

MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards

PART I *What is the material and what do I need to know in an emergency?*

1. PRODUCT IDENTIFICATION

TRADE NAME (AS LABELED):

CHEMONITE® TREATED WOOD
Ammoniacal Copper Zinc Arsenate (ACZA)
Treated Wood

CHEMICAL NAME/CLASS:

Treated Wood

SYNONYMS:

Not Applicable

PRODUCT USE:

Construction and Other Operations Involving Wood Products

SUPPLIER/MANUFACTURER'S NAME:

Conrad Forest Products

ADDRESS:

68765 Wildwood Drive
North Bend, Oregon 97459

BUSINESS PHONE:

1-800-356-7146

EMERGENCY PHONE:

1-800-356-7146

DATE OF PREPARATION:

June 14, 1988

DATE OF REVISION:

April 26, 2000

2. COMPOSITION and INFORMATION ON INGREDIENTS

This product consists of wood treated with a preservative containing the components listed in the table below. This product is treated with differing strengths of the preservative in the wood as required or specified for the end-use service conditions. Based on the desired level of preservative treatment, the product retains the following amount of preservative in pounds per cubic foot of wood (pcf):

0.25 pcf

0.40 pcf

0.60 pcf

1.00 pcf

2.5 pcf

For the amount of preservative in a particular product, refer to the product label. The information presented in this document is applicable for all preservative retention levels listed above.

CHEMICAL NAME	CAS #	% w/w	EXPOSURE LIMITS IN AIR					
			ACGIH-TLV		OSHA-PEL		IDLH mg/m ³	OTHER mg/m ³
			TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³		
Arsenic Compounds (the following exposure limits are for Arsenic as As)	Not Applicable	0.30-1.55	0.01 (inorganic compounds), A1 (Confirmed Human Carcinogen)	NE	0.01 (Inorganic compounds) Carcinogen	NE	5 (as As)	NIOSH REL: TWA = 0.002, 15 min Carcinogen: EPA-A, NTP-K, IARC-1, MAK-A1, OSHA-X, NIOSH-X, TLV-A1
Copper Compounds (the following exposure limits are for Copper, dusts and mists, as Cu)	Not Applicable	0.56-3.12	1 (dust and mist, as Cu)	NE	1	NE	100	NIOSH REL: TWA = 1 DFG MAKs: TWA = 1 (Inhalable Fraction) PEAK = 2•MAK 30 min., average value Carcinogen: EPA-D

NE = Not Established

See Section 16 for Definitions of Terms Used

NOTE (1): ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-1998 format. This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

2. COMPOSITION and INFORMATION ON INGREDIENTS (Continued)

CHEMICAL NAME	CAS #	% w/w	EXPOSURE LIMITS IN AIR					
			ACGIH-TLV		OSHA-PEL		IDLH mg/m ³	OTHER mg/m ³
			TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³		
Zinc Compounds (exposure limits are for zinc oxide, dust)	Not Applicable	0.30-1.55	10 (dust)	NE	15 (total dust) 5 (respirable dust) 5 (fume) 10 (Total dust) 5 (respirable dust) (Vacated 1989 PEL)	10 (fume) (Vacated 1989 PEL)	500	NIOSH REL: TWA = 5 (fume, dust) STEL = 15 ceiling, 5 minutes (dust); 10 (fume) DFG MAK: TWA = 1.5 (fume) [respiratory fraction] Carcinogen: EPA-D
Wood (exposure limits are for wood dust) See Note (1) below)	Not Applicable	Entire non-preservative component	1 (Hard wood); 5 (Soft wood)	10 (Soft wood)	2.5 (Western Red Cedar) 5 (All other) (Vacated 1989 PEL)	10 (All woods except Western Red Cedar); (Vacated 1989 PEL)	NE	NIOSH REL: TWA = 1 DFG MAK: Danger of Sensitization of the Airways and the Skin Carcinogen: (Hard wood) MAK-A1, NIOSH-X (All other) MAK-3, NIOSH-X

NOTE: The ACGIH has multiple Notice of Intended Changes (NIC) related to various types of woods and wood dusts, as follows:

