Oxine Copper Reaffirmation Data Package – July 2022

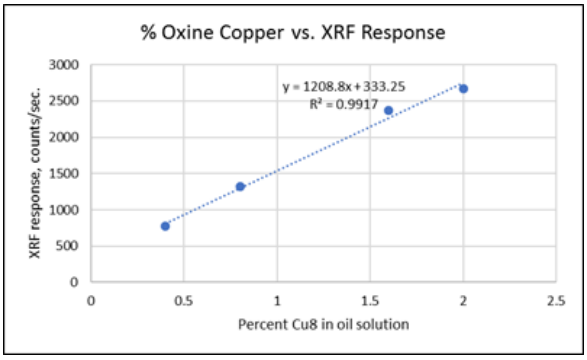
Standard P37 for oxine copper (copper 8-quinolinolate or Cu8) is due for reaffirmation. This data package supports reaffirmation as required by AWPA Guidance Document I, "Reaffirmation Requirement Guidelines", including:

1. Review existing standard
2. Efficacy data since last reaffirmation
3. Treating and performance records
4. Regulatory status
5. New information required for P37 reaffirmation proposal

Reaffirmation Requirement #1 – Review existing Standard

Oxine copper was originally adopted by AWPA in 1962 as an oil-borne preservative in Standard P8, Section 3, and moved to standalone Standard P37 in 2008. At that time, the standard specified both 10% oxine copper and 10% nickel 2-ethylhexanoate (Ni 2-EH), the latter required as a formulating (solubilizing) aid in the formulation rather than as an active ingredient. Although standard P37 was amended in 2011 to delete the specific requirement for Ni 2-EH, oxine copper requires added formulants to enhance solubility since the active ingredient is minimally soluble in hydrocarbon solvents conforming to AWPA HSA and HSC. Standard P37 does not include waterborne oxine copper formulations.

Because more treaters have XRF capability than ICP, we propose amending the Analytical Methods section of P37 to add standard A9 as a suitable method for assay of oxine copper solutions and treated wood. A quick lab study showed that XRF response to copper correlates with solution oxine copper concentration, as shown at right. While each instrument will still have to be calibrated, these data confirm XRF is a suitable method for oxine copper assays.



No other changes to the current standard are needed or proposed for this reaffirmation.

Reaffirmation Requirement #2 – Review new efficacy data

One oil-borne oxine copper efficacy study was found to have been published since the last reaffirmation:

Petruch et *al*. (2019) investigated the relative resistance of three different oxine copper formulations (oil-borne, waterborne, and waterborne with pH-adjustment) as preservative treatments for wood against brown-rot fungi. Impregnated southern pine sapwood cubes were exposed to *R. placenta* and *G. trabeum* cultures in a modified AWPA Standard E10-16 soil-block test. After eight weeks, the weight losses of the cubes were examined in relation to the retention of the preservative in the cubes. The results shown in Figures 1 and 2 suggest all of the formulations effectively prevented decay at retention values near the previously reported toxic thresholds and that there was little difference between the water borne and solvent borne systems. Buffering or adjusting the solution to less acidic and non-corrosive pH caused some cloudiness due to reduced solubility which resulted in some surface deposits on the blocks during vacuum pressure treatment, but did not appear to consistently or unambiguously influence efficacy.

