T-ECO

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OPLON®

Zero VOC hydro-oleo penetrating protector for Natural Preservation

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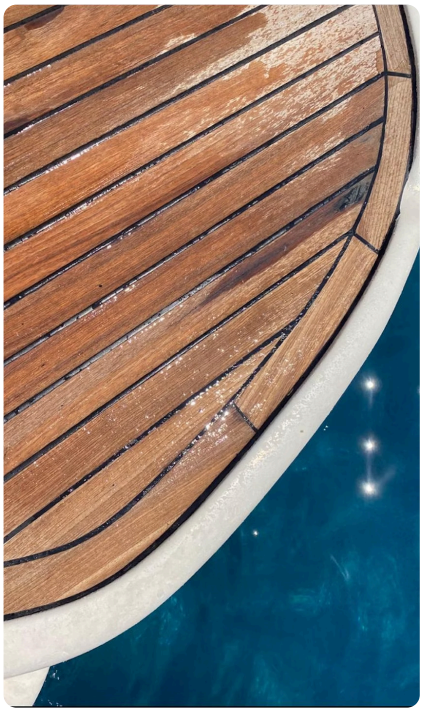

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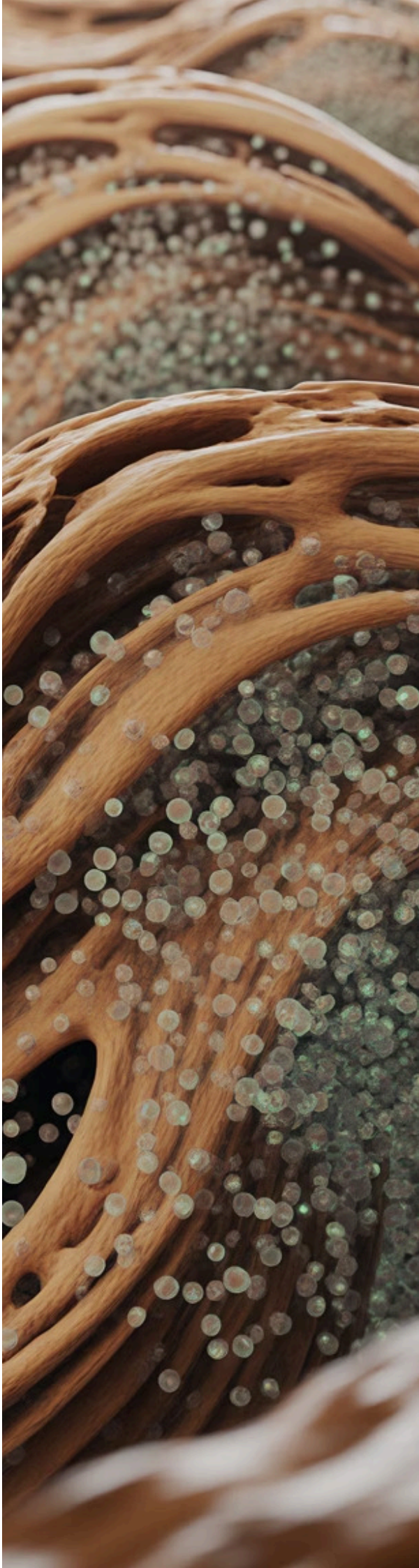
OPLON® Advanced Technology

OPLON® is an innovative line of high-performance, **plant-based penetrating protector** treatments, Based on RENUVAIT Nano Deep Tech technology, produced and commercialized by T-ECO.

These products are specifically formulated to protect, regenerate, and enhance the durability of a wide range of porous materials.
Through a **Nature Co-Design** approach, OPLON® G transforms molecularly reorganized vegetable oils into unique hydro-dispersed solutions.

The key to its effectiveness lies in its deep penetration capability. Thanks to molecular **micro-nanostructuring**, its formulas anchor firmly within the substrate, creating a durable, breathable protective barrier that does not alter the material's natural appearance. This ensures superior protection against moisture, oxidation, and biological degradation, significantly extending the service life of treated materials.

OPLON® represents a perfect balance between scientific innovation and sustainability. Being biocompatible and not classified as a nanomaterial, it offers a safe, eco-responsible solution for both the environment and users, while maintaining high industrial performance standards..



Product Description

Product Name	OPLON®
Product Type	hydro-oleo penetrating protector
Category	Protective Treatment for Wood and Porous Materials
Lines	Marine, Exterior and Interior, Finishing

OPLON® represents the new generation of **natural hydro-oleo penetrating protector** systems Manufactured by T-ECO with an **Eco Label-oriented design**, combining **technological innovation** with **certifiable sustainability**.

Its hydro-oleo formulation, based on vegetable oils, is the result of research covered by a filed patent application. This allows precise control over **penetration and adhesion** on natural surfaces, maximizing performance **without compromising material breathability**.

Developed in full compliance with European Eco Label criteria, OPLON® integrates principles of **eco-design, low environmental impact, and user safety**, offering a **solvent-free formulation** that meets the most advanced environmental standards.