Wood Dust, Hardwoods & Softwoods (non-allergenic): TWA = NIC 5 mg/m³ (Inhalable Fraction), A4, Sensitizer

Wood Dust, Softwoods & Other Hardwoods (allergenic): TWA = NIC 5 mg/m³ (Inhalable Fraction), A4, Sensitizer

Wood Dust, Western Red Cedar: TWA = NIC 0.5 mg/m³ (Inhalable Fraction), A4, Sensitizer

NE = Not Established

See Section 16 for Definitions of Terms Used

NOTE (1): ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-1998 format. This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: This product consists of chemically treated dark brown to greenish-brown wood. The product presents limited hazards in an emergency situation. Arsenic, a component of this product, is a confirmed human carcinogen, additionally, wood dusts have been implicated in human cancer and sensitization of the respiratory system and skin. Dusts from this product can be irritating to exposed tissue. The product is a combustible wood material, producing acrid smoke and toxic gases (i.e. carbon monoxide, carbon dioxide, and arsenic, copper and zinc compounds) when burned. This product is not reactive under typical emergency situations. Personal protective equipment appropriate to the specific release should be worn by Emergency Response personnel.

SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE: The most significant routes of occupational over-exposure are via inhalation of dust or contact with skin and eyes. The symptoms of over-exposure to this product are as follows:

INHALATION: Inhalation of finely divided dusts of this product, as with any untreated wood product, may cause irritation of the nose, throat, and other tissues of the respiratory system. Chronic inhalation over-exposure can potentially cause adverse effects on the lungs and nasal system, including some forms of cancer. Some individuals may become sensitized to wood dusts and develop allergy-like symptoms upon repeated exposure.

CONTACT WITH SKIN or EYES: Dusts which may contaminate the eyes can cause irritation and scratching of eye tissues. Prolonged exposure can also cause reversible corneal damage caused by abrasion to the cornea. Prolonged and/or repeated skin contact can cause mild irritation or dermatitis, which disappears after exposure ends, unless the person is susceptible to possible sensitization effects of wood dusts and the arsenic present in the preservative solution.

SKIN ABSORPTION: Though not anticipated to be a significant route of occupational over-exposure, arsenic compounds may be absorbed through the skin, causing symptoms as those described under "Contact with Skin or Eyes".

INGESTION: Ingestion is not anticipated to be a significant route of occupational over-exposure. If dusts or particles of this product are ingested, especially in large quantities, irritation of the mouth, throat, stomach, and other tissues of the digestive system can occur. One of the most significant health effects associated with ingestion of this product is the potential for arsenic poisoning. Symptoms of arsenic poisoning may be delayed many hours and can include constriction in the throat and difficulty swallowing, dehydration with intense thirst and muscular cramps, blood, albumin and high sugar content in the urine and vertigo. Chronic exposure can cause skin eruptions and discolorations. Severe ingestion over-exposures can be fatal.

3. HAZARD IDENTIFICATION (Continued)

INJECTION: The only likely manner in which injection of this material could occur is by wood splinters puncturing the skin. The main symptoms associated with such an exposure would be redness and irritation at the point of injection.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms.




ACUTE: The main health hazard presented by this product after short-term exposure would be irritation of contaminated tissues, especially the respiratory system, skin, and eyes, from contact with the treated wood or with the wood dust.

CHRONIC: The symptoms of long-term exposure would be similar to those for acute exposure, described above. Symptoms of chronic, long-term exposure to dusts generated by this product will include irritation of exposed tissues. Prolonged exposure to the eyes can cause reversible corneal damage caused by abrasion to the cornea. Prolonged exposure, via inhalation, to dusts generated by this product can result in some forms of cancer. Additionally, some individuals can become sensitized to wood dusts and develop allergy-like symptoms upon repeated exposures. Chronic over-exposure to arsenic, a component of this product, can cause skin eruptions and discolorations. Arsenic is a confirmed human carcinogen. Refer to Section 11 (Toxicological Information) for further information on potential carcinogenic and sensitization effects of this product.

TARGET ORGANS (For Dusts of Product):

ACUTE: Respiratory system, skin, eyes.

CHRONIC: Respiratory system, eyes, skin.

