

**OSMOSE LIFEWOOD - CCA TREATED TIMBER**

ChemWatch Material Safety Data Sheet (REVIEW)  
Issue Date: Thu 11-Sep-2003

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**Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

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**PRODUCT NAME**

OSMOSE LIFEWOOD - CCA TREATED TIMBER

**SYNONYMS**

MW60406320ENVIRONMEN

**PRODUCT USE**

Used for outdoor applications in garden furniture, fencing, pergolas and decking, particularly where below ground borer and rot resistant timber is required. Where treated timber is to be used for playground equipment or log cabin construction a storage period of 6 weeks is recommended prior to distribution. All treated timber for this use should also be washed to remove dried salts from the surface. Sawing and sanding produces dust which contains preservative chemicals.

**SUPPLIER**

Company: Osmose Australia P/L  
Address:  
Cafrpirco Road Abn: 75 088 260 575  
Mt Gambier  
SA, 5290  
AUS  
Telephone: (+61 8) 8723 1399  
Emergency Tel: 1800 039 008 (24 hours)  
Emergency Tel: +61 3 9573 3112  
Fax: 08 8723 0010

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**Section 2 - HAZARDS IDENTIFICATION**

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**STATEMENT OF HAZARDOUS NATURE**

NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

According to the Criteria of NOHSC, and the ADG Code.

**POISONS SCHEDULE**

None

**RISK**

Cumulative effects may result following exposure\*.  
May produce discomfort of the eyes\*.  
Limited evidence of a carcinogenic effect\*.  
Possible respiratory and skin sensitiser\*.  
May be harmful to the foetus/ embryo\*.

continued...

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## Section 2 - HAZARDS IDENTIFICATION ...

\* (limited evidence)

### SAFETY

Avoid exposure - obtain special instructions before use.  
In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons Information Centre.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
softwood preservative present as complex insoluble copper, chromium and mixed arsenates that do not have specific stoichiometry		> 90
total preservative metals (Cu, Cr,As) impregnation residuals, as		1.2-2.0
chromium	7440-47-3	< 3.8
arsenic	7440-38-2	< 2.7
copper	7440-50-8	< 1.6
In use, may generate softwood dust	None	> 1

## Section 4 - FIRST AID MEASURES

### EYE

If this product comes in contact with the eyes:

- Wash out immediately with fresh running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- If pain persists or recurs seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

### SKIN

If skin or hair contact occurs:

- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

### INHALED

- If dust is inhaled, remove from contaminated area.
  - Encourage patient to blow nose to ensure clear breathing passages.
  - Ask patient to rinse mouth with water but to not drink water.
  - Seek immediate medical attention.
- or
- If fumes or combustion products are inhaled remove from contaminated area.
  - Lay patient down. Keep warm and rested.
  - Prosthesis such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
  - Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
  - Transport to hospital, or doctor, without delay.

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## Section 4 - FIRST AID MEASURES ...

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### NOTES TO PHYSICIAN

Treat symptomatically.

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## Section 5 - FIRE FIGHTING MEASURES

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### EXTINGUISHING MEDIA

- Water spray or fog.
- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

### FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water courses.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- DO NOT approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

### FIRE/EXPLOSION HAZARD

Combustible. Will burn if ignited.

Moderate fire hazard when exposed to heat or flame.

On combustion, emits toxic fumes of

carbon monoxide (CO)

carbon dioxide (CO<sub>2</sub>)

and

highly toxic

arsenic compounds

Avoid creating dust - may present dust explosion hazard. Dry dust can be electrostatically charged by turbulence, pneumatic transport, pouring, in exhaust ducts and during transport. Build-up of electrostatic charge may be prevented by grounding.

### FIRE INCOMPATIBILITY

Avoid creating dust - may present dust explosion hazard. Dry dust can be electrostatically charged by turbulence, pneumatic transport, pouring, in exhaust ducts and during transport. Build-up of electrostatic charge may be prevented by grounding.

Avoid reaction with oxidising agents

### HAZCHEM

None

### Personal Protective Equipment

Glasses:  
Safety Glasses.

