



MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

KOPPERS INC.
436 SEVENTH AVENUE
PITTSBURGH, PA 15219-1800

MEDICAL EMERGENCIES: 877-737-9047
MEDICAL EMERGENCIES OUTSIDE U.S.A.: 651-632-9269
TECHNICAL ASSISTANCE: 412-227-2001
MSDS REQUESTS: 866-852-5239
CHEMTREC ASSISTANCE: 800-424-9300
CANUTEC: 613-996-6666

MSDS NUMBER: 00228329

SUBSTANCE: CHROMATED COPPER ARSENATE (CCA) PRESSURE TREATED WOOD

PRODUCT USE: Industrial wood products; specifically utility and building poles, foundation and marine pilings.

PRODUCT DESCRIPTION: The chemical form of CCA present in the treated wood product is not determined due to chemical reactions between the preservative solution and the wood cellulose during the process commonly referred to as fixation. Therefore, the CAS numbers provided are for component metals.

REVISION DATE: Jul 17 2006

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: WOOD DUST, HARDWOODS
CAS NUMBER: Not assigned.
PERCENTAGE: 0-98.5

COMPONENT: WOOD DUST, SOFTWOODS
CAS NUMBER: Not assigned.
PERCENTAGE: 0-98.5

COMPONENT: CHROMIUM (III)
CAS NUMBER: 7440-47-3
PERCENTAGE: 1.0-3.1

COMPONENT: ARSENIC (V)
CAS NUMBER: 7440-38-2
PERCENTAGE: 0.7-2.2

COMPONENT: COPPER
CAS NUMBER: 7440-50-8
PERCENTAGE: 0.4-1.2

3. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=2 FIRE=1 REACTIVITY=0



EMERGENCY OVERVIEW:

COLOR: light-colored, green

PHYSICAL FORM: Pressure treated utility and building poles and foundation pilings - treated at a retention level of 0.6-0.8 lbs/ft³ and a wood density of 38-40 lbs/ft³. Pressure treated marine pilings - treated at a retention level of 2.5 lbs/ft³ and a wood density of 38-40 lbs/ft³. Actual retention level dependent on wood stock, moisture levels, and customer specifications.

ODOR: odorless

SIGNAL WORD: WARNING!

MAJOR HEALTH HAZARDS: respiratory tract irritation, skin irritation, eye irritation, allergic reactions, skin cancer, nasal cancer, lung cancer

PHYSICAL HAZARDS: Dust/air mixtures may ignite or explode.

PRECAUTIONARY STATEMENTS: Avoid breathing dust. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Wash thoroughly after handling. Protective clothing must be changed when it shows signs of contamination. Observe good hygiene and safety practices when handling this product. There is an EPA approved Consumer Information Sheet (CIS) available for this product, do not use this product until the CIS and MSDS have been read and understood.

POTENTIAL HEALTH EFFECTS:

INHALATION:

SHORT TERM EXPOSURE: CCA may cause irritation, difficulty breathing and same effects as reported in short term ingestion. Wood dust may cause irritation and allergic reactions.

LONG TERM EXPOSURE: CCA may cause skin cancer, lung cancer and same effects as reported in short term ingestion. Wood dust may cause irritation, allergic reactions, nosebleed, nausea, vomiting, loss of appetite, chest pain, difficulty breathing, headache, drowsiness, dilated pupils, visual disturbances, irregular heartbeat, lung damage, liver damage, kidney damage, and nasal/sinus cancer.

SKIN CONTACT:

SHORT TERM EXPOSURE: CCA may cause irritation and allergic reactions. Wood dust may cause irritation, allergic reactions, skin disorders, difficulty breathing, irregular heartbeat, headache, visual disturbances and kidney damage.

LONG TERM EXPOSURE: CCA may cause irritation, allergic reactions, skin disorders, and skin cancer. Wood dust may cause irritation, allergic reactions, and skin disorders.

EYE CONTACT:

SHORT TERM EXPOSURE: CCA may cause irritation. Wood dust may cause irritation and eye damage.

LONG TERM EXPOSURE: CCA may cause irritation. Wood dust may cause irritation and eye damage.

INGESTION:

SHORT TERM EXPOSURE: CCA may cause systemic poisoning, skin disorders, changes in body temperature, changes in blood pressure, nausea, vomiting, diarrhea, stomach pain, chest pain, headache, dizziness, pain in extremities, blood disorders, kidney damage, liver damage and nerve damage. Wood dust may cause nausea, vomiting, loss of appetite, difficulty breathing, irregular heartbeat, and drowsiness.

