KOPPERS

SAFETY DATA SHEET

PRODUCT NAME: **Chromated Copper Arsenate (CCA) Pressure Treated Wood**

1. PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURED BY:
Koppers Utility & Industrial Products
P.O. Box 1124
Orangeburg, SC 29116
(803) 534-7467

DESCRIPTION/USE: Restricted Use Treated Wood Products
EMERGENCY NUMBER: 800-424-9300 (CHEMTREC)
SYNONYMS: CCA Treated Materials with Mold Inhibitor, CCA Treated Materials with oil or polymer, CCA Treated Poles, Piles, Posts, Lumber

2. HAZARDS IDENTIFICATION



DANGER!

Treated and untreated wood dust are classified as: carcinogenic, possible respiratory and skin sensitizer.

If mixed with air in the presence of an ignition source, *sawing, sanding or machining* material may generate a dust that could be a potential explosion hazard.



	Hazard Statements	Category
Physical Hazards:	None	
Skin Irritation:	Causes mild skin irritation	3
Eye Irritation:	Treated and untreated wood dust causes eye irritation	2B
Respiratory Sensitization:	Treated and untreated wood dust may cause allergy or asthma symptoms or breathing difficulties if inhaled	1
Skin Sensitization:	May cause an allergic skin reaction due to prolonged and/or repeated contact with treated or untreated wood dust. *(Various species of untreated wood dust can elicit allergic type skin irritation in sensitized persons.)*	1
Carcinogenicity:	May cause cancer due to long term inhalation of treated or untreated wood dust above threshold limits	1A
Specific Target Organ Toxicity (Single Exposure):	May cause respiratory irritation	3

Precautionary Statements - Prevention

- Do not cut or machine wood (generate wood dust) until all safety precautions have been read and understood.
- Wear protective gloves, long sleeve shirt and pants when handling treated or untreated wood.
- Wash face, hands and any exposed skin thoroughly after handling and before eating, drinking or using the restroom
- Contaminated work clothing should not be allowed out of the workplace
- Cut or machine treated/untreated wood only outdoors or in a well-ventilated area
- Avoid breathing dust when cutting or machining wood
- In case of inadequate ventilation and levels exceed the recommended exposure limits, wear a NIOSH approved P95 or better particulate filter respirator

2. HAZARDS IDENTIFICATION CONT'D

Precautionary Statements - Response

- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists get medical attention.
- IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms or feeling unwell, call physician or Poison Control Center
- IF ON SKIN: Wash with plenty of water
- If skin irritation or rash occurs, get medical attention.
- IF exposed or concerned: Get medical attention.
- Take off contaminated clothing and wash it before reuse.

Precautionary Statements – Storage

- None

Precautionary Statements – Disposal

- Dispose of material in accordance with local, state and federal regulations

Other

- If mixed with air in the presence of an ignition source, *sawing, sanding or machining* wood may form explosible dust-air mixture if dispersed
- Acute Target Organ Toxicity: Skin, Eyes, Respiratory tract
- Chronic Target Organ Toxicity: Kidney, Liver, Lungs, Lymphatic System, Respiratory system
- Causes mild skin irritation (Prolonged and/or repeated contact with treated or untreated wood dust. *Various species of untreated wood dust can elicit allergic type skin irritation in sensitized persons.)*
- *Formaldehyde is a by-product of the untreated plywood or glued/laminated article and not part of the treatment. This information only applies to these products.*
- Odor: No odor to a woody smell Physical State: solid

Immediate (Acute) Health Effects

Inhalation:	Airborne treated or untreated wood dust may cause nose, throat or lung irritation. Avoid breathing dust when cutting or machining wood. Wear respiratory protection if needed.
Eye Contact:	Treated or untreated wood dust may cause eye irritation. Wear Protective eyewear.
Skin Contact:	Handling wood may result in skin exposure to splinters. Wear protective gloves and clothing.
Ingestion:	Not anticipated to occur. A single ingestion of a very large dose of treated wood dust may require immediate medical attention. (NOTE: *One ounce of treated wood dust per 10 pounds of body weight ingested may cause acute arsenic intoxication.)*
Acute Target Organ Toxicity:	Skin, Eyes, Respiratory tract

Prolonged (Chronic) Health Effects

Carcinogenicity:	**Carcinogenicity Data:** IARC has classified untreated hardwood and hardwood/softwood mix wood dust as a Group 1 human carcinogen. The wood dust classification is based primarily on IARC's evaluation of increased risk in the occurrence of adenocarcinomas of the nasal cavities and para-nasal sinuses associated with occupational exposures to untreated wood dust. NTP has classified all untreated wood dust as a carcinogen. **Carcinogenic status:** IARC, the NTP, OSHA and California Proposition 65 do not consistently distinguish among arsenic or chrome species but list inorganic arsenic and chromium and certain chromium compounds as human carcinogens.