Versatile and suitable for **wood, stone, terracotta, and roof tiles**, the OPLON® line combines patent-backed research with certifiable sustainability, delivering a high-performance solution that renews and protects materials in harmony with nature.

Fields of Application

Building and Construction

For the treatment of beams, frames, floors, and claddings exposed to weathering and environmental agents.

Furniture and Interior Design

Ideal for indoor and outdoor furniture, enhancing the natural appearance and texture.

Restoration and Conservation

Perfect for the conservation and restoration of historical artifacts, thanks to its deep penetration and protective action that preserve the original aesthetic and material integrity.

Marine and Nautical Applications

Recommended for wooden boats, decks, and structures exposed to saltwater, humidity, and UV radiation. Provides high resistance to atmospheric and biological agents, enhancing durability and performance in marine environments.

Garden Center & Outdoor

Ideal for outdoor furniture, decking, pergolas, fences and structures exposed to weathering, helping protect them against moisture, biological degradation and UV radiation.

Key Features

Eco-Friendly

Formulated with natural oils, OPLON® is an eco-friendly choice, free from toxic chemicals and zero in VOCs (volatile organic compounds), ideal for those seeking sustainable, high-performance solutions.

Natural Appearance

Preserves the authentic look, enhancing grain and color without altering its natural aesthetic.

Deep Protection

Penetrates deeply, providing effective resistance against moisture, UV rays, and weathering, while preventing deterioration and discoloration

Breathable

Allows the treated material to breathe naturally, preventing moisture buildup and related damage.

Easy Application

Suitable for brush, roller, or spray application: practical for both professional and DIY use.

Long-Lasting Protection

Provides effective, long-term defense without the need for frequent maintenance or reapplication.

Fast Drying

Dries quickly, enabling efficient application and shorter waiting times between coats.

Water-Repellent Effect

Reduces water absorption, preventing moisture damage and helping to preserve the wood in optimal condition.

Technical Data

Appearance	White / opalescent liquid
Color	Transparent when dry
Odor	Light, vegetal
pH	5-7,4
Density at 20 °C	0,995 ± 0,01 g/cm^3
Viscosity at 20°C	1.2 mPa·s
Solids Content	2.5-20% ± 0.5% (p/p)
Drying Time	Tack-free: 30–60 minutes; through drying: 12 hours
Standard Overcoating Time	3–5 hours
Immediate Overcoating	Immediate overcoating possible via wet-on-wet application with compatible water-based enamels, clear varnishes and finishes
Coverage	10–20 m^2/L, depending on the surface type, material porosity, and number of coats applied
Recommended Coats	1-2
Durability	1–4 years, depending on climatic conditions and the type of treated surface
Storage	12 months in unopened packaging, if properly stored in a cool, dry place away from frost and direct sunlight
Safety	Non-hazardous product according to EU Regulation (EC) No. 1272/2008 (CLP). Suitable for both professional and domestic use.Free from MIT/BIT and added formaldehyde
VOC	0 g/L

Comparison with Conventional Impregnants

Feature	OPLON®G	Competitor X
Composition	Natural hydro-oleo system with plant-based oils	Synthetic resins, petroleum-based solvents
VOC Content	Zero	High (solvent emissions)
Penetration	Deep molecular penetration	Surface level
Hydrophobic Effect	High water repellency while maintaining full breathability	Yes, but often reduces breathability
Breathability	Fully breathable	Often film-forming, limits vapor exchange
Environmental Impact	Eco Label–compliant, low environmental impact	Moderate to high
Durability	Comparable	1–4 years
Aesthetic Effect	Natural, warm, non-gloss finish	Glossy or synthetic finish

User Guide

Surface Preparation

Ensure the substrate is clean and dry. For optimal penetration, light sanding (120–180 grit) is recommended. On old or weathered furniture, the product can be applied directly for an immediate restorative effect. Always remove residual dust to ensure proper adhesion.

Product Application

Shake well before use.
Apply using a brush, roller, spray, or immersion, distributing the product uniformly until the material is fully saturated.
Avoid excess buildup or drips. After approximately 10–15 minutes, remove any excess with a soft, lint-free damp cloth, following the direction of the grain or surface texture.

Drying Times

Allow 1–2 hours drying time between coats. The product becomes touch-dry in approximately 30–60 minutes. For highly exposed surfaces, apply a second coat. Through drying and maximum resistance are achieved after 12 hours. Thanks to its micro-nanostructured formula, sanding between coats is not required.

Maintenance and Renewal

Treatment with OPLON® G provides long-lasting protection. For maintenance or renewal, the product can be reapplied directly onto the surface after thorough cleaning and light sanding, with no need to remove previous coats, simplifying long-term care and upkeep.

Warnings

Safe Storage

Store the product in its original container and use within 6 months after opening.
Protect from direct sunlight and heat sources.
Keep out of reach of children and pets.

Responsible Disposal

Dispose of product residues and empty containers in accordance with applicable local and national waste management regulations.
Do not release the product or its containers into the environment.

Preliminary Test

Before full application, it is recommended to test the product on a small, inconspicuous area to verify adhesion, compatibility, and the final aesthetic effect of the treatment.

