MicroPro®
Construction Product Specification Guide

PRESERVATIVE TREATMENT

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This document describes the MicroPro micronized copper azole based preservative system for wood products protected from termites and fungal decay, manufactured by the Performance Chemicals division of Koppers Inc. These products may be marketed under the MicroPro® trademark or other brand names. Recommended applications include: 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. Typical uses may include structural lumber, sill plates, outdoor furniture, patios, decks, garden edging, landscaping structures and fresh water boat docks.

PRESERVATIVE TREATMENT (PRESERVATIVE-TREATED WOOD)

PART 1 GENERAL

Specifier Note: MicroPro micronized copper azole preservatives are used to pressure treat the following materials: Dimensional lumber and timbers of the following species: Southern Pine, Ponderosa Pine, Red Pine, Incised Hem-Fir, Radiata Pine, Caribbean Pine and German Scots Pine Decking. Maximum nominal size of 5/4 inches × 8 inches in all listed species for decking use only. Southern Pine and Douglas Fir plywood. Round and Sawn posts and building poles of Southern Pine and Red Pine. Minimum preservative retention levels are provided in the ICC Evaluation Services, Inc. ESR - 2240. MicroPro preserved wood products are designed for long-term performance in outdoor applications and, therefore, require high quality corrosion resistant nails, screws, and other fasteners. Use hot dip galvanized, stainless steel, or other fasteners and hardware as recommended by the hardware manufacturer and 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. Aluminum building products may be placed in direct contact with MicroPro treated wood products used for interior uses and above ground exterior applications such as decks, fencing, and landscaping projects. Examples of aluminum products include siding, roofing, gutters, door and window trim, flashing, nails, fasteners and other hardware connectors. However, MicroPro treated wood in direct contact with aluminum 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 aluminum products where trapped moisture or water can occur so as to avoid pitting or other unwanted results.
We recommend you contact the aluminum building product manufacturer for their recommendations regarding their aluminum 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 aluminum product manufacturers regarding compatibility with other chemicals and cleaning agents. Contact Koppers Performance Chemicals for further information on aluminum contact use in commercial, industrial, and specialty applications such as boat construction.

MicroPro products are not currently approved for saltwater immersion applications.

PART 2 GENERAL

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.scscertified.com.

Home Innovation
NGBS GREEN CERTIFIED™

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.

SUMMARY

Section Includes: termite and fungal decay protection treatment for wood products specified in other sections, including:

Specifier Note: Edit subparagraphs below to suit project requirements and specifier practice.

1. Above ground: Decking, rails, spindles, trim and fascia, framing, flooring, sill plates, trellises, gazebos, fencing.
2. Ground Contact and Fresh Water Immersion: Deck support posts, fence posts and fresh

water boat docks.
3. Critical Structural: Permanent wood foundations, building poles.

Specifier Note: Revise paragraph below to suit project requirements. Add section numbers and titles.

Specifier Note: Article below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain Reference Article when specifying products and installation by an industry reference standard. If retained, list standard(s) referenced in this section. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Conditions of the Contract References Section may establish the edition date of standards. This article does not require compliance with standard, but is merely a listing of references used. Article below should list only those industry standards referenced in this section.

REFERENCES

A. General: Standards listed by reference, including revisions by issuing authority, form a part of this specification section to extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.

B. American Wood Protection Association (AWPA) Standards used for quality control of MicroPro 1. AWPA Analytical Standards A2-06, A3-05, A9-01, A-11-93, A17-03, A18-05, A21-00, A36-04, A37-05.

C. ICC Evaluation Service Inc.
1. ICC-ES Report No. ESR-2240.

Specifier Note: Article below should be restricted to statements describing design or performance requirements and functional, not dimensional, tolerances of a complete system. Limit descriptions to composite and operational properties to extent necessary to link multiple components of a system together and to interface with other systems.

SYSTEM DESCRIPTION

A. Performance Requirements: Provide micronized copper azole wood preservative treatment that will [Perform in accordance with manufacturer's stated performance criteria without defects, damage or failure.].

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Submittal Procedures Section.

SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Submittal Procedures Section.
B. Product Data: Submit product data, including manufacturer's product sheet, for specified products.
C. Quality Assurance Submittals: Submit the following:

1. Evaluation Report:
a. ICC Evaluation Services, Inc. ESR - 2240.

b. [Specify model code evaluation report submittal to suit project requirements.]
c. Environmentally Preferable Product certified SCS-EPP-01699 (www.scscertified.com).

2. Certificates: Certification from treating plant certifying wood treatment applied complies with the criteria and physical requirements for micronized copper quaternary preservative-treated wood products as specified herein.
3. Closeout Submittals: Submit the following: [Insert requirements.].
4. Warranty: Warranty documents specified herein.

Specifier Note: Article below should include prerequisites, standards, limitations and criteria that establish an overall level of quality for products and workmanship for this section. Coordinate below article with Quality Assurance Section.

QUALITY ASSURANCE

A. Source Quality: Obtain micronized copper preservative-treated wood products from a single approved source.

B. Wood Treatment Plant Qualifications: Wood treatment plant experienced in performing work of this section which has specialized in the treatment of wood similar to that required for this project, licensed by the manufacturer and listed on ICC Evaluation Services, Inc. ESR – 2240.

Specifier Note: Paragraph below should list obligations for compliance with specific code requirements particular to this section. General statements to comply with a particular code are typically addressed in Conditions of the Contract and Regulatory Requirements Section. Repetitive statements should be avoided. Edit paragraph below to suit project requirements.

C. Regulatory Requirements: Provide preservative treatment that complies with the following regulatory requirements:

1. [Insert name of applicable code.], requirements for termite- and fungal decay-preservative-treated wood.

Specifier Note: Retain quality mark requirement below for all micronized copper azole preservative-treated wood product applications.

D. Quality Mark: All micronized copper azole preservative-treated wood members shall bear an end tag or permanent ink stamp indicating the following:

1. Name of wood treating company.
2. Treatment plant city and state.
3. Symbol “Micronized Copper Azole Compounds.”
4. Preservative retention level.
5. Approved use.
6. ESR number.
7. Third party inspection agency.

Specifier Note: Article below should include special and unique requirements. Coordinate article below with Product Requirements Section.

DELIVERY, STORAGE & HANDLING

A. General: Comply with Product Requirements Sections.

B. Exposure: Allow materials exposed to incidental moisture to dry thoroughly prior to covering with vapor or moisture-retarding finish materials.

Specifier Note: Coordinate article below with Conditions of the Contract and with Division 1 Closeout Submittals (Warranty) Section.

1.07 WARRANTY

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.

Specifier Note: Coordinate paragraph below with manufacturer's warranty requirements. Koppers Performance Chemicals offers a limited lifetime warranty against structural failure caused by fungal decay or termites under "The MicroPro Residential & Agricultural Limited Warranty." Consult manufacturer for complete details.

B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.
Specifier Note: Coordinate paragraph below with manufacturer's warranty requirements.

1. Warranty Period: MicroPro Residential & Agricultural Limited Warranty.

PART 2

PRODUCTS

Specifier Note: MicroPro Preservative is used to treat sapwood species and Incised Hem-Fir. Specify appropriate product(s) below. MICRONIZED COPPER AZOLE PRESERVATIVE-TREATED WOOD PRODUCTS, [MicroPro 200C or MP 200-A]

Specifier Note: Retain first 3 paragraphs below for specification. Add product attributes performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

A. Manufacturer: Koppers Performance Chemicals.

1. Contact: PO Drawer O, 1016 Everee Inn Road, Griffin, GA 30224-0249; Telephone: (800) 241-0240, (770) 233-4200; Fax: (770) 229-5225; E-mail: treatedwood@koppers.com; Web site: www.kopperspc.com.

B. Proprietary Product(s)/System(s):

1. MicroPro Preservative-Treated Wood Products:
    a. Preservative Treatment: Waterborne, micronized copper azole preservative system meeting the following standards:

1) AWPA Analytical Standards used in the quality control of MicroPro/EverGuard treated wood: A2-06, A3-05, A9-01, A-11-93, A16-93, A17-03, A18-05, A21-00, A36-04, A37-05.