2. HAZARDS IDENTIFICATION CONT'D

Prolonged (Chronic) Health Effects Cont'd

Chronic Wood Dust Effects: Various species of untreated wood dust can elicit allergic respiratory and skin responses in sensitized persons.

Chronic Target Organ Toxicity: Kidney, Liver, Lungs, Lymphatic System, Respiratory system

3. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS	CAS #	PERCENT[1]
Chrome III (as Cr)	7440-47-3	<3
Chrome VI[1]	18540-29-9	Trace
Arsenic V (as As)	7440-38-2	<3
Copper Oxide (as Cu)	7440-50-8	<3
Wood	N/A	>90
Formaldehyde[2] *(by-product of the untreated plywood article)*	50-00-0	<0.1

Notes: Chromic Acid, Arsenic Acid, and Copper oxide are present in the preservative used to treat this wood. Actual retention may vary due to differences in wood stock and treatment retention levels.

[1]Although the Chrome VI present in the Chromic Acid used to treat this wood is reduced to Chrome III during the treating and fixation processes, trace amounts Chrome VI may be present.

[2]Formaldehyde is a by-product of the untreated plywood or glued/laminated article and not part of the treatment. This information only applies to these products.

4. FIRST AID MEASURES

Inhalation: Remove individual to fresh air. Seek medical attention if breathing becomes difficult or if respiratory irritation develops or persists. If not breathing, give artificial respiration and call for medical assistance.

Skin Contact: Wash skin with soap and water. Take off all contaminated clothing. Seek medical advice or attention if irritation persists.

Eye Contact: Flush eyes with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eyes open while flushing. Seek medical advice or attention if irritation develops. DO NOT RUB.

Ingestion: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If conscious rinse the individual's mouth out with water. Seek medical advice or attention immediately. (NOTE: *One ounce of treated wood dust per 10 pounds of body weight ingested may cause acute arsenic intoxication.)*

See Section 11 for more toxicological information. Note to Physicians: May cause sensitization in susceptible persons. Treat symptomatically.

5. FIRE FIGHTING MEASURES

Flammability Summary:	Product is not known to be flammable, combustible, pyrophoric or explosive.
Fire / Explosion Hazards:	If the product is involved in a fire, toxic smokes could develop. Dust may be a potential explosion hazard if mixed with air in the presence of an ignition source.
Extinguishing Media:	Water spray, Carbon Dioxide, regular dry chemical or foam.
Fire Fighting Instructions:	In case of fire, use normal fire-fighting equipment and personal protective equipment including a NIOSH approved self-contained breathing apparatus (SCBA, pressure-demand).
Hazardous Combustion Products:	During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Combustion products may include smoke, oxides of carbon, nitrogen and copper. If the fire is intense enough, some arsenic trioxide may be released into the smoke. The metals will remain in the ash if the wood is burned.

6. ACCIDENTAL RELEASE MEASURES

Personal Protection for Emergency Situations:	No extra protection required beyond that listed in Section 8. In case of fire, use normal fire-fighting equipment and personal protective equipment including a NIOSH approved self-contained breathing apparatus (SCBA, pressure-demand).
Spill or Leak Procedures:	Not applicable
Waste Disposal:	See Section 13.

7. HANDLING AND STORAGE

Handling:	DO NOT BURN TREATED WOOD. Whenever possible, sawing or machining treated or untreated wood should be performed outdoors to avoid accumulations of airborne wood dust. Do not use treated chips or sawdust as mulch. Wash hands thoroughly before eating, drinking, using tobacco products, and/or using restrooms. Due to the explosive potential of dust when suspended in air, precautions should be taken when sawing, sanding, or machining wood or wood products to prevent sparks or other ignition sources. Refer to NFPA 654, *Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids.*
Storage:	Keep away from unguarded flame, sparks, and heat sources. Protect from physical damage. Maintain good housekeeping.
Incompatible Materials:	Oxidizers, strong acids and bases