LONG TERM EXPOSURE: CCA may cause same effects as reported in short term exposure, nosebleed, skin cancer, bladder cancer, and possibly other internal cancers. No information is available for wood dust.

4. FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

SKIN CONTACT: Wash skin with soap and water for at least 15 minutes, or use a waterless handcleaner, while removing contaminated clothing and shoes. DO NOT rub until skin is free of sawdust and preservative material. Get immediate medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

EYE CONTACT: Flush eyes with plenty of water for at least 15 minutes. DO NOT not rub eyes. Then get immediate medical attention.

INGESTION: If a large amount is swallowed, get medical attention.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Dust/air mixtures may ignite or explode. During fire conditions, vapors and decomposition products may be released, forming flammable/explosive mixtures in air. Contact with heat may generate toxic and/or flammable gases.

EXTINGUISHING MEDIA: carbon dioxide, regular dry chemical, regular foam, water spray

FIRE FIGHTING: Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Use extinguishing agents appropriate for surrounding fire.

FIRE FIGHTING PROTECTIVE EQUIPMENT: Full fire fighting turn-out gear (bunker gear).

SENSITIVITY TO MECHANICAL IMPACT: No

SENSITIVITY TO STATIC DISCHARGE: Not available

FLASH POINT: Not applicable

6. ACCIDENTAL RELEASE MEASURES

WATER RELEASE:

Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65).

OCCUPATIONAL RELEASE:

Collect debris and used material in appropriate container for disposal. In Canada, report releases to provincial authorities, municipal authorities, or both, as required.

7. HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Avoid generating dust. Keep separated from incompatible substances.

HANDLING: Use methods to minimize dust. Avoid frequent or prolonged inhalation of sawdust from treated wood. When sawing and machining treated wood, wear a dust mask. When power-sawing and machining, wear

goggles to protect eyes from flying particles. Whenever possible, these operations should be performed outdoors to avoid indoor accumulations of airborne sawdust from treated wood. Avoid frequent or prolonged skin contact with CCA-treated wood; when handling the treated wood, wear long-sleeved shirts and long pants and use gloves impervious to the chemicals (for example, gloves that are vinyl-coated). After working with the wood, and before eating, drinking and use of tobacco products, wash exposed areas thoroughly. Remove and launder contaminated clothing separately from other laundry before reuse.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

CHROMATED COPPER ARSENATE (CCA) PRESSURE TREATED WOOD:

The chemical form of CCA present in the treated wood product is not determined due to chemical reactions between the preservative solution and the wood cellulose during the process commonly referred to as fixation. If necessary, see applicable exposure limits.

Exposure to wood dust would not be expected under normal use conditions. If handling or use patterns associated with CCA treated wood involve the use of a power saw, sander, drill or any tool or activity resulting in the generation of airborne particulate the following wood dust exposure limits should be observed and appropriate steps taken to minimize exposure.

HARD WOOD DUST:

1 mg/m³ ACGIH TWA (inhalable fraction)
1 mg/m³ NIOSH recommended TWA 10 hour(s)

SOFT WOOD DUST:

0.5 mg/m³ ACGIH TWA (inhalable fraction) (sensitizer) (western red cedar)
1 mg/m³ ACGIH TWA (inhalable fraction) (others)
1 mg/m³ NIOSH recommended TWA 10 hour(s)

CHROMIUM:

1 mg(Cr)/m³ OSHA TWA (metal)
0.5 mg/m³ ACGIH TWA (metal)
0.5 mg(Cr)/m³ NIOSH recommended TWA 8 hour(s)

ARSENIC:

10 ug/m³ OSHA TWA
0.01 mg/m³ ACGIH TWA
0.002 mg/m³ NIOSH recommended ceiling 15 minute(s)

COPPER:

COPPER AND COMPOUNDS (as Cu):

0.1 mg/m³ OSHA TWA (fume)
1 mg/m³ OSHA TWA (dust) (mist)
0.2 mg/m³ ACGIH TWA (fume)
1 mg/m³ ACGIH TWA (dust) (mist)
0.1 mg/m³ NIOSH recommended TWA 10 hour(s) (fume)
1 mg/m³ NIOSH recommended TWA 10 hour(s) (dust) (mist)

VENTILATION: Ensure adequate ventilation. Ensure compliance with applicable exposure limits.

