |
|            |         |                                 |               | 250    | ml   | C021.2NPL25    |
|            |         |                                 |               | 500    | ml   | C021.2NPL5     |
| Germanium  | Ge      | in 2-5% HNO <sub>3</sub> /HF tr | 1000 mg/l     | 30     | ml   | C022.5N1FPL03  |
|            |         |                                 |               | 100    | ml   | C022.5N1FPL1   |
|            |         |                                 |               | 250    | ml   | C022.5N1FPL25  |
|            |         |                                 |               | 500    | ml   | C022.5N1FPL5   |
| Hafnium    | Hf      | in 2-5% HCl/HF tr               | 1000 mg/l     | 30     | ml   | C023.2C05FPL03 |
|            |         |                                 |               | 100    | ml   | C023.2C05FPL1  |
|            |         |                                 |               | 250    | ml   | C023.2C05FPL25 |
|            |         |                                 |               | 500    | ml   | C023.2C05FPL5  |
| Hafnium    | Hf      | in 2-5% HNO <sub>3</sub> /HF tr | 1000 mg/l     | 30     | ml   | C023.2N1FPL03  |
|            |         |                                 |               | 100    | ml   | C023.2N1FPL1   |
|            |         |                                 |               | 250    | ml   | C023.2N1FPL25  |
|            |         |                                 |               | 500    | ml   | C023.2N1FPL5   |
| Mercury    | Hg      | in 5-10% HNO <sub>3</sub>       | 1000 mg/l     | 30     | ml   | C024.10NPL03   |
|            |         |                                 |               | 100    | ml   | C024.10NPL1    |
|            |         |                                 |               | 250    | ml   | C024.10NPL25   |
|            |         |                                 |               | 500    | ml   | C024.10NPL5    |
| Holmium    | Ho      | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 30     | ml   | C025.2NPL03    |
|            |         |                                 |               | 100    | ml   | C025.2NPL1     |
|            |         |                                 |               | 250    | ml   | C025.2NPL25    |
|            |         |                                 |               | 500    | ml   | C025.2NPL5     |
| Indium     | In      | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 30     | ml   | C026.2NPL03    |
|            |         |                                 |               | 100    | ml   | C026.2NPL1     |
|            |         |                                 |               | 250    | ml   | C026.2NPL25    |
|            |         |                                 |               | 500    | ml   | C026.2NPL5     |
| Iridium    | Ir      | in 5-10% HCl                    | 1000 mg/l     | 30     | ml   | C027.10CPL03   |
|            |         |                                 |               | 100    | ml   | C027.10CPL1    |
|            |         |                                 |               | 250    | ml   | C027.10CPL25   |
|            |         |                                 |               | 500    | ml   | C027.10CPL5    |



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| TYPE NAME  | ELEMENT | MATRIX                          | CONCENTRATION | VOLUME | UNIT | REFERENCE     |
|------------|---------|---------------------------------|---------------|--------|------|---------------|
| Potassium  | K       | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 30     | ml   | C028.2NPL03   |
|            |         |                                 |               | 100    | ml   | C028.2NPL1    |
|            |         |                                 |               | 250    | ml   | C028.2NPL25   |
|            |         |                                 |               | 500    | ml   | C028.2NPL5    |
| Potassium  | K       | in H <sub>2</sub> O             | 1000 mg/l     | 30     | ml   | C028.W.L03    |
|            |         |                                 |               | 100    | ml   | C028.W.L1     |
|            |         |                                 |               | 250    | ml   | C028.W.L25    |
|            |         |                                 |               | 500    | ml   | C028.W.L5     |
| Lanthanum  | La      | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 30     | ml   | C029.2NPL03   |
|            |         |                                 |               | 100    | ml   | C029.2NPL1    |
|            |         |                                 |               | 250    | ml   | C029.2NPL25   |
|            |         |                                 |               | 500    | ml   | C029.2NPL5    |
| Lithium    | Li      | in 2-5% HCl                     | 1000 mg/l     | 30     | ml   | C030.2CPL03   |
|            |         |                                 |               | 100    | ml   | C030.2CPL1    |
|            |         |                                 |               | 250    | ml   | C030.2CPL25   |
|            |         |                                 |               | 500    | ml   | C030.2CPL5    |
| Lithium    | Li      | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 30     | ml   | C030.2NPL03   |
|            |         |                                 |               | 100    | ml   | C030.2NPL1    |
|            |         |                                 |               | 250    | ml   | C030.2NPL25   |
|            |         |                                 |               | 500    | ml   | C030.2NPL5    |
| Lutetium   | Lu      | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 30     | ml   | C031.2NPL03   |
|            |         |                                 |               | 100    | ml   | C031.2NPL1    |
|            |         |                                 |               | 250    | ml   | C031.2NPL25   |
|            |         |                                 |               | 500    | ml   | C031.2NPL5    |
| Magnesium  | Mg      | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 30     | ml   | C032.2NPL03   |
|            |         |                                 |               | 100    | ml   | C032.2NPL1    |
|            |         |                                 |               | 250    | ml   | C032.2NPL25   |
|            |         |                                 |               | 500    | ml   | C032.2NPL5    |
| Manganese  | Mn      | in 2-5% HCl                     | 1000 mg/l     | 30     | ml   | C033.2CPL03   |
|            |         |                                 |               | 100    | ml   | C033.2CPL1    |
|            |         |                                 |               | 250    | ml   | C033.2CPL25   |
|            |         |                                 |               | 500    | ml   | C033.2CPL5    |
| Manganese  | Mn      | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 30     | ml   | C033.2NPL03   |
|            |         |                                 |               | 100    | ml   | C033.2NPL1    |
|            |         |                                 |               | 250    | ml   | C033.2NPL25   |
|            |         |                                 |               | 500    | ml   | C033.2NPL5    |
| Molybdenum | Mo      | in 2-5% HNO <sub>3</sub> /HF tr | 1000 mg/l     | 30     | ml   | C034.1N1FPL03 |
|            |         |                                 |               | 100    | ml   | C034.1N1FPL1  |
|            |         |                                 |               | 250    | ml   | C034.1N1FPL25 |
|            |         |                                 |               | 500    | ml   | C034.1N1FPL5  |
| Molybdenum | Mo      | in 2-5% NH <sub>4</sub> OH      | 1000 mg/l     | 30     | ml   | C034.4APL03   |
|            |         |                                 |               | 100    | ml   | C034.4APL1    |
|            |         |                                 |               | 250    | ml   | C034.4APL25   |
|            |         |                                 |               | 500    | ml   | C034.4APL5    |
| Sodium     | Na      | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 30     | ml   | C035.2NPL03   |
|            |         |                                 |               | 100    | ml   | C035.2NPL1    |
|            |         |                                 |               | 250    | ml   | C035.2NPL25   |
|            |         |                                 |               | 500    | ml   | C035.2NPL5    |

| TYPE NAME    | ELEMENT | MATRIX                                 | CONCENTRATION | VOLUME | UNIT | REFERENCE     |
|--------------|---------|----------------------------------------|---------------|--------|------|---------------|
| Sodium       | Na      | in H <sub>2</sub> O                    | 1000 mg/l     | 30     | ml   | C035.W.L03    |
|              |         |                                        |               | 100    | ml   | C035.W.L1     |
|              |         |                                        |               | 250    | ml   | C035.W.L25    |
|              |         |                                        |               | 500    | ml   | C035.W.L5     |
| Niobium      | Nb      | in 2-5% HNO <sub>3</sub> /HF tr        | 1000 mg/l     | 30     | ml   | C036.5N1FPL03 |
|              |         |                                        |               | 100    | ml   | C036.5N1FPL1  |
|              |         |                                        |               | 250    | ml   | C036.5N1FPL25 |
|              |         |                                        |               | 500    | ml   | C036.5N1FPL5  |
| Neodymium    | Nd      | in 2-5% HNO <sub>3</sub>               | 1000 mg/l     | 30     | ml   | C037.2NPL03   |
|              |         |                                        |               | 100    | ml   | C037.2NPL1    |
|              |         |                                        |               | 250    | ml   | C037.2NPL25   |
|              |         |                                        |               | 500    | ml   | C037.2NPL5    |
| Nickel       | Ni      | in 2-5% HNO <sub>3</sub>               | 1000 mg/l     | 30     | ml   | C038.2NPL03   |
|              |         |                                        |               | 100    | ml   | C038.2NPL1    |
|              |         |                                        |               | 250    | ml   | C038.2NPL25   |
|              |         |                                        |               | 500    | ml   | C038.2NPL5    |
| Osmium       | Os      | in 2-5% HCl                            | 1000 mg/l     | 30     | ml   | C039.2CPL03   |
|              |         |                                        |               | 100    | ml   | C039.2CPL1    |
|              |         |                                        |               | 250    | ml   | C039.2CPL25   |
|              |         |                                        |               | 500    | ml   | C039.2CPL5    |
| Phosphorus   | P       | in 0.5% H <sub>2</sub> SO <sub>4</sub> | 1000 mg/l     | 30     | ml   | C040.05SPL03  |
|              |         |                                        |               | 100    | ml   | C040.05SPL1   |
|              |         |                                        |               | 250    | ml   | C040.05SPL25  |
|              |         |                                        |               | 500    | ml   | C040.05SPL5   |
| Phosphorus   | P       | in H <sub>2</sub> O                    | 1000 mg/l     | 30     | ml   | C040.W.L03    |
|              |         |                                        |               | 100    | ml   | C040.W.L1     |
|              |         |                                        |               | 250    | ml   | C040.W.L25    |
|              |         |                                        |               | 500    | ml   | C040.W.L5     |
| Lead         | Pb      | in 2-5% HNO <sub>3</sub>               | 1000 mg/l     | 30     | ml   | C041.2NPL03   |
|              |         |                                        |               | 100    | ml   | C041.2NPL1    |
|              |         |                                        |               | 250    | ml   | C041.2NPL25   |
|              |         |                                        |               | 500    | ml   | C041.2NPL5    |
| Palladium    | Pd      | in 2-5% HCl                            | 1000 mg/l     | 30     | ml   | C042.5CPL03   |
|              |         |                                        |               | 100    | ml   | C042.5CPL1    |
|              |         |                                        |               | 250    | ml   | C042.5CPL25   |
|              |         |                                        |               | 500    | ml   | C042.5CPL5    |
| Palladium    | Pd      | in 2-5% HNO <sub>3</sub>               | 1000 mg/l     | 30     | ml   | C042.5NPL03   |
|              |         |                                        |               | 100    | ml   | C042.5NPL1    |
|              |         |                                        |               | 250    | ml   | C042.5NPL25   |
|              |         |                                        |               | 500    | ml   | C042.5NPL5    |
| Praseodymium | Pr      | in 2-5% HNO <sub>3</sub>               | 1000 mg/l     | 30     | ml   | C043.2NPL03   |
|              |         |                                        |               | 100    | ml   | C043.2NPL1    |
|              |         |                                        |               | 250    | ml   | C043.2NPL25   |
|              |         |                                        |               | 500    | ml   | C043.2NPL5    |
| Platinum     | Pt      | in 5-10% HCl                           | 1000 mg/l     | 30     | ml   | C044.10CPL03  |
|              |         |                                        |               | 100    | ml   | C044.10CPL1   |
|              |         |                                        |               | 250    | ml   | C044.10CPL25  |
|              |         |                                        |               | 500    | ml   | C044.10CPL5   |



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| TYPE NAME | ELEMENT | MATRIX                          | CONCENTRATION | VOLUME | UNIT | REFERENCE     |
|-----------|---------|---------------------------------|---------------|--------|------|---------------|
| Rubidium  | Rb      | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 30     | ml   | C045.2NPL03   |
|           |         |                                 |               | 100    | ml   | C045.2NPL1    |
|           |         |                                 |               | 250    | ml   | C045.2NPL25   |
|           |         |                                 |               | 500    | ml   | C045.2NPL5    |
| Rubidium  | Rb      | in H <sub>2</sub> O             | 1000 mg/l     | 30     | ml   | C045.W.L03    |
|           |         |                                 |               | 100    | ml   | C045.W.L1     |
|           |         |                                 |               | 250    | ml   | C045.W.L25    |
|           |         |                                 |               | 500    | ml   | C045.W.L5     |
| Rhenium   | Re      | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 30     | ml   | C046.2NPL03   |
|           |         |                                 |               | 100    | ml   | C046.2NPL1    |
|           |         |                                 |               | 250    | ml   | C046.2NPL25   |
|           |         |                                 |               | 500    | ml   | C046.2NPL5    |
| Rhenium   | Re      | in H <sub>2</sub> O             | 1000 mg/l     | 30     | ml   | C046.W.L03    |
|           |         |                                 |               | 100    | ml   | C046.W.L1     |
|           |         |                                 |               | 250    | ml   | C046.W.L25    |
|           |         |                                 |               | 500    | ml   | C046.W.L5     |
| Rhodium   | Rh      | in 2-5% HCl                     | 1000 mg/l     | 30     | ml   | C047.5CPL03   |
|           |         |                                 |               | 100    | ml   | C047.5CPL1    |
|           |         |                                 |               | 250    | ml   | C047.5CPL25   |
|           |         |                                 |               | 500    | ml   | C047.5CPL5    |
| Ruthenium | Ru      | in 2-5% HCl                     | 1000 mg/l     | 30     | ml   | C048.5CPL03   |
|           |         |                                 |               | 100    | ml   | C048.5CPL1    |
|           |         |                                 |               | 250    | ml   | C048.5CPL25   |
|           |         |                                 |               | 500    | ml   | C048.5CPL5    |
| Sulphur   | S       | in H <sub>2</sub> O             | 1000 mg/l     | 30     | ml   | C049.W.L03    |
|           |         |                                 |               | 100    | ml   | C049.W.L1     |
|           |         |                                 |               | 250    | ml   | C049.W.L25    |
|           |         |                                 |               | 500    | ml   | C049.W.L5     |
| Antimony  | Sb      | in 10-20% HCl                   | 1000 mg/l     | 30     | ml   | C050.20CPL03  |
|           |         |                                 |               | 100    | ml   | C050.20CPL1   |
|           |         |                                 |               | 250    | ml   | C050.20CPL25  |
|           |         |                                 |               | 500    | ml   | C050.20CPL5   |
| Antimony  | Sb      | in 2-5% HNO <sub>3</sub> /HF tr | 1000 mg/l     | 30     | ml   | C050.5N1FPL03 |
|           |         |                                 |               | 100    | ml   | C050.5N1FPL1  |
|           |         |                                 |               | 250    | ml   | C050.5N1FPL25 |
|           |         |                                 |               | 500    | ml   | C050.5N1FPL5  |
| Scandium  | Sc      | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 30     | ml   | C051.2NPL03   |
|           |         |                                 |               | 100    | ml   | C051.2NPL1    |
|           |         |                                 |               | 250    | ml   | C051.2NPL25   |
|           |         |                                 |               | 500    | ml   | C051.2NPL5    |
| Selenium  | Se      | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 30     | ml   | C052.2NPL03   |
|           |         |                                 |               | 100    | ml   | C052.2NPL1    |
|           |         |                                 |               | 250    | ml   | C052.2NPL25   |
|           |         |                                 |               | 500    | ml   | C052.2NPL5    |
| Silicon   | Si      | in H <sub>2</sub> O             | 1000 mg/l     | 30     | ml   | C053.W.L03    |
|           |         |                                 |               | 100    | ml   | C053.W.L1     |
|           |         |                                 |               | 250    | ml   | C053.W.L25    |
|           |         |                                 |               | 500    | ml   | C053.W.L5     |

| TYPE NAME | ELEMENT | MATRIX                          | CONCENTRATION | VOLUME | UNIT | REFERENCE      |
|-----------|---------|---------------------------------|---------------|--------|------|----------------|
| Samarium  | Sm      | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 30     | ml   | C054.2NPL03    |
|           |         |                                 |               | 100    | ml   | C054.2NPL1     |
|           |         |                                 |               | 250    | ml   | C054.2NPL25    |
|           |         |                                 |               | 500    | ml   | C054.2NPL5     |
| Tin       | Sn      | in 2-5% HNO <sub>3</sub> /HF tr | 1000 mg/l     | 30     | ml   | C055.1N1FPL03  |
|           |         |                                 |               | 100    | ml   | C055.1N1FPL1   |
|           |         |                                 |               | 250    | ml   | C055.1N1FPL25  |
|           |         |                                 |               | 500    | ml   | C055.1N1FPL5   |
| Tin       | Sn      | in 20% HCl                      | 1000 mg/l     | 30     | ml   | C055.20CPL03   |
|           |         |                                 |               | 100    | ml   | C055.20CPL1    |
|           |         |                                 |               | 250    | ml   | C055.20CPL25   |
|           |         |                                 |               | 500    | ml   | C055.20CPL5    |
| Strontium | Sr      | in 2-5% HCl                     | 1000 mg/l     | 30     | ml   | C056.2CPL03    |
|           |         |                                 |               | 100    | ml   | C056.2CPL1     |
|           |         |                                 |               | 250    | ml   | C056.2CPL25    |
|           |         |                                 |               | 500    | ml   | C056.2CPL5     |
| Strontium | Sr      | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 30     | ml   | C056.2NPL03    |
|           |         |                                 |               | 100    | ml   | C056.2NPL1     |
|           |         |                                 |               | 250    | ml   | C056.2NPL25    |
|           |         |                                 |               | 500    | ml   | C056.2NPL5     |
| Tantalum  | Ta      | in 2-5% HNO <sub>3</sub> /HF tr | 1000 mg/l     | 30     | ml   | C057.5N1FPL03  |
|           |         |                                 |               | 100    | ml   | C057.5N1FPL1   |
|           |         |                                 |               | 250    | ml   | C057.5N1FPL25  |
|           |         |                                 |               | 500    | ml   | C057.5N1FPL5   |
| Terbium   | Tb      | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 30     | ml   | C058.2NPL03    |
|           |         |                                 |               | 100    | ml   | C058.2NPL1     |
|           |         |                                 |               | 250    | ml   | C058.2NPL25    |
|           |         |                                 |               | 500    | ml   | C058.2NPL5     |
| Tellurium | Te      | in 10-20% HCl                   | 1000 mg/l     | 30     | ml   | C059.20CPL03   |
|           |         |                                 |               | 100    | ml   | C059.20CPL1    |
|           |         |                                 |               | 250    | ml   | C059.20CPL25   |
|           |         |                                 |               | 500    | ml   | C059.20CPL5    |
| Tellurium | Te      | in 10-20% HNO <sub>3</sub>      | 1000 mg/l     | 30     | ml   | C059.20NPL03   |
|           |         |                                 |               | 100    | ml   | C059.20NPL1    |
|           |         |                                 |               | 250    | ml   | C059.20NPL25   |
|           |         |                                 |               | 500    | ml   | C059.20NPL5    |
| Thorium   | Th      | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 30     | ml   | C060.2NPL03    |
|           |         |                                 |               | 100    | ml   | C060.2NPL1     |
|           |         |                                 |               | 250    | ml   | C060.2NPL25    |
|           |         |                                 |               | 500    | ml   | C060.2NPL5     |
| Titanium  | Ti      | in 2-5% HNO <sub>3</sub> /HF tr | 1000 mg/l     | 30     | ml   | C061.5N05FPL03 |
|           |         |                                 |               | 100    | ml   | C061.5N05FPL1  |
|           |         |                                 |               | 250    | ml   | C061.5N05FPL25 |
|           |         |                                 |               | 500    | ml   | C061.5N05FPL5  |
| Titanium  | Ti      | in 5 %HCl/HF tr                 | 1000 mg/l     | 30     | ml   | C061.5C05FPL03 |
|           |         |                                 |               | 100    | ml   | C061.5C05FPL1  |
|           |         |                                 |               | 250    | ml   | C061.5C05FPL25 |
|           |         |                                 |               | 500    | ml   | C061.5C05FPL5  |



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| TYPE NAME | ELEMENT | MATRIX                               | CONCENTRATION | VOLUME | UNIT | REFERENCE      |
|-----------|---------|--------------------------------------|---------------|--------|------|----------------|
| Thallium  | Tl      | in 2-5% HNO <sub>3</sub>             | 1000 mg/l     | 30     | ml   | C062.2NPL03    |
|           |         |                                      |               | 100    | ml   | C062.2NPL1     |
|           |         |                                      |               | 250    | ml   | C062.2NPL25    |
|           |         |                                      |               | 500    | ml   | C062.2NPL5     |
| Thulium   | Tm      | in 2-5% HNO <sub>3</sub>             | 1000 mg/l     | 30     | ml   | C063.2NPL03    |
|           |         |                                      |               | 100    | ml   | C063.2NPL1     |
|           |         |                                      |               | 250    | ml   | C063.2NPL25    |
|           |         |                                      |               | 500    | ml   | C063.2NPL5     |
| Uranium   | U       | in 2-5% HNO <sub>3</sub>             | 1000 mg/l     | 30     | ml   | C064.2NPL03    |
|           |         |                                      |               | 100    | ml   | C064.2NPL1     |
|           |         |                                      |               | 250    | ml   | C064.2NPL25    |
|           |         |                                      |               | 500    | ml   | C064.2NPL5     |
| Vanadium  | V       | in 2-5% HNO <sub>3</sub>             | 1000 mg/l     | 30     | ml   | C065.2NPL03    |
|           |         |                                      |               | 100    | ml   | C065.2NPL1     |
|           |         |                                      |               | 250    | ml   | C065.2NPL25    |
|           |         |                                      |               | 500    | ml   | C065.2NPL5     |
| Vanadium  | V       | in 2% H <sub>2</sub> SO <sub>4</sub> | 1000 mg/l     | 30     | ml   | C065.2SPL03    |
|           |         |                                      |               | 100    | ml   | C065.2SPL1     |
|           |         |                                      |               | 250    | ml   | C065.2SPL25    |
|           |         |                                      |               | 500    | ml   | C065.2SPL5     |
| Tungsten  | W       | in 2-5% HNO <sub>3</sub> /HF tr      | 1000 mg/l     | 30     | ml   | C066.1N2FPL03  |
|           |         |                                      |               | 100    | ml   | C066.1N2FPL1   |
|           |         |                                      |               | 250    | ml   | C066.1N2FPL25  |
|           |         |                                      |               | 500    | ml   | C066.1N2FPL5   |
| Tungsten  | W       | in 2-5% NH <sub>4</sub> OH           | 1000 mg/l     | 30     | ml   | C066.4APL03    |
|           |         |                                      |               | 100    | ml   | C066.4APL1     |
|           |         |                                      |               | 250    | ml   | C066.4APL25    |
|           |         |                                      |               | 500    | ml   | C066.4APL5     |
| Yttrium   | Y       | in 2-5% HNO <sub>3</sub>             | 1000 mg/l     | 30     | ml   | C067.2NPL03    |
|           |         |                                      |               | 100    | ml   | C067.2NPL1     |
|           |         |                                      |               | 250    | ml   | C067.2NPL25    |
|           |         |                                      |               | 500    | ml   | C067.2NPL5     |
| Ytterbium | Yb      | in 2-5% HNO <sub>3</sub>             | 1000 mg/l     | 30     | ml   | C068.2NPL03    |
|           |         |                                      |               | 100    | ml   | C068.2NPL1     |
|           |         |                                      |               | 250    | ml   | C068.2NPL25    |
|           |         |                                      |               | 500    | ml   | C068.2NPL5     |
| Zinc      | Zn      | in 2-5% HCl                          | 1000 mg/l     | 30     | ml   | C069.2CPL03    |
|           |         |                                      |               | 100    | ml   | C069.2CPL1     |
|           |         |                                      |               | 250    | ml   | C069.2CPL25    |
|           |         |                                      |               | 500    | ml   | C069.2CPL5     |
| Zinc      | Zn      | in 2-5% HNO <sub>3</sub>             | 1000 mg/l     | 30     | ml   | C069.2NPL03    |
|           |         |                                      |               | 100    | ml   | C069.2NPL1     |
|           |         |                                      |               | 250    | ml   | C069.2NPL25    |
|           |         |                                      |               | 500    | ml   | C069.2NPL5     |
| Zirconium | Zr      | in 2-5% HNO <sub>3</sub> /HF tr      | 1000 mg/l     | 30     | ml   | C070.2N05FPL03 |
|           |         |                                      |               | 100    | ml   | C070.2N05FPL1  |
|           |         |                                      |               | 250    | ml   | C070.2N05FPL25 |
|           |         |                                      |               | 500    | ml   | C070.2N05FPL5  |
| Zirconium | Zr      | in 2-5% HCl/HF tr                    | 1000 mg/l     | 30     | ml   | C070.5C05FPL03 |
|           |         |                                      |               | 100    | ml   | C070.5C05FPL1  |
|           |         |                                      |               | 250    | ml   | C070.5C05FPL25 |
|           |         |                                      |               | 500    | ml   | C070.5C05FPL5  |

10 000 mg/l for ICP

| TYPE NAME | ELEMENT | MATRIX                          | CONCENTRATION | VOLUME | UNIT | REFERENCE     |
|-----------|---------|---------------------------------|---------------|--------|------|---------------|
| Silver    | Ag      | in 2-5% HNO <sub>3</sub>        | 10 000 mg/l   | 30     | ml   | C101.5NPL5    |
|           |         |                                 |               | 100    | ml   | C101.5NPL03   |
|           |         |                                 |               | 250    | ml   | C101.5NPL1    |
|           |         |                                 |               | 500    | ml   | C101.5NPL25   |
| Aluminium | Al      | in 2-5% HCl                     | 10 000 mg/l   | 30     | ml   | C102.5CPL03   |
|           |         |                                 |               | 100    | ml   | C102.5CPL1    |
|           |         |                                 |               | 250    | ml   | C102.5CPL25   |
|           |         |                                 |               | 500    | ml   | C102.5CPL5    |
| Aluminium | Al      | in 2-5% HNO <sub>3</sub>        | 10 000 mg/l   | 30     | ml   | C102.5NPL03   |
|           |         |                                 |               | 100    | ml   | C102.5NPL1    |
|           |         |                                 |               | 250    | ml   | C102.5NPL25   |
|           |         |                                 |               | 500    | ml   | C102.5NPL5    |
| Arsenic   | As      | in 2-5% HNO <sub>3</sub>        | 10 000 mg/l   | 30     | ml   | C103.5NPL03   |
|           |         |                                 |               | 100    | ml   | C103.5NPL1    |
|           |         |                                 |               | 250    | ml   | C103.5NPL25   |
|           |         |                                 |               | 500    | ml   | C103.5NPL5    |
| Gold      | Au      | in 2-5% HCl                     | 10 000 mg/l   | 30     | ml   | C104.5CPL03   |
|           |         |                                 |               | 100    | ml   | C104.5CPL03   |
|           |         |                                 |               | 250    | ml   | C104.5CPL1    |
|           |         |                                 |               | 500    | ml   | C104.5CPL25   |
| Boron     | B       | in H <sub>2</sub> O             | 10 000 mg/l   | 30     | ml   | C105.W.L03    |
|           |         |                                 |               | 100    | ml   | C105.W.L1     |
|           |         |                                 |               | 250    | ml   | C105.W.L25    |
|           |         |                                 |               | 500    | ml   | C105.W.L5     |
| Barium    | Ba      | in 2-5% HCl                     | 10 000 mg/l   | 30     | ml   | C106.5CPL03   |
|           |         |                                 |               | 100    | ml   | C106.5CPL1    |
|           |         |                                 |               | 250    | ml   | C106.5CPL25   |
|           |         |                                 |               | 500    | ml   | C106.5CPL5    |
| Barium    | Ba      | in 2-5% HNO <sub>3</sub>        | 10 000 mg/l   | 30     | ml   | C106.2NPL03   |
|           |         |                                 |               | 100    | ml   | C106.2NPL1    |
|           |         |                                 |               | 250    | ml   | C106.2NPL25   |
|           |         |                                 |               | 500    | ml   | C106.2NPL5    |
| Beryllium | Be      | in 2-5% HNO <sub>3</sub> /HF tr | 10 000 mg/l   | 30     | ml   | C107.5N1FPL03 |
|           |         |                                 |               | 100    | ml   | C107.5N1FPL1  |
|           |         |                                 |               | 250    | ml   | C107.5N1FPL25 |
|           |         |                                 |               | 500    | ml   | C107.5N1FPL5  |
| Bismuth   | Bi      | in 2-5% HNO <sub>3</sub>        | 10 000 mg/l   | 30     | ml   | C108.10NPL03  |
|           |         |                                 |               | 100    | ml   | C108.10NPL1   |
|           |         |                                 |               | 250    | ml   | C108.10NPL25  |
|           |         |                                 |               | 500    | ml   | C108.10NPL5   |
| Calcium   | Ca      | in 2-5% HNO <sub>3</sub>        | 10 000 mg/l   | 30     | ml   | C109.2NPL03   |
|           |         |                                 |               | 100    | ml   | C109.2NPL1    |
|           |         |                                 |               | 250    | ml   | C109.2NPL25   |
|           |         |                                 |               | 500    | ml   | C109.2NPL5    |
| Cadmium   | Cd      | in 2-5% HNO <sub>3</sub>        | 10 000 mg/l   | 30     | ml   | C110.5NPL03   |
|           |         |                                 |               | 100    | ml   | C110.5NPL1    |
|           |         |                                 |               | 250    | ml   | C110.5NPL25   |
|           |         |                                 |               | 500    | ml   | C110.5NPL5    |



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| TYPE NAME  | ELEMENT | MATRIX                   | CONCENTRATION | VOLUME | UNIT | REFERENCE    |
|------------|---------|--------------------------|---------------|--------|------|--------------|
| Cerium     | Ce      | in 2-5% HNO <sub>3</sub> | 10 000 mg/l   | 30     | ml   | C111.5NPL03  |
|            |         |                          |               | 100    | ml   | C111.5NPL1   |
|            |         |                          |               | 250    | ml   | C111.5NPL25  |
|            |         |                          |               | 500    | ml   | C111.5NPL5   |
| Cobalt     | Co      | in 2-5% HNO <sub>3</sub> | 10 000 mg/l   | 30     | ml   | C112.5NPL03  |
|            |         |                          |               | 100    | ml   | C112.5NPL1   |
|            |         |                          |               | 250    | ml   | C112.5NPL25  |
|            |         |                          |               | 500    | ml   | C112.5NPL5   |
| Chromium   | Cr      | in 2-5% HCl              | 10 000 mg/l   | 30     | ml   | C113.5CPL03  |
|            |         |                          |               | 100    | ml   | C113.5CPL1   |
|            |         |                          |               | 250    | ml   | C113.5CPL25  |
|            |         |                          |               | 500    | ml   | C113.5CPL5   |
| Chromium   | Cr      | in 2-5% HNO <sub>3</sub> | 10 000 mg/l   | 30     | ml   | C113.5NPL03  |
|            |         |                          |               | 100    | ml   | C113.5NPL1   |
|            |         |                          |               | 250    | ml   | C113.5NPL25  |
|            |         |                          |               | 500    | ml   | C113.5NPL5   |
| Cesium     | Cs      | in 2-5% HNO <sub>3</sub> | 10 000 mg/l   | 30     | ml   | C114.2NPL03  |
|            |         |                          |               | 100    | ml   | C114.2NPL1   |
|            |         |                          |               | 250    | ml   | C114.2NPL25  |
|            |         |                          |               | 500    | ml   | C114.2NPL5   |
| Cesium     | Cs      | in H <sub>2</sub> O      | 10 000 mg/l   | 30     | ml   | C114.W.L03   |
|            |         |                          |               | 100    | ml   | C114.W.L1    |
|            |         |                          |               | 250    | ml   | C114.W.L25   |
|            |         |                          |               | 500    | ml   | C114.W.L5    |
| Copper     | Cu      | in 2-5% HNO <sub>3</sub> | 10 000 mg/l   | 30     | ml   | C115.5NPL03  |
|            |         |                          |               | 100    | ml   | C115.5NPL1   |
|            |         |                          |               | 250    | ml   | C115.5NPL25  |
|            |         |                          |               | 500    | ml   | C115.5NPL5   |
| Dysprosium | Dy      | in 2-5% HNO <sub>3</sub> | 10 000 mg/l   | 30     | ml   | C116.5NPL03  |
|            |         |                          |               | 100    | ml   | C116.5NPL1   |
|            |         |                          |               | 250    | ml   | C116.5NPL25  |
|            |         |                          |               | 500    | ml   | C116.5NPL5   |
| Erbium     | Er      | in 2-5% HNO <sub>3</sub> | 10 000 mg/l   | 30     | ml   | C117.5NPL03  |
|            |         |                          |               | 100    | ml   | C117.5NPL1   |
|            |         |                          |               | 250    | ml   | C117.5NPL25  |
|            |         |                          |               | 500    | ml   | C117.5NPL5   |
| Europium   | Eu      | in 2-5% HNO <sub>3</sub> | 10 000 mg/l   | 30     | ml   | C118.2NPL03  |
|            |         |                          |               | 100    | ml   | C118.2NPL1   |
|            |         |                          |               | 250    | ml   | C118.2NPL25  |
|            |         |                          |               | 500    | ml   | C118.2NPL5   |
| Iron       | Fe      | in 2-5% HCl              | 10 000 mg/l   | 30     | ml   | C119.5CPL03  |
|            |         |                          |               | 100    | ml   | C119.5CPL1   |
|            |         |                          |               | 250    | ml   | C119.5CPL125 |
|            |         |                          |               | 500    | ml   | C119.5CPL5   |
| Iron       | Fe      | in 2-5% HNO <sub>3</sub> | 10 000 mg/l   | 30     | ml   | C119.5NPL03  |
|            |         |                          |               | 100    | ml   | C119.5NPL1   |
|            |         |                          |               | 250    | ml   | C119.5NPL25  |
|            |         |                          |               | 500    | ml   | C119.5NPL5   |



| TYPE NAME  | ELEMENT | MATRIX                          | CONCENTRATION | VOLUME | UNIT | REFERENCE     |
|------------|---------|---------------------------------|---------------|--------|------|---------------|
| Gallium    | Ga      | in 2-5% HNO <sub>3</sub>        | 10 000 mg/l   | 30     | ml   | C120.5NPL03   |
|            |         |                                 |               | 100    | ml   | C120.5NPL1    |
|            |         |                                 |               | 250    | ml   | C120.5NPL25   |
|            |         |                                 |               | 500    | ml   | C120.5NPL5    |
| Gadolinium | Gd      | in 2-5% HNO <sub>3</sub>        | 10 000 mg/l   | 30     | ml   | C121.5NPL03   |
|            |         |                                 |               | 100    | ml   | C121.5NPL1    |
|            |         |                                 |               | 250    | ml   | C121.5NPL25   |
|            |         |                                 |               | 500    | ml   | C121.5NPL5    |
| Germanium  | Ge      | in 2-5% HNO <sub>3</sub> /HF tr | 10 000 mg/l   | 30     | ml   | C122.5N1FPL03 |
|            |         |                                 |               | 100    | ml   | C122.5N1FPL1  |
|            |         |                                 |               | 250    | ml   | C122.5N1FPL25 |
|            |         |                                 |               | 500    | ml   | C122.5N1FPL5  |
| Hafnium    | Hf      | in 2-5% HNO <sub>3</sub> /HF tr | 10 000 mg/l   | 30     | ml   | C123.5N2FPL03 |
|            |         |                                 |               | 100    | ml   | C123.5N2FPL1  |
|            |         |                                 |               | 250    | ml   | C123.5N2FPL25 |
|            |         |                                 |               | 500    | ml   | C123.5N2FPL5  |
| Mercury    | Hg      | in 5-10% HNO <sub>3</sub>       | 10 000 mg/l   | 30     | ml   | C124.10NPL03  |
|            |         |                                 |               | 100    | ml   | C124.10NPL1   |
|            |         |                                 |               | 250    | ml   | C124.10NPL25  |
|            |         |                                 |               | 500    | ml   | C124.10NPL5   |
| Holmium    | Ho      | in 2-5% HNO <sub>3</sub>        | 10 000 mg/l   | 30     | ml   | C125.5NPL03   |
|            |         |                                 |               | 100    | ml   | C125.5NPL1    |
|            |         |                                 |               | 250    | ml   | C125.5NPL25   |
|            |         |                                 |               | 500    | ml   | C125.5NPL5    |
| Indium     | In      | in 2-5% HNO <sub>3</sub>        | 10 000 mg/l   | 30     | ml   | C126.5NPL03   |
|            |         |                                 |               | 100    | ml   | C126.5NPL1    |
|            |         |                                 |               | 250    | ml   | C126.5NPL25   |
|            |         |                                 |               | 500    | ml   | C126.5NPL5    |
| Iridium    | Ir      | in 5-10% HCl                    | 10 000 mg/l   | 30     | ml   | C127.10CPL03  |
|            |         |                                 |               | 100    | ml   | C127.10CPL1   |
|            |         |                                 |               | 250    | ml   | C127.10CPL25  |
|            |         |                                 |               | 500    | ml   | C127.10CPL5   |
| Potassium  | K       | in 2-5% HNO <sub>3</sub>        | 10 000 mg/l   | 30     | ml   | C128.2NPL03   |
|            |         |                                 |               | 100    | ml   | C128.2NPL1    |
|            |         |                                 |               | 250    | ml   | C128.2NPL25   |
|            |         |                                 |               | 500    | ml   | C128.2NPL5    |
| Potassium  | K       | in H <sub>2</sub> O             | 10 000 mg/l   | 30     | ml   | C128.W.L03    |
|            |         |                                 |               | 100    | ml   | C128.W.L1     |
|            |         |                                 |               | 250    | ml   | C128.W.L25    |
|            |         |                                 |               | 500    | ml   | C128.W.L5     |
| Lanthanum  | La      | in 2-5% HNO <sub>3</sub>        | 10 000 mg/l   | 30     | ml   | C129.5NPL03   |
|            |         |                                 |               | 100    | ml   | C129.5NPL1    |
|            |         |                                 |               | 250    | ml   | C129.5NPL25   |
|            |         |                                 |               | 500    | ml   | C129.5NPL5    |
| Lithium    | Li      | in 2-5% HNO <sub>3</sub>        | 10 000 mg/l   | 30     | ml   | C130.5NPL03   |
|            |         |                                 |               | 100    | ml   | C130.5NPL1    |
|            |         |                                 |               | 250    | ml   | C130.5NPL25   |
|            |         |                                 |               | 500    | ml   | C130.5NPL5    |



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| TYPE NAME  | ELEMENT | MATRIX                                 | CONCENTRATION | VOLUME | UNIT | REFERENCE     |
|------------|---------|----------------------------------------|---------------|--------|------|---------------|
| Lutetium   | Lu      | in 2-5% HNO <sub>3</sub>               | 10 000 mg/l   | 30     | ml   | C131.5NPL03   |
|            |         |                                        |               | 100    | ml   | C131.5NPL1    |
|            |         |                                        |               | 250    | ml   | C131.5NPL25   |
|            |         |                                        |               | 500    | ml   | C131.5NPL5    |
| Magnesium  | Mg      | in 2-5% HNO <sub>3</sub>               | 10 000 mg/l   | 30     | ml   | C132.2NPL03   |
|            |         |                                        |               | 100    | ml   | C132.2NPL1    |
|            |         |                                        |               | 250    | ml   | C132.2NPL25   |
|            |         |                                        |               | 500    | ml   | C132.2NPL5    |
| Manganese  | Mn      | in 2-5% HCl                            | 10 000 mg/l   | 30     | ml   | C133.5CPL03   |
|            |         |                                        |               | 100    | ml   | C133.5CPL1    |
|            |         |                                        |               | 250    | ml   | C133.5CPL25   |
|            |         |                                        |               | 500    | ml   | C133.5CPL5    |
| Manganese  | Mn      | in 2-5% HNO <sub>3</sub>               | 10 000 mg/l   | 30     | ml   | C133.5NPL03   |
|            |         |                                        |               | 100    | ml   | C133.5NPL1    |
|            |         |                                        |               | 250    | ml   | C133.5NPL25   |
|            |         |                                        |               | 500    | ml   | C133.5NPL5    |
| Molybdenum | Mo      | in 2-5 % NH <sub>4</sub> OH            | 10 000 mg/l   | 30     | ml   | C134.4APL03   |
|            |         |                                        |               | 100    | ml   | C134.4APL1    |
|            |         |                                        |               | 250    | ml   | C134.4APL25   |
|            |         |                                        |               | 500    | ml   | C134.4APL5    |
| Molybdenum | Mo      | in 2-5% HNO <sub>3</sub> /HF tr        | 10 000 mg/l   | 30     | ml   | C134.5N4FPL03 |
|            |         |                                        |               | 100    | ml   | C134.5N4FPL1  |
|            |         |                                        |               | 250    | ml   | C134.5N4FPL25 |
|            |         |                                        |               | 500    | ml   | C134.5N4FPL5  |
| Sodium     | Na      | in 2-5% HNO <sub>3</sub>               | 10 000 mg/l   | 30     | ml   | C135.2NPL03   |
|            |         |                                        |               | 100    | ml   | C135.2NPL1    |
|            |         |                                        |               | 250    | ml   | C135.2NPL25   |
|            |         |                                        |               | 500    | ml   | C135.2NPL5    |
| Sodium     | Na      | in H <sub>2</sub> O                    | 10 000 mg/l   | 30     | ml   | C135.W.L03    |
|            |         |                                        |               | 100    | ml   | C135.W.L1     |
|            |         |                                        |               | 250    | ml   | C135.W.L25    |
|            |         |                                        |               | 500    | ml   | C135.W.L5     |
| Niobium    | Nb      | in 2-5% HNO <sub>3</sub> /HF tr        | 10 000 mg/l   | 30     | ml   | C136.5N5FPL03 |
|            |         |                                        |               | 100    | ml   | C136.5N5FPL1  |
|            |         |                                        |               | 250    | ml   | C136.5N5FPL25 |
|            |         |                                        |               | 500    | ml   | C136.5N5FPL5  |
| Neodymium  | Nd      | in 2-5% HNO <sub>3</sub>               | 10 000 mg/l   | 30     | ml   | C137.5N.L03   |
|            |         |                                        |               | 100    | ml   | C137.5N.L1    |
|            |         |                                        |               | 250    | ml   | C137.5N.L25   |
|            |         |                                        |               | 500    | ml   | C137.5N.L5    |
| Nickel     | Ni      | in 2-5% HNO <sub>3</sub>               | 10 000 mg/l   | 30     | ml   | C138.5NPL03   |
|            |         |                                        |               | 100    | ml   | C138.5NPL1    |
|            |         |                                        |               | 250    | ml   | C138.5NPL25   |
|            |         |                                        |               | 500    | ml   | C138.5NPL5    |
| Phosphorus | P       | in 0,5% H <sub>2</sub> SO <sub>4</sub> | 10 000 mg/l   | 30     | ml   | C140.05SPL03  |
|            |         |                                        |               | 100    | ml   | C140.005SPL1  |
|            |         |                                        |               | 250    | ml   | C140.005SPL25 |
|            |         |                                        |               | 500    | ml   | C140.005SPL5  |

| TYPE NAME    | ELEMENT | MATRIX                    | CONCENTRATION | VOLUME | UNIT | REFERENCE    |
|--------------|---------|---------------------------|---------------|--------|------|--------------|
| Phosphorus   | P       | in H <sub>2</sub> O       | 10 000 mg/l   | 30     | ml   | C140.W.L03   |
|              |         |                           |               | 100    | ml   | C140.W.L1    |
|              |         |                           |               | 250    | ml   | C140.W.L25   |
|              |         |                           |               | 500    | ml   | C140.W.L5    |
| Lead         | Pb      | in 2-5% HNO <sub>3</sub>  | 10 000 mg/l   | 33     | ml   | C141.5NPL03  |
|              |         |                           |               | 100    | ml   | C141.5NPL1   |
|              |         |                           |               | 250    | ml   | C141.5NPL25  |
|              |         |                           |               | 500    | ml   | C141.5NPL5   |
| Palladium    | Pd      | in 5-10% HNO <sub>3</sub> | 10 000 mg/l   | 30     | ml   | C142.10NPL03 |
|              |         |                           |               | 100    | ml   | C142.10NPL1  |
|              |         |                           |               | 250    | ml   | C142.10NPL25 |
|              |         |                           |               | 500    | ml   | C142.10NPL5  |
| Palladium    | Pd      | in 2-5% HCl               | 10 000 mg/l   | 30     | ml   | C142.5CPL03  |
|              |         |                           |               | 100    | ml   | C142.5CPL1   |
|              |         |                           |               | 250    | ml   | C142.5CPL25  |
|              |         |                           |               | 500    | ml   | C142.5CPL5   |
| Praseodymium | Pr      | in 2-5% HNO <sub>3</sub>  | 10 000 mg/l   | 30     | ml   | C143.5NPL03  |
|              |         |                           |               | 100    | ml   | C143.5NPL1   |
|              |         |                           |               | 250    | ml   | C143.5NPL25  |
|              |         |                           |               | 500    | ml   | C143.5NPL5   |
| Platinum     | Pt      | in 10-20% HCl             | 10 000 mg/l   | 30     | ml   | C144.10CPL03 |
|              |         |                           |               | 100    | ml   | C144.10CPL1  |
|              |         |                           |               | 250    | ml   | C144.10CPL25 |
|              |         |                           |               | 500    | ml   | C144.10CPL5  |
| Rubidium     | Rb      | in 2-5% HNO <sub>3</sub>  | 10 000 mg/l   | 30     | ml   | C145.2NPL03  |
|              |         |                           |               | 100    | ml   | C145.2NPL1   |
|              |         |                           |               | 250    | ml   | C145.2NPL25  |
|              |         |                           |               | 500    | ml   | C145.2NPL5   |
| Rubidium     | Rb      | in H <sub>2</sub> O       | 10 000 mg/l   | 30     | ml   | C145.W.L03   |
|              |         |                           |               | 100    | ml   | C145.W.L1    |
|              |         |                           |               | 250    | ml   | C145.W.L25   |
|              |         |                           |               | 500    | ml   | C145.W.L5    |
| Rhenium      | Re      | in 2-5% HNO <sub>3</sub>  | 10 000 mg/l   | 30     | ml   | C146.5NPL03  |
|              |         |                           |               | 100    | ml   | C146.5NPL1   |
|              |         |                           |               | 250    | ml   | C146.5NPL25  |
|              |         |                           |               | 500    | ml   | C146.5NPL5   |
| Rhenium      | Re      | in H <sub>2</sub> O       | 10 000 mg/l   | 30     | ml   | C146.W.L03   |
|              |         |                           |               | 100    | ml   | C146.W.L1    |
|              |         |                           |               | 250    | ml   | C146.W.L25   |
|              |         |                           |               | 500    | ml   | C146.W.L5    |
| Ruthenium    | Ru      | in 10-20% HCl             | 10 000 mg/l   | 30     | ml   | C148.10CPL03 |
|              |         |                           |               | 100    | ml   | C148.10CPL1  |
|              |         |                           |               | 250    | ml   | C148.10CPL25 |
|              |         |                           |               | 500    | ml   | C148.10CPL5  |
| Sulfur       | S       | in H <sub>2</sub> O       | 10 000 mg/l   | 30     | ml   | C149.W.L03   |
|              |         |                           |               | 100    | ml   | C149.W.L1    |
|              |         |                           |               | 250    | ml   | C149.W.L25   |
|              |         |                           |               | 500    | ml   | C149.W.L5    |



\* Custom Standards for ICP & ICP-MS are available upon request.

| TYPE NAME | ELEMENT | MATRIX                          | CONCENTRATION | VOLUME | UNIT | REFERENCE      |
|-----------|---------|---------------------------------|---------------|--------|------|----------------|
| Antimony  | Sb      | in 2-5% HNO <sub>3</sub> /HF tr | 10 000 mg/l   | 30     | ml   | C150.10N2FPL03 |
|           |         |                                 |               | 100    | ml   | C150.10N2FPL1  |
|           |         |                                 |               | 250    | ml   | C150.10N2FPL25 |
|           |         |                                 |               | 500    | ml   | C150.10N2FPL5  |
| Antimony  | Sb      | in 10-20% HCl                   | 10 000 mg/l   | 30     | ml   | C150.20CPL03   |
|           |         |                                 |               | 100    | ml   | C150.20CPL1    |
|           |         |                                 |               | 250    | ml   | C150.20CPL25   |
|           |         |                                 |               | 500    | ml   | C150.20CPL5    |
| Scandium  | Sc      | in 2-5% HNO <sub>3</sub>        | 10 000 mg/l   | 30     | ml   | C151.5NPL03    |
|           |         |                                 |               | 100    | ml   | C151.5NPL1     |
|           |         |                                 |               | 250    | ml   | C151.5NPL25    |
|           |         |                                 |               | 500    | ml   | C151.5NPL5     |
| Selenium  | Se      | in 2-5% HNO <sub>3</sub>        | 10 000 mg/l   | 30     | ml   | C152.5NPL03    |
|           |         |                                 |               | 100    | ml   | C152.5NPL1     |
|           |         |                                 |               | 250    | ml   | C152.5NPL25    |
|           |         |                                 |               | 500    | ml   | C152.5NPL5     |
| Silicon   | Si      | in H <sub>2</sub> O             | 10 000 mg/l   | 30     | ml   | C153.W.L03     |
|           |         |                                 |               | 100    | ml   | C153.W.L1      |
|           |         |                                 |               | 250    | ml   | C153.W.L25     |
|           |         |                                 |               | 500    | ml   | C153.W.L5      |
| Samarium  | Sm      | in 2-5% HNO <sub>3</sub>        | 10 000 mg/l   | 30     | ml   | C154.2NPL03    |
|           |         |                                 |               | 100    | ml   | C154.2NPL1     |
|           |         |                                 |               | 250    | ml   | C154.2NPL25    |
|           |         |                                 |               | 500    | ml   | C154.2NPL5     |
| Tin       | Sn      | in 10-20% HCl                   | 10 000 mg/l   | 30     | ml   | C155.20CPL03   |
|           |         |                                 |               | 100    | ml   | C155.20CPL1    |
|           |         |                                 |               | 250    | ml   | C155.20CPL25   |
|           |         |                                 |               | 500    | ml   | C155.20CPL5    |
| Tin       | Sn      | in 2-5% HNO <sub>3</sub> /HF tr | 10 000 mg/l   | 30     | ml   | C155.2N2FPL03  |
|           |         |                                 |               | 100    | ml   | C155.2N2FPL1   |
|           |         |                                 |               | 250    | ml   | C155.2N2FPL25  |
|           |         |                                 |               | 500    | ml   | C155.2N2FPL5   |
| Strontium | Sr      | in 2-5% HCl                     | 10 000 mg/l   | 30     | ml   | C156.2CPL03    |
|           |         |                                 |               | 100    | ml   | C156.2CPL1     |
|           |         |                                 |               | 250    | ml   | C156.2CPL25    |
|           |         |                                 |               | 500    | ml   | C156.2CPL5     |
| Strontium | Sr      | in 2-5% HNO <sub>3</sub>        | 10 000 mg/l   | 30     | ml   | C156.2NPL03    |
|           |         |                                 |               | 100    | ml   | C156.2NPL1     |
|           |         |                                 |               | 250    | ml   | C156.2NPL25    |
|           |         |                                 |               | 500    | ml   | C156.2NPL5     |
| Tantalum  | Ta      | in 2-5% HNO <sub>3</sub> /HF tr | 10 000 mg/l   | 30     | ml   | C157.5N2FPL03  |
|           |         |                                 |               | 100    | ml   | C157.5N2FPL1   |
|           |         |                                 |               | 250    | ml   | C157.5N2FPL25  |
|           |         |                                 |               | 500    | ml   | C157.5N2FPL5   |
| Terbium   | Tb      | in 2-5% HNO <sub>3</sub>        | 10 000 mg/l   | 30     | ml   | C158.5NPL03    |
|           |         |                                 |               | 100    | ml   | C158.5NPL1     |
|           |         |                                 |               | 250    | ml   | C158.5NPL25    |
|           |         |                                 |               | 500    | ml   | C158.5NPL5     |

| TYPE NAME | ELEMENT | MATRIX                                 | CONCENTRATION | VOLUME | UNIT | REFERENCE      |
|-----------|---------|----------------------------------------|---------------|--------|------|----------------|
| Tellurium | Te      | in 10-20% HNO <sub>3</sub>             | 10 000 mg/l   | 30     | ml   | C159.20NPL03   |
|           |         |                                        |               | 100    | ml   | C159.20NPL1    |
|           |         |                                        |               | 250    | ml   | C159.20NPL25   |
|           |         |                                        |               | 500    | ml   | C159.20NPL5    |
| Titanium  | Ti      | in 2-5% HCl/HF tr                      | 10 000 mg/l   | 30     | ml   | C161.5C05FPL03 |
|           |         |                                        |               | 100    | ml   | C161.5C05FPL1  |
|           |         |                                        |               | 250    | ml   | C161.5C05FPL25 |
|           |         |                                        |               | 500    | ml   | C161.5C05FPL5  |
| Titanium  | Ti      | in 2-5% HNO <sub>3</sub> /HF tr        | 10 000 mg/l   | 30     | ml   | C161.5N2FPL03  |
|           |         |                                        |               | 100    | ml   | C161.5N2FPL1   |
|           |         |                                        |               | 250    | ml   | C161.5N2FPL25  |
|           |         |                                        |               | 500    | ml   | C161.5N2FPL5   |
| Thallium  | Tl      | in 2-5% HNO <sub>3</sub>               | 10 000 mg/l   | 30     | ml   | C162.5NPL03    |
|           |         |                                        |               | 100    | ml   | C162.5NPL1     |
|           |         |                                        |               | 250    | ml   | C162.5NPL25    |
|           |         |                                        |               | 500    | ml   | C162.5NPL5     |
| Thulium   | Tm      | in 2-5% HNO <sub>3</sub>               | 10 000 mg/l   | 30     | ml   | C163.5NPL03    |
|           |         |                                        |               | 100    | ml   | C163.5NPL1     |
|           |         |                                        |               | 250    | ml   | C163.5NPL25    |
|           |         |                                        |               | 500    | ml   | C163.5NPL5     |
| Uranium   | U       | in 2-5% HNO <sub>3</sub>               | 10 000 mg/l   | 30     | ml   | C164.5NPL03    |
|           |         |                                        |               | 100    | ml   | C164.5NPL1     |
|           |         |                                        |               | 250    | ml   | C164.5NPL25    |
|           |         |                                        |               | 500    | ml   | C164.5NPL5     |
| Vanadium  | V       | in 2-5% HNO <sub>3</sub>               | 10 000 mg/l   | 30     | ml   | C165.5NPL03    |
|           |         |                                        |               | 100    | ml   | C165.5NPL1     |
|           |         |                                        |               | 250    | ml   | C165.5NPL25    |
|           |         |                                        |               | 500    | ml   | C165.5NPL5     |
| Vanadium  | V       | in 2-5% H <sub>2</sub> SO <sub>4</sub> | 10 000 mg/l   | 30     | ml   | C165.5SPL03    |
|           |         |                                        |               | 100    | ml   | C165.5SPL1     |
|           |         |                                        |               | 250    | ml   | C165.5SPL25    |
|           |         |                                        |               | 500    | ml   | C165.5SPL5     |
| Tungsten  | W       | in 5-10% NH <sub>4</sub> OH            | 10 000 mg/l   | 30     | ml   | C166.10APL03   |
|           |         |                                        |               | 100    | ml   | C166.10APL1    |
|           |         |                                        |               | 250    | ml   | C166.10APL25   |
|           |         |                                        |               | 500    | ml   | C166.10APL5    |
| Tungsten  | W       | in 2-5% HNO <sub>3</sub> /HF tr        | 10 000 mg/l   | 30     | ml   | C166.2N5FPL03  |
|           |         |                                        |               | 100    | ml   | C166.2N5FPL1   |
|           |         |                                        |               | 250    | ml   | C166.2N5FPL25  |
|           |         |                                        |               | 500    | ml   | C166.2N5FPL5   |
| Yttrium   | Y       | in 2-5% HNO <sub>3</sub>               | 10 000 mg/l   | 30     | ml   | C167.5NPL03    |
|           |         |                                        |               | 100    | ml   | C167.5NPL1     |
|           |         |                                        |               | 250    | ml   | C167.5NPL25    |
|           |         |                                        |               | 500    | ml   | C167.5NPL5     |
| Ytterbium | Yb      | in 2-5% HNO <sub>3</sub>               | 10 000 mg/l   | 30     | ml   | C168.5NPL03    |
|           |         |                                        |               | 100    | ml   | C168.5NPL1     |
|           |         |                                        |               | 250    | ml   | C168.5NPL25    |
|           |         |                                        |               | 500    | ml   | C168.5NPL5     |