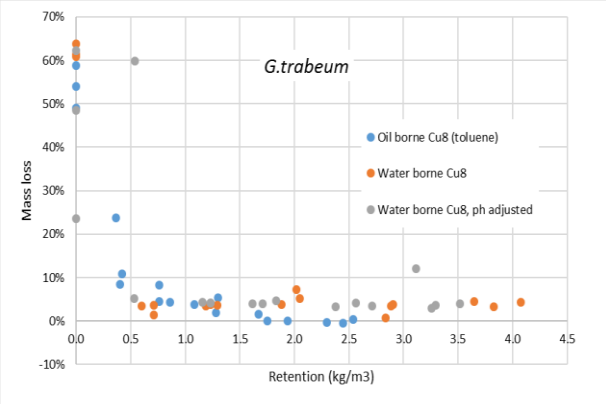


Figure 1. Mass loss vs. retention, exposed to *G. trabeum*

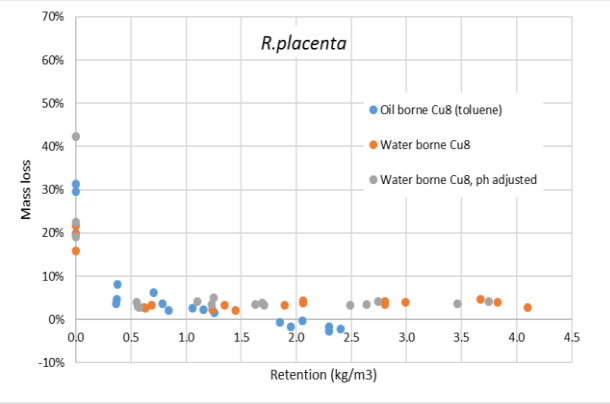


Figure 2. Mass loss vs. retention, exposed to *R. placenta*

Although no other recent (since 2015) published studies on oil-borne oxine copper efficacy as a wood preservative were found, the efficacy of waterborne formulations of oxine copper as a wood preservative has been evaluated by the USDA Forest Products Lab (Lebow *et al.* 2015; Lebow *et al.* 2017; Arango *et al.* 2022). Other waterborne preservatives evaluated as positive controls for dip treatments for military wooden packaging included copper naphthenate (CuN-W) and zinc naphthenate (ZnN). Two oxine copper formulations (Cu8 #1 and #2) were evaluated at two solution concentrations, with significantly different performance seen, particularly in yellow poplar samples. The exact oxine copper formulations tested were not identified or characterized in the publications, so a rationale for their relative performance cannot be postulated. As shown in Table 1, Cu8 formulation #2 was among the most effective preservatives for Southern pine samples in soil block tests, and the higher (1.8%) solution concentration of formulation Cu8 #1 also provided excellent protection of Southern pine against both test fungi. Four of the formulations (1.05% Azole+imidacloprid, 2% soluble Cu+Azole, 1.8% Cu8 #2, and 2% CuN-W) provided protection across all of the test organisms, including efficacy against Cu-tolerant *P. placenta*.

Table 1. Average weight loss in cubes dip-treated with waterborne preservatives (Lebow *et al*. 2017)

Preservative		Southern Pine				Yellow Poplar			
		G. trabeum		***P. placenta***		***T. versicolor***		***I. lacteus***	
	% A.I.	Mean	St Dev	Mean	St Dev	Mean	St Dev	Mean	St Dev
Water	--	47.7	3.2	59.9	2.4	45.4	6.6	70.4	7.2
Azole-Imid.	1.05%	0.4	0.6	0.2	0.5	-2.7	5.2	-0.5	0.4
sCu-Azole	1%	1.9	1.0	49.5	8.5	0	0.1	-0.4	0.2
sCu-Azole	2%	0.6	0.2	2.9	4.4	-0.3	0.3	-1.8	3.5
pCu-Azole #1	1%	1.9	1.6	38.1	15	0.3	0.1	-0.04	0.5
pCu-Azole #1	2%	-0.1	0.1	6.6	14	-0.4	0.1	-0.5	0.1
Cu8 #1	1.2%	0.2	0.2	2.5	4.9	20.5	11.3	32.6	7.8
Cu8 #1	1.8%	0	0.2	0.4	0.4	17.6	6.9	32.8	6.3
Cu8 #2	1.2%	0.5	0.1	0.5	0.2	0.6	1.2	-0.1	0.5
Cu8 #2	1.8%	0.5	0.4	0.4	0.4	0.4	1.2	-0.6	0.7
CuN-W	1%	10.2	4.7	53.4	9.9	0.1	0.2	4.1	5.7
CuN-W	2%	0.6	0.1	6.6	8.5	0.2	0.1	0.4	0.2
ZnN	2.9%	8.8	7.6	4.6	5.5	10.5	5.3	20.7	7.8

Another recently documented study on waterborne preservatives demonstrated the efficacy of oxine copper against termites (Arango *et al.* 2016). All preservatives in the study produced complete to nearly complete termite mortality and resulted in negligible mass loss to the test specimens overall.

Reaffirmation Requirement #3 – Review product performance in service and update usage

Oxine copper is currently being used as a wood preservative for protection against decay fungi and wood-destroying insects including termites and for control of sapstain and mold. Wooden commodities treated with oxine copper include log homes, trailer decking, millwork, shingles, siding, fences, decks and wood packaging that may come into contact with fruit and vegetables. Non-pressure application for end cut or remedial treatment (per AWPA M4) includes residential/consumer use by brush, dip and spray application.

No documented reports of unsatisfactory performance have been received since the last reaffirmation.