Gloves:

Respirator:  
Particulate

continued...

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## Section 5 - FIRE FIGHTING MEASURES ...

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## Section 6 - ACCIDENTAL RELEASE MEASURES

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### EMERGENCY PROCEDURES

#### MINOR SPILLS

Refer to major spills.

#### MAJOR SPILLS

- Minor hazard.
- Clear area of personnel.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear physical protective gloves e.g. Leather.
- Contain spill/secure load if safe to do so.
- Bundle/collect recoverable product and label for recycling.
- Collect remaining product and place in appropriate containers for disposal.
- Clean up/sweep up area.
- Water may be required.

### EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:

other than mild, transient adverse effects without perceiving a clearly defined odour is:

American Industrial Hygiene Association (AIHA)

**Personal Protective Equipment advice is contained in Section 8 of the MSDS.**

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## Section 7 - HANDLING AND STORAGE

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### PROCEDURE FOR HANDLING

Wear protective clothing when risk of exposure occurs.  
Use in a well-ventilated area  
When handling, DO NOT eat, drink or smoke.  
Always wash hands with soap and water after handling. Work clothes should be laundered separately.  
Use good occupational work practice. Observe manufacturer's storing and handling recommendations.

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## Section 7 - HANDLING AND STORAGE ...

### SUITABLE CONTAINER

Not applicable

### STORAGE INCOMPATIBILITY

None known

### STORAGE REQUIREMENTS

- Keep dry.
  - Store under cover.
  - Store in a well ventilated area.
  - Store away from sources of heat or ignition.
  - Observe manufacturer's storing and handling recommendations.
- No smoking, naked lights or ignition sources.

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

#3300

#### EXPOSURE STANDARDS FOR MIXTURE

"Worst Case" computer-aided prediction of spray/ mist or fume/ dust components and concentration:

Composite Exposure Standard for Mixture (TWA) :0.336 mg/m<sup>3</sup>.

Operations which produce a spray/mist or fume/dust, introduce particulates to the breathing zone.

If the breathing zone concentration of ANY of the components listed below is exceeded, "Worst Case" considerations deem the individual to be overexposed.

Component Breathing Zone ppm Breathing Zone mg/m<sup>3</sup> Mixture Conc (%)

Component	Breathing Zone (mg/m <sup>3</sup> )	Mixture Conc (%)
arsenic	0.0091	2.7
chromium	0.0128	3.8
copper	0.0054	1.6
softwood dust	0.3088	91.9

#### REPRODUCTIVE HEALTH GUIDELINES

Established occupational exposure limits frequently do not take into consideration reproductive end points that are clearly below the thresholds for other toxic effects. Occupational reproductive guidelines (ORGs) have been suggested as an additional standard. These have been established after a literature search for reproductive no-observed-adverse effect-level (NOAEL) and the lowest-observed-adverse-effect-level (LOAEL). In addition the US EPA's procedures for risk assessment for hazard identification and dose-response assessment as applied by NIOSH were used in the creation of such limits.

Ingredient	ORG	UF	Endpoint	CR	TLV Adeq
arsenic	0.0005 mg/mg	1000	D	4.7	-

These exposure guidelines have been derived from a screening level of risk assessment and should not be construed as unequivocally safe limits. ORGS

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION ...

represent an 8-hour time-weighted average unless specified otherwise.

CR = Cancer Risk/10000; UF = Uncertainty factor:

TLV believed to be adequate to protect reproductive health:

LOD: Limit of detection

Toxic endpoints have also been identified as:

D = Developmental; R = Reproductive; TC = Transplacental carcinogen

Jankovic J., Drake F.: A Screening Method for Occupational Reproductive

American Industrial Hygiene Association Journal 57: 641-649 (1996)

### INGREDIENT DATA

#### CHROMIUM:

TLV TWA: 0.5 mg/m<sup>3</sup> A4

NOTE: This substance has been classified by the ACGIH as A4 NOT classifiable as causing Cancer in humans

