

MicroPro® Treated Wood Products

The MicroPro Micronized Copper Azole (MCA) based preservative system for wood products protects from insects, termites and fungal decay and is manufactured by the Performance Chemicals division of Koppers Inc. These products may be marketed under the MicroPro® trademark or other brand names. The preservative contains a mixture of micronised copper carbonate (copper) and tebuconazole (azole) at a ratio of 25:1 copper: tebuconazole. This ratio has been shown to provide the most efficacious preservative performance.

Copper azole preservatives have been in commercial use around the world since the 1990's. Micronised copper azole was introduced to the US market in 2006 and micronised copper preservative treatments now account for over 80% of wood treated in the US for domestic applications. Micronised copper azole preservatives offer benefits over the solubilised copper azole equivalent in terms of reduced corrosivity to fasteners, reduced copper leaching, a lighter more natural wood appearance, and reduced propensity for mould growth.

Recommended applications include all H3/H3.1 to H5 situations such as above ground decking, rails, spindles, trim and fascia, framing, flooring, sill plates, trellises, gazebos, fencing; ground contact deck support posts and fence posts; and critical structural members, including permanent wood foundations and building poles.

When correctly installed in the intended situation for the specified Hazard Class, a service life of 50 years or more is expected. MicroPro products are not approved for H6 saltwater immersion applications.

Preservative Treatment

MicroPro micronized copper azole preservatives are EPA-approved for use in New Zealand and Australia, and the required preservative retentions and penetration are specified in the relevant preservative standards NZS3640:2003 and AS1604.1 2012 (please see Standards for complete details):

NZS3640:2003

Hazard Class	Minimum retention, % m/m
H3.1/H3.2	0.23%
H4	0.416%
H5	0.759%

AS1604:2012

Hazard Class	Minimum retention, % m/m
H3	0.229%
H4	0.416%
H5	0.759%

MicroPro MCA preservative solutions are applied as water-based suspensions to plantation-grown Radiata Pine using a high-pressure, vacuum-pressure impregnation process in KLC's modern, automated treatment facility. Following treatment, the wood products may then be kiln-dried and machined to a final profile and then coated.

The quality of treated wood products manufactured by KLC is verified under a third-party, independently-audited quality assurance system.

Safe Handling

Complete handling recommendations are available from the manufacturer. Avoid frequent or prolonged inhalation of sawdust from treated wood. When sawing and machining treated wood, wear a dust mask. When power sawing or machining, wear goggles to protect eyes from flying particles.

Installation

Ensure that treated wood products are correctly stored prior to installation to prevent unwanted damage, distortion or moisture pick-up.

Cut-end Treatment

The use of a brush-on, cut-end wood preservative (for example Koppers Reseal Clear or equivalent) is recommended on all saw cuts and drill holes during construction of wood projects to ensure the best durability. Also apply to areas where moisture can collect. Always follow manufacturer's recommendations.

Fasteners

MicroPro preserved wood products are designed for long-term performance in outdoor applications, and therefore require nails, screws, and other fasteners that are suitably corrosion resistant for the intended exposure.

Use hot dip galvanized, stainless steel, or other fasteners and hardware as recommended by the hardware manufacturer and to meet building code requirements. Carbon steel fasteners may be used for interior, above ground, weather-protected applications such as sill plates, interior framing and interior trusses.

Unlike many other treated wood products, MicroPro treated wood products may be placed in direct contact with Aluminium building products used for interior uses and above ground exterior applications such as decks, fencing, and landscaping projects. Examples of aluminium products include siding, roofing, gutters, door and window trim, flashing, nails, fasteners and other hardware connectors. MicroPro treated wood in direct contact with aluminium products should only be used in code compliant construction applications that provide proper water drainage and do not allow the wood to be exposed to, or remain in contact with a continual moisture source, standing water or water immersion.

In addition, MicroPro treated wood should not be encased, sealed, or wrapped with aluminium products where trapped moisture or water can occur so as to avoid pitting or other unwanted results. We recommend you contact the aluminium building product manufacturer for their recommendations regarding their aluminium products in contact with MicroPro treated wood used in ground contact applications or when MicroPro treated wood is exposed to salt water, brackish water, or chlorinated water, such as swimming pools or hot tubs. Also check with the aluminium product manufacturers regarding compatibility with other chemicals and cleaning agents. Contact Koppers Performance Chemicals for further information on aluminium contact use in commercial, industrial, and specialty applications such as boat construction.

