

## Material Safety Data Sheet

### MATERIAL SAFETY DATA SHEET Softwood wood dust

**STATEMENT OF HAZARDOUS NATURE:** In its intact state, this product is classified as not hazardous according to the criteria of Worksafe Australia. Dust from the product is hazardous according to the criteria of Worksafe Australia.

**Manufactured by:**  
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**Product name:** Softwood wood dust  
**Other names:**  
**Manufacturer's Product Code:** Not Applicable  
**UN number:** None Allocated  
**Dangerous goods class & Subsidiary Risk:** None Allocated  
**Hazchem code:** None Allocated  
**Poisons schedule number:** None Scheduled  
**Use:** Absorbent, insulation, fuel, source of anode carbon.

#### Physical Description/Properties:

**Appearance:** Light yellow to buff-coloured finely powdered or granular solid. Odour is dependent on the wood source and aging. Insoluble in water.

**Boiling Point: (°C)** Not Applicable

**Melting Point: (°C)** Not Applicable

<b>Vapour pressure:</b>	Not Determined
<b>Specific gravity (H<sub>2</sub>O = 1)</b>	<1
<b>Flashpoint:</b>	Not Applicable
<b>Lower Explosive Limit: (%)</b>	0.3500 mgm/m3
<b>Upper Explosive Limit: (%)</b>	Not Available
<b>Solubility in water:</b>	Negligible
<b>Auto-ignition temperature (°C):</b>	Not Determined
<b>Odour Threshold:</b>	

### Early Fire Hazard Indices to AS 1530.3

- Ignitability index:**
- Spread of flame index:**
- Heat evolved index:**
- Smoke developed index:**

### Ingredients:

<b>Chemical Name:</b>	<b>CAS Number:</b>	<b>Proportion:</b>
wood dust softwood	Not available	100

Notes:

### HEALTH HAZARD INFORMATION

Note: In its intact state this product is not classified as a hazardous substance by Worksafe Australia.

### Health Effects

#### *Acute:*

- Swallowed:** Considered an unlikely route of entry in commercial/industrial environments The dust may be discomforting and may be harmful if swallowed in large quantity Ingestion may result in nausea, abdominal irritation, pain and vomiting
- Eye:** The dust may be discomforting and may be mildly abrasive to the eyes and is capable of causing a mild, temporary redness of the conjunctiva (similar to wind-burn), temporary impairment of vision and/or other transient eye damage/ulceration, conjunctivitis
- Skin:** The material may be mildly discomforting to the skin if exposure is

prolonged and is capable of causing skin reactions which may lead to dermatitis and may cause in some cases, sensitisation. The material may accentuate any pre-existing skin condition. Allergic reactions are more common from handling green timber, less common for dried hardwood.

**Inhaled:** The dust may be discomforting and may be harmful if exposure is prolonged and may cause in some cases, sensitisation. Sensitisation reactions may appear suddenly after repeated symptom free exposures. Respiratory sensitisation may result in allergic/asthma like responses; from coughing and minor breathing difficulties to bronchitis with wheezing, gasping. Inhalation of vapour may aggravate a pre-existing respiratory condition

*Chronic:* Principal routes of exposure are by accidental skin and eye contact and inhalation of generated dusts. Common chronic responses to wood dust exposures are dermatitis, simple bronchitis and non asthmatic chronic airflow obstruction. Wood is an organic substrate for growth of micro-organisms and fungal spores, these readily become airborne with wood dust and have caused a variety of respiratory infections. Various woods, mainly tropical varieties, are able to induce allergies in joiners, carpenters, cabinet makers and model-makers. Allergies of the immediate type (rhinoconjunctivitis, bronchial asthma, urticaria), caused by contact with dusts produced during wood-working and those of a delayed type (contact eczema) caused by both the dust and by direct contact with the solid wood, are seen in an occupational setting. Because of the large number of substances found in wood, only a few low molecular weight allergens have been isolated and identified; these are mostly quinone or flavone derivatives. Many of the constituents of wood may also cause primary irritation. Irritation of the skin, eyes and respiratory passages are often distinguished from allergic responses with difficulty. The use of skin tests with wood dusts to confirm suspected allergy must be viewed as suspect because the high concentration of wood components which are sometimes applied, can actually produce new sensitisation in test subjects. It should also be noted that cross-reactions or reactions to groups of similar substances, in other woods and also in other herbaceous plants can also occur. The substances in wood responsible for respiratory allergies are probably mostly high molecular weight substances. Wood dusts may induce asthmatic reactions of both the immediate and delayed types, and occasionally, both. Positive results in bronchial provocation tests, are often, but not always, associated with positive results in skin tests and IgE induction. Bronchial provocation tests may produce different results dependent on whether they are carried out with coarse or fine dusts or with lyophilised aqueous extracts. Very coarse dust may produce false negatives and very fine dust may produce false positives (irritation). Non-allergenic bronchial and nasal irritation are seen frequently. Certain exotic woods contain alkaloids which may produce headache, anorexia, nausea, bradycardia and dyspnea. Agents used to treat wood (preservatives, fungicides, stains, glues, pore fillers) may themselves be responsible for allergic reaction. Other