PRODUCT SUBSTITUTIONS

A. Substitutions: No substitutions permitted.

RELATED MATERIALS

A. Provide the following related materials:

1. End Cut Preservative:
    a. Material Type and Name: [Acceptable to manufacturer of micronized copper azole preservative].
    b. Manufacturer: [Acceptable to manufacturer of micronized copper azole

preservative].

2. Adhesive:

a. Material Type and Name: [Acceptable to manufacturer of micronized copper azole preservative].

b. Manufacturer: [Acceptable to manufacturer of micronized copper azole preservative].

SOURCE QUALITY

Specifier Note: Coordinate paragraph below with Quality Control Section.

A. Tests, Inspections: [Specify tests, inspections and other source quality requirements.]

PART 3

EXECUTION

Specifier Note: Revise article below to suit project requirements and specifier's practice.

MANUFACTURER'S INSTRUCTIONS

A. Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions and product carton instructions for installation.

INSTALLATION

1. Select micronized copper azole preservative-treated wood members in accordance with appropriate untreated lumber and plywood span tables.
2. Provide ventilation of building cavities as required by code.

Specifier Note: Retain, edit or delete paragraph below to suit project requirements and specifier practice.

B. Aluminum building products may be placed in direct contact with MicroPro treated wood products used for interior uses and above ground exterior applications such as decks, fencing, and landscaping projects. Examples of aluminum products include siding, roofing, gutters, door and window trim, flashing, nails, fasteners and other hardware connectors. However, MicroPro treated wood in direct contact with aluminum 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 aluminum products where trapped moisture or water can occur so as to avoid pitting or other unwanted results. We recommend you contact the aluminum building product manufacturer for their recommendations regarding their aluminum 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 aluminum product manufacturers regarding compatibility with other chemicals and cleaning agents. Contact Koppers Performance Chemicals for further information on aluminum contact use in commercial, industrial, and specialty applications such as boat construction.

C. Install micronized copper azole preservative-treated wood in accordance with requirements of applicable codes. Avoid milling operations that could adversely affect preservative characteristics of micronized copper azole preservative-treated wood.

D. End Cut Treatment: Brush-on endcoat wood preservative is recommended on all saw cuts and

drill holes during construction of wood projects. Also apply on areas where moisture can collect. Always follow manufacturer's recommendations.

Specifier Note: Verify requirements of building code authority having jurisdiction and edit paragraph below as required.

E. Sill Plate: Where applicable, provide sill plate of [micronized copper azole preservative-treated wood] [Specify sill plate material.]. Carbon steel fasteners may be used for interior, above ground, weather-protected applications such as sill plates, interior framing and interior trusses.

Specifier Note: Verify fastener requirements of building code authority having jurisdiction and edit paragraph below as required.

F. Install treated wood using hot dipped galvanized steel, stainless steel, or other fasteners and hardware as recommended by the hardware manufacturer and in compliance with code authority having jurisdiction.

FINISHING

Specifier Note: Complete application 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. Surfaces must be clean and dry before application.

A. Prepare micronized copper azole preservative-treated wood for application of finishes in accordance with manufacturer's recommendations. Sand surfaces lightly, clean and verify proper moisture content prior to finishing.

B. Apply paint or stain in accordance with Division 9 Section "Painting." If you desire to apply paint, stain, clear water repellant or other finish to our preservative treed wood, we recommend following the manufacturer's instructions and label of the finishing product. Before you start, we recommend you apply the finishing product to a small exposed test area before finishing the entire project to insure it provides the intended result before proceeding.

C. Refer to www.kopperspc.com for additional information or contact:
Koppers Performance Chemicals, PO Drawer O, Griffin, GA 30224-0249;
Telephone: 800-241-0240; Fax: 770-229-5225; Email: treatedwood@koppers.com

3.04 PROTECTION

Protection:

1. Protect micronized copper azole preservative-treated wood from damage due to subsequent construction activity.
2. Protect from moisture prior to installation of finishes.

www.kopperspc.com

SAFETY DATA SHEET

1. Identification

Product identifier	**Micronized Copper Azole (MCA) Treated Wood**
Other means of identification	254
Recommended use	Preservative Treated Wood for various exterior applications including above ground, ground contact and freshwater exposure.
Recommended restrictions	None known.