Reaffirmation Requirement #4 – Update regulatory status

Copper 8-quinolinolate or oxine copper was first registered in the United States in 1956. Currently there are 11 products (oil-borne and waterborne) with active EPA registrations: two manufacturing use (MU) and nine end use (EU) products. Two oil-borne products conforming to P37 are registered, both ready-to-use (RTU) formulations containing 0.675% oxine copper; no oil-borne concentrates are actively registered at this time. Oxine copper is registered for use as a wood preservative for control of sapstain, mold, and decay in unfinished wood and wood products such as millwork, siding, outdoor furniture, shingles, structural lumber, boats interiors, decks, and baseboards. In addition to its use in wood preservation, oxine copper is registered for use as a fungicide and mildewcide in the manufacture of kraft paper, paperboard, cement backerboard, and adhesives, and as a material preservative to control mold and mildew on industrial and military textiles (non-apparel use) such as canvas, burlap, rope, and nets (non-aquatic uses only).

Copies of the current SDS for CTA Products' Outlast® Q8 Log Oil® and the EPA label for ISK Biocides' Woodguard oxine copper RTU products are attached as Appendices A and B.

The Reregistration Eligibility Decision (RED) for copper 8-quinolinolate was completed in September 2007 (U.S. EPA 2007). On September 29, 2010, the EPA formally initiated registration review for copper 8-quinolinolate, aka oxine copper. Along with the summary document, EPA also posted the following to the public docket:

- Copper 8-Quinolinolate. Human Health Effects Scoping Document for Registration Review
- Summary of Product Chemistry, Environmental Fate and Ecotoxicity Data for the Copper 8-Quinolinolate Registration Review Decision Document

Since then, the following EPA activities toward Registration Review of oxine copper have occurred:

- February 2011 – EPA posted the Copper 8-Quinolinolate Final Work Plan (FWP) to the public docket.
- May 2015 – EPA posted the Copper 8-quinolinolate Amended Final Work Plan to the public docket.
- December 2018– EPA issued a generic data call-in (GDCI) for oxine copper to obtain data needed to conduct the registration review risk assessments.
- June 2021 - EPA issued its Human Health and Ecological Draft Risk Assessment for oxine copper.

- August 2021 – EPA posted the Registration Review Draft Risk Assessment for Copper 8-Quinolinolate for a 60-day public comment period. EPA received two comments from two commenters; the comments did not change the risk assessments or registration review timeline for copper 8-quinolinolate.
- December 2021 - EPA held a meeting with representatives of US Forest Service Forest Products Laboratory concerning oxine copper.
- March 2022 – EPA posted the Copper 8-Quinolinolate Proposed Interim Registration Review Decision (U.S. EPA 2022) to the public docket for a 60-day public comment period.

The Agency made the following proposed interim decision: (1) EPA proposes that no additional data are required at this time; and (2) EPA proposes that oxine copper does not meet the registration standard without changes to the affected registrations and their labeling. However, EPA proposed that the mitigation proposed in specific sections and appendices of the proposed interim decision are sufficient to address certain concerns. EPA does not anticipate calling in additional data for oxine copper's registration review.

The proposed interim decision, applicable for all MU and EU labels for oxine copper that include wood preservation uses, proposes the following revised labelling requirement: "*For above ground use only. Not for wood intended for structures with ground contact, berthing structures, or other standalone structures immersed in water (including but not limited to docks, piers, signposts, etc.*)." This decision was based on the EPA's Draft Risk Assessment (U.S. EPA 2021) that identified some areas of concern with potential aquatic toxicity, although APWA's Standard U1 listing of oxine copper only for service conditions UC1 through UC3B appears to also have been factored into EPA's decision. As we understand it (based on informal discussions outside the official EPA docket comment process), this proposed label change will not exclude oxine copper usage in near-ground contact applications such as remedial or field treatment of preservative-treated wood as provided for in AWPA Standard M4. At least one registrant plans to comment in reference to this use application.

Additionally, for wood preservative uses, EPA is requiring all oxine copper labels that reference AWPA or other 3rd party organization standards to cite the specific standard as well as that standard's publication date. This proposed requirement is consistent with EPA's strategy for all wood preservatives.

Canada's PMRA recently granted continued registration of the antisapstain use of oxine copper (Health Canada 2017). Label amendments are required for all antisapstain end-use products but no additional data were requested. Two oxine copper products were registered by PMRA as of August 28, 2019.

Reaffirmation Requirement #5 – New information requirements for extension of exposure conditions

Oxine copper currently is only listed for above ground (UC 1 through UC3B) exposures in AWPA Standard U1. No extension of exposure conditions is planned at this time.