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| TYPE NAME | ELEMENT | MATRIX                          | CONCENTRATION | VOLUME | UNIT | REFERENCE     |
|-----------|---------|---------------------------------|---------------|--------|------|---------------|
| Zinc      | Zn      | in 2-5% HCl                     | 10 000 mg/l   | 30     | ml   | C169.5CPL03   |
|           |         |                                 |               | 100    | ml   | C169.5CPL1    |
|           |         |                                 |               | 250    | ml   | C169.5CPL25   |
|           |         |                                 |               | 500    | ml   | C169.5CPL5    |
| Zinc      | Zn      | in 2-5% HNO <sub>3</sub>        | 10 000 mg/l   | 30     | ml   | C169.5NPL03   |
|           |         |                                 |               | 100    | ml   | C169.5NPL1    |
|           |         |                                 |               | 250    | ml   | C169.5NPL25   |
|           |         |                                 |               | 500    | ml   | C169.5NPL5    |
| Zirconium | Zr      | in 2-5% HCl/HF tr               | 10 000 mg/l   | 30     | ml   | C170.5C2FPL03 |
|           |         |                                 |               | 100    | ml   | C170.5C2FPL1  |
|           |         |                                 |               | 250    | ml   | C170.5C2FPL25 |
|           |         |                                 |               | 500    | ml   | C170.5C2FPL5  |
| Zirconium | Zr      | in 2-5% HNO <sub>3</sub> /HF tr | 10 000 mg/l   | 30     | ml   | C170.5N2FPL03 |
|           |         |                                 |               | 100    | ml   | C170.5N2FPL1  |
|           |         |                                 |               | 250    | ml   | C170.5N2FPL25 |
|           |         |                                 |               | 500    | ml   | C170.5N2FPL5  |

10 mg/l for ICP-MS

| TYPE NAME  | ELEMENT | STARTING MATERIAL                                                                     | MATRIX                          | CONCENTRATION | VOLUME | UNIT | REFERENCE     |
|------------|---------|---------------------------------------------------------------------------------------|---------------------------------|---------------|--------|------|---------------|
| Silver     | Ag      | Ag 99.999%                                                                            | in 2-5% HNO <sub>3</sub>        | 10 mg/l       | 100    | ml   | M401.2NPL1    |
| Aluminium  | Al      | Al(NO <sub>3</sub> ) <sub>3</sub> 99.999%                                             | in 2-5% HNO <sub>3</sub>        | 10 mg/l       | 100    | ml   | M402.2NPL1    |
| Arsenic    | As      | As 99.9999%                                                                           | in 2-5% HNO <sub>3</sub>        | 10 mg/l       | 100    | ml   | M403.2NPL1    |
| Gold       | Au      | Au 99.999%                                                                            | in 2-5% HCl                     | 10 mg/l       | 100    | ml   | M404.2CPL1    |
| Boron      | B       | (NH <sub>4</sub> ) <sub>2</sub> B <sub>4</sub> O <sub>7</sub> 99.999%                 | in H <sub>2</sub> O             | 10 mg/l       | 100    | ml   | M405.W.L1     |
| Barium     | Ba      | BaCO <sub>3</sub> 99.999%                                                             | in 2-5% HNO <sub>3</sub>        | 10 mg/l       | 100    | ml   | M406.2NPL1    |
| Beryllium  | Be      | Be <sub>4</sub> O(C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> ) <sub>6</sub> 99.999% | in 2-5% HNO <sub>3</sub>        | 10 mg/l       | 100    | ml   | M407.2NPL1    |
| Bismuth    | Bi      | Bi 99.999%                                                                            | in 2-5% HNO <sub>3</sub>        | 10 mg/l       | 100    | ml   | M408.2NPL1    |
| Calcium    | Ca      | CaCO <sub>3</sub> 99.999%                                                             | in 2-5% HNO <sub>3</sub>        | 10 mg/l       | 100    | ml   | M409.2NPL1    |
| Cadmium    | Cd      | Cd 99.9999%                                                                           | in 2-5% HNO <sub>3</sub>        | 10 mg/l       | 100    | ml   | M410.2NPL1    |
| Cerium     | Ce      | Ce(NO <sub>3</sub> ) <sub>3</sub> 99.999%                                             | in 2-5% HNO <sub>3</sub>        | 10 mg/l       | 100    | ml   | M411.2NPL1    |
| Cobalt     | Co      | Co 99.999%                                                                            | in 2-5% HNO <sub>3</sub>        | 10 mg/l       | 100    | ml   | M412.2NPL1    |
| Chromium   | Cr      | Cr(NO <sub>3</sub> ) <sub>3</sub> 99.999%                                             | in 2-5% HNO <sub>3</sub>        | 10 mg/l       | 100    | ml   | M413.2NPL1    |
| Cesium     | Cs      | CsNO <sub>3</sub> 99.999%                                                             | in 2-5% HNO <sub>3</sub>        | 10 mg/l       | 100    | ml   | M414.2NPL1    |
| Copper     | Cu      | Cu 99.999%                                                                            | in 2-5% HNO <sub>3</sub>        | 10 mg/l       | 100    | ml   | M415.2NPL1    |
| Dysprosium | Dy      | Dy <sub>2</sub> O <sub>3</sub> 99.999%                                                | in 2-5% HNO <sub>3</sub>        | 10 mg/l       | 100    | ml   | M416.2NPL1    |
| Erbium     | Er      | Er <sub>2</sub> O <sub>3</sub> 99.999%                                                | in 2-5% HNO <sub>3</sub>        | 10 mg/l       | 100    | ml   | M417.2NPL1    |
| Europium   | Eu      | Eu <sub>2</sub> O <sub>3</sub> 99.99%                                                 | in 2-5% HNO <sub>3</sub>        | 10 mg/l       | 100    | ml   | M418.2NPL1    |
| Iron       | Fe      | Fe(NO <sub>3</sub> ) <sub>3</sub> 99.9995%                                            | in 2-5% HNO <sub>3</sub>        | 10 mg/l       | 100    | ml   | M419.2NPL1    |
| Gallium    | Ga      | Ga 99.999%                                                                            | in 2-5% HNO <sub>3</sub>        | 10 mg/l       | 100    | ml   | M420.2NPL1    |
| Gadolinium | Gd      | Gd <sub>2</sub> O <sub>3</sub> 99.999%                                                | in 2-5% HNO <sub>3</sub>        | 10 mg/l       | 100    | ml   | M421.2NPL1    |
| Germanium  | Ge      | Ge 99.999%                                                                            | in 2-5% HNO <sub>3</sub> /HF tr | 10 mg/l       | 100    | ml   | M422.2N02FPL1 |
| Hafnium    | Hf      | HfO <sub>2</sub> 99.995%                                                              | in 2-5% HNO <sub>3</sub> /HF tr | 10 mg/l       | 100    | ml   | M423.2N05FPL1 |
| Mercury    | Hg      | HgO 99.999+%                                                                          | in 2-5% HNO <sub>3</sub>        | 10 mg/l       | 100    | ml   | M424.5NPL1    |
| Holmium    | Ho      | HoO <sub>3</sub> 99.99%                                                               | in 2-5% HNO <sub>3</sub>        | 10 mg/l       | 100    | ml   | M425.2NPL1    |
| Indium     | In      | In 99.999%                                                                            | in 2-5% HCl                     | 10 mg/l       | 100    | ml   | M426.2NPL1    |



| TYPE NAME    | ELEMENT | STARTING MATERIAL                                          | MATRIX                                    | CONCENTRATION | VOLUME | UNIT | REFERENCE     |
|--------------|---------|------------------------------------------------------------|-------------------------------------------|---------------|--------|------|---------------|
| Iridium      | Ir      | (NH <sub>4</sub> ) <sub>2</sub> IrCl <sub>6</sub> 99.99%   | in 2-5% HCl                               | 10 mg/l       | 100    | ml   | M427.2CPL1    |
| Potassium    | K       | KNO <sub>3</sub> 99.999%                                   | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M428.2NPL1    |
| Lanthanum    | La      | La <sub>2</sub> O <sub>3</sub> 99.999%                     | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M429.2NPL1    |
| Lithium      | Li      | Li <sub>2</sub> CO <sub>3</sub> 99.999%                    | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M430.2NPL1    |
| Lutetium     | Lu      | Lu <sub>2</sub> O <sub>3</sub> 99.99%                      | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M431.2NPL1    |
| Magnesium    | Mg      | Mg(NO <sub>3</sub> ) <sub>2</sub> , 99.999%                | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M432.2NPL1    |
| Manganese    | Mn      | Mn(NO <sub>3</sub> ) <sub>2</sub> , 99.999%                | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M433.2NPL1    |
| Molybdenum   | Mo      | (NH <sub>4</sub> ) <sub>2</sub> MoO <sub>4</sub> , 99.999% | in H <sub>2</sub> O                       | 10 mg/l       | 100    | ml   | M434.W.L1     |
| Sodium       | Na      | NaNO <sub>3</sub> 99.999%                                  | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M435.2NPL1    |
| Niobium      | Nb      | Nb 99.99%                                                  | in 2-5% HNO <sub>3</sub> /HF tr           | 10 mg/l       | 100    | ml   | M436.2N05FPL1 |
| Neodymium    | Nd      | Nd <sub>2</sub> O <sub>3</sub> 99.999%                     | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M437.2NPL1    |
| Nickel       | Ni      | Ni(NO <sub>3</sub> ) <sub>2</sub> 99.9998%                 | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M438.2NPL1    |
| Phosphorus   | P       | NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub> 99.999%     | in H <sub>2</sub> O                       | 10 mg/l       | 100    | ml   | M440.W.L1     |
| Lead         | Pb      | Pb(NO <sub>3</sub> ) <sub>2</sub> 99.9995%                 | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M441.2NPL1    |
| Palladium    | Pd      | Pd 99.999%                                                 | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M442.2NPL1    |
| Praseodymium | Pr      | Pr <sub>6</sub> O <sub>11</sub> 99.999%                    | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M443.2NPL1    |
| Platinum     | Pt      | Pt 99.999%                                                 | in 2-5% HCl                               | 10 mg/l       | 100    | ml   | M444.2CPL1    |
| Rubidium     | Rb      | RbNO <sub>3</sub> 99.99%                                   | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M445.2NPL1    |
| Rhenium      | Re      | Re 99.995 + %                                              | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M446.2NPL1    |
| Rhodium      | Rh      | RhCl <sub>3</sub> 99.99%                                   | in 2-5% HCl                               | 10 mg/l       | 100    | ml   | M447.2CPL1    |
| Ruthenium    | Ru      | RuCl <sub>3</sub> 99.99%                                   | in 2-5% HCl                               | 10 mg/l       | 100    | ml   | M448.2CPL1    |
| Sulphur      | S       | (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> 99.999%    | in H <sub>2</sub> O                       | 10 mg/l       | 100    | ml   | M449.W.L1     |
| Antimony     | Sb      | Sb 99.999%                                                 | in 2-5% HNO <sub>3</sub> /HF tr           | 10 mg/l       | 100    | ml   | M450.2N05FPL1 |
| Scandium     | Sc      | Sc(NO <sub>3</sub> ) <sub>3</sub> 99.999%                  | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M451.2NPL1    |
| Selenium     | Se      | Se 99.999%                                                 | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M452.2NPL1    |
| Silicon      | Si      | (NH <sub>4</sub> ) <sub>2</sub> SiF <sub>6</sub> 99.999%   | in H <sub>2</sub> O                       | 10 mg/l       | 100    | ml   | M453.W.L1     |
| Samarium     | Sm      | Sm <sub>2</sub> O <sub>3</sub> 99.999%                     | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M454.2NPL1    |
| Tin          | Sn      | Sn 99.9999%                                                | in 2-5% HNO <sub>3</sub> /HF tr           | 10 mg/l       | 100    | ml   | M455.1N05FPL1 |
| Strontium    | Sr      | SrCO <sub>3</sub> 99.999%                                  | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M456.2NPL1    |
| Tantalum     | Ta      | Ta 99.99 + %                                               | in 2-5% HNO <sub>3</sub> /HF tr           | 10 mg/l       | 100    | ml   | M457.2N05FPL1 |
| Terbium      | Tb      | Tb(NO <sub>3</sub> ) <sub>3</sub> 99.999%                  | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M458.2NPL1    |
| Tellurium    | Te      | Te 99.999%                                                 | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M459.2NPL1    |
| Titanium     | Ti      | (NH <sub>4</sub> ) <sub>2</sub> TiF <sub>6</sub> , 99.998% | in 2-5% HNO <sub>3</sub> /HF tr           | 10 mg/l       | 100    | ml   | M461.2N02FPL1 |
| Thallium     | Tl      | TlNO <sub>3</sub> 99.999%                                  | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M462.2NPL1    |
| Thulium      | Tm      | Tm <sub>2</sub> O <sub>3</sub> 99.999%                     | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M463.2NPL1    |
| Uranium      | U       | UO <sub>2</sub> (OOCCH <sub>3</sub> ) <sub>2</sub> 99.99%  | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M464.2NPL1    |
| Vanadium     | V       | NH <sub>4</sub> VO <sub>3</sub> 99.999%                    | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M465.2NPL1    |
| Tungsten     | W       | WO <sub>3</sub> 99.999%                                    | in H <sub>2</sub> O/NH <sub>4</sub> OH tr | 10 mg/l       | 100    | ml   | M466.W.L1     |
| Yttrium      | Y       | Y <sub>2</sub> O <sub>3</sub> 99.999%                      | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M467.2NPL1    |
| Ytterbium    | Yb      | Yb <sub>2</sub> O <sub>3</sub> 99.999%                     | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M468.2NPL1    |
| Zinc         | Zn      | Zn 99.999%                                                 | in 2-5% HNO <sub>3</sub>                  | 10 mg/l       | 100    | ml   | M469.2NPL1    |
| Zirconium    | Zr      | ZrO(NO <sub>3</sub> ) <sub>2</sub> 99.99%                  | in 2-5% HNO <sub>3</sub> /HF tr           | 10 mg/l       | 100    | ml   | M470.2N05FPL1 |



100 mg/l for ICP-MS

| TYPE NAME    | ELEMENT | STARTING MATERIAL                                                                     | MATRIX                          | CONCENTRATION | VOLUME | UNIT | REFERENCE     |
|--------------|---------|---------------------------------------------------------------------------------------|---------------------------------|---------------|--------|------|---------------|
| Silver       | Ag      | Ag 99.999%                                                                            | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M301.2NPL1    |
| Aluminium    | Al      | Al(NO <sub>3</sub> ) <sub>3</sub> 99.999%                                             | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M302.2NPL1    |
| Arsenic      | As      | As 99.999%                                                                            | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M303.2NPL1    |
| Gold         | Au      | Au 99.999%                                                                            | in 2-5% HCl                     | 100 mg/l      | 100    | ml   | M304.2CPL1    |
| Boron        | B       | (NH <sub>4</sub> ) <sub>2</sub> B <sub>4</sub> O <sub>7</sub> 99.999%                 | in H <sub>2</sub> O             | 100 mg/l      | 100    | ml   | M305.WL1      |
| Barium       | Ba      | BaCO <sub>3</sub> 99.999%                                                             | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M306.2NPL1    |
| Beryllium    | Be      | Be <sub>4</sub> O(C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> ) <sub>6</sub> 99.999% | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M307.2NPL05   |
| Bismuth      | Bi      | Bi 99.999%                                                                            | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M308.2NPL1    |
| Calcium      | Ca      | CaCO <sub>3</sub> 99.999%                                                             | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M309.2NPL1    |
| Cadmium      | Cd      | Cd 99.9999%                                                                           | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M310.2NPL1    |
| Cerium       | Ce      | Ce(NO <sub>3</sub> ) <sub>3</sub> 99.999%                                             | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M311.2NPL1    |
| Cobalt       | Co      | Co(NO <sub>3</sub> ) <sub>2</sub> 99.999%                                             | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M312.2NPL1    |
| Chromium     | Cr      | Cr(NO <sub>3</sub> ) <sub>3</sub> 99.999%                                             | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M313.2NPL1    |
| Cesium       | Cs      | CsNO <sub>3</sub> 99.999%                                                             | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M314.2NPL1    |
| Copper       | Cu      | Cu 99.999%                                                                            | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M315.2NPL1    |
| Dysprosium   | Dy      | Dy <sub>2</sub> O <sub>3</sub> 99.999%                                                | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M316.2NPL1    |
| Erbium       | Er      | Er <sub>2</sub> O <sub>3</sub> 99.999%                                                | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M317.2NPL1    |
| Europium     | Eu      | Eu <sub>2</sub> O <sub>3</sub> 99.99%                                                 | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M318.2NPL1    |
| Iron         | Fe      | Fe(NO <sub>3</sub> ) <sub>3</sub> 99.9995%                                            | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M319.2NPL1    |
| Gallium      | Ga      | Ga 99.999%                                                                            | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M320.2NPL1    |
| Gadolinium   | Gd      | Gd <sub>2</sub> O <sub>3</sub> 99.999%                                                | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M321.2NPL1    |
| Germanium    | Ge      | Ge 99.999%                                                                            | in 2-5% HNO <sub>3</sub> /HF tr | 100 mg/l      | 100    | ml   | M322.2N02FPL1 |
| Hafnium      | Hf      | HfO <sub>2</sub> 99.995%                                                              | in 2-5% HNO <sub>3</sub> /HF tr | 100 mg/l      | 100    | ml   | M323.2N05FPL1 |
| Mercury      | Hg      | HgO 99.999+ %                                                                         | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M324.5NPL1    |
| Holmium      | Ho      | HoO <sub>3</sub> 99.99%                                                               | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M325.2NPL1    |
| Indium       | In      | In 99.999%                                                                            | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M326.2NPL1    |
| Iridium      | Ir      | (NH <sub>4</sub> ) <sub>2</sub> IrCl <sub>6</sub> 99.99%                              | in 2-5% HCl                     | 100 mg/l      | 100    | ml   | M327.2CPL1    |
| Potassium    | K       | KNO <sub>3</sub> 99.999%                                                              | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M328.2NPL1    |
| Lanthanum    | La      | La <sub>2</sub> O <sub>3</sub> 99.999%                                                | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M329.2NPL1    |
| Lithium      | Li      | Li <sub>2</sub> CO <sub>3</sub> 99.999%                                               | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M330.2NPL1    |
| Lutetium     | Lu      | Lu <sub>2</sub> O <sub>3</sub> 99.99%                                                 | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M331.2NPL1    |
| Magnesium    | Mg      | Mg(NO <sub>3</sub> ) <sub>2</sub> 99.9995%                                            | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M332.2NPL1    |
| Manganese    | Mn      | Mn(NO <sub>3</sub> ) <sub>2</sub> 99.999%                                             | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M333.2NPL1    |
| Molybdenum   | Mo      | (NH <sub>4</sub> ) <sub>2</sub> MoO <sub>4</sub> 99.999%                              | in H <sub>2</sub> O             | 100 mg/l      | 100    | ml   | M334.WL1      |
| Sodium       | Na      | NaNO <sub>3</sub> 99.999%                                                             | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M335.2NPL1    |
| Niobium      | Nb      | Nb 99.99%                                                                             | in 2-5% HNO <sub>3</sub> /HF tr | 100 mg/l      | 100    | ml   | M336.2N05FPL1 |
| Neodymium    | Nd      | Nd <sub>2</sub> O <sub>3</sub> 99.999%                                                | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M337.2NPL1    |
| Nickel       | Ni      | Ni 99.9998%                                                                           | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M338.2NPL1    |
| Phosphorus   | P       | NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub> 99.999%                                | in H <sub>2</sub> O             | 100 mg/l      | 100    | ml   | M340.WL1      |
| Lead         | Pb      | Pb(NO <sub>3</sub> ) <sub>2</sub> 99.9995%                                            | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M341.2NPL1    |
| Palladium    | Pd      | Pd 99.999%                                                                            | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M342.2NPL1    |
| Praseodymium | Pr      | Pr <sub>6</sub> O <sub>11</sub> 99.999%                                               | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M343.2NPL1    |
| Platinum     | Pt      | Pt 99.999%                                                                            | in 2-5% HCl                     | 100 mg/l      | 100    | ml   | M344.2CPL1    |

| TYPE NAME | ELEMENT | STARTING MATERIAL                                         | MATRIX                          | CONCENTRATION | VOLUME | UNIT | REFERENCE     |
|-----------|---------|-----------------------------------------------------------|---------------------------------|---------------|--------|------|---------------|
| Rubidium  | Rb      | RbNO <sub>3</sub> 99.99%                                  | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M345.2NPL1    |
| Rhenium   | Re      | Re 99.995+ %                                              | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M346.2NPL1    |
| Rhodium   | Rh      | RhCl <sub>3</sub> 99.99%                                  | in 2-5% HCl                     | 100 mg/l      | 100    | ml   | M347.2CPL1    |
| Ruthenium | Ru      | RuCl <sub>3</sub> 99.99%                                  | in 2-5% HCl                     | 100 mg/l      | 100    | ml   | M348.2CPL1    |
| Sulphur   | S       | (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> 99.999%   | in H <sub>2</sub> O             | 100 mg/l      | 100    | ml   | M349.W.L1     |
| Antimony  | Sb      | Sb 99.999%                                                | in 2-5% HNO <sub>3</sub> /HF tr | 100 mg/l      | 100    | ml   | M350.2N05FPL1 |
| Scandium  | Sc      | Sc(NO <sub>3</sub> ) <sub>3</sub> 99.999%                 | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M351.2NPL1    |
| Selenium  | Se      | Se 99.999%                                                | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M352.2NPL1    |
| Silicon   | Si      | (NH <sub>4</sub> ) <sub>2</sub> SiF <sub>6</sub> 99.999%  | in H <sub>2</sub> O             | 100 mg/l      | 100    | ml   | M353.W.L1     |
| Samarium  | Sm      | Sm <sub>2</sub> O <sub>3</sub> 99.999%                    | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M354.2NPL1    |
| Tin       | Sn      | Sn 99.9999%                                               | in 2-5% HNO <sub>3</sub> /HF tr | 100 mg/l      | 100    | ml   | M355.1N05FPL1 |
| Strontium | Sr      | SrCO <sub>3</sub> 99.999%                                 | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M356.2NPL1    |
| Tantalum  | Ta      | Ta 99.99+ %                                               | in 2-5% HNO <sub>3</sub> /HF tr | 100 mg/l      | 100    | ml   | M357.2N05FPL1 |
| Terbium   | Tb      | Tb(NO <sub>3</sub> ) <sub>3</sub> 99.999%                 | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M358.2NPL1    |
| Tellurium | Te      | Te 99.999%                                                | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M359.2NPL1    |
| Titanium  | Ti      | (NH <sub>4</sub> ) <sub>2</sub> TiF <sub>6</sub> 99.998%  | in 2-5% HNO <sub>3</sub> /HF tr | 100 mg/l      | 100    | ml   | M361.2N02FPL1 |
| Thallium  | Tl      | TlNO <sub>3</sub> 99.999%                                 | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M362.2NPL1    |
| Thulium   | Tm      | Tm <sub>2</sub> O <sub>3</sub> 99.999%                    | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M363.2NPL1    |
| Uranium   | U       | UO <sub>2</sub> (OOCCH <sub>3</sub> ) <sub>2</sub> 99.99% | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M364.2NPL1    |
| Vanadium  | V       | NH <sub>4</sub> VO <sub>3</sub> 99.999%                   | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M365.2NPL1    |
| Tungsten  | W       | WO <sub>3</sub> 99.999%                                   | in 0,05% NH <sub>3</sub>        | 100 mg/l      | 100    | ml   | M366.W.L1     |
| Yttrium   | Y       | Y <sub>2</sub> O <sub>3</sub> 99.999%                     | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M367.2NPL1    |
| Ytterbium | Yb      | Yb <sub>2</sub> O <sub>3</sub> 99.999%                    | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M368.2NPL1    |
| Zinc      | Zn      | Zn 99.9999%                                               | in 2-5% HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | M369.2NPL1    |
| Zirconium | Zr      | ZrO(NO <sub>3</sub> ) <sub>2</sub> 99.99%                 | in 2-5% HNO <sub>3</sub> /HF tr | 100 mg/l      | 100    | ml   | M370.2N05FPL1 |

### 1000 mg/l for ICP-MS

| TYPE NAME | ELEMENT | STARTING MATERIAL                                                                     | MATRIX                          | CONCENTRATION | VOLUME | UNIT | REFERENCE    |
|-----------|---------|---------------------------------------------------------------------------------------|---------------------------------|---------------|--------|------|--------------|
| Silver    | Ag      | Ag 99.999%                                                                            | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | M201.2NPL1   |
| Gold      | Au      | Au 99.999%                                                                            | in 2-5% HCl                     | 1000 mg/l     | 100    | ml   | M204.2CPL1   |
| Barium    | Ba      | BaCO <sub>3</sub> 99.999%                                                             | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | M206.2NPL1   |
| Beryllium | Be      | Be <sub>4</sub> O(C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> ) <sub>6</sub> 99.999% | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | M207.2NPL1   |
| Bismuth   | Bi      | Bi 99.999%                                                                            | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | M208.2NPL1   |
| Cadmium   | Cd      | Cd 99.9999%                                                                           | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | M210.2NPL1   |
| Cobalt    | Co      | Co(NO <sub>3</sub> ) <sub>2</sub> 99.999%                                             | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | M212.2NPL1   |
| Chromium  | Cr      | Cr(NO <sub>3</sub> ) <sub>3</sub> 99.999%                                             | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | M213.2NPL1   |
| Copper    | Cu      | Cu 99.999%                                                                            | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | M215.2NPL1   |
| Iron      | Fe      | Fe(NO <sub>3</sub> ) <sub>3</sub> 99.9995%                                            | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | M219.2NPL1   |
| Germanium | Ge      | Ge 99.999%                                                                            | in 2-5% HNO <sub>3</sub> /HF tr | 1000 mg/l     | 100    | ml   | M222.2N2FPL1 |
| Mercury   | Hg      | HgO 99.999+ %                                                                         | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | M224.5NPL1   |
| Indium    | In      | In 99.999%                                                                            | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | M226.2NPL1   |
| Potassium | K       | KNO <sub>3</sub> 99.999%                                                              | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | M228.2NPL1   |
| Lithium   | Li      | Li <sub>2</sub> CO <sub>3</sub> 99.999%                                               | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | M230.2NPL1   |



\* Custom Standards for ICP & ICP-MS are available upon request.

| TYPE NAME  | ELEMENT | STARTING MATERIAL                                          | MATRIX                          | CONCENTRATION | VOLUME | UNIT | REFERENCE     |
|------------|---------|------------------------------------------------------------|---------------------------------|---------------|--------|------|---------------|
| Magnesium  | Mg      | Mg(NO <sub>3</sub> ) <sub>2</sub> , 99.9995%               | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | M232.2NPL1    |
| Manganese  | Mn      | Mn(NO <sub>3</sub> ) <sub>2</sub> , 99.999%                | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | M233.2NPL1    |
| Sodium     | Na      | NaNO <sub>3</sub> 99.999%                                  | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | M235.2NPL1    |
| Nickel     | Ni      | Ni 99.9998%                                                | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | M238.2NPL1    |
| Phosphorus | P       | NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub> 99.999%     | in H <sub>2</sub> O             | 1000 mg/l     | 100    | ml   | M240.W.L1     |
| Lead       | Pb      | Pb(NO <sub>3</sub> ) <sub>2</sub> 99.9995%                 | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | M241.2NPL1    |
| Platinum   | Pt      | Pt 99.999%                                                 | in 2-5% HCl                     | 1000 mg/l     | 100    | ml   | M244.2NPL1    |
| Rhodium    | Rh      | RhCl <sub>3</sub> 99.99%                                   | in 2-5% HCl                     | 1000 mg/l     | 100    | ml   | M247.2CPL1    |
| Sulphur    | S       | (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> 99.999%    | in H <sub>2</sub> O             | 1000 mg/l     | 100    | ml   | M249.W.L1     |
| Antimony   | Sb      | Sb 99.999%                                                 | in 2-5% HNO <sub>3</sub> /HF tr | 1000 mg/l     | 100    | ml   | M250.2N05FPL1 |
| Scandium   | Sc      | Sc(NO <sub>3</sub> ) <sub>3</sub> 99.999%                  | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | M251.2NPL1    |
| Selenium   | Se      | Se 99.999%                                                 | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | M252.2NPL1    |
| Tin        | Sn      | Sn 99.9999%                                                | in 2-5% HNO <sub>3</sub> /HF tr | 1000 mg/l     | 100    | ml   | M255.1N05FPL1 |
| Strontium  | Sr      | SrCO <sub>3</sub> 99.999%                                  | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | M256.2NPL1    |
| Terbium    | Tb      | Tb(NO <sub>3</sub> ) <sub>3</sub> 99.999%                  | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | M258.2NPL1    |
| Titanium   | Ti      | (NH <sub>4</sub> ) <sub>2</sub> TiF <sub>6</sub> , 99.998% | in 2-5% HNO <sub>3</sub> /HF tr | 1000 mg/l     | 100    | ml   | M261.2N2FPL1  |
| Thallium   | Tl      | TlNO <sub>3</sub> 99.999%                                  | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | M262.2NPL1    |
| Vanadium   | V       | NH <sub>4</sub> VO <sub>3</sub> 99.999%                    | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | M265.2NPL1    |
| Yttrium    | Y       | Y <sub>2</sub> O <sub>3</sub> 99.999%                      | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | M267.2NPL1    |
| Zinc       | Zn      | Zn 99.9999%                                                | in 2-5% HNO <sub>3</sub>        | 1000 mg/l     | 100    | ml   | M269.2NPL1    |

10 000 mg/l for ICP-MS

| TYPE NAME  | ELEMENT | STARTING MATERIAL                                       | MATRIX                           | CONCENTRATION | VOLUME | UNIT | REFERENCE     |
|------------|---------|---------------------------------------------------------|----------------------------------|---------------|--------|------|---------------|
| Bismuth    | Bi      | Bi 99.999%                                              | in 5-10% HNO <sub>3</sub>        | 10 000 mg/l   | 100    | ml   | M108.10NPL1   |
| Calcium    | Ca      | CaCO <sub>3</sub> 99.999%                               | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | M109.2NPL1    |
| Cadmium    | Cd      | Cd 99.9999%                                             | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | M110.5NPL1    |
| Cobalt     | Co      | Co(NO <sub>3</sub> ) <sub>2</sub> 99.999%               | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | M112.5NPL1    |
| Chromium   | Cr      | Cr(NO <sub>3</sub> ) <sub>3</sub> 99.999%               | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | M113.5NPL1    |
| Copper     | Cu      | Cu 99.999%                                              | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | M115.5NPL1    |
| Iron       | Fe      | Fe(NO <sub>3</sub> ) <sub>3</sub> 99.9995%              | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | M119.5NPL5    |
| Potassium  | K       | KNO <sub>3</sub> 99.999%                                | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | M128.2NPL1    |
| Lithium    | Li      | Li <sub>2</sub> CO <sub>3</sub> 99.999%                 | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | M130.2NPL1    |
| Magnesium  | Mg      | Mg(NO <sub>3</sub> ) <sub>2</sub> 99.9995%              | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | M132.2NPL1    |
| Manganese  | Mn      | Mn(NO <sub>3</sub> ) <sub>2</sub> 99.999%               | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | M133.5NPL1    |
| Sodium     | Na      | NaNO <sub>3</sub> 99.999%                               | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | M135.2NPL1    |
| Phosphorus | P       | NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub> 99.999%  | in H <sub>2</sub> O              | 10 000 mg/l   | 100    | ml   | M140.W.L100   |
| Sulphur    | S       | (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> 99.999% | in H <sub>2</sub> O              | 10 000 mg/l   | 100    | ml   | M149.W.L1     |
| Antimony   | Sb      | Sb 99.999%                                              | in 5-10% HNO <sub>3</sub> /HF tr | 10 000 mg/l   | 100    | ml   | M150.10N2FPL1 |
| Tin        | Sn      | Sn 99.9999%                                             | in 2-5% HNO <sub>3</sub> /HF tr  | 10 000 mg/l   | 100    | ml   | M155.2N2FPL1  |
| Zinc       | Zn      | Zn 99.9999%                                             | in 2-5% HNO <sub>3</sub>         | 10 000 mg/l   | 100    | ml   | M169.5NPL1    |

Specification Standards

| TYPE NAME      | ELEMENT  | STARTING MATERIAL                                              | MATRIX                                  | CONCENTRATION | VOLUME | UNIT | REFERENCE        |
|----------------|----------|----------------------------------------------------------------|-----------------------------------------|---------------|--------|------|------------------|
| Arsenic (III)  | As (III) | As <sub>2</sub> O <sub>3</sub>                                 | in NaOH/NaCl                            | 100 mg/l      | 100    | ml   | SP371.05001NC.L1 |
| Arsenic (III)  | As (III) | As <sub>2</sub> O <sub>3</sub>                                 | in NaOH/NaCl                            | 1000 mg/l     | 100    | ml   | SP071.05001NC.L1 |
| Arsenic (V)    | As (III) | As <sub>2</sub> O <sub>5</sub>                                 | in H <sub>2</sub> O                     | 100 mg/l      | 100    | ml   | SP372.W.L1       |
| Arsenic (V)    | As (III) | As <sub>2</sub> O <sub>5</sub>                                 | in H <sub>2</sub> O                     | 1000 mg/l     | 100    | ml   | SP072.W.L1       |
| Chromium (III) | Cr (III) | Cr metal                                                       | in 2-5% HNO <sub>3</sub>                | 10 mg/l       | 100    | ml   | SP473.5N.L1      |
| Chromium (III) | Cr (III) | Cr metal                                                       | in 2-5% HNO <sub>3</sub>                | 100 mg/l      | 100    | ml   | SP373.5N.L1      |
| Chromium (III) | Cr (III) | Cr metal                                                       | in 2-5% HNO <sub>3</sub>                | 1000 mg/l     | 100    | ml   | SP073.5N.L1      |
| Chromium (III) | Cr (III) | Cr metal                                                       | in 2-5% HNO <sub>3</sub>                | 10000 mg/l    | 100    | ml   | SP173.5N.L1      |
| Chromium (VI)  | Cr (VI)  | (NH <sub>4</sub> ) <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> | in H <sub>2</sub> O                     | 100 mg/l      | 100    | ml   | SP374.W.L1       |
| Chromium (VI)  | Cr (VI)  | (NH <sub>4</sub> ) <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> | in H <sub>2</sub> O                     | 1000 mg/l     | 100    | ml   | SP074.W.L1       |
| Selenium (IV)  | Se (IV)  | Se metal                                                       | in 2-5% HNO <sub>3</sub>                | 100 mg/l      | 100    | ml   | SP375.2N.L1      |
| Selenium (IV)  | Se (IV)  | Se metal                                                       | in 2-5% HNO <sub>3</sub>                | 1000 mg/l     | 100    | ml   | SP075.2N.L1      |
| Selenium (VI)  | Se (VI)  | Selenic acid                                                   | in H <sub>2</sub> O/tr HNO <sub>3</sub> | 100 mg/l      | 100    | ml   | SP376.01N.L1     |
| Selenium (VI)  | Se (VI)  | Selenic acid                                                   | in H <sub>2</sub> O/tr HNO <sub>3</sub> | 1000 mg/l     | 100    | ml   | SP076.01N.L1     |

Blanks & dilution matrix

| TYPE NAME           | MATRIX                         | VOLUME | UNIT | REFERENCE       |
|---------------------|--------------------------------|--------|------|-----------------|
| Blank- Nitric Acid  | in 0.5% HNO <sub>3</sub> (v/v) | 500    | ml   | MS6469.0.05N.L5 |
| Blank- Nitric Acid  | in 5% HNO <sub>3</sub> (v/v)   | 500    | ml   | MS6469.0.5N.L5  |
| High - purity Water |                                | 500    | ml   | MS6469.0.W.L5   |
| Water               | in 5% HCl                      | 500    | ml   | AW.5CPL5        |
| Water               | in 5% HNO <sub>3</sub>         | 500    | ml   | AW.5NPL5        |



\* Custom Standards for ICP & ICP-MS are available upon request.

# ICP Multi-Element Standards

## ICP Standards

### ICP Calibration Standards

| Standard<br>33 components |               | Reference: M8A96.K1.5N.L1                         |               | Reference: M8A96.K1.5N.L5                         |               |         |               |
|---------------------------|---------------|---------------------------------------------------|---------------|---------------------------------------------------|---------------|---------|---------------|
|                           |               | Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               | Volume: 500 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |         |               |
| Element                   | Concentration | Element                                           | Concentration | Element                                           | Concentration | Element | Concentration |
| Al                        | 100 mg/l      | Cs                                                | 100 mg/l      | Mn                                                | 100 mg/l      | Sr      | 100 mg/l      |
| Sb                        | 100 mg/l      | Cr                                                | 100 mg/l      | Mo                                                | 100 mg/l      | Tl      | 100 mg/l      |
| As                        | 100 mg/l      | Co                                                | 100 mg/l      | Ni                                                | 100 mg/l      | Ti      | 100 mg/l      |
| Ba                        | 100 mg/l      | Cu                                                | 100 mg/l      | Nb                                                | 100 mg/l      | U       | 100 mg/l      |
| Be                        | 100 mg/l      | In                                                | 100 mg/l      | K                                                 | 100 mg/l      | V       | 100 mg/l      |
| Bi                        | 100 mg/l      | Fe                                                | 100 mg/l      | Rb                                                | 100 mg/l      | Zn      | 100 mg/l      |
| B                         | 100 mg/l      | Pb                                                | 100 mg/l      | Se                                                | 100 mg/l      |         |               |
| Cd                        | 100 mg/l      | Li                                                | 100 mg/l      | Ag                                                | 100 mg/l      |         |               |
| Ca                        | 100 mg/l      | Mg                                                | 100 mg/l      | Na                                                | 100 mg/l      |         |               |

| Standard<br>28 components |               | Reference: MB56A.K1.5N.L05                       |               | Reference: MB56A.K1.5N.L1                         |               | Reference: MB56A.K1.5N.L5                         |               |
|---------------------------|---------------|--------------------------------------------------|---------------|---------------------------------------------------|---------------|---------------------------------------------------|---------------|
|                           |               | Volume: 50 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               | Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               | Volume: 500 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                   | Concentration | Element                                          | Concentration | Element                                           | Concentration | Element                                           | Concentration |
| Sb                        | 100 mg/l      | Cd                                               | 100 mg/l      | Li                                                | 100 mg/l      | Ag                                                | 100 mg/l      |
| Al                        | 100 mg/l      | Ca                                               | 100 mg/l      | Mg                                                | 100 mg/l      | Na                                                | 100 mg/l      |
| As                        | 100 mg/l      | Co                                               | 100 mg/l      | Mn                                                | 100 mg/l      | Sr                                                | 100 mg/l      |
| Ba                        | 100 mg/l      | Cr                                               | 100 mg/l      | Mo                                                | 100 mg/l      | Tl                                                | 100 mg/l      |
| Be                        | 100 mg/l      | Cu                                               | 100 mg/l      | Ni                                                | 100 mg/l      | Ti                                                | 100 mg/l      |
| Bi                        | 100 mg/l      | Fe                                               | 100 mg/l      | K                                                 | 100 mg/l      | V                                                 | 100 mg/l      |
| B                         | 100 mg/l      | Pb                                               | 100 mg/l      | Se                                                | 100 mg/l      | Zn                                                | 100 mg/l      |

| Standard<br>4 components |               | Reference: 91C8.1K.2N.L1                          |               | Reference: 91C8.1K.2N.L5                          |               |         |               |
|--------------------------|---------------|---------------------------------------------------|---------------|---------------------------------------------------|---------------|---------|---------------|
|                          |               | Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> |               | Volume: 500 ml<br>Matrix: in 2 % HNO <sub>3</sub> |               |         |               |
| Element                  | Concentration | Element                                           | Concentration | Element                                           | Concentration | Element | Concentration |
| Ca                       | 1000 mg/l     | Mg                                                | 1000 mg/l     | K                                                 | 1000 mg/l     | Na      | 1000 mg/l     |

| Standard<br>2 components: P, S |               | Reference: F4AD.1K.W.L1                       |               | Reference: F4AD.1K.W.L5                       |  |  |  |
|--------------------------------|---------------|-----------------------------------------------|---------------|-----------------------------------------------|--|--|--|
|                                |               | Volume: 100 ml<br>Matrix: in H <sub>2</sub> O |               | Volume: 500 ml<br>Matrix: in H <sub>2</sub> O |  |  |  |
| Element                        | Concentration | Element                                       | Concentration |                                               |  |  |  |
| P                              | 1000 mg/l     | S                                             | 1000 mg/l     |                                               |  |  |  |



| Standard precious metals - 8 components |               | Reference: A2E5.K1.5C.L1 |               |
|-----------------------------------------|---------------|--------------------------|---------------|
|                                         |               | Volume: 100 ml           |               |
|                                         |               | Matrix: in 5 % HCl       |               |
| Element                                 | Concentration | Element                  | Concentration |
| Au                                      | 100 mg/l      | Pt                       | 100 mg/l      |
| Ir                                      | 100 mg/l      | Re                       | 100 mg/l      |
| Os                                      | 100 mg/l      | Rh                       | 100 mg/l      |
| Pd                                      | 100 mg/l      | Ru                       | 100 mg/l      |

| Calibration Standard 7 - 3 components |               | Reference: E210.K5.5N.L1        |               |
|---------------------------------------|---------------|---------------------------------|---------------|
|                                       |               | Volume: 100 ml                  |               |
|                                       |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                               | Concentration | Element                         | Concentration |
| B                                     | 500 mg/l      | Si                              | 500 mg/l      |
| Mo                                    | 500 mg/l      |                                 |               |

| Calibration Standard - 15 components |               | Reference: E592.1.2N.L1         |               |
|--------------------------------------|---------------|---------------------------------|---------------|
|                                      |               | Volume: 100 ml                  |               |
|                                      |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                              | Concentration | Element                         | Concentration |
| B                                    | 1 mg/l        | Lu                              | 1 mg/l        |
| Ba                                   | 1 mg/l        | Na                              | 1 mg/l        |
| Co                                   | 1 mg/l        | Rh                              | 1 mg/l        |
| Fe                                   | 1 mg/l        | Sc                              | 1 mg/l        |
| Ga                                   | 1 mg/l        | Tl                              | 1 mg/l        |
| In                                   | 1 mg/l        | U                               | 1 mg/l        |
| K                                    | 1 mg/l        | Y                               | 1 mg/l        |
| Li                                   | 1 mg/l        |                                 |               |

| GENESIS Calibration Standard - 22 components |               | Reference: 3965.2.2N2C.L1                         |               |
|----------------------------------------------|---------------|---------------------------------------------------|---------------|
|                                              |               | Volume: 100 ml                                    |               |
|                                              |               | Matrix: in 2 % HNO <sub>3</sub> / 2 % HCl/ tr. HF |               |
| Element                                      | Concentration | Element                                           | Concentration |
| S                                            | 50 mg/l       | V                                                 | 10 mg/l       |
| Ce                                           | 10 mg/l       | Y                                                 | 10 mg/l       |
| Cu                                           | 10 mg/l       | Zr                                                | 10 mg/l       |
| Eu                                           | 10 mg/l       | Mn                                                | 5 mg/l        |
| Fe                                           | 10 mg/l       | Mo                                                | 5 mg/l        |
| In                                           | 10 mg/l       | Na                                                | 5 mg/l        |
| K                                            | 10 mg/l       | Sc                                                | 5 mg/l        |
| Ni                                           | 10 mg/l       | Be                                                | 2 mg/l        |
| P                                            | 10 mg/l       | Li                                                | 2 mg/l        |
| Si                                           | 10 mg/l       | Sr                                                | 2 mg/l        |
| Ti                                           | 10 mg/l       | Ca                                                | 1 mg/l        |

| Standard precious metals - 3 components |               | Reference: C56D.K1.5C.L1 |               |
|-----------------------------------------|---------------|--------------------------|---------------|
|                                         |               | Volume: 100 ml           |               |
|                                         |               | Matrix: in 5 % HCl       |               |
| Element                                 | Concentration | Element                  | Concentration |
| Au                                      | 100 mg/l      | Pt                       | 100 mg/l      |
| Pd                                      | 100 mg/l      |                          |               |

| Calibration Standard - 10 components |               | Reference: 1E1E.1.2N.L1         |               |
|--------------------------------------|---------------|---------------------------------|---------------|
|                                      |               | Volume: 100 ml                  |               |
|                                      |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                              | Concentration | Element                         | Concentration |
| P                                    | 10 mg/l       | Mn                              | 1 mg/l        |
| Ni                                   | 5 mg/l        | Ba                              | 0.2 mg/l      |
| K                                    | 5 mg/l        | Ca                              | 0.2 mg/l      |
| Al                                   | 1 mg/l        | Mg                              | 0.2 mg/l      |
| Cu                                   | 1 mg/l        | Zn                              | 0.2 mg/l      |

| ICP Calibration Standard - Toxic components - 7 components |               | Reference: 8E66.K1.5N.L1        |               |
|------------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                            |               | Volume: 100 ml                  |               |
|                                                            |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                    | Concentration | Element                         | Concentration |
| As                                                         | 100 mg/l      | Pb                              | 100 mg/l      |
| Be                                                         | 100 mg/l      | Se                              | 100 mg/l      |
| Cd                                                         | 100 mg/l      | Tl                              | 100 mg/l      |
| Ni                                                         | 100 mg/l      |                                 |               |

| ICP-MS Precious Metals Standard - 8 components |               | Reference: A2E5.10.5C.L1 |               |
|------------------------------------------------|---------------|--------------------------|---------------|
|                                                |               | Volume: 100 ml           |               |
|                                                |               | Matrix: in 5 % HCl       |               |
| Element                                        | Concentration | Element                  | Concentration |
| Au                                             | 10 mg/l       | Pt                       | 10 mg/l       |
| Ir                                             | 10 mg/l       | Re                       | 10 mg/l       |
| Os                                             | 10 mg/l       | Rh                       | 10 mg/l       |
| Pd                                             | 10 mg/l       | Ru                       | 10 mg/l       |



\* Custom Standards for ICP & ICP-MS are available upon request.

| Calibration Standard - 26 components |               | Reference: MU01100100           |               |
|--------------------------------------|---------------|---------------------------------|---------------|
|                                      |               | Volume: 100 ml                  |               |
|                                      |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                              | Concentration | Element                         | Concentration |
| Al                                   | 100 mg/l      | Li                              | 100 mg/l      |
| As                                   | 100 mg/l      | Mg                              | 100 mg/l      |
| Ba                                   | 100 mg/l      | Mn                              | 100 mg/l      |
| Be                                   | 100 mg/l      | Mo                              | 100 mg/l      |
| Bi                                   | 100 mg/l      | Ni                              | 100 mg/l      |
| B                                    | 100 mg/l      | K                               | 100 mg/l      |
| Cd                                   | 100 mg/l      | Se                              | 100 mg/l      |
| Ca                                   | 100 mg/l      | Na                              | 100 mg/l      |
| Cr                                   | 100 mg/l      | Sr                              | 100 mg/l      |
| Co                                   | 100 mg/l      | Tl                              | 100 mg/l      |
| Cu                                   | 100 mg/l      | Ti                              | 100 mg/l      |
| Fe                                   | 100 mg/l      | V                               | 100 mg/l      |
| Pb                                   | 100 mg/l      | Zn                              | 100 mg/l      |

| Multi-element standard - 16 components |               | Reference: MU01060100            |               |
|----------------------------------------|---------------|----------------------------------|---------------|
|                                        |               | Volume: 100 ml                   |               |
|                                        |               | Matrix: in 10 % HNO <sub>3</sub> |               |
| Element                                | Concentration | Element                          | Concentration |
| Al                                     | 100 mg/l      | Fe                               | 20 mg/l       |
| Ba                                     | 5 mg/l        | Pb                               | 200 mg/l      |
| Be                                     | 2 mg/l        | Mn                               | 10 mg/l       |
| B                                      | 20 mg/l       | Ni                               | 50 mg/l       |
| Cd                                     | 20 mg/l       | Se                               | 5 mg/l        |
| Cr                                     | 20 mg/l       | Tl                               | 100 mg/l      |
| Co                                     | 50 mg/l       | V                                | 50 mg/l       |
| Cu                                     | 20 mg/l       | Zn                               | 50 mg/l       |

| MISA Standard 3 - Tellurium |               | Reference: AA6C.K1.10C.L1 |  |
|-----------------------------|---------------|---------------------------|--|
|                             |               | Volume: 100 ml            |  |
|                             |               | Matrix: in 10 % HCl       |  |
| Element                     | Concentration |                           |  |
| Te                          | 100 mg/l      |                           |  |

| Multi-element standard - 4 components |               | Reference: MU01090100 |               |
|---------------------------------------|---------------|-----------------------|---------------|
|                                       |               | Volume: 100 ml        |               |
|                                       |               | Matrix: in 1 % HCl    |               |
| Element                               | Concentration | Element               | Concentration |
| Ca                                    | 100 mg/l      | K                     | 150 mg/l      |
| Mg                                    | 20 mg/l       | Na                    | 3300 mg/l     |

| MISA Standard 1 - Rare Earth Metals - 18 components |               | Reference: 7027.K1.5N.L1        |               |
|-----------------------------------------------------|---------------|---------------------------------|---------------|
|                                                     |               | Volume: 100 ml                  |               |
|                                                     |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                             | Concentration | Element                         | Concentration |
| Ce                                                  | 100 mg/l      | Pr                              | 100 mg/l      |
| Dy                                                  | 100 mg/l      | Sc                              | 100 mg/l      |
| Er                                                  | 100 mg/l      | Sm                              | 100 mg/l      |
| Eu                                                  | 100 mg/l      | Tb                              | 100 mg/l      |
| Gd                                                  | 100 mg/l      | Th                              | 100 mg/l      |
| Ho                                                  | 100 mg/l      | Tm                              | 100 mg/l      |
| La                                                  | 100 mg/l      | U                               | 100 mg/l      |
| Lu                                                  | 100 mg/l      | Y                               | 100 mg/l      |
| Nd                                                  | 100 mg/l      | Yb                              | 100 mg/l      |

| MISA Standard 2 - Precious Metals - 6 components |               | Reference: 397C.K1.10C.L1 |               |
|--------------------------------------------------|---------------|---------------------------|---------------|
|                                                  |               | Volume: 100 ml            |               |
|                                                  |               | Matrix: in 10 % HCl       |               |
| Element                                          | Concentration | Element                   | Concentration |
| Au                                               | 100 mg/l      | Pt                        | 100 mg/l      |
| Ir                                               | 100 mg/l      | Rh                        | 100 mg/l      |
| Pd                                               | 100 mg/l      | Ru                        | 100 mg/l      |

| MISA Standard 4 - Alkali, Alkaline Earth, Non-Transition Group - 16 components |               | Reference: 942A.K1.10N.L1        |               |
|--------------------------------------------------------------------------------|---------------|----------------------------------|---------------|
|                                                                                |               | Volume: 100 ml                   |               |
|                                                                                |               | Matrix: in 10 % HNO <sub>3</sub> |               |
| Element                                                                        | Concentration | Element                          | Concentration |
| Al                                                                             | 100 mg/l      | In                               | 100 mg/l      |
| As                                                                             | 100 mg/l      | Li                               | 100 mg/l      |
| Ba                                                                             | 100 mg/l      | Mg                               | 100 mg/l      |
| Bi                                                                             | 100 mg/l      | K                                | 100 mg/l      |
| Be                                                                             | 100 mg/l      | Rb                               | 100 mg/l      |
| Ca                                                                             | 100 mg/l      | Se                               | 100 mg/l      |
| Cs                                                                             | 100 mg/l      | Na                               | 100 mg/l      |
| Ga                                                                             | 100 mg/l      | Sr                               | 100 mg/l      |

| MISA Standard 5 - Fluoride Soluble Group 15 components |               | Reference: 32D7.K1.5NFL1                |               |
|--------------------------------------------------------|---------------|-----------------------------------------|---------------|
|                                                        |               | Volume: 100 ml                          |               |
|                                                        |               | Matrix: in 5 % HNO <sub>3</sub> /tr. HF |               |
| Element                                                | Concentration | Element                                 | Concentration |
| Sb                                                     | 100 mg/l      | Si                                      | 100 mg/l      |
| B                                                      | 100 mg/l      | S                                       | 100 mg/l      |
| Ge                                                     | 100 mg/l      | Ta                                      | 100 mg/l      |
| Hf                                                     | 100 mg/l      | Sn                                      | 100 mg/l      |
| Mo                                                     | 100 mg/l      | Ti                                      | 100 mg/l      |
| Nb                                                     | 100 mg/l      | W                                       | 100 mg/l      |
| P                                                      | 100 mg/l      | Zr                                      | 100 mg/l      |
| Re                                                     | 100 mg/l      |                                         |               |

| MISA Standard 6 - Transition Metals - 13 components |               | Reference: E579.K1.10N.L1        |               |
|-----------------------------------------------------|---------------|----------------------------------|---------------|
|                                                     |               | Volume: 100 ml                   |               |
|                                                     |               | Matrix: in 10 % HNO <sub>3</sub> |               |
| Element                                             | Concentration | Element                          | Concentration |
| Cd                                                  | 100 mg/l      | Hg                               | 100 mg/l      |
| Co                                                  | 100 mg/l      | Ni                               | 100 mg/l      |
| Cu                                                  | 100 mg/l      | Ag                               | 100 mg/l      |
| Cr                                                  | 100 mg/l      | Tl                               | 100 mg/l      |
| Fe                                                  | 100 mg/l      | V                                | 100 mg/l      |
| Pb                                                  | 100 mg/l      | Zn                               | 100 mg/l      |
| Mn                                                  | 100 mg/l      |                                  |               |

| Continuing Calibration Verification for CLP - 5 components |               | Reference: 30A8.50.5N.L1        |               |
|------------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                            |               | Volume: 100 ml                  |               |
|                                                            |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                    | Concentration | Element                         | Concentration |
| As                                                         | 50 mg/l       | Pb                              | 25 mg/l       |
| Tl                                                         | 50 mg/l       | Se                              | 25 mg/l       |
| Cd                                                         | 25 mg/l       |                                 |               |

| Continuing Calibration Verification for CLP - 16 components |               | Reference: 199B.50.5N.L1        |               |
|-------------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                             |               | Volume: 100 ml                  |               |
|                                                             |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                     | Concentration | Element                         | Concentration |
| Ca                                                          | 2500 mg/l     | V                               | 250 mg/l      |
| Mg                                                          | 2500 mg/l     | Ni                              | 200 mg/l      |
| K                                                           | 2500 mg/l     | Cu                              | 125 mg/l      |
| Na                                                          | 2500 mg/l     | Zn                              | 100 mg/l      |
| Al                                                          | 1000 mg/l     | Mn                              | 75 mg/l       |
| Ba                                                          | 1000 mg/l     | Cr                              | 50 mg/l       |
| Fe                                                          | 500 mg/l      | Ag                              | 50 mg/l       |
| Co                                                          | 250 mg/l      | Be                              | 25 mg/l       |

| Continuing Calibration Verification Standard - 16 components |               | Reference: AC25.K125.5N.L1      |               |
|--------------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                              |               | Volume: 100 ml                  |               |
|                                                              |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                      | Concentration | Element                         | Concentration |
| Ca                                                           | 2500 mg/l     | V                               | 250 mg/l      |
| Mg                                                           | 2500 mg/l     | Co                              | 250 mg/l      |
| Na                                                           | 2500 mg/l     | Ni                              | 250 mg/l      |
| K                                                            | 2500 mg/l     | Zn                              | 250 mg/l      |
| Al                                                           | 1000 mg/l     | Ag                              | 125 mg/l      |
| Ba                                                           | 1000 mg/l     | Cu                              | 125 mg/l      |
| Fe                                                           | 500 mg/l      | Cr                              | 100 mg/l      |
| Mn                                                           | 250 mg/l      | Be                              | 25 mg/l       |



\* Custom Standards for ICP & ICP-MS are available upon request.