Manufacturer/Importer/Supplier/Distributor information

Customers of Koppers Performance Chemicals Inc.

Company name	Central Nebraska Wood Preservers / Iowa Wood Preservers
Address	PO Box 630 Sutton, NE 68979
Telephone number	402 773-4319
Contact person	Kurt Andres
Emergency phone number	CHEMTREC: 800-424-9300
E-mail	info@nebraskawood.com

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Carcinogenicity	Category 1A
OSHA defined hazards	Combustible dust	

Label elements

Hazard symbols

Signal word	Danger
Hazard statement	May cause cancer by inhalation. May form combustible dust concentrations in air.

Precautionary statement

Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Prevent dust accumulation to minimize explosion hazard. Ground/bond container and receiving equipment. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If exposed or concerned: Get medical advice/attention. In case of fire: Use CO2, foam or water spray for extinction.
Storage	Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Wood/Wood dust	N/A	>90

Composition comments The product contains: Copper carbonate (CAS 12069-69-1) and Tebuconazole (CAS 107534-96-3) below reportable limits.
Depending on the additives applied to the treating solution, this wood may also contain <1% of mold inhibitors, <1% of a wax emulsion, and <1% of a colorant. Components not listed are either non-hazardous or are below reportable limits.

4. First-aid measures

Inhalation	Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately. Some species may cause allergic respiratory reactions with asthma-like symptoms in sensitized individuals.
Skin contact	Remove contaminated clothing. Wash skin thoroughly with soap and water for several minutes. Prolonged contact with treated wood and/or treated wood dust, especially when freshly treated at the plant, may cause irritation to the skin. Abrasive handling or rubbing of the treated wood may increase skin irritation. Some wood species, regardless of treatment, may cause dermatitis or allergic skin reactions in sensitized individuals. In case of rashes, wounds or other skin disorders: Seek medical attention and bring along these instructions.
Eye contact	Do not rub eye. Immediately flush eye(s) with plenty of water. Remove any contact lenses and open eyelids wide apart. If eye irritation persists: Get medical advice/attention.
Ingestion	Rinse mouth thoroughly if dust is ingested. Get medical attention if any discomfort continues.
Most important symptoms/effects, acute and delayed	Wood dust: May cause nasal dryness, irritation and mucostasis. Coughing, wheezing, sneezing, sinusitis and prolonged colds have also been reported. Depending on wood species may cause respiratory sensitization and/or irritation. Symptoms can include irritation, redness, scratching of the cornea, and tearing. May cause eczema-like skin disorders (dermatitis). Airborne treated or untreated wood dust may cause nose, throat, or lung irritation and other respiratory effects.
Indication of immediate medical attention and special treatment needed	Treat symptomatically. Respiratory ailments and pre-existing skin conditions may be aggravated by exposure to wood dust.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Carbon dioxide, regular foam, dry chemical, water spray, or water fog.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Depending on moisture content, and more importantly, particle diameter and airborne concentration, wood dust in a contained area may explode in the presence of an ignition source. Wood dust may similarly deflagrate (combustion without detonation like an explosion) if ignited in an open or loosely contained area. An airborne concentration of 40 grams (40,000 mg) of dust per cubic meter of air is often used as the LEL for wood dusts. Reference NFPA Standards- 654 and 664 for guidance.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.
Fire-fighting equipment/instructions	Use water spray to cool fire exposed surfaces and to protect personnel.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Avoid generation and spreading of dust. Avoid spread of dust. Avoid inhalation of dust. Provide adequate ventilation. Wear appropriate personal protective equipment (See Section 8).
Methods and materials for containment and cleaning up	Sweep or vacuum up spillage and collect in suitable container for disposal. If not possible, gently moisten dust before it is collected with shovel, broom or the like. Containers must be labeled. For waste disposal, see Section 13.
Environmental precautions	For good industrial practice avoid release to the environment.