References

Arango, R.A.; Woodward, B.; Lebow, S. 2016. Evaluating the Effects of Post Dip-Treatment Laser Marking on Resistance to Feeding by Subterranean Termites. International Research Group on Wood Protection, Document No. IRG/WP 16-10854. 12 p.

Arango, R. A.; Lebow, S. T.; Yang, V.; Zelinka, S.L.; Lebow, P. K.; DeWald, P. In press; est. 2022. Evaluation of Moldicide Additives for Wood Preservatives used in Dip-treatment of Wood Packing

Materials for Military Applications. General Technical Report FPL-GTR-xxx. Madison, WI: U.S. Department of Agriculture, Forest Service, Forest Products Laboratory. 69 p.

Health Canada. 2017. Antisapstain Use of Copper-8-quinolinolate. Re-evaluation Decision PRVD2017-07. October 13, 2017. 9 p.

Lebow, S. T.; Arango, R. A.; Woodward, B. M.; Lebow, P. K.; Ohno, K. M. 2015. Efficacy of alternatives to zinc naphthenate for dip treatment of wood packaging materials. *International Biodeterioration & Biodegradation*. 104 (2015) 371-376.

Lebow, S. T.; Zelinka, S. L.; Arango, R. A.; Woodward, B. M.; Lebow, P. K.; Ohno, K. M.; Chotlos, N. P. 2017. Evaluation of nonpressure wood preservatives for military applications. Research Paper FPL–RP–693. Madison, WI: U.S. Department of Agriculture, Forest Service, Forest Products Laboratory. 30 p.

Petruch, M.; Lloyd, J.; Taylor, A. 2019. Relative efficacy of various oxine copper formulations against brown-rot fungi. International Research Group on Wood Protection, Document No. IRG/WP 19-30741. 9 p.

U.S. EPA. 2007. Reregistration Eligibility Decision for Copper 8-Quinolinolate - Case Number 4026. United States Environmental Protection Agency. www.regulations.gov. EPA 739-R-07-009. September 26, 2007.

U.S. EPA. 2021. Registration Review Draft Risk Assessment for Copper 8-Quinolinolate. Decision No. 573218. DP Barcode 461722. Case No. 5118. United States Environmental Protection Agency. www.regulations.gov. Docket Number EPA-HQ-OPP-2010-0454. June 3, 2021.

U.S. EPA. 2022. Copper 8-Quinolinolate – Proposed Interim Registration Review Decision - Case Number 5118. United States Environmental Protection Agency. www.regulations.gov. Docket Number EPA-HQ-OPP-2010-0454. March 30, 2022.

Appendix A. SDS for Oil-borne Oxine Copper

Safety Data Sheet

Issue Date: 01-Mar-2011 **Revision Date:** 24-Jan-2014 **Review Date:** 10-Dec-2020 **Version** 1

1. IDENTIFICATION

Product Identifier

Product Name Outlast Q8 Log Oil (Clear)

Other means of identification

SDS # CTA-006

Recommended use of the chemical and restrictions on use

Recommended Use EPA registered wood preservative
EPA REG # 81819-1

Details of the supplier of the safety data sheet

Supplier Address
CTA Products Group
1899 Kings Castle Drive
Southaven, MS 38671
www.OutlastCTA.com

Emergency Telephone Number

Company Phone Number Phone: 662-536-1446
Fax: 662-349-2286

Emergency Telephone (24 hr) INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Please see Section 15 for additional EPA information.

Appearance Clear, slightly viscous liquid **Physical State** Liquid **Odor** Mild petrochemical odor

Classification

Aspiration toxicity	Category 1

Hazards Not Otherwise Classified (HNOC)
May be harmful in contact with skin

Signal Word
Danger

Hazard Statements
May be fatal if swallowed and enters airways

Precautionary Statements – Prevention

Avoid breathing mist, vapors or spray. Use only outdoors or in a well ventilated area.

Precautionary Statements - Response

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
Do not induce vomiting. IF INHALED; Remove victim to fresh air and keep at rest in a position comfortable for breathing

Precautionary Statements - Storage

Store locked up. Store in a well-ventilated place. Keep container tightly closed.

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other Hazards

Toxic to aquatic life with long lasting effects

Unknown Acute Toxicity

13.4% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Petroleum Distillates, Hydrotreated light	64742-47-8	Proprietary
Oxine Copper	10380-28-6	Proprietary
Paraffin Emulsion	8002-74-2	Proprietary

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

First Aid Measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Skin Contact Wash off immediately with plenty of water. Take off contaminated clothing and wash it before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. If skin irritation persists, call a physician.