ES TWA: 0.5 mg/m<sup>3</sup>

IDLH Level: 250 mg/m<sup>3</sup>

#### ARSENIC:

PEL TWA: 0.5 mg/m<sup>3</sup> [OSHA Z1]

TLV TWA: 0.01 mg/m<sup>3</sup> A1

WARNING: This substance has been classified by the ACGIH as A1 CONFIRMED HUMAN CARCINOGEN

ES TWA: 0.05 mg/m<sup>3</sup>

WARNING: This substance is classified by the NOHSC as Category 1 ESTABLISHED HUMAN CARCINOGEN

MEL TWA: 0.1 mg/m<sup>3</sup>

#### COPPER:

TLV TWA: 1 mg/m<sup>3</sup> Dusts and mists as Cu [ACGIH]

TLV TWA: 0.2 mg/m<sup>3</sup> Fume [ACGIH]

PEL TWA: 1 mg/m<sup>3</sup> [OSHA Z1]

copper dusts and mists, as Cu (A.Wt: 63.54)

ES TWA: 1 mg/m<sup>3</sup>

TLV TWA: 1 mg/m<sup>3</sup>

OES TWA: 1 mg/m<sup>3</sup>; STEL: 2 mg/m<sup>3</sup>

copper fume, as Cu

ES-TWA: 0.2 mg/m<sup>3</sup>

TLV-TWA: 0.2 mg/m<sup>3</sup>

OES-TWA: 0.2 mg/m<sup>3</sup>

IDLH Level: 100 mg/m<sup>3</sup> (fume)

#### SOFTWOOD DUST:

TLV TWA: 5 mg/m<sup>3</sup>; STEL: 10 mg/m<sup>3</sup>

NOTICE OF INTENDED CHANGE

TLV TWA 0.5 mg/m<sup>3</sup> Western red cedar Inhalable fraction Sensitiser

TLV TWA 1 mg/m<sup>3</sup> nonallergenic and noncarcinogenic A4

NOTE: This substance has been classified by the ACGIH as A4 NOT classifiable as causing Cancer in humans

ES TWA: 5 mg/m<sup>3</sup>; STEL: 10 mg/m<sup>3</sup> (Sensitiser) (Under review)

MEL TWA: 5 mg/m<sup>3</sup> Sensitiser

PEL: 2.5 mg/m<sup>3</sup> OSHA

Wood dusts produce dermatitis and an increased risk of upper respiratory disease. Epidemiological studies in furniture workers show an increased risk of lung, tongue, pharynx and nasal cancer. An excess risk of leukaemia amongst millwrights probably is associated with exposure to various components used in wood preservation.

Impairment of nasal mucociliary function may occur below 5 mg/m<sup>3</sup> and may be

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION ...

important in the development of nasal adenocarcinoma amongst furniture workers exposed to hardwoods.

Certain exotic hardwoods contain alkaloids which may produce headache, anorexia, nausea, bradycardia and dyspnoea.

The softwood TLV-TWA reflects the apparent low risk for upper respiratory tract involvement amongst workers in the building industry. A separate TLV-TWA, for hard woods, is based on impaired nasal mucociliary function reported to contribute to nasal adenocarcinoma and related hyperplasia found in furniture workers.

TRK: 2 mg/m<sup>3</sup>

(measured as inhalable fraction of the aerosol)

The technical exposure limit, TRK (Technische Richtkonzentrationen), defines the airborne concentration of named carcinogenic materials which is the minimum possible given the state of current technologies. TRK values are assigned only for materials for which there is no current MAK (German exposure standard).