Safety Advice

Keep out of reach of children.
Do not ingest.
In case of eye contact, rinse immediately with plenty of clean water.

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Visible Results

Laminated Fir

The untreated panel shows a matte appearance and a lighter natural tone, indicating an unprotected and porous surface.

The treated panel, on the other hand, displays a slightly warmer and more uniform color with a natural satin finish, resulting from the controlled saturation of the wood fibers by the oleic phase of the formulation. This demonstrates deep penetration and active fiber protection, reducing water absorption and improving resistance to thermal and hygrometric variations.

In summary, on laminated fir, OPLON® enhances grain definition, increases dimensional stability, and delivers a richer, more natural appearance while maintaining the wood's breathability.

Interior and Exterior Treatments

The table surface originally appeared dull, scratched, and discolored, showing clear signs of aging and wear.
Through the application of OPLON®, the wood's original tone was restored, its color depth enhanced, and a uniform, naturally glossy finish was achieved.


The OPLON® treatment enhanced the natural appearance of the beam, giving it a brighter finish and highlighting the wood grain.
Beyond the aesthetic improvement, the product provided effective protection against weathering, helping to preserve the integrity and durability of the wood over time: a sustainable, high-performance solution for exterior applications.


Interior and Exterior Treatments

The untreated terracotta surface shows high porosity and strong capillary absorption: water quickly penetrates the material, leading to physical degradation, color variation, and loss of cohesion over time.

After the application of OPLON®, there is a marked reduction in absorption and a clear hydrophobic effect. Water droplets remain on the surface without infiltrating, demonstrating the formation of a stable, micro-nanostructured breathable barrier that effectively protects the material from moisture and weathering.

The treatment also produces enhanced color depth and natural brightness, resulting from the controlled pore saturation achieved by the oleic component. The effect is non-film-forming, maintaining breathability and preserving the authentic appearance of terracotta.

In summary, OPLON® provides deep, durable, and breathable protection, improving the aesthetic quality and resistance of the material without altering its original character.

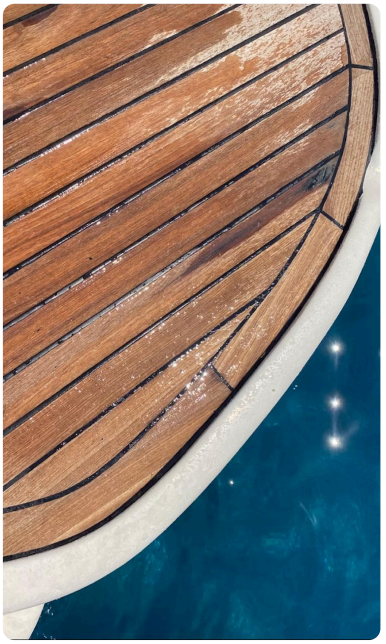
Marine Treatments

Untreated teak surfaces show high vulnerability to moisture, UV radiation, and the combined action of salt and weathering agents, which over time can lead to fiber dehydration, greying, surface oxidation, and loss of material cohesion.

After the application of OPLON®, a marked reduction in absorption and a clear hydrophobic effect can be observed. Water remains on the surface without penetrating, demonstrating the formation of a stable, breathable micro-nanostructured protective barrier capable of effectively protecting marine wood from moisture and environmental degradation.

The treatment also enhances the aesthetic value of teak, with richer color tone and restored natural depth, resulting from the controlled saturation of the pores by the oily component. The non-film-forming effect preserves breathability while maintaining the authentic appearance of the wood.

In summary, OPLON® provides deep, durable and breathable protection for marine teak, improving resistance, stability and aesthetic performance without altering its original nature



Marine Treatments

The wooden surface of the boat's transom appears weathered and uneven, with discoloration and loss of fiber cohesion. Prolonged exposure to marine conditions has caused photo-oxidation, leaching of natural oleoresinous components, and an increase in capillary porosity. These effects compromise not only the aesthetic appearance but also the mechanical strength and natural water resistance of the wood, making it more vulnerable to fungi, mold, and salt corrosion.

After treatment with OPLON®, the wood shows visible structural recovery: the color becomes richer and warmer, the grain more defined, and the surface appears compact and uniform. This improvement results from the deep penetration of the hydro-oleo dispersed phase, which restores the wood's lipid balance and forms a micro-nanostructured breathable barrier. The treatment provides active hydrophobic protection, limiting water absorption and salt diffusion into microfissures, preventing swelling, cracking, and delamination. At the same time, it restores natural brightness and a refreshed appearance, without forming any surface film.

In conclusion, on the entire transom, treatment with OPLON® not only restores the wood's color and beauty but also regenerates its functional structure, enhancing durability in marine environments while maintaining a natural, authentic, and protected finish.

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T-ECO: Our Vision

To bring to market a new generation of high-performance sustainable solutions for advanced material protection.

We believe bio-based technologies, zero-VOC solutions and low-impact systems can redefine industry standards, combining durability, effectiveness and sustainability without compromise.

> **Transforming innovation into practical applications.**
> **Transforming matter into value.**
>
> **Invisible innovation. Visible results.**

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