Product Highlights and EPP (Environmentally Preferable Product) Benefits

First Wood Treatment Process to Receive EPP Status –MicroPro technology is the first treated wood process to be certified under Scientific Certification Systems' Environmentally Preferable Product (EPP) program based on Life-Cycle Assessment.



First Wood Treatment Process to Complete Life-Cycle Assessment Studies – The MicroPro wood treatment process systems were analyzed by Scientific Certification Systems under an exhaustive environmental review process called Life-Cycle Assessment (LCA), in accordance with rigorous international standards set by ISO, the leading international standards setting organization. The MicroPro LCA studies are in compliance with ISO standards 14044 and 14025.

Reduced Energy Use – The MicroPro treated wood process reduces total energy use by approximately 80% and greatly reduces greenhouse gas emissions.

Largely Eliminates Copper Releases – Wood products treated with the MicroPro process result in the release of 90% to 99% less copper into aquatic and terrestrial environments when compared to standard treated wood products. The very small amount released bonds readily to organic matter in the soil and becomes biologically inactive, thus effectively eliminating eco-toxic impacts.

Reduced Air Emissions – The solution containing the MicroPro copper preservative formula is four times more concentrated than the industry standard. As a result, fewer trucks are required for transport. Fewer trucks, combined with the absence of monoethanolamine (MEA) in the production process, result in a reduction of air pollutants from tailpipe emissions and associated impacts, including: soot, nitrous oxide, volatile organic compounds (VOC's), particulate matter, and reduced impacts of acid rain, smog, and oceanic acidification.

Reduced Greenhouse Gas Emissions – The absence of MEA in the production process, combined with the reduced use of fuel and fewer trucks, means that using MicroPro technology in lieu of standard wood treatment formulations reduces an estimated 20,000 tons or more of greenhouse gas emissions each year. (This is the equivalent to the annual emissions of approximately 2,200 SUV's.) For more information, visit www.scs-certified.com.

NGBS Green Certified MicroPro wood preservative technologies have been certified for points toward NGBS Green Certification to the ICC 700 National Green Building Standard. The National Green Building Standard program is an American National Standards Institute (ANSI) approved consensus-based standard that defines the criteria for certifying a building (single-family or multifamily; new construction, addition, or renovation) as "Green." For more information on the NAHB Research Center, visit www.nahbgreen.org. For information on the MicroPro Green Approved Product certifications, visit <http://www.greenapprovedproducts.com>.

GREENGUARD Gold Certification MicroPro wood preservative technologies have earned GREENGUARD Gold Certification from UL Environment. GREENGUARD Gold Certification indicates that a product has undergone rigorous testing and has met stringent standards for low volatile organic compound (VOC) emissions. Products certified to these criteria are suitable for use in schools, offices, and other sensitive environments. UL Environment is an industry independent, third-party, not-for-profit organization that oversees the GREENGUARD Certification programs. The mission of the institute is to protect human health and quality of life through programs that reduce chemical exposure and improve indoor air quality. UL Environment is an American National Standards Institute (ANSI) authorized standards developer. For more information about the GREENGUARD Environmental Institute, visit www.greenguard.org.

GLOBAL GREEN TAG^{Cert™} visit <http://www.globalgreentag.com>

Koppers Performance Chemicals are currently in the process of achieving GREENTAG Certification of the MicroPro treatment system, highly sort after by Architects and Designers, for green build alternative safe products.



This certification is recognised in Australia, New Zealand, Malaysia, South Africa, Africa and SE Asia and in over 70 other countries.

This extensive process should be completed by August 2017.

Green Tag Certification is compliant with:

- Externally certified to ISO 9001 for Quality Management
- Externally verified as compliant to:
- ISO 14024 for Type 1 (Third Party) Eco-labels and
- ISO 17065 for Conformance Assessment Bodies
- Certification is compliant to ISO 14040 & ISO 14044 for LCA
- ISO 14067 for Greenhouse Gas calculation
- ISO 14025 for Environmental Product Declarations and
- ISO 21930 and EN 15804 for specific need EPDs
- Australian Competition and Consumer Commission (ACCC) and US Trade Marks & Patents Office Approved Certification Mark.

Koppers Performance Chemicals offers a limited 50-year warranty against structural failure caused by fungal decay or termites.

Refer to www.kopperspc.co.nz for additional information or contact: Koppers Performance Chemicals New Zealand, PO Box 22-148, Clendon, Auckland 2214; Telephone: 09 277 7770