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM			
HEALTH		(BLUE)	1
FLAMMABILITY		(RED)	2
REACTIVITY		(YELLOW)	0
PROTECTIVE EQUIPMENT			C
EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		
For routine wood handling operations			

PART II *What should I do if a hazardous situation occurs?*

See Section 16 for Definition of Ratings

4. FIRST-AID MEASURES

Those exposed to chemicals must be taken for medical attention if sign of irritation or other symptoms develop. A copy of the product label and MSDS should accompany the contaminated individual to the health care facility.

SKIN EXPOSURE: If dusts of this product contaminate the skin, immediately begin decontamination with running water. Flush skin for a minimum of 15 minutes. Remove exposed or contaminated clothing, taking care not to contaminate eyes. The contaminated individual must seek medical attention if adverse effects continue after flushing ends.

EYE EXPOSURE: If particulates enter the eyes, or if the eyes are touched with contaminated fingers or gloves, open contaminated individual's eyes while under gently running water. Use sufficient force to open eyelids. Have contaminated individual "roll" eyes. Flush eyes for a minimum of 15 minutes. Those with wood splinters in the eye must seek immediate medical attention.

INHALATION: If particulates of this product are inhaled, remove contaminated individual to fresh air. If necessary, use artificial respiration to support vital functions.

INGESTION: If this product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Have victim rinse mouth with water, if conscious. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing respiratory problems, liver problems, eye problems, dermatitis, and other skin disorders can be aggravated by exposures to dusts of this product.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and eliminate over-exposure. If necessary, refer to the OSHA Inorganic Arsenic Standard for Medical Surveillance requirements.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not applicable.

AUTOIGNITION TEMPERATURE: 200-270°C (392-518°F)

FLAMMABLE LIMITS (in air by volume, %):

Lower: Not available.

Upper: Not available.

FIRE EXTINGUISHING MATERIALS:

Water Spray: YES Carbon Dioxide: YES

Dry Chemical: YES Halon: YES

Foam: YES Other: Any "A" Class.

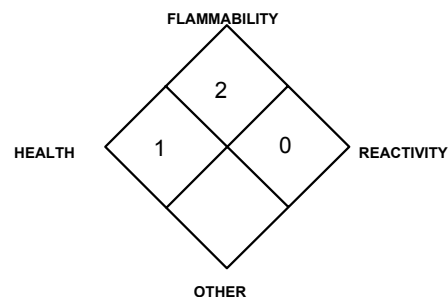
UNUSUAL FIRE AND EXPLOSION HAZARDS: This product is a combustible wood product. When involved in a fire, this material may ignite and produce irritating smoke and toxic gases (carbon monoxide, carbon dioxide, arsenic, copper, and zinc compounds).

Explosion Sensitivity to Mechanical Impact: Not applicable.

Explosion Sensitivity to Static Discharge: Not applicable.

FIRE-FIGHTING PROCEDURES: Treat and respond to fires involving this product as for any fire involving a wood-based material. Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. If possible, prevent run-off water from entering storm drains, bodies of water, or other environmentally sensitive areas.

NFPA RATING



See Section 16 for Definition of Ratings

6. ACCIDENTAL RELEASE MEASURES

RELEASE RESPONSE: This product cannot spill or leak because the chemicals are fixed in the wood. In the event of a release of dust or chips of this product, safety goggles, puncture-resistant gloves, and coveralls should be worn by clean-up personnel. In the event that puncture-resistant gloves indicate signs of product absorption, chemically resistant gloves should also be worn. In particularly dusty areas, use a NIOSH-approved dust mask. Sweep-up or vacuum wood dust and chips. If necessary, rinse the area with soap and water.

PART III *How can I prevent hazardous situations from occurring?*

7. HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: Avoid breathing or getting dust generated by this material on you. Wash thoroughly after handling this product. Do not eat, drink or smoke while handling this product or in areas where there are dusts of this product. Avoid contaminating food, and water with dusts of this product.