# Quality Control Standards for ICP

| Quality Control Standard 1 - 23 components |               | Reference: B0D3.K1.5N.L1                |               |
|--------------------------------------------|---------------|-----------------------------------------|---------------|
|                                            |               | Volume: 100 ml                          |               |
|                                            |               | Matrix: in 5 % HNO <sub>3</sub> /tr. HF |               |
| Element                                    | Concentration | Element                                 | Concentration |
| Sb                                         | 100 mg/l      | Mn                                      | 100 mg/l      |
| As                                         | 100 mg/l      | Mo                                      | 100 mg/l      |
| Be                                         | 100 mg/l      | Ni                                      | 100 mg/l      |
| Cd                                         | 100 mg/l      | P                                       | 100 mg/l      |
| Ca                                         | 100 mg/l      | Se                                      | 100 mg/l      |
| Cr                                         | 100 mg/l      | Sr                                      | 100 mg/l      |
| Co                                         | 100 mg/l      | Sn                                      | 100 mg/l      |
| Cu                                         | 100 mg/l      | Tl                                      | 100 mg/l      |
| Fe                                         | 100 mg/l      | Ti                                      | 100 mg/l      |
| Pb                                         | 100 mg/l      | V                                       | 100 mg/l      |
| Li                                         | 100 mg/l      | Zn                                      | 100 mg/l      |
| Mg                                         | 100 mg/l      |                                         |               |

| Quality Control Standard 4 - 19 components |               | Reference: 4176.50.5N.L1        |               |
|--------------------------------------------|---------------|---------------------------------|---------------|
|                                            |               | Volume: 100 ml                  |               |
|                                            |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                    | Concentration | Element                         | Concentration |
| Bi                                         | 200 mg/l      | Co                              | 20 mg/l       |
| In                                         | 200 mg/l      | Cu                              | 20 mg/l       |
| Pb                                         | 200 mg/l      | Zn                              | 20 mg/l       |
| Ga                                         | 150 mg/l      | B                               | 15 mg/l       |
| Al                                         | 100 mg/l      | Fe                              | 15 mg/l       |
| Ag                                         | 50 mg/l       | Ba                              | 5 mg/l        |
| Ni                                         | 50 mg/l       | Mn                              | 5 mg/l        |
| Tl                                         | 40 mg/l       | Be                              | 1 mg/l        |
| Cr                                         | 25 mg/l       | Sr                              | 1 mg/l        |
| Cd                                         | 20 mg/l       |                                 |               |

| Quality Control Standard 6 - 4 components |               | Reference: F9B8.1K.2N.L1        |               |
|-------------------------------------------|---------------|---------------------------------|---------------|
|                                           |               | Volume: 100 ml                  |               |
|                                           |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                   | Concentration | Element                         | Concentration |
| Ba                                        | 1000 mg/l     | Mg                              | 1000 mg/l     |
| Ca                                        | 1000 mg/l     | Sr                              | 1000 mg/l     |

| Quality Control Standard 2R - 7 components |               | Reference: 01EC.K1.5N.L1                |               |
|--------------------------------------------|---------------|-----------------------------------------|---------------|
|                                            |               | Volume: 100 ml                          |               |
|                                            |               | Matrix: in 5 % HNO <sub>3</sub> /tr. HF |               |
| Element                                    | Concentration | Element                                 | Concentration |
| Al                                         | 100 mg/l      | Si                                      | 100 mg/l      |
| Ba                                         | 100 mg/l      | Ag                                      | 100 mg/l      |
| B                                          | 100 mg/l      | Na                                      | 100 mg/l      |
| K                                          | 100 mg/l      |                                         |               |

| Quality Control Standard 3 - 15 components |               | Reference: CF34.K1.5N.L1                |               |
|--------------------------------------------|---------------|-----------------------------------------|---------------|
|                                            |               | Volume: 100 ml                          |               |
|                                            |               | Matrix: in 5 % HNO <sub>3</sub> /tr. HF |               |
| Element                                    | Concentration | Element                                 | Concentration |
| Al                                         | 100 mg/l      | Pb                                      | 100 mg/l      |
| Ba                                         | 100 mg/l      | Mg                                      | 100 mg/l      |
| Cd                                         | 100 mg/l      | Mn                                      | 100 mg/l      |
| Ca                                         | 100 mg/l      | Ni                                      | 100 mg/l      |
| Cr                                         | 100 mg/l      | Na                                      | 100 mg/l      |
| Co                                         | 100 mg/l      | Ti                                      | 100 mg/l      |
| Cu                                         | 100 mg/l      | Zn                                      | 100 mg/l      |
| Fe                                         | 100 mg/l      |                                         |               |

| Quality Control Standard 5 - 3 components |               | Reference: A895.10K.2N.L1       |               |
|-------------------------------------------|---------------|---------------------------------|---------------|
|                                           |               | Volume: 100 ml                  |               |
|                                           |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                   | Concentration | Element                         | Concentration |
| K                                         | 10000 mg/l    | Li                              | 250 mg/l      |
| Na                                        | 1000 mg/l     |                                 |               |

| Quality Control Standard 24 - 22 components |               | Reference: 3865.10.10N.L1        |               |
|---------------------------------------------|---------------|----------------------------------|---------------|
|                                             |               | Volume: 100 ml                   |               |
|                                             |               | Matrix: in 10 % HNO <sub>3</sub> |               |
| Element                                     | Concentration | Element                          | Concentration |
| Al                                          | 10 mg/l       | Fe                               | 10 mg/l       |
| Ba                                          | 10 mg/l       | Pb                               | 10 mg/l       |
| Bi                                          | 10 mg/l       | Li                               | 10 mg/l       |
| B                                           | 10 mg/l       | Mg                               | 10 mg/l       |
| Cd                                          | 10 mg/l       | Mn                               | 10 mg/l       |
| Ca                                          | 10 mg/l       | Mo                               | 10 mg/l       |
| Cr                                          | 10 mg/l       | K                                | 10 mg/l       |
| Co                                          | 10 mg/l       | Ag                               | 10 mg/l       |
| Cu                                          | 10 mg/l       | Na                               | 10 mg/l       |
| Ga                                          | 10 mg/l       | Tl                               | 10 mg/l       |
| In                                          | 10 mg/l       | Zn                               | 10 mg/l       |

| QC Multi<br>22 components |               | Reference: M52B5.1.5N.L1<br><br>Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |         | Reference: M52B5.1.5N.L5<br><br>Volume: 500 ml<br>Matrix: in 5 % HNO <sub>3</sub> |         |               |
|---------------------------|---------------|-----------------------------------------------------------------------------------|---------------|---------|-----------------------------------------------------------------------------------|---------|---------------|
| Element                   | Concentration | Element                                                                           | Concentration | Element | Concentration                                                                     | Element | Concentration |
| Sb                        | 1 mg/l        | Co                                                                                | 1 mg/l        | Mg      | 1 mg/l                                                                            | Tl      | 1 mg/l        |
| As                        | 1 mg/l        | Cr                                                                                | 1 mg/l        | Mn      | 1 mg/l                                                                            | Ti      | 1 mg/l        |
| Be                        | 1 mg/l        | Cu                                                                                | 1 mg/l        | Mo      | 1 mg/l                                                                            | V       | 1 mg/l        |
| Bi                        | 1 mg/l        | Fe                                                                                | 1 mg/l        | Ni      | 1 mg/l                                                                            | Zn      | 1 mg/l        |
| Cd                        | 1 mg/l        | Pb                                                                                | 1 mg/l        | Se      | 1 mg/l                                                                            |         |               |
| Ca                        | 1 mg/l        | Li                                                                                | 1 mg/l        | Sr      | 1 mg/l                                                                            |         |               |

| QC Multi<br>28 components |               | Reference: MB56A.1.2N.L1<br><br>Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> |               |         | Reference: MB56A.1.2N.L5<br><br>Volume: 500 ml<br>Matrix: in 2 % HNO <sub>3</sub> |         |               |
|---------------------------|---------------|-----------------------------------------------------------------------------------|---------------|---------|-----------------------------------------------------------------------------------|---------|---------------|
| Element                   | Concentration | Element                                                                           | Concentration | Element | Concentration                                                                     | Element | Concentration |
| Sb                        | 1 mg/l        | Cd                                                                                | 1 mg/l        | Pb      | 1 mg/l                                                                            | Ag      | 1 mg/l        |
| Al                        | 1 mg/l        | Ca                                                                                | 1 mg/l        | Mg      | 1 mg/l                                                                            | Na      | 1 mg/l        |
| As                        | 1 mg/l        | Cr                                                                                | 1 mg/l        | Mn      | 1 mg/l                                                                            | Sr      | 1 mg/l        |
| B                         | 1 mg/l        | Co                                                                                | 1 mg/l        | Mo      | 1 mg/l                                                                            | Tl      | 1 mg/l        |
| Ba                        | 1 mg/l        | Cu                                                                                | 1 mg/l        | Ni      | 1 mg/l                                                                            | Ti      | 1 mg/l        |
| Be                        | 1 mg/l        | Fe                                                                                | 1 mg/l        | K       | 1 mg/l                                                                            | V       | 1 mg/l        |
| Bi                        | 1 mg/l        | Li                                                                                | 1 mg/l        | Se      | 1 mg/l                                                                            | Zn      | 1 mg/l        |

| QC Multi<br>33 components |               | Reference: M8A96.1.5N.L1<br><br>Volume: 100 ml<br>Matrix: in 5% HNO <sub>3</sub> |               |         | Reference: M8A96.1.5N.L5<br><br>Volume: 500 ml<br>Matrix: n 5% HNO <sub>3</sub> |         |               |
|---------------------------|---------------|----------------------------------------------------------------------------------|---------------|---------|---------------------------------------------------------------------------------|---------|---------------|
| Element                   | Concentration | Element                                                                          | Concentration | Element | Concentration                                                                   | Element | Concentration |
| Sb                        | 1 mg/l        | Cs                                                                               | 1 mg/l        | Mn      | 1 mg/l                                                                          | Sr      | 1 mg/l        |
| Al                        | 1 mg/l        | Cr                                                                               | 1 mg/l        | Mo      | 1 mg/l                                                                          | Tl      | 1 mg/l        |
| As                        | 1 mg/l        | Co                                                                               | 1 mg/l        | Ni      | 1 mg/l                                                                          | Ti      | 1 mg/l        |
| Ba                        | 1 mg/l        | Cu                                                                               | 1 mg/l        | Nb      | 1 mg/l                                                                          | U       | 1 mg/l        |
| Be                        | 1 mg/l        | In                                                                               | 1 mg/l        | K       | 1 mg/l                                                                          | V       | 1 mg/l        |
| Bi                        | 1 mg/l        | Fe                                                                               | 1 mg/l        | Rb      | 1 mg/l                                                                          | Zn      | 1 mg/l        |
| B                         | 1 mg/l        | Pb                                                                               | 1 mg/l        | Se      | 1 mg/l                                                                          |         |               |
| Cd                        | 1 mg/l        | Li                                                                               | 1 mg/l        | Ag      | 1 mg/l                                                                          |         |               |
| Ca                        | 1 mg/l        | Mg                                                                               | 1 mg/l        | Na      | 1 mg/l                                                                          |         |               |

| QC precious metals |               | Reference: M397C.1.2C.L1<br><br>Volume: 100 ml<br>Matrix: in 2% HCl |               |         | Reference: M397C.1.2C.L5<br><br>Volume: 500 ml<br>Matrix: in 2% HCl |         |               |
|--------------------|---------------|---------------------------------------------------------------------|---------------|---------|---------------------------------------------------------------------|---------|---------------|
| Element            | Concentration | Element                                                             | Concentration | Element | Concentration                                                       | Element | Concentration |
| Au                 | 1 mg/l        | Rh                                                                  | 1 mg/l        | Na      | 1 mg/l                                                              | V       | 1 mg/l        |
| Ir                 | 1 mg/l        | Ru                                                                  | 1 mg/l        | Sr      | 1 mg/l                                                              | Zn      | 1 mg/l        |
| Pd                 | 1 mg/l        | Se                                                                  | 1 mg/l        | Tl      | 1 mg/l                                                              |         |               |
| Pt                 | 1 mg/l        | Ag                                                                  | 1 mg/l        | Ti      | 1 mg/l                                                              |         |               |

| Hg - Mercury |               | Reference: ESD0BC.K5.5N.L1                       |  | Reference: ESD0BC.K5.5N.L5                       |  |
|--------------|---------------|--------------------------------------------------|--|--------------------------------------------------|--|
|              |               | Volume: 100 ml<br>Matrix: in 5% HNO <sub>3</sub> |  | Volume: 500 ml<br>Matrix: in 5% HNO <sub>3</sub> |  |
| Element      | Concentration |                                                  |  |                                                  |  |
| Hg           | 0.5 mg/l      |                                                  |  |                                                  |  |



\* Custom Standards for ICP & ICP-MS are available upon request.

## Tuning Solutions

| Tuning Solution - 15 components |               | Reference: 2197.10.2N.L1        |               |
|---------------------------------|---------------|---------------------------------|---------------|
|                                 |               | Volume: 100 ml                  |               |
|                                 |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                         | Concentration | Element                         | Concentration |
| B                               | 10 mg/l       | Lu                              | 10 mg/l       |
| Ba                              | 10 mg/l       | K                               | 10 mg/l       |
| Co                              | 10 mg/l       | Rh                              | 10 mg/l       |
| Ga                              | 10 mg/l       | Sc                              | 10 mg/l       |
| In                              | 10 mg/l       | Na                              | 10 mg/l       |
| Fe                              | 10 mg/l       | Th                              | 10 mg/l       |
| Li                              | 10 mg/l       |                                 |               |

| CIROS Tuning Solution - 9 components |               | Reference: 5EC8.10.5C2N.L1              |               |
|--------------------------------------|---------------|-----------------------------------------|---------------|
|                                      |               | Volume: 100 ml                          |               |
|                                      |               | Matrix: in 5 % HCl/2 % HNO <sub>3</sub> |               |
| Element                              | Concentration | Element                                 | Concentration |
| S                                    | 50 mg/l       | Sc                                      | 10 mg/l       |
| Fe                                   | 10 mg/l       | Ti                                      | 10 mg/l       |
| K                                    | 10 mg/l       | Mg                                      | 5 mg/l        |
| La                                   | 10 mg/l       | Mn                                      | 5 mg/l        |
| P                                    | 10 mg/l       |                                         |               |

## Initial Calibration Verification

| ICV-2A - 16 components |               | Reference: 5927.K1.5N.L1        |               |
|------------------------|---------------|---------------------------------|---------------|
|                        |               | Volume: 100 ml                  |               |
|                        |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                | Concentration | Element                         | Concentration |
| Mg                     | 2000 mg/l     | V                               | 500 mg/l      |
| Na                     | 2000 mg/l     | Cr                              | 200 mg/l      |
| Al                     | 1000 mg/l     | Cu                              | 200 mg/l      |
| Ba                     | 1000 mg/l     | Ag                              | 100 mg/l      |
| Fe                     | 1000 mg/l     | Be                              | 100 mg/l      |
| Co                     | 500 mg/l      | Mn                              | 100 mg/l      |
| Ni                     | 500 mg/l      | Zn                              | 100 mg/l      |

| ICV-2C - 5 components |               | Reference: A186.K5.5N.L1        |               |
|-----------------------|---------------|---------------------------------|---------------|
|                       |               | Volume: 100 ml                  |               |
|                       |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element               | Concentration | Element                         | Concentration |
| As                    | 500 mg/l      | Tl                              | 500 mg/l      |
| Pb                    | 500 mg/l      | Cd                              | 100 mg/l      |
| Se                    | 500 mg/l      |                                 |               |



# ICP-MS Standards

## ICP-MS Calibration Standards

| Standard 8 elements |               | <b>Reference:</b> MSBD60.10.2N01F.L1<br><b>Volume:</b> 100 ml<br><b>Matrix:</b> in 2 % HNO <sub>3</sub> /HF tr |               |
|---------------------|---------------|----------------------------------------------------------------------------------------------------------------|---------------|
| Element             | Concentration | Element                                                                                                        | Concentration |
| Sb                  | 10 mg/l       | Te                                                                                                             | 10 mg/l       |
| Ge                  | 10 mg/l       | Sn                                                                                                             | 10 mg/l       |
| Hf                  | 10 mg/l       | W                                                                                                              | 10 mg/l       |
| Mo                  | 10 mg/l       | Zr                                                                                                             | 10 mg/l       |

| Standard 31 elements |               | <b>Reference:</b> MSE194.10.2N.L1<br><b>Volume:</b> 100 ml<br><b>Matrix:</b> in 2 % HNO <sub>3</sub> |               |
|----------------------|---------------|------------------------------------------------------------------------------------------------------|---------------|
| Element              | Concentration | Element                                                                                              | Concentration |
| Al                   | 10 mg/l       | Mn                                                                                                   | 10 mg/l       |
| As                   | 10 mg/l       | Nd                                                                                                   | 10 mg/l       |
| Ba                   | 10 mg/l       | Ni                                                                                                   | 10 mg/l       |
| B                    | 10 mg/l       | P                                                                                                    | 10 mg/l       |
| Cd                   | 10 mg/l       | Pb                                                                                                   | 10 mg/l       |
| Ce                   | 10 mg/l       | Rb                                                                                                   | 10 mg/l       |
| Co                   | 10 mg/l       | Se                                                                                                   | 10 mg/l       |
| Cr                   | 10 mg/l       | Ag                                                                                                   | 10 mg/l       |
| Cu                   | 10 mg/l       | Sm                                                                                                   | 10 mg/l       |
| Dy                   | 10 mg/l       | Sr                                                                                                   | 10 mg/l       |
| Er                   | 10 mg/l       | Tl                                                                                                   | 10 mg/l       |
| Gd                   | 10 mg/l       | Tm                                                                                                   | 10 mg/l       |
| Ho                   | 10 mg/l       | U                                                                                                    | 10 mg/l       |
| La                   | 10 mg/l       | V                                                                                                    | 10 mg/l       |
| Li                   | 10 mg/l       | Zn                                                                                                   | 10 mg/l       |
| Lu                   | 10 mg/l       |                                                                                                      |               |

| Initial Calibration Verification Standard 2 - 2 components |               | <b>Reference:</b> 1F15.10.2N.L1<br><b>Volume:</b> 100 ml<br><b>Matrix:</b> in 2 % HNO <sub>3</sub> |               |
|------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------|---------------|
| Element                                                    | Concentration | Element                                                                                            | Concentration |
| Sn                                                         | 10 mg/l       | Ti                                                                                                 | 10 mg/l       |

| Standard 18 elements |               | <b>Reference:</b> MSBEDC.10.2N.L1<br><b>Volume:</b> 100 ml<br><b>Matrix:</b> in 2 % HNO <sub>3</sub> |               |
|----------------------|---------------|------------------------------------------------------------------------------------------------------|---------------|
| Element              | Concentration | Element                                                                                              | Concentration |
| Al                   | 10 mg/l       | Ni                                                                                                   | 10 mg/l       |
| As                   | 10 mg/l       | Pb                                                                                                   | 10 mg/l       |
| Ba                   | 10 mg/l       | Se                                                                                                   | 10 mg/l       |
| Be                   | 10 mg/l       | Ag                                                                                                   | 10 mg/l       |
| Cd                   | 10 mg/l       | Th                                                                                                   | 10 mg/l       |
| Cr                   | 10 mg/l       | Tl                                                                                                   | 10 mg/l       |
| Co                   | 10 mg/l       | U                                                                                                    | 10 mg/l       |
| Cu                   | 10 mg/l       | V                                                                                                    | 10 mg/l       |
| Mn                   | 10 mg/l       | Zn                                                                                                   | 10 mg/l       |

| Standard 5 elements |               | <b>Reference:</b> MS13BF.1K.2N.L1<br><b>Volume:</b> 100 ml<br><b>Matrix:</b> in 2 % HNO <sub>3</sub> |               |
|---------------------|---------------|------------------------------------------------------------------------------------------------------|---------------|
| Element             | Concentration | Element                                                                                              | Concentration |
| Ca                  | 1000 mg/l     | K                                                                                                    | 1000 mg/l     |
| Fe                  | 1000 mg/l     | Na                                                                                                   | 1000 mg/l     |
| Mg                  | 1000 mg/l     |                                                                                                      |               |

| Standard 4 elements precious metals |               | <b>Reference:</b> MS91C8.1K.2N.L1<br><b>Volume:</b> 100 ml<br><b>Matrix:</b> in 2 % HNO <sub>3</sub> |               |
|-------------------------------------|---------------|------------------------------------------------------------------------------------------------------|---------------|
| Element                             | Concentration | Element                                                                                              | Concentration |
| Ca                                  | 1000 mg/l     | K                                                                                                    | 1000 mg/l     |
| Mg                                  | 1000 mg/l     | Na                                                                                                   | 1000 mg/l     |



\* Custom Standards for ICP & ICP-MS are available upon request.

| Initial Calibration Verification Standard 1 - 26 components |               | Reference: E738.K1.10N.L1       |               |
|-------------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                             |               | Volume: 100 ml                  |               |
|                                                             |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                     | Concentration | Element                         | Concentration |
| Ca                                                          | 1000 mg/l     | Cr                              | 10 mg/l       |
| Fe                                                          | 1000 mg/l     | Cu                              | 10 mg/l       |
| K                                                           | 1000 mg/l     | Mn                              | 10 mg/l       |
| Mg                                                          | 1000 mg/l     | Mo                              | 10 mg/l       |
| Na                                                          | 1000 mg/l     | Ni                              | 10 mg/l       |
| Sr                                                          | 1000 mg/l     | Pb                              | 10 mg/l       |
| Ag                                                          | 10 mg/l       | Sb                              | 10 mg/l       |
| Al                                                          | 10 mg/l       | Se                              | 10 mg/l       |
| As                                                          | 10 mg/l       | Tl                              | 10 mg/l       |
| Ba                                                          | 10 mg/l       | V                               | 10 mg/l       |
| Be                                                          | 10 mg/l       | Zn                              | 10 mg/l       |
| Cd                                                          | 10 mg/l       | Th                              | 10 mg/l       |
| Co                                                          | 10 mg/l       | U                               | 10 mg/l       |

| ICP-MS Instrument Calibration Standard 1A - 20 components |               | Reference: E85B.10.5N.L1                        |               |
|-----------------------------------------------------------|---------------|-------------------------------------------------|---------------|
|                                                           |               | Volume: 100 ml                                  |               |
|                                                           |               | Matrix: in 5 % HNO <sub>3</sub> / tr. Tart. Ac. |               |
| Element                                                   | Concentration | Element                                         | Concentration |
| Se                                                        | 50 mg/l       | Pb                                              | 10 mg/l       |
| Al                                                        | 10 mg/l       | Mn                                              | 10 mg/l       |
| Sb                                                        | 10 mg/l       | Mo                                              | 10 mg/l       |
| As                                                        | 10 mg/l       | Ni                                              | 10 mg/l       |
| Ba                                                        | 10 mg/l       | Ag                                              | 10 mg/l       |
| Be                                                        | 10 mg/l       | Tl                                              | 10 mg/l       |
| Cd                                                        | 10 mg/l       | Th                                              | 10 mg/l       |
| Cr                                                        | 10 mg/l       | U                                               | 10 mg/l       |
| Co                                                        | 10 mg/l       | V                                               | 10 mg/l       |
| Cu                                                        | 10 mg/l       | Zn                                              | 10 mg/l       |

| ICP-MS Calibration Standard - 10 components |               | Reference: D743.10.2N.L1        |               |
|---------------------------------------------|---------------|---------------------------------|---------------|
|                                             |               | Volume: 100 ml                  |               |
|                                             |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                     | Concentration | Element                         | Concentration |
| Ba                                          | 10 mg/l       | In                              | 10 mg/l       |
| Be                                          | 10 mg/l       | Li                              | 10 mg/l       |
| Bi                                          | 10 mg/l       | Ni                              | 10 mg/l       |
| Ce                                          | 10 mg/l       | Pb                              | 10 mg/l       |
| Co                                          | 10 mg/l       | U                               | 10 mg/l       |

| ICP-MS Calibration Standard - 5 components |               | Reference: 1ADA.10.2N.L1        |               |
|--------------------------------------------|---------------|---------------------------------|---------------|
|                                            |               | Volume: 100 ml                  |               |
|                                            |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                    | Concentration | Element                         | Concentration |
| Ca                                         | 10 mg/l       | Li                              | 10 mg/l       |
| Fe                                         | 10 mg/l       | Na                              | 10 mg/l       |
| K                                          | 10 mg/l       |                                 |               |

| ICP Multi-Element Standard Solution XX for MS - 11 components |               | Reference: CEB3.1.1N.L1         |               |
|---------------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                               |               | Volume: 100 ml                  |               |
|                                                               |               | Matrix: in 1 % HNO <sub>3</sub> |               |
| Element                                                       | Concentration | Element                         | Concentration |
| Mg                                                            | 1 mg/l        | Tl                              | 1 mg/l        |
| Cu                                                            | 1 mg/l        | Ce                              | 1 mg/l        |
| Cd                                                            | 1 mg/l        | Ge                              | 1 mg/l        |
| Pb                                                            | 1 mg/l        | Tb                              | 1 mg/l        |
| Sc                                                            | 1 mg/l        | Ba                              | 1 mg/l        |
| Rh                                                            | 1 mg/l        |                                 |               |

| ICP-MS Refractory Elements Standard - 12 components |               | Reference: 058E.10.5N.L1        |               |
|-----------------------------------------------------|---------------|---------------------------------|---------------|
|                                                     |               | Volume: 100 ml                  |               |
|                                                     |               | Matrix: in 1 % HNO <sub>3</sub> |               |
| Element                                             | Concentration | Element                         | Concentration |
| Ge                                                  | 10 mg/l       | Sn                              | 10 mg/l       |
| Hf                                                  | 10 mg/l       | Ta                              | 10 mg/l       |
| Mo                                                  | 10 mg/l       | Te                              | 10 mg/l       |
| Nb                                                  | 10 mg/l       | Ti                              | 10 mg/l       |
| Sb                                                  | 10 mg/l       | W                               | 10 mg/l       |
| Si                                                  | 10 mg/l       | Zr                              | 10 mg/l       |

Quality Control Standards for ICP-MS

| QC-MS<br>31 elements |               | Reference: MSE194.D01.1N.L1<br><br>Volume: 100 ml<br>Matrix: in 1 % HNO <sub>3</sub> |               | Reference: MSE194.D01.1N.L5<br><br>Volume: 500 ml<br>Matrix: in 1 % HNO <sub>3</sub> |               |         |               |
|----------------------|---------------|--------------------------------------------------------------------------------------|---------------|--------------------------------------------------------------------------------------|---------------|---------|---------------|
| Element              | Concentration | Element                                                                              | Concentration | Element                                                                              | Concentration | Element | Concentration |
| Al                   | 0.01 mg/l     | Cu                                                                                   | 0.01 mg/l     | Lu                                                                                   | 0.01 mg/l     | Ag      | 0.01 mg/l     |
| As                   | 0.01 mg/l     | Dy                                                                                   | 0.01 mg/l     | Mn                                                                                   | 0.01 mg/l     | Sr      | 0.01 mg/l     |
| Ba                   | 0.01 mg/l     | Er                                                                                   | 0.01 mg/l     | Ni                                                                                   | 0.01 mg/l     | Tl      | 0.01 mg/l     |
| B                    | 0.01 mg/l     | Gd                                                                                   | 0.01 mg/l     | Nb                                                                                   | 0.01 mg/l     | Tm      | 0.01 mg/l     |
| Cd                   | 0.01 mg/l     | Ho                                                                                   | 0.01 mg/l     | P                                                                                    | 0.01 mg/l     | U       | 0.01 mg/l     |
| Ce                   | 0.01 mg/l     | La                                                                                   | 0.01 mg/l     | Rb                                                                                   | 0.01 mg/l     | V       | 0.01 mg/l     |
| Cr                   | 0.01 mg/l     | Pb                                                                                   | 0.01 mg/l     | Sm                                                                                   | 0.01 mg/l     | Zn      | 0.01 mg/l     |
| Co                   | 0.01 mg/l     | Li                                                                                   | 0.01 mg/l     | Se                                                                                   | 0.01 mg/l     |         |               |

| QC-MS Hg |               | <u>Reference: MSD0BC.D01.2N.L1</u>                              | <u>Reference: MSD0BC.D01.2N.L5</u>                              |
|----------|---------------|-----------------------------------------------------------------|-----------------------------------------------------------------|
|          |               | <b>Volume:</b> 100 ml<br><b>Matrix:</b> in 2 % HNO <sub>3</sub> | <b>Volume:</b> 500 ml<br><b>Matrix:</b> in 2 % HNO <sub>3</sub> |
| Element  | Concentration |                                                                 |                                                                 |
| Hg       | 0.01 mg/l     |                                                                 |                                                                 |

| QC-MS<br>18 elements |               | Reference: MSBEDC.D01.1N.L1<br><br>Volume: 100 ml<br>Matrix: in 1 % HNO <sub>3</sub> |               | Reference: SBEDC.D01.1N.L5<br><br>Volume: 500 ml<br>Matrix: in 1 % HNO <sub>3</sub> |               |         |               |
|----------------------|---------------|--------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------|---------------|---------|---------------|
| Element              | Concentration | Element                                                                              | Concentration | Element                                                                             | Concentration | Element | Concentration |
| Al                   | 0.01 mg/l     | Cr                                                                                   | 0.01 mg/l     | Ni                                                                                  | 0.01 mg/l     | U       | 0.01 mg/l     |
| As                   | 0.01 mg/l     | Co                                                                                   | 0.01 mg/l     | Se                                                                                  | 0.01 mg/l     | V       | 0.01 mg/l     |
| Ba                   | 0.01 mg/l     | Cu                                                                                   | 0.01 mg/l     | Ag                                                                                  | 0.01 mg/l     | Zn      | 0.01 mg/l     |
| Be                   | 0.01 mg/l     | Pb                                                                                   | 0.01 mg/l     | Tl                                                                                  | 0.01 mg/l     |         |               |
| Cd                   | 0.01 mg/l     | Mn                                                                                   | 0.01 mg/l     | Th                                                                                  | 0.01 mg/l     |         |               |

| QC-MS<br>18 elements |               | Reference:<br>MSBEDC.10.2N.L1<br><br>Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> |               |
|----------------------|---------------|----------------------------------------------------------------------------------------|---------------|
| Element              | Concentration | Element                                                                                | Concentration |
| Al                   | 10 mg/l       | Mn                                                                                     | 10 mg/l       |
| As                   | 10 mg/l       | Ni                                                                                     | 10 mg/l       |
| Ba                   | 10 mg/l       | Se                                                                                     | 10 mg/l       |
| Be                   | 10 mg/l       | Ag                                                                                     | 10 mg/l       |
| Cd                   | 10 mg/l       | Tl                                                                                     | 10 mg/l       |
| Cr                   | 10 mg/l       | Th                                                                                     | 10 mg/l       |
| Co                   | 10 mg/l       | U                                                                                      | 10 mg/l       |
| Cu                   | 10 mg/l       | V                                                                                      | 10 mg/l       |
| Pb                   | 10 mg/l       | Zn                                                                                     | 10 mg/l       |

| QC-MS Multi<br>8 elements |               | Reference:<br>MSBD60.10.2N01FL1<br><br>Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> /0.1% HF |               |
|---------------------------|---------------|---------------------------------------------------------------------------------------------------|---------------|
| Element                   | Concentration | Element                                                                                           | Concentration |
| Sb                        | 10 mg/l       | Te                                                                                                | 10 mg/l       |
| Ge                        | 10 mg/l       | Sn                                                                                                | 10 mg/l       |
| Hf                        | 10 mg/l       | W                                                                                                 | 10 mg/l       |
| Mo                        | 10 mg/l       | Zr                                                                                                | 10 mg/l       |



\* Custom Standards for ICP & ICP-MS are available upon request.

Internal Standard for ICP-MS

| TYPE NAME                   | ELEMENT | MATRIX                        | CONCENTRATION | VOLUME | UNIT | REFERENCE       |
|-----------------------------|---------|-------------------------------|---------------|--------|------|-----------------|
| Internal Standard Solumass™ | Be      | in 2 %HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | MS6925.1K.2N.L1 |
| Internal Standard Solumass™ | Bi      | in 2 %HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | MS3926.K1.2N.L1 |
| Internal Standard Solumass™ | Cs      | in 2 %HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | MSE11C.K1.2N.L1 |
| Internal Standard Solumass™ | Eu      | in 2 %HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | MS6994.K1.2N.L1 |
| Internal Standard Solumass™ | Ga      | in 2 %HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | MS59E8.1K.2N.L1 |
| Internal Standard Solumass™ | Ge      | in 2 %HNO <sub>3</sub> /HF tr | 100 mg/l      | 100    | ml   | MS69E9.K1.2N.L1 |
| Internal Standard Solumass™ | Au      | in 2% HCl                     | 100 mg/l      | 100    | ml   | MSA965.K1.2C.L1 |
| Internal Standard Solumass™ | Ho      | in 2 %HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | MSB0BE.K1.2N.L1 |
| Internal Standard Solumass™ | In      | in 2 %HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | MS8C82.K1.2N.L1 |
| Internal Standard Solumass™ | Pr      | in 2 %HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | MSDE98.K1.2N.L1 |
| Internal Standard Solumass™ | Re      | in 2 %HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | MSAAE4.K1.2N.L1 |
| Internal Standard Solumass™ | Rh      | in 2% HCl                     | 100 mg/l      | 100    | ml   | MS06E6.K1.2C.L1 |
| Internal Standard Solumass™ | Sc      | in 2 %HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | MSE2D9.K1.2N.L1 |
| Internal Standard Solumass™ | Tb      | in 2 %HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | MSDE6D.K1.2N.L1 |
| Internal Standard Solumass™ | Th      | in 2 %HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | MS066E.K1.2N.L1 |
| Internal Standard Solumass™ | Yb      | in 2 %HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | MS1837.K1.2N.L1 |
| Internal Standard Solumass™ | Y       | in 2 %HNO <sub>3</sub>        | 100 mg/l      | 100    | ml   | MS1F40.K1.2N.L1 |

| ICP-MS Internal Standard 2 - 8 components |               | Reference: 7556.10.N.L1         |               |
|-------------------------------------------|---------------|---------------------------------|---------------|
|                                           |               | Volume: 100 ml                  |               |
|                                           |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                   | Concentration | Element                         | Concentration |
| Bi                                        | 10 mg/l       | Sc                              | 10 mg/l       |
| Ho                                        | 10 mg/l       | Tb                              | 10 mg/l       |
| In                                        | 10 mg/l       | Y                               | 10 mg/l       |
| 6Li                                       | 10 mg/l       | Rh                              | 10 mg/l       |

| ICP-MS Alternate Internal Standard 1 - 7 components |               | Reference: B55E.10.N.L1               |               |
|-----------------------------------------------------|---------------|---------------------------------------|---------------|
|                                                     |               | Volume: 100 ml                        |               |
|                                                     |               | Matrix: in 5 % HNO <sub>3</sub> (v/v) |               |
| Element                                             | Concentration | Element                               | Concentration |
| 6Li                                                 | 10 mg/l       | In                                    | 10 mg/l       |
| Sc                                                  | 10 mg/l       | Tb                                    | 10 mg/l       |
| Ge                                                  | 10 mg/l       | Bi                                    | 10 mg/l       |
| Y                                                   | 10 mg/l       |                                       |               |

| ICP-MS Alternate Internal Standard 2 - 8 components |               | Reference: E738.K1.10N.L1              |               |
|-----------------------------------------------------|---------------|----------------------------------------|---------------|
|                                                     |               | Volume: 100 ml                         |               |
|                                                     |               | Matrix: in 10 % HNO <sub>3</sub> (v/v) |               |
| Element                                             | Concentration | Element                                | Concentration |
| Bi                                                  | 100 mg/l      | Lu                                     | 100 mg/l      |
| Ge                                                  | 100 mg/l      | Rh                                     | 100 mg/l      |
| In                                                  | 100 mg/l      | Sc                                     | 100 mg/l      |
| 6Li                                                 | 100 mg/l      | Tb                                     | 100 mg/l      |

# Instrument Check Standards

## Instrument Check Standards

| Spiking Standard 1R - 4 components |               | Reference: D543.K4.5N.L5                |               |
|------------------------------------|---------------|-----------------------------------------|---------------|
|                                    |               | Volume: 500 ml                          |               |
|                                    |               | Matrix: in 5 % HNO <sub>3</sub> /tr. HF |               |
| Element                            | Concentration | Element                                 | Concentration |
| Si                                 | 2000 mg/l     | P                                       | 400 mg/l      |
| B                                  | 400 mg/l      | Mo                                      | 200 mg/l      |

| Spiking Standard 2R - 4 components |               | Reference: 91C8.10K.2N.L1       |               |
|------------------------------------|---------------|---------------------------------|---------------|
|                                    |               | Volume: 100 ml                  |               |
|                                    |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                            | Concentration | Element                         | Concentration |
| Ca                                 | 10 000 mg/l   | K                               | 10 000 mg/l   |
| Mg                                 | 10 000 mg/l   | Na                              | 10 000 mg/l   |

| Spiking Standard 4R - Sb |               | Reference: 1ED8.K2.2N.L1        |  |
|--------------------------|---------------|---------------------------------|--|
|                          |               | Volume: 100 ml                  |  |
|                          |               | Matrix: in 2 % HNO <sub>3</sub> |  |
| Element                  | Concentration |                                 |  |
| Sb                       | 200 mg/l      |                                 |  |

| Spiking Standard 5R - 5 components |               | Reference: F373.K2.5N.L1        |               |
|------------------------------------|---------------|---------------------------------|---------------|
|                                    |               | Volume: 100 ml                  |               |
|                                    |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                            | Concentration | Element                         | Concentration |
| Se                                 | 400 mg/l      | Pb                              | 200 mg/l      |
| Tl                                 | 400 mg/l      | Cd                              | 100 mg/l      |
| As                                 | 200 mg/l      |                                 |               |

| Spiking Standard 3 - 12 components |               | Reference: 4554.50.5N.L1        |               |
|------------------------------------|---------------|---------------------------------|---------------|
|                                    |               | Volume: 100 ml                  |               |
|                                    |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                            | Concentration | Element                         | Concentration |
| Al                                 | 2000 mg/l     | V                               | 500 mg/l      |
| Ba                                 | 2000 mg/l     | Zn                              | 500 mg/l      |
| Fe                                 | 1000 mg/l     | Cu                              | 250 mg/l      |
| Co                                 | 500 mg/l      | Cr                              | 200 mg/l      |
| Mn                                 | 500 mg/l      | Be                              | 50 mg/l       |
| Ni                                 | 500 mg/l      | Ag                              | 50 mg/l       |

| Instrument Check Standard 1 - 9 components |               | Reference: 9EF9.K1.2N.L1        |               |
|--------------------------------------------|---------------|---------------------------------|---------------|
|                                            |               | Volume: 100 ml                  |               |
|                                            |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                    | Concentration | Element                         | Concentration |
| P                                          | 1000 mg/l     | Ba                              | 10 mg/l       |
| Al                                         | 100 mg/l      | Be                              | 10 mg/l       |
| B                                          | 100 mg/l      | Ca                              | 10 mg/l       |
| Ni                                         | 100 mg/l      | Sc                              | 10 mg/l       |
| Zn                                         | 100 mg/l      |                                 |               |

| Instrument Check Standard 2 - 7 components |               | Reference: 4855.50.2N.L1        |               |
|--------------------------------------------|---------------|---------------------------------|---------------|
|                                            |               | Volume: 100 ml                  |               |
|                                            |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                    | Concentration | Element                         | Concentration |
| Ba                                         | 50 mg/l       | Ni                              | 20 mg/l       |
| Be                                         | 20 mg/l       | Sc                              | 20 mg/l       |
| La                                         | 20 mg/l       | Zn                              | 20 mg/l       |
| Mn                                         | 20 mg/l       |                                 |               |

| Instrument Check Standard 3 - 11 components |               | Reference: 198A.20.2N.L1                |               |
|---------------------------------------------|---------------|-----------------------------------------|---------------|
|                                             |               | Volume: 100 ml                          |               |
|                                             |               | Matrix: in 2 % HNO <sub>3</sub> /tr. HF |               |
| Element                                     | Concentration | Element                                 | Concentration |
| P                                           | 100 mg/l      | Mn                                      | 20 mg/l       |
| K                                           | 100 mg/l      | Mo                                      | 20 mg/l       |
| S                                           | 100 mg/l      | Ni                                      | 20 mg/l       |
| As                                          | 20 mg/l       | Sc                                      | 20 mg/l       |
| La                                          | 20 mg/l       | Na                                      | 20 mg/l       |
| Li                                          | 20 mg/l       |                                         |               |



\* Custom Standards for ICP & ICP-MS are available upon request.

| Instrument Check Standard 4 - 12 components |               | Reference: 735FK1.2N.L1         |               |
|---------------------------------------------|---------------|---------------------------------|---------------|
|                                             |               | Volume: 100 ml                  |               |
|                                             |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                     | Concentration | Element                         | Concentration |
| K                                           | 500 mg/l      | Mn                              | 100 mg/l      |
| Al                                          | 100 mg/l      | Ni                              | 100 mg/l      |
| As                                          | 100 mg/l      | P                               | 100 mg/l      |
| Ba                                          | 100 mg/l      | Sc                              | 100 mg/l      |
| Cu                                          | 100 mg/l      | Na                              | 100 mg/l      |
| Pb                                          | 100 mg/l      | Zn                              | 100 mg/l      |

| Instrument Check Standard 5 - 15 components |               | Reference: 6C97.K1.2N.L1        |               |
|---------------------------------------------|---------------|---------------------------------|---------------|
|                                             |               | Volume: 100 ml                  |               |
|                                             |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                     | Concentration | Element                         | Concentration |
| Y                                           | 600 mg/l      | Pb                              | 100 mg/l      |
| Al                                          | 100 mg/l      | Mg                              | 100 mg/l      |
| As                                          | 100 mg/l      | Mn                              | 100 mg/l      |
| Cd                                          | 100 mg/l      | Ni                              | 100 mg/l      |
| Cr                                          | 100 mg/l      | K                               | 100 mg/l      |
| Co                                          | 100 mg/l      | Na                              | 100 mg/l      |
| Cu                                          | 100 mg/l      | Zn                              | 100 mg/l      |
| Fe                                          | 100 mg/l      |                                 |               |

| Instrument Check Standard - 9 components |               | Reference: A479.50.2N.L1        |               | Reference: A479.50.2N.L5        |               |
|------------------------------------------|---------------|---------------------------------|---------------|---------------------------------|---------------|
|                                          |               | Volume: 100 ml                  |               | Volume: 500 ml                  |               |
|                                          |               | Matrix: in 2 % HNO <sub>3</sub> |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                  | Concentration | Element                         | Concentration | Element                         | Concentration |
| Al                                       | 50 mg/l       | Co                              | 50 mg/l       | P                               | 50 mg/l       |
| As                                       | 50 mg/l       | Cu                              | 50 mg/l       | K                               | 50 mg/l       |
| Cr                                       | 50 mg/l       | Pb                              | 50 mg/l       | Na                              | 50 mg/l       |

| Instrument Check Standard 7 - 7 components |               | Reference: AAB1.50.2N.L1        |               |
|--------------------------------------------|---------------|---------------------------------|---------------|
|                                            |               | Volume: 100 ml                  |               |
|                                            |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                    | Concentration | Element                         | Concentration |
| K                                          | 500 mg/l      | Cu                              | 50 mg/l       |
| Al                                         | 50 mg/l       | Mn                              | 50 mg/l       |
| Ba                                         | 50 mg/l       | Zn                              | 50 mg/l       |
| Cd                                         | 50 mg/l       |                                 |               |

| Instrument Check Standard - 12 components |               | Reference: 8636.10.2N.L1        |               |
|-------------------------------------------|---------------|---------------------------------|---------------|
|                                           |               | Volume: 100 ml                  |               |
|                                           |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                   | Concentration | Element                         | Concentration |
| K                                         | 50 mg/l       | Ni                              | 10 mg/l       |
| Al                                        | 10 mg/l       | P                               | 10 mg/l       |
| As                                        | 10 mg/l       | Pb                              | 10 mg/l       |
| Cu                                        | 10 mg/l       | Sc                              | 10 mg/l       |
| Mn                                        | 10 mg/l       | Zn                              | 10 mg/l       |
| Na                                        | 10 mg/l       | Ba                              | 1 mg/l        |

### Quantitation Detection Limit Standard

| Contract Required Detection Limit Standard - 9 components |               | Reference: 96D3.K2.5N.L1        |               |
|-----------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                           |               | Volume: 100 ml                  |               |
|                                                           |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                   | Concentration | Element                         | Concentration |
| Co                                                        | 1000 mg/l     | Mn                              | 300 mg/l      |
| V                                                         | 1000 mg/l     | Ag                              | 200 mg/l      |
| Ni                                                        | 800 mg/l      | Cr                              | 200 mg/l      |
| Cu                                                        | 500 mg/l      | Be                              | 100 mg/l      |
| Zn                                                        | 400 mg/l      |                                 |               |

| Contract Required Detection Limit Standard - 5 components |               | Reference: 922B.K1.5N.L1        |               |
|-----------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                           |               | Volume: 100 ml                  |               |
|                                                           |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                   | Concentration | Element                         | Concentration |
| As                                                        | 100 mg/l      | Se                              | 50 mg/l       |
| Tl                                                        | 100 mg/l      | Pb                              | 30 mg/l       |
| Cd                                                        | 50 mg/l       |                                 |               |



| Contract Required<br>Detection Limit Standard<br>for CLP - 23 components |               | Reference: EC46.1.2N.L1         |               |
|--------------------------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                                          |               | Volume: 100 ml                  |               |
|                                                                          |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                                                  | Concentration | Element                         | Concentration |
| Ca                                                                       | 500 mg/l      | Ni                              | 4 mg/l        |
| Mg                                                                       | 500 mg/l      | Se                              | 3.5 mg/l      |
| Na                                                                       | 500 mg/l      | Tl                              | 2.5 mg/l      |
| K                                                                        | 500 mg/l      | Cu                              | 2.5 mg/l      |
| Al                                                                       | 20 mg/l       | As                              | 1.5 mg/l      |
| Ba                                                                       | 20 mg/l       | Mn                              | 1.5 mg/l      |
| Fe                                                                       | 10 mg/l       | Ag                              | 1 mg/l        |
| Zn                                                                       | 6 mg/l        | Pb                              | 1 mg/l        |
| Li                                                                       | 5 mg/l        | Cr                              | 1 mg/l        |
| Co                                                                       | 5 mg/l        | Be                              | 0.5 mg/l      |
| Sr                                                                       | 5 mg/l        | Cd                              | 0.5 mg/l      |
| V                                                                        | 5 mg/l        |                                 |               |

| ICP Contract Required<br>Detection Limit<br>Standard 2 for CLP -<br>16 components |               | Reference: 968A.20.2N.L1        |               |
|-----------------------------------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                                                   |               | Volume: 100 ml                  |               |
|                                                                                   |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                                                           | Concentration | Element                         | Concentration |
| Fe                                                                                | 200 mg/l      | Tl                              | 50 mg/l       |
| Sb                                                                                | 120 mg/l      | Mn                              | 30 mg/l       |
| Zn                                                                                | 120 mg/l      | As                              | 20 mg/l       |
| Co                                                                                | 100 mg/l      | Cr                              | 20 mg/l       |
| V                                                                                 | 100 mg/l      | Pb                              | 20 mg/l       |
| Ni                                                                                | 80 mg/l       | Ag                              | 20 mg/l       |
| Se                                                                                | 70 mg/l       | Be                              | 10 mg/l       |
| Cu                                                                                | 50 mg/l       | Cd                              | 10 mg/l       |

| ICP-MS Contract<br>Required Detection<br>Limit Standard 2 -<br>22 components |               | Reference: 9781.2.5NTFL1                                |               |
|------------------------------------------------------------------------------|---------------|---------------------------------------------------------|---------------|
|                                                                              |               | Volume: 100 ml                                          |               |
|                                                                              |               | Matrix: in 5 % HNO <sub>3</sub> /<br>tr.HF/tr. Tart. Ac |               |
| Element                                                                      | Concentration | Element                                                 | Concentration |
| Ca                                                                           | 1000 mg/l     | Cu                                                      | 4 mg/l        |
| Mg                                                                           | 1000 mg/l     | Zn                                                      | 4 mg/l        |
| K                                                                            | 1000 mg/l     | As                                                      | 2 mg/l        |
| Na                                                                           | 1000 mg/l     | Be                                                      | 2 mg/l        |
| Fe                                                                           | 400 mg/l      | Cd                                                      | 2 mg/l        |
| Al                                                                           | 40 mg/l       | Co                                                      | 2 mg/l        |
| Ba                                                                           | 20 mg/l       | Pb                                                      | 2 mg/l        |
| Se                                                                           | 10 mg/l       | Mn                                                      | 2 mg/l        |
| V                                                                            | 10 mg/l       | Ni                                                      | 2 mg/l        |
| Sb                                                                           | 4 mg/l        | Ag                                                      | 2 mg/l        |
| Cr                                                                           | 4 mg/l        | Tl                                                      | 2 mg/l        |

| Contract Required<br>Detection Limit Standard<br>for CLP - 16 components |               | Reference: B752.1.2N.L1         |               |
|--------------------------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                                          |               | Volume: 100 ml                  |               |
|                                                                          |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                                                  | Concentration | Element                         | Concentration |
| Ba                                                                       | 10 mg/l       | Be                              | 1 mg/l        |
| Se                                                                       | 5 mg/l        | Cd                              | 1 mg/l        |
| Cr                                                                       | 2 mg/l        | Co                              | 1 mg/l        |
| Cu                                                                       | 2 mg/l        | Mn                              | 1 mg/l        |
| Sb                                                                       | 2 mg/l        | Ni                              | 1 mg/l        |
| Zn                                                                       | 2 mg/l        | Pb                              | 1 mg/l        |
| Ag                                                                       | 1 mg/l        | Tl                              | 1 mg/l        |
| As                                                                       | 1 mg/l        | V                               | 1 mg/l        |

| ICP Contract Required<br>Detection Limit<br>Standard 2A -<br>6 components |               | Reference: CBB.D.K2.10N.L1      |               |
|---------------------------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                                           |               | Volume: 100 ml                  |               |
|                                                                           |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                                                   | Concentration | Element                         | Concentration |
| Ca                                                                        | 5000 mg/l     | Na                              | 5000 mg/l     |
| Mg                                                                        | 5000 mg/l     | Al                              | 200 mg/l      |
| K                                                                         | 5000 mg/l     | Ba                              | 200 mg/l      |

| Contract Required<br>Detection Limits<br>(CRDL) |               | Reference: 8005.20.5N.L1        |               |
|-------------------------------------------------|---------------|---------------------------------|---------------|
|                                                 |               | Volume: 100 ml                  |               |
|                                                 |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                         | Concentration | Element                         | Concentration |
| Sb                                              | 120 mg/l      | As                              | 20 mg/l       |
| Co                                              | 100 mg/l      | Cr                              | 20 mg/l       |
| V                                               | 100 mg/l      | Tl                              | 20 mg/l       |
| Ni                                              | 80 mg/l       | Be                              | 10 mg/l       |
| Cu                                              | 50 mg/l       | Cd                              | 10 mg/l       |
| Zn                                              | 40 mg/l       | Se                              | 10 mg/l       |
| Mn                                              | 30 mg/l       | Pb                              | 6 mg/l        |
| Ag                                              | 20 mg/l       |                                 |               |

| Contract Required<br>Quantitation Limit<br>Standard for CLP - MS -<br>17 components |               | Reference: 1F00.1.2N.L1         |               |
|-------------------------------------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                                                     |               | Volume: 100 ml                  |               |
|                                                                                     |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                                                             | Concentration | Element                         | Concentration |
| Al                                                                                  | 30 mg/l       | Cd                              | 1 mg/l        |
| Ba                                                                                  | 10 mg/l       | Ni                              | 1 mg/l        |
| Se                                                                                  | 5 mg/l        | Pb                              | 1 mg/l        |
| Cr                                                                                  | 2 mg/l        | Tl                              | 1 mg/l        |
| Cu                                                                                  | 2 mg/l        | V                               | 1 mg/l        |
| Sb                                                                                  | 2 mg/l        | Zn                              | 1 mg/l        |
| Ag                                                                                  | 1 mg/l        | Co                              | 0.5 mg/l      |
| As                                                                                  | 1 mg/l        | Mn                              | 0.5 mg/l      |
| Be                                                                                  | 1 mg/l        |                                 |               |



