

CHH CCA TREATED TIMBER

ChemWatch Material Safety Data Sheet (REVIEW)

CHEMWATCH 61085

Date of Issue: Tue 9-Feb-1999

CD 2002/3

◆ Health Hazard ◆ Precaution ◆ Safe Handling ◆ Contact Point

IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE

Not classified as hazardous according to Worksafe Australia criteria.

Not considered a dangerous substance according to directive 67/548/EEC, point 4; and not hazardous according to OSHA 29 CFR 1910.1200 (USA).

SUPPLIER

Company: Carter Holt Harvey
Address:
Jubilee Highway East
Mount Gambier
SA
Australia
Telephone: (+61 8) 8721 2777
Fax: (+61 8) 8721 2858

Company: Carter Holt Harvey
Address:
PO Box 1446
Mount Gambier
SA
Australia

Company: Carter Holt Harvey
Address:
Penola Road
Nangwarry
SA
Australia
Telephone: (+61 8) 8739 7011
Fax: (+61 8) 8739 7098

Company: Carter Holt Harvey
Address:
PO Box 645
Mount Gambier
SA
Australia

CHEMWATCH HAZARD RATINGS

Flammability: 0	
Toxicity: 1	■
Body Contact: 0	
Reactivity: 0	
Chronic effect: 4	■

Scale: Min / Nil = 0, Low = 1, Moderate = 2, High = 3 and Extreme = 4.

PERSONAL PROTECTIVE EQUIPMENT FOR INDUSTRIAL/COMMERCIAL ENVIRONMENTS



Product Name: CHH CCA Treated Timber

CAS RN No(s):	None
U.N. Number:	None
Packaging Group:	None
Dangerous Goods Class:	None
Subsidiary Risk:	None
Hazchem Code:	None
Poisons Schedule Number:	None

USE

Used for outdoor applications in garden furniture, fencing, pergolas and decking, particularly where below ground borer and rot resistant timber is required.
Sawing and sanding produces dust which contains preservative chemicals.

PHYSICAL DESCRIPTION/PROPERTIES

APPEARANCE

Green or blue green coloured dressed and natural timber, sections, logs, poles and posts which are dry and aged for 4 to 6 weeks after vacuum/pressure impregnation with copper chrome arsenic (CCA) liquid treatment to protect timber from fungi and insects. 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.

Boiling Point (deg C):	Not applicable.
Melting Point (deg C):	Not applicable.
Vapour Pressure (kPa):	Not applicable
Specific Gravity:	< 1
Flash Point (deg C):	Not applicable
Lower Explosive Limit (%):	Not available.
Upper Explosive Limit (%):	Not available.
Solubility in Water (g/L):	Insoluble.

INGREDIENTS

NAME	CAS RN	%
softwood		>90
preservative present as complex insoluble copper, chromium and mixed arsenates that do not have specific stoichiometry		
total preservative metals (Cu, Cr,As)		1.2-2.0
impregnation residuals, as		
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

HEALTH HAZARD

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

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

Principal routes of exposure are skin contact, inhalation of machining dust and exposure to volatile arsenic compounds when treated timber is burnt.

Australian Standard AS1924 recommends: Treated timber for childrens playground equipment or for use in log cabins, should before use be:

(a) Aged 4 to 6 weeks to "fix" treatment chemicals and thoroughly dry timber;

and (b) washed well with water to remove soluble salts.

Failure to observe above may result in timber wet with treatment chemicals being handled, with considerably increased hazard, particularly from dust if timber is sawn or sanded. It is believed that no absorption of CCA into the skin will occur after the fixation period.

C.C.A. treated timber has a long history of safe use with human and stock exposure, provided reasonable occupational hygiene is observed.

Chronic responses to wood dust exposures are dermatitis, simple bronchitis and non asthmatic obstructive air flow. Exposure to air borne wood dust over long periods of time has been associated with the development of nasal cancer. Excessive exposure to CCA treated wood dust over time may lead to elevated levels of arsenic and chromium in blood.

Treated timber must NOT be used for cooking over open fires, barbecues, spit roasts. Arsenic compounds are released and volatilised by burning and may cause serious food contamination.