Note: Refer to the OSHA Inorganic Arsenic Standard (29 CFR 1910.1018) for specific requirements associated with the use of inorganic arsenic. Occupational exposures to arsenic resulting from the treatment of wood with preservatives or the utilization of arsenically preserved wood are exempt from the requirements of this standard. However, in workplaces where employees are exposed above the Action Level (5 µg/m³ averaged over any 8-hour period), the OSHA requirements for monitoring, establishment of regulated areas, methods of compliance, respiratory protection, emergency response protocol, medical surveillance, training and record keeping must be followed.

STORAGE AND HANDLING PRACTICES: All employees who handle this material should be trained to handle it safely. Use in a well-ventilated location. Maintain good housekeeping practices, such as sweeping area routinely to avoid accumulation of excessive dusts. Store product in a dry location, away from open flame, or sources of intense heat. Store away from incompatible materials (strong oxidizers - see Section 10, Stability and Reactivity). Storage areas should be built to code approval for storage of combustible materials, such as wood.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures) above, for accidental release measures.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided in Section 2 (Composition and Information on Ingredients). Use a mechanical fan or vent area to outside, where applicable.

RESPIRATORY PROTECTION: None needed under normal circumstances of handling and use. Maintain airborne contaminant concentrations below exposure limits listed in Section 2 (Composition and Information on Ingredients). If it is anticipated that the exposure limits for dust may be exceeded during work with this product, wear an NIOSH-approved dust mask. If other respiratory protection is needed, use only protection authorized in the OSHA Standard (29 CFR 1910.134), applicable State regulations, or the Canadian CSA Standard Z94.4-93 and applicable standards of Canadian Provinces.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998). In regulated areas, refer to the OSHA Inorganic Arsenic Standard for specific respirator recommendations.

EYE PROTECTION: Splash goggles or safety glasses.

HAND PROTECTION: Mechanically or puncture resistant gloves. Also use chemical-resistant gloves if the puncture resistant gloves show signs of product absorption.

BODY PROTECTION: Use body protection appropriate for task (i.e. coveralls).

9. PHYSICAL and CHEMICAL PROPERTIES

VAPOR DENSITY: Not applicable.

SPECIFIC GRAVITY: Not available.

SOLUBILITY IN WATER: Insoluble.

VAPOR PRESSURE, mm Hg @ 20 °C: Not applicable.

ODOR THRESHOLD: Not established.

COEFFICIENT OF OIL/WATER DISTRIBUTION (PARTITION COEFFICIENT): Not established

APPEARANCE, ODOR AND COLOR: Dark brown to greenish-brown wood. Freshly treated material may exhibit a slight ammonia odor.

HOW TO DETECT THIS SUBSTANCE (warning properties): There are no unusual warning properties associated with this product. Freshly treated material may exhibit a slight ammonia odor.

EVAPORATION RATE (water=1): Not applicable.

MELTING POINT or RANGE: Not applicable.

BOILING POINT: Not applicable.

pH: Not applicable.

10. STABILITY and REACTIVITY

STABILITY: Stable.

DECOMPOSITION PRODUCTS: Products of thermal decomposition include carbon monoxide, carbon dioxide, ammonia and arsenic, copper and zinc compounds.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: This product is not compatible with strong oxidizers (e.g. peroxides, chlorates, perchlorates, nitrates, and permanganates). A vigorous reaction may occur at ambient temperatures, potentially generating sufficient heat to ignite when wood, as a cellulosic material, comes in contact with these types of oxidizing compounds.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Avoid contact with open flame and other sources of extreme high temperatures. Avoid contact with incompatible materials.

PART IV *Is there any other useful information about this material?*

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: There currently are no toxicological data for wood, or wood dust. The following toxicology information is for the components of the preservative solution that is applied to this wood product.

ARSENIC:

Cytogenetic Analysis-Mouse-Intraperitoneal 4 mg/kg/48 hours: intermittent

Cytogenetic Analysis-Mouse-Oral 280 mg/kg/8 weeks Mutation Research.