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CHEMICAL NAME	EXPOSURE LIMITS		
	ACGIH-TLV	OSHA-PEL	NIOSH
Chrome III (as Cr)	0.5 mg/m^3	0.5 mg/m^3	0.5 mg/m^3
Chrome VI[1]	0.01 mg/m^3 (as Cr)	0.005 mg/m^3 (as CrO3)	0.0002 mg/m^3 (Cr(VI))
Arsenic (As)	0.01 mg/m^3	0.01 mg/m^3	0.002 mg/m^3 (15 min) 5 mg/m^3 IDLH
Copper Oxide (Cu dusts/mists)	1.0 mg/m^3	1.0 mg/m^3	1.0 mg/m^3
Wood Dust[2]	1.0 mg/m^3 inhalable fraction 0.5 mg/m^3 Inhalable fraction (Western Red Cedar)	15 mg/m^3 total dust 5.0 mg/m^3 respirable fraction	1 mg/m^3
Formaldehyde[3]	0.3 ppm (Ceiling)	0.75 ppm TWA 2 ppm STEL	0.016 ppm 0.1 ppm (Ceiling)

[1]Although the Chrome VI present in the Chromic Acid used to treat this wood is reduced to Chrome III during the treating and fixation processes, trace amounts of Chrome VI may be present. Due to this, OSHA's Hexavalent Chromium Rule (29 CFR 1910.1026) may apply. The manufacturer of this treated wood has monitoring data indicating levels will be below established limits when used under usual conditions. If unusual circumstances exist, monitoring may be required.
[2]A state-run OSHA program may have more stringent limits for wood dust and/or PNOR.
[3]Formaldehyde is a by-product of the untreated plywood or glued/laminated article and not part of the treatment. This information only applies to these products. IDLH means Immediately Dangerous to Life or Health STEL means Short term exposure limit

Protective Equipment for Routine Use of Product

Respiratory: Wear a NIOSH approved P95 or better particulate filter respirator if wood dust levels exceed the recommended exposure limits. *FOR PLYWOOD OR GLUE/LAMINATED ARTICLES ONLY: If formaldehyde vapor levels exceed recommended exposure limits, wear a NIOSH approved respirator. Formaldehyde is a by-product of the untreated plywood or glued/laminated article and not the result of this treatment.*

Skin Protection : Wear leather gloves, long sleeve shirt, pants, and steel-toed shoes when handling treated or untreated wood.

Eye Protection: Use safety glasses with side shields or debris goggles when sawing or cutting material.

General: Due to the explosive potential of dust when suspended in air, precautions should be taken when sawing, sanding, or machining wood or wood products to prevent sparks or other ignition sources. Refer to NFPA 654, *Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids.*

Wash hands thoroughly before eating, drinking, using tobacco products, and/or using restrooms. Keep away from food, drink and animal feed stuffs. Regular cleaning of equipment, area and clothing is recommended.

Whenever possible, sawing or machining treated or untreated wood should be performed outdoors or in well ventilated areas to avoid accumulations of airborne wood dust. Ventilation should be sufficient to maintain exposures below the recommended exposure limits.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid lumber, poles, piling or posts	**Conditions to Avoid:**	Sparks, open flame
Color:	Light to dark green	**Chemical Incompatibility:**	Strong acids, bases, oxidizers
Oxidizing:	No Oxidizing Properties	**Hazardous decomposition:**	During a fire, irritating and toxic gases may be generated

10. STABILITY AND REACTIVITY

Stability and Reactivity Summary:	Stable under normal conditions. Product will not undergo hazardous reactions during normal processing.
Conditions to Avoid:	Sparks, open flame, other ignition sources, and elevated temperatures., Contact with incompatible substances
Chemical Incompatibility:	strong acids, oxidizers
Hazardous Decomposition Products:	During a fire, irritating and toxic gases may be generated by thermal decomposition or combustion. If the fire is intense enough, some arsenic trioxide may be released into the smoke. The metals will remain in the ash if the wood is burned.

11. TOXICOLOGICAL INFORMATION

Inhalation:	Airborne treated or untreated wood dust may cause nose, throat or lung irritation. (Various species of untreated wood dust can elicit allergic respiratory response in sensitized persons.)
Eye Contact:	Treated or untreated wood dust may cause eye irritation.
Skin Contact:	Prolonged and/or repeated contact with treated or untreated wood dust may result in skin irritation. (Various species of untreated wood dust can elicit allergic type skin irritation in sensitized persons.)
Ingestion:	Not anticipated to occur. Harmful if swallowed. (NOTE: One ounce of treated wood dust per 10 pounds of body weight ingested may cause acute arsenic intoxication.)
Target Organ Effects:	Eyes, kidney, liver, lungs, Lymphatic System, Respiratory system, skin.