\* Custom Standards for ICP & ICP-MS are available upon request.

| ICP-MS Contract<br>Required Detection<br>Limit Standard 1 -<br>22 components |               | <b>Reference:</b> A536.1.5NT.L1                                |               |
|------------------------------------------------------------------------------|---------------|----------------------------------------------------------------|---------------|
|                                                                              |               | <b>Volume:</b> 100 ml                                          |               |
|                                                                              |               | <b>Matrix:</b> in 5 % HNO <sub>3</sub> /<br>tr.HF/tr. Tart. Ac |               |
| Element                                                                      | Concentration | Element                                                        | Concentration |
| Ca                                                                           | 500 mg/l      | Cu                                                             | 2.5 mg/l      |
| K                                                                            | 500 mg/l      | Zn                                                             | 2 mg/l        |
| Mg                                                                           | 500 mg/l      | Mn                                                             | 1.5 mg/l      |
| Na                                                                           | 500 mg/l      | Ag                                                             | 1 mg/l        |
| Al                                                                           | 20 mg/l       | As                                                             | 1 mg/l        |
| Ba                                                                           | 20 mg/l       | Cr                                                             | 1 mg/l        |
| Fe                                                                           | 10 mg/l       | Tl                                                             | 1 mg/l        |
| Sb                                                                           | 6 mg/l        | Be                                                             | 0.5 mg/l      |
| Co                                                                           | 5 mg/l        | Cd                                                             | 0.5 mg/l      |
| V                                                                            | 5 mg/l        | Se                                                             | 0.5 mg/l      |
| Ni                                                                           | 4 mg/l        | Pb                                                             | 0.3 mg/l      |

Interference Check

| Interference Check<br>Standard 1 -<br>17 components |               | <b>Reference:</b> 8F59.K3.5N.L1        |               |
|-----------------------------------------------------|---------------|----------------------------------------|---------------|
|                                                     |               | <b>Volume:</b> 100 ml                  |               |
|                                                     |               | <b>Matrix:</b> in 5 % HNO <sub>3</sub> |               |
| Element                                             | Concentration | Element                                | Concentration |
| K                                                   | 20000 mg/l    | Cu                                     | 300 mg/l      |
| As                                                  | 1000 mg/l     | Ni                                     | 300 mg/l      |
| Pb                                                  | 1000 mg/l     | Ag                                     | 300 mg/l      |
| Tl                                                  | 1000 mg/l     | V                                      | 300 mg/l      |
| Se                                                  | 500 mg/l      | Zn                                     | 300 mg/l      |
| Ba                                                  | 300 mg/l      | Mn                                     | 200 mg/l      |
| Cd                                                  | 300 mg/l      | Be                                     | 100 mg/l      |
| Cr                                                  | 300 mg/l      | Hg                                     | 50 mg/l       |
| Co                                                  | 300 mg/l      |                                        |               |

| Interference Check<br>Standard 2 -<br>4 components |               | <b>Reference:</b> 4AF7.K5.5N.L1        |               |
|----------------------------------------------------|---------------|----------------------------------------|---------------|
|                                                    |               | <b>Volume:</b> 100 ml                  |               |
|                                                    |               | <b>Matrix:</b> in 5 % HNO <sub>3</sub> |               |
| Element                                            | Concentration | Element                                | Concentration |
| Tl                                                 | 1000 mg/l     | Mo                                     | 300 mg/l      |
| B                                                  | 500 mg/l      | Si                                     | 200 mg/l      |

| Interference Check<br>Standard 3 - Sb |               | <b>Reference:</b> 1ED8.K5.2N.L1        |  |
|---------------------------------------|---------------|----------------------------------------|--|
|                                       |               | <b>Volume:</b> 100 ml                  |  |
|                                       |               | <b>Matrix:</b> in 2 % HNO <sub>3</sub> |  |
| Element                               | Concentration |                                        |  |
| Sb                                    | 500 mg/l      |                                        |  |

Initial Calibration Verification Standards

| ICP-MS Initial<br>Calibration Verification<br>Standard 3 -<br>22 components |               | <b>Reference:</b> 2EE1.10.5N.L5             |               |
|-----------------------------------------------------------------------------|---------------|---------------------------------------------|---------------|
|                                                                             |               | <b>Volume:</b> 500 ml                       |               |
|                                                                             |               | <b>Matrix:</b> in 5 %HNO3/<br>tr. Tart. Ac. |               |
| Element                                                                     | Concentration | Element                                     | Concentration |
| Ca                                                                          | 100 mg/l      | Cd                                          | 10 mg/l       |
| Fe                                                                          | 100 mg/l      | Cr                                          | 10 mg/l       |
| Mg                                                                          | 100 mg/l      | Co                                          | 10 mg/l       |
| K                                                                           | 100 mg/l      | Cu                                          | 10 mg/l       |
| Na                                                                          | 100 mg/l      | Pb                                          | 10 mg/l       |
| Se                                                                          | 50 mg/l       | Mn                                          | 10 mg/l       |
| Al                                                                          | 10 mg/l       | Ni                                          | 10 mg/l       |
| Sb                                                                          | 10 mg/l       | Ag                                          | 10 mg/l       |
| As                                                                          | 10 mg/l       | Tl                                          | 10 mg/l       |
| Ba                                                                          | 10 mg/l       | V                                           | 10 mg/l       |
| Be                                                                          | 10 mg/l       | Zn                                          | 10 mg/l       |

# Tuning Solution

| Tuning Solution<br>9 elements |               | <b>Reference:</b><br>MS8AC1.10.2N.L1<br><b>Volume:</b> 100 ml<br><b>Matrix:</b> in 2 % HNO <sub>3</sub> |               |
|-------------------------------|---------------|---------------------------------------------------------------------------------------------------------|---------------|
| Element                       | Concentration | Element                                                                                                 | Concentration |
| Ba                            | 10 mg/l       | Pb                                                                                                      | 10 mg/l       |
| Be                            | 10 mg/l       | Mg                                                                                                      | 10 mg/l       |
| Ce                            | 10 mg/l       | Rh                                                                                                      | 10 mg/l       |
| Co                            | 10 mg/l       | U                                                                                                       | 10 mg/l       |
| In                            | 10 mg/l       |                                                                                                         |               |

| Tuning Solution<br>5 elements |               | <b>Reference:</b><br>MS448B.10.2N.L1<br><b>Volume:</b> 100 ml<br><b>Matrix:</b> in 2 % HNO <sub>3</sub> |               |
|-------------------------------|---------------|---------------------------------------------------------------------------------------------------------|---------------|
| Element                       | Concentration | Element                                                                                                 | Concentration |
| Be                            | 10 mg/l       | Pb                                                                                                      | 10 mg/l       |
| Co                            | 10 mg/l       | Mg                                                                                                      | 10 mg/l       |
| In                            | 10 mg/l       |                                                                                                         |               |

| Tuning Solution<br>4 elements |               | <b>Reference:</b> 5EAF.10.2N.L1<br><b>Volume:</b> 100 ml<br><b>Matrix:</b> in 2 % HNO <sub>3</sub> |               |
|-------------------------------|---------------|----------------------------------------------------------------------------------------------------|---------------|
| Element                       | Concentration | Element                                                                                            | Concentration |
| Co                            | 10 mg/l       | Li                                                                                                 | 10 mg/l       |
| In                            | 10 mg/l       | Tl                                                                                                 | 10 mg/l       |

| ICP-MS Tuning<br>Solution 3 -<br>10 components |               | <b>Reference:</b><br>0E83.10.2N.L1<br><b>Volume:</b> 100 ml<br><b>Matrix:</b> in 2 % HNO <sub>3</sub> |               |
|------------------------------------------------|---------------|-------------------------------------------------------------------------------------------------------|---------------|
| Element                                        | Concentration | Element                                                                                               | Concentration |
| Ba                                             | 10 mg/l       | In                                                                                                    | 1 mg/l        |
| Be                                             | 1 mg/l        | Mg                                                                                                    | 1 mg/l        |
| Ce                                             | 1 mg/l        | Pb                                                                                                    | 1 mg/l        |
| Co                                             | 1 mg/l        | Th                                                                                                    | 1 mg/l        |
| Fe                                             | 1 mg/l        | U                                                                                                     | 1 mg/l        |

| Tuning Solution<br>8 elements |               | <b>Reference:</b><br>MSF5AA.10.2N.L1<br><b>Volume:</b> 100 ml<br><b>Matrix:</b> in 2 % HNO <sub>3</sub> |               |
|-------------------------------|---------------|---------------------------------------------------------------------------------------------------------|---------------|
| Element                       | Concentration | Element                                                                                                 | Concentration |
| Ba                            | 10 mg/l       | Li                                                                                                      | 10 mg/l       |
| Be                            | 10 mg/l       | Mg                                                                                                      | 10 mg/l       |
| Cu                            | 10 mg/l       | Tl                                                                                                      | 10 mg/l       |
| In                            | 10 mg/l       | U                                                                                                       | 10 mg/l       |

| Tuning Solution<br>4 elements |               | <b>Reference:</b><br>MS4C39.10.2N.L1<br><b>Volume:</b> 100 ml<br><b>Matrix:</b> in 2 % HNO <sub>3</sub> |               |
|-------------------------------|---------------|---------------------------------------------------------------------------------------------------------|---------------|
| Element                       | Concentration | Element                                                                                                 | Concentration |
| Ce                            | 10 mg/l       | Tl                                                                                                      | 10 mg/l       |
| Li                            | 10 mg/l       | Y                                                                                                       | 10 mg/l       |

| ICP-MS Tuning<br>Solution - Tune B ICAP -<br>7 components |               | <b>Reference:</b><br>161D.1.2N05C.L1<br><b>Volume:</b> 100 ml<br><b>Matrix:</b> in 2 % HNO <sub>3</sub> |               |
|-----------------------------------------------------------|---------------|---------------------------------------------------------------------------------------------------------|---------------|
| Element                                                   | Concentration | Element                                                                                                 | Concentration |
| Ba                                                        | 1 mg/l        | In                                                                                                      | 1 mg/l        |
| Bi                                                        | 1 mg/l        | Li                                                                                                      | 1 mg/l        |
| Ce                                                        | 1 mg/l        | U                                                                                                       | 1 mg/l        |
| Co                                                        | 1 mg/l        |                                                                                                         |               |

| ICP-MS Tuning<br>Solution 4 -<br>4 components |               | <b>Reference:</b> 5EAF.10.2N.L1<br><b>Volume:</b> 100 ml<br><b>Matrix:</b> in 2 % HNO <sub>3</sub> |               |
|-----------------------------------------------|---------------|----------------------------------------------------------------------------------------------------|---------------|
| Element                                       | Concentration | Element                                                                                            | Concentration |
| Co                                            | 10 mg/l       | Li                                                                                                 | 10 mg/l       |
| In                                            | 10 mg/l       | Tl                                                                                                 | 10 mg/l       |



\* Custom Standards for ICP & ICP-MS are available upon request.

Plasma Setup Solution

| Plasma Setup Solution<br>13 elements |               | <b>Reference:</b><br>MS9562.D01.05N.L5   |               |
|--------------------------------------|---------------|------------------------------------------|---------------|
|                                      |               | <b>Volume:</b> 100 ml                    |               |
|                                      |               | <b>Matrix:</b> in 0,5 % HNO <sub>3</sub> |               |
| Element                              | Concentration | Element                                  | Concentration |
| Al                                   | 0.01 mg/l     | In                                       | 0.01 mg/l     |
| B                                    | 0.01 mg/l     | Pb                                       | 0.01 mg/l     |
| Ba                                   | 0.01 mg/l     | Mg                                       | 0.01 mg/l     |
| Cd                                   | 0.01 mg/l     | Mn                                       | 0.01 mg/l     |
| Ce                                   | 0.01 mg/l     | Rh                                       | 0.01 mg/l     |
| Cr                                   | 0.01 mg/l     | Th                                       | 0.01 mg/l     |
| Cu                                   | 0.01 mg/l     |                                          |               |

# EPA and ISO Methods

## EPA Method 200.7

| EPA 200.7 - Mixed Calibration Standard 1 |               | Reference: 87EA.5.5N.L1         |               |
|------------------------------------------|---------------|---------------------------------|---------------|
|                                          |               | Volume: 100 ml                  |               |
|                                          |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                  | Concentration | Element                         | Concentration |
| As                                       | 100 mg/l      | Cd                              | 20 mg/l       |
| Ca                                       | 100 mg/l      | Cu                              | 20 mg/l       |
| Sb                                       | 50 mg/l       | Mn                              | 20 mg/l       |
| Se                                       | 50 mg/l       | Ba                              | 10 mg/l       |
| B                                        | 20 mg/l       | Ag                              | 5 mg/l        |

| EPA 200.7 - Mixed Calibration Standard 2 - 6 components |               | Reference: B306.K2.5N.L1        |               |
|---------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                         |               | Volume: 100 ml                  |               |
|                                                         |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                 | Concentration | Element                         | Concentration |
| K                                                       | 200 mg/l      | Ti                              | 100 mg/l      |
| Mo                                                      | 100 mg/l      | Li                              | 50 mg/l       |
| Na                                                      | 100 mg/l      | Sr                              | 10 mg/l       |

| EPA 200.7 - Mixed Calibration Standard 2 - 4 components |               | Reference: AE93.20.5N.L1        |               |
|---------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                         |               | Volume: 100 ml                  |               |
|                                                         |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                 | Concentration | Element                         | Concentration |
| P                                                       | 100 mg/l      | Co                              | 20 mg/l       |
| Ce                                                      | 20 mg/l       | V                               | 20 mg/l       |

| EPA 200.7 - Mixed Calibration Standard 4 - 5 components |               | Reference: 58DA.K1.5N.L1        |               |
|---------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                         |               | Volume: 100 ml                  |               |
|                                                         |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                 | Concentration | Element                         | Concentration |
| Al                                                      | 100 mg/l      | Zn                              | 50 mg/l       |
| Si                                                      | 100 mg/l      | Sn                              | 40 mg/l       |
| Cr                                                      | 50 mg/l       |                                 |               |

| EPA 200.7 - Mixed Calibration Standard 5 - 6 components |               | Reference: FE99.10.5N.L1        |               |
|---------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                         |               | Volume: 100 ml                  |               |
|                                                         |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                 | Concentration | Element                         | Concentration |
| Fe                                                      | 100 mg/l      | Tl                              | 50 mg/l       |
| Pb                                                      | 100 mg/l      | Ni                              | 20 mg/l       |
| Mg                                                      | 100 mg/l      | Be                              | 10 mg/l       |

| EPA 200.7 - Mixed Calibration Standard 6R - 5 components |               | Reference: 78DA.50.5NF.L1       |               |
|----------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                          |               | Volume: 100 ml                  |               |
|                                                          |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                  | Concentration | Element                         | Concentration |
| P                                                        | 200 mg/l      | Si                              | 100 mg/l      |
| Sn                                                       | 200 mg/l      | B                               | 50 mg/l       |
| Ti                                                       | 100 mg/l      |                                 |               |

| EPA 200.7 - Instrument Performance Check Standard 1 |               | Reference: 581A.2D5.5N.L1       |               |
|-----------------------------------------------------|---------------|---------------------------------|---------------|
|                                                     |               | Volume: 100 ml                  |               |
|                                                     |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                             | Concentration | Element                         | Concentration |
| K                                                   | 100 mg/l      | Fe                              | 20 mg/l       |
| P                                                   | 100 mg/l      | Pb                              | 20 mg/l       |
| Al                                                  | 20 mg/l       | Li                              | 20 mg/l       |
| As                                                  | 20 mg/l       | Mg                              | 20 mg/l       |
| Ba                                                  | 20 mg/l       | Mn                              | 20 mg/l       |
| Be                                                  | 20 mg/l       | Ni                              | 20 mg/l       |
| B                                                   | 20 mg/l       | Se                              | 20 mg/l       |
| Cd                                                  | 20 mg/l       | Na                              | 20 mg/l       |
| Ca                                                  | 20 mg/l       | Sr                              | 20 mg/l       |
| Ce                                                  | 20 mg/l       | Tl                              | 20 mg/l       |
| Cr                                                  | 20 mg/l       | V                               | 20 mg/l       |
| Co                                                  | 20 mg/l       | Zn                              | 20 mg/l       |
| Cu                                                  | 20 mg/l       | Ag                              | 2.5 mg/l      |

| EPA 200.7 - Instrument Performance Check Standard 2 - 5 components |               | Reference: A827.20.5N.L1        |               |
|--------------------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                                    |               | Volume: 100 ml                  |               |
|                                                                    |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                            | Concentration | Element                         | Concentration |
| Si                                                                 | 100 mg/l      | Sn                              | 20 mg/l       |
| Sb                                                                 | 20 mg/l       | Ti                              | 20 mg/l       |
| Mo                                                                 | 20 mg/l       |                                 |               |



\* Custom Standards for ICP & ICP-MS are available upon request.

| EPA 200.7 -<br>Laboratory Fortifying<br>Stock Solution -<br>25 components |               | Reference: 424E.2D5.5N.L1       |               |
|---------------------------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                                           |               | Volume: 100 ml                  |               |
|                                                                           |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                                   | Concentration | Element                         | Concentration |
| P                                                                         | 50 mg/l       | Se                              | 25 mg/l       |
| Al                                                                        | 25 mg/l       | Si                              | 25 mg/l       |
| Sb                                                                        | 25 mg/l       | Sr                              | 25 mg/l       |
| As                                                                        | 25 mg/l       | Tl                              | 25 mg/l       |
| Ba                                                                        | 25 mg/l       | Zn                              | 25 mg/l       |
| B                                                                         | 25 mg/l       | Cd                              | 10 mg/l       |
| Cr                                                                        | 25 mg/l       | Co                              | 10 mg/l       |
| Cu                                                                        | 25 mg/l       | Mo                              | 10 mg/l       |
| Fe                                                                        | 25 mg/l       | Sn                              | 10 mg/l       |
| Pb                                                                        | 25 mg/l       | V                               | 10 mg/l       |
| Li                                                                        | 25 mg/l       | Be                              | 5 mg/l        |
| Mn                                                                        | 25 mg/l       | Ag                              | 2.5 mg/l      |
| Ni                                                                        | 25 mg/l       |                                 |               |

| EPA 200.7 -<br>Instrument Fortifying<br>Standard for Water -<br>22 components |               | Reference: A816.7D5.5N.L1       |               |
|-------------------------------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                                               |               | Volume: 100 ml                  |               |
|                                                                               |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                                       | Concentration | Element                         | Concentration |
| K                                                                             | 500 mg/l      | Fe                              | 20 mg/l       |
| Al                                                                            | 20 mg/l       | Pb                              | 20 mg/l       |
| As                                                                            | 20 mg/l       | Li                              | 20 mg/l       |
| Ba                                                                            | 20 mg/l       | Mn                              | 20 mg/l       |
| Be                                                                            | 20 mg/l       | Ni                              | 20 mg/l       |
| B                                                                             | 20 mg/l       | P                               | 20 mg/l       |
| Cd                                                                            | 20 mg/l       | Se                              | 20 mg/l       |
| Ce                                                                            | 20 mg/l       | Tl                              | 20 mg/l       |
| Cr                                                                            | 20 mg/l       | V                               | 20 mg/l       |
| Co                                                                            | 20 mg/l       | Zn                              | 20 mg/l       |
| Cu                                                                            | 20 mg/l       | Ag                              | 7.5 mg/l      |

| EPA 200.7 - Laboratory<br>Performance Check<br>Standard -<br>29 components |               | Reference: 0F81.5.5N.L1         |               |
|----------------------------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                                            |               | Volume: 100 ml                  |               |
|                                                                            |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                                    | Concentration | Element                         | Concentration |
| P                                                                          | 100 mg/l      | Pb                              | 20 mg/l       |
| K                                                                          | 100 mg/l      | Li                              | 20 mg/l       |
| Si                                                                         | 100 mg/l      | Mg                              | 20 mg/l       |
| Al                                                                         | 20 mg/l       | Mn                              | 20 mg/l       |
| Sb                                                                         | 20 mg/l       | Mo                              | 20 mg/l       |
| As                                                                         | 20 mg/l       | Ni                              | 20 mg/l       |
| Ba                                                                         | 20 mg/l       | Se                              | 20 mg/l       |
| Be                                                                         | 20 mg/l       | Na                              | 20 mg/l       |
| B                                                                          | 20 mg/l       | Sr                              | 20 mg/l       |
| Cd                                                                         | 20 mg/l       | Tl                              | 20 mg/l       |
| Ca                                                                         | 20 mg/l       | Sn                              | 20 mg/l       |
| Cr                                                                         | 20 mg/l       | V                               | 20 mg/l       |
| Co                                                                         | 20 mg/l       | Zn                              | 20 mg/l       |
| Cu                                                                         | 20 mg/l       | Ag                              | 5 mg/l        |
| Fe                                                                         | 20 mg/l       |                                 |               |

| EPA 200.7 -<br>Instrument Fortifying<br>Standard -<br>26 components |               | Reference: C2E3.7D5.5N.L1       |               |
|---------------------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                                     |               | Volume: 100 ml                  |               |
|                                                                     |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                             | Concentration | Element                         | Concentration |
| K                                                                   | 500 mg/l      | Pb                              | 20 mg/l       |
| Al                                                                  | 20 mg/l       | Li                              | 20 mg/l       |
| As                                                                  | 20 mg/l       | Mg                              | 20 mg/l       |
| Ba                                                                  | 20 mg/l       | Mn                              | 20 mg/l       |
| Be                                                                  | 20 mg/l       | Ni                              | 20 mg/l       |
| B                                                                   | 20 mg/l       | P                               | 20 mg/l       |
| Cd                                                                  | 20 mg/l       | Se                              | 20 mg/l       |
| Ca                                                                  | 20 mg/l       | Na                              | 20 mg/l       |
| Ce                                                                  | 20 mg/l       | Sr                              | 20 mg/l       |
| Cr                                                                  | 20 mg/l       | Tl                              | 20 mg/l       |
| Co                                                                  | 20 mg/l       | V                               | 20 mg/l       |
| Cu                                                                  | 20 mg/l       | Zn                              | 20 mg/l       |
| Fe                                                                  | 20 mg/l       | Ag                              | 7.5 mg/l      |



| Instrument Fortifying Standard for Solids - 24 components |               | Reference: E5D1.7D5.5N.L1       |               |
|-----------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                           |               | Volume: 100 ml                  |               |
|                                                           |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                   | Concentration | Element                         | Concentration |
| K                                                         | 500 mg/l      | Li                              | 20 mg/l       |
| As                                                        | 20 mg/l       | Mg                              | 20 mg/l       |
| Ba                                                        | 20 mg/l       | Mn                              | 20 mg/l       |
| Be                                                        | 20 mg/l       | Ni                              | 20 mg/l       |
| B                                                         | 20 mg/l       | P                               | 20 mg/l       |
| Cd                                                        | 20 mg/l       | Se                              | 20 mg/l       |
| Ca                                                        | 20 mg/l       | Na                              | 20 mg/l       |
| Ce                                                        | 20 mg/l       | Sr                              | 20 mg/l       |
| Cr                                                        | 20 mg/l       | Tl                              | 20 mg/l       |
| Co                                                        | 20 mg/l       | V                               | 20 mg/l       |
| Cu                                                        | 20 mg/l       | Zn                              | 20 mg/l       |
| Pb                                                        | 20 mg/l       | Ag                              | 7.5 mg/l      |

| EPA 200.7 - Instrument Fortifying Standard - 5 components |               | Reference: 6C22.20.5N.L1        |               |
|-----------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                           |               | Volume: 100 ml                  |               |
|                                                           |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                   | Concentration | Element                         | Concentration |
| Sb                                                        | 20 mg/l       | Sn                              | 20 mg/l       |
| Mo                                                        | 20 mg/l       | Ti                              | 20 mg/l       |
| Si                                                        | 20 mg/l       |                                 |               |

| EPA 200.7 - SIC Solution 1 |               | Reference: B072.50.2N.L1                |  |
|----------------------------|---------------|-----------------------------------------|--|
|                            |               | Volume: 100 ml                          |  |
|                            |               | Matrix: in 2 % HNO <sub>3</sub> /tr. HF |  |
| Element                    | Concentration |                                         |  |
| Mo                         | 50 mg/l       |                                         |  |

| EPA 200.7 - SIC Solution 2 - 5 components |               | Reference: B8ED.10.2N.L1        |               |
|-------------------------------------------|---------------|---------------------------------|---------------|
|                                           |               | Volume: 100 ml                  |               |
|                                           |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                   | Concentration | Element                         | Concentration |
| Cu                                        | 40 mg/l       | Co                              | 10 mg/l       |
| Cr                                        | 20 mg/l       | V                               | 10 mg/l       |
| Mn                                        | 20 mg/l       |                                 |               |

| EPA 200.7 - SIC Solution 3 - 3 components |               | Reference: B229.30.2N.L1        |               |
|-------------------------------------------|---------------|---------------------------------|---------------|
|                                           |               | Volume: 100 ml                  |               |
|                                           |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                   | Concentration | Element                         | Concentration |
| Fe                                        | 150 mg/l      | Ni                              | 20 mg/l       |
| Al                                        | 30 mg/l       |                                 |               |

| 200.7 Calibration - CAL 2 - 6 components |               | Reference: B306.2K.5N.L1        |               |
|------------------------------------------|---------------|---------------------------------|---------------|
|                                          |               | Volume: 100 ml                  |               |
|                                          |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                  | Concentration | Element                         | Concentration |
| K                                        | 2000 mg/l     | Ti                              | 1000 mg/l     |
| Mo                                       | 1000 mg/l     | Li                              | 500 mg/l      |
| Na                                       | 1000 mg/l     | Sr                              | 100 mg/l      |

| 200.7 Calibration - CAL 1 - 10 components |               | Reference: AE81.50.5N.L1        |               |
|-------------------------------------------|---------------|---------------------------------|---------------|
|                                           |               | Volume: 100 ml                  |               |
|                                           |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                   | Concentration | Element                         | Concentration |
| As                                        | 1000 mg/l     | Cu                              | 200 mg/l      |
| Ca                                        | 1000 mg/l     | Mn                              | 200 mg/l      |
| Sb                                        | 500 mg/l      | Ba                              | 100 mg/l      |
| Se                                        | 500 mg/l      | B                               | 100 mg/l      |
| Cd                                        | 200 mg/l      | Ag                              | 50 mg/l       |



\* Custom Standards for ICP & ICP-MS are available upon request.

| 200.7 Calibration - CAL 3 - 4 components |               | Reference: AE93.K2.5N.L1        |               |
|------------------------------------------|---------------|---------------------------------|---------------|
|                                          |               | Volume: 100 ml                  |               |
|                                          |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                  | Concentration | Element                         | Concentration |
| P                                        | 1000 mg/l     | Co                              | 200 mg/l      |
| Ce                                       | 200 mg/l      | V                               | 200 mg/l      |

| 200.7 Calibration - CAL 4A- 4 components |               | Reference: B37B.1K.5N.L1        |               |
|------------------------------------------|---------------|---------------------------------|---------------|
|                                          |               | Volume: 100 ml                  |               |
|                                          |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                  | Concentration | Element                         | Concentration |
| Al                                       | 1000 mg/l     | Zn                              | 500 mg/l      |
| Cr                                       | 500 mg/l      | Hg                              | 200 mg/l      |

| 200.7 Calibration - CAL 4B- 2 components |               | Reference: E2EC.1K.2N.L1              |               |
|------------------------------------------|---------------|---------------------------------------|---------------|
|                                          |               | Volume: 100 ml                        |               |
|                                          |               | Matrix: in 2 %HNO <sub>3</sub> /tr.HF |               |
| Element                                  | Concentration | Element                               | Concentration |
| SiO <sub>2</sub>                         | 1000 mg/l     | Sn                                    | 400 mg/l      |

| 200.7 Quality Control Standard (QCS) - 3 components |               | Reference: 92F5.K1.5N.L1        |               |
|-----------------------------------------------------|---------------|---------------------------------|---------------|
|                                                     |               | Volume: 100 ml                  |               |
|                                                     |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                             | Concentration | Element                         | Concentration |
| Ce                                                  | 100 mg/l      | P                               | 100 mg/l      |
| Hg                                                  | 100 mg/l      |                                 |               |

EPA Method 200.8

| 200.8 Calibration CAL 3 - Hg |               | Reference: DOBC.1.5N.L1               |  |
|------------------------------|---------------|---------------------------------------|--|
|                              |               | Volume: 100 ml                        |  |
|                              |               | Matrix: in 5 % HNO <sub>3</sub> (v/v) |  |
| Element                      | Concentration |                                       |  |
| Hg                           | 1 mg/l        |                                       |  |

EPA Method 6010

| EPA 6010 - Laboratory Performance Check Standard - 30 components |               | Reference: 7CF2.5.5N.L1         |               |
|------------------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                                  |               | Volume: 100 ml                  |               |
|                                                                  |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                          | Concentration | Element                         | Concentration |
| P                                                                | 100 mg/l      | Pb                              | 20 mg/l       |
| K                                                                | 100 mg/l      | Li                              | 20 mg/l       |
| Si                                                               | 100 mg/l      | Mg                              | 20 mg/l       |
| Al                                                               | 20 mg/l       | Mn                              | 20 mg/l       |
| Sb                                                               | 20 mg/l       | Mo                              | 20 mg/l       |
| As                                                               | 20 mg/l       | Ni                              | 20 mg/l       |
| Ba                                                               | 20 mg/l       | Se                              | 20 mg/l       |
| Be                                                               | 20 mg/l       | Na                              | 20 mg/l       |
| B                                                                | 20 mg/l       | Sr                              | 20 mg/l       |
| Cd                                                               | 20 mg/l       | Tl                              | 20 mg/l       |
| Ca                                                               | 20 mg/l       | Sn                              | 20 mg/l       |
| Cr                                                               | 20 mg/l       | Ti                              | 20 mg/l       |
| Co                                                               | 20 mg/l       | V                               | 20 mg/l       |
| Cu                                                               | 20 mg/l       | Zn                              | 20 mg/l       |
| Fe                                                               | 20 mg/l       | Ag                              | 5 mg/l        |

| Multi element<br>Reference Solution 1 -<br>18 components |               | Reference: 9B99.10.5N.L1        |               |
|----------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                          |               | Volume: 100 ml                  |               |
|                                                          |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                  | Concentration | Element                         | Concentration |
| Al                                                       | 10 mg/l       | Mo                              | 10 mg/l       |
| Be                                                       | 10 mg/l       | Ni                              | 10 mg/l       |
| Bi                                                       | 10 mg/l       | Pb                              | 10 mg/l       |
| Cd                                                       | 10 mg/l       | Si                              | 10 mg/l       |
| Co                                                       | 10 mg/l       | Sr                              | 10 mg/l       |
| Cu                                                       | 10 mg/l       | V                               | 10 mg/l       |
| Fe                                                       | 10 mg/l       | W                               | 10 mg/l       |
| Li                                                       | 10 mg/l       | Zn                              | 10 mg/l       |
| Mn                                                       | 10 mg/l       | Zr                              | 10 mg/l       |

| Reagent Blank Solution:<br>Nitric Acid 1% | Reference: 842A.1K.N.L5 |
|-------------------------------------------|-------------------------|
|                                           | Volume: 500 ml          |

| Multi element<br>Reference Solution 2 -<br>5 components |               | Reference: 2014.10.5N.L1        |               |
|---------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                         |               | Volume: 100 ml                  |               |
|                                                         |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                 | Concentration | Element                         | Concentration |
| As                                                      | 10 mg/l       | Sn                              | 10 mg/l       |
| Sb                                                      | 10 mg/l       | Ti                              | 10 mg/l       |
| Se                                                      | 10 mg/l       |                                 |               |

| Multi element<br>Reference Solution 6 -<br>6 components |               | Reference: B488.10.1N.L1        |               |
|---------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                         |               | Volume: 100 ml                  |               |
|                                                         |               | Matrix: in 1 % HNO <sub>3</sub> |               |
| Element                                                 | Concentration | Element                         | Concentration |
| Ca                                                      | 10 mg/l       | K                               | 10 mg/l       |
| Mg                                                      | 10 mg/l       | S                               | 10 mg/l       |
| Na                                                      | 10 mg/l       | P                               | 10 mg/l       |

## USP 232

| Multi-element solution<br>according to USP 232<br>dietary supplements -<br>4 components |               | Reference: FDA4.15.7N.L1        |               |
|-----------------------------------------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                                                         |               | Volume: 100 ml                  |               |
|                                                                                         |               | Matrix: in 7 % HNO <sub>3</sub> |               |
| Element                                                                                 | Concentration | Element                         | Concentration |
| Cd                                                                                      | 5 mg/l        | As                              | 15 mg/l       |
| Pb                                                                                      | 10 mg/l       | Hg                              | 15 mg/l       |

| USP 232 Parenteral<br>Elemental Impurities -<br>8 components |               | Reference: 121E.1D5.7N.L1       |               |
|--------------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                              |               | Volume: 100 ml                  |               |
|                                                              |               | Matrix: in 7 % HNO <sub>3</sub> |               |
| Element                                                      | Concentration | Element                         | Concentration |
| Cd                                                           | 2.5 mg/l      | Mo                              | 10 mg/l       |
| Pb                                                           | 5 mg/l        | Ni                              | 50 mg/l       |
| As                                                           | 1.5 mg/l      | V                               | 10 mg/l       |
| Hg                                                           | 1.5 mg/l      | Cu                              | 100 mg/l      |

| ICP Multi-element<br>standard according to<br>USP 232 parenteral<br>dose - 6 components |               | Reference: 7F97.10.15C.L1 |               |
|-----------------------------------------------------------------------------------------|---------------|---------------------------|---------------|
|                                                                                         |               | Volume: 100 ml            |               |
|                                                                                         |               | Matrix: in 15 % HCl       |               |
| Element                                                                                 | Concentration | Element                   | Concentration |
| Ir                                                                                      | 10 mg/l       | Rh                        | 10 mg/l       |
| Pt                                                                                      | 10 mg/l       | Pd                        | 10 mg/l       |
| Os                                                                                      | 10 mg/l       | Ru                        | 10 mg/l       |

| USP 232 Parenteral<br>Elemental Impurities -<br>8 components |               | Reference: E13C.1D5.7N.L1       |               |
|--------------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                              |               | Volume: 100 ml                  |               |
|                                                              |               | Matrix: in 7 % HNO <sub>3</sub> |               |
| Element                                                      | Concentration | Element                         | Concentration |
| Cd                                                           | 25 mg/l       | Mo                              | 100 mg/l      |
| Pb                                                           | 5 mg/l        | Ni                              | 500 mg/l      |
| As                                                           | 1.5 mg/l      | V                               | 100 mg/l      |
| Hg                                                           | 15 mg/l       | Cu                              | 1000 mg/l     |

| USP 232 Parenteral<br>Elemental Impurities -<br>6 components |               | Reference: 7F97.K1.15C.L1 |               |
|--------------------------------------------------------------|---------------|---------------------------|---------------|
|                                                              |               | Volume: 100 ml            |               |
|                                                              |               | Matrix: in 15 % HCl       |               |
| Element                                                      | Concentration | Element                   | Concentration |
| Ir                                                           | 100 mg/l      | Rh                        | 100 mg/l      |
| Pt                                                           | 100 mg/l      | Pd                        | 100 mg/l      |
| Os                                                           | 100 mg/l      | Ru                        | 100 mg/l      |



## Standards for Water Quality

### Reference Material for Measurement of Elements in Water

| CRM water 1<br>(Ca 1000 µg/l) -<br>1 bottle of 100 ml |               | Reference:<br>WCEBF.D005.005N.L1<br>Volume: 100 ml<br>Matrix: in 0,05 % HNO <sub>3</sub> |               |
|-------------------------------------------------------|---------------|------------------------------------------------------------------------------------------|---------------|
| Element                                               | Concentration | Element                                                                                  | Concentration |
| S                                                     | 2000 µg/l     | Al                                                                                       | 5 µg/l        |
| Ca                                                    | 1000 µg/l     | Ba                                                                                       | 5 µg/l        |
| Si                                                    | 1000 µg/l     | Cu                                                                                       | 5 µg/l        |
| P                                                     | 500 µg/l      | Pb                                                                                       | 5 µg/l        |
| K                                                     | 500 µg/l      | Mo                                                                                       | 5 µg/l        |
| Na                                                    | 500 µg/l      | Ni                                                                                       | 5 µg/l        |
| Mg                                                    | 200 µg/l      | Ag                                                                                       | 5 µg/l        |
| B                                                     | 50 µg/l       | Sr                                                                                       | 5 µg/l        |
| Li                                                    | 50 µg/l       | V                                                                                        | 5 µg/l        |
| Sb                                                    | 10 µg/l       | Be                                                                                       | 2 µg/l        |
| As                                                    | 10 µg/l       | Co                                                                                       | 2 µg/l        |
| Bi                                                    | 10 µg/l       | Cr                                                                                       | 2 µg/l        |
| Fe                                                    | 10 µg/l       | Mn                                                                                       | 2 µg/l        |
| Se                                                    | 10 µg/l       | Ti                                                                                       | 2 µg/l        |
| Tl                                                    | 10 µg/l       | Cd                                                                                       | 0.5 µg/l      |
| Zn                                                    | 10 µg/l       |                                                                                          |               |

| CRM water 2<br>(Ca 10 000 µg/l) -<br>1 bottle of 100 ml |               | Reference:<br>WCEBF.D05.05N.L1<br>Volume: 100 ml<br>Matrix: in 0,05 % HNO <sub>3</sub> |               |
|---------------------------------------------------------|---------------|----------------------------------------------------------------------------------------|---------------|
| Element                                                 | Concentration | Element                                                                                | Concentration |
| S                                                       | 20 000 µg/l   | Al                                                                                     | 50 µg/l       |
| Ca                                                      | 10 000 µg/l   | Ba                                                                                     | 50 µg/l       |
| Si                                                      | 10 000 µg/l   | Cu                                                                                     | 50 µg/l       |
| P                                                       | 5000 µg/l     | Pb                                                                                     | 50 µg/l       |
| K                                                       | 5000 µg/l     | Mo                                                                                     | 50 µg/l       |
| Na                                                      | 5000 µg/l     | Ni                                                                                     | 50 µg/l       |
| Mg                                                      | 2000 µg/l     | Ag                                                                                     | 50 µg/l       |
| B                                                       | 500 µg/l      | Sr                                                                                     | 50 µg/l       |
| Li                                                      | 500 µg/l      | V                                                                                      | 50 µg/l       |
| Sb                                                      | 100 µg/l      | Be                                                                                     | 20 µg/l       |
| As                                                      | 100 µg/l      | Co                                                                                     | 20 µg/l       |
| Bi                                                      | 100 µg/l      | Cr                                                                                     | 20 µg/l       |
| Fe                                                      | 100 µg/l      | Mn                                                                                     | 20 µg/l       |
| Se                                                      | 100 µg/l      | Ti                                                                                     | 20 µg/l       |
| Tl                                                      | 100 µg/l      | Cd                                                                                     | 5 µg/l        |
| Zn                                                      | 100 µg/l      |                                                                                        |               |

| CRM water 3<br>(Ca 100 000 µg/l) -<br>1 bottle of 100 ml |               | Reference:<br>WCEBF.D5.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |
|----------------------------------------------------------|---------------|-----------------------------------------------------------------------------------|---------------|
| Element                                                  | Concentration | Element                                                                           | Concentration |
| S                                                        | 200 000 µg/l  | Al                                                                                | 500 µg/l      |
| Ca                                                       | 100 000 µg/l  | Ba                                                                                | 500 µg/l      |
| Si                                                       | 100 000 µg/l  | Cu                                                                                | 500 µg/l      |
| P                                                        | 50 000 µg/l   | Pb                                                                                | 500 µg/l      |
| K                                                        | 50 000 µg/l   | Mo                                                                                | 500 µg/l      |
| Na                                                       | 50 000 µg/l   | Ni                                                                                | 500 µg/l      |
| Mg                                                       | 20 000 µg/l   | Ag                                                                                | 500 µg/l      |
| B                                                        | 5000 µg/l     | Sr                                                                                | 500 µg/l      |
| Li                                                       | 5000 µg/l     | V                                                                                 | 500 µg/l      |
| Sb                                                       | 1000 µg/l     | Be                                                                                | 200 µg/l      |
| As                                                       | 1000 µg/l     | Cr                                                                                | 200 µg/l      |
| Bi                                                       | 1000 µg/l     | Co                                                                                | 200 µg/l      |
| Fe                                                       | 1000 µg/l     | Mn                                                                                | 200 µg/l      |
| Se                                                       | 1000 µg/l     | Ti                                                                                | 200 µg/l      |
| Tl                                                       | 1000 µg/l     | Cd                                                                                | 50 µg/l       |
| Zn                                                       | 1000 µg/l     |                                                                                   |               |

| CRM water 4<br>(Ca 1 000 000 µg/l) -<br>1 bottle of 100 ml |                | Reference:<br>WCEBF.5.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |
|------------------------------------------------------------|----------------|----------------------------------------------------------------------------------|---------------|
| Element                                                    | Concentration  | Element                                                                          | Concentration |
| S                                                          | 2 000 000 µg/l | Al                                                                               | 5000 µg/l     |
| Ca                                                         | 1000 000 µg/l  | Ba                                                                               | 5000 µg/l     |
| Si                                                         | 1000 000 µg/l  | Cu                                                                               | 5000 µg/l     |
| P                                                          | 500 000 µg/l   | Pb                                                                               | 5000 µg/l     |
| K                                                          | 500 000 µg/l   | Mo                                                                               | 5000 µg/l     |
| Na                                                         | 500 000 µg/l   | Ni                                                                               | 5000 µg/l     |
| Mg                                                         | 200 000 µg/l   | Ag                                                                               | 5000 µg/l     |
| B                                                          | 50 000 µg/l    | Sr                                                                               | 5000 µg/l     |
| Li                                                         | 50 000 µg/l    | V                                                                                | 5000 µg/l     |
| Sb                                                         | 10 000 µg/l    | Be                                                                               | 2000 µg/l     |
| As                                                         | 10 000 µg/l    | Cr                                                                               | 2000 µg/l     |
| Bi                                                         | 10 000 µg/l    | Co                                                                               | 2000 µg/l     |
| Fe                                                         | 10 000 µg/l    | Mn                                                                               | 2000 µg/l     |
| Se                                                         | 10 000 µg/l    | Ti                                                                               | 2000 µg/l     |
| Tl                                                         | 10 000 µg/l    | Cd                                                                               | 500µg/l       |
| Zn                                                         | 10 000 µg/l    |                                                                                  |               |

| CRM water 5<br>(Ca 2 000 000 µg/l) -<br>4 bottle of 100 ml |               | Reference: WCEBFD5.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |
|------------------------------------------------------------|---------------|-------------------------------------------------------------------------------|---------------|
| Element                                                    | Concentration | Element                                                                       | Concentration |
| S                                                          | 4000 000 µg/l | Al                                                                            | 10 000 µg/l   |
| Ca                                                         | 2000 000 µg/l | Ba                                                                            | 10 000 µg/l   |
| Si                                                         | 2000 000 µg/l | Cu                                                                            | 10 000 µg/l   |
| P                                                          | 1000 000 µg/l | Pb                                                                            | 10 000 µg/l   |
| K                                                          | 1000 000 µg/l | Mo                                                                            | 10 000 µg/l   |
| Na                                                         | 1000 000 µg/l | Ni                                                                            | 10 000 µg/l   |
| Mg                                                         | 400 000 µg/l  | Ag                                                                            | 10 000 µg/l   |
| B                                                          | 100 000 µg/l  | Sr                                                                            | 10 000 µg/l   |
| Li                                                         | 100 000 µg/l  | V                                                                             | 10 000 µg/l   |
| Sb                                                         | 20 000 µg/l   | Be                                                                            | 4000 µg/l     |
| As                                                         | 20 000 µg/l   | Cr                                                                            | 4000 µg/l     |
| Bi                                                         | 20 000 µg/l   | Co                                                                            | 4000 µg/l     |
| Fe                                                         | 20 000 µg/l   | Mn                                                                            | 4000 µg/l     |
| Se                                                         | 20 000 µg/l   | Ti                                                                            | 4000 µg/l     |
| Tl                                                         | 20 000 µg/l   | Cd                                                                            | 1000 µg/l     |
| Zn                                                         | 20 000 µg/l   |                                                                               |               |

| TCLP Standard<br>for ICP -<br>4 components |               | Reference: 47BC.25.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> |               |
|--------------------------------------------|---------------|-------------------------------------------------------------------------------|---------------|
| Element                                    | Concentration | Element                                                                       | Concentration |
| Ba                                         | 500 mg/l      | Ag                                                                            | 25 mg/l       |
| Cr                                         | 25 mg/l       | Cd                                                                            | 5 mg/l        |

| TCLP Standard 2 - Hg |               | Reference: D0BC.20.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |  |
|----------------------|---------------|-------------------------------------------------------------------------------|--|
| Element              | Concentration |                                                                               |  |
| Hg                   | 20 mg/l       |                                                                               |  |

| ICP Calibration<br>Standard -<br>Sewage Sludge |               | Reference: D45E.10.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |
|------------------------------------------------|---------------|-------------------------------------------------------------------------------|---------------|
| Element                                        | Concentration | Element                                                                       | Concentration |
| Zn                                             | 2500 mg/l     | Cu                                                                            | 800 mg/l      |
| Cr                                             | 900 mg/l      | Ni                                                                            | 200 mg/l      |
| Pb                                             | 900 mg/l      | Cd                                                                            | 10 mg/l       |

| CLP Soil Spiking<br>Solution -<br>16 components |               | Reference: 10D1.10.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |
|-------------------------------------------------|---------------|-------------------------------------------------------------------------------|---------------|
| Element                                         | Concentration | Element                                                                       | Concentration |
| As                                              | 400 mg/l      | Ni                                                                            | 100 mg/l      |
| Ba                                              | 400 mg/l      | V                                                                             | 100 mg/l      |
| Se                                              | 400 mg/l      | Zn                                                                            | 100 mg/l      |
| Tl                                              | 400 mg/l      | Cu                                                                            | 50 mg/l       |
| Sb                                              | 100 mg/l      | Cr                                                                            | 40 mg/l       |
| Co                                              | 100 mg/l      | Be                                                                            | 10 mg/l       |
| Pb                                              | 100 mg/l      | Cd                                                                            | 10 mg/l       |
| Mn                                              | 100 mg/l      | Ag                                                                            | 10 mg/l       |

| TCLP Standard<br>for ICP -<br>3 components |               | Reference: 8050.25.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |
|--------------------------------------------|---------------|-------------------------------------------------------------------------------|---------------|
| Element                                    | Concentration | Element                                                                       | Concentration |
| As                                         | 25 mg/l       | Se                                                                            | 5 mg/l        |
| Pb                                         | 25 mg/l       |                                                                               |               |

*Standards for Analytes covered in the Safe Drinking Water Act (SDWA)*

| Primary Metals for<br>Analysis by ICP -<br>9 components |               | Reference: 6D95.K1.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> |               |
|---------------------------------------------------------|---------------|-------------------------------------------------------------------------------|---------------|
| Element                                                 | Concentration | Element                                                                       | Concentration |
| As                                                      | 100 mg/l      | Cd                                                                            | 10 mg/l       |
| Ca                                                      | 100 mg/l      | Cr                                                                            | 10 mg/l       |
| Na                                                      | 100 mg/l      | Cu                                                                            | 10 mg/l       |
| Ba                                                      | 10 mg/l       | Ni                                                                            | 10 mg/l       |
| Be                                                      | 10 mg/l       |                                                                               |               |

| Primary Metals for<br>Analysis by ICP-MS -<br>11 components |               | Reference: 686F.10.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> |               |
|-------------------------------------------------------------|---------------|-------------------------------------------------------------------------------|---------------|
| Element                                                     | Concentration | Element                                                                       | Concentration |
| As                                                          | 10 mg/l       | Ni                                                                            | 10 mg/l       |
| Ba                                                          | 10 mg/l       | Pb                                                                            | 10 mg/l       |
| Be                                                          | 10 mg/l       | Sb                                                                            | 10 mg/l       |
| Cd                                                          | 10 mg/l       | Se                                                                            | 10 mg/l       |
| Cr                                                          | 10 mg/l       | Tl                                                                            | 10 mg/l       |
| Cu                                                          | 10 mg/l       |                                                                               |               |



\* Custom Standards for ICP & ICP-MS are available upon request.

| Primary Metals for Analysis by GFAA - 9 components |               | <b>Reference:</b> 2495.10.2N.L1        |               |
|----------------------------------------------------|---------------|----------------------------------------|---------------|
|                                                    |               | <b>Volume:</b> 100 ml                  |               |
|                                                    |               | <b>Matrix:</b> in 2 % HNO <sub>3</sub> |               |
| Element                                            | Concentration | Element                                | Concentration |
| Sb                                                 | 10 mg/l       | Pb                                     | 10 mg/l       |
| As                                                 | 10 mg/l       | Ni                                     | 10 mg/l       |
| Cd                                                 | 10 mg/l       | Se                                     | 10 mg/l       |
| Cr                                                 | 10 mg/l       | Tl                                     | 10 mg/l       |
| Cu                                                 | 10 mg/l       |                                        |               |

| Primary & Secondary Metals for Analysis by GFAA/ICP/ICP-MS - 19 components |               | <b>Reference:</b> DE11.10.2N.L1        |               |
|----------------------------------------------------------------------------|---------------|----------------------------------------|---------------|
|                                                                            |               | <b>Volume:</b> 100 ml                  |               |
|                                                                            |               | <b>Matrix:</b> in 2 % HNO <sub>3</sub> |               |
| Element                                                                    | Concentration | Element                                | Concentration |
| Sb                                                                         | 100 mg/l      | Cr                                     | 10 mg/l       |
| As                                                                         | 100 mg/l      | Cu                                     | 10 mg/l       |
| Ca                                                                         | 100 mg/l      | Pb                                     | 10 mg/l       |
| Fe                                                                         | 100 mg/l      | Mn                                     | 10 mg/l       |
| Si                                                                         | 100 mg/l      | Ni                                     | 10 mg/l       |
| Na                                                                         | 100 mg/l      | Se                                     | 10 mg/l       |
| Al                                                                         | 10 mg/l       | Ag                                     | 10 mg/l       |
| Ba                                                                         | 10 mg/l       | Tl                                     | 10 mg/l       |
| Be                                                                         | 10 mg/l       | Zn                                     | 10 mg/l       |
| Cd                                                                         | 10 mg/l       |                                        |               |

| Primary Metals for Analysis by GFAA/ICP/ICP-MS - 14 components |               | <b>Reference:</b> C87D.K1.2NFL1        |               |
|----------------------------------------------------------------|---------------|----------------------------------------|---------------|
|                                                                |               | <b>Volume:</b> 100 ml                  |               |
|                                                                |               | <b>Matrix:</b> in 2 % HNO <sub>3</sub> |               |
| Element                                                        | Concentration | Element                                | Concentration |
| Sb                                                             | 100 mg/l      | Cd                                     | 10 mg/l       |
| As                                                             | 100 mg/l      | Cr                                     | 10 mg/l       |
| Ca                                                             | 100 mg/l      | Cu                                     | 10 mg/l       |
| Si                                                             | 100 mg/l      | Pb                                     | 10 mg/l       |
| Na                                                             | 100 mg/l      | Ni                                     | 10 mg/l       |
| Ba                                                             | 10 mg/l       | Se                                     | 10 mg/l       |
| Be                                                             | 10 mg/l       | Tl                                     | 10 mg/l       |

| Secondary Metals for Analysis by GFAA/ICP/ICP-MS - 5 components |               | <b>Reference:</b> F235.10.2N.L1        |               |
|-----------------------------------------------------------------|---------------|----------------------------------------|---------------|
|                                                                 |               | <b>Volume:</b> 100 ml                  |               |
|                                                                 |               | <b>Matrix:</b> in 2 % HNO <sub>3</sub> |               |
| Element                                                         | Concentration | Element                                | Concentration |
| Fe                                                              | 100 mg/l      | Mn                                     | 10 mg/l       |
| Ag                                                              | 10 mg/l       | Zn                                     | 10 mg/l       |
| Al                                                              | 10 mg/l       |                                        |               |

ICP Standards

Quality Control Standards for ICP

| Quality Control Standard - 25 components |               | <b>Reference:</b> 64F7.10.2N.L1        |               |
|------------------------------------------|---------------|----------------------------------------|---------------|
|                                          |               | <b>Volume:</b> 100 ml                  |               |
|                                          |               | <b>Matrix:</b> in 2 % HNO <sub>3</sub> |               |
| Element                                  | Concentration | Element                                | Concentration |
| Ag                                       | 10 mg/l       | Mn                                     | 10 mg/l       |
| Al                                       | 10 mg/l       | Mo                                     | 10 mg/l       |
| As                                       | 10 mg/l       | Na                                     | 10 mg/l       |
| Ba                                       | 10 mg/l       | Ni                                     | 10 mg/l       |
| Be                                       | 10 mg/l       | Pb                                     | 10 mg/l       |
| Ca                                       | 10 mg/l       | Sb                                     | 10 mg/l       |
| Cd                                       | 10 mg/l       | Se                                     | 10 mg/l       |
| Co                                       | 10 mg/l       | Th                                     | 10 mg/l       |
| Cr                                       | 10 mg/l       | Tl                                     | 10 mg/l       |
| Cu                                       | 10 mg/l       | U                                      | 10 mg/l       |
| Fe                                       | 10 mg/l       | V                                      | 10 mg/l       |
| K                                        | 10 mg/l       | Zn                                     | 10 mg/l       |
| Mg                                       | 10 mg/l       |                                        |               |

ICP Calibration Standards

| Solids 1A CCV Solution for ICP-OES - 14 components |               | <b>Reference:</b> 06DF.K1.5N.L1        |               |
|----------------------------------------------------|---------------|----------------------------------------|---------------|
|                                                    |               | <b>Volume:</b> 100 ml                  |               |
|                                                    |               | <b>Matrix:</b> in 5 % HNO <sub>3</sub> |               |
| Element                                            | Concentration | Element                                | Concentration |
| B                                                  | 1000 mg/l     | Cr                                     | 100 mg/l      |
| Ba                                                 | 1000 mg/l     | Cu                                     | 100 mg/l      |
| P                                                  | 1000 mg/l     | Ni                                     | 100 mg/l      |
| Mn                                                 | 500 mg/l      | Pb                                     | 100 mg/l      |
| Zn                                                 | 500 mg/l      | V                                      | 100 mg/l      |
| As                                                 | 100 mg/l      | Be                                     | 5 mg/l        |
| Co                                                 | 100 mg/l      | Cd                                     | 5 mg/l        |

| Solids 1B CCV Solution for ICP-OES - 6 components |               | <b>Reference:</b> FC4C.5K.5N.L1        |               |
|---------------------------------------------------|---------------|----------------------------------------|---------------|
|                                                   |               | <b>Volume:</b> 100 ml                  |               |
|                                                   |               | <b>Matrix:</b> in 5 % HNO <sub>3</sub> |               |
| Element                                           | Concentration | Element                                | Concentration |
| Al                                                | 5000 mg/l     | Mg                                     | 5000 mg/l     |
| Ca                                                | 5000 mg/l     | Na                                     | 5000 mg/l     |
| Fe                                                | 5000 mg/l     | K                                      | 2000 mg/l     |

| Solids Mix 3A solution for ICP-OES - 11 components |               | <b>Reference:</b> F679.1K.5N.L1        |               |
|----------------------------------------------------|---------------|----------------------------------------|---------------|
|                                                    |               | <b>Volume:</b> 100 ml                  |               |
|                                                    |               | <b>Matrix:</b> in 5 % HNO <sub>3</sub> |               |
| Element                                            | Concentration | Element                                | Concentration |
| Mn                                                 | 2500 mg/l     | Ni                                     | 1000 mg/l     |
| Zn                                                 | 2500 mg/l     | Pb                                     | 1000 mg/l     |
| As                                                 | 1000 mg/l     | V                                      | 1000 mg/l     |
| Co                                                 | 1000 mg/l     | Be                                     | 100 mg/l      |
| Cr                                                 | 1000 mg/l     | Cd                                     | 100 mg/l      |
| Cu                                                 | 1000 mg/l     |                                        |               |

| Solids Mix 4 solution for ICP-OES - 6 components |               | <b>Reference:</b> 42F9.50.5N.L1        |               |
|--------------------------------------------------|---------------|----------------------------------------|---------------|
|                                                  |               | <b>Volume:</b> 100 ml                  |               |
|                                                  |               | <b>Matrix:</b> in 5 % HNO <sub>3</sub> |               |
| Element                                          | Concentration | Element                                | Concentration |
| Sb                                               | 100 mg/l      | Te                                     | 100 mg/l      |
| Se                                               | 100 mg/l      | Tl                                     | 100 mg/l      |
| Sn                                               | 100 mg/l      | Mo                                     | 50 mg/l       |



\* Custom Standards for ICP & ICP-MS are available upon request.