TDLo (Oral-Rat) = 605 µg/kg (35 weeks pregnant): Reproductive effects

TDLo(Oral-Rat) = 580 µg/kg (female 30 weeks pregnant): Teratogenic effects

TDLo (Oral-Man) = 76 mg/kg/12 years intermittent: Carcinogenic effects

TDLo (Implant-Rabbit, adult) = 75 mg/kg: Equivocal tumorigenic agent

TDLo (Oral-Man) = 7857 mg/kg/55 years: Gastrointestinal tract effects

LD₅₀ (Oral-Rat) = 763 mg/kg

ARSENIC (continued):

LD₅₀ (Intraperitoneal-Rat) = 13,390 µg/kg

LD₅₀ (Oral-Mouse) = 145 mg/kg

LD₅₀ (Intraperitoneal-Mouse) = 46,200 µg/kg

LDLo (Subcutaneous-Rabbit, adult) = 300 mg/kg

LDLo (Subcutaneous-Guinea Pig, adult) = 300 mg/kg

ZINC COMPOUNDS: Zinc compounds are variable in toxicity, but most are of generally low toxicity. Ingestion of some zinc salts can cause gastric distress, nausea, and vomiting.

COPPER COMPOUNDS: Copper compounds can irritate the skin and repeated skin exposure may lead to the development of allergy-like symptoms. Copper compounds can also be irritating to the eyes and tissues of the upper respiratory system.

11. TOXICOLOGICAL INFORMATION (Continued)

SUSPECTED CANCER AGENT: Studies have been conducted focusing on employees who routinely work with various wood products. The International Agency for Research on Cancer reports that sufficient evidence exists to indicate that exposure to wood dust from some hardwood species may lead to an increased risk of nasal/paranasal sinus cancer. The following are currently carcinogenic status for various types of wood dusts:

WOOD DUST: Beech and Oak: MAK-A1 (Capable of inducing malignant tumors as shown by experience with humans); NIOSH-X (Carcinogen defined with no further categorization); ACGIH TLV-A1 (Confirmed Human Carcinogen). Softwoods, Western Red Cedar: MAK-3 (Substances which cause concern that they could be carcinogenic for man, but which cannot be assessed conclusively because of lack of data.); NIOSH-X (Carcinogen defined with no further categorization). This 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 exposure to wood dust. **NOTE:** The ACGIH has submitted a Notice of Intended Change (NIC) to change the TLV carcinogenic status of many Wood Dusts. The following are the pending NICs: Birch, Mahogany, Teak and Walnut: ACGIH TLV-A2 (Suspected Human Carcinogen); Hardwoods & Softwoods, non-allergenic: ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen; Agents which cause concern that they could be carcinogenic to humans, but which cannot be conclusively assessed due to lack of data); Hardwoods & Softwoods, allergenic: ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen; Agents which cause concern that they could be carcinogenic to humans, but which cannot be conclusively assessed due to lack of data); Western Red Cedar: ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen; Agents which cause concern that they could be carcinogenic to humans, but which cannot be conclusively assessed due to lack of data)

In addition, ingredients of the preservative solution that is applied to the wood product are found on the following lists:

ARSENIC/ARSENIC COMPOUNDS: EPA-A (Human Carcinogen); IARC-1 (Carcinogenic to Humans); MAK-A1 (Capable of Inducing Malignant Tumors/Experience with Humans); NIOSH-X (Carcinogen); NTP-K (Known to be a Human Carcinogen); OSHA-X (Carcinogen); Cal-OSHA (Carcinogen); ACGIH TLV-A1 (Confirmed Human Carcinogen).

COPPER: EPA-D (Not Classifiable as to Human Carcinogenicity).

ZINC OXIDE: EPA-D (Not Classifiable as to Human Carcinogenicity).

The other components of this product are not found on the following lists: FEDERAL OSHA Z LIST, NTP, IARC, and CAL/OSHA and therefore are not considered to be, nor suspected to be, cancer-causing agents by these agencies.

SENSITIZATION TO THE PRODUCT: Arsenic compounds and copper, components of this product, may cause sensitization with repeated or prolonged use, including allergy-like symptoms in some individuals. In addition, evidence suggests that chronic exposure to many types of wood dusts may result in sensitization and subsequent allergic response. The ACGIH has recently submitted a Notice of Intended Change for nearly all wood dusts listed in their exposure guidance documents that will give these wood dusts status as sensitizers.

IRRITANCY OF PRODUCT: This product is slightly irritating to contaminated tissue.

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of this product and its components on the human reproductive system.