Carcinogenic status: IARC, the NTP, OSHA and California Proposition 65 do not consistently distinguish among arsenic or chrome species but list inorganic arsenic and chromium and certain chromium compounds as human carcinogens. Cancers in humans have followed from long term consumption of Fowler's Solution, a medicinal trivalent arsenical; inhalations and skin contact with inorganic trivalent arsenical sheep-dust; the combined inhalation of arsenic trioxide (trivalent arsenical), sulfur dioxide, and other particulates from ore smelting in arsenic trioxide production; and occupational exposure to nonwater-soluble hexavalent chromium.

Carcinogenicity Data: IARC has classified untreated hardwood and hardwood/softwood mix wood dust as a Group I human carcinogen. The wood dust classification is based primarily on IARC's evaluation of increased risk in the occurrence of adenocarcinomas of the nasal cavities and para-nasal sinuses associated with occupational exposures to untreated wood dust. NTP has classified all untreated wood dust as a carcinogen.

OSHA (Occupational Safety and Health Administration) IARC (International Agency for Research on Cancer) NTP (National Toxicology Program)

11. TOXICOLOGICAL INFORMATION CONT'D

Study Abstracts: In Hawaii, where over 45,000 homes have been built almost entirely of CCA-treated wood, a study was conducted by the Pacific Biomedical Center of the University of Hawaii (the Budy-Rashad study) in 1977 to determine any possible effect on the health of carpenters. The study concluded that exposure to CCA-treated sawdust is not associated with increased risk of total cancer, lung cancer or lymphatic cancer and shows that excess respiratory cancer mortality was not observed in the carpenters.

A study was conducted by the University of Alabama to evaluate the teratogenicity of CCA-impregnated sawdust when exposed to rabbits and mice. Sawdust from CCA-treated wood has been shown *not* to cause chromosome damage or teratogenic effects in mice fed sawdust nor to cause birth defects in rabbits receiving sawdust applied to their skin.

According to a Human Health Risk Assessment conducted by Gradient Corporation in August 2004, potential health risks to workers and residents do not exceed U.S. Environmental Protection Agency acceptable risk limits. Although the arsenic complex (the predominate chemical form of arsenic in CCA-treated wood is chromium III arsenate) is present on the surface of CCA-treated utility poles and in surrounding soils, the chromium III arsenate in these poles is chemically bonded to the wood and is not readily absorbed in the body. This risk assessment evaluated exposures to chromium III arsenate on the surface of CCA treated utility poles and in soil adjacent to the poles. Exposure was evaluated for both hand to mouth contact and skin contact for a child resident age 2-6 and an adult utility pole worker. The assessment results also indicate that the amount of chromium III arsenate complex potentially taken into the body from exposures to CCA-treated utility poles and adjacent soils for a child resident is approximately 8 fold less than the intake of naturally occurring inorganic arsenic in food and drinking water at the new federal drinking water standard for arsenic. An adult worker is exposed to over 24 fold less chromium III arsenate complex associated with CCA-treated utility poles, compared to intake of inorganic arsenic from food and drinking water.

12. ECOLOGICAL INFORMATION

Aquatic Life: Specific CCA treated products are approved for usage in water environments. Follow *American Wood Preserving Association (AWPA) standards* along with Federal, State, and Local requirements for water environment applications. Utilize the book *Managing Treated wood in Aquatic Environments* through the Forest Products Society to assist in proper handling of treated materials in aquatic environments.

Study Abstracts: A technical paper published in the Forest Products Journal (September, 1974) by Levi, Huisingh and Nesbitt described a study conducted to determine if CCA wood preservative in grapevine support posts might be absorbed by the vines, leaves and/or grapes. This study concluded that "... CCA preservatives are bound in wood, are not readily leached and are not concentrated in plants growing close to the treated wood."

The Springborn Laboratories Environmental Sciences Division in 1993 conducted a sediment exposure study using leachate from CCA treated and untreated marine pilings and exposing Ampelisca abdita for a period of 10 days. Survival of the organisms during the 10-day exposure period was the biological endpoint used to establish the effects of exposure. Results indicated that leachate from treated pilings had no adverse effect on organism survival. It was concluded that the primary constituents of the CCA-treated wood piling were not present in the leachate at concentrations which would adversely affect the survival of the organisms.

12. ECOLOGICAL INFORMATION CONT'D

Testing has been conducted to evaluate the use of treated wood in raised vegetable gardens. Vegetables harvested from gardens in raised bed structures built of CCA-treated wood were compared with vegetables grown in untreated raised bed structures and with vegetables purchased at a local grocery store. Testing revealed that all vegetables contained minuscule amounts of each element in CCA. In some cases, the levels of metals were actually higher in the vegetables grown in untreated bins, and in one case the store-purchased vegetable had the highest level of arsenic. The report concluded that there was "no uptake of the metal constituents into the vegetables."