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Administer oxygen if breathing is difficult. If breathing is irregular or stopped, administer artificial respiration. Immediately call a poison center or doctor/physician.

Ingestion Do not induce vomiting. Do not induce vomiting unless directed by medical personnel. If vomiting occurs, lean patient forward to maintain an open airway & prevent aspiration. Get immediate medical attention.

Most important symptoms and effects

Symptoms Exposed individuals may experience eye tearing, redness and discomfort. May cause skin irritation. Inhalation may cause irritation of respiratory tract. Prolonged breathing of vapors may cause nausea, headache, weakness and/or dizziness. Prolonged or repeated exposure by inhalation or ingestion may affect behavior/central nervous system. Skin contact may aggravate an existing dermatitis. Conjuntivitis. May cause nausea, vomiting and/or diarrhea if ingested.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Carbon dioxide (CO2). Dry chemical. Foam. Use water spray to cool fire-exposed containers.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical
None known.

Hazardous Combustion Products Burning will produce toxic fumes and gases.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Use personal protective equipment as required. Ventilate affected area. Remove all sources of ignition.

Environmental Precautions Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. See Section 13: DISPOSAL CONSIDERATIONS. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Clean-Up For small spills: recover any free liquid and pick up the remainder with granular clay or sand For large spills: eliminate any sources of ignition and dike the area to contain the spill. Recover as much liquid as possible by use of an explosion-proof sump pump or other similar means. Reuse as much material as possible. Pick up the remainder using granular clay or sand.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling Handle in accordance with good industrial hygiene and safety practice. Use personal protection recommended in Section 8. Avoid contact with skin, eyes or clothing. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapors/spray.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed and store in a cool, dry and well-ventilated place. Do not store at temperatures above 120°F. Drum is not a pressure vessel; never use pressure to empty. Shelf life: Indefinite if kept dry and store in unopened containers at recommended temperatures. Store locked up.

Incompatible Materials Strong oxidizing agents.

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Petroleum distillates, hydrotreated light 64742-47-8	100 ppm	500 ppm	-
Oxine Copper 10380-28-6	TWA: 1 mg/m³ Cu dust and mist	-	IDLH: 100 mg/m³ Cu dust and mist TWA: 1 mg/m³ Cu dust and mist
Paraffin Emulsion 8002-74-2	TWA: 2 mg/m³ fume	(vacated) TWA: 2 mg/m³	TWA: 2 mg/m³ fume

Appropriate engineering controls

Engineering Controls Local exhaust is suggested for use, where possible, in enclosed or confined spaces. Eyewash stations. Showers.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Goggles and face shield as needed to prevent eye and face contact.

Skin and Body Protection Rubber or neoprene gloves. Boots and aprons as needed for protection against spills and/or splashes.

Respiratory Protection Ensure adequate ventilation, especially in confined areas. In case of inadequate ventilation wear respiratory protection.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid		
Appearance	Clear, slightly viscous liquid	**Odor**	Mild petrochemical odor
Color	Clear	**Odor Threshold**	Not determined

Property	Values	Remarks • Method
pH	Not determined	
Melting Point/Freezing Point	Not available	
Boiling Point/Boiling Range	154 °C / 310 °F	
Flash Point	> 121 °C / >250 °F	Pensky-Martens Closed Cup (PMCC)
Evaporation Rate	< 1	(butyl acetate = 1)
Flammability (Solid, Gas)	Liquid-not applicable	
Upper Flammability Limits	Unknown	
Lower Flammability Limit	Unknown	
Vapor Pressure	<1 mmHg	
Vapor Density	Unknown	
Specific Gravity	0.895	(1=Water)
Water Solubility	Insoluble in water	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Auto-ignition Temperature	Not determined	
Decomposition Temperature	Not determined	
Kinematic Viscosity	Not determined	
Dynamic Viscosity	Not determined	
Explosive Properties	Not determined	
Oxidizing Properties	Not determined	
VOC Content	<250 gm/L	
Density	6.972 – 7.09 lb/gal	

10. STABILITY AND REACTIVITY

Reactivity
Not reactive under normal conditions.

Chemical Stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.

Conditions to Avoid
Keep out of reach of children.

Incompatible Materials
Strong oxidizing agents.

Hazardous Decomposition Products

11. TOXICOLOGICAL INFORMATION

None known.