Observance of the TRK value is intended to reduce the risk of adverse effects on health but does NOT completely eliminate it. Since no threshold doses can be determined for carcinogens, health considerations require that the exposure limits be kept as far as possible below the TRK and that the TRK value be gradually reduced. The limitation of exposure peaks is regulated as follows;

Short-term exposure limit: 5 x TRK

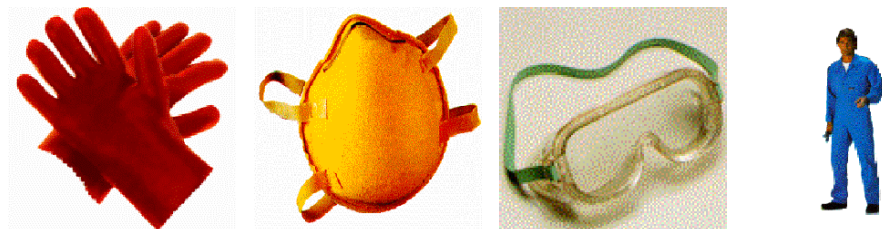
Short-term exposure duration: 15 min/average

Frequency per work shift: 5 times

Interval: 1 hour

Report No. 35 1999, Deutsche Forschungsgemeinschaft.

## PERSONAL PROTECTION



### EYE

When sawing, machining or sanding use

- Safety glasses with side shields.
- Contact lenses pose a special hazard; soft lenses absorb irritants and all lenses concentrate them.

### HANDS/FEET

Impervious gloves  
Safety footwear

### OTHER

- Overalls
- Barrier cream
- Eyewash unit.

## ENGINEERING CONTROLS

Avoid generating and breathing dust. Effective dust extraction and good ventilation is required when using cutting, shaping or sanding tools. Wear a disposable dust mask AS 1715 (1991) class P1 or P2 when machining.

continued...

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## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

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### APPEARANCE

CCA treated timber has a greenish colour but with weathering, the timber species and formulation differences may make identification difficult. The CCA solution is fixed by chemical reaction which changes the water-soluble CCA with Cr(VI) into an insoluble preservative with Cr(III) in the treated timber. The product weathers to various shades of grey over several years. Timber surface may show a white powder bloom. This is non-toxic sodium sulfate which is leached slowly to surface.

### PHYSICAL PROPERTIES

Does not mix with water.

Molecular Weight: Not applicable  
Melting Range (°C): Not applicable.  
Solubility in water (g/L): Insoluble.  
pH (1% solution): Not applicable  
Volatile Component (%vol): Not available  
Relative Vapour Density (air=1): Not applicable.  
Lower Explosive Limit (%): Not available.  
Autoignition Temp (°C): Not available  
State: Manufactured

Boiling Range (°C): Not applicable.  
Specific Gravity (water=1): Not available  
pH (as supplied): Not applicable  
Vapour Pressure (kPa): Not applicable  
Evaporation Rate: Not available  
Flash Point (°C): Not applicable  
Upper Explosive Limit (%): Not available.  
Decomposition Temp (°C): Not available.

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## Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

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### CONDITIONS CONTRIBUTING TO INSTABILITY

Product is considered stable and hazardous polymerisation will not occur.

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## Section 11 - TOXICOLOGICAL INFORMATION

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### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS SWALLOWED

Overexposure is unlikely in this form and quantity.  
Considered an unlikely route of entry in commercial/industrial environments

#### EYE

The dust may produce eye discomfort and abrasive eye inflammation.

#### SKIN

The material may be mildly discomforting to the skin and is capable of causing allergic skin reactions which may lead to dermatitis

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## Section 11 - TOXICOLOGICAL INFORMATION ...

### INHALED

Not normally a hazard due to non-volatile nature of product  
Hazard relates to dust released by sawing, cutting, sanding, trimming or other finishing operations.  
Generated dust may be discomforting and may be harmful if inhaled  
Inhalation of dust may aggravate a pre-existing respiratory condition such as asthma, bronchitis, emphysema  
The vapour from the burning material is highly discomforting and may be highly toxic if inhaled

### CHRONIC HEALTH EFFECTS

No data for this material.

### Osmose Lifewood - CCA Treated Timber

#### CHROMIUM:

No significant acute toxicological data identified in literature search.  
The substance is classified by IARC as Group 3:  
NOT classifiable as to its carcinogenicity to humans.  
Evidence of carcinogenicity may be inadequate or limited in animal testing.  
Tenth Annual Report on Carcinogens: Substance known to be Carcinogenic [National Toxicology Program: U.S. Dep. of Health and Human Services 2002]  
Gastrointestinal tumours, lymphoma, musculoskeletal tumours and tumours at site of application recorded.