The Food and Drug Administration's (FDA) "Market Basket Survey" has consistently shown that arsenic in tomatoes is below the analytical level of detection despite the increased usage of arsenically-treated wood for tomato stakes. Moreover, even though CCA-treated wood has been increasingly used in applications such as cattle bunks and stalls and poultry brooders for the last ten years, the FDA survey has shown a decrease in the arsenic content of dairy, meat and poultry products.

A study funded in part by the National Oceanic and Atmospheric Administration (NOAA) and prepared by the Marine Resources Division of the South Carolina Department of Natural Resources in 1995 measured the impact of wood preservative leachate from docks in an estuarine environment. Copper, chromium, arsenic, and polynuclear aromatic hydrocarbons (PAHs) were measured in composite samples of sediments and naturally occurring oyster populations from creeks with high densities of docks, and from nearby reference creeks with no docks. Sediments from all but one site had metal and total PAH concentrations which were below levels reported to cause biological effects, and the oysters showed no significant difference in their physiological condition. Bioassays were also conducted on four common estuarine species and hatchery-reared oysters. The results suggest that wood preservative leachates from dock pilings have no acutely toxic effects on these common species, nor do they affect the survival or growth of juvenile oysters over a six-week period. In some cases, metal leachates may accumulate in sediments and oysters immediately adjacent to pilings, but do not appear to become concentrated in sediments or oysters elsewhere in the same creeks.

13. DISPOSAL CONSIDERATIONS

CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THIS MATERIAL. THE USER OF THE MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES.

Disposal Guidance: DO NOT BURN TREATED WOOD. Do not use pressure treated chips or sawdust as mulch. Dispose of in accordance with local, state and federal regulations. Under RCRA, it is the responsibility of the user to determine at the time of disposal whether the product meets RCRA criteria for hazardous waste. This product is exempted as a hazardous waste under any sections of the RCRA regulations as long as the product is being utilized for its intended end use as stated in EPA 40 CFR 261.4 (b) (9). Check local and state regulations, as they may be more stringent.

14. TRANSPORT INFORMATION

Not regulated as a hazardous material under US DOT for land transportation, IMDG for water transportation or IATA for air transportation.

15. REGULATORY INFORMATION

OSHA (29 CFR 1910.1200): This product is regulated under the Hazard Communication Standard.
SARA 311/312 (40 CFR 370.2): Unless exempted, this product may require reporting. It is the user's responsibility to determine applicability of reporting requirements and exemptions.
SARA 313 (40 CFR 372): Unless exempted, this product may require a Toxic Release Inventory reporting for individual material uses of 25,000 pounds or more. Reporting is under Copper Compounds, Chromium Compounds and Arsenic Compounds. It is the user's responsibility to determine applicability of reporting requirements and exemptions.
Clean Air Act (CAA): None established under any CAA sections unless manufacturing/generating particulate matter.
Clean Water Act (CWA): this product contains chrome, copper, and arsenic which are regulated pollutants.
CERCLA: This material, as supplied, contains regulated hazardous substances (chromium and arsenic). There may be specific reporting requirements at the local, regional, state or federal level pertaining to releases of this material.
California Proposition 65: WARNING: This product contains chemicals (Arsenic, Formaldehyde, wood dust) known to the State of California to cause cancer. *(NOTE: Formaldehyde is a by-product of the untreated plywood or glued/laminated article and not part of the treatment. Up to 0.1% may be in the plywood product.)* WARNING: Under California's Proposition 65, hexavalent chromium is known to cause cancer, birth defects or other reproductive harm (male and female). *Although the Chrome VI present in the Chromic Acid used to treat this wood is reduced to Chrome III during the treating and fixation processes, some Chrome VI may be present.* These statements issued in accordance with California Proposition 65).

16. OTHER INFORMATION

Hazardous Materials Identification System (HMIS)/ National Fire Protection Association Classifications (NFPA)				
Hazard Ratings :	Health	Flammability	Physical / Instability	PPE/ Special hazard.
HMIS	2	1	0	
NFPA	2	1	0	

THIS SAFETY DATA SHEET (SDS) IS DESIGNED ONLY AS A GUIDANCE FOR SAFE HANDLING AND USE FOR PERSONS WORKING WITH OR EXPOSED TO THIS PRODUCT. THIS SDS IS NOT TO BE CONSIDERED A WARRANTY OR QUALITY SPECIFICATION. THE MANUFACTURER BELIEVES THIS INFORMATION TO BE RELIABLE AND CURRENT AS OF THE DATE OF PUBLICATION BUT, MAKES NO WARRANTY THAT IT IS.

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