FIRST AID

SWALLOWED

If CCA treated dust is swallowed, give water to drink. Seek medical attention if any abdominal discomfort occurs. If swallowed by a child and more than 15 minutes from a hospital, induce vomiting if the child is alert and conscious. Use Ipecac syrup APS.

EYE

If this product comes in contact with the eyes:
Immediately hold the eyes open and wash 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 product comes in contact with the skin:
Wash affected areas thoroughly with water (and soap if available).
Seek medical attention in event of irritation.

INHALED

If dust is inhaled, remove to fresh air.
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 to fresh air. Lay patient down. Keep warm and rested. Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. If available, administer medical oxygen by trained personnel. If breathing is shallow or has stopped, ensure clear airway and apply resuscitation, 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.

ADVICE TO DOCTOR

Treat symptomatically.



PRECAUTIONS FOR USE

EXPOSURE STANDARDS

None assigned. Refer to individual constituents.

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/m³.
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 ³	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 Adequate
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 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:

PEL TWA: 1 mg/m³ [OSHA Z1]

TLV TWA: 0.5 mg/m³ A4

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

ES TWA: 0.5 mg/m³

IDLH Level: 250 mg/m³

ARSENIC:

PEL TWA: 0.5 mg/m³ [OSHA Z1]

TLV TWA: 0.01 mg/m³ A1

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

ES TWA: 0.05 mg/m³

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

MEL TWA: 0.1 mg/m³

COPPER:

TLV TWA: 0.2 mg/m³ Fume [ACGIH]

TLV TWA: 1 mg/m³ Dusts and mists as Cu [ACGIH]

PEL TWA: 1 mg/m³ [OSHA Z1]

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

ES TWA: 1 mg/m³

TLV TWA: 1 mg/m³

OES TWA: 1 mg/m³; STEL: 2 mg/m³

copper fume, as Cu

ES-TWA: 0.2 mg/m³

TLV-TWA: 0.2 mg/m³

OES-TWA: 0.2 mg/m³

IDLH Level: 100 mg/m³ (fume)

SOFTWOOD DUST:

TLV TWA: 5 mg/m³; STEL: 10 mg/m³

NOTICE OF INTENDED CHANGE

TLV TWA 0.5 mg/m³ Western red cedar Sensitiser A4

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

TLV TWA 2 mg/m³ nonallergenic and noncarcinogenic A4

TLV TWA 1 mg/m³ other respiratory allergenic wood dust Sensitiser A4

ES TWA: 5 mg/m³; STEL: 10 mg/m³ (Sensitiser) (Under review)

MEL TWA: 5 mg/m³ Sensitiser

PEL: 2.5 mg/m³ 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/m³ and may be

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.

The TLVs for hardwood and softwood specifically exclude the issue of occupational asthma and related allergic respiratory response associated with exposure to red cedar dusts and similar woods.

TRK: 2 mg/m³

(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.

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. Avoid sawing or sanding of timber that is wet (not dry) with treatment chemicals.

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.

RESPIRATOR

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant.

Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Breathing Zone Level ppm (volume)	Maximum Protection Factor	Half-face Respirator	Full-Face Respirator
1000	10	-AUS P	-
1000	50	-	-AUS P
5000	50	Airline *	-
5000	100	-	-2 P
10000	100	-	-3 P
	100+		Airline**

* - Continuous Flow ** - Continuous-flow or positive pressure demand
The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required. For further information consult site specific CHEMWATCH data (if available), or your Occupational Health and Safety Advisor.

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SAFE HANDLING

STORAGE AND TRANSPORT

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.

TRANSPORTATION

No restrictions.

SPILLS AND DISPOSAL

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.

DISPOSAL

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.

FIRE FIGHTERS' REPORT

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
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 (CO₂)
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
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Avoid reaction with oxidising agents

HAZCHEM

None

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CONTACT POINT

COMPANY CONTACT
(+61 8) 8721 2777

AUSTRALIAN POISONS INFORMATION CENTRE
24 HOUR SERVICE: 13 11 26
POLICE, FIRE BRIGADE OR AMBULANCE: 000

NEW ZEALAND POISONS INFORMATION CENTRE
24 HOUR SERVICE: (03) 4747 000
NZ EMERGENCY SERVICES: 111

End of Report (REVIEW)

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