7. Handling and storage

Precautions for safe handling	Avoid working with freshly treated wet wood. If not possible, wear long sleeve shirt, long pants and gloves when working with freshly treated wet wood. Clothing should be removed and replaced if it becomes wet due to contact with freshly treated wood. Avoid prolonged or repeated breathing of dust. Avoid contact with skin and eyes. Do not smoke. Do not burn preserved wood. Do not use preserved wood as mulch. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.
Conditions for safe storage, including any incompatibilities	Keep away from heat, sparks and open flame. Store in a dry, cool and well-ventilated place. Store away from incompatible materials (See Section 10).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA

Components	Type	Value	Form
Wood/Wood dust (CAS N/A)	PEL	5 mg/m^3	Respirable dust.
		15 mg/m^3	Total fraction.

ACGIH

Components	Type	Value	Form
Wood/Wood dust (CAS N/A)	TWA	1 mg/m^3	Inhalable fraction.

U.S. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Wood/Wood dust (CAS N/A)	TWA	1 mg/m^3	Dust

Biological limit values No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls Provide sufficient general/local exhaust ventilation to maintain inhalation exposures below current exposure limits and areas below explosive dust concentrations. Shower, hand and eye washing facilities near the workplace are recommended.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields or safety goggles when sawing or cutting.

Skin protection

Hand protection When handling wood, wear leather or fabric gloves.

Other Wear normal work clothes and safety shoes.

Respiratory protection If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Use a NIOSH–approved respirator if there is a potential for exposure to dust exceeding exposure limits (See 29 CRF 1910.134, respiratory protection standard).

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations If wood dust contacts the skin, workers should wash the affected areas with soap and water. Clothing contaminated with wood dust should be removed, and provisions should be made for the safe removal of the chemical from the clothing. Persons laundering the clothes should be informed of the hazardous properties of wood dust. A worker who handles wood dust should thoroughly wash hands, forearms, and face with soap and water before eating, using tobacco products, using toilet facilities, applying cosmetics, or taking medication. Workers should not eat, drink, use tobacco products, apply cosmetics, or take medication in areas where wood dust is handled, or processed. Observe any medical surveillance requirements.

9. Physical and Chemical Properties

Appearance

Physical state Solid.

Form Chips. Dust.

Color Not available.

Odor Wood odor.

Odor threshold Not available.

pH Not applicable.

Melting point/freezing point Not applicable.

Initial boiling point and boiling range Not applicable.

Flash Point Not available.

Evaporation rate Not applicable.

Flammability (solid, gas) Combustible dust.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not applicable.
Vapor density	Not applicable.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not available.
Viscosity	Not applicable.

10. Stability and reactivity

Reactivity	The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	Stable at normal conditions.
Possibility of hazardous reactions	Hazardous reactions do not occur.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Minimize dust generation and accumulation. Avoid contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Reducing agents.
Hazardous decomposition products	During combustion: Carbon oxides. Nitrogen oxides. Aliphatic aldehydes. Polycyclic aromatic hydrocarbons (PAHs).

11. Toxicological information

Information on likely routes of exposure

Inhalation	Wood dust, treated or untreated, is irritating to the nose, throat and lungs. Prolonged or repeated inhalation of wood dusts may cause respiratory irritation, recurrent bronchitis and prolonged colds. Some species may cause allergic respiratory reactions with asthma-like symptoms in sensitized individuals. Prolonged exposure to wood dusts by inhalation has been reported to be associated with nasal and paranasal cancer.
Skin contact	Handling may cause splinters. Prolonged contact with treated wood and/or treated wood dust, especially when freshly treated at the plant, may cause irritation to the skin. Abrasive handling or rubbing of the treated wood may increase skin irritation. Some wood species, regardless of treatment, may cause dermatitis or allergic skin reactions in sensitized individuals.
Eye contact	Dust may irritate the eyes.
Ingestion	Not likely, due to the form of the product. However, ingestion of dusts generated during working operations may cause nausea and vomiting. Certain species of wood and their dusts may contain natural toxins, which can have adverse effects in humans.
Symptoms related to the physical, chemical and toxicological characteristics	Wood dust: May cause nasal dryness, irritation and mucostasis. Coughing, wheezing, sneezing, sinusitis and prolonged colds have also been reported. Depending on wood species may cause respiratory sensitization and/or irritation. Symptoms can include irritation, redness, scratching of the cornea, and tearing. May cause eczema-like skin disorders (dermatitis). Airborne treated or untreated wood dust may cause nose, throat, or lung irritation and other respiratory effects.