# Ion Chromatography Standards





# Single-Ion Standards

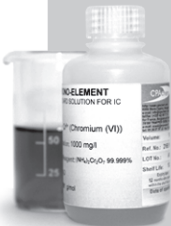
| TYPE NAME          | ELEMENT                                                    | MATRIX                      | CONCENTRATION | VOLUME | UNIT | REFERENCE    |
|--------------------|------------------------------------------------------------|-----------------------------|---------------|--------|------|--------------|
| Acetate            | CH <sub>3</sub> COO <sup>-</sup>                           | in H <sub>2</sub> O         | 1000 mg/l     | 100    | ml   | H016.W.L1    |
| Acetate            | CH <sub>3</sub> COO <sup>-</sup>                           | in H <sub>2</sub> O         | 1000 mg/l     | 250    | ml   | H016.W.L25   |
| Acetate            | CH <sub>3</sub> COO <sup>-</sup>                           | in H <sub>2</sub> O         | 1000 mg/l     | 500    | ml   | H016.W.L5    |
| Ammonium           | NH <sub>4</sub> <sup>+</sup>                               | in H <sub>2</sub> O         | 1000 mg/l     | 100    | ml   | H011.W.L1    |
| Ammonium           | NH <sub>4</sub> <sup>+</sup>                               | in H <sub>2</sub> O         | 1000 mg/l     | 250    | ml   | H011.W.L25   |
| Ammonium           | NH <sub>4</sub> <sup>+</sup>                               | in H <sub>2</sub> O         | 1000 mg/l     | 500    | ml   | H011.W.L5    |
| Ammonium as N      | N                                                          | in H <sub>2</sub> O         | 1000 mg/l     | 100    | ml   | H031.W.L1    |
| Ammonium as N      | N                                                          | in H <sub>2</sub> O         | 1000 mg/l     | 250    | ml   | H031.W.L25   |
| Ammonium as N      | N                                                          | in H <sub>2</sub> O         | 1000 mg/l     | 500    | ml   | H031.W.L5    |
| Barium             | Ba <sup>2+</sup>                                           | in H <sub>2</sub> O         | 1000 mg/l     | 100    | ml   | H022.W.L1    |
| Barium             | Ba <sup>2+</sup>                                           | in H <sub>2</sub> O         | 1000 mg/l     | 250    | ml   | H022.W.L25   |
| Barium             | Ba <sup>2+</sup>                                           | in H <sub>2</sub> O         | 1000 mg/l     | 500    | ml   | H022.W.L5    |
| Benzoate           | C <sub>6</sub> H <sub>5</sub> COO <sup>-</sup>             | in H <sub>2</sub> O         | 1000 mg/l     | 100    | ml   | H030.W.L1    |
| Benzoate           | C <sub>6</sub> H <sub>5</sub> COO <sup>-</sup>             | in H <sub>2</sub> O         | 1000 mg/l     | 250    | ml   | H030.W.L25   |
| Benzoate           | C <sub>6</sub> H <sub>5</sub> COO <sup>-</sup>             | in H <sub>2</sub> O         | 1000 mg/l     | 500    | ml   | H030.W.L5    |
| Bromate            | BrO <sub>3</sub> <sup>-</sup>                              | in H <sub>2</sub> O         | 1000 mg/l     | 100    | ml   | H020.W.L1    |
| Bromate            | BrO <sub>3</sub> <sup>-</sup>                              | in H <sub>2</sub> O         | 1000 mg/l     | 250    | ml   | H020.W.L25   |
| Bromate            | BrO <sub>3</sub> <sup>-</sup>                              | in H <sub>2</sub> O         | 1000 mg/l     | 500    | ml   | H020.W.L5    |
| Bromide            | Br <sup>-</sup>                                            | in H <sub>2</sub> O         | 1000 mg/l     | 100    | ml   | H001.W.L1    |
| Bromide            | Br <sup>-</sup>                                            | in H <sub>2</sub> O         | 1000 mg/l     | 250    | ml   | H001.W.L25   |
| Bromide            | Br <sup>-</sup>                                            | in H <sub>2</sub> O         | 1000 mg/l     | 500    | ml   | H001.W.L5    |
| Calcium            | Ca <sup>2+</sup>                                           | in H <sub>2</sub> O         | 1000 mg/l     | 100    | ml   | H002.W.L1    |
| Calcium            | Ca <sup>2+</sup>                                           | in H <sub>2</sub> O         | 1000 mg/l     | 250    | ml   | H002.W.L25   |
| Calcium            | Ca <sup>2+</sup>                                           | in H <sub>2</sub> O         | 1000 mg/l     | 500    | ml   | H002.W.L5    |
| Cesium             | Cs <sup>+</sup>                                            | in H <sub>2</sub> O         | 1000 mg/l     | 100    | ml   | H027.W.L1    |
| Cesium             | Cs <sup>+</sup>                                            | in H <sub>2</sub> O         | 1000 mg/l     | 250    | ml   | H027.W.L25   |
| Cesium             | Cs <sup>+</sup>                                            | in H <sub>2</sub> O         | 1000 mg/l     | 500    | ml   | H027.W.L5    |
| Chlorate           | ClO <sub>3</sub> <sup>-</sup>                              | in H <sub>2</sub> O         | 1000 mg/l     | 100    | ml   | H025.W.L1    |
| Chlorate           | ClO <sub>3</sub> <sup>-</sup>                              | in H <sub>2</sub> O         | 1000 mg/l     | 250    | ml   | H025.W.L25   |
| Chlorate           | ClO <sub>3</sub> <sup>-</sup>                              | in H <sub>2</sub> O         | 1000 mg/l     | 500    | ml   | H025.W.L5    |
| Chloride           | Cl <sup>-</sup>                                            | in H <sub>2</sub> O         | 1000 mg/l     | 100    | ml   | H003.W.L1    |
| Chloride           | Cl <sup>-</sup>                                            | in H <sub>2</sub> O         | 1000 mg/l     | 250    | ml   | H003.W.L25   |
| Chloride           | Cl <sup>-</sup>                                            | in H <sub>2</sub> O         | 1000 mg/l     | 500    | ml   | H003.W.L5    |
| Chlorite           | ClO <sub>2</sub> <sup>-</sup>                              | in H <sub>2</sub> O/tr NaOH | 1000 mg/l     | 100    | ml   | H028.010.L1  |
| Chlorite           | ClO <sub>2</sub> <sup>-</sup>                              | in H <sub>2</sub> O/tr NaOH | 1000 mg/l     | 250    | ml   | H028.010.L25 |
| Chlorite           | ClO <sub>2</sub> <sup>-</sup>                              | in H <sub>2</sub> O/tr NaOH | 1000 mg/l     | 500    | ml   | H028.010.L5  |
| Chromate as Cr(VI) | Cr <sup>6+</sup>                                           | in H <sub>2</sub> O         | 1000 mg/l     | 100    | ml   | H004.W.L1    |
| Chromate as Cr(VI) | Cr <sup>6+</sup>                                           | in H <sub>2</sub> O         | 1000 mg/l     | 250    | ml   | H004.W.L25   |
| Chromate as Cr(VI) | Cr <sup>6+</sup>                                           | in H <sub>2</sub> O         | 1000 mg/l     | 500    | ml   | H004.W.L5    |
| Citrate            | C <sub>6</sub> H <sub>5</sub> O <sub>7</sub> <sup>3-</sup> | in H <sub>2</sub> O         | 1000 mg/l     | 100    | ml   | H029.W.L1    |
| Citrate            | C <sub>6</sub> H <sub>5</sub> O <sub>7</sub> <sup>3-</sup> | in H <sub>2</sub> O         | 1000 mg/l     | 250    | ml   | H029.W.L25   |



\* Custom Standards for Ion Chromatography are available upon request.

| TYPE NAME            | ELEMENT               | MATRIX            | CONCENTRATION | VOLUME | UNIT | REFERENCE    |
|----------------------|-----------------------|-------------------|---------------|--------|------|--------------|
| Citrate              | $C_6H_5O_7^{3-}$      | in $H_2O$         | 1000 mg/l     | 500    | ml   | H029.W.L5    |
| Cyanide              | $CN^-$                | in $H_2O$ /tr KOH | 1000 mg/l     | 100    | ml   | H032.010.L1  |
| Cyanide              | $CN^-$                | in $H_2O$ /tr KOH | 1000 mg/l     | 250    | ml   | H032.010.L25 |
| Cyanide              | $CN^-$                | in $H_2O$ /tr KOH | 1000 mg/l     | 500    | ml   | H032.010.L5  |
| Diethanolamine       | $(HOC_2H_4)_2NH_2^+$  | in $H_2O$         | 1000 mg/l     | 100    | ml   | H033.W.L1    |
| Diethanolamine       | $(HOC_2H_4)_2NH_2^+$  | in $H_2O$         | 1000 mg/l     | 250    | ml   | H033.W.L25   |
| Diethanolamine       | $(HOC_2H_4)_2NH_2^+$  | in $H_2O$         | 1000 mg/l     | 500    | ml   | H033.W.L5    |
| Fluoride             | $F^-$                 | in $H_2O$         | 1000 mg/l     | 100    | ml   | H005.W.L1    |
| Fluoride             | $F^-$                 | in $H_2O$         | 1000 mg/l     | 250    | ml   | H005.W.L25   |
| Fluoride             | $F^-$                 | in $H_2O$         | 1000 mg/l     | 500    | ml   | H005.W.L5    |
| Formate              | $HCOO^-$              | in $H_2O$         | 1000 mg/l     | 100    | ml   | H026.W.L1    |
| Formate              | $HCOO^-$              | in $H_2O$         | 1000 mg/l     | 250    | ml   | H026.W.L25   |
| Formate              | $HCOO^-$              | in $H_2O$         | 1000 mg/l     | 500    | ml   | H026.W.L5    |
| Glycolate            | $C_2H_3O_3^-$         | in $H_2O$         | 1000 mg/l     | 100    | ml   | H034.W.L1    |
| Glycolate            | $C_2H_3O_3^-$         | in $H_2O$         | 1000 mg/l     | 250    | ml   | H034.W.L25   |
| Glycolate            | $C_2H_3O_3^-$         | in $H_2O$         | 1000 mg/l     | 500    | ml   | H034.W.L5    |
| Hydrogen phthalate   | $C_6H_4(COO)_2H^-$    | in $H_2O$         | 1000 mg/l     | 100    | ml   | H035.W.L1    |
| Hydrogen phthalate   | $C_6H_4(COO)_2H^-$    | in $H_2O$         | 1000 mg/l     | 250    | ml   | H035.W.L25   |
| Hydrogen phthalate   | $C_6H_4(COO)_2H^-$    | in $H_2O$         | 1000 mg/l     | 500    | ml   | H035.W.L5    |
| Hydrogen sulfite     | $HSO_3^-$             | in $H_2O$         | 1000 mg/l     | 100    | ml   | H057.W.L1    |
| Hydrogen sulfite     | $HSO_3^-$             | in $H_2O$         | 1000 mg/l     | 250    | ml   | H057.W.L25   |
| Hydrogen sulfite     | $HSO_3^-$             | in $H_2O$         | 1000 mg/l     | 500    | ml   | H057.W.L5    |
| Iodate               | $IO_3^-$              | in $H_2O$         | 1000 mg/l     | 100    | ml   | H036.W.L1    |
| Iodate               | $IO_3^-$              | in $H_2O$         | 1000 mg/l     | 250    | ml   | H036.W.L25   |
| Iodate               | $IO_3^-$              | in $H_2O$         | 1000 mg/l     | 500    | ml   | H036.W.L5    |
| Iodide               | $I^-$                 | in $H_2O$         | 1000 mg/l     | 100    | ml   | H006.W.L1    |
| Iodide               | $I^-$                 | in $H_2O$         | 1000 mg/l     | 250    | ml   | H006.W.L25   |
| Iodide               | $I^-$                 | in $H_2O$         | 1000 mg/l     | 500    | ml   | H006.W.L5    |
| Lactate              | $CH_3CH(OH)COO^-$     | in $H_2O$         | 1000 mg/l     | 100    | ml   | H037.W.L1    |
| Lactate              | $CH_3CH(OH)COO^-$     | in $H_2O$         | 1000 mg/l     | 250    | ml   | H037.W.L25   |
| Lactate              | $CH_3CH(OH)COO^-$     | in $H_2O$         | 1000 mg/l     | 500    | ml   | H037.W.L5    |
| Lithium              | $Li^+$                | in $H_2O$         | 1000 mg/l     | 100    | ml   | H008.W.L1    |
| Lithium              | $Li^+$                | in $H_2O$         | 1000 mg/l     | 250    | ml   | H008.W.L25   |
| Lithium              | $Li^+$                | in $H_2O$         | 1000 mg/l     | 500    | ml   | H008.W.L5    |
| Magnesium            | $Mg^{2+}$             | in $H_2O$         | 1000 mg/l     | 100    | ml   | H009.W.L1    |
| Magnesium            | $Mg^{2+}$             | in $H_2O$         | 1000 mg/l     | 250    | ml   | H009.W.L25   |
| Magnesium            | $Mg^{2+}$             | in $H_2O$         | 1000 mg/l     | 500    | ml   | H009.W.L5    |
| Maleate              | $C_2H_2(COO)_2^{2-}$  | in $H_2O$         | 1000 mg/l     | 100    | ml   | H038.W.L1    |
| Maleate              | $C_2H_2(COO)_2^{2-}$  | in $H_2O$         | 1000 mg/l     | 250    | ml   | H038.W.L25   |
| Maleate              | $C_2H_2(COO)_2^{2-}$  | in $H_2O$         | 1000 mg/l     | 500    | ml   | H038.W.L5    |
| Methane sulfonate    | $CH_3SO_3^-$          | in $H_2O$         | 1000 mg/l     | 100    | ml   | H039.W.L1    |
| Methane sulfonate    | $CH_3SO_3^-$          | in $H_2O$         | 1000 mg/l     | 250    | ml   | H039.W.L25   |
| Methane sulfonate    | $CH_3SO_3^-$          | in $H_2O$         | 1000 mg/l     | 500    | ml   | H039.W.L5    |
| 3-Methoxypropylamine | $CH_3O(CH_2)_3NH_3^+$ | in $H_2O$         | 1000 mg/l     | 100    | ml   | H053.W.L1    |
| 3-Methoxypropylamine | $CH_3O(CH_2)_3NH_3^+$ | in $H_2O$         | 1000 mg/l     | 250    | ml   | H053.W.L25   |

| TYPE NAME            | ELEMENT                                           | MATRIX                  | CONCENTRATION | VOLUME | UNIT | REFERENCE   |
|----------------------|---------------------------------------------------|-------------------------|---------------|--------|------|-------------|
| 3-Methoxypropylamine | $\text{CH}_3\text{O}(\text{CH}_2)_3\text{NH}_3^+$ | in $\text{H}_2\text{O}$ | 1000 mg/l     | 500    | ml   | H053.W.L5   |
| Monoethanolamine     | $\text{HOC}_2\text{H}_4\text{NH}_3^+$             | in $\text{H}_2\text{O}$ | 1000 mg/l     | 100    | ml   | H040.W.L1   |
| Monoethanolamine     | $\text{HOC}_2\text{H}_4\text{NH}_3^+$             | in $\text{H}_2\text{O}$ | 1000 mg/l     | 250    | ml   | H040.W.L25  |
| Monoethanolamine     | $\text{HOC}_2\text{H}_4\text{NH}_3^+$             | in $\text{H}_2\text{O}$ | 1000 mg/l     | 500    | ml   | H040.W.L5   |
| Monomethylamine      | $\text{CH}_3\text{NH}_3^+$                        | in $\text{H}_2\text{O}$ | 1000 mg/l     | 100    | ml   | H041.W.L1   |
| Monomethylamine      | $\text{CH}_3\text{NH}_3^+$                        | in $\text{H}_2\text{O}$ | 1000 mg/l     | 250    | ml   | H041.W.L25  |
| Monomethylamine      | $\text{CH}_3\text{NH}_3^+$                        | in $\text{H}_2\text{O}$ | 1000 mg/l     | 500    | ml   | H041.W.L5   |
| Nitrate              | $\text{NO}_3^-$                                   | in $\text{H}_2\text{O}$ | 1000 mg/l     | 100    | ml   | H013.W.L1   |
| Nitrate              | $\text{NO}_3^-$                                   | in $\text{H}_2\text{O}$ | 1000 mg/l     | 250    | ml   | H013.W.L25  |
| Nitrate              | $\text{NO}_3^-$                                   | in $\text{H}_2\text{O}$ | 1000 mg/l     | 500    | ml   | H013.W.L5   |
| Nitrate as N         | N                                                 | in $\text{H}_2\text{O}$ | 1000 mg/l     | 100    | ml   | H044.W.L1   |
| Nitrate as N         | N                                                 | in $\text{H}_2\text{O}$ | 1000 mg/l     | 250    | ml   | H044.W.L25  |
| Nitrate as N         | N                                                 | in $\text{H}_2\text{O}$ | 1000 mg/l     | 500    | ml   | H044.W.L5   |
| Nitrilotriacetate    | $\text{N}(\text{CH}_2\text{COO})_3^{3-}$          | in $\text{H}_2\text{O}$ | 1000 mg/l     | 100    | ml   | H042.W.L1   |
| Nitrilotriacetate    | $\text{N}(\text{CH}_2\text{COO})_3^{3-}$          | in $\text{H}_2\text{O}$ | 1000 mg/l     | 250    | ml   | H042.W.L25  |
| Nitrilotriacetate    | $\text{N}(\text{CH}_2\text{COO})_3^{3-}$          | in $\text{H}_2\text{O}$ | 1000 mg/l     | 500    | ml   | H042.W.L5   |
| Nitrite              | $\text{NO}_2^-$                                   | in $\text{H}_2\text{O}$ | 1000 mg/l     | 100    | ml   | H012.W.L1   |
| Nitrite              | $\text{NO}_2^-$                                   | in $\text{H}_2\text{O}$ | 1000 mg/l     | 250    | ml   | H012.W.L25  |
| Nitrite              | $\text{NO}_2^-$                                   | in $\text{H}_2\text{O}$ | 1000 mg/l     | 500    | ml   | H012.W.L5   |
| Nitrite as N         | N                                                 | in $\text{H}_2\text{O}$ | 1000 mg/l     | 100    | ml   | H043.W.L1   |
| Nitrite as N         | N                                                 | in $\text{H}_2\text{O}$ | 1000 mg/l     | 250    | ml   | H043.W.L25  |
| Nitrite as N         | N                                                 | in $\text{H}_2\text{O}$ | 1000 mg/l     | 500    | ml   | H043.W.L5   |
| Oxalate              | $\text{C}_2\text{O}_4^{2-}$                       | in $\text{H}_2\text{O}$ | 1000 mg/l     | 100    | ml   | H024.W.L1   |
| Oxalate              | $\text{C}_2\text{O}_4^{2-}$                       | in $\text{H}_2\text{O}$ | 1000 mg/l     | 250    | ml   | H024.W.L25  |
| Oxalate              | $\text{C}_2\text{O}_4^{2-}$                       | in $\text{H}_2\text{O}$ | 1000 mg/l     | 500    | ml   | H024.W.L5   |
| Perchlorate          | $\text{ClO}_4^{3-}$                               | in $\text{H}_2\text{O}$ | 1000 mg/l     | 100    | ml   | H017.W.L1   |
| Perchlorate          | $\text{ClO}_4^{3-}$                               | in $\text{H}_2\text{O}$ | 1000 mg/l     | 250    | ml   | H017.W.L25  |
| Perchlorate          | $\text{ClO}_4^{3-}$                               | in $\text{H}_2\text{O}$ | 1000 mg/l     | 500    | ml   | H017.W.L5   |
| Phosphate            | $\text{PO}_4^{3-}$                                | in $\text{H}_2\text{O}$ | 1000 mg/l     | 100    | ml   | H014.W.L1   |
| Phosphate            | $\text{PO}_4^{3-}$                                | in $\text{H}_2\text{O}$ | 1000 mg/l     | 250    | ml   | H014.W.L25  |
| Phosphate            | $\text{PO}_4^{3-}$                                | in $\text{H}_2\text{O}$ | 1000 mg/l     | 500    | ml   | H014.W.L5   |
| Phosphate as P       | P                                                 | in $\text{H}_2\text{O}$ | 1000 mg/l     | 100    | ml   | H045.W.L1   |
| Phosphate as P       | P                                                 | in $\text{H}_2\text{O}$ | 1000 mg/l     | 250    | ml   | H045.W.L25  |
| Phosphate as P       | P                                                 | in $\text{H}_2\text{O}$ | 1000 mg/l     | 500    | ml   | H045.W.L5   |
| Potassium            | $\text{K}^+$                                      | in $\text{H}_2\text{O}$ | 1000 mg/l     | 100    | ml   | H007.W.L1   |
| Potassium            | $\text{K}^+$                                      | in $\text{H}_2\text{O}$ | 1000 mg/l     | 250    | ml   | H007.W.L25  |
| Potassium            | $\text{K}^+$                                      | in $\text{H}_2\text{O}$ | 1000 mg/l     | 500    | ml   | H007.W.L5   |
| Propionate           | $\text{C}_2\text{H}_5\text{COO}^-$                | in $\text{H}_2\text{O}$ | 1000 mg/l     | 100    | ml   | H046.W.L1   |
| Propionate           | $\text{C}_2\text{H}_5\text{COO}^-$                | in $\text{H}_2\text{O}$ | 1000 mg/l     | 250    | ml   | H046.W.L25  |
| Propionate           | $\text{C}_2\text{H}_5\text{COO}^-$                | in $\text{H}_2\text{O}$ | 1000 mg/l     | 500    | ml   | H046.W.L5   |
| Silicate             | $\text{SiO}_3^{2-}$                               | in 1% NaOH              | 1000 mg/l     | 100    | ml   | H047.10.L1  |
| Silicate             | $\text{SiO}_3^{2-}$                               | in 1% NaOH              | 1000 mg/l     | 250    | ml   | H047.10.L25 |
| Silicate             | $\text{SiO}_3^{2-}$                               | in 1% NaOH              | 1000 mg/l     | 500    | ml   | H047.10.L5  |
| Sodium               | $\text{Na}^+$                                     | in $\text{H}_2\text{O}$ | 1000 mg/l     | 100    | ml   | H010.W.L1   |
| Sodium               | $\text{Na}^+$                                     | in $\text{H}_2\text{O}$ | 1000 mg/l     | 250    | ml   | H010.W.L25  |



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| TYPE NAME         | ELEMENT                                                         | MATRIX              | CONCENTRATION | VOLUME | UNIT | REFERENCE      |
|-------------------|-----------------------------------------------------------------|---------------------|---------------|--------|------|----------------|
| Sodium            | Na <sup>+</sup>                                                 | in H <sub>2</sub> O | 1000 mg/l     | 500    | ml   | H010.W.L5      |
| Strontium         | Sr <sup>2+</sup>                                                | in H <sub>2</sub> O | 1000 mg/l     | 100    | ml   | H023.W.L1      |
| Strontium         | Sr <sup>2+</sup>                                                | in H <sub>2</sub> O | 1000 mg/l     | 250    | ml   | H023.W.L25     |
| Strontium         | Sr <sup>2+</sup>                                                | in H <sub>2</sub> O | 1000 mg/l     | 500    | ml   | H023.W.L5      |
| Succinate         | OOC(CH <sub>2</sub> ) <sub>2</sub> COO <sup>2-</sup>            | in H <sub>2</sub> O | 1000 mg/l     | 100    | ml   | H048.W.L1      |
| Succinate         | OOC(CH <sub>2</sub> ) <sub>2</sub> COO <sup>2-</sup>            | in H <sub>2</sub> O | 1000 mg/l     | 250    | ml   | H048.W.L25     |
| Succinate         | OOC(CH <sub>2</sub> ) <sub>2</sub> COO <sup>2-</sup>            | in H <sub>2</sub> O | 1000 mg/l     | 500    | ml   | H048.W.L5      |
| Sulphate          | SO <sub>4</sub> <sup>2-</sup>                                   | in H <sub>2</sub> O | 1000 mg/l     | 100    | ml   | H015.W.L1      |
| Sulphate          | SO <sub>4</sub> <sup>2-</sup>                                   | in H <sub>2</sub> O | 1000 mg/l     | 250    | ml   | H015.W.L25     |
| Sulphate          | SO <sub>4</sub> <sup>2-</sup>                                   | in H <sub>2</sub> O | 1000 mg/l     | 500    | ml   | H015.W.L5      |
| Sulphite as S(IV) | S(IV)                                                           | in H <sub>2</sub> O | 1000 mg/l     | 100    | ml   | H018.W.L1      |
| Sulphite as S(IV) | S(IV)                                                           | in H <sub>2</sub> O | 1000 mg/l     | 250    | ml   | H018.W.L25     |
| Sulphite as S(IV) | S(IV)                                                           | in H <sub>2</sub> O | 1000 mg/l     | 500    | ml   | H018.W.L5      |
| Tartrate          | OOC(CHOH) <sub>2</sub> COO <sup>2-</sup>                        | in H <sub>2</sub> O | 1000 mg/l     | 100    | ml   | H049.W.L1      |
| Tartrate          | OOC(CHOH) <sub>2</sub> COO <sup>2-</sup>                        | in H <sub>2</sub> O | 1000 mg/l     | 250    | ml   | H049.W.L25     |
| Tartrate          | OOC(CHOH) <sub>2</sub> COO <sup>2-</sup>                        | in H <sub>2</sub> O | 1000 mg/l     | 500    | ml   | H049.W.L5      |
| Thiocyanate       | SCN <sup>-</sup>                                                | in H <sub>2</sub> O | 1000 mg/l     | 100    | ml   | H021.W.L1      |
| Thiocyanate       | SCN <sup>-</sup>                                                | in H <sub>2</sub> O | 1000 mg/l     | 250    | ml   | H021.W.L25     |
| Thiocyanate       | SCN <sup>-</sup>                                                | in H <sub>2</sub> O | 1000 mg/l     | 500    | ml   | H021.W.L5      |
| Thiosulphate      | S <sub>2</sub> O <sub>3</sub> <sup>2-</sup>                     | in n-pentanol       | 1000 mg/l     | 100    | ml   | H050.011044.L1 |
| Thiosulphate      | S <sub>2</sub> O <sub>3</sub> <sup>2-</sup>                     | in n-pentanol       | 1000 mg/l     | 250    | ml   | 050.011044.L25 |
| Thiosulphate      | S <sub>2</sub> O <sub>3</sub> <sup>2-</sup>                     | in n-pentanol       | 1000 mg/l     | 500    | ml   | H050.011044.L5 |
| Triethanolamine   | (HOC <sub>2</sub> H <sub>4</sub> ) <sub>3</sub> NH <sup>+</sup> | in H <sub>2</sub> O | 1000 mg/l     | 100    | ml   | H051.W.L1      |
| Triethanolamine   | (HOC <sub>2</sub> H <sub>4</sub> ) <sub>3</sub> NH <sup>+</sup> | in H <sub>2</sub> O | 1000 mg/l     | 250    | ml   | H051.W.L25     |
| Triethanolamine   | (HOC <sub>2</sub> H <sub>4</sub> ) <sub>3</sub> NH <sup>+</sup> | in H <sub>2</sub> O | 1000 mg/l     | 500    | ml   | H051.W.L5      |
| Triethylamine     | (C <sub>2</sub> H <sub>5</sub> ) <sub>3</sub> NH <sup>+</sup>   | in H <sub>2</sub> O | 1000 mg/l     | 100    | ml   | H054.W.L1      |
| Triethylamine     | (C <sub>2</sub> H <sub>5</sub> ) <sub>3</sub> NH <sup>+</sup>   | in H <sub>2</sub> O | 1000 mg/l     | 250    | ml   | H054.W.L25     |
| Triethylamine     | (C <sub>2</sub> H <sub>5</sub> ) <sub>3</sub> NH <sup>+</sup>   | in H <sub>2</sub> O | 1000 mg/l     | 500    | ml   | H054.W.L5      |
| Trimethylamine    | (CH <sub>3</sub> )NH <sup>+</sup>                               | in H <sub>2</sub> O | 1000 mg/l     | 100    | ml   | H052.W.L1      |
| Trimethylamine    | (CH <sub>3</sub> )NH <sup>+</sup>                               | in H <sub>2</sub> O | 1000 mg/l     | 250    | ml   | H052.W.L25     |
| Trimethylamine    | (CH <sub>3</sub> )NH <sup>+</sup>                               | in H <sub>2</sub> O | 1000 mg/l     | 500    | ml   | H052.W.L5      |
| Tetrafluoroborate | BF <sub>4</sub>                                                 | in H <sub>2</sub> O | 1000 mg/l     | 100    | ml   | H058.W.L1      |
| Tetrafluoroborate | BF <sub>4</sub>                                                 | in H <sub>2</sub> O | 1000 mg/l     | 250    | ml   | H058.W.L25     |
| Tetrafluoroborate | BF <sub>4</sub>                                                 | in H <sub>2</sub> O | 1000 mg/l     | 500    | ml   | H058.W.L5      |
| Adipates          | C <sub>6</sub> H <sub>8</sub> O <sub>4</sub> <sup>2-</sup>      | in H <sub>2</sub> O | 1000 mg/l     | 100    | ml   | H059.W.L1      |
| Adipates          | C <sub>6</sub> H <sub>8</sub> O <sub>4</sub> <sup>2-</sup>      | in H <sub>2</sub> O | 1000 mg/l     | 250    | ml   | H059.W.L25     |
| Adipates          | C <sub>6</sub> H <sub>8</sub> O <sub>4</sub> <sup>2-</sup>      | in H <sub>2</sub> O | 1000 mg/l     | 500    | ml   | H059.W.L5      |
| Butyrates         | C <sub>4</sub> H <sub>7</sub> O <sub>2</sub> <sup>-</sup>       | in H <sub>2</sub> O | 1000 mg/l     | 100    | ml   | H060.W.L1      |
| Butyrates         | C <sub>4</sub> H <sub>7</sub> O <sub>2</sub> <sup>-</sup>       | in H <sub>2</sub> O | 1000 mg/l     | 250    | ml   | H060.W.L25     |
| Butyrates         | C <sub>4</sub> H <sub>7</sub> O <sub>2</sub> <sup>-</sup>       | in H <sub>2</sub> O | 1000 mg/l     | 500    | ml   | H060.W.L5      |



# Multi-Ion Standards

| Standard 7 ions |               | Reference: 1521.K1.W.L1                       |               |                               | Reference: 1521.K1.W.L25                      |                               |               |
|-----------------|---------------|-----------------------------------------------|---------------|-------------------------------|-----------------------------------------------|-------------------------------|---------------|
|                 |               | Volume: 100 ml<br>Matrix: in H <sub>2</sub> O |               |                               | Volume: 250 ml<br>Matrix: in H <sub>2</sub> O |                               |               |
| Element         | Concentration | Element                                       | Concentration | Element                       | Concentration                                 | Element                       | Concentration |
| Br <sup>-</sup> | 100 mg/l      | F <sup>-</sup>                                | 100 mg/l      | NO <sub>3</sub> <sup>-</sup>  | 100 mg/l                                      | SO <sub>4</sub> <sup>2-</sup> | 100 mg/l      |
| Cl <sup>-</sup> | 100 mg/l      | NO <sub>2</sub> <sup>-</sup>                  | 100 mg/l      | PO <sub>4</sub> <sup>3-</sup> | 100 mg/l                                      |                               |               |

| Standard 7 ions              |               | Reference: 1521.1K.W.L1                       |               |
|------------------------------|---------------|-----------------------------------------------|---------------|
|                              |               | Volume: 100 ml<br>Matrix: in H <sub>2</sub> O |               |
| Element                      | Concentration | Element                                       | Concentration |
| Br <sup>-</sup>              | 1000 mg/l     | NO <sub>3</sub> <sup>-</sup>                  | 1000 mg/l     |
| Cl <sup>-</sup>              | 1000 mg/l     | PO <sub>4</sub> <sup>3-</sup>                 | 1000 mg/l     |
| F <sup>-</sup>               | 1000 mg/l     | SO <sub>4</sub> <sup>2-</sup>                 | 1000 mg/l     |
| NO <sub>2</sub> <sup>-</sup> | 1000 mg/l     |                                               |               |

| Standard 7 ions               |               | Reference: ACE63.25.W.L1                      |               |                              | Reference: ACE63.25.W.L5                      |                |               |
|-------------------------------|---------------|-----------------------------------------------|---------------|------------------------------|-----------------------------------------------|----------------|---------------|
|                               |               | Volume: 100 ml<br>Matrix: in H <sub>2</sub> O |               |                              | Volume: 500 ml<br>Matrix: in H <sub>2</sub> O |                |               |
| Element                       | Concentration | Element                                       | Concentration | Element                      | Concentration                                 | Element        | Concentration |
| PO <sub>4</sub> <sup>3-</sup> | 40 mg/l       | Br <sup>-</sup>                               | 25 mg/l       | NO <sub>2</sub> <sup>-</sup> | 15 mg/l                                       | F <sup>-</sup> | 5 mg/l        |
| SO <sub>4</sub> <sup>2-</sup> | 30 mg/l       | NO <sub>3</sub> <sup>-</sup>                  | 25 mg/l       | Cl <sup>-</sup>              | 10 mg/l                                       |                |               |

| Standard 6 ions              |               | Reference: 1A3DCF.40.01N.L1                                       |               |                 | Reference: A3DCF.40.01N.L5                                        |  |  |
|------------------------------|---------------|-------------------------------------------------------------------|---------------|-----------------|-------------------------------------------------------------------|--|--|
|                              |               | Volume: 100 ml<br>Matrix: in H <sub>2</sub> O/tr HNO <sub>3</sub> |               |                 | Volume: 250 ml<br>Matrix: in H <sub>2</sub> O/tr HNO <sub>3</sub> |  |  |
| Element                      | Concentration | Element                                                           | Concentration | Element         | Concentration                                                     |  |  |
| NH <sub>4</sub> <sup>+</sup> | 40 mg/l       | Na <sup>+</sup>                                                   | 20 mg/l       | K <sup>+</sup>  | 20 mg/l                                                           |  |  |
| Ca <sup>2+</sup>             | 40 mg/l       | Mg <sup>2+</sup>                                                  | 20 mg/l       | Li <sup>+</sup> | 10 mg/l                                                           |  |  |

| Standard 6 ions |               | Reference: E3A7.K1.W.L1                       |               |
|-----------------|---------------|-----------------------------------------------|---------------|
|                 |               | Volume: 100 ml<br>Matrix: in H <sub>2</sub> O |               |
| Element         | Concentration | Element                                       | Concentration |
| Br <sup>-</sup> | 100 mg/l      | NO <sub>3</sub> <sup>-</sup>                  | 100 mg/l      |
| Cl <sup>-</sup> | 100 mg/l      | PO <sub>4</sub> <sup>3-</sup>                 | 100 mg/l      |
| F <sup>-</sup>  | 100 mg/l      | SO <sub>4</sub> <sup>2-</sup>                 | 100 mg/l      |



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| Standard 6 ions  |               | Reference: A7A40.5.01N.L1                       |               | Reference: A7A40.5.01N.L5                       |               |         |               |
|------------------|---------------|-------------------------------------------------|---------------|-------------------------------------------------|---------------|---------|---------------|
|                  |               | Volume: 100 ml                                  |               | Volume: 500 ml                                  |               |         |               |
|                  |               | Matrix: in H <sub>2</sub> O/tr HNO <sub>3</sub> |               | Matrix: in H <sub>2</sub> O/tr HNO <sub>3</sub> |               |         |               |
| Element          | Concentration | Element                                         | Concentration | Element                                         | Concentration | Element | Concentration |
| Ca <sup>2+</sup> | 5 mg/l        | NH <sub>4</sub> <sup>+</sup>                    | 2.5 mg/l      | Na <sup>+</sup>                                 | 2 mg/l        |         |               |
| K <sup>+</sup>   | 5 mg/l        | Mg <sup>2+</sup>                                | 2.5 mg/l      | Li <sup>+</sup>                                 | 0.5 mg/l      |         |               |

| Standard 5 ions              |               | Reference: 1A15.K1.W.L1     |               |
|------------------------------|---------------|-----------------------------|---------------|
|                              |               | Volume: 100 ml              |               |
|                              |               | Matrix: in H <sub>2</sub> O |               |
| Element                      | Concentration | Element                     | Concentration |
| NH <sub>4</sub> <sup>+</sup> | 100 mg/l      | K <sup>+</sup>              | 100 mg/l      |
| Ca <sup>2+</sup>             | 100 mg/l      | Na <sup>+</sup>             | 100 mg/l      |
| Mg <sup>2+</sup>             | 100 mg/l      |                             |               |

| Standard 4 ions  |               | Reference: 4C79.1K.W.L1     |               |
|------------------|---------------|-----------------------------|---------------|
|                  |               | Volume: 100 ml              |               |
|                  |               | Matrix: in H <sub>2</sub> O |               |
| Element          | Concentration | Element                     | Concentration |
| Ca <sup>2+</sup> | 1000 mg/l     | K <sup>+</sup>              | 1000 mg/l     |
| Mg <sup>2+</sup> | 1000 mg/l     | Na <sup>+</sup>             | 1000 mg/l     |

| Standard 3 ions              |               | Reference: 3905.1K.W.L1       |               |
|------------------------------|---------------|-------------------------------|---------------|
|                              |               | Volume: 100 ml                |               |
|                              |               | Matrix: in H <sub>2</sub> O   |               |
| Element                      | Concentration | Element                       | Concentration |
| Cl <sup>-</sup>              | 1000 mg/l     | SO <sub>4</sub> <sup>2-</sup> | 1000 mg/l     |
| NO <sub>3</sub> <sup>-</sup> | 1000 mg/l     |                               |               |

## Eluent Concentrates

| Sodium Carbonate                        | Reference: EL001.W.L1       | Reference: EL001.W.L5       |
|-----------------------------------------|-----------------------------|-----------------------------|
|                                         | Volume: 100 ml              | Volume: 500 ml              |
|                                         | Matrix: in H <sub>2</sub> O | Matrix: in H <sub>2</sub> O |
| 0.5M Carbonate - 100 times concentrated |                             |                             |

| Sodium Bicarbonate                        | Reference: EL002.W.L1       | Reference: EL002.W.L5       |
|-------------------------------------------|-----------------------------|-----------------------------|
|                                           | Volume: 100 ml              | Volume: 500 ml              |
|                                           | Matrix: in H <sub>2</sub> O | Matrix: in H <sub>2</sub> O |
| 0.5M Bicarbonate - 100 times concentrated |                             |                             |

| Carbonate Bicarbonate                                       | Reference: EL003.W.L1       | Reference: EL003.W.L5       |
|-------------------------------------------------------------|-----------------------------|-----------------------------|
|                                                             | Volume: 100 ml              | Volume: 500 ml              |
|                                                             | Matrix: in H <sub>2</sub> O | Matrix: in H <sub>2</sub> O |
| 0.22M Carbonate/ 0.28M Bicarbonate - 100 times concentrated |                             |                             |

|                                                             |                                    |                                    |
|-------------------------------------------------------------|------------------------------------|------------------------------------|
| Carbonate Bicarbonate                                       | <b>Reference:</b> EL004.W.L1       | <b>Reference:</b> EL004.W.L5       |
|                                                             | <b>Volume:</b> 100 ml              | <b>Volume:</b> 500 ml              |
|                                                             | <b>Matrix:</b> in H <sub>2</sub> O | <b>Matrix:</b> in H <sub>2</sub> O |
| 0.18M Carbonate/ 0.17M Bicarbonate - 100 times concentrated |                                    |                                    |

|                                                             |                                    |                                    |
|-------------------------------------------------------------|------------------------------------|------------------------------------|
| Carbonate Bicarbonate                                       | <b>Reference:</b> EL005.W.L1       | <b>Reference:</b> EL005.W.L5       |
|                                                             | <b>Volume:</b> 100 ml              | <b>Volume:</b> 500 ml              |
|                                                             | <b>Matrix:</b> in H <sub>2</sub> O | <b>Matrix:</b> in H <sub>2</sub> O |
| 0.35M Carbonate/ 0.10M Bicarbonate - 100 times concentrated |                                    |                                    |

## Water For Chromatography

|                              |                          |
|------------------------------|--------------------------|
| Water 0.2 micron<br>filtered | <b>Reference:</b> CIW.1L |
|                              | <b>Volume:</b> 1000 ml   |



\* Custom Standards for Ion Chromatography are available upon request.



# Standards equivalent to





# Standards equivalent to Agilent

STANDARDS EQUIVALENT TO

| Agilent Environmental Calibration Standard - 25 components |               | Reference: 5183-4688.L1                 |               |
|------------------------------------------------------------|---------------|-----------------------------------------|---------------|
|                                                            |               | Volume: 100 ml                          |               |
|                                                            |               | Matrix: in 10 % HNO <sub>3</sub> /tr.HF |               |
| Element                                                    | Concentration | Element                                 | Concentration |
| Ca                                                         | 1000 mg/l     | Cu                                      | 10 mg/l       |
| Fe                                                         | 1000 mg/l     | Pb                                      | 10 mg/l       |
| Mg                                                         | 1000 mg/l     | Mn                                      | 10 mg/l       |
| K                                                          | 1000 mg/l     | Mo                                      | 10 mg/l       |
| Na                                                         | 1000 mg/l     | Ni                                      | 10 mg/l       |
| Al                                                         | 10 mg/l       | Se                                      | 10 mg/l       |
| Sb                                                         | 10 mg/l       | Ag                                      | 10 mg/l       |
| As                                                         | 10 mg/l       | Tl                                      | 10 mg/l       |
| Ba                                                         | 10 mg/l       | Th                                      | 10 mg/l       |
| Be                                                         | 10 mg/l       | U                                       | 10 mg/l       |
| Cd                                                         | 10 mg/l       | V                                       | 10 mg/l       |
| Cr                                                         | 10 mg/l       | Zn                                      | 10 mg/l       |
| Co                                                         | 10 mg/l       |                                         |               |

| Agilent Multi-element Calibration Standard # 2A - 28 components |               | Reference: 8500-6940.L1         |               |
|-----------------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                                 |               | Volume: 100 ml                  |               |
|                                                                 |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                         | Concentration | Element                         | Concentration |
| Ag                                                              | 10 mg/l       | K                               | 10 mg/l       |
| Al                                                              | 10 mg/l       | Li                              | 10 mg/l       |
| As                                                              | 10 mg/l       | Mg                              | 10 mg/l       |
| Ba                                                              | 10 mg/l       | Mn                              | 10 mg/l       |
| Be                                                              | 10 mg/l       | Na                              | 10 mg/l       |
| Ca                                                              | 10 mg/l       | Ni                              | 10 mg/l       |
| Cd                                                              | 10 mg/l       | Pb                              | 10 mg/l       |
| Co                                                              | 10 mg/l       | Rb                              | 10 mg/l       |
| Cr                                                              | 10 mg/l       | Se                              | 10 mg/l       |
| Cs                                                              | 10 mg/l       | Sr                              | 10 mg/l       |
| Cu                                                              | 10 mg/l       | Tl                              | 10 mg/l       |
| Fe                                                              | 10 mg/l       | U                               | 10 mg/l       |
| Ga                                                              | 10 mg/l       | V                               | 10 mg/l       |
| Hg                                                              | 10 mg/l       | Zn                              | 10 mg/l       |

| Initial Calibration Verification Standard - 24 components |               | Reference: 5183-4687.L1         |               |
|-----------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                           |               | Volume: 100 ml                  |               |
|                                                           |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                   | Concentration | Element                         | Concentration |
| Ca                                                        | 1000 mg/l     | Cr                              | 100 mg/l      |
| Fe                                                        | 1000 mg/l     | Mn                              | 100 mg/l      |
| K                                                         | 1000 mg/l     | Mo                              | 100 mg/l      |
| Mg                                                        | 1000 mg/l     | Pb                              | 100 mg/l      |
| Na                                                        | 1000 mg/l     | Sb                              | 100 mg/l      |
| Ag                                                        | 100 mg/l      | Se                              | 100 mg/l      |
| Al                                                        | 100 mg/l      | Tl                              | 100 mg/l      |
| As                                                        | 100 mg/l      | V                               | 100 mg/l      |
| Ba                                                        | 100 mg/l      | Zn                              | 100 mg/l      |
| Be                                                        | 100 mg/l      | U                               | 100 mg/l      |
| Cd                                                        | 100 mg/l      | Cu                              | 100 mg/l      |
| Co                                                        | 100 mg/l      | Ni                              | 100 mg/l      |

| Initial Calibration Verification Standard - 26 components |               | Reference: 5183-4682.L1         |               |
|-----------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                           |               | Volume: 100 ml                  |               |
|                                                           |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                   | Concentration | Element                         | Concentration |
| Ca                                                        | 1000 mg/l     | Cr                              | 10 mg/l       |
| Fe                                                        | 1000 mg/l     | Cu                              | 10 mg/l       |
| K                                                         | 1000 mg/l     | Mn                              | 10 mg/l       |
| Mg                                                        | 1000 mg/l     | Mo                              | 10 mg/l       |
| Na                                                        | 1000 mg/l     | Ni                              | 10 mg/l       |
| Sr                                                        | 1000 mg/l     | Pb                              | 10 mg/l       |
| Ag                                                        | 10 mg/l       | Sb                              | 10 mg/l       |
| Al                                                        | 10 mg/l       | Se                              | 10 mg/l       |
| As                                                        | 10 mg/l       | Tl                              | 10 mg/l       |
| Ba                                                        | 10 mg/l       | V                               | 10 mg/l       |
| Be                                                        | 10 mg/l       | Zn                              | 10 mg/l       |
| Cd                                                        | 10 mg/l       | Th                              | 10 mg/l       |
| Co                                                        | 10 mg/l       | U                               | 10 mg/l       |

| 6020 Interference Check<br>Solution A for ICP-MS<br>systems -12 components |               | <u>Reference: 5188-6526.L1</u><br><br>Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> /tr HF |               |         | <u>Reference: 5188-6526.L5</u><br><br>Volume: 500 ml<br>Matrix: in 5 % HNO <sub>3</sub> /tr HF |         |               |
|----------------------------------------------------------------------------|---------------|------------------------------------------------------------------------------------------------|---------------|---------|------------------------------------------------------------------------------------------------|---------|---------------|
| Element                                                                    | Concentration | Element                                                                                        | Concentration | Element | Concentration                                                                                  | Element | Concentration |
| Cl-                                                                        | 20 000 mg/l   | Na                                                                                             | 2 500 mg/l    | Mg      | 1000 mg/l                                                                                      | S       | 1000 mg/l     |
| Ca                                                                         | 3 000 mg/l    | C                                                                                              | 2 000 mg/l    | P       | 1000 mg/l                                                                                      | Mo      | 20 mg/l       |
| Fe                                                                         | 2 500 mg/l    | Al                                                                                             | 1000 mg/l     | K       | 1000 mg/l                                                                                      | Ti      | 20 mg/l       |





| 6020 Interference Check Solution B for ICP/MS - 11 components |               | Reference: 5188-6527.L1         |               |
|---------------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                               |               | Volume: 100 ml                  |               |
|                                                               |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                       | Concentration | Element                         | Concentration |
| Co                                                            | 20 mg/l       | As                              | 10 mg/l       |
| Cr                                                            | 20 mg/l       | Cd                              | 10 mg/l       |
| Cu                                                            | 20 mg/l       | Se                              | 10 mg/l       |
| Mn                                                            | 20 mg/l       | Zn                              | 10 mg/l       |
| Ni                                                            | 20 mg/l       | Ag                              | 5 mg/l        |
| V                                                             | 20 mg/l       |                                 |               |

| Internal standard mix for ICP-MS systems - 8 components |               | Reference: 5188-6525.L1                  |               |
|---------------------------------------------------------|---------------|------------------------------------------|---------------|
|                                                         |               | Volume: 100 ml                           |               |
|                                                         |               | Matrix: in 10 % HNO <sub>3</sub> /tr HCl |               |
| Element                                                 | Concentration | Element                                  | Concentration |
| 6Li                                                     | 10 mg/l       | In                                       | 10 mg/l       |
| Sc                                                      | 10 mg/l       | Tb                                       | 10 mg/l       |
| Ge                                                      | 10 mg/l       | Lu                                       | 10 mg/l       |
| Rh                                                      | 10 mg/l       | Bi                                       | 10 mg/l       |

| ICP-MS tuning solution - 6 components |               | Reference: 5190-0465.L1         |               |
|---------------------------------------|---------------|---------------------------------|---------------|
|                                       |               | Volume: 100 ml                  |               |
|                                       |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                               | Concentration | Element                         | Concentration |
| Li                                    | 10 mg/l       | Ce                              | 10 mg/l       |
| Mg                                    | 10 mg/l       | Tl                              | 10 mg/l       |
| Y                                     | 10 mg/l       | Co                              | 10 mg/l       |

| ICP-MS Stock Tuning Solution - 5 components |               | Reference: 5188-6564.L1                |               |
|---------------------------------------------|---------------|----------------------------------------|---------------|
|                                             |               | Volume: 100 ml                         |               |
|                                             |               | Matrix: in 5 % HNO <sub>3</sub> /tr HF |               |
| Element                                     | Concentration | Element                                | Concentration |
| Li                                          | 10 mg/l       | Tl                                     | 10 mg/l       |
| Y                                           | 10 mg/l       | Co                                     | 10 mg/l       |
| Ce                                          | 10 mg/l       |                                        |               |