#### ARSENIC:

##### TOXICITY

Oral (man) TDLo: 7857 mg/kg/55 years

Oral (rat) LD50: 763 mg/kg

Tumorigenic - Carcinogenic by RTECS criteria.

WARNING: This substance has been classified by the IARC as Group 1: CARCINOGENIC TO HUMANS.

##### IRRITATION

Nil reported

#### COPPER:

##### TOXICITY

Oral (human) TDLo : 0.12 mg/kg

WARNING: Inhalation of high concentrations of copper fume may cause "metal

##### IRRITATION

Nil Reported

fume fever", an acute industrial disease of short duration. Symptoms are tiredness, influenza like respiratory tract irritation with fever.

#### SOFTWOOD DUST:

No data of toxicological significance identified in literature search.

WARNING: Inhalation of wood dust by workers in the furniture and cabinet making industry has been related to nasal cancer [ I.L.O. Encyclopedia]

Use control measures to limit all exposures.

WARNING: This substance has been classified by the IARC as Group 1: CARCINOGENIC TO HUMANS.

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## Section 12 - ECOLOGICAL INFORMATION

No data for Osmose Lifewood - CCA Treated Timber.  
Refer to data for ingredients, which follows:

### CHROMIUM:

Hazardous Air Pollutant: Yes

### ARSENIC:

Hazardous Air Pollutant: Yes

Water solubility (mg/l): 0.05

Toxicity Fish: LC50(96)2.8-4.2mg/L

Degradation Biological: slow

### COPPER:

Hazardous Air Pollutant: No

Copper is unlikely to accumulate in the atmosphere due to a short residence time for airborne copper aerosols. Airborne coppers, however, may be transported over large distances. Copper accumulates significantly in the food chain.

### Drinking Water Standards:

3000 ug/l (UK max)

2000 ug/l (WHO provisional Guideline)

1000 ug/l (WHO level where individuals complain)

Soil Guidelines: Dutch Criteria

36 mg/kg (target)

190 mg/kg (intervention)

Air Quality Standards: no data available.

The toxic effect of copper in the aquatic biota depends on the bio-availability of copper in water which, in turn, depends on its physico-chemical form (ie.speciation). Bioavailability is decreased by complexation and adsorption of copper by natural organic matter, iron and manganese hydrated oxides, and chelating agents excreted by algae and other aquatic organisms. Toxicity is also affected by pH and hardness. Total copper is rarely useful as a predictor of toxicity. In natural sea water, more than 98% of copper is organically bound and in river waters a high percentage is often organically bound, but the actual percentage depends on the river water and its pH.

Copper exhibits significant toxicity in some aquatic organisms. Some algal species are very sensitive to copper with EC50 (96 hour) values as low as 47 ug/litre dissolved copper whilst for other algal species EC50 values of up to 481 ug/litre have been reported. However many of the reportedly high EC50 values may arise in experiments conducted with a culture media containing copper-complexing agents such as silicate, iron, manganese and EDTA which reduce bioavailability.

Toxic effects arising following exposure by aquatic species to copper are typically:

Algae EC50 (96 h)	Daphnia magna LC50 (48-96 h)	Amphipods LC50 (48-96 h)	Gastropods LC50 (48-96 h)	Crab larvae LC50 (48-96 h)
47-481 *	7-54 *	37-183 *	58-112 *	50-100 *

\* ug/litre

Exposure to concentrations ranging from one to a few hundred micrograms per litre has led to sublethal effects and effects on long-term survival. For high bioavailability waters, effect concentrations for several sensitive species may be below 10 ug Cu/litre.

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## Section 12 - ECOLOGICAL INFORMATION ...