EYE PROTECTION: ANSI Z87.1-1989 approved safety glasses with side shields.

CLOTHING: Wear tightly woven long-sleeved shirts and long pants. Remove and launder contaminated clothing separately from other laundry before reuse.

GLOVES: Individuals must wear gloves impervious to the wood treatment formulations in all situations where dermal contact with chromated copper arsenate is expected.

PROTECTIVE MATERIAL TYPES: Examples of impervious materials for protective clothing (e.g. overalls, jackets, gloves and boots) required during application and handling of chromated copper arsenate are polyvinyl acetate (PVA), polyvinyl chloride (PVC), Neoprene and NBR (Buna-N).

RESPIRATOR: If the applicable TLVs and/or PELs are exceeded, use canister or cartridge respirators, which are MSHA/NIOSH-approved, with high-efficiency particulate filters.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: solid

COLOR: light-colored, green

PHYSICAL FORM: Pressure treated utility and building poles and foundation pilings - treated at a retention level of 0.6-0.8 lbs/ft³ and a wood density of 38-40 lbs/ft³. Pressure treated marine pilings - treated at a retention level of 2.5 lbs/ft³ and a wood density of 38-40 lbs/ft³. Actual retention level dependent on wood stock, moisture levels, and customer specifications.

ODOR: odorless

BOILING POINT: Not applicable

MELTING POINT: Not available

VAPOR PRESSURE: Not applicable

VAPOR DENSITY: Not applicable

SPECIFIC GRAVITY (water=1): varies

WATER SOLUBILITY: insoluble

PH: Not applicable

VOLATILITY: Not applicable

ODOR THRESHOLD: Not available

EVAPORATION RATE: Not applicable

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

10. STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.

INCOMPATIBILITIES: oxidizing materials, acids

HAZARDOUS DECOMPOSITION:

Thermal decomposition products: carbon monoxide, carbon dioxide, oxides of nitrogen, oxides of chromium, oxides of copper, arsine, chromium, arsenic

POLYMERIZATION: Will not polymerize.

11. TOXICOLOGICAL INFORMATION

CHROMATED COPPER ARSENATE (CCA) PRESSURE TREATED WOOD:

CARCINOGEN STATUS: OSHA: Yes, NTP: Yes, IARC: Yes, (See below for additional information on component carcinogen status)

TARGET ORGANS: respiratory system, skin, eyes, immune system (sensitizer), nervous system

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: respiratory disorders, skin disorders and allergies

ADDITIONAL DATA: Wood dust is particles of varying size produced from processing or handling wood. Cancer of the nasal cavities and sinuses is associated with exposure to hardwood dust. IARC concluded that there were too few studies to evaluate cancer risks attributable to exposure to softwood alone and to any particular species of wood. In view of the overall lack of consistent findings, IARC also concluded that there is no indication that occupational exposure to wood dust has a causal role in cancers of the throat, lung, lymphatic and blood systems, stomach, colon or rectum.

Different woods produce different health effects and there is evidence that wood from different trees of the same species can produce varying health effects. Woods other than Western Red Cedar (WRC) seem unlikely to be responsible for large numbers of cases of respiratory allergies. Other common wood dusts produce asthma/pulmonary effects that are less well described than the responses to WRC. These other wood species (e.g., oak and pine) are considered somewhat allergenic.

The copper, chromium, and arsenic in the CCA preservative undergo a chemical fixation reaction and chromium is reduced to the trivalent state when placed into the wood. For CCA treated wood the most likely chemical species of arsenic complex to which potential exposure might occur is chromium (III) arsenate (As V). This CCA treated wood is not expected to contain trivalent arsenic or hexavalent chromium compounds.

The IARC Monographs state that arsenic and arsenic compounds are carcinogenic to humans (Group 1). This evaluation applies to the group of chemicals as a whole and not necessarily to all individual chemicals within the group. IARC's conclusion of carcinogenicity to humans is based mainly on medical treatment with Fowler's solution and inhalation exposure of mining and smelting workers and drinking water. Lung cancer has been associated with inhalation of arsenic, and skin, bladder, and possibly other internal cancers have been associated with ingestion of arsenic in drinking water. IARC concluded that chromium (III) compounds are not classifiable as to their carcinogenicity to humans (Group 3).