Mutagenicity: While no data exist for the product, it is not expected to cause any fetal toxicity problems related to mutagenicity.

Embryotoxicity: While no data exist for the product, it is not expected to cause any fetal toxicity problems related to embryotoxicity.

Teratogenicity: While no data exist for the product, it is not expected to cause any fetal toxicity problems related to teratogenicity. Animal studies indicate some experimental teratogenic effects for arsenic and zinc oxide (components of the preservative solution applied to the wood product) at relatively high doses.

Reproductive Toxicity: While no data exist for the product, it is not expected to have an adverse effect on the male or female reproductive system or to cause any fetal toxicity problems. Animal studies indicate some experimental reproductive effects for arsenic, zinc oxide and copper oxide (components of the preservative solution applied to the wood product) at high doses.

*A **mutagen** is a chemical, which causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An **embryotoxin** is a chemical, which causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A **teratogen** is a chemical, which causes damage to a developing fetus, but the damage does not propagate across generational lines. A **reproductive toxin** is any substance, which interferes in any way with the reproductive process.*

BIOLOGICAL EXPOSURE INDICES: Biological Exposure Indices (BEIs) have been determined for the components of the preservative solution applied to the wood product are as follows:

CHEMICAL DETERMINANT	SAMPLING TIME	BEI
ARSENIC AND SOLUBLE COMPOUNDS INCLUDING ARSINE • Inorganic arsenic metabolites in urine	• End of workweek	• 50 µg/g creatinine

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL STABILITY: This product is treated to prevent decomposition. Arsenic, copper, and zinc compounds released into the environment will be transported or made insoluble based on pH, soil type, and salinity. The following environmental data are available for the components of this product:

COPPER: Solubility: Insoluble. There is no evidence of any biotransformation for copper compounds. Copper is accumulated by all plants and animals. BCF Algae = 12; plants = 1,000; invertebrates = 1,000, fish = 667 and fish = 200 (Soluble copper salts).

ARSENIC: Solubility: 30/100 cc at 12.5°C. Arsenic accumulates in the body. The biological half-life for excretion of arsenic (in man) is 3 to 5 days. Microorganisms in sediments that contain arsenic convert arsenic to dimethyl arsine.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: Do not use treated wood under circumstances where the preservative may become a component of food or animal feed. Examples of such sites would be structures or containers for storing silage of food. Refer to Section 11 (Toxicological Information) for specific information regarding the effects of this product's components on test animals.

EFFECT OF CHEMICAL ON AQUATIC LIFE: There is currently no information available on this product's effects on aquatic life; however, it is anticipated that if large enough quantities of product dusts contaminate a water system, exposed aquatic life may experience adverse health effects. The following environmental data are available for components of this product:

COPPER: 6 mg/day is harmful to rats. 1 g/day can be fatal to dogs. 18 g to sheep was fatal to all test subjects. 500 mg/kg to chicks is the maximum toxic level. Copper is concentrated by plankton by 1000 or more. Copper may concentrate to toxic level in the food chain.

LC₅₀ (fathead minnows) = 0.14 ppm in hard water

LC₅₀ (bluegill) = 0.02 ppm in soft water

LC₅₀ (brook trout) = 0.09 ppm in soft water

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations.

EPA WASTE CODE: Wastes generated from this product may be required to be tested to determine if they meet the definition of a RCRA regulated waste under the Toxicity Characteristic Leaching Procedures. Refer to 40 CFR 161.4 a(9) for specific exclusions involving wood treated products.

14. TRANSPORTATION INFORMATION

THIS MATERIAL IS NOT HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Not applicable.

HAZARD CLASS NUMBER and DESCRIPTION: Not applicable.

UN IDENTIFICATION NUMBER: Not applicable.

PACKING GROUP: Not applicable.

DOT LABEL(S) REQUIRED: Not applicable.

EMERGENCY RESPONSE GUIDE NUMBER: Not applicable.

MARINE POLLUTANT: This product is not a marine pollutant under 49 CFR 172.101.

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is not considered as dangerous goods, per regulations of Transport Canada.

15. REGULATORY INFORMATION

NOTE: The regulatory information is provided on this Material Safety Data Sheet is for preservative solutions and is not applicable to preservative components contained in the treated wood. Chemical components of the treated wood are fixed into the wood and are not reportable under SARA or CERCLA.