| ICP internal standard -<br>15 components |               | Reference: 6610030100.L1        |               |         | Reference: 6610030100.L5        |         |               |
|------------------------------------------|---------------|---------------------------------|---------------|---------|---------------------------------|---------|---------------|
|                                          |               | Volume: 100 ml                  |               |         | Volume: 500 ml                  |         |               |
|                                          |               | Matrix: in 5 % HNO <sub>3</sub> |               |         | Matrix: in 5 % HNO <sub>3</sub> |         |               |
| Element                                  | Concentration | Element                         | Concentration | Element | Concentration                   | Element | Concentration |
| Al                                       | 5 mg/l        | Co                              | 5 mg/l        | Mo      | 5 mg/l                          | Sr      | 5 mg/l        |
| As                                       | 5 mg/l        | Cr                              | 5 mg/l        | Ni      | 5 mg/l                          | Zn      | 5 mg/l        |
| Ba                                       | 5 mg/l        | Cu                              | 5 mg/l        | Pb      | 5 mg/l                          | K       | 50 mg/l       |
| Cd                                       | 5 mg/l        | Mn                              | 5 mg/l        | Se      | 5 mg/l                          |         |               |

| Tuning Solution - 9 elements |               | Reference: 190024400.L1         |               |
|------------------------------|---------------|---------------------------------|---------------|
|                              |               | Volume: 100 ml                  |               |
|                              |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                      | Concentration | Element                         | Concentration |
| Ba                           | 10 mg/l       | Pb                              | 10 mg/l       |
| Be                           | 10 mg/l       | Mg                              | 10 mg/l       |
| Ce                           | 10 mg/l       | Tl                              | 10 mg/l       |
| Co                           | 10 mg/l       | Th                              | 10 mg/l       |
| In                           | 10 mg/l       |                                 |               |

| ICV-7 QC standard Initial/continuing calibration verification standard - 22 components |               | Reference: 190064900.L1         |               |
|----------------------------------------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                                                        |               | Volume: 100 ml                  |               |
|                                                                                        |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                                                | Concentration | Element                         | Concentration |
| Ca                                                                                     | 5000 mg/l     | Cu                              | 25 mg/l       |
| Mg                                                                                     | 5000 mg/l     | Zn                              | 20 mg/l       |
| K                                                                                      | 5000 mg/l     | Mn                              | 15 mg/l       |
| Na                                                                                     | 5000 mg/l     | As                              | 10 mg/l       |
| Al                                                                                     | 200 mg/l      | Cr                              | 10 mg/l       |
| Ba                                                                                     | 200 mg/l      | Ag                              | 10 mg/l       |
| Fe                                                                                     | 100 mg/l      | Tl                              | 10 mg/l       |
| Sb                                                                                     | 60 mg/l       | Be                              | 5 mg/l        |
| Co                                                                                     | 50 mg/l       | Cd                              | 5 mg/l        |
| V                                                                                      | 50 mg/l       | Pb                              | 5 mg/l        |
| Ni                                                                                     | 40 mg/l       | Se                              | 5 mg/l        |

| QCSTD-27 Quality Control standard for environmental analyses |               | Reference: 8500-6940.L1                 |               |
|--------------------------------------------------------------|---------------|-----------------------------------------|---------------|
|                                                              |               | Volume: 100 ml                          |               |
|                                                              |               | Matrix: in 5 % HNO <sub>3</sub> /tr. Hf |               |
| Element                                                      | Concentration | Element                                 | Concentration |
| Al                                                           | 100 mg/l      | Mn                                      | 100 mg/l      |
| Sb                                                           | 100 mg/l      | Mo                                      | 100 mg/l      |
| As                                                           | 100 mg/l      | Ni                                      | 100 mg/l      |
| Ba                                                           | 100 mg/l      | K                                       | 100 mg/l      |
| Be                                                           | 100 mg/l      | Se                                      | 100 mg/l      |
| B                                                            | 100 mg/l      | Si                                      | 100 mg/l      |
| Cd                                                           | 100 mg/l      | Ag                                      | 100 mg/l      |
| Ca                                                           | 100 mg/l      | Sr                                      | 100 mg/l      |
| Cr                                                           | 100 mg/l      | Na                                      | 100 mg/l      |
| Co                                                           | 100 mg/l      | Tl                                      | 100 mg/l      |
| Cu                                                           | 100 mg/l      | Ti                                      | 100 mg/l      |
| Fe                                                           | 100 mg/l      | V                                       | 100 mg/l      |
| Pb                                                           | 100 mg/l      | Zn                                      | 100 mg/l      |
| Mg                                                           | 100 mg/l      |                                         |               |

| ANALT-B Quality Control Standard - 12 components |               | Reference: 190065100.L1         |               |
|--------------------------------------------------|---------------|---------------------------------|---------------|
|                                                  |               | Volume: 100 ml                  |               |
|                                                  |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                          | Concentration | Element                         | Concentration |
| Cd                                               | 100 mg/l      | Be                              | 50 mg/l       |
| Ni                                               | 100 mg/l      | Co                              | 50 mg/l       |
| Pb                                               | 100 mg/l      | Cr                              | 50 mg/l       |
| Ag                                               | 100 mg/l      | Cu                              | 50 mg/l       |
| Zn                                               | 100 mg/l      | Mn                              | 50 mg/l       |
| Ba                                               | 50 mg/l       | V                               | 50 mg/l       |

| INTF-A Quality Control standard - 4 components |               | Reference: 190064800.L1         |               |
|------------------------------------------------|---------------|---------------------------------|---------------|
|                                                |               | Volume: 100 ml                  |               |
|                                                |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                        | Concentration | Element                         | Concentration |
| Al                                             | 5000 mg/l     | Mg                              | 5000 mg/l     |
| Ca                                             | 5000 mg/l     | Fe                              | 2000 mg/l     |

| ICP-OES wavelength calibration solution concentrate - 15 components |               | Reference: 6610030000.L1        |               |         | Reference: 6610030000.L5        |         |               |
|---------------------------------------------------------------------|---------------|---------------------------------|---------------|---------|---------------------------------|---------|---------------|
|                                                                     |               | Volume: 100 ml                  |               |         | Volume: 500 ml                  |         |               |
|                                                                     |               | Matrix: in 5 % HNO <sub>3</sub> |               |         | Matrix: in 5 % HNO <sub>3</sub> |         |               |
| Element                                                             | Concentration | Element                         | Concentration | Element | Concentration                   | Element | Concentration |
| Al                                                                  | 50 mg/l       | Co                              | 50 mg/l       | Mo      | 50 mg/l                         | Sr      | 50 mg/l       |
| As                                                                  | 50 mg/l       | Cr                              | 50 mg/l       | Ni      | 50 mg/l                         | Zn      | 50 mg/l       |
| Ba                                                                  | 50 mg/l       | Cu                              | 50 mg/l       | Pb      | 50 mg/l                         | K       | 500 mg/l      |
| Cd                                                                  | 50 mg/l       | Mn                              | 50 mg/l       | Se      | 50 mg/l                         |         |               |

| ICP-OES wavelength calibration solution - 15 components |               | Reference: 6610030100.L1        |               |         | Reference: 6610030100.L5        |         |               |
|---------------------------------------------------------|---------------|---------------------------------|---------------|---------|---------------------------------|---------|---------------|
|                                                         |               | Volume: 100 ml                  |               |         | Volume: 500 ml                  |         |               |
|                                                         |               | Matrix: in 5 % HNO <sub>3</sub> |               |         | Matrix: in 5 % HNO <sub>3</sub> |         |               |
| Element                                                 | Concentration | Element                         | Concentration | Element | Concentration                   | Element | Concentration |
| Al                                                      | 5 mg/l        | Co                              | 5 mg/l        | Mo      | 5 mg/l                          | Sr      | 5 mg/l        |
| As                                                      | 5 mg/l        | Cr                              | 5 mg/l        | Ni      | 5 mg/l                          | Zn      | 5 mg/l        |
| Ba                                                      | 5 mg/l        | Cu                              | 5 mg/l        | Pb      | 5 mg/l                          | K       | 50 mg/l       |
| Cd                                                      | 5 mg/l        | Mn                              | 5 mg/l        | Se      | 5 mg/l                          |         |               |

| ICP-OES wavelength calibration solution - 6 components |               | Reference: 6610030400.L1        |               |
|--------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                        |               | Volume: 100 ml                  |               |
|                                                        |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                | Concentration | Element                         | Concentration |
| Bi                                                     | 100 mg/l      | Sc                              | 100 mg/l      |
| In                                                     | 100 mg/l      | Tb                              | 100 mg/l      |
| 6Li                                                    | 100 mg/l      | Y                               | 100 mg/l      |

| Calibration mix 1 for AA and ICP-OES 4 components |               | Reference: 6610030500.L1                   |               |
|---------------------------------------------------|---------------|--------------------------------------------|---------------|
|                                                   |               | Volume: 100 ml                             |               |
|                                                   |               | Matrix: in 2 % HNO <sub>3</sub> ; 0.5 % HF |               |
| Element                                           | Concentration | Element                                    | Concentration |
| Mo                                                | 100 mg/l      | Sn                                         | 100 mg/l      |
| Sb                                                | 100 mg/l      | Ti                                         | 100 mg/l      |



| Calibration mix 2 for<br>AA and ICP-OES -<br>18 components |               | Reference: 6610030600.L1                          |               |
|------------------------------------------------------------|---------------|---------------------------------------------------|---------------|
|                                                            |               | Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                    | Concentration | Element                                           | Concentration |
| Ag                                                         | 100 mg/l      | Mn                                                | 100 mg/l      |
| Al                                                         | 100 mg/l      | Ni                                                | 100 mg/l      |
| As                                                         | 100 mg/l      | Pb                                                | 100 mg/l      |
| Ba                                                         | 100 mg/l      | Se                                                | 100 mg/l      |
| Be                                                         | 100 mg/l      | Th                                                | 100 mg/l      |
| Cd                                                         | 100 mg/l      | Tl                                                | 100 mg/l      |
| Co                                                         | 100 mg/l      | U                                                 | 100 mg/l      |
| Cr                                                         | 100 mg/l      | V                                                 | 100 mg/l      |
| Cu                                                         | 100 mg/l      | Zn                                                | 100 mg/l      |

| Calibration<br>mix majors |               | Reference: 6610030700.L1                          |               | Reference: 6610030700.L5                          |               |
|---------------------------|---------------|---------------------------------------------------|---------------|---------------------------------------------------|---------------|
|                           |               | Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               | Volume: 500 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                   | Concentration | Element                                           | Concentration | Element                                           | Concentration |
| Ca                        | 500 mg/l      | K                                                 | 500 mg/l      | Na                                                | 500 mg/l      |
| Fe                        | 500 mg/l      | Mg                                                | 500 mg/l      |                                                   |               |

| PA Tuning Solution 1 -<br>26 components |               | Reference: 5188-6524-1.L1                         |               |
|-----------------------------------------|---------------|---------------------------------------------------|---------------|
|                                         |               | Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                 | Concentration | Element                                           | Concentration |
| As                                      | 20 mg/l       | In                                                | 5 mg/l        |
| Be                                      | 20 mg/l       | 6Li                                               | 5 mg/l        |
| Cd                                      | 20 mg/l       | Lu                                                | 5 mg/l        |
| Zn                                      | 20 mg/l       | Mn                                                | 5 mg/l        |
| Mg                                      | 10 mg/l       | Na                                                | 5 mg/l        |
| Ni                                      | 10 mg/l       | Sc                                                | 5 mg/l        |
| Pb                                      | 10 mg/l       | Sr                                                | 5 mg/l        |
| Al                                      | 5 mg/l        | Th                                                | 5 mg/l        |
| Ba                                      | 5 mg/l        | Tl                                                | 5 mg/l        |
| Bi                                      | 5 mg/l        | U                                                 | 5 mg/l        |
| Co                                      | 5 mg/l        | V                                                 | 5 mg/l        |
| Cr                                      | 5 mg/l        | Y                                                 | 2.5 mg/l      |
| Cu                                      | 5 mg/l        | Yb                                                | 2.5 mg/l      |

| PA Tuning Solution 2 -<br>8 components |               | Reference: 5188-6524-2.L1           |               |
|----------------------------------------|---------------|-------------------------------------|---------------|
|                                        |               | Volume: 100 ml<br>Matrix: in 5 %HCl |               |
| Element                                | Concentration | Element                             | Concentration |
| Ge                                     | 10 mg/l       | Sb                                  | 10 mg/l       |
| Mo                                     | 10 mg/l       | Sn                                  | 10 mg/l       |
| Pd                                     | 10 mg/l       | Ir                                  | 5 mg/l        |
| Ru                                     | 10 mg/l       | Ti                                  | 5 mg/l        |

| Multi-element<br>calibration standard-1 -<br>17 components |               | Reference: 8500-6944.L1                           |               |
|------------------------------------------------------------|---------------|---------------------------------------------------|---------------|
|                                                            |               | Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                    | Concentration | Element                                           | Concentration |
| Ce                                                         | 10 mg/l       | Pr                                                | 10 mg/l       |
| Dy                                                         | 10 mg/l       | Sc                                                | 10 mg/l       |
| Er                                                         | 10 mg/l       | Sm                                                | 10 mg/l       |
| Eu                                                         | 10 mg/l       | Tb                                                | 10 mg/l       |
| Gd                                                         | 10 mg/l       | Th                                                | 10 mg/l       |
| Ho                                                         | 10 mg/l       | Tm                                                | 10 mg/l       |
| La                                                         | 10 mg/l       | Y                                                 | 10 mg/l       |
| Lu                                                         | 10 mg/l       | Yb                                                | 10 mg/l       |
| Nd                                                         | 10 mg/l       |                                                   |               |

| Multi-element<br>calibration standard-4B -<br>12 components |               | Reference: 8500-6942.L1                                    |               |
|-------------------------------------------------------------|---------------|------------------------------------------------------------|---------------|
|                                                             |               | Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> / tr. HF |               |
| Element                                                     | Concentration | Element                                                    | Concentration |
| B                                                           | 10 mg/l       | S                                                          | 10 mg/l       |
| Ge                                                          | 10 mg/l       | Si                                                         | 10 mg/l       |
| Mo                                                          | 10 mg/l       | Ta                                                         | 10 mg/l       |
| Nb                                                          | 10 mg/l       | Ti                                                         | 10 mg/l       |
| P                                                           | 10 mg/l       | W                                                          | 10 mg/l       |
| Re                                                          | 10 mg/l       | Zr                                                         | 10 mg/l       |

| Multi-element calibration standard-3 - 10 components |               | Reference: 8500-6948.L1                  |               |
|------------------------------------------------------|---------------|------------------------------------------|---------------|
|                                                      |               | Volume: 100 ml                           |               |
|                                                      |               | Matrix: in 10 % HCl/1 % HNO <sub>3</sub> |               |
| Element                                              | Concentration | Element                                  | Concentration |
| Sb                                                   | 10 mg/l       | Pt                                       | 10 mg/l       |
| Au                                                   | 10 mg/l       | Rh                                       | 10 mg/l       |
| Hf                                                   | 10 mg/l       | Ru                                       | 10 mg/l       |
| Ir                                                   | 10 mg/l       | Te                                       | 10 mg/l       |
| Pd                                                   | 10 mg/l       | Sn                                       | 10 mg/l       |

| ICV-7 QC standard Initial/continuing calibration verification standard - 26 components |               | Reference: 51834682.L1           |               |
|----------------------------------------------------------------------------------------|---------------|----------------------------------|---------------|
|                                                                                        |               | Volume: 100 ml                   |               |
|                                                                                        |               | Matrix: in 10 % HNO <sub>3</sub> |               |
| Element                                                                                | Concentration | Element                          | Concentration |
| Ca                                                                                     | 1000 mg/l     | Cr                               | 10 mg/l       |
| Fe                                                                                     | 1000 mg/l     | Cu                               | 10 mg/l       |
| K                                                                                      | 1000 mg/l     | Mn                               | 10 mg/l       |
| Mg                                                                                     | 1000 mg/l     | Mo                               | 10 mg/l       |
| Na                                                                                     | 1000 mg/l     | Ni                               | 10 mg/l       |
| Sr                                                                                     | 1000 mg/l     | Pb                               | 10 mg/l       |
| Ag                                                                                     | 10 mg/l       | Sb                               | 10 mg/l       |
| Al                                                                                     | 10 mg/l       | Se                               | 10 mg/l       |
| As                                                                                     | 10 mg/l       | Tl                               | 10 mg/l       |
| Ba                                                                                     | 10 mg/l       | V                                | 10 mg/l       |
| Be                                                                                     | 10 mg/l       | Zn                               | 10 mg/l       |
| Cd                                                                                     | 10 mg/l       | Th                               | 10 mg/l       |
| Co                                                                                     | 10 mg/l       | U                                | 10 mg/l       |

| ICP standard solution - 15 components |               | Reference: 8500-6944.L1         |               |
|---------------------------------------|---------------|---------------------------------|---------------|
|                                       |               | Volume: 100 ml                  |               |
|                                       |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                               | Concentration | Element                         | Concentration |
| Al                                    | 5 mg/l        | Mn                              | 5 mg/l        |
| As                                    | 5 mg/l        | Mo                              | 5 mg/l        |
| Ba                                    | 5 mg/l        | Ni                              | 5 mg/l        |
| Cd                                    | 5 mg/l        | Pb                              | 5 mg/l        |
| Co                                    | 5 mg/l        | Se                              | 5 mg/l        |
| Cr                                    | 5 mg/l        | Sr                              | 5 mg/l        |
| Cu                                    | 5 mg/l        | Zn                              | 5 mg/l        |
| K                                     | 5 mg/l        |                                 |               |



## Standards equivalent to Perkin Elmer

| Mixed Calibration Standard - 10 components |               | Reference: N0691579.L1                            |               | Reference: N0691579.L5                            |               |         |               |
|--------------------------------------------|---------------|---------------------------------------------------|---------------|---------------------------------------------------|---------------|---------|---------------|
|                                            |               | Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> |               | Volume: 500 ml<br>Matrix: in 2 % HNO <sub>3</sub> |               |         |               |
| Element                                    | Concentration | Element                                           | Concentration | Element                                           | Concentration | Element | Concentration |
| As                                         | 50 mg/l       | Li                                                | 10 mg/l       | Sr                                                | 10 mg/l       | Ba      | 1 mg/l        |
| K                                          | 50 mg/l       | Mn                                                | 10 mg/l       | Zn                                                | 10 mg/l       | Mg      | 1 mg/l        |
| La                                         | 10 mg/l       | Ni                                                | 10 mg/l       |                                                   |               |         |               |

| Mixed Calibration Standard 1 - 6 components |               | Reference: N9300200.L1                            |               |
|---------------------------------------------|---------------|---------------------------------------------------|---------------|
|                                             |               | Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                     | Concentration | Element                                           | Concentration |
| Pb                                          | 500 mg/l      | Zn                                                | 150 mg/l      |
| Se                                          | 200 mg/l      | Mn                                                | 100 mg/l      |
| Cd                                          | 150 mg/l      | Be                                                | 50 mg/l       |

| Mixed Calibration Standard 2 - 5 components |               | Reference: N9300201.L1                            |               |
|---------------------------------------------|---------------|---------------------------------------------------|---------------|
|                                             |               | Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                     | Concentration | Element                                           | Concentration |
| Fe                                          | 10 000 mg/l   | Cu                                                | 100 mg/l      |
| Ba                                          | 100 mg/l      | V                                                 | 100 mg/l      |
| Co                                          | 100 mg/l      |                                                   |               |

| Mixed Calibration Standard 3 - 3 components |               | Reference: N9300202.L1                                   |               |
|---------------------------------------------|---------------|----------------------------------------------------------|---------------|
|                                             |               | Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> /tr HF |               |
| Element                                     | Concentration | Element                                                  | Concentration |
| As                                          | 500 mg/l      | Si                                                       | 100 mg/l      |
| Mo                                          | 100 mg/l      |                                                          |               |

| Mixed Calibration Standard 4 - 6 components |               | Reference: N9300203.L1                            |               |
|---------------------------------------------|---------------|---------------------------------------------------|---------------|
|                                             |               | Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                     | Concentration | Element                                           | Concentration |
| Ca                                          | 1000 mg/l     | Na                                                | 200 mg/l      |
| K                                           | 400 mg/l      | Cr                                                | 20 mg/l       |
| Al                                          | 200 mg/l      | Ni                                                | 20 mg/l       |

| Mixed Calibration Standard 5 - 5 components |               | Reference: N9300204.L1                                                        |               |
|---------------------------------------------|---------------|-------------------------------------------------------------------------------|---------------|
|                                             |               | Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> /<br>tr Tartaric acid/tr HF |               |
| Element                                     | Concentration | Element                                                                       | Concentration |
| Mg                                          | 1000 mg/l     | B                                                                             | 100 mg/l      |
| Sb                                          | 200 mg/l      | Ag                                                                            | 50 mg/l       |
| Tl                                          | 200 mg/l      |                                                                               |               |

| Wavelength Calibration Standard - 11 components |               | Reference: N0681470.L1                            |               | Reference: N0681470.L5                            |               |         |               |
|-------------------------------------------------|---------------|---------------------------------------------------|---------------|---------------------------------------------------|---------------|---------|---------------|
|                                                 |               | Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               | Volume: 500 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |         |               |
| Element                                         | Concentration | Element                                           | Concentration | Element                                           | Concentration | Element | Concentration |
| P                                               | 100 mg/l      | As                                                | 20 mg/l       | Mn                                                | 20 mg/l       | Na      | 20 mg/l       |
| K                                               | 100 mg/l      | La                                                | 20 mg/l       | Mo                                                | 20 mg/l       | Sc      | 20 mg/l       |
| S                                               | 100 mg/l      | Li                                                | 20 mg/l       | Ni                                                | 20 mg/l       |         |               |

| Initial Calibration<br>Verification Standard -<br>21 components |               | Reference: N9303953.L1                            |               |
|-----------------------------------------------------------------|---------------|---------------------------------------------------|---------------|
|                                                                 |               | Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                         | Concentration | Element                                           | Concentration |
| Ca                                                              | 500 mg/l      | Cu                                                | 25 mg/l       |
| Mg                                                              | 500 mg/l      | Zn                                                | 20 mg/l       |
| K                                                               | 500 mg/l      | Mn                                                | 15 mg/l       |
| Na                                                              | 500 mg/l      | As                                                | 10 mg/l       |
| Ba                                                              | 200 mg/l      | Cr                                                | 10 mg/l       |
| Al                                                              | 200 mg/l      | Ag                                                | 10 mg/l       |
| Fe                                                              | 100 mg/l      | Tl                                                | 10 mg/l       |
| Sb                                                              | 60 mg/l       | Cd                                                | 5 mg/l        |
| Co                                                              | 50 mg/l       | Se                                                | 5 mg/l        |
| V                                                               | 50 mg/l       | Pb                                                | 3 mg/l        |
| Ni                                                              | 40 mg/l       |                                                   |               |

| Quality Control Standard,<br>21 components Pure<br>(Pure XVI) |               | Reference: N9300281.L1                                                      |               |
|---------------------------------------------------------------|---------------|-----------------------------------------------------------------------------|---------------|
|                                                               |               | Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> /<br>tr. HF/ tr.Tart. Ac. |               |
| Element                                                       | Concentration | Element                                                                     | Concentration |
| As                                                            | 100 mg/l      | Mo                                                                          | 100 mg/l      |
| Be                                                            | 100 mg/l      | Ni                                                                          | 100 mg/l      |
| Ca                                                            | 100 mg/l      | Pb                                                                          | 100 mg/l      |
| Cd                                                            | 100 mg/l      | Sb                                                                          | 100 mg/l      |
| Co                                                            | 100 mg/l      | Se                                                                          | 100 mg/l      |
| Cr                                                            | 100 mg/l      | Sr                                                                          | 100 mg/l      |
| Cu                                                            | 100 mg/l      | Ti                                                                          | 100 mg/l      |
| Fe                                                            | 100 mg/l      | Tl                                                                          | 100 mg/l      |
| Li                                                            | 100 mg/l      | V                                                                           | 100 mg/l      |
| Mg                                                            | 100 mg/l      | Zn                                                                          | 100 mg/l      |
| Mn                                                            | 100 mg/l      |                                                                             |               |

| Quality Control<br>Standard -<br>7 components |               | Reference: N9300280.L1                                     |               |
|-----------------------------------------------|---------------|------------------------------------------------------------|---------------|
|                                               |               | Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> / tr. HF |               |
| Element                                       | Concentration | Element                                                    | Concentration |
| K                                             | 1000 mg/l     | Ba                                                         | 100 mg/l      |
| Si                                            | 500 mg/l      | Na                                                         | 100 mg/l      |
| Al                                            | 100 mg/l      | Ag                                                         | 50 mg/l       |
| B                                             | 100 mg/l      |                                                            |               |

| Instrument Calibration<br>Standard 1 -<br>4 components |               | Reference: N9300218.L1                            |               |         | Reference: N9300218.L5                            |         |               |
|--------------------------------------------------------|---------------|---------------------------------------------------|---------------|---------|---------------------------------------------------|---------|---------------|
|                                                        |               | Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |         | Volume: 500 ml<br>Matrix: in 5 % HNO <sub>3</sub> |         |               |
| Element                                                | Concentration | Element                                           | Concentration | Element | Concentration                                     | Element | Concentration |
| Ca                                                     | 5000 mg/l     | K                                                 | 5000 mg/l     | Na      | 5000 mg/l                                         | Mg      | 5000 mg/l     |

| Instrument Calibration<br>Standard 2 -<br>5 components |               | Reference: N9300219.L1                            |               |
|--------------------------------------------------------|---------------|---------------------------------------------------|---------------|
|                                                        |               | Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                | Concentration | Element                                           | Concentration |
| Ni                                                     | 400 mg/l      | Ag                                                | 100 mg/l      |
| Zn                                                     | 200 mg/l      | Cr                                                | 100 mg/l      |
| Mn                                                     | 150 mg/l      |                                                   |               |

| Instrument Calibration<br>Standard 3 -<br>7 components |               | Reference: N9300220.L1                           |               |
|--------------------------------------------------------|---------------|--------------------------------------------------|---------------|
|                                                        |               | Volume: 100 ml<br>Matrix: in 5 %HNO <sub>3</sub> |               |
| Element                                                | Concentration | Element                                          | Concentration |
| Al                                                     | 2000 mg/l     | V                                                | 500 mg/l      |
| Ba                                                     | 2000 mg/l     | Cu                                               | 250 mg/l      |
| Fe                                                     | 1000 mg/l     | Be                                               | 50 mg/l       |
| Co                                                     | 500 mg/l      |                                                  |               |



| Instrument Calibration<br>Standard 4 -<br>5 components |               | <b>Reference:</b> N9300221.L1<br><br><b>Volume:</b> 100 ml<br><b>Matrix:</b> in 5 % HNO <sub>3</sub> |               |
|--------------------------------------------------------|---------------|------------------------------------------------------------------------------------------------------|---------------|
| Element                                                | Concentration | Element                                                                                              | Concentration |
| As                                                     | 100 mg/l      | Se                                                                                                   | 50 mg/l       |
| Tl                                                     | 100 mg/l      | Pb                                                                                                   | 30 mg/l       |
| Cd                                                     | 50 mg/l       |                                                                                                      |               |

| Instrument Check<br>Standard 1 -<br>17 components |               | <b>Reference:</b> N9303821.L1<br><br><b>Volume:</b> 100 ml<br><b>Matrix:</b> in 2 % HNO <sub>3</sub> /<br>tr Tart Ac/tr HF |               |
|---------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------------------|---------------|
| Element                                           | Concentration | Element                                                                                                                    | Concentration |
| Ag                                                | 10 mg/l       | Mn                                                                                                                         | 10 mg/l       |
| Al                                                | 10 mg/l       | Ni                                                                                                                         | 10 mg/l       |
| As                                                | 10 mg/l       | Pb                                                                                                                         | 10 mg/l       |
| Ba                                                | 10 mg/l       | Sb                                                                                                                         | 10 mg/l       |
| Be                                                | 10 mg/l       | Se                                                                                                                         | 10 mg/l       |
| Cd                                                | 10 mg/l       | Tl                                                                                                                         | 10 mg/l       |
| Co                                                | 10 mg/l       | V                                                                                                                          | 10 mg/l       |
| Cr                                                | 10 mg/l       | Zn                                                                                                                         | 10 mg/l       |
| Cu                                                | 10 mg/l       |                                                                                                                            |               |

| Instrument Check<br>Standard 4 -<br>3 components |               | <b>Reference:</b> N9303823.L1<br><br><b>Volume:</b> 100 ml<br><b>Matrix:</b> in 2 % HNO <sub>3</sub> |               |
|--------------------------------------------------|---------------|------------------------------------------------------------------------------------------------------|---------------|
| Element                                          | Concentration | Element                                                                                              | Concentration |
| Mo                                               | 10 mg/l       | U                                                                                                    | 10 mg/l       |
| Th                                               | 10 mg/l       |                                                                                                      |               |

| Contract Required<br>Detection Limits<br>(CRDL) - 15 components |               | <b>Reference:</b> N9300225.L1<br><br><b>Volume:</b> 100 ml<br><b>Matrix:</b> in 5 % HNO <sub>3</sub> /<br>tr Tart Ac/tr HF |               |
|-----------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------------------|---------------|
| Element                                                         | Concentration | Element                                                                                                                    | Concentration |
| Sb                                                              | 120 mg/l      | As                                                                                                                         | 20 mg/l       |
| Co                                                              | 100 mg/l      | Cr                                                                                                                         | 20 mg/l       |
| V                                                               | 100 mg/l      | Tl                                                                                                                         | 20 mg/l       |
| Ni                                                              | 80 mg/l       | Be                                                                                                                         | 10 mg/l       |
| Cu                                                              | 50 mg/l       | Cd                                                                                                                         | 10 mg/l       |
| Zn                                                              | 40 mg/l       | Se                                                                                                                         | 10 mg/l       |
| Mn                                                              | 30 mg/l       | Pb                                                                                                                         | 6 mg/l        |
| Ag                                                              | 20 mg/l       |                                                                                                                            |               |

| Instrument Check<br>Standard 3 -<br>5 components |               | <b>Reference:</b> N9303822.L1<br><br><b>Volume:</b> 100 ml<br><b>Matrix:</b> in 2 % HNO <sub>3</sub> |               |
|--------------------------------------------------|---------------|------------------------------------------------------------------------------------------------------|---------------|
| Element                                          | Concentration | Element                                                                                              | Concentration |
| Ca                                               | 200 mg/l      | Mg                                                                                                   | 200 mg/l      |
| Fe                                               | 200 mg/l      | Na                                                                                                   | 200 mg/l      |
| K                                                | 200 mg/l      |                                                                                                      |               |

| Instrument Check<br>Standard 5 -<br>4 components |               | <b>Reference:</b> N9303824.L1<br><br><b>Volume:</b> 100 ml<br><b>Matrix:</b> in 2 % HNO <sub>3</sub> |               |
|--------------------------------------------------|---------------|------------------------------------------------------------------------------------------------------|---------------|
| Element                                          | Concentration | Element                                                                                              | Concentration |
| Mo                                               | 10 mg/l       | Sr                                                                                                   | 10 mg/l       |
| Sn                                               | 10 mg/l       | Ti                                                                                                   | 10 mg/l       |

| Interference Check<br>Standard -<br>5 components |               | <b>Reference:</b> N9300208.L1<br><br><b>Volume:</b> 100 ml<br><b>Matrix:</b> in 5 % HNO <sub>3</sub> |               |
|--------------------------------------------------|---------------|------------------------------------------------------------------------------------------------------|---------------|
| Element                                          | Concentration | Element                                                                                              | Concentration |
| Ca                                               | 6000 mg/l     | Al                                                                                                   | 1200 mg/l     |
| Fe                                               | 5000 mg/l     | Na                                                                                                   | 1000 mg/l     |
| Mg                                               | 3000 mg/l     |                                                                                                      |               |

| Interference Check<br>Standard 18 -<br>17 components |            | <b>Reference:</b> N9300205.L1<br><br><b>Volume:</b> 100 ml<br><b>Matrix:</b> in 5 % HNO <sub>3</sub> |               | <b>Reference:</b> N9300205.L5<br><br><b>Volume:</b> 500 ml<br><b>Matrix:</b> in 5 % HNO <sub>3</sub> |               |         |               |
|------------------------------------------------------|------------|------------------------------------------------------------------------------------------------------|---------------|------------------------------------------------------------------------------------------------------|---------------|---------|---------------|
|                                                      |            | Element                                                                                              | Concentration | Element                                                                                              | Concentration | Element | Concentration |
| K                                                    | 20000 mg/l | Ag                                                                                                   | 300 mg/l      | Cu                                                                                                   | 300 mg/l      | Be      | 100 mg/l      |
| As                                                   | 1000 mg/l  | Ba                                                                                                   | 300 mg/l      | Ni                                                                                                   | 300 mg/l      | Hg      | 100 mg/l      |
| Pb                                                   | 1000 mg/l  | Cd                                                                                                   | 300 mg/l      | V                                                                                                    | 300 mg/l      |         |               |
| Tl                                                   | 1000 mg/l  | Co                                                                                                   | 300 mg/l      | Zn                                                                                                   | 300 mg/l      |         |               |
| Se                                                   | 500 mg/l   | Cr                                                                                                   | 300 mg/l      | Mn                                                                                                   | 200 mg/l      |         |               |



| Interferents A - 4 components |               | Reference: N9300226.L1          |               |         | Reference: N9300226.L5          |         |               |
|-------------------------------|---------------|---------------------------------|---------------|---------|---------------------------------|---------|---------------|
|                               |               | Volume: 100 ml                  |               |         | Volume: 500 ml                  |         |               |
|                               |               | Matrix: in 5 % HNO <sub>3</sub> |               |         | Matrix: in 5 % HNO <sub>3</sub> |         |               |
| Element                       | Concentration | Element                         | Concentration | Element | Concentration                   | Element | Concentration |
| Al                            | 5000 mg/l     | Ca                              | 5000 mg/l     | Mg      | 5000 mg/l                       | Fe      | 2000 mg/l     |

| Alternate Interferents A - 6 components |               | Reference: N9300228.L1          |               |         | Reference: N9300228.L5          |  |  |
|-----------------------------------------|---------------|---------------------------------|---------------|---------|---------------------------------|--|--|
|                                         |               | Volume: 100 ml                  |               |         | Volume: 500 ml                  |  |  |
|                                         |               | Matrix: in 5 % HNO <sub>3</sub> |               |         | Matrix: in 5 % HNO <sub>3</sub> |  |  |
| Element                                 | Concentration | Element                         | Concentration | Element | Concentration                   |  |  |
| Cr                                      | 1000 mg/l     | Mn                              | 1000 mg/l     | Ti      | 1000 mg/l                       |  |  |
| Cu                                      | 1000 mg/l     | Ni                              | 1000 mg/l     | V       | 1000 mg/l                       |  |  |

| Analytes B - 16 components |               | Reference: N9300228.L1                             |               |         | Reference: N9300228.L5                             |         |               |
|----------------------------|---------------|----------------------------------------------------|---------------|---------|----------------------------------------------------|---------|---------------|
|                            |               | Volume: 100 ml                                     |               |         | Volume: 500 ml                                     |         |               |
|                            |               | Matrix: in 5 % HNO <sub>3</sub> / tr Tart Ac/tr HF |               |         | Matrix: in 5 % HNO <sub>3</sub> / tr Tart Ac/tr HF |         |               |
| Element                    | Concentration | Element                                            | Concentration | Element | Concentration                                      | Element | Concentration |
| Cd                         | 100 mg/l      | Ba                                                 | 50 mg/l       | Cu      | 50 mg/l                                            | As      | 10 mg/l       |
| Ni                         | 100 mg/l      | Be                                                 | 50 mg/l       | Mn      | 50 mg/l                                            | Tl      | 10 mg/l       |
| Zn                         | 100 mg/l      | Co                                                 | 50 mg/l       | V       | 50 mg/l                                            | Pb      | 5 mg/l        |
| Sb                         | 60 mg/l       | Cr                                                 | 50 mg/l       | Ag      | 20 mg/l                                            | Se      | 5 mg/l        |

| Alternate Analytes B - 12 components |               | Reference: N9300229.L1                             |               |         | Reference: N9300229.L5                             |         |               |
|--------------------------------------|---------------|----------------------------------------------------|---------------|---------|----------------------------------------------------|---------|---------------|
|                                      |               | Volume: 100 ml                                     |               |         | Volume: 500 ml                                     |         |               |
|                                      |               | Matrix: in 5 % HNO <sub>3</sub> / tr Tart Ac/tr HF |               |         | Matrix: in 5 % HNO <sub>3</sub> / tr Tart Ac/tr HF |         |               |
| Element                              | Concentration | Element                                            | Concentration | Element | Concentration                                      | Element | Concentration |
| Al                                   | 100 mg/l      | Mo                                                 | 100 mg/l      | Se      | 100 mg/l                                           | Fe      | 10 mg/l       |
| As                                   | 100 mg/l      | Na                                                 | 100 mg/l      | Tl      | 100 mg/l                                           | Mg      | 10 mg/l       |
| B                                    | 100 mg/l      | Sb                                                 | 100 mg/l      | Ca      | 10 mg/l                                            | Si      | 10 mg/l       |

| Interference Check Solution 1 - 12 components |               | Reference: N9303828.L1                             |               |         | Reference: N9303828.L5                             |         |               |
|-----------------------------------------------|---------------|----------------------------------------------------|---------------|---------|----------------------------------------------------|---------|---------------|
|                                               |               | Volume: 100 ml                                     |               |         | Volume: 500 ml                                     |         |               |
|                                               |               | Matrix: in 5 % HNO <sub>3</sub> / tr Tart Ac/tr HF |               |         | Matrix: in 5 % HNO <sub>3</sub> / tr Tart Ac/tr HF |         |               |
| Element                                       | Concentration | Element                                            | Concentration | Element | Concentration                                      | Element | Concentration |
| Cl-                                           | 10000 mg/l    | Ca                                                 | 1000 mg/l     | Mg      | 1000 mg/l                                          | S       | 1000 mg/l     |
| C                                             | 2000 mg/l     | Fe                                                 | 1000 mg/l     | Na      | 1000 mg/l                                          | Mo      | 20 mg/l       |
| Al                                            | 1000 mg/l     | K                                                  | 1000 mg/l     | P       | 1000 mg/l                                          | Ti      | 20 mg/l       |



| Interference Check<br>Solution 2 -<br>9 components |               | Reference: N9303830.L1                            |               | Reference: N9303830.L5                            |               |
|----------------------------------------------------|---------------|---------------------------------------------------|---------------|---------------------------------------------------|---------------|
|                                                    |               | Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> |               | Volume: 500 ml<br>Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                            | Concentration | Element                                           | Concentration | Element                                           | Concentration |
| Ag                                                 | 10 mg/l       | Co                                                | 10 mg/l       | Mn                                                | 10 mg/l       |
| As                                                 | 10 mg/l       | Cr                                                | 10 mg/l       | Ni                                                | 10 mg/l       |
| Cd                                                 | 10 mg/l       | Cu                                                | 10 mg/l       | Zn                                                | 10 mg/l       |

| Analytes C -<br>17 components |               | Reference: N9303831.L1                                              |               | Reference: N9303831.L5                                              |               |         |               |
|-------------------------------|---------------|---------------------------------------------------------------------|---------------|---------------------------------------------------------------------|---------------|---------|---------------|
|                               |               | Volume: 100 ml<br>Matrix: in 2 %HNO <sub>3</sub> / tr Tart Ac/tr HF |               | Volume: 500 ml<br>Matrix: in 2 %HNO <sub>3</sub> / tr Tart Ac/tr HF |               |         |               |
| Element                       | Concentration | Element                                                             | Concentration | Element                                                             | Concentration | Element | Concentration |
| Ag                            | 2 mg/l        | Co                                                                  | 2 mg/l        | Ni                                                                  | 2 mg/l        | V       | 2 mg/l        |
| As                            | 2 mg/l        | Cr                                                                  | 2 mg/l        | Pb                                                                  | 2 mg/l        | Zn      | 2 mg/l        |
| Ba                            | 2 mg/l        | Cu                                                                  | 2 mg/l        | Sb                                                                  | 2 mg/l        |         |               |
| Be                            | 2 mg/l        | Hg                                                                  | 2 mg/l        | Se                                                                  | 2 mg/l        |         |               |
| Cd                            | 2 mg/l        | Mn                                                                  | 2 mg/l        | Tl                                                                  | 2 mg/l        |         |               |

| Universal Data<br>Acquisition Standard 5:<br>12 components |               | Reference: N9300235.L1                                     |               |
|------------------------------------------------------------|---------------|------------------------------------------------------------|---------------|
|                                                            |               | Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> / tr. HF |               |
| Element                                                    | Concentration | Element                                                    | Concentration |
| B                                                          | 10 mg/l       | S                                                          | 10 mg/l       |
| Ge                                                         | 10 mg/l       | Si                                                         | 10 mg/l       |
| Mo                                                         | 10 mg/l       | Ta                                                         | 10 mg/l       |
| Nb                                                         | 10 mg/l       | Ti                                                         | 10 mg/l       |
| P                                                          | 10 mg/l       | W                                                          | 10 mg/l       |
| Re                                                         | 10 mg/l       | Zr                                                         | 10 mg/l       |

| Vis Wavecal Solution -<br>8 components |               | Reference: N9302946.L1                            |               | Reference: N9302946.L25                           |               |
|----------------------------------------|---------------|---------------------------------------------------|---------------|---------------------------------------------------|---------------|
|                                        |               | Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> |               | Volume: 250 ml<br>Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                | Concentration | Element                                           | Concentration | Element                                           | Concentration |
| Ba                                     | 1 mg/l        | La                                                | 10 mg/l       | Na                                                | 10 mg/l       |
| Ca                                     | 1 mg/l        | Li                                                | 10 mg/l       | Sr                                                | 10 mg/l       |
| K                                      | 50 mg/l       | Mn                                                | 10 mg/l       |                                                   |               |

| UV Wavecal Solution - 11 components |               | <b>Reference:</b> N0681470.L25 |               |
|-------------------------------------|---------------|--------------------------------|---------------|
|                                     |               | <b>Volume:</b> 100 ml          |               |
|                                     |               | <b>Matrix:</b> in 5 % HCl      |               |
| Element                             | Concentration | Element                        | Concentration |
| P                                   | 100 mg/l      | Sc                             | 20 mg/l       |
| S                                   | 100 mg/l      | As                             | 20 mg/l       |
| K                                   | 100 mg/l      | Na                             | 20 mg/l       |
| Mn                                  | 20 mg/l       | La                             | 20 mg/l       |
| Mo                                  | 20 mg/l       | Li                             | 20 mg/l       |
| Ni                                  | 20 mg/l       |                                |               |

| UV Wavecal Solution - 12 components |               | <b>Reference:</b> N0582152.L5 |               |
|-------------------------------------|---------------|-------------------------------|---------------|
|                                     |               | <b>Volume:</b> 500 ml         |               |
|                                     |               | <b>Matrix:</b> in 5 % HCl     |               |
| Element                             | Concentration | Element                       | Concentration |
| P                                   | 100 mg/l      | Sc                            | 20 mg/l       |
| S                                   | 100 mg/l      | As                            | 20 mg/l       |
| K                                   | 100 mg/l      | Na                            | 20 mg/l       |
| Mn                                  | 20 mg/l       | La                            | 20 mg/l       |
| Mo                                  | 20 mg/l       | Li                            | 20 mg/l       |
| Ni                                  | 20 mg/l       | Ca                            | 1 mg/l        |

| Low UV Standard - 3 components |               | <b>Reference:</b> N0691580.L1          |               | <b>Reference:</b> N0691580.L25         |               | <b>Reference:</b> N0691580.L5          |  |
|--------------------------------|---------------|----------------------------------------|---------------|----------------------------------------|---------------|----------------------------------------|--|
|                                |               | <b>Volume:</b> 100 ml                  |               | <b>Volume:</b> 500 ml                  |               | <b>Volume:</b> 500 ml                  |  |
|                                |               | <b>Matrix:</b> in 2 % HNO <sub>3</sub> |               | <b>Matrix:</b> in 2 % HNO <sub>3</sub> |               | <b>Matrix:</b> in 2 % HNO <sub>3</sub> |  |
| Element                        | Concentration | Element                                | Concentration | Element                                | Concentration |                                        |  |
| Al                             | 10 mg/l       | P                                      | 10 mg/l       | S                                      | 10 mg/l       |                                        |  |

| Calcium Stray Light Standard |               | <b>Reference:</b> N0691581.L1      |  |
|------------------------------|---------------|------------------------------------|--|
|                              |               | <b>Volume:</b> 100 ml              |  |
|                              |               | <b>Matrix:</b> in H <sub>2</sub> O |  |
| Element                      | Concentration |                                    |  |
| Ca                           | 10 000 mg/l   |                                    |  |

| Spike Sample Standard I (water) - 17 components |               | <b>Reference:</b> N9303839.L1                             |               |
|-------------------------------------------------|---------------|-----------------------------------------------------------|---------------|
|                                                 |               | <b>Volume:</b> 100 ml                                     |               |
|                                                 |               | <b>Matrix:</b> in 5 % HNO <sub>3</sub> / tr Tart Ac/tr HF |               |
| Element                                         | Concentration | Element                                                   | Concentration |
| Fe                                              | 500 mg/l      | V                                                         | 100 mg/l      |
| Ba                                              | 250 mg/l      | As                                                        | 50 mg/l       |
| Zn                                              | 250 mg/l      | Pb                                                        | 50 mg/l       |
| Co                                              | 100 mg/l      | Ag                                                        | 25 mg/l       |
| Cr                                              | 100 mg/l      | Be                                                        | 25 mg/l       |
| Cu                                              | 100 mg/l      | Cd                                                        | 25 mg/l       |
| Mn                                              | 100 mg/l      | Se                                                        | 25 mg/l       |
| Ni                                              | 100 mg/l      | Tl                                                        | 25 mg/l       |
| Sb                                              | 100 mg/l      |                                                           |               |

| Spike Sample Standard I - 18 components |               | <b>Reference:</b> N9300230.L1                             |               |
|-----------------------------------------|---------------|-----------------------------------------------------------|---------------|
|                                         |               | <b>Volume:</b> 100 ml                                     |               |
|                                         |               | <b>Matrix:</b> in 5 % HNO <sub>3</sub> / tr Tart Ac/tr HF |               |
| Element                                 | Concentration | Element                                                   | Concentration |
| Al                                      | 200 mg/l      | Pb                                                        | 50 mg/l       |
| As                                      | 200 mg/l      | Sb                                                        | 50 mg/l       |
| Ba                                      | 200 mg/l      | V                                                         | 50 mg/l       |
| Se                                      | 200 mg/l      | Zn                                                        | 50 mg/l       |
| Tl                                      | 200 mg/l      | Cu                                                        | 25 mg/l       |
| Fe                                      | 200 mg/l      | Cr                                                        | 20 mg/l       |
| Co                                      | 50 mg/l       | Ag                                                        | 5 mg/l        |
| Mn                                      | 50 mg/l       | Be                                                        | 5 mg/l        |
| Ni                                      | 50 mg/l       | Cd                                                        | 5 mg/l        |

| Spike Sample Standard 2 (soil) - 15 components |               | <b>Reference:</b> N9303840.L1                             |               |
|------------------------------------------------|---------------|-----------------------------------------------------------|---------------|
|                                                |               | <b>Volume:</b> 100 ml                                     |               |
|                                                |               | <b>Matrix:</b> in 5 % HNO <sub>3</sub> / tr Tart Ac/tr HF |               |
| Element                                        | Concentration | Element                                                   | Concentration |
| Ba                                             | 250 mg/l      | Sb                                                        | 100 mg/l      |
| Cr                                             | 250 mg/l      | As                                                        | 50 mg/l       |
| Cu                                             | 250 mg/l      | Cd                                                        | 50 mg/l       |
| Zn                                             | 250 mg/l      | Ag                                                        | 25 mg/l       |
| V                                              | 150 mg/l      | Be                                                        | 25 mg/l       |
| Ni                                             | 125 mg/l      | Se                                                        | 25 mg/l       |
| Co                                             | 100 mg/l      | Tl                                                        | 25 mg/l       |
| Pb                                             | 100 mg/l      |                                                           |               |



| Spike Sample Standard<br>3 (for ILM 05.2) -<br>17 components |               | Reference: N9303841.L1                                |               |
|--------------------------------------------------------------|---------------|-------------------------------------------------------|---------------|
|                                                              |               | Volume: 100 ml                                        |               |
|                                                              |               | Matrix: in 5 % HNO <sub>3</sub> /<br>tr Tart Ac/tr HF |               |
| Element                                                      | Concentration | Element                                               | Concentration |
| Al                                                           | 200 mg/l      | Sb                                                    | 10 mg/l       |
| Ba                                                           | 200 mg/l      | Be                                                    | 5 mg/l        |
| Co                                                           | 50 mg/l       | Cd                                                    | 5 mg/l        |
| Mn                                                           | 50 mg/l       | Ag                                                    | 5 mg/l        |
| Ni                                                           | 50 mg/l       | Tl                                                    | 5 mg/l        |
| V                                                            | 50 mg/l       | As                                                    | 4 mg/l        |
| Zn                                                           | 50 mg/l       | Pb                                                    | 2 mg/l        |
| Cu                                                           | 25 mg/l       | Se                                                    | 1 mg/l        |
| Cr                                                           | 20 mg/l       |                                                       |               |

| Multi-Element Solution -<br>4 components |               | Reference: N9307113.L1          |               | Reference: N9307113.L5          |               |         |               |
|------------------------------------------|---------------|---------------------------------|---------------|---------------------------------|---------------|---------|---------------|
|                                          |               | Volume: 100 ml                  |               | Volume: 500 ml                  |               |         |               |
|                                          |               | Matrix: in 5 % HNO <sub>3</sub> |               | Matrix: in 5 % HNO <sub>3</sub> |               |         |               |
| Element                                  | Concentration | Element                         | Concentration | Element                         | Concentration | Element | Concentration |
| Al                                       | 1000 mg/l     | Ca                              | 1000 mg/l     | Fe                              | 1000 mg/l     | Mg      | 1000 mg/l     |

| Low UV Standard -<br>3 components |               | Reference: N9307114.L1          |               | Reference: N9307114.L5          |               |  |  |
|-----------------------------------|---------------|---------------------------------|---------------|---------------------------------|---------------|--|--|
|                                   |               | Volume: 100 ml                  |               | Volume: 500 ml                  |               |  |  |
|                                   |               | Matrix: in 2 % HNO <sub>3</sub> |               | Matrix: in 2 % HNO <sub>3</sub> |               |  |  |
| Element                           | Concentration | Element                         | Concentration | Element                         | Concentration |  |  |
| K                                 | 1000 mg/l     | Na                              | 1000 mg/l     | P                               | 1000 mg/l     |  |  |

| Multi-Element Solution -<br>5 components |               | Reference: N9307115.L1          |               | Reference: N9307115.L5          |               |  |  |
|------------------------------------------|---------------|---------------------------------|---------------|---------------------------------|---------------|--|--|
|                                          |               | Volume: 100 ml                  |               | Volume: 500 ml                  |               |  |  |
|                                          |               | Matrix: in 5 % HNO <sub>3</sub> |               | Matrix: in 5 % HNO <sub>3</sub> |               |  |  |
| Element                                  | Concentration | Element                         | Concentration | Element                         | Concentration |  |  |
| Mo                                       | 1000 mg/l     | Sb                              | 1000 mg/l     | Zr                              | 1000 mg/l     |  |  |
| Sn                                       | 1000 mg/l     | W                               | 1000 mg/l     |                                 |               |  |  |

| Multi-Element Solution -<br>17 components |               | Reference: N9307116.L1          |               | Reference: N9307116.L5          |               |         |               |
|-------------------------------------------|---------------|---------------------------------|---------------|---------------------------------|---------------|---------|---------------|
|                                           |               | Volume: 100 ml                  |               | Volume: 500 ml                  |               |         |               |
|                                           |               | Matrix: in 5 % HNO <sub>3</sub> |               | Matrix: in 5 % HNO <sub>3</sub> |               |         |               |
| Element                                   | Concentration | Element                         | Concentration | Element                         | Concentration | Element | Concentration |
| As                                        | 1000 mg/l     | Co                              | 1000 mg/l     | Mn                              | 1000 mg/l     | Y       | 1000 mg/l     |
| Ba                                        | 1000 mg/l     | Cu                              | 1000 mg/l     | Ni                              | 1000 mg/l     | Zn      | 1000 mg/l     |
| Be                                        | 1000 mg/l     | La                              | 1000 mg/l     | Sc                              | 1000 mg/l     |         |               |
| Cr                                        | 1000 mg/l     | Pb                              | 1000 mg/l     | Sr                              | 1000 mg/l     |         |               |
| Cd                                        | 1000 mg/l     | Li                              | 1000 mg/l     | V                               | 1000 mg/l     |         |               |

| Perkin Elmer Pure 4<br>(Quality Control<br>Standard 23) |               | Reference: N9303941.L1                           |               |
|---------------------------------------------------------|---------------|--------------------------------------------------|---------------|
|                                                         |               | Volume: 100 ml<br>Matrix: in 2 %HNO <sub>3</sub> |               |
| Element                                                 | Concentration | Element                                          | Concentration |
| Al                                                      | 1000 mg/l     | Pb                                               | 1000 mg/l     |
| Ba                                                      | 1000 mg/l     | Li                                               | 1000 mg/l     |
| Bi                                                      | 1000 mg/l     | Mg                                               | 1000 mg/l     |
| B                                                       | 1000 mg/l     | Mn                                               | 1000 mg/l     |
| Cd                                                      | 1000 mg/l     | Ni                                               | 1000 mg/l     |
| Ca                                                      | 1000 mg/l     | K                                                | 1000 mg/l     |
| Cr                                                      | 1000 mg/l     | Ag                                               | 1000 mg/l     |
| Co                                                      | 1000 mg/l     | Na                                               | 1000 mg/l     |
| Cu                                                      | 1000 mg/l     | Sr                                               | 1000 mg/l     |
| Ga                                                      | 1000 mg/l     | Tl                                               | 1000 mg/l     |
| In                                                      | 1000 mg/l     | Zn                                               | 1000 mg/l     |
| Fe                                                      | 1000 mg/l     |                                                  |               |