Gradient Corporation prepared a human health risk assessment for Arch Wood Protection, Inc., to quantify potential health risks from exposures to the arsenic complex associated with chromated copper arsenate (CCA) treated wooden utility poles. Cancer risk estimates for a child assumed to play outdoors near a CCA-treated utility pole and adult utility pole worker assumed to perform maintenance and repair services that requires climbing a CCA-treated utility pole have been found to be within the U.S. Environmental Protection Agency's "generally acceptable" cancer target risk range of 1 in a million to 1 in 10,000. It should be noted that the actual number of cancer cases could be zero.

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 birth defects in mice fed sawdust nor to cause birth defects in rabbits receiving sawdust applied to their skin.

WOOD DUST, HARDWOODS:

CARCINOGEN STATUS: NTP: Known Human Carcinogen; IARC: Human Sufficient Evidence, Animal Inadequate Evidence, Group 1; ACGIH: A1 -Confirmed Human Carcinogen (Oak and beech), A2 -Suspected Human Carcinogen (Birch, mahogany, teak and walnut), A4 -Not Classifiable as a Human Carcinogen (All other wood dusts)

LOCAL EFFECTS:

Irritant: inhalation, skin, eye

TARGET ORGANS: immune system (sensitizer)

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: respiratory disorders, skin disorders and allergies

WOOD DUST, SOFTWOODS:

CARCINOGEN STATUS: NTP: Known Human Carcinogen; IARC: Human Sufficient Evidence, Animal Inadequate Evidence, Group 1; ACGIH: A1 -Confirmed Human Carcinogen (Oak and beech), A2 -Suspected Human Carcinogen (Birch, mahogany, teak and walnut), A4 -Not Classifiable as a Human Carcinogen (Western red cedar)

LOCAL EFFECTS:

Irritant: inhalation, skin, eye

TARGET ORGANS: immune system (sensitizer)

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: respiratory disorders, skin disorders and allergies

CHROMIUM:

CARCINOGEN STATUS: IARC: Human Inadequate Evidence, Animal Inadequate Evidence, Group 3 (Chromium metal); ACGIH: A4 -Not Classifiable as a Human Carcinogen

ACUTE TOXICITY LEVEL: Insufficient Data.

ADDITIONAL DATA: May cross the placenta. May be excreted in breast milk.

ARSENIC:**TOXICITY DATA:**

763 mg/kg oral-rat LD50

CARCINOGEN STATUS: OSHA: Carcinogen; NTP: Known Human Carcinogen; IARC: Human Sufficient Evidence, Animal Limited Evidence, Group 1; ACGIH: A1 -Confirmed Human Carcinogen

LOCAL EFFECTS:

Irritant: inhalation, skin, eye

ACUTE TOXICITY LEVEL:

Moderately Toxic: ingestion

TARGET ORGANS: immune system (sensitizer), nervous system

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: diabetes, heart or cardiovascular disorders, immune system disorders or allergies, kidney disorders, liver disorders, nervous system disorders, skin disorders and allergies

COPPER:**LOCAL EFFECTS:**

Irritant: inhalation, eye

ACUTE TOXICITY LEVEL: Insufficient Data.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: blood system disorders, kidney disorders, liver disorders, respiratory disorders, skin disorders and allergies

12. ECOLOGICAL INFORMATION

Study Abstracts: 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.

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

Dispose in accordance with all applicable regulations. Treated wood should not be burned in open fires or in stoves, fireplaces or residential boilers, because toxic chemicals may be produced as part of the smoke and ashes. Treated wood from commercial or industrial use (e.g., construction sites) may be burned only in commercial or industrial incinerators or boilers in accordance with state and federal regulations. For more information please see Koppers Consumer Information Sheet for this product.

14. TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION: No classification assigned.

CANADIAN TRANSPORTATION OF DANGEROUS GOODS: No classification assigned.

15. REGULATORY INFORMATION

U.S. REGULATIONS:

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30): Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40): Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):

ACUTE: Yes

CHRONIC: Yes

FIRE: No

REACTIVE: No

SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65):

CHROMIUM

ARSENIC

COPPER AND COMPOUNDS (as Cu)

COPPER

STATE REGULATIONS:

California Proposition 65:

Known to the state of California to cause the following:

ARSENIC

Cancer (Feb 27, 1987)

CANADIAN REGULATIONS:

WHMIS CLASSIFICATION: Not a Controlled Product under Canada's Workplace Hazardous Material Information System.

NATIONAL INVENTORY STATUS:

U.S. INVENTORY (TSCA): This product is exempt.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDSL): This product is exempt.

16. OTHER INFORMATION

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