ADDITIONAL U.S. REGULATIONS:

U.S. SARA REPORTING REQUIREMENTS: The components of the preservative solution for this product are subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act, as follows:

CHEMICAL COMPOUND	SARA 302 (40 CFR 355, Appendix A)	SARA 304 (40 CFR Table 302.4)	SARA 313 (40 CFR 372.65)
Arsenic Compounds	NO	YES	YES
Copper Compounds	NO	YES	YES
Zinc Compounds	NO	YES	YES

15. REGULATORY INFORMATION (Continued)

ADDITIONAL U.S. REGULATIONS (continued):

U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for this product. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lbs (4,540 kg) therefore applies, per 40 CFR 370.20.

U.S. TSCA INVENTORY STATUS: The chemicals in this product are listed on the TSCA Inventory.

CERCLA REPORTABLE QUANTITY (RQ): Arsenic = 1 pound (0.454 kg); Copper = 5000 pounds (2270 kg); Zinc = 1000 pounds (454 kg)

U.S. STATE REGULATORY INFORMATION: Chemicals in this product are covered under specific State regulations, as denoted below:

Designated Toxic and Hazardous Substances: Copper (Fume, Dust, and Mist).

California - Permissible Exposure Limits for Chemical Contaminants: Arsenic Compounds, Copper (Salts, Dusts, Mist).

Florida - Substance List: Arsenic.

Illinois - Toxic Substance List: Arsenic Compounds, Copper Compounds.

Kansas - Section 302/313 List: Copper and Compounds.

Massachusetts - Substance List: Arsenic Compounds.

Minnesota - List of Hazardous Substances: Arsenic Compounds, Copper (Dusts and Mists).

Michigan Critical Materials Register: Arsenic, Copper, and Zinc.

Missouri - Employer Information/Toxic Substance List: Arsenic Acid, Zinc Oxide.

New Jersey - Right to Know Hazardous Substance List: Arsenic Acid, Inorganic Copper Compounds, and Zinc Oxide.

North Dakota - List of Hazardous Chemicals, Reportable Quantities: Arsenic, Copper and Compounds, Zinc and Compounds.

Pennsylvania - Hazardous Substance List: Arsenic Compounds, Copper, and Zinc Oxide.

Rhode Island - Hazardous Substance List: Zinc Oxide.

Texas - Hazardous Substance List: None.

West Virginia - Hazardous Substance List: None.

Wisconsin - Toxic and Hazardous Substances: None.

CALIFORNIA PROPOSITION 65: Inorganic Arsenic Compounds are on the California Proposition 65 lists. **WARNING:** This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

ANSI LABELING [Z129.1] (Precautionary Statements): **WARNING!** ARSENIC TREATED WOOD. ACUTE AND CHRONIC HAZARDS ASSOCIATED WITH THIS PRODUCT ARE SIMILAR TO THE HAZARDS ASSOCIATED WITH DUSTS GENERATED FROM UNTREATED WOOD PRODUCTS. DUSTS OF THIS PRODUCT CAN IRRITATE THE SKIN, EYES, NOSE, THROAT, OR OTHER TISSUES OF THE RESPIRATORY SYSTEM. DUSTS CAN ALSO SCRATCH THE EYES, AND SPLINTERS OF THIS PRODUCT CAN PUNCTURE THE SKIN. IN SENSITIVE INDIVIDUALS, WOOD DUST AND RESIDUE FROM ARSENIC MAY CAUSE SENSITIZATION AND SUBSEQUENT ALLERGIC REACTION. CANCER HAZARD. CONTAINS MATERIAL WHICH CAN CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM. Avoid contact with skin and eyes. Avoid breathing dust. Wash thoroughly after handling. Keep away from open flame. Wear gloves, goggles, and appropriate body protection. **FIRST AID:** In case of contact, immediately flush skin and/or eyes with plenty of water. If inhaled, remove to fresh air. Get medical attention if irritation develops or persists. If not breathing, give artificial respiration. If swallowed, do not induce vomiting. Get medical attention. **IN CASE OF FIRE:** Use, water spray, foam, dry chemical, or CO₂. **IN CASE OF SPILL:** This product cannot spill or leak. If wood dust or chips are released, sweep-up or vacuum dust or chips. Use NIOSH approved dust mask, if particularly dusty. Consult MSDS for additional information.