| PerkinElmer Pure VIII -<br>24 components |               | Reference: N9303942.L1                            |               |
|------------------------------------------|---------------|---------------------------------------------------|---------------|
|                                          |               | Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                  | Concentration | Element                                           | Concentration |
| Al                                       | 100 mg/l      | Pb                                                | 100 mg/l      |
| Ba                                       | 100 mg/l      | Li                                                | 100 mg/l      |
| Be                                       | 100 mg/l      | Mg                                                | 100 mg/l      |
| Bi                                       | 100 mg/l      | Mn                                                | 100 mg/l      |
| B                                        | 100 mg/l      | Ni                                                | 100 mg/l      |
| Cd                                       | 100 mg/l      | K                                                 | 100 mg/l      |
| Ca                                       | 100 mg/l      | Se                                                | 100 mg/l      |
| Cr                                       | 100 mg/l      | Na                                                | 100 mg/l      |
| Co                                       | 100 mg/l      | Sr                                                | 100 mg/l      |
| Cu                                       | 100 mg/l      | Te                                                | 100 mg/l      |
| Ga                                       | 100 mg/l      | Tl                                                | 100 mg/l      |
| Fe                                       | 100 mg/l      | Zn                                                | 100 mg/l      |

| PerkinElmer Pure IX -<br>4 components |               | Reference: N9303943.L1                            |               |
|---------------------------------------|---------------|---------------------------------------------------|---------------|
|                                       |               | Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                               | Concentration | Element                                           | Concentration |
| As                                    | 100 mg/l      | Pb                                                | 100 mg/l      |
| Be                                    | 100 mg/l      | Cd                                                | 100 mg/l      |

| PerkinElmer Pure X |               | Reference: N9303944.L1                            |               |
|--------------------|---------------|---------------------------------------------------|---------------|
|                    |               | Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> |               |
| Element            | Concentration | Element                                           | Concentration |
| Ca                 | 35 000 mg/l   | Zn                                                | 50 mg/l       |
| Mg                 | 15 000 mg/l   | Mn                                                | 30 mg/l       |
| Na                 | 8 000 mg/l    | Co                                                | 25 mg/l       |
| K                  | 3 000 mg/l    | Pb                                                | 25 mg/l       |
| B                  | 100 mg/l      | Be                                                | 20 mg/l       |
| Fe                 | 100 mg/l      | Cd                                                | 20 mg/l       |
| Mo                 | 100 mg/l      | Cr                                                | 20 mg/l       |
| Sr                 | 100 mg/l      | Cu                                                | 20 mg/l       |
| As                 | 50 mg/l       | Bi                                                | 10 mg/l       |
| Ba                 | 50 mg/l       | Se                                                | 10 mg/l       |
| Ni                 | 50 mg/l       | Tl                                                | 10 mg/l       |
| V                  | 50 mg/l       |                                                   |               |

| 8 mg/L Mercury<br>in 5% HNO <sub>3</sub> |               | Reference: N9303954.L1                            |  |
|------------------------------------------|---------------|---------------------------------------------------|--|
|                                          |               | Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |  |
| Element                                  | Concentration |                                                   |  |
| Hg                                       | 8 mg/l        |                                                   |  |

| PerkinElmer<br>Pure XI |               | Reference: N9303945.L1                            |               |
|------------------------|---------------|---------------------------------------------------|---------------|
|                        |               | Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                | Concentration | Element                                           | Concentration |
| Zn                     | 2500 mg/l     | Cu                                                | 800 mg/l      |
| Cr                     | 900 mg/l      | Ni                                                | 200 mg/l      |
| Pb                     | 900 mg/l      | Cd                                                | 10 mg/l       |

| PerkinElmer Pure XIII -<br>14 components |               | Reference: N9303946.L1                            |               |
|------------------------------------------|---------------|---------------------------------------------------|---------------|
|                                          |               | Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                  | Concentration | Element                                           | Concentration |
| Al                                       | 500 mg/l      | Fe                                                | 100 mg/l      |
| V                                        | 250 mg/l      | Mn                                                | 100 mg/l      |
| As                                       | 100 mg/l      | Ni                                                | 100 mg/l      |
| Be                                       | 100 mg/l      | Pb                                                | 100 mg/l      |
| Co                                       | 100 mg/l      | Zn                                                | 100 mg/l      |
| Cr                                       | 100 mg/l      | Cd                                                | 25 mg/l       |
| Cu                                       | 100 mg/l      | Se                                                | 25 mg/l       |

| 5 mg/L Mercury<br>in 5% HNO <sub>3</sub> |               | Reference: N9303949.L1                            |  |
|------------------------------------------|---------------|---------------------------------------------------|--|
|                                          |               | Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |  |
| Element                                  | Concentration |                                                   |  |
| Hg                                       | 5 mg/l        |                                                   |  |



| PerkinElmer Pure XVII - 7 components |               | Reference: N9303948.L1      |               |
|--------------------------------------|---------------|-----------------------------|---------------|
|                                      |               | Volume: 100 ml              |               |
|                                      |               | Matrix: in 15 % HCl/ tr. HF |               |
| Element                              | Concentration | Element                     | Concentration |
| Hf                                   | 100 mg/l      | Ta                          | 100 mg/l      |
| Ir                                   | 100 mg/l      | Tl                          | 100 mg/l      |
| Sb                                   | 100 mg/l      | Zr                          | 100 mg/l      |
| Sn                                   | 100 mg/l      |                             |               |

| PerkinElmer Pure VIII - 24 components |               | Reference: 109492.L1            |               |
|---------------------------------------|---------------|---------------------------------|---------------|
|                                       |               | Volume: 100 ml                  |               |
|                                       |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                               | Concentration | Element                         | Concentration |
| Al                                    | 100 mg/l      | Pb                              | 100 mg/l      |
| Ba                                    | 100 mg/l      | Li                              | 100 mg/l      |
| Be                                    | 100 mg/l      | Mg                              | 100 mg/l      |
| Bi                                    | 100 mg/l      | Mn                              | 100 mg/l      |
| B                                     | 100 mg/l      | Ni                              | 100 mg/l      |
| Cd                                    | 100 mg/l      | K                               | 100 mg/l      |
| Ca                                    | 100 mg/l      | Se                              | 100 mg/l      |
| Cr                                    | 100 mg/l      | Na                              | 100 mg/l      |
| Co                                    | 100 mg/l      | Sr                              | 100 mg/l      |
| Cu                                    | 100 mg/l      | Te                              | 100 mg/l      |
| Ga                                    | 100 mg/l      | Tl                              | 100 mg/l      |
| Fe                                    | 100 mg/l      | Zn                              | 100 mg/l      |

| Instrument Calibration Standard 3 - 5 components |               | Reference: N9303818.L1          |               |
|--------------------------------------------------|---------------|---------------------------------|---------------|
|                                                  |               | Volume: 100 ml                  |               |
|                                                  |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                          | Concentration | Element                         | Concentration |
| Ca                                               | 1000 mg/l     | Mg                              | 1000 mg/l     |
| Fe                                               | 1000 mg/l     | Na                              | 1000 mg/l     |
| K                                                | 1000 mg/l     |                                 |               |

| Contract Lab Program Modification Standard - 12 components |               | Reference: N9303843.L1                    |               |
|------------------------------------------------------------|---------------|-------------------------------------------|---------------|
|                                                            |               | Volume: 100 ml                            |               |
|                                                            |               | Matrix: in 2 % HNO <sub>3</sub> / 5 % HCl |               |
| Element                                                    | Concentration | Element                                   | Concentration |
| Ba                                                         | 10 mg/l       | Mg                                        | 10 mg/l       |
| Be                                                         | 10 mg/l       | Pb                                        | 10 mg/l       |
| Ce                                                         | 10 mg/l       | Rh                                        | 10 mg/l       |
| Co                                                         | 10 mg/l       | Tl                                        | 10 mg/l       |
| In                                                         | 10 mg/l       | U                                         | 10 mg/l       |
| Li                                                         | 10 mg/l       | Y                                         | 10 mg/l       |

| Instrument Calibration Standard 1 - 20 components |               | Reference: N9303816.L1                          |               |
|---------------------------------------------------|---------------|-------------------------------------------------|---------------|
|                                                   |               | Volume: 100 ml                                  |               |
|                                                   |               | Matrix: in 5 % HNO <sub>3</sub> / tr. Tart. Ac. |               |
| Element                                           | Concentration | Element                                         | Concentration |
| Ag                                                | 20 mg/l       | Mo                                              | 20 mg/l       |
| Al                                                | 20 mg/l       | Ni                                              | 20 mg/l       |
| As                                                | 20 mg/l       | Pb                                              | 20 mg/l       |
| Ba                                                | 20 mg/l       | Sb                                              | 20 mg/l       |
| Be                                                | 20 mg/l       | Se                                              | 20 mg/l       |
| Cd                                                | 20 mg/l       | Th                                              | 20 mg/l       |
| Co                                                | 20 mg/l       | Tl                                              | 20 mg/l       |
| Cr                                                | 20 mg/l       | U                                               | 20 mg/l       |
| Cu                                                | 20 mg/l       | V                                               | 20 mg/l       |
| Mn                                                | 20 mg/l       | Zn                                              | 20 mg/l       |

| Instrument Calibration Standard 2 - 26 components |               | Reference: N9301721.L1                                 |               |
|---------------------------------------------------|---------------|--------------------------------------------------------|---------------|
|                                                   |               | Volume: 100 ml                                         |               |
|                                                   |               | Matrix: in 5 % HNO <sub>3</sub> / tr. Tart. Ac./ tr.HF |               |
| Element                                           | Concentration | Element                                                | Concentration |
| Ag                                                | 100 mg/l      | Mn                                                     | 100 mg/l      |
| Al                                                | 100 mg/l      | Mo                                                     | 100 mg/l      |
| As                                                | 100 mg/l      | Na                                                     | 100 mg/l      |
| Ba                                                | 100 mg/l      | Ni                                                     | 100 mg/l      |
| Be                                                | 100 mg/l      | Pb                                                     | 100 mg/l      |
| Ca                                                | 100 mg/l      | Sb                                                     | 100 mg/l      |
| Cd                                                | 100 mg/l      | Se                                                     | 100 mg/l      |
| Co                                                | 100 mg/l      | Sn                                                     | 100 mg/l      |
| Cr                                                | 100 mg/l      | Sr                                                     | 100 mg/l      |
| Cu                                                | 100 mg/l      | Ti                                                     | 100 mg/l      |
| Fe                                                | 100 mg/l      | Tl                                                     | 100 mg/l      |
| K                                                 | 100 mg/l      | V                                                      | 100 mg/l      |
| Mg                                                | 100 mg/l      | Zn                                                     | 100 mg/l      |

| Contract Required Detection Limit - 22 components |               | Reference: N9303819.L1          |               |
|---------------------------------------------------|---------------|---------------------------------|---------------|
|                                                   |               | Volume: 100 ml                  |               |
|                                                   |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                           | Concentration | Element                         | Concentration |
| Ca                                                | 500 mg/l      | Cu                              | 2.5 mg/l      |
| K                                                 | 500 mg/l      | Zn                              | 2 mg/l        |
| Mg                                                | 500 mg/l      | Mn                              | 1.5 mg/l      |
| Na                                                | 500 mg/l      | Ag                              | 1 mg/l        |
| Al                                                | 20 mg/l       | As                              | 1 mg/l        |
| Ba                                                | 20 mg/l       | Cr                              | 1 mg/l        |
| Fe                                                | 10 mg/l       | Tl                              | 1 mg/l        |
| Sb                                                | 6 mg/l        | Be                              | 0.5 mg/l      |
| Co                                                | 5 mg/l        | Cd                              | 0.5 mg/l      |
| V                                                 | 5 mg/l        | Se                              | 0.5 mg/l      |
| Ni                                                | 4 mg/l        | Pb                              | 0.3 mg/l      |

| Contract Lab Program<br>Modification Standard -<br>26 components |               | Reference: N9301721MS.L1<br>Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> /<br>tr. HF/ tr. Tart. Ac. |               |
|------------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------------|---------------|
| Element                                                          | Concentration | Element                                                                                                  | Concentration |
| Ag                                                               | 100 mg/l      | Mn                                                                                                       | 100 mg/l      |
| Al                                                               | 100 mg/l      | Mo                                                                                                       | 100 mg/l      |
| As                                                               | 100 mg/l      | Na                                                                                                       | 100 mg/l      |
| Ba                                                               | 100 mg/l      | Ni                                                                                                       | 100 mg/l      |
| Be                                                               | 100 mg/l      | Pb                                                                                                       | 100 mg/l      |
| Ca                                                               | 100 mg/l      | Sb                                                                                                       | 100 mg/l      |
| Cd                                                               | 100 mg/l      | Se                                                                                                       | 100 mg/l      |
| Co                                                               | 100 mg/l      | Sn                                                                                                       | 100 mg/l      |
| Cr                                                               | 100 mg/l      | Sr                                                                                                       | 100 mg/l      |
| Cu                                                               | 100 mg/l      | Ti                                                                                                       | 100 mg/l      |
| Fe                                                               | 100 mg/l      | Tl                                                                                                       | 100 mg/l      |
| K                                                                | 100 mg/l      | V                                                                                                        | 100 mg/l      |
| Mg                                                               | 100 mg/l      | Zn                                                                                                       | 100 mg/l      |

| Contract Lab Program<br>Modification Standard -<br>1 component |               | Reference: N9300253.L1<br>Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |  |
|----------------------------------------------------------------|---------------|-----------------------------------------------------------------------------|--|
| Element                                                        | Concentration |                                                                             |  |
| Hg                                                             | 10 mg/l       |                                                                             |  |

| Contract Lab Program<br>Modification Standard -<br>12 components |               | Reference: N9303827.L1<br>Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> /<br>tr Tart Ac |               |
|------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------------|---------------|
| Element                                                          | Concentration | Element                                                                                     | Concentration |
| Cl-                                                              | 21215 mg/l    | Mg                                                                                          | 1000 mg/l     |
| Ca                                                               | 3000 mg/l     | P                                                                                           | 1000 mg/l     |
| Fe                                                               | 2500 mg/l     | K                                                                                           | 1000 mg/l     |
| Na                                                               | 2500 mg/l     | S                                                                                           | 1000 mg/l     |
| C                                                                | 2000 mg/l     | Mo                                                                                          | 20 mg/l       |
| Al                                                               | 1000 mg/l     | Ti                                                                                          | 20 mg/l       |

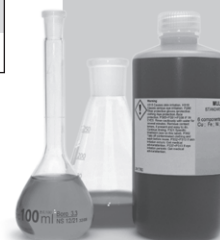
| Analytes B -<br>11 components |               | Reference: N9303829.L1<br>Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> |               |
|-------------------------------|---------------|-----------------------------------------------------------------------------|---------------|
| Element                       | Concentration | Element                                                                     | Concentration |
| Cr                            | 20 mg/l       | As                                                                          | 10 mg/l       |
| Co                            | 20 mg/l       | Cd                                                                          | 10 mg/l       |
| Cu                            | 20 mg/l       | Se                                                                          | 10 mg/l       |
| Mn                            | 20 mg/l       | Zn                                                                          | 10 mg/l       |
| Ni                            | 20 mg/l       | Ag                                                                          | 5 mg/l        |
| V                             | 20 mg/l       |                                                                             |               |

| Memory Test 2 -<br>7 components |               | Reference: N9303836.L1<br>Volume: 100 ml<br>Matrix: in H <sub>2</sub> O/tr. HF/tr. HNO <sub>3</sub> |               |
|---------------------------------|---------------|-----------------------------------------------------------------------------------------------------|---------------|
| Element                         | Concentration | Element                                                                                             | Concentration |
| Cl-                             | 7200 mg/l     | Mo                                                                                                  | 20 mg/l       |
| C                               | 2000 mg/l     | Sb                                                                                                  | 20 mg/l       |
| P                               | 1000 mg/l     | Ti                                                                                                  | 20 mg/l       |
| S                               | 1000 mg/l     |                                                                                                     |               |

| Memory Test 1 -<br>21 components |               | Reference: N9303835.L1<br>Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> |               |
|----------------------------------|---------------|-----------------------------------------------------------------------------|---------------|
| Element                          | Concentration | Element                                                                     | Concentration |
| Al                               | 1000 mg/l     | Co                                                                          | 20 mg/l       |
| Ca                               | 1000 mg/l     | Cr                                                                          | 20 mg/l       |
| Fe                               | 1000 mg/l     | Cu                                                                          | 20 mg/l       |
| K                                | 1000 mg/l     | Mn                                                                          | 20 mg/l       |
| Mg                               | 1000 mg/l     | Ni                                                                          | 20 mg/l       |
| Na                               | 1000 mg/l     | Pb                                                                          | 20 mg/l       |
| Ag                               | 20 mg/l       | Se                                                                          | 20 mg/l       |
| As                               | 20 mg/l       | Tl                                                                          | 20 mg/l       |
| Ba                               | 20 mg/l       | V                                                                           | 20 mg/l       |
| Be                               | 20 mg/l       | Zn                                                                          | 20 mg/l       |
| Cd                               | 20 mg/l       |                                                                             |               |

| Environmental EPA<br>Standard - Mercury |               | Reference: N9300223.L1<br>Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |  |
|-----------------------------------------|---------------|-----------------------------------------------------------------------------|--|
| Element                                 | Concentration |                                                                             |  |
| Hg                                      | 100 mg/l      |                                                                             |  |

| Environmental EPA<br>Standard -<br>6 components |               | Reference: N9300200.L1<br>Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> |               |
|-------------------------------------------------|---------------|-----------------------------------------------------------------------------|---------------|
| Element                                         | Concentration | Element                                                                     | Concentration |
| Pb                                              | 500 mg/l      | Zn                                                                          | 150 mg/l      |
| Se                                              | 200 mg/l      | Mn                                                                          | 100 mg/l      |
| Cd                                              | 150 mg/l      | Be                                                                          | 50 mg/l       |





| TCLP Standard 1 - 8 components |               | Reference: N9300241.L1                            |               | Reference: N9300241.L5                            |               |
|--------------------------------|---------------|---------------------------------------------------|---------------|---------------------------------------------------|---------------|
|                                |               | Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> |               | Volume: 500 ml<br>Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                        | Concentration | Element                                           | Concentration | Element                                           | Concentration |
| Ba                             | 500 mg/l      | As                                                | 25 mg/l       | Pb                                                | 25 mg/l       |
| Ag                             | 25 mg/l       | Cr                                                | 25 mg/l       | Hg                                                | 100 mg/l      |
|                                |               |                                                   |               | Cd                                                | 5 mg/l        |
|                                |               |                                                   |               | Se                                                | 5 mg/l        |

|                   |               |                                                                 |                                                                 |
|-------------------|---------------|-----------------------------------------------------------------|-----------------------------------------------------------------|
| Selenium Solution |               | <u>Reference:</u> N8125039.L1                                   | <u>Reference:</u> N8125039.L5                                   |
|                   |               | <b>Volume:</b> 100 ml<br><b>Matrix:</b> in 5 % HNO <sub>3</sub> | <b>Volume:</b> 500 ml<br><b>Matrix:</b> in 5 % HNO <sub>3</sub> |
| Element           | Concentration |                                                                 |                                                                 |
| Se                | 10 mg/l       |                                                                 |                                                                 |

| USP Elemental Impurities Solution 1 - 10 components |               | Reference: N9303957A.L1                           |               |
|-----------------------------------------------------|---------------|---------------------------------------------------|---------------|
|                                                     |               | Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                             | Concentration | Element                                           | Concentration |
| Cu                                                  | 2500 mg/kg    | V                                                 | 250 mg/kg     |
| Mn                                                  | 2500 mg/kg    | As                                                | 15 mg/kg      |
| Cr                                                  | 250 mg/kg     | Hg                                                | 15 mg/kg      |
| Mo                                                  | 250 mg/kg     | Pb                                                | 10 mg/kg      |
| Ni                                                  | 250 mg/kg     | Cd                                                | 5 mg/kg       |

| USP Elemental Impurities Solution 2 - 6 components |               | Reference: N9303957B.L1               |               |
|----------------------------------------------------|---------------|---------------------------------------|---------------|
|                                                    |               | Volume: 100 ml<br>Matrix: in 15 % HCl |               |
| Element                                            | Concentration | Element                               | Concentration |
| Pt                                                 | 100 mg/l      | Os                                    | 100 mg/l      |
| Pd                                                 | 100 mg/l      | Ru                                    | 100 mg/l      |
| Ir                                                 | 100 mg/l      | Rh                                    | 100 mg/l      |

| Primary Drinking Water Metals - 8 components |               | Reference: N9300216.L1                                    |               |
|----------------------------------------------|---------------|-----------------------------------------------------------|---------------|
|                                              |               | Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> /tr. HF |               |
| Element                                      | Concentration | Element                                                   | Concentration |
| Ba                                           | 100 mg/l      | Hg                                                        | 10 mg/l       |
| Ag                                           | 10 mg/l       | Pb                                                        | 10 mg/l       |
| As                                           | 10 mg/l       | Cd                                                        | 5 mg/l        |
| Cr                                           | 10 mg/l       | Se                                                        | 5 mg/l        |

| Secondary Drinking Water Metals - 4 components |               | Reference: N9300217.L1                                    |               |
|------------------------------------------------|---------------|-----------------------------------------------------------|---------------|
|                                                |               | Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> /tr. HF |               |
| Element                                        | Concentration | Element                                                   | Concentration |
| Zn                                             | 500 mg/l      | Fe                                                        | 30 mg/l       |
| Cu                                             | 100 mg/l      | Mn                                                        | 5 mg/l        |

| Trace Metals III - 6 components |               | Reference: N9300213.L1                            |               |
|---------------------------------|---------------|---------------------------------------------------|---------------|
|                                 |               | Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                         | Concentration | Element                                           | Concentration |
| Ba                              | 500 mg/l      | Na                                                | 500 mg/l      |
| Ca                              | 500 mg/l      | K                                                 | 100 mg/l      |
| Mo                              | 500 mg/l      | Mg                                                | 100 mg/l      |

| Trace Metals I - 15 components |               | Reference: N9300211.L1                            |               |
|--------------------------------|---------------|---------------------------------------------------|---------------|
|                                |               | Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                        | Concentration | Element                                           | Concentration |
| Al                             | 500 mg/l      | Mn                                                | 100 mg/l      |
| V                              | 250 mg/l      | Ni                                                | 100 mg/l      |
| As                             | 100 mg/l      | Pb                                                | 100 mg/l      |
| Be                             | 100 mg/l      | Zn                                                | 100 mg/l      |
| Co                             | 100 mg/l      | Cd                                                | 25 mg/l       |
| Cr                             | 100 mg/l      | Se                                                | 25 mg/l       |
| Cu                             | 100 mg/l      | Hg                                                | 10 mg/l       |
| Fe                             | 100 mg/l      |                                                   |               |

| Trace Metals II - 3 components |               | Reference: N9300212.L1          |               |
|--------------------------------|---------------|---------------------------------|---------------|
|                                |               | Volume: 100 ml                  |               |
|                                |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                        | Concentration | Element                         | Concentration |
| Sb                             | 20 mg/l       | Ag                              | 10 mg/l       |
| Tl                             | 20 mg/l       |                                 |               |

| Alternate Metals I - 11 components |               | Reference: N9300214.L1          |               |
|------------------------------------|---------------|---------------------------------|---------------|
|                                    |               | Volume: 100 ml                  |               |
|                                    |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                            | Concentration | Element                         | Concentration |
| Al                                 | 20 mg/l       | Ni                              | 10 mg/l       |
| Fe                                 | 20 mg/l       | Zn                              | 10 mg/l       |
| V                                  | 20 mg/l       | Be                              | 5 mg/l        |
| Co                                 | 10 mg/l       | Sb                              | 5 mg/l        |
| Cu                                 | 10 mg/l       | Tl                              | 5 mg/l        |
| Mn                                 | 10 mg/l       |                                 |               |

| Alternate Metals II - 4 components |               | Reference: N9300215.L1          |               | Reference: N9303952.L5          |               |
|------------------------------------|---------------|---------------------------------|---------------|---------------------------------|---------------|
|                                    |               | Volume: 100 ml                  |               | Volume: 500 ml                  |               |
|                                    |               | Matrix: in 2 % HNO <sub>3</sub> |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                            | Concentration | Element                         | Concentration | Element                         | Concentration |
| Ca                                 | 500 mg/l      | Na                              | 500 mg/l      | K                               | 100 mg/l      |
|                                    |               |                                 |               | Mg                              | 100 mg/l      |

| Internal Standard Mix - 7 components |               | Reference: N9303832.L1          |               | Reference: N9303832.L5          |               |
|--------------------------------------|---------------|---------------------------------|---------------|---------------------------------|---------------|
|                                      |               | Volume: 100 ml                  |               | Volume: 500 ml                  |               |
|                                      |               | Matrix: in 5 % HNO <sub>3</sub> |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                              | Concentration | Element                         | Concentration | Element                         | Concentration |
| Bi                                   | 10 mg/l       | In                              | 10 mg/l       | Sc                              | 10 mg/l       |
| Ge                                   | 10 mg/l       | 6Li                             | 10 mg/l       | Tb                              | 10 mg/l       |

| Universal Data Acquisition Standard 2 - 29 components |               | Reference: N9300233.L1          |               |
|-------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                       |               | Volume: 100 ml                  |               |
|                                                       |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                               | Concentration | Element                         | Concentration |
| Al                                                    | 10 mg/l       | Li                              | 10 mg/l       |
| As                                                    | 10 mg/l       | Mg                              | 10 mg/l       |
| Ba                                                    | 10 mg/l       | Mn                              | 10 mg/l       |
| Be                                                    | 10 mg/l       | Ni                              | 10 mg/l       |
| Bi                                                    | 10 mg/l       | K                               | 10 mg/l       |
| Cd                                                    | 10 mg/l       | Rb                              | 10 mg/l       |
| Ca                                                    | 10 mg/l       | Se                              | 10 mg/l       |
| Cs                                                    | 10 mg/l       | Ag                              | 10 mg/l       |
| Cr                                                    | 10 mg/l       | Na                              | 10 mg/l       |
| Co                                                    | 10 mg/l       | Sr                              | 10 mg/l       |
| Cu                                                    | 10 mg/l       | Ti                              | 10 mg/l       |
| Ga                                                    | 10 mg/l       | U                               | 10 mg/l       |
| In                                                    | 10 mg/l       | V                               | 10 mg/l       |
| Fe                                                    | 10 mg/l       | Zn                              | 10 mg/l       |
| Pb                                                    | 10 mg/l       |                                 |               |

| Universal Data Acquisition Standard 1 - 17 components |               | Reference: N9300232.L1          |               |
|-------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                       |               | Volume: 100 ml                  |               |
|                                                       |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                               | Concentration | Element                         | Concentration |
| Ce                                                    | 10 mg/l       | Pr                              | 10 mg/l       |
| Dy                                                    | 10 mg/l       | Sc                              | 10 mg/l       |
| Er                                                    | 10 mg/l       | Sm                              | 10 mg/l       |
| Eu                                                    | 10 mg/l       | Tb                              | 10 mg/l       |
| Gd                                                    | 10 mg/l       | Th                              | 10 mg/l       |
| Ho                                                    | 10 mg/l       | Tm                              | 10 mg/l       |
| La                                                    | 10 mg/l       | Y                               | 10 mg/l       |
| Lu                                                    | 10 mg/l       | Yb                              | 10 mg/l       |
| Nd                                                    | 10 mg/l       |                                 |               |

| Universal Data Acquisition Standard 3 - 9 components |               | Reference: N9300234.L1          |               |
|------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                      |               | Volume: 100 ml                  |               |
|                                                      |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                              | Concentration | Element                         | Concentration |
| Sb                                                   | 10 mg/l       | Pt                              | 10 mg/l       |
| Au                                                   | 10 mg/l       | Rh                              | 10 mg/l       |
| Hf                                                   | 10 mg/l       | Ru                              | 10 mg/l       |
| Ir                                                   | 10 mg/l       | Te                              | 10 mg/l       |
| Pd                                                   | 10 mg/l       |                                 |               |



| Multi-Element Internal Standard - 7 components |               | <b>Reference:</b> N9303834.L1          |               |
|------------------------------------------------|---------------|----------------------------------------|---------------|
|                                                |               | <b>Volume:</b> 100 ml                  |               |
|                                                |               | <b>Matrix:</b> in 2 % HNO <sub>3</sub> |               |
| Element                                        | Concentration | Element                                | Concentration |
| Bi                                             | 10 mg/l       | Sc                                     | 10 mg/l       |
| Ho                                             | 10 mg/l       | Tb                                     | 10 mg/l       |
| In                                             | 10 mg/l       | Y                                      | 10 mg/l       |
| 6Li                                            | 10 mg/l       |                                        |               |

| Multi-Element Solution 3 with Hg - 29 components |               | <b>Reference:</b> N9301720.L1          |               |
|--------------------------------------------------|---------------|----------------------------------------|---------------|
|                                                  |               | <b>Volume:</b> 100 ml                  |               |
|                                                  |               | <b>Matrix:</b> in 5 % HNO <sub>3</sub> |               |
| Element                                          | Concentration | Element                                | Concentration |
| Al                                               | 10 mg/l       | Li                                     | 10 mg/l       |
| As                                               | 10 mg/l       | Mg                                     | 10 mg/l       |
| Ba                                               | 10 mg/l       | Mn                                     | 10 mg/l       |
| Be                                               | 10 mg/l       | Ni                                     | 10 mg/l       |
| Bi                                               | 10 mg/l       | K                                      | 10 mg/l       |
| Cd                                               | 10 mg/l       | Rb                                     | 10 mg/l       |
| Ca                                               | 10 mg/l       | Se                                     | 10 mg/l       |
| Cs                                               | 10 mg/l       | Ag                                     | 10 mg/l       |
| Cr                                               | 10 mg/l       | Na                                     | 10 mg/l       |
| Co                                               | 10 mg/l       | Sr                                     | 10 mg/l       |
| Cu                                               | 10 mg/l       | Ti                                     | 10 mg/l       |
| Ga                                               | 10 mg/l       | U                                      | 10 mg/l       |
| In                                               | 10 mg/l       | V                                      | 10 mg/l       |
| Fe                                               | 10 mg/l       | Zn                                     | 10 mg/l       |
| Pb                                               | 10 mg/l       |                                        |               |

| Initial Calibration Verification Standard 2 - 2 components |               | <b>Reference:</b> N9303826.L1                  |               |
|------------------------------------------------------------|---------------|------------------------------------------------|---------------|
|                                                            |               | <b>Volume:</b> 100 ml                          |               |
|                                                            |               | <b>Matrix:</b> in 2 % HNO <sub>3</sub> /tr. HF |               |
| Element                                                    | Concentration | Element                                        | Concentration |
| Sn                                                         | 10 mg/l       | Ti                                             | 10 mg/l       |

| Elan 6100 DRC Setup/ Stab/Masscal Solution - 12 components |               | <b>Reference:</b> N8125035.L1            |               | <b>Reference:</b> N8125035.L5            |               |         |               |
|------------------------------------------------------------|---------------|------------------------------------------|---------------|------------------------------------------|---------------|---------|---------------|
|                                                            |               | <b>Volume:</b> 100 ml                    |               | <b>Volume:</b> 500 ml                    |               |         |               |
|                                                            |               | <b>Matrix:</b> in 0.5 % HNO <sub>3</sub> |               | <b>Matrix:</b> in 0.5 % HNO <sub>3</sub> |               |         |               |
| Element                                                    | Concentration | Element                                  | Concentration | Element                                  | Concentration | Element | Concentration |
| Ba                                                         | 10 ug/l       | Ce                                       | 1 ug/l        | In                                       | 1 ug/l        | Mn      | 1 ug/l        |
| Al                                                         | 1 ug/l        | Cr                                       | 1 ug/l        | Pb                                       | 1 ug/l        | Rh      | 1 ug/l        |
| Cd                                                         | 1 ug/l        | Cu                                       | 1 ug/l        | Mg                                       | 1 ug/l        | Th      | 1 ug/l        |

| Multi-Element Solution 1 - 9 components |               | <b>Reference:</b> N9300231.L1          |               |
|-----------------------------------------|---------------|----------------------------------------|---------------|
|                                         |               | <b>Volume:</b> 100 ml                  |               |
|                                         |               | <b>Matrix:</b> in 2 % HNO <sub>3</sub> |               |
| Element                                 | Concentration | Element                                | Concentration |
| Be                                      | 10 mg/l       | Mg                                     | 10 mg/l       |
| Bi                                      | 10 mg/l       | Ni                                     | 10 mg/l       |
| Ce                                      | 10 mg/l       | Pb                                     | 10 mg/l       |
| Co                                      | 10 mg/l       | U                                      | 10 mg/l       |
| In                                      | 10 mg/l       |                                        |               |

| Perkin Elmer Pure I - 19 components |               | <b>Reference:</b> N9303940.L1          |               |
|-------------------------------------|---------------|----------------------------------------|---------------|
|                                     |               | <b>Volume:</b> 100 ml                  |               |
|                                     |               | <b>Matrix:</b> in 5 % HNO <sub>3</sub> |               |
| Element                             | Concentration | Element                                | Concentration |
| Tl                                  | 400 mg/l      | Co                                     | 20 mg/l       |
| Bi                                  | 200 mg/l      | Cu                                     | 20 mg/l       |
| In                                  | 200 mg/l      | Zn                                     | 20 mg/l       |
| Pb                                  | 200 mg/l      | B                                      | 15 mg/l       |
| Ga                                  | 150 mg/l      | Fe                                     | 15 mg/l       |
| Al                                  | 100 mg/l      | Ba                                     | 5 mg/l        |
| Ni                                  | 50 mg/l       | Mn                                     | 5 mg/l        |
| Ag                                  | 50 mg/l       | Be                                     | 1 mg/l        |
| Cr                                  | 25 mg/l       | Sr                                     | 1 mg/l        |
| Cd                                  | 20 mg/l       |                                        |               |

| Initial Calibration Verification Standard 1 - 26 components |               | <b>Reference:</b> N9303825.L1                         |               |
|-------------------------------------------------------------|---------------|-------------------------------------------------------|---------------|
|                                                             |               | <b>Volume:</b> 100 ml                                 |               |
|                                                             |               | <b>Matrix:</b> in 5 % HNO <sub>3</sub> /tr. Tart. Ac. |               |
| Element                                                     | Concentration | Element                                               | Concentration |
| Ca                                                          | 1000 mg/l     | Cr                                                    | 10 mg/l       |
| Fe                                                          | 1000 mg/l     | Cu                                                    | 10 mg/l       |
| K                                                           | 1000 mg/l     | Mn                                                    | 10 mg/l       |
| Mg                                                          | 1000 mg/l     | Mo                                                    | 10 mg/l       |
| Na                                                          | 1000 mg/l     | Ni                                                    | 10 mg/l       |
| Sr                                                          | 1000 mg/l     | Pb                                                    | 10 mg/l       |
| Ag                                                          | 10 mg/l       | Sb                                                    | 10 mg/l       |
| Al                                                          | 10 mg/l       | Se                                                    | 10 mg/l       |
| As                                                          | 10 mg/l       | Tl                                                    | 10 mg/l       |
| Ba                                                          | 10 mg/l       | V                                                     | 10 mg/l       |
| Be                                                          | 10 mg/l       | Zn                                                    | 10 mg/l       |
| Cd                                                          | 10 mg/l       | Th                                                    | 10 mg/l       |
| Co                                                          | 10 mg/l       | U                                                     | 10 mg/l       |

| Elan 9000/6100 Setup/<br>Stability/Masscal Solution -<br>9 components |               | Reference: N8125030.L1<br><br>Volume: 100 ml<br>Matrix: in 1 % HNO <sub>3</sub> |               | Reference: N8125030.1L<br><br>Volume: 1000 ml<br>Matrix: in 1 % HNO <sub>3</sub> |               |
|-----------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------|---------------|----------------------------------------------------------------------------------|---------------|
| Element                                                               | Concentration | Element                                                                         | Concentration | Element                                                                          | Concentration |
| Mg                                                                    | 10 ug/l       | Cd                                                                              | 10 ug/l       | Ce                                                                               | 10 ug/l       |
| Cu                                                                    | 10 ug/l       | In                                                                              | 10 ug/l       | Pb                                                                               | 10 ug/l       |
| Rh                                                                    | 10 ug/l       | Ba                                                                              | 10 ug/l       | U                                                                                | 10 ug/l       |

| Elan 9000/6X00 Dual-<br>Detector Calibration<br>Solution - 5 components |               | Reference: N8125032.L1<br><br>Volume: 100 ml<br>Matrix: in 1 % HNO <sub>3</sub> |               | Reference: N8125032.1L<br><br>Volume: 1000 ml<br>Matrix: in 1 % HNO <sub>3</sub> |               |
|-------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------|---------------|----------------------------------------------------------------------------------|---------------|
| Element                                                                 | Concentration | Element                                                                         | Concentration | Element                                                                          | Concentration |
| Cd                                                                      | 200 ug/l      | Pb                                                                              | 200 ug/l      | Rh                                                                               | 200 ug/l      |
| Cu                                                                      | 200 ug/l      | Mg                                                                              | 200 ug/l      |                                                                                  |               |

| Elan 6000/5000 Plasma<br>Setup Solution -<br>11 components |               | Reference: N8122014.L1<br><br>Volume: 100 ml<br>Matrix: in 1 % HNO <sub>3</sub> |               | Reference: N8122014.L5<br><br>Volume: 500 ml<br>Matrix: in 1 % HNO <sub>3</sub> |               |         |               |
|------------------------------------------------------------|---------------|---------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------|---------------|---------|---------------|
| Element                                                    | Concentration | Element                                                                         | Concentration | Element                                                                         | Concentration | Element | Concentration |
| Ba                                                         | 10 ug/l       | Cu                                                                              | 10 ug/l       | Mg                                                                              | 10 ug/l       | Tb      | 10 ug/l       |
| Cd                                                         | 10 ug/l       | Ge                                                                              | 10 ug/l       | Rh                                                                              | 10 ug/l       | Tl      | 10 ug/l       |
| Ce                                                         | 10 ug/l       | Pb                                                                              | 10 ug/l       | Sc                                                                              | 10 ug/l       |         |               |

| SmartTune Solution<br>for Standard ELANs/<br>DRC-e - 9 components |               | Reference: N8125040.L1<br><br>Volume: 100 ml<br>Matrix: in 1 % HNO <sub>3</sub> |               |
|-------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------|---------------|
| Element                                                           | Concentration | Element                                                                         | Concentration |
| Be                                                                | 10 ug/l       | Ce                                                                              | 10 ug/l       |
| Mg                                                                | 10 ug/l       | Ba                                                                              | 10 ug/l       |
| Co                                                                | 10 ug/l       | Pb                                                                              | 10 ug/l       |
| In                                                                | 10 ug/l       | U                                                                               | 10 ug/l       |
| Rh                                                                | 10 ug/l       |                                                                                 |               |

| SmartTune Solution for<br>DRC/DRCplus/DRC II -<br>10 components |               | Reference: N8125041.L5<br><br>Volume: 500 ml<br>Matrix: in 0.5 % HNO <sub>3</sub> |               | Reference: N8125041.1L<br><br>Volume: 1000 ml<br>Matrix: in 0.5 % HNO <sub>3</sub> |               |         |               |
|-----------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------|---------------|------------------------------------------------------------------------------------|---------------|---------|---------------|
| Element                                                         | Concentration | Element                                                                           | Concentration | Element                                                                            | Concentration | Element | Concentration |
| Ba                                                              | 10 ug/l       | Co                                                                                | 1 ug/l        | Pb                                                                                 | 1 ug/l        | U       | 1 ug/l        |
| Be                                                              | 1 ug/l        | In                                                                                | 1 ug/l        | Mg                                                                                 | 1 ug/l        |         |               |
| Ce                                                              | 1 ug/l        | Fe                                                                                | 1 ug/l        | Th                                                                                 | 1 ug/l        |         |               |

| NexION Setup Solution -<br>8 components |               | Reference: N8145051.L1<br><br>Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> /5 % HCl |               | Reference: N8145051.L5<br><br>Volume: 500 ml<br>Matrix: in 2 % HNO <sub>3</sub> /5 % HCl |               |         |               |
|-----------------------------------------|---------------|------------------------------------------------------------------------------------------|---------------|------------------------------------------------------------------------------------------|---------------|---------|---------------|
| Element                                 | Concentration | Element                                                                                  | Concentration | Element                                                                                  | Concentration | Element | Concentration |
| Be                                      | 1 ug/l        | Fe                                                                                       | 1 ug/l        | Li                                                                                       | 1 ug/l        | Pb      | 1 ug/l        |
| Ce                                      | 1 ug/l        | In                                                                                       | 1 ug/l        | Mg                                                                                       | 1 ug/l        | U       | 1 ug/l        |



| NexION KED Setup<br>Solution - 2 components |               | Reference: N8145052.L1               |               | Reference: N8145052.L5               |  |
|---------------------------------------------|---------------|--------------------------------------|---------------|--------------------------------------|--|
|                                             |               | Volume: 100 ml<br>Matrix: in 1 % HCl |               | Volume: 500 ml<br>Matrix: in 1 % HCl |  |
| Element                                     | Concentration | Element                              | Concentration |                                      |  |
| Co                                          | 10 ug/l       | Ce                                   | 1 ug/l        |                                      |  |

| NexION 300Q Non-cell<br>Stability Solution -<br>4 components |               | Reference: N8145053.L5                            |               |
|--------------------------------------------------------------|---------------|---------------------------------------------------|---------------|
|                                                              |               | Volume: 500 ml<br>Matrix: in 1 % HNO <sub>3</sub> |               |
| Element                                                      | Concentration | Element                                           | Concentration |
| Cd                                                           | 1 ug/l        | Mg                                                | 1 ug/l        |
| Cu                                                           | 1 ug/l        | Pb                                                | 1 ug/l        |

| NexION 300X/D/S Cell<br>Stability Solution -<br>9 components |               | Reference: N8145054.L5                            |               |
|--------------------------------------------------------------|---------------|---------------------------------------------------|---------------|
|                                                              |               | Volume: 500 ml<br>Matrix: in 1 % HNO <sub>3</sub> |               |
| Element                                                      | Concentration | Element                                           | Concentration |
| Cd                                                           | 1 ug/l        | Pb                                                | 1 ug/l        |
| Cr                                                           | 1 ug/l        | Co                                                | 10 ug/l       |
| Fe                                                           | 1 ug/l        | Cu                                                | 10 ug/l       |
| In                                                           | 1 ug/l        | Se                                                | 10 ug/l       |
| Mg                                                           | 1 ug/l        |                                                   |               |

| NexION Standard/DRC<br>Mode Detection Limit<br>Blank Solution |  | Reference: N8145055.L1                              |  |
|---------------------------------------------------------------|--|-----------------------------------------------------|--|
|                                                               |  | Volume: 100 ml<br>Matrix: in 0.5 % HNO <sub>3</sub> |  |

| NexION Standard/DRC<br>Mode Detection Limit<br>Solution - 6 components |               | Reference: N8145056.L1                              |               |
|------------------------------------------------------------------------|---------------|-----------------------------------------------------|---------------|
|                                                                        |               | Volume: 100 ml<br>Matrix: in 0.5 % HNO <sub>3</sub> |               |
| Element                                                                | Concentration | Element                                             | Concentration |
| Be                                                                     | 1 ug/l        | Fe                                                  | 1 ug/l        |
| Ca                                                                     | 1 ug/l        | In                                                  | 1 ug/l        |
| Co                                                                     | 1 ug/l        | U                                                   | 1 ug/l        |

| NexION KED Mode<br>Detection Limit Solution -<br>3 components |               | Reference: N8145058.L1               |               |
|---------------------------------------------------------------|---------------|--------------------------------------|---------------|
|                                                               |               | Volume: 500 ml<br>Matrix: in 1 % HCl |               |
| Element                                                       | Concentration | Element                              | Concentration |
| V                                                             | 10 ug/l       | Se                                   | 10 ug/l       |
| As                                                            | 10 ug/l       |                                      |               |

| NexION Dual Detector<br>Solution -<br>13 components |               | Reference: N8145059.L1                            |               |
|-----------------------------------------------------|---------------|---------------------------------------------------|---------------|
|                                                     |               | Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                             | Concentration | Element                                           | Concentration |
| Al                                                  | 50 ug/l       | Mn                                                | 50 ug/l       |
| Ba                                                  | 50 ug/l       | Ni                                                | 50 ug/l       |
| Ce                                                  | 50 ug/l       | Pb                                                | 50 ug/l       |
| Co                                                  | 50 ug/l       | Tb                                                | 50 ug/l       |
| In                                                  | 50 ug/l       | U                                                 | 50 ug/l       |
| Li                                                  | 50 ug/l       | Zn                                                | 50 ug/l       |
| Mg                                                  | 50 ug/l       |                                                   |               |

| NexION AFT<br>Multi-Element Solution -<br>29 components |               | Reference: N8145061.L1                            |               |
|---------------------------------------------------------|---------------|---------------------------------------------------|---------------|
|                                                         |               | Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                                 | Concentration | Element                                           | Concentration |
| Ag                                                      | 2 ug/l        | K                                                 | 2 ug/l        |
| Al                                                      | 2 ug/l        | Li                                                | 2 ug/l        |
| As                                                      | 2 ug/l        | Mg                                                | 2 ug/l        |
| Ba                                                      | 2 ug/l        | Mn                                                | 2 ug/l        |
| Be                                                      | 2 ug/l        | Na                                                | 2 ug/l        |
| Bi                                                      | 2 ug/l        | Ni                                                | 2 ug/l        |
| Ca                                                      | 2 ug/l        | Pb                                                | 2 ug/l        |
| Cd                                                      | 2 ug/l        | Rb                                                | 2 ug/l        |
| Cr                                                      | 2 ug/l        | Se                                                | 2 ug/l        |
| Co                                                      | 2 ug/l        | Sr                                                | 2 ug/l        |
| Cs                                                      | 2 ug/l        | Tl                                                | 2 ug/l        |
| Cu                                                      | 2 ug/l        | U                                                 | 2 ug/l        |
| Fe                                                      | 2 ug/l        | V                                                 | 2 ug/l        |
| Ga                                                      | 2 ug/l        | Zn                                                | 2 ug/l        |
| In                                                      | 2 ug/l        |                                                   |               |

| NexION AFT<br>Single-Element Solution -<br>1 components |               | Reference: N8145060.L1                            |  |
|---------------------------------------------------------|---------------|---------------------------------------------------|--|
|                                                         |               | Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> |  |
| Element                                                 | Concentration |                                                   |  |
| Fe                                                      | 2 ug/l        |                                                   |  |

| NexION KED Mode<br>Detection Limit<br>Blank Solution |  | Reference: N8145057.L1               |  |
|------------------------------------------------------|--|--------------------------------------|--|
|                                                      |  | Volume: 100 ml<br>Matrix: in 1 % HCl |  |

| Environmental Standard - 2 components |               | Reference: N9307806.L1          |               |
|---------------------------------------|---------------|---------------------------------|---------------|
|                                       |               | Volume: 80 ml                   |               |
|                                       |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                               | Concentration | Element                         | Concentration |
| Al                                    | 1000 mg/l     | Fe                              | 1000 mg/l     |

| Environmental Standard - 3 components |               | Reference: N9307807.L1          |               |
|---------------------------------------|---------------|---------------------------------|---------------|
|                                       |               | Volume: 500 ml                  |               |
|                                       |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                               | Concentration | Element                         | Concentration |
| B                                     | 100 mg/l      | U                               | 100 mg/l      |
| Th                                    | 100 mg/l      |                                 |               |

| Internal Standard Mix - 8 components |               | Reference: N9307808.L1          |               |
|--------------------------------------|---------------|---------------------------------|---------------|
|                                      |               | Volume: 100 ml                  |               |
|                                      |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                              | Concentration | Element                         | Concentration |
| Sc                                   | 50 mg/l       | 6Li                             | 10 mg/l       |
| Ge                                   | 20 mg/l       | Rh                              | 10 mg/l       |
| In                                   | 10 mg/l       | Tb                              | 10 mg/l       |
| Ir                                   | 10 mg/l       | Y                               | 10 mg/l       |

| Internal Standard Mix - 6 components |               | Reference: N9307738.L1          |               |
|--------------------------------------|---------------|---------------------------------|---------------|
|                                      |               | Volume: 100 ml                  |               |
|                                      |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                              | Concentration | Element                         | Concentration |
| Sc                                   | 200 mg/l      | Ir                              | 10 mg/l       |
| Ga                                   | 20 mg/l       | Rh                              | 10 mg/l       |
| In                                   | 10 mg/l       | Tm                              | 10 mg/l       |

| GF AAS Multi element standard XVIII - 16 components |               | Reference: N9300244.L1                  |               |
|-----------------------------------------------------|---------------|-----------------------------------------|---------------|
|                                                     |               | Volume: 100 ml                          |               |
|                                                     |               | Matrix: in 5 % HNO <sub>3</sub> /tr. HF |               |
| Element                                             | Concentration | Element                                 | Concentration |
| Sb                                                  | 100 mg/l      | Cu                                      | 50 mg/l       |
| Al                                                  | 100 mg/l      | Ni                                      | 50 mg/l       |
| As                                                  | 100 mg/l      | Cr                                      | 20 mg/l       |
| Pb                                                  | 100 mg/l      | Fe                                      | 20 mg/l       |
| Se                                                  | 100 mg/l      | Mn                                      | 20 mg/l       |
| Tl                                                  | 100 mg/l      | Ag                                      | 10 mg/l       |
| Ba                                                  | 50 mg/l       | Be                                      | 5 mg/l        |
| Co                                                  | 50 mg/l       | Cd                                      | 5 mg/l        |

| AA Test Mix |               | Reference: 02900540.L1 |               |
|-------------|---------------|------------------------|---------------|
|             |               | Volume: 100 ml         |               |
|             |               | Matrix: in 2 % HCl     |               |
| Element     | Concentration | Element                | Concentration |
| Ca          | 50 mg/l       | Ni                     | 50 mg/l       |
| Cr          | 50 mg/l       | K                      | 20 mg/l       |
| Cu          | 50 mg/l       | Na                     | 10 mg/l       |
| Fe          | 50 mg/l       | Zn                     | 10 mg/l       |

| Environmental Standards - 4 components |               | Reference: N9307805.L1          |               |
|----------------------------------------|---------------|---------------------------------|---------------|
|                                        |               | Volume: 100 ml                  |               |
|                                        |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                | Concentration | Element                         | Concentration |
| Ca                                     | 1000 mg/l     | Mg                              | 1002 mg/l     |
| K                                      | 1001 mg/l     | Na                              | 1003 mg/l     |