Information on likely routes of exposure

Product Information

Eye Contact Avoid contact with eyes.

Skin Contact May be harmful in contact with skin.

Inhalation Avoid breathing vapors or mists.

Ingestion Potential for aspiration if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Petroleum Distillates, Hydrotreated light 64742-47-8	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.2 mg/L (Rat) 4 h
Oxine Copper 10380-28-6	= 9930 mg/kg (Rat)	> 2 g/kg (Rabbit)	-
Paraffin Emulsion 8002-74-2	> 3750 mg/kg (Rat)	> 3600 mg/kg (Rabbit)	-

Information on physical, chemical and toxicological effects

Symptoms Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen. However, the product as a whole has not been tested. Group 3 IARC components are "not classifiable as human carcinogens" *IARC (International Agency for Research on Cancer)*
Group 3 IARC components are "not classifiable as human carcinogens"

Chemical Name	ACGIH	IARC	NTP	OSHA
Oxine Copper 10380-28-6		Group 3		

Aspiration hazard May be fatal if swallowed and enters airways.

Numerical measures of toxicity
Not determined

Unknown Acute Toxicity 13.4% of the mixture consists of ingredient(s) of unknown toxicity.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Toxic to aquatic life with long lasting effects.

22.4% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Component Information

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Petroleum Distillates, Hydrotreated light 64742-47-8		45: 96 h Pimephales promelas mg/L LC50 flow-through 2.2: 96 h Lepomis macrochirus mg/L LC50 static 2.4: 96 h Oncorhynchus mykiss mg/L LC50 static		

Persistence/Degradability
Not determined.

Bioaccumulation
Not determined.

Mobility
Not determined

Other Adverse Effects
Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

California Hazardous Waste Status

Chemical Name	California Hazardous Waste Status
Oxine Copper 10380-28-6	Toxic

14. TRANSPORT INFORMATION

Note Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT Not regulated

IATA Not regulated

IMDG

Marine Pollutant This material may meet the definition of a marine pollutant

15. REGULATORY INFORMATION

International Inventories

Not determined

US Federal Regulations

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Oxine Copper - 10380-28-6	10380-28-6	Proprietary	1.0

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Oxine Copper 10380-28-6 (Proprietary)		X		

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Oxine Copper 10380-28-6	X		X
Paraffin Emulsion 8002-74-2	X	X	X

EPA Pesticide Registration Number 81819-1

EPA Statement

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

EPA Pesticide Label

CAUTION: Causes moderate eye irritation. Harmful if inhaled, swallowed or absorbed through skin. Avoid contact with eyes, skin or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

Difference between SDS and EPA pesticide label

	EPA	OSHA
Signal Word	Caution	Danger
Acute Toxicity- Inhalation	Harmful if inhaled	n/a
Acute Toxicity- Oral	Harmful if swallowed	n/a
Acute Toxicity- Dermal	Harmful if absorbed through the skin	May be harmful in contact with skin
Aspiration Toxicity	Vomiting may cause aspiration pneumonia	May be fatal if swallowed and enters airways

16. OTHER INFORMATION

NFPA	**Health Hazards**	**Flammability**	**Instability**	**Special Hazards**
	2	0	0	None
HMIS	**Health Hazards**	**Flammability**	**Physical Hazards**	**Personal Protection**
	Not determined	Not determined	Not determined	Not determined

Issue Date: 01-Mar-2011
Revision Date: 24-Jan-2014
Revision Note: New format

Disclaimer

The information provided in this Safety Data Sheetis correct to the best of our knowledge, information and belief at the time of its publication. The information given is designed only a a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Appendix B. EPA Label for Oil-borne Oxine Copper

WOOD guard®

Photo Courtesy of Papilita Land Vacation Rental

EXTERIOR WOOD PRESERVATIVE AND FINISH

OIL-BASED WOOD PRESERVATIVE

• CONTROLS SURFACE MOLD, DECAY & MILDEW • EXCEPTIONAL WATER REPELLENCY • TOXIC TO TERMITES • MEETS VOC STANDARDS
• LOG HOMES • SHINGLES AND SHAKES • SIDING • FENCES
THE SUPERIOR DEEP PENETRATING TREATMENT • IDEALLY SUITED FOR LOG HOMES, ROOFS, SIDING, AND FENCES
ESPECIALLY ROUGH SAWN LUMBER, OLD WEATHERED WOOD, NEW POROUS WOODS

KEEP OUT OF REACH OF CHILDREN

CAUTION

SEE BACK PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS.