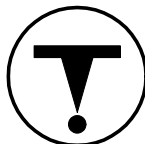
ADDITIONAL CANADIAN REGULATIONS:

CANADIAN DSL/NDL INVENTORY STATUS: The components of this product are listed on the DSL Inventory.

OTHER CANADIAN REGULATIONS: This product may be regulated under the Canadian Environmental Protection Act.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITY SUBSTANCES LISTS: Inorganic Arsenic Compounds are on the Priority Substance List # 1 (PSL) and is a Substance Considered as "TOXIC" under Section 11 of CEPA.

CANADIAN WHMIS SYMBOL: (For Dusts) **D2A**; Materials Causing Other Toxic Effects (Chronic Effects - Sensitization & Possible Carcinogenic Effects)



16. OTHER INFORMATION

PREPARED BY:

CHEMICAL SAFETY ASSOCIATES, Inc.
9163 Chesapeake Drive, San Diego, CA 92123-1002
858/565-0302

Information contained in this MSDS refers only to the specific material designated and does not relate to any process or to use with any other materials. This information is furnished free of charge and is based on data believed to be reliable as of the date hereof. It is intended for use by persons possessing technical knowledge at their own discretion and risk. Since actual use is beyond our control, no guarantee, expressed or implied, and no liability is assumed by J.H. Baxter in conjunction with the use of this information. Nothing herein is to be construed as a recommendation to infringe any patents.

DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these, which are commonly used, include the following:

CAS #: This is the Chemical Abstract Service Number, which uniquely identifies each constituent. It is used for computer-related searching.

EXPOSURE LIMITS IN AIR:

ACGIH - American Conference of Governmental Industrial Hygienists, a professional association that establishes exposure limits.

TLV - Threshold Limit Value - an airborne concentration of a substance which represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour **Time Weighted Average (TWA)**, the 15-minute **Short Term Exposure Limit**, and the instantaneous **Ceiling Level**. Skin absorption effects must also be considered.

OSHA - U.S. Occupational Safety and Health Administration.

PEL - Permissible Exposure Limit - This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL which was vacated by Court Order.

IDLH - Immediately Dangerous to Life and Health - This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury. **The DFG - MAK** is the Republic of Germany's Maximum Exposure Level, similar to the U.S. PEL. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (**OSHA**). NIOSH issues exposure guidelines called **Recommended Exposure Levels (RELs)**. When no exposure guidelines are established, an entry of **NE** is made for reference.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the **National Fire Protection Association (NFPA)**. **LEL** - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. **UEL** - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION:

Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: **LD₅₀** - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **LC₅₀** - Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm** concentration expressed in parts of material per million parts of air or water; **mg/m³** concentration expressed in weight of substance per volume of air; **mg/kg** quantity of material, by weight, administered to a test subject, based on their body weight in kg. Data from several sources are used to evaluate the cancer-causing potential of the material. The sources are: **IARC** - the International Agency for Research on Cancer; **NTP** - the National Toxicology Program, **RTECS** - the Registry of Toxic Effects of Chemical Substances, **OSHA** and **CAL/OSHA**. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. Other measures of toxicity include **TDLo**, the lowest dose to cause a symptom and **TCLo** the lowest concentration to cause a symptom; **TD₀₁**, **LDLo**, and **LDo**, or **TC**, **TC₀₁**, **LCLo**, and **LCo**, the lowest dose (or concentration) to cause death. **BEI** - Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

REGULATORY INFORMATION:

This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **WHMIS** is the Canadian Workplace Hazardous Materials Information System. **DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively. Other acronyms used are: **Superfund Amendments and Reauthorization Act (SARA)**; the **Toxic Substance Control Act (TSCA)**; Marine Pollutant status according to the **DOT**; California's Safe Drinking Water Act (**Proposition 65**); the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund)**; and various state regulations. This section also includes information on the precautionary warnings which appear on the material's package label.