In fish, the acute lethal concentration of copper ranges from a few ug/litre to several mg/litre, depending both on test species and exposure conditions. Where the value is less than 50 ug Cu/litre, test waters generally have a low dissolved organic carbon (DOC) level, low hardness and neutral to slightly acidic pH. Exposure to concentrations ranging from one to a few hundred micrograms per litre has led to sublethal effects and effects on long-term survival. Lower effect concentrations are generally associated with test waters of high bioavailability.

In summary:

TABLE BORDER><TD>RESPONSES EXPECTED FOR HIGH CONCENTRATION RANGES OF COPPER

/TABLE

Total dissolved Cu concentration range (ug/litre)	Effects of high availability in water
1-10	Significant effects are expected for diatoms and sensitive invertebrates, notably cladocerans. Effects on fish could be significant in freshwaters with low pH and hardness.
10-100	Significant effects are expected on various species of microalgae, some species of macroalgae, and a range of invertebrates, including crustaceans, gastropods and sea urchins. Survival of sensitive fish will be affected and a variety of fish show sublethal effects.
100-1000	Most taxonomic groups of macroalgae and invertebrates will be severely affected. Lethal levels for most fish species will be reached.
>1000	Lethal concentrations for most tolerant organisms are reached.

\* Sites chosen have moderate to high bioavailability similar to water used in most toxicity tests.

In soil, copper levels are raised by application of fertiliser, fungicides, from deposition of highway dusts and from urban, mining and industrial sources. Generally, vegetation rooted in soils reflects the soil copper levels in its foliage. This is dependent upon the bioavailability of copper and the physiological requirements of species concerned.

Typical foliar levels of copper are:

Uncontaminated soils (0.3-250 mg/kg)	Contaminated soils (150-450 mg/kg)	Mining/smelting soils
6.1-25 mg/kg	80 mg/kg	300 mg/kg

Plants rarely show symptoms of toxicity or of adverse growth effects at normal soil concentrations of copper. Crops are often more sensitive to copper than the native flora, so protection levels for agricultural crops range from 25 mg Cu/kg to several hundred mg/kg, depending on country. Chronic and or acute effects on sensitive species occur at copper levels occurring in some soils as a result of human activities such as copper fertiliser addition, and addition of sludge. When soil levels exceed 150 mg Cu/kg, native and agricultural species show chronic effects. Soils in the range 500-1000 mg Cu/kg act in a strongly selective fashion allowing the survival of only copper-tolerant species and strains. At 2000 Cu mg/kg most species cannot survive. By 3500 mg Cu/kg areas are largely devoid of vegetation cover. The organic content of the soil appears

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## Section 12 - ECOLOGICAL INFORMATION ...

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to be a key factor affecting the bioavailability of copper.  
On normal forest soils, non-rooted plants such as mosses and lichens show higher copper concentrations. The fruiting bodies and mycorrhizal sheaths of soil fungi associated with higher plants in forests often accumulate copper to much higher levels than plants at the same site. International Programme on Chemical Safety (IPCS): Environmental Health Criteria 200

SOFTWOOD DUST:

No data for softwood dust.

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## Section 13 - DISPOSAL CONSIDERATIONS

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- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Management Authority for disposal.
- Bury residue in an authorised landfill.
- Recycle containers if possible, or dispose of in an authorised landfill.

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## Section 14 - TRANSPORTATION INFORMATION

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Shipping Name:

NONE

Dangerous Goods Class: None

UN/NA Number: None

ADR Number:

Packing Group: None

Labels Required:

Additional Shipping Information:

International Transport Regulations:

IMO: None

## HAZCHEM

None

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## Section 15 - REGULATORY INFORMATION

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### POISONS SCHEDULE

None

### REGULATIONS

Australian Inventory of Chemical Substances (NICNAS) applies to the following ingredients:  
chromium (CAS: 7440-47-3)  
arsenic (CAS: 7440-38-2)  
copper (CAS: 7440-50-8)

No data available for softwood dust (CAS: None).

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## Section 16 - OTHER INFORMATION

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Issue Date: Thu 11-Sep-2003  
Print Date: Tue 12-Oct-2004