Information on toxicological effects

Acute toxicity	Not expected to be acutely toxic.
Skin corrosion/irritation	Dust may irritate skin.
Serious eye damage/eye irritation	Dust may irritate the eyes.

Respiratory or skin sensitization

ACGIH Sensitization	
Wood/Wood dust (CAS N/A)	Dermal sensitization. Respiratory sensitization.
Respiratory sensitization	Exposure to wood dusts can result in hypersensitivity.
Skin sensitization	Exposure to wood dust can result in the development of contact dermatitis. The primary irritant dermatitis resulting from skin contact with wood dusts consist of erythema, blistering, and sometimes erosion and secondary infections occur.

Germ cell mutagenicity	No component of this product present at levels greater than or equal to 0.1% is identified as a mutagen by OSHA.
Carcinogenicity	May cause cancer by inhalation. Untreated wood dust or saw dust: The International Agency for Research on Cancer (IARC) classifies untreated wood dust as a Group I human carcinogen. The classification is based primarily on IARC's evaluation of increased risk in the occurrence of adenocarcinomas of the nasal cavities and paranasal sinuses associated with occupational exposures of untreated wood dust. Epidemiological studies have been reported on carcinogenic risks of employment in the furniture-making industry, the carpentry industry, and the lumber and sawmill industry. IARC has reviewed these studies and reports that there is sufficient evidence that nasal carcinomas have been caused by employment in the furniture-making industry where the excess risk is associated with exposure to untreated wood dust or sawdust from hardwood species. IARC concluded that epidemiological data are not sufficient to make a definite assessment of the carcinogenic risk of employment as a carpenter or worker in a lumber mill or sawmill.

IARC Monographs. Overall Evaluation of Carcinogenicity

Wood/Wood dust (CAS N/A) 1 Carcinogenic to humans.

NTP Report on Carcinogens

Wood/Wood dust (CAS N/A) Known To Be Human Carcinogen.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not likely, due to the form of the product.
Chronic effects	Chronic exposure to wood dusts can result in pneumonitis, and coughing, wheezing, fever and the other signs and symptoms associated with chronic bronchitis.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available on bioaccumulation.
Mobility in soil	The product is insoluble in water.
Mobility in general	The product is not volatile but may be spread by dust-raising handling.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Dispose in accordance with applicable federal, state, and local regulations. Do not discharge into drains, water courses or onto the ground.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	Not regulated.
Waste from residues / unused products	Dispose in accordance with all applicable regulations. Do not discharge into drains, water courses or onto the ground.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA) Hazard categories

Hazard categories Carcinogenicity
Combustible dust

SARA 302 Extremely hazardous substance	Not listed.
SARA 311/312 Hazardous chemical	Yes
SARA 313 (TRI reporting)	Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List	Not regulated.
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)	Not regulated.
Safe Drinking Water Act (SDWA)	Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Wood/Wood dust (CAS N/A)

US. Pennsylvania Worker and Community Right-to-Know Law

Wood/Wood dust (CAS N/A)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

WARNING. Drilling, sawing, sanding or machining wood products can expose you to wood dust, a substance known to the State of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection. For more information, go to www.P65Warnings.ca.gov/wood.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	01-28-2019
Revision date	01-28-2019
Version #	01
Further Information	HMIS® is a registered trade and service mark of the NPCA. E - Safety Glasses, Gloves, Dust Respirator

PERCENTAGE OF ACTIVE INGREDIENTS PER RETENTION LEVEL

	0.06 pcf	0.15 pcf	0.23 pcf
Copper carbonate expressed as Elemental Copper	0.15 - 0.25%	0.35 - 0.65%	0.55 - 0.95%
Tebuconazole	0.006 - 0.01%	0.01 - 0.03%	0.02 - 0.05%

HMIS® ratings

Health: 1*
Flammability: 1
Physical hazard: 0
Personal protection: E

NFPA ratings

Disclaimer

Supplier cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.