allergic reactions may be provoked by liverworts ("Frullania dermatitis"), lichens, fungi (e.g. bronchopulmonary aspergillosis), actinomycetes or other plants which grow on wood. Microorganisms and fungal spores, associated with wood, may become airborne and provoke allergic responses. Other chronic responses associated with exposure to wood dusts include conjunctivitis, simple bronchitis and non-asthmatic chronic airflow obstruction. Epidemiologic studies in furniture workers show an increased risk of lung, tongue, pharynx and nasal cancer (adenocarcinoma). Workers in timber industries, with a history of exposure to wood dust, have shown increased occurrence of lung, liver and vocal cavity cancer. An excess risk of leukaemia amongst mill-wrights probably is associated with various components used in wood preservation. It is now suggested that sinonasal cancers may be caused by both hardwoods and softwoods (1). The causative agent or agents are unknown although certain aldehydes or their quinone oxidation products have been implicated. Exposure standards for the softwoods reflect the apparent low risk for upper respiratory tract involvement among workers in the building industry. A significantly lower exposure standard for hardwoods is based on impaired nasal mucocilliary hyperplasia reported to contribute to nasal adenocarcinoma and related hyperplasia in furniture workers. Exposure standards for both hard and softwoods specifically exclude the issue of occupational asthma and related allergic respiratory response associated with exposure to red cedar dusts and similar woods.

### **First Aid**

- Swallowed:** DO NOT induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. Observe the patient carefully. Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. Give water (or milk) to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. Seek medical advice.
- 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.  
If irritation or discomfort persists seek medical attention.  
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 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.

First Aid  
Facilities:

**Advice to Doctor:** Treat symptomatically.

## PRECAUTIONS FOR USE

Exposure  
Standards:

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 Sensitiser A4

NOTE: This substance has been classified by the ACGIH as A4 NOT classifiable as

causing Cancer in humans

TLV TWA 2 mg/m<sup>3</sup> nonallergenic and noncarcinogenic A4

TLV TWA 1 mg/m<sup>3</sup> other respiratory allergenic wood dust Sensitiser A4

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

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/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.

Engineering  
Controls:

Use in a well-ventilated area Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction. Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace. If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered. Such protection might consist of:

(a): particle dust respirators, if necessary, combined with an absorption cartridge;

(b): filter respirators with absorption cartridge or canister of the right type;

(c): fresh-air hoods or masks

Build-up of electrostatic charge on the dust particle, may be prevented by bonding and grounding. Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:

Air Speed:

direct spray, spray painting in

1-2.5 m/s (200-200 f/min.)

shallow booths, drum filling,  
conveyer loading, crusher dusts,  
gas discharge (active generation  
into zone of rapid air motion)

grinding, abrasive blasting,  
tumbling, high speed wheel  
generated dusts (released at high  
initial velocity into zone of very  
high rapid air motion).

2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate  
value depends on

Lower end of the range

Upper end of the range

1: Room air currents minimal or  
favourable to capture

1: Disturbing room air currents

2: Contaminants of low toxicity or  
of nuisance value only

2: Contaminants of high toxicity

3: Intermittent, low production.

3: High production, heavy use

4: Large hood or large air mass in  
motion

4: Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

Personal

Protection:

Eye

Safety glasses with side shields; or as required, Chemical goggles.

Protection:

Contact lenses pose a special hazard; soft lenses may absorb irritants and all lenses concentrate them.

Hands/Feet:

Wear general protective gloves: i.e. Disposable polythene gloves or Cotton gloves or Light weight rubber gloves, with Barrier cream preferably Safety footwear.

Other:

Overalls  
Skin cleansing cream  
Barrier cream  
Eyewash unit.

Respiratory  
Protection:

Protection Factor

Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
P1 Air-line*	- -	PAPR-P1 -
Air-line**	P2	PAPR-P2
-	P3	-

10 x ES

P1 Air-line\* - - PAPR-P1 -

50 x ES

Air-line\*\* P2 PAPR-P2

100 x ES

- P3 -



Disposal: Recycle wherever possible.  
Consult manufacturer for recycling options.  
Consult State Land Waste Management Authority for disposal.  
Bury or incinerate residue at an approved site.

**Fire fighter's 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.  
Remove burned or wet dust to an outside location after extinguishing fire  
as partially burned or wet dust may spontaneously reignite.  
Rake out ashes.

Fire/Explosion Hazard: Solid which exhibits difficult combustion or is difficult to ignite.  
Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited  
Dry dust can also be charged electrostatically by turbulence, pneumatic transport, pouring, in exhaust ducts and during transport. Build-up of electrostatic charge may be prevented by bonding and grounding.  
Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.  
Decomposes on heating and produces toxic fumes of carbon monoxide (CO) , other pyrolysis products typical of burning organic material ,

carbon dioxide (CO<sub>2</sub>)  
and minor amounts of aldehydes , formaldehyde

Fire Incompatibility: Avoid contamination with strong oxidising agents as ignition may result

Hazchem: None

#### **CONTACT POINT**

For further information on this product, please contact the following: CHH woodlogic (ACN 000 002993106), 118-120 Pacific Highway, St Leonards NSW 2065, Australia. Phone +61 2 9478 5000 or 1300 658 828 (available in Australia only). Fax: +61 2 9478 5630.

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