INGREDIENTS

ACTIVE INGREDIENT:	
COPPER 8-QUINOLINOLATE*	0.675%
OTHER INGREDIENTS:	99.325%
TOTAL:	100.000%

* METALLIC COPPER EQUIVALENT 0.12%
THIS PRODUCT CONTAINS PETROLEUM DISTILLATES

Manufactured for:
ISK Biocides, Inc.
416 East Brooks Road
Memphis, TN 38109

EPA Est. No. 1022-TN-001
EPA Reg. No. 1022-514-71581

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WOOD guard®

Test before using on smooth dense wood.
Do not use on painted surfaces.
Woodguard must penetrate to be effective.
Wood must be cleaned prior to Woodguard® application (See Preparation and Maintenance Guide)
Wood must be dry before application (less than 18% moisture)
This product exceeds NWWDA and Fed. Spec. TT-W-572 Water Repellency requirements by 400%.

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION

Avoid contact with skin, eyes or clothing. Harmful if swallowed. Avoid breathing spray mist.

FIRST AID

IF IN EYES:	• Hold eye open and rinse slowly and gently with water for 15 – 20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. • Call a poison control center or doctor for treatment advice.
IF SWALLOWED:	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told by a Poison Control Center or doctor. • Do not give anything by mouth to an unconscious person.
IF ON SKIN OR CLOTHING:	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 - 20 minutes. • Call a Poison Control Center or doctor for further treatment advice.

In case of emergency, call **Chemtrec** toll free at **800-424-9300.** Have the product container or label with you when calling a poison control center or doctor or going for treatment.

WARRANTY AND LIMITATION OF DAMAGES

Seller warrants to those persons lawfully acquiring title to this product that at the time of the first sale of this product by seller this product conformed to its chemical description and that it was reasonably fit for the purposes stated on the product label when used both in accordance with the Direction for Use appearing on the product label and under normal conditions of use. Buyers and users of this product assume the risk of all loss or damage from use or handling of this product that results from their failure to read and comply with the Directions for Use of this product which appear on the product label. SELLER MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY, INCLUDING ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR OF MERCHANTABILITY, AND NO AGENT OF SELLER IS AUTHORIZED TO DO SO. Unless expressly prohibited by state law, the liability of seller for any breach of warranty shall not exceed the purchase price of the product as to which a claim is made.

ENVIRONMENTAL HAZARDS

This product is toxic to fish. Do not apply directly to water. Do not contaminate water when disposing of equipment washwaters.

DO NOT discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. DO NOT discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the Environmental Protection Agency.

PHYSICAL OR CHEMICAL HAZARDS

Do not store or use near heat or open flame.

STORAGE AND DISPOSAL

PESTICIDE STORAGE: Protect pesticide containers from heat and cold. The storage area must be secured, dry, well lit, and well-ventilated. Keep pesticide storage areas clean. Clean up any spills promptly. Always store pesticide in the original container. If a leaky container must be contained within another, mark the outer container to identify the contents.

PESTICIDE DISPOSAL: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide spray mixture or rinsate is a violation of capital Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL: Nonrefillable Container. Do not reuse or refill this container. Triple rinse as follows: Fill container 1/4 full with water and recap. Shake for 10 seconds. Follow Pesticide Disposal instructions for rinsate disposal. Drain for 10 seconds after flow begins to drip. Repeat procedure two more times. Then offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Woodguard is an oil-based transparent preservative designed for log homes, wood shingle roofs, siding, and fences. WOODGUARD's oil formula provides long-term protection by penetrating deeply into the wood. It achieves maximum performance on rough sawn lumber, old weathered wood and new porous wood where maximum penetration results in exceptional water repellency on sloping roofs and vertical surfaces; horizontal surfaces are normally subjected to more severe weathering and will usually require earlier retreatment. In harsh exposures involving standing water, retreatment may be required annually to maintain water repellency.

Surfaces previously treated with a semi-transparent stain (non-film forming) may be satisfactorily recoated with WOODGUARD when a superior, water repellent wood preservative is desired. If WOODGUARD is applied to non-porous or film-covered surfaces which prevent or significantly retard penetration, reduced performance or even complete failure can result. Test first on a small area if in doubt.

See the Woodguard Preparation and Maintenance Guide for guidelines on preparation of the wood surface for Woodguard application.