## Standards equivalent to Merck

| Calibration Standard (I) - 19 components |               | Reference: 115474.L1            |               |
|------------------------------------------|---------------|---------------------------------|---------------|
|                                          |               | Volume: 100 ml                  |               |
|                                          |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                  | Concentration | Element                         | Concentration |
| Tl                                       | 400 mg/l      | Co                              | 20 mg/l       |
| Bi                                       | 200 mg/l      | Cu                              | 20 mg/l       |
| In                                       | 200 mg/l      | Zn                              | 20 mg/l       |
| Pb                                       | 200 mg/l      | B                               | 15 mg/l       |
| Ga                                       | 150 mg/l      | Fe                              | 15 mg/l       |
| Al                                       | 100 mg/l      | Ba                              | 5 mg/l        |
| Ni                                       | 50 mg/l       | Mn                              | 5 mg/l        |
| Ag                                       | 50 mg/l       | Be                              | 1 mg/l        |
| Cr                                       | 25 mg/l       | Sr                              | 1 mg/l        |
| Cd                                       | 20 mg/l       |                                 |               |

| ICP multi-element standard solution II - 3 components |               | Reference: 115708.L1            |               |
|-------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                       |               | Volume: 100 ml                  |               |
|                                                       |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                               | Concentration | Element                         | Concentration |
| Li                                                    | 250 mg/l      | Na                              | 1000 mg/l     |
| K                                                     | 10000 mg/l    |                                 |               |

| Calibration Standard Earth Alkali components (III) - 4 components |               | Reference: 115626.L1            |               |
|-------------------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                                   |               | Volume: 100 ml                  |               |
|                                                                   |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                           | Concentration | Element                         | Concentration |
| Ba                                                                | 1000 mg/l     | Mg                              | 1000 mg/l     |
| Ca                                                                | 1000 mg/l     | Sr                              | 1000 mg/l     |

| Calibration Standard (IV) - 23 components |               | Reference: 111355.L1            |               |
|-------------------------------------------|---------------|---------------------------------|---------------|
|                                           |               | Volume: 100 ml                  |               |
|                                           |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                   | Concentration | Element                         | Concentration |
| Al                                        | 1000 mg/l     | Pb                              | 1000 mg/l     |
| Ba                                        | 1000 mg/l     | Li                              | 1000 mg/l     |
| Bi                                        | 1000 mg/l     | Mg                              | 1000 mg/l     |
| B                                         | 1000 mg/l     | Mn                              | 1000 mg/l     |
| Cd                                        | 1000 mg/l     | Ni                              | 1000 mg/l     |
| Ca                                        | 1000 mg/l     | K                               | 1000 mg/l     |
| Cr                                        | 1000 mg/l     | Ag                              | 1000 mg/l     |
| Co                                        | 1000 mg/l     | Na                              | 1000 mg/l     |
| Cu                                        | 1000 mg/l     | Sr                              | 1000 mg/l     |
| Ga                                        | 1000 mg/l     | Tl                              | 1000 mg/l     |
| In                                        | 1000 mg/l     | Zn                              | 1000 mg/l     |
| Fe                                        | 1000 mg/l     |                                 |               |

| ICP multi-element standard solution VI - 30 components |               | Reference: 110580.L1            |               |
|--------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                        |               | Volume: 100 ml                  |               |
|                                                        |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                | Concentration | Element                         | Concentration |
| Ca                                                     | 1000 mg/l     | K                               | 10 mg/l       |
| As                                                     | 100 mg/l      | Pb                              | 10 mg/l       |
| B                                                      | 100 mg/l      | Li                              | 10 mg/l       |
| Be                                                     | 100 mg/l      | Mg                              | 10 mg/l       |
| Fe                                                     | 100 mg/l      | Mn                              | 10 mg/l       |
| Se                                                     | 100 mg/l      | Mo                              | 10 mg/l       |
| Zn                                                     | 100 mg/l      | Ni                              | 10 mg/l       |
| Al                                                     | 10 mg/l       | Rb                              | 10 mg/l       |
| Ba                                                     | 10 mg/l       | Na                              | 10 mg/l       |
| Bi                                                     | 10 mg/l       | Ag                              | 10 mg/l       |
| Cd                                                     | 10 mg/l       | Sr                              | 10 mg/l       |
| Co                                                     | 10 mg/l       | Te                              | 10 mg/l       |
| Cr                                                     | 10 mg/l       | Tl                              | 10 mg/l       |
| Cu                                                     | 10 mg/l       | U                               | 10 mg/l       |
| Ga                                                     | 10 mg/l       | V                               | 10 mg/l       |

| ICP multi-element standard IX - 9 components |               | Reference: 109494.L1            |               |
|----------------------------------------------|---------------|---------------------------------|---------------|
|                                              |               | Volume: 100 ml                  |               |
|                                              |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                      | Concentration | Element                         | Concentration |
| As                                           | 100 mg/l      | Hg                              | 100 mg/l      |
| Be                                           | 100 mg/l      | Ni                              | 100 mg/l      |
| Cd                                           | 100 mg/l      | Se                              | 100 mg/l      |
| Cr                                           | 100 mg/l      | Tl                              | 100 mg/l      |
| Pb                                           | 100 mg/l      |                                 |               |

| Merck ICP Multi-element standard XI - 7 components |               | Reference: 109491.L1            |               |
|----------------------------------------------------|---------------|---------------------------------|---------------|
|                                                    |               | Volume: 100 ml                  |               |
|                                                    |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                            | Concentration | Element                         | Concentration |
| Zn                                                 | 2 500 mg/l    | Ni                              | 200 mg/l      |
| Cr                                                 | 900 mg/l      | Cd                              | 10 mg/l       |
| Pb                                                 | 900 mg/l      | Hg                              | 8 mg/l        |
| Cu                                                 | 800 mg/l      |                                 |               |



| Calibration Standard (VIII) - 24 components |               | Reference: 109492.L1                    |               |
|---------------------------------------------|---------------|-----------------------------------------|---------------|
|                                             |               | Volume: 100 ml                          |               |
|                                             |               | Matrix: in 2 % HNO <sub>3</sub> /tr.HCl |               |
| Element                                     | Concentration | Element                                 | Concentration |
| Al                                          | 100 mg/l      | Pb                                      | 100 mg/l      |
| Ba                                          | 100 mg/l      | Li                                      | 100 mg/l      |
| Be                                          | 100 mg/l      | Mg                                      | 100 mg/l      |
| Bi                                          | 100 mg/l      | Mn                                      | 100 mg/l      |
| B                                           | 100 mg/l      | Ni                                      | 100 mg/l      |
| Cd                                          | 100 mg/l      | K                                       | 100 mg/l      |
| Ca                                          | 100 mg/l      | Se                                      | 100 mg/l      |
| Cr                                          | 100 mg/l      | Na                                      | 100 mg/l      |
| Co                                          | 100 mg/l      | Sr                                      | 100 mg/l      |
| Cu                                          | 100 mg/l      | Te                                      | 100 mg/l      |
| Ga                                          | 100 mg/l      | Tl                                      | 100 mg/l      |
| Fe                                          | 100 mg/l      | Zn                                      | 100 mg/l      |

| ICP multi-element standard solution X - 23 components |               | Reference: 109493.L1                    |               |
|-------------------------------------------------------|---------------|-----------------------------------------|---------------|
|                                                       |               | Volume: 100 ml                          |               |
|                                                       |               | Matrix: in 5 % HNO <sub>3</sub> /tr. HF |               |
| Element                                               | Concentration | Element                                 | Concentration |
| Ca                                                    | 35 000 mg/l   | Zn                                      | 50 mg/l       |
| Mg                                                    | 15 000 mg/l   | Mn                                      | 30 mg/l       |
| Na                                                    | 8 000 mg/l    | Co                                      | 25 mg/l       |
| K                                                     | 3 000 mg/l    | Pb                                      | 25 mg/l       |
| B                                                     | 100 mg/l      | Be                                      | 20 mg/l       |
| Fe                                                    | 100 mg/l      | Cd                                      | 20 mg/l       |
| Mo                                                    | 100 mg/l      | Cr                                      | 20 mg/l       |
| Sr                                                    | 100 mg/l      | Cu                                      | 20 mg/l       |
| As                                                    | 50 mg/l       | Bi                                      | 10 mg/l       |
| Ba                                                    | 50 mg/l       | Se                                      | 10 mg/l       |
| Ni                                                    | 50 mg/l       | Tl                                      | 10 mg/l       |
| V                                                     | 50 mg/l       |                                         |               |

| ICP Multi-element standard Solution (XII) - 8 components |               | Reference: 109490.L1 |               |
|----------------------------------------------------------|---------------|----------------------|---------------|
|                                                          |               | Volume: 100 ml       |               |
|                                                          |               | Matrix: in 5 % HCl   |               |
| Element                                                  | Concentration | Element              | Concentration |
| As                                                       | 1000 mg/l     | Si                   | 1000 mg/l     |
| Mo                                                       | 1000 mg/l     | W                    | 1000 mg/l     |
| P                                                        | 1000 mg/l     | V                    | 1000 mg/l     |
| S                                                        | 1000 mg/l     | Zr                   | 1000 mg/l     |

| Calibration Standard Trace Metals (XIII) - 15 components |               | Reference: 109480.L1                    |               |
|----------------------------------------------------------|---------------|-----------------------------------------|---------------|
|                                                          |               | Volume: 100 ml                          |               |
|                                                          |               | Matrix: in 5 % HNO <sub>3</sub> /tr. HF |               |
| Element                                                  | Concentration | Element                                 | Concentration |
| Al                                                       | 500 mg/l      | Pb                                      | 100 mg/l      |
| V                                                        | 250 mg/l      | Mn                                      | 100 mg/l      |
| As                                                       | 100 mg/l      | Ni                                      | 100 mg/l      |
| Be                                                       | 100 mg/l      | Zn                                      | 100 mg/l      |
| Cr                                                       | 100 mg/l      | Cd                                      | 25 mg/l       |
| Co                                                       | 100 mg/l      | Se                                      | 25 mg/l       |
| Cu                                                       | 100 mg/l      | Hg                                      | 5 mg/l        |
| Fe                                                       | 100 mg/l      |                                         |               |

| Wavelength Calibration<br>Standard (XIV) -<br>11 components |               | Reference: 109481.L1                    |               |         | Reference: 109481.L5                    |         |               |
|-------------------------------------------------------------|---------------|-----------------------------------------|---------------|---------|-----------------------------------------|---------|---------------|
|                                                             |               | Volume: 100 ml                          |               |         | Volume: 500 ml                          |         |               |
|                                                             |               | Matrix: in 2 % HCl/tr. HNO <sub>3</sub> |               |         | Matrix: in 2 % HCl/tr. HNO <sub>3</sub> |         |               |
| Element                                                     | Concentration | Element                                 | Concentration | Element | Concentration                           | Element | Concentration |
| P                                                           | 100 mg/l      | As                                      | 20 mg/l       | Mn      | 20 mg/l                                 | Na      | 20 mg/l       |
| K                                                           | 100 mg/l      | La                                      | 20 mg/l       | Mo      | 20 mg/l                                 | Sc      | 20 mg/l       |
| S                                                           | 100 mg/l      | Li                                      | 20 mg/l       | Ni      | 20 mg/l                                 |         |               |

| ICP Multi-Element Standard Solution XV - 8 components |               | Reference: 109482.L1            |               | Reference: 109482.L5            |               |
|-------------------------------------------------------|---------------|---------------------------------|---------------|---------------------------------|---------------|
|                                                       |               | Volume: 100 ml                  |               | Volume: 500 ml                  |               |
|                                                       |               | Matrix: in 2 % HNO <sub>3</sub> |               | Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                               | Concentration | Element                         | Concentration | Element                         | Concentration |
| Ba                                                    | 1 mg/l        | La                              | 10 mg/l       | Na                              | 10 mg/l       |
| Ca                                                    | 1 mg/l        | Li                              | 10 mg/l       | Sr                              | 10 mg/l       |
| K                                                     | 50 mg/l       | Mn                              | 10 mg/l       |                                 |               |



| Calibration Standard - Quality Control (XVI) - 21 components |               | Reference: 109487.L1                              |               |
|--------------------------------------------------------------|---------------|---------------------------------------------------|---------------|
|                                                              |               | Volume: 100 ml<br>Matrix: in 2 % HNO <sub>3</sub> |               |
| Element                                                      | Concentration | Element                                           | Concentration |
| Sb                                                           | 100 mg/l      | Mg                                                | 100 mg/l      |
| As                                                           | 100 mg/l      | Mn                                                | 100 mg/l      |
| Be                                                           | 100 mg/l      | Mo                                                | 100 mg/l      |
| Cd                                                           | 100 mg/l      | Ni                                                | 100 mg/l      |
| Ca                                                           | 100 mg/l      | Sr                                                | 100 mg/l      |
| Cr                                                           | 100 mg/l      | Tl                                                | 100 mg/l      |
| Co                                                           | 100 mg/l      | Ti                                                | 100 mg/l      |
| Cu                                                           | 100 mg/l      | Se                                                | 100 mg/l      |
| Fe                                                           | 100 mg/l      | V                                                 | 100 mg/l      |
| Pb                                                           | 100 mg/l      | Zn                                                | 100 mg/l      |
| Li                                                           | 100 mg/l      |                                                   |               |

| Wavelength Calibration Standard (V) - 26 components |               | Reference: 110714.L1                 |               |
|-----------------------------------------------------|---------------|--------------------------------------|---------------|
|                                                     |               | Volume: 100 ml<br>Matrix: in 5 % HCl |               |
| Element                                             | Concentration | Element                              | Concentration |
| K                                                   | 100 mg/l      | Cd                                   | 2 mg/l        |
| Al                                                  | 20 mg/l       | Cr                                   | 2 mg/l        |
| As                                                  | 20 mg/l       | Cu                                   | 2 mg/l        |
| Pb                                                  | 20 mg/l       | Fe                                   | 2 mg/l        |
| Se                                                  | 20 mg/l       | Li                                   | 2 mg/l        |
| Na                                                  | 20 mg/l       | Ti                                   | 2 mg/l        |
| Te                                                  | 20 mg/l       | Zn                                   | 2 mg/l        |
| Ca                                                  | 10 mg/l       | Be                                   | 1 mg/l        |
| P                                                   | 10 mg/l       | Mg                                   | 1 mg/l        |
| Hg                                                  | 5 mg/l        | Mn                                   | 1 mg/l        |
| Ni                                                  | 5 mg/l        | Sc                                   | 1 mg/l        |
| B                                                   | 2 mg/l        | Sr                                   | 1 mg/l        |
| Ba                                                  | 2 mg/l        | Y                                    | 1 mg/l        |

| ICP multi-element standard solution XVII - 7 components |               | Reference: 109495.L1                  |               |
|---------------------------------------------------------|---------------|---------------------------------------|---------------|
|                                                         |               | Volume: 100 ml<br>Matrix: in 15 % HCl |               |
| Element                                                 | Concentration | Element                               | Concentration |
| Sb                                                      | 100 mg/l      | Sn                                    | 100 mg/l      |
| Hf                                                      | 100 mg/l      | Ti                                    | 100 mg/l      |
| Ir                                                      | 100 mg/l      | Zr                                    | 100 mg/l      |
| Ta                                                      | 100 mg/l      |                                       |               |

| GF AAS Multi element standard XVIII - 16 components |               | Reference: 109500.L1                              |               |
|-----------------------------------------------------|---------------|---------------------------------------------------|---------------|
|                                                     |               | Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                             | Concentration | Element                                           | Concentration |
| Sb                                                  | 100 mg/l      | Cu                                                | 50 mg/l       |
| Al                                                  | 100 mg/l      | Ni                                                | 50 mg/l       |
| As                                                  | 100 mg/l      | Cr                                                | 20 mg/l       |
| Pb                                                  | 100 mg/l      | Fe                                                | 20 mg/l       |
| Se                                                  | 100 mg/l      | Mn                                                | 20 mg/l       |
| Tl                                                  | 100 mg/l      | Ag                                                | 10 mg/l       |
| Ba                                                  | 50 mg/l       | Be                                                | 5 mg/l        |
| Co                                                  | 50 mg/l       | Cd                                                | 5 mg/l        |

| IC Multi-element standard VII - 9 components |               | Reference: 110322.L1                                |               |
|----------------------------------------------|---------------|-----------------------------------------------------|---------------|
|                                              |               | Volume: 100 ml<br>Matrix: in 0.1 % HNO <sub>3</sub> |               |
| Element                                      | Concentration | Element                                             | Concentration |
| NH <sub>4</sub> <sup>+</sup>                 | 100 mg/l      | Mg <sup>2+</sup>                                    | 100 mg/l      |
| Ba <sup>2+</sup>                             | 100 mg/l      | Mn <sup>2+</sup>                                    | 100 mg/l      |
| Ca <sup>2+</sup>                             | 100 mg/l      | Na <sup>+</sup>                                     | 100 mg/l      |
| K <sup>+</sup>                               | 100 mg/l      | Sr <sup>2+</sup>                                    | 100 mg/l      |
| Li <sup>+</sup>                              | 100 mg/l      |                                                     |               |

| Tuning Standard (XXIV) - 15 components |               | Reference: 109411.L1                              |               | Reference: 109411.L5                              |               |
|----------------------------------------|---------------|---------------------------------------------------|---------------|---------------------------------------------------|---------------|
|                                        |               | Volume: 100 ml<br>Matrix: in 1 % HNO <sub>3</sub> |               | Volume: 500 ml<br>Matrix: in 1 % HNO <sub>3</sub> |               |
| Element                                | Concentration | Element                                           | Concentration | Element                                           | Concentration |
| K                                      | 500 mg/l      | Cd                                                | 50 mg/l       | Pb                                                | 50 mg/l       |
| Al                                     | 50 mg/l       | Cr                                                | 50 mg/l       | Mn                                                | 50 mg/l       |
| As                                     | 50 mg/l       | Co                                                | 50 mg/l       | Mo                                                | 50 mg/l       |
| Ba                                     | 50 mg/l       | Cu                                                | 50 mg/l       | Ni                                                | 50 mg/l       |
|                                        |               |                                                   |               | Se                                                | 50 mg/l       |
|                                        |               |                                                   |               | Sr                                                | 50 mg/l       |
|                                        |               |                                                   |               | Zn                                                | 50 mg/l       |

| ICP-MS Detection Limit Standard (XIX) - 5 components |               | Reference: 109496.L1            |               |
|------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                      |               | Volume: 100 ml                  |               |
|                                                      |               | Matrix: in 1 % HNO <sub>3</sub> |               |
| Element                                              | Concentration | Element                         | Concentration |
| Be                                                   | 10 µg/l       | Tl                              | 10 µg/l       |
| Co                                                   | 10 µg/l       | U                               | 10 µg/l       |
| In                                                   | 10 µg/l       |                                 |               |

| ICP-MS Optimization Standard (XXII) - 5 components |               | Reference: 109499.L1                    |               |
|----------------------------------------------------|---------------|-----------------------------------------|---------------|
|                                                    |               | Volume: 100 ml                          |               |
|                                                    |               | Matrix: in 2 % HNO <sub>3</sub> /tr HCl |               |
| Element                                            | Concentration | Element                                 | Concentration |
| Cd                                                 | 200 µg/l      | Mg                                      | 200 µg/l      |
| Cu                                                 | 200 µg/l      | Rh                                      | 200 µg/l      |
| Pb                                                 | 200 µg/l      |                                         |               |

| ICP-MS Calibration Standard (XXI) - 29 components |               | Reference: 109498.L1            |               |
|---------------------------------------------------|---------------|---------------------------------|---------------|
|                                                   |               | Volume: 100 ml                  |               |
|                                                   |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                           | Concentration | Element                         | Concentration |
| Al                                                | 10 mg/l       | Li                              | 10 mg/l       |
| As                                                | 10 mg/l       | Mg                              | 10 mg/l       |
| Ba                                                | 10 mg/l       | Mn                              | 10 mg/l       |
| Be                                                | 10 mg/l       | Ni                              | 10 mg/l       |
| Bi                                                | 10 mg/l       | K                               | 10 mg/l       |
| Ca                                                | 10 mg/l       | Se                              | 10 mg/l       |
| Cd                                                | 10 mg/l       | Ag                              | 10 mg/l       |
| Co                                                | 10 mg/l       | Na                              | 10 mg/l       |
| Cr                                                | 10 mg/l       | Rb                              | 10 mg/l       |
| Cs                                                | 10 mg/l       | Sr                              | 10 mg/l       |
| Cu                                                | 10 mg/l       | Tl                              | 10 mg/l       |
| Fe                                                | 10 mg/l       | U                               | 10 mg/l       |
| Ga                                                | 10 mg/l       | V                               | 10 mg/l       |
| In                                                | 10 mg/l       | Zn                              | 10 mg/l       |
| Pb                                                | 10 mg/l       |                                 |               |

| ICP multi-element standard solution XX - 11 components |               | Reference: 109497.L1            |               | Reference: 109497.L5            |               |
|--------------------------------------------------------|---------------|---------------------------------|---------------|---------------------------------|---------------|
|                                                        |               | Volume: 100 ml                  |               | Volume: 500 ml                  |               |
|                                                        |               | Matrix: in 1 % HNO <sub>3</sub> |               | Matrix: in 1 % HNO <sub>3</sub> |               |
| Element                                                | Concentration | Element                         | Concentration | Element                         | Concentration |
| Mg                                                     | 10 µg/l       | Pb                              | 10 µg/l       | Tl                              | 10 µg/l       |
| Cu                                                     | 10 µg/l       | Sc                              | 10 µg/l       | Ce                              | 10 µg/l       |
| Cd                                                     | 10 µg/l       | Rh                              | 10 µg/l       | Ge                              | 10 µg/l       |
|                                                        |               |                                 |               | Tb                              | 10 µg/l       |
|                                                        |               |                                 |               | Ba                              | 10 µg/l       |

| Mass Calibration Standard (XXIII)- 15 components |               | Reference: 109410.L1                    |               | Reference: 109411.L5                    |               |
|--------------------------------------------------|---------------|-----------------------------------------|---------------|-----------------------------------------|---------------|
|                                                  |               | Volume: 100 ml                          |               | Volume: 500 ml                          |               |
|                                                  |               | Matrix: in 5 % HNO <sub>3</sub> /tr HCl |               | Matrix: in 5 % HNO <sub>3</sub> /tr HCl |               |
| Element                                          | Concentration | Element                                 | Concentration | Element                                 | Concentration |
| Ba                                               | 1 µg/l        | In                                      | 1 µg/l        | K                                       | 1 µg/l        |
| B                                                | 1 µg/l        | Fe                                      | 1 µg/l        | Rh                                      | 1 µg/l        |
| Co                                               | 1 µg/l        | Li                                      | 1 µg/l        | Sc                                      | 1 µg/l        |
| Ga                                               | 1 µg/l        | Lu                                      | 1 µg/l        | Na                                      | 1 µg/l        |
|                                                  |               |                                         |               | Tl                                      | 1 µg/l        |
|                                                  |               |                                         |               | U                                       | 1 µg/l        |
|                                                  |               |                                         |               | Y                                       | 1 µg/l        |



# Standards equivalent to Jobin Yvon

| Standard Quality Control for ICP Ultima family - 5 components |               | Reference: JYICP-QC1.L1<br>Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               | Reference: JYICP-QC1.L5<br>Volume: 500 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |
|---------------------------------------------------------------|---------------|------------------------------------------------------------------------------|---------------|------------------------------------------------------------------------------|---------------|
| Element                                                       | Concentration | Element                                                                      | Concentration | Element                                                                      | Concentration |
| K                                                             | 1500 mg/l     | Al                                                                           | 500 mg/l      | Cd                                                                           | 100 mg/l      |
| Pb                                                            | 1000 mg/l     | Mg                                                                           | 500 mg/l      |                                                                              |               |

| Standard Quality Control for Chlorine |               | Reference: JYICP-QC2.L1<br>Volume: 100 ml<br>Matrix: in H <sub>2</sub> O |  | Reference: JYICP-QC2.L5<br>Volume: 500 ml<br>Matrix: in H <sub>2</sub> O |  |
|---------------------------------------|---------------|--------------------------------------------------------------------------|--|--------------------------------------------------------------------------|--|
| Element                               | Concentration |                                                                          |  |                                                                          |  |
| Cl <sup>-</sup>                       | 10 000 mg/l   |                                                                          |  |                                                                          |  |

| Standard Quality Control for Testing ICP Activa Family - 5 components |               | Reference: JYICP-QCACT.L1<br>Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |
|-----------------------------------------------------------------------|---------------|--------------------------------------------------------------------------------|---------------|
| Element                                                               | Concentration | Element                                                                        | Concentration |
| Al                                                                    | 100 mg/l      | Mg                                                                             | 100 mg/l      |
| Cd                                                                    | 100 mg/l      | Pb                                                                             | 100 mg/l      |
| K                                                                     | 100 mg/l      |                                                                                |               |

| Standard for Semi-quantitative Method - 7 components |               | Reference: JYICP-MIX7.L1<br>Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> / tr. HF |               |
|------------------------------------------------------|---------------|----------------------------------------------------------------------------------------|---------------|
| Element                                              | Concentration | Element                                                                                | Concentration |
| K                                                    | 1000 mg/l     | B                                                                                      | 100 mg/l      |
| Ag                                                   | 100 mg/l      | Na                                                                                     | 100 mg/l      |
| Al                                                   | 100 mg/l      | Si                                                                                     | 50 mg/l       |
| Ba                                                   | 100 mg/l      |                                                                                        |               |

| Instrument Check Standard - 9 components |               | Reference: JYICP-MIX9.L1<br>Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               | Reference: JYICP-MIX9.L5<br>Volume: 500 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |
|------------------------------------------|---------------|-------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------|---------------|
| Element                                  | Concentration | Element                                                                       | Concentration | Element                                                                       | Concentration |
| Al                                       | 50 mg/l       | Cr                                                                            | 50 mg/l       | P                                                                             | 50 mg/l       |
| As                                       | 50 mg/l       | Cu                                                                            | 50 mg/l       | K                                                                             | 50 mg/l       |
| Co                                       | 50 mg/l       | Pb                                                                            | 50 mg/l       | Na                                                                            | 50 mg/l       |

| Instrument Check Standard - 3 components |               | Reference: JYICP-DIAG.L1<br>Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               | Reference: JYICP-DIAG.L5<br>Volume: 500 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |
|------------------------------------------|---------------|-------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------|---------------|
| Element                                  | Concentration | Element                                                                       | Concentration | Element                                                                       | Concentration |
| Ba                                       | 1000 mg/l     | Mg                                                                            | 1000 mg/l     | Zn                                                                            | 1000 mg/l     |

| Standard for determination of 4 main components |               | Reference: JYICP-MIXMAJ.L1<br>Volume: 100 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               | Reference: JYICP-MIXMAJ.L5<br>Volume: 500 ml<br>Matrix: in 5 % HNO <sub>3</sub> |               |         |               |
|-------------------------------------------------|---------------|---------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------|---------------|---------|---------------|
| Element                                         | Concentration | Element                                                                         | Concentration | Element                                                                         | Concentration | Element | Concentration |
| Ca                                              | 5000 mg/l     | K                                                                               | 5000 mg/l     | Na                                                                              | 5000 mg/l     | Mg      | 5000 mg/l     |

| Standard for Semi-quantitative Method - 21 components |               | Reference: JYICP-MIX21.L1       |               |
|-------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                       |               | Volume: 100 ml                  |               |
|                                                       |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                               | Concentration | Element                         | Concentration |
| As                                                    | 100 mg/l      | Mo                              | 100 mg/l      |
| Be                                                    | 100 mg/l      | Ni                              | 100 mg/l      |
| Ca                                                    | 100 mg/l      | Pb                              | 100 mg/l      |
| Cd                                                    | 100 mg/l      | Sb                              | 100 mg/l      |
| Co                                                    | 100 mg/l      | Se                              | 100 mg/l      |
| Cr                                                    | 100 mg/l      | Sr                              | 100 mg/l      |
| Cu                                                    | 100 mg/l      | Ti                              | 100 mg/l      |
| Fe                                                    | 100 mg/l      | Tl                              | 100 mg/l      |
| Li                                                    | 100 mg/l      | V                               | 100 mg/l      |
| Mg                                                    | 100 mg/l      | Zn                              | 100 mg/l      |
| Mn                                                    | 100 mg/l      |                                 |               |

| Quality Control Standard - 7 components |               | Reference: JYICP-MIX7HSI.L1     |               |
|-----------------------------------------|---------------|---------------------------------|---------------|
|                                         |               | Volume: 100 ml                  |               |
|                                         |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                 | Concentration | Element                         | Concentration |
| K                                       | 1000 mg/l     | Ba                              | 100 mg/l      |
| Si                                      | 500 mg/l      | Na                              | 100 mg/l      |
| Al                                      | 100 mg/l      | Ag                              | 50 mg/l       |
| B                                       | 100 mg/l      |                                 |               |

| Standard for the Determination of traces of 5 heavy metals |               | Reference: JYICP-MIXHM.L1       |               |
|------------------------------------------------------------|---------------|---------------------------------|---------------|
|                                                            |               | Volume: 100 ml                  |               |
|                                                            |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                                                    | Concentration | Element                         | Concentration |
| As                                                         | 100 mg/l      | Se                              | 50 mg/l       |
| Tl                                                         | 100 mg/l      | Pb                              | 30 mg/l       |
| Cd                                                         | 50 mg/l       |                                 |               |

| Quality Control -<br>23 components |               | Reference: JYICP-MIX23.L1        |               |         | Reference: JYICP-MIX23.L5        |         |               |
|------------------------------------|---------------|----------------------------------|---------------|---------|----------------------------------|---------|---------------|
|                                    |               | Volume: 100 ml                   |               |         | Volume: 500 ml                   |         |               |
|                                    |               | Matrix: in 10 % HNO <sub>3</sub> |               |         | Matrix: in 10 % HNO <sub>3</sub> |         |               |
| Element                            | Concentration | Element                          | Concentration | Element | Concentration                    | Element | Concentration |
| Al                                 | 1000 mg/l     | Cr                               | 1000 mg/l     | Pb      | 1000 mg/l                        | Ag      | 1000 mg/l     |
| Ba                                 | 1000 mg/l     | Co                               | 1000 mg/l     | Li      | 1000 mg/l                        | Na      | 1000 mg/l     |
| Bi                                 | 1000 mg/l     | Cu                               | 1000 mg/l     | Mg      | 1000 mg/l                        | Sr      | 1000 mg/l     |
| B                                  | 1000 mg/l     | Ga                               | 1000 mg/l     | Mn      | 1000 mg/l                        | Tl      | 1000 mg/l     |
| Cd                                 | 1000 mg/l     | In                               | 1000 mg/l     | Ni      | 1000 mg/l                        | Zn      | 1000 mg/l     |
| Ca                                 | 1000 mg/l     | Fe                               | 1000 mg/l     | K       | 1000 mg/l                        |         |               |

Standards equivalent to NIST

| Trace metals in Water - 30 components |               | Reference: 1643.L1              |               |
|---------------------------------------|---------------|---------------------------------|---------------|
|                                       |               | Volume: 100 ml                  |               |
|                                       |               | Matrix: in 5 % HNO <sub>3</sub> |               |
| Element                               | Concentration | Element                         | Concentration |
| Ag                                    | 1 ug/l        | Mg                              | 8000 ug/l     |
| Al                                    | 142 ug/l      | Mn                              | 39 ug/l       |
| As                                    | 60 ug/l       | Mo                              | 121 ug/l      |
| B                                     | 158 ug/l      | Na                              | 21000 ug/l    |
| Ba                                    | 544 ug/l      | Ni                              | 62 ug/l       |
| Be                                    | 14 ug/l       | Pb                              | 20 ug/l       |
| Bi                                    | 14 ug/l       | Rb                              | 14 ug/l       |
| Ca                                    | 32000 ug/l    | Re                              | 113 ug/l      |
| Cd                                    | 7 ug/l        | Sb                              | 58 ug/l       |
| Co                                    | 27 ug/l       | Se                              | 12 ug/l       |
| Cr                                    | 20 ug/l       | Sr                              | 323 ug/l      |
| Cu                                    | 23 ug/l       | Te                              | 1 ug/l        |
| Fe                                    | 98 ug/l       | Tl                              | 7 ug/l        |
| K                                     | 2000 ug/l     | V                               | 38 ug/l       |
| Li                                    | 17 ug/l       | Zn                              | 79 ug/l       |

| Mercury In Water |               | Reference: 1641d.L1             |  |
|------------------|---------------|---------------------------------|--|
|                  |               | Volume: 100 ml                  |  |
|                  |               | Matrix: in 2 % HNO <sub>3</sub> |  |
| Element          | Concentration |                                 |  |
| Hg               | 1.557 mg/kg   |                                 |  |



# Standards equivalent to Metrohm

| Mixed Anions Standard - 7 components |               | Reference: REAIC1020.L1                       |               |
|--------------------------------------|---------------|-----------------------------------------------|---------------|
|                                      |               | Volume: 100 ml<br>Matrix: in H <sub>2</sub> O |               |
| Element                              | Concentration | Element                                       | Concentration |
| F-                                   | 2 mg/l        | Br-                                           | 10 mg/l       |
| P043-                                | 10 mg/l       | Cl-                                           | 5 mg/l        |
| N02-                                 | 5 mg/l        | S042-                                         | 10 mg/l       |
| N03-                                 | 10 mg/l       |                                               |               |

| Mixed Anions Standard - 7 components |               | Reference: REAIC1025.L1                       |               |
|--------------------------------------|---------------|-----------------------------------------------|---------------|
|                                      |               | Volume: 100 ml<br>Matrix: in H <sub>2</sub> O |               |
| Element                              | Concentration | Element                                       | Concentration |
| F-                                   | 4 mg/l        | Br-                                           | 8 mg/l        |
| P043-                                | 4 mg/l        | Cl-                                           | 100 mg/l      |
| N02-                                 | 8 mg/l        | S042-                                         | 100 mg/l      |
| N03-                                 | 8 mg/l        |                                               |               |

| Mixed Anions Standard - 7 components |               | Reference: REAIC1026.L1                       |               |
|--------------------------------------|---------------|-----------------------------------------------|---------------|
|                                      |               | Volume: 100 ml<br>Matrix: in H <sub>2</sub> O |               |
| Element                              | Concentration | Element                                       | Concentration |
| F-                                   | 0.5 mg/l      | Br-                                           | 1 mg/l        |
| P043-                                | 0.5 mg/l      | Cl-                                           | 12.5 mg/l     |
| N02-                                 | 1 mg/l        | S042-                                         | 12.5 mg/l     |
| N03-                                 | 1 mg/l        |                                               |               |

| Mixed Anions Standard - 7 components |               | Reference: REAIC1035.L1                       |               |
|--------------------------------------|---------------|-----------------------------------------------|---------------|
|                                      |               | Volume: 100 ml<br>Matrix: in H <sub>2</sub> O |               |
| Element                              | Concentration | Element                                       | Concentration |
| F-                                   | 100 mg/l      | Br-                                           | 100 mg/l      |
| P043-                                | 100 mg/l      | Cl-                                           | 100 mg/l      |
| N02-                                 | 100 mg/l      | S042-                                         | 100 mg/l      |
| N03-                                 | 100 mg/l      |                                               |               |

| Mixed Anions Standard - 7 components |               | Reference: REAIC1040.L1                       |               |
|--------------------------------------|---------------|-----------------------------------------------|---------------|
|                                      |               | Volume: 100 ml<br>Matrix: in H <sub>2</sub> O |               |
| Element                              | Concentration | Element                                       | Concentration |
| F-                                   | 100 ug/l      | Br-                                           | 100 ug/l      |
| P043-                                | 100 ug/l      | Cl-                                           | 100 ug/l      |
| N02-                                 | 100 ug/l      | S042-                                         | 100 ug/l      |
| N03-                                 | 100 ug/l      |                                               |               |

| Metrohm Peak - chloride/sulfate standard - 2 components |               | Reference: REAIC105001.L5                     |               |
|---------------------------------------------------------|---------------|-----------------------------------------------|---------------|
|                                                         |               | Volume: 500 ml<br>Matrix: in H <sub>2</sub> O |               |
| Element                                                 | Concentration | Element                                       | Concentration |
| Cl-                                                     | 0.5 mg/l      | S042-                                         | 0.5 mg/l      |

| Metrohm Peak - chloride/sulfate standard - 2 components |               | Reference: REAIC105002.L5                     |               |
|---------------------------------------------------------|---------------|-----------------------------------------------|---------------|
|                                                         |               | Volume: 500 ml<br>Matrix: in H <sub>2</sub> O |               |
| Element                                                 | Concentration | Element                                       | Concentration |
| Cl-                                                     | 1 mg/l        | S042-                                         | 1 mg/l        |

| Metrohm Peak - chloride/sulfate standard - 2 components |               | Reference: REAIC10501.L5                      |               |
|---------------------------------------------------------|---------------|-----------------------------------------------|---------------|
|                                                         |               | Volume: 500 ml<br>Matrix: in H <sub>2</sub> O |               |
| Element                                                 | Concentration | Element                                       | Concentration |
| Cl-                                                     | 2 mg/l        | S042-                                         | 2 mg/l        |

| Metrohm Peak - chloride/sulfate standard - 2 components |               | Reference: REAIC105004.L5                     |               |
|---------------------------------------------------------|---------------|-----------------------------------------------|---------------|
|                                                         |               | Volume: 500 ml<br>Matrix: in H <sub>2</sub> O |               |
| Element                                                 | Concentration | Element                                       | Concentration |
| Cl-                                                     | 2.5 mg/l      | S042-                                         | 2.5 mg/l      |

| Metrohm Peak - chloride/sulfate standard - 2 components |               | Reference: REAIC105005.L5                     |               |
|---------------------------------------------------------|---------------|-----------------------------------------------|---------------|
|                                                         |               | Volume: 500 ml<br>Matrix: in H <sub>2</sub> O |               |
| Element                                                 | Concentration | Element                                       | Concentration |
| Cl-                                                     | 5 mg/l        | S042-                                         | 5 mg/l        |

| Metrohm Peak - chloride/sulfate standard - 2 components |               | Reference: REAIC105006.L5                     |               |
|---------------------------------------------------------|---------------|-----------------------------------------------|---------------|
|                                                         |               | Volume: 500 ml<br>Matrix: in H <sub>2</sub> O |               |
| Element                                                 | Concentration | Element                                       | Concentration |
| Cl-                                                     | 10 mg/l       | S042-                                         | 10 mg/l       |

| Metrohm Peak - chloride/sulfate standard - 2 components |               | Reference: REAIC10551.L5    |               |
|---------------------------------------------------------|---------------|-----------------------------|---------------|
|                                                         |               | Volume: 500 ml              |               |
|                                                         |               | Matrix: in H <sub>2</sub> O |               |
| Element                                                 | Concentration | Element                     | Concentration |
| Cl <sup>-</sup>                                         | 10 mg/l       | S042 <sup>-</sup>           | 10 mg/l       |

| Calibration H3PO4 & S04 |               | Reference: REAIC10551.L1    |               |
|-------------------------|---------------|-----------------------------|---------------|
|                         |               | Volume: 100 ml              |               |
|                         |               | Matrix: in H <sub>2</sub> O |               |
| Element                 | Concentration | Element                     | Concentration |
| H3PO4                   | 150 mg/l      | S042 <sup>-</sup>           | 10 mg/l       |

| Calibration H3PO4 & S04 |               | Reference: REAIC10552.L1    |               |
|-------------------------|---------------|-----------------------------|---------------|
|                         |               | Volume: 100 ml              |               |
|                         |               | Matrix: in H <sub>2</sub> O |               |
| Element                 | Concentration | Element                     | Concentration |
| H3PO4                   | 250 mg/l      | S042 <sup>-</sup>           | 10 mg/l       |

| Calibration H3PO4 & S04 |               | Reference: REAIC10553.L1    |               |
|-------------------------|---------------|-----------------------------|---------------|
|                         |               | Volume: 100 ml              |               |
|                         |               | Matrix: in H <sub>2</sub> O |               |
| Element                 | Concentration | Element                     | Concentration |
| H3PO4                   | 350 mg/l      | S042 <sup>-</sup>           | 10 mg/l       |

| Calibration H3PO4 & S04 |               | Reference: REAIC10554.L1    |               |
|-------------------------|---------------|-----------------------------|---------------|
|                         |               | Volume: 100 ml              |               |
|                         |               | Matrix: in H <sub>2</sub> O |               |
| Element                 | Concentration | Element                     | Concentration |
| H3PO4                   | 450 mg/l      | S042 <sup>-</sup>           | 10 mg/l       |

| Calibration H3PO4 & S04 |               | Reference: REAIC10555.L1    |               |
|-------------------------|---------------|-----------------------------|---------------|
|                         |               | Volume: 100 ml              |               |
|                         |               | Matrix: in H <sub>2</sub> O |               |
| Element                 | Concentration | Element                     | Concentration |
| H3PO4                   | 550 mg/l      | S042 <sup>-</sup>           | 10 mg/l       |

| Calibration H3PO4 & S04 |               | Reference: REAIC10556.L1    |               |
|-------------------------|---------------|-----------------------------|---------------|
|                         |               | Volume: 100 ml              |               |
|                         |               | Matrix: in H <sub>2</sub> O |               |
| Element                 | Concentration | Element                     | Concentration |
| H3PO4                   | 650 mg/l      | S042 <sup>-</sup>           | 10 mg/l       |

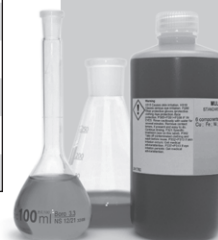
| Calibration H3PO4 & S04 Check Standard |               | Reference: REAIC1056.L1     |               |
|----------------------------------------|---------------|-----------------------------|---------------|
|                                        |               | Volume: 100 ml              |               |
|                                        |               | Matrix: in H <sub>2</sub> O |               |
| Element                                | Concentration | Element                     | Concentration |
| H3PO4                                  | 545 mg/l      | S042 <sup>-</sup>           | 10 mg/l       |

| Mixed Cations Standard - 6 components |               | Reference: REAIC1220.L1     |               |
|---------------------------------------|---------------|-----------------------------|---------------|
|                                       |               | Volume: 100 ml              |               |
|                                       |               | Matrix: in H <sub>2</sub> O |               |
| Element                               | Concentration | Element                     | Concentration |
| Li <sup>+</sup>                       | 1 mg/l        | K <sup>+</sup>              | 10 mg/l       |
| Na <sup>+</sup>                       | 5 mg/l        | Ca 2 <sup>+</sup>           | 10 mg/l       |
| NH4 <sup>+</sup>                      | 5 mg/l        | Mg 2 <sup>+</sup>           | 10 mg/l       |

| Mixed Cations Standard - 6 components |               | Reference: REAIC1230.L1     |               |
|---------------------------------------|---------------|-----------------------------|---------------|
|                                       |               | Volume: 100 ml              |               |
|                                       |               | Matrix: in H <sub>2</sub> O |               |
| Element                               | Concentration | Element                     | Concentration |
| Li <sup>+</sup>                       | 100 mg/l      | K <sup>+</sup>              | 100 mg/l      |
| Na <sup>+</sup>                       | 100 mg/l      | Ca 2 <sup>+</sup>           | 100 mg/l      |
| NH4 <sup>+</sup>                      | 100 mg/l      | Mg 2 <sup>+</sup>           | 100 mg/l      |

| Mixed Cations Standard - 5 components |               | Reference: REAIC1225.L1                          |               |
|---------------------------------------|---------------|--------------------------------------------------|---------------|
|                                       |               | Volume: 100 ml                                   |               |
|                                       |               | Matrix: in H <sub>2</sub> O/tr. HNO <sub>3</sub> |               |
| Element                               | Concentration | Element                                          | Concentration |
| Cu 2 <sup>+</sup>                     | 1 mg/l        | Ni 2 <sup>+</sup>                                | 1 mg/l        |
| Fe 3 <sup>+</sup>                     | 1 mg/l        | Zn 2 <sup>+</sup>                                | 1 mg/l        |
| Mn 2 <sup>+</sup>                     | 1 mg/l        |                                                  |               |

| Mixed Cations Standard - 11 components |               | Reference: REAIC1235.L1                          |               |
|----------------------------------------|---------------|--------------------------------------------------|---------------|
|                                        |               | Volume: 100 ml                                   |               |
|                                        |               | Matrix: in H <sub>2</sub> O/tr. HNO <sub>3</sub> |               |
| Element                                | Concentration | Element                                          | Concentration |
| Li <sup>+</sup>                        | 0.1 mg/l      | Mn 2 <sup>+</sup>                                | 0.1 mg/l      |
| Na <sup>+</sup>                        | 0.1 mg/l      | Cu 2 <sup>+</sup>                                | 0.1 mg/l      |
| NH4 <sup>+</sup>                       | 0.1 mg/l      | Fe 3 <sup>+</sup>                                | 0.1 mg/l      |
| K <sup>+</sup>                         | 0.1 mg/l      | Ni 2 <sup>+</sup>                                | 0.1 mg/l      |
| Ca 2 <sup>+</sup>                      | 0.1 mg/l      | Zn 2 <sup>+</sup>                                | 0.1 mg/l      |
| Mg 2 <sup>+</sup>                      | 0.1 mg/l      |                                                  |               |





# Standards equivalent to Dionex

| Combined Seven Anion Standard |               | Reference: P/N056933.L05    |               | Reference: P/N056933.L1     |               |         |               |
|-------------------------------|---------------|-----------------------------|---------------|-----------------------------|---------------|---------|---------------|
|                               |               | Volume: 50 ml               |               | Volume: 100 ml              |               |         |               |
|                               |               | Matrix: in H <sub>2</sub> O |               | Matrix: in H <sub>2</sub> O |               |         |               |
| Element                       | Concentration | Element                     | Concentration | Element                     | Concentration | Element | Concentration |
| F-                            | 20 mg/l       | N02-                        | 100 mg/l      | N03-                        | 100 mg/l      | S042-   | 150 mg/l      |
| Cl-                           | 30 mg/l       | Br-                         | 100 mg/l      | P043-                       | 150 mg/l      |         |               |

| Combined Seven Anion Standard II |               | Reference: P/N057590.L1     |               |
|----------------------------------|---------------|-----------------------------|---------------|
|                                  |               | Volume: 100 ml              |               |
|                                  |               | Matrix: in H <sub>2</sub> O |               |
| Element                          | Concentration | Element                     | Concentration |
| F-                               | 20 mg/l       | N03-                        | 100 mg/l      |
| Cl-                              | 100 mg/l      | P043-                       | 200 mg/l      |
| N02-                             | 100 mg/l      | S042-                       | 100 mg/l      |
| Br-                              | 100 mg/l      |                             |               |

| Combined Five Anion Standard |               | Reference: P/N037157.L1                          |               |
|------------------------------|---------------|--------------------------------------------------|---------------|
|                              |               | Volume: 100 ml                                   |               |
|                              |               | Matrix: in H <sub>2</sub> O/tr. HNO <sub>3</sub> |               |
| Element                      | Concentration | Element                                          | Concentration |
| F-                           | 20 mg/l       | P043-                                            | 150 mg/l      |
| Cl-                          | 30 mg/l       | S042-                                            | 150 mg/l      |
| N03-                         | 100 mg/l      |                                                  |               |

| Combined Six Cation Standard-I |               | Reference: P/N040187.L05    |               | Reference: P/N040187.L1     |               |
|--------------------------------|---------------|-----------------------------|---------------|-----------------------------|---------------|
|                                |               | Volume: 50 ml               |               | Volume: 100 ml              |               |
|                                |               | Matrix: in H <sub>2</sub> O |               | Matrix: in H <sub>2</sub> O |               |
| Element                        | Concentration | Element                     | Concentration | Element                     | Concentration |
| Li+                            | 50 mg/l       | NH4+                        | 400 mg/l      | Mg 2+                       | 200 mg/l      |
| Na+                            | 200 mg/l      | K+                          | 200 mg/l      | Ca 2+                       | 1000 mg/l     |

| Combined Six Cation Standard-II |               | Reference: P/N046070.L05    |               |
|---------------------------------|---------------|-----------------------------|---------------|
|                                 |               | Volume: 100 ml              |               |
|                                 |               | Matrix: in H <sub>2</sub> O |               |
| Element                         | Concentration | Element                     | Concentration |
| Li+                             | 50 mg/l       | K+                          | 500 mg/l      |
| Na+                             | 200 mg/l      | Mg 2+                       | 250 mg/l      |
| NH4+                            | 250 mg/l      | Ca 2+                       | 500 mg/l      |

REQUEST FORM FOR CUSTOM-MADE  
MULTI-ELEMENT STANDARD SOLUTIONS

1. Specify the concentration of the chosen element in mg/l.

| ELEMENT                                        | CONCENTR.<br>in mg/l | ELEMENT                                               | CONCENTR.<br>in mg/l | ELEMENT                                               | CONCENTR.<br>in mg/l |
|------------------------------------------------|----------------------|-------------------------------------------------------|----------------------|-------------------------------------------------------|----------------------|
| Ag (HNO <sub>3</sub> )                         |                      | Ho (HNO <sub>3</sub> or HCl)                          |                      | S (H <sub>2</sub> O; HNO <sub>3</sub> or HCl)         |                      |
| Al (HNO <sub>3</sub> or HCl)                   |                      | In (HNO <sub>3</sub> or HCl)                          |                      | Sb (HNO <sub>3</sub> /tr.HF or HCl)                   |                      |
| As (HNO <sub>3</sub> or HCl)                   |                      | Ir (HNO <sub>3</sub> /HCl or HCl)                     |                      | Sc (HNO <sub>3</sub> or HCl)                          |                      |
| Au (HNO <sub>3</sub> /HCl or HCl)              |                      | K (H <sub>2</sub> O; HNO <sub>3</sub> or HCl)         |                      | Se (HNO <sub>3</sub> or HCl)                          |                      |
| B (H <sub>2</sub> O; HNO <sub>3</sub> or HCl)  |                      | La (HNO <sub>3</sub> or HCl)                          |                      | Si (H <sub>2</sub> O; HNO <sub>3</sub> /tr.HF or HCl) |                      |
| Ba (H <sub>2</sub> O; HNO <sub>3</sub> or HCl) |                      | Li (H <sub>2</sub> O; HNO <sub>3</sub> or HCl)        |                      | Sm (HNO <sub>3</sub> or HCl)                          |                      |
| Be (HNO <sub>3</sub> /tr.HF or HCl)            |                      | Lu (HNO <sub>3</sub> or HCl)                          |                      | Sn (HNO <sub>3</sub> /tr.HF or HCl)                   |                      |
| Bi (HNO <sub>3</sub> )                         |                      | Mg (H <sub>2</sub> O; HNO <sub>3</sub> or HCl)        |                      | Sr (H <sub>2</sub> O; HNO <sub>3</sub> or HCl)        |                      |
| Ca (H <sub>2</sub> O; HNO <sub>3</sub> or HCl) |                      | Mn (HNO <sub>3</sub> or HCl)                          |                      | Ta (HNO <sub>3</sub> /tr.HF or HCl/tr.HF)             |                      |
| Cd (HNO <sub>3</sub> or HCl)                   |                      | Mo (H <sub>2</sub> O; HNO <sub>3</sub> /tr.HF or HCl) |                      | Tb (HNO <sub>3</sub> or HCl)                          |                      |
| Ce (HNO <sub>3</sub> or HCl)                   |                      | Na (H <sub>2</sub> O; HNO <sub>3</sub> or HCl)        |                      | Te (HNO <sub>3</sub> or HCl)                          |                      |
| Co (HNO <sub>3</sub> or HCl)                   |                      | Nb (HNO <sub>3</sub> /tr.HF or HCl/tr.HF)             |                      | Th (HNO <sub>3</sub> or HCl)                          |                      |
| Cr (H <sub>2</sub> O; HNO <sub>3</sub> or HCl) |                      | Nd (HNO <sub>3</sub> or HCl)                          |                      | Ti (HNO <sub>3</sub> /tr.HF or HCl)                   |                      |
| Cs (H <sub>2</sub> O; HNO <sub>3</sub> or HCl) |                      | Ni (HNO <sub>3</sub> or HCl)                          |                      | Tl (HNO <sub>3</sub> or HCl)                          |                      |
| Cu (HNO <sub>3</sub> or HCl)                   |                      | Os (HCl)                                              |                      | Tm (HNO <sub>3</sub> or HCl)                          |                      |
| Dy (HNO <sub>3</sub> or HCl)                   |                      | P (H <sub>2</sub> O; HNO <sub>3</sub> or HCl)         |                      | U (HNO <sub>3</sub> or HCl)                           |                      |
| Er (HNO <sub>3</sub> or HCl)                   |                      | Pb (HNO <sub>3</sub> )                                |                      | V (HNO <sub>3</sub> or HCl)                           |                      |
| Eu (HNO <sub>3</sub> or HCl)                   |                      | Pd (HNO <sub>3</sub> or HCl)                          |                      | W (H <sub>2</sub> O; HNO <sub>3</sub> /tr.HF or HCl)  |                      |
| Fe (HNO <sub>3</sub> or HCl)                   |                      | Pr (HNO <sub>3</sub> or HCl)                          |                      | Y (HNO <sub>3</sub> or HCl)                           |                      |
| Ga (HNO <sub>3</sub> or HCl)                   |                      | Pt (HNO <sub>3</sub> /HCl or HCl)                     |                      | Yb (HNO <sub>3</sub> or HCl)                          |                      |
| Gd (HNO <sub>3</sub> or HCl)                   |                      | Rb (H <sub>2</sub> O; HNO <sub>3</sub> or HCl)        |                      | Zn (HNO <sub>3</sub> or HCl)                          |                      |
| Ge (HNO <sub>3</sub> /tr.HF or HCl)            |                      | Re (H <sub>2</sub> O; HNO <sub>3</sub> or HCl)        |                      | Zr (HNO <sub>3</sub> /tr.HF or HCl/tr.HF)             |                      |
| Hf (HNO <sub>3</sub> /tr.HF or HCl)            |                      | Rh (HNO <sub>3</sub> /HCl or HCl)                     |                      |                                                       |                      |
| Hg (HNO <sub>3</sub> or HCl)                   |                      | Ru (HNO <sub>3</sub> /HCl or HCl)                     |                      |                                                       |                      |

2. Specify the concentration of the chosen matrix, needed volume and quantities.

| MATRIX           | CONCENTRATION<br>in mg/l | VOLUME<br>in ml | NUMBER<br>OF BOTTLES |
|------------------|--------------------------|-----------------|----------------------|
| HNO <sub>3</sub> |                          |                 |                      |
| HCl              |                          |                 |                      |
| H <sub>2</sub> O |                          |                 |                      |
| OTHER            |                          |                 |                      |

3. Complete

Name\* .....

Company\* .....

City\* ..... State/Prov .....

Zip/Postal Code\* ..... Country\* .....

Telephone\* ..... Fax .....

E-mail\* .....

\* Required

Please, photocopy for future use and fax it to your local distributor  
or CPAchem at: +359 42 607 716

1. Specify the concentration of the chosen element in mg/l.

| ELEMENT                                   | CONCENTR.<br>in mg/l | ELEMENT                                 | CONCENTR.<br>in mg/l | ELEMENT                                   | CONCENTR.<br>in mg/l |
|-------------------------------------------|----------------------|-----------------------------------------|----------------------|-------------------------------------------|----------------------|
| Acetate                                   |                      | Hydrogen Phtalate                       |                      | Phosphate as P                            |                      |
| Ammonium                                  |                      | Iodate (IO <sub>3</sub> <sup>-</sup> )  |                      | Potassium                                 |                      |
| Ammonium as N                             |                      | Iodide (I <sup>-</sup> )                |                      | Propionate                                |                      |
| Barium                                    |                      | Lactate                                 |                      | Silicate                                  |                      |
| Benzoate                                  |                      | Lithium                                 |                      | Sodium                                    |                      |
| Bromate (BrO <sub>3</sub> <sup>-</sup> )  |                      | Magnesium                               |                      | Strontium                                 |                      |
| Bromide (Br <sup>-</sup> )                |                      | Maleate                                 |                      | Succinate                                 |                      |
| Calcium                                   |                      | Methane sulphonate                      |                      | Sulphate (SO <sub>4</sub> <sup>2-</sup> ) |                      |
| Cesium                                    |                      | 3-Methoxypropylamine                    |                      | Sulphite                                  |                      |
| Chromium (III)                            |                      | Monoethalonamine                        |                      | Tartrate                                  |                      |
| Chromium (VI)                             |                      | Monomethylamine                         |                      | Thiocyanate                               |                      |
| Chlorate (ClO <sub>3</sub> <sup>-</sup> ) |                      | Nitriotriacetate                        |                      | Thiosulphate                              |                      |
| Chloride (Cl <sup>-</sup> )               |                      | Nitrate (NO <sub>3</sub> <sup>-</sup> ) |                      | Triethanolamine                           |                      |
| Citrate                                   |                      | Nitrate as N                            |                      | Triethylamine                             |                      |
| Cyanide                                   |                      | Nitrite (NO <sub>2</sub> <sup>-</sup> ) |                      | Trimethylamine                            |                      |
| Diethanolamine                            |                      | Nitrite as N                            |                      | Other                                     |                      |
| Fluoride                                  |                      | Oxalate                                 |                      | Other                                     |                      |
| Formate                                   |                      | Perchlorate                             |                      | Other                                     |                      |
| Glycolate                                 |                      | Phosphate                               |                      |                                           |                      |

2. Specify the concentration of the chosen matrix, needed volume and quantities.

| MATRIX             | CONCENTRATION<br>in mg/l | VOLUME<br>in ml | NUMBER<br>OF BOTTLES |
|--------------------|--------------------------|-----------------|----------------------|
| HNO <sub>3</sub>   |                          |                 |                      |
| CH <sub>3</sub> CN |                          |                 |                      |
| HCl                |                          |                 |                      |
| OTHER              |                          |                 |                      |

3. Complete

Name\* .....

Company\* .....

City\* ..... State/Prov .....

Zip/Postal Code\* ..... Country\* .....

Telephone\* ..... Fax .....

E-mail\* .....

\* Required

Please, photocopy for future use and fax it to your local distributor  
or CPAchem at: +359 42 607 716