WOODGUARD combines mold and decay control with unique and EXCEPTIONAL WATER REPELLENCY THAT WITHSTANDS OUTDOOR VERTICAL WEATHERING, ESPECIALLY ON OLD, CRACKED, WEATHERED WOOD. WOODGUARD IS TOXIC TO TERMITES AND ANOBIID POWDERPOST BEETLES.

WOODGUARD cannot chip, crack or peel. When applied as directed, it leaves a uniform, streak-free appearance.

WOODGUARD protects and extends service life by inhibiting mold and decay, as well as cupping and warping. A single coat application is recommended every 2 to 4 years on vertical surfaces. Always apply to the point of refusal. Double coat applications are not needed or recommended. WOODGUARD will clean up with paint thinner or mineral spirits.

WOODGUARD (clear) temporarily darkens wood color which later greys after weathering. Use pigmented WOODGUARD to help hide this greyed effect.

DIRECTIONS FOR USE

It is a violation of Federal Law to use WOODGUARD in a manner inconsistent with its labeling.

New or weathered wood must be cleaned prior to your Woodguard application. See Preparation and Maintenance Guide for directions.

Apply liberally to log buildings, roof, wood siding, or fence by simply wetting down the surface as follows:

Spray – Do not use airless spray equipment. Use a garden-type, pump-up sprayer with adjustable nozzle. Set nozzle to deliver a low pressure, coarse spray and backbrush as necessary.

Brush – A regular paint brush is fine for most surfaces. For uneven shingle or rough surfaces, use a stiff bristle brush. Apply evenly, brushing out sags, etc. as necessary.

Roller – Use a long nap for rough surfaces.

ONE COAT IS SUFFICIENT. Surface must be clean and free of all loose debris. Apply to dry wood for maximum penetration and fastest drying. Wood must be dry before application (less than 18% moisture).

Avoid contact with plants, shrubs and trees.

NOTE:

1. Stir or shake well before use.
2. WOODGUARD goes on "dark" but lightens considerably during the curing period.
3. Cure time will range from 3 days to 2 weeks, depending on temperature and wood porosity.
4. Coverage: 150 to 300 sq. ft. per gallon, depending on surface condition and wood porosity. Always apply to the point of refusal.
5. Application temperature: Do not apply if the overnight low temperature is below 50°F / 10°C or the daytime high temperature is above 95°F / 35°C. At 50 - 55°F, dilute with mineral spirits or turpentine -- one pint to one gallon of WOODGUARD. The hotter the weather, the faster the drying. Below 65°F, WOODGUARD may become too viscous to spray, but easily spreads by brush down to 50°F. If unsure of temperatures on cool days add one quart of turpentine to each 5 gallons of Woodguard used and mix well to improve penetration into the wood and aid in cure times. This will also assist in spraying at cooler temperatures. DO NOT OVER DILUTE or performance will be reduced.
6. WOODGUARD softens asphalt (including asphalt shingles) – avoid contact.
7. Do not apply if rain is expected within 36 hours.
8. WOODGUARD provides an immediate water repellent barrier; however, its ability to bead water develops as it cures. Re-treat when the surface exhibits signs of losing capability to inhibit water penetration.
9. Avoid open flame during application and until WOODGUARD has soaked in completely.
10. Subsequent painting – WOODGUARD provides such strong properties of water repellency that subsequent applications of paint will not adhere as long as the WOODGUARD barrier remains intact. If in doubt, test first.
11. WOODGUARD protection will not withstand repeated contact with chlorine or chlorinated water. Avoid using on wood in contact with this chemical, or retreat as necessary.
12. Until WOODGUARD has thoroughly cured, treated surface may be slippery. WOODGUARD in its clear, untinted form is effective on many wood products – greenhouse items, fruit and vegetable boxes, and other farm uses, especially wood surfaces in close proximity with animals, feedstuffs and the like.

TINTING INSTRUCTIONS

WOODGUARD is compatible with and may be colored by the addition of small quantities of the Universal Machine Colorants employed to color oil or water based paints. It is important to note that different colorants weather differently, and that color development varies with wood species, wood grain and wood undertone.

Consult your dealer for assistance in tinting WOODGUARD. WOODGUARD is a transparent preservative oil finish that can be tinted to a light stain; do not attempt to obtain a heavy or solid color stain by overloading with pigment. Approved formulas are available from your dealer or at www.woodguard.com.

Stir tinted WOODGUARD frequently when applying to keep pigments evenly dispersed and uniform. Coat surfaces evenly. Smooth sags or runs by feathering with a brush or cloth in order to achieve a uniform appearance.

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Woodguard® is a registered trademark of IBC Manufacturing Company.