

# MATERIAL SAFETY DATA SHEET - Wood Dust

Date Revised: August 11, 2004

## Section I Material Identification

Material Name: Wood Dust  
Trade Names and Synonyms: Sawdust, sander dust

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| 1 | Health (see Section VI) for FIRST AID MEASURES)          |
| 1 | Flammability (see Section IV for FIRE FIGHTING MEASURES) |
| 0 | Reactivity   |

## Section II Description

Particles generated by any manual or mechanical cutting or abrasion process performed on wood such as:

- **Soft wood dust** from primarily Western Hemlock (*Tsuga heterophylla*), Douglas fir (*Pseudotsuga menziesii*), fir (*Abies* spp.), and Coastal Redwood (*Sequoia*)
- **Hardwood dust** from primarily Alder (*Alnus rubra*), and Eucalyptus (spp.)

## Section III Physical Data

Specific Gravity: Approx. <0.8 (Water = 1)  
Percent Volatile: Approx. 5 % at 220°F  
Solubility in Water: <6%  
Heat of Combustion: 8,000 to 10,000 BTU/lb.  
Appearance and Odor: Light to dark colored granular solid. Color and odor are dependent on the wood species and time since dust was generated.

## Section IV Fire and Explosion Hazard Data

Flash Point: N/A  
Auto Ignition Temperature: Variable (typically >400°F)

### FIRE FIGHTING MEASURES:

**Extinguishing media:** Water spray, carbon dioxide, foam, or dry chemical as determined by surrounding fire.

Unusual Fire and Explosion Hazards: In the remanufacture of wood products accumulation of wood dust during sawing,

sanding and other operations, e.g., blowdown and clean-up, may lead to ignitable concentrations in air. If dust contacts a source of ignition, an explosion may result. An airborne concentration of 40 g/m<sup>3</sup> of air is commonly considered the Lower Explosive Limit (LEL) for dust of this type.

## Section V Reactivity Data

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| Stability:                        | Stable under normal conditions, at normal moisture content. Dry dusts or dust during dry weather are more prone to oxidation and ignition. Large accumulations of sawdust may autoignite at high moisture content.  |
| Incompatibility:                  | Avoid contact with oxidizers.   |
| Conditions to Avoid:              | Accumulation of wood dust in remanufacturing area may result in spontaneous heating or combustion. 212°F has been suggested as the upper temperature limit for continuous exposure of wood without risk of ignition. For wood dust this temperature would be lower. Avoid contact with oxidizers and drying oils. |
| Hazardous Decomposition Products: | Burning of wood products produces irritating smoke which may contain toxic compounds and gases including carbon monoxide and carbon dioxide, polycyclic aromatic hydrocarbons, aldehydes, and organic acids.  |

## Section VI: Health Hazards

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| Exposure Limit <sup>(1)</sup> | ACGIH TLV<br>TWA - 5.0 mg/m <sup>3</sup> (softwood);<br>STEL (15 min.) - 10.0 mg/m <sup>3</sup> (softwood);<br>TWA - 1.0 mg/m <sup>3</sup> (hardwoods such as alder, beech and oak)<br>OSHA PEL: <sup>(2)</sup><br>TWA - 15.0 mg/m <sup>3</sup> (total dust); |
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5.0 mg/m<sup>3</sup> (respirable fraction)

<sup>(1)</sup> ACGIH – American Conference of Governmental Industrial Hygienists, TLV – threshold limit value, TWA – time-weighted average, STEL – short-term exposure limit, OSHA - Occupational Safety and Health Administration, PEL – permissible exposure limit

<sup>(2)</sup> In AFL-CIO v. OSHA 965 F. 2d 962 (11th Cir. 1992), the court overturned OSHA's 1989 Air Contaminants Rule, including the specific PELs for wood dust that OSHA had established at that time. The 1989 PELs were: TWA - 5.0 mg/m<sup>3</sup> (ALL SOFT AND HARD WOODS, EXCEPT WESTERN RED CEDAR); WESTERN RED CEDAR; TWA - 2.5 mg/m<sup>3</sup>.

Skin and Eye Contact

Wood dust can cause eye irritation. Various species of wood dust can elicit allergic contact dermatitis in sensitized individuals.

Ingestion

Not applicable

Skin Absorption

Not known to occur

Inhalation

May cause nasal dryness, irritation and obstruction. Coughing, wheezing and sneezing, sinusitis and prolonged colds have also been reported.

Chronic overexposure

Wood dust of some species, Coastal Redwood and Western Red Cedar, can elicit allergic contact dermatitis and asthma in sensitized individuals as well as mechanical irritation resulting in erythema (red warming of the skin) and hives.

Based primarily on results from studies of hardwood dust, chronic exposure to wood dust may cause nasal adenocarcinoma (cancer in the nose). The International Agency for Research on Cancer (IARC)

classifies wood dust as a carcinogen to humans (Group 1). This classification is based primarily on IARC's evaluation of increased risk in the occurrence of adenocarcinomas of the nasal cavities and paranasal sinuses associated with exposure to hardwood dust. Information associating wood dust exposure with cancer risk for other types of wood dust or other types of cancer is less conclusive. In Page 4 of 5 8/11/04 particular, IARC did not find sufficient evidence to associate wood dust exposure with other types of cancer of the nasal cavities (e.g., squamous cell carcinomas) or cancers in other parts of the body (e.g., the oropharynx, hypopharynx, lung, lymphatic and hematopoietic systems, stomach, colon, or rectum). Nasal cancers are more highly associated with exposure to hardwoods in the furniture manufacturing and cabinet-making industries. Nasal cancers were also most commonly observed in individuals with the highest level and length of exposure.

IARC's report on wood dust concluded "There were too few studies of any type to evaluate cancer risks attributable to exposure to softwood alone."

**EMERGENCY AND FIRST AID PROCEDURES:**

- Eyes** Flush with water to remove dust.
- Inhalation** Remove to fresh air.
- Skin** Consult physician after rash or persistent irritation or evidence of dermatitis.
- Ingestion** Consult physician.

In all cases if irritation persists, obtain medical advice.

**Section VII Spill or Leak Procedures**

Steps to be taken in case material is      Avoid creating dusty conditions.

released or spilled: Follow best industry practices for clean-up.  
Provide good ventilation when dust conditions are likely to occur.

Waste Disposal Method: Dust should be placed in a container for proper disposal or recycled as appropriate.

### **Section VIII: Special Protection Information**

Respiratory Protection: NIOSH/MSHA dust mask under dusty conditions that exceed TWA or STEL or when upper respiratory irritation is present.

Ventilation: Local exhaust to control wood dust in air as required by OSHA, state or local regulations. Dust should be collected at source.

Eye Protection: Safety glasses with side shields or goggles.

Skin Protection: Other protective equipment such as gloves and outer garments may be needed to reduce skin contact.

### **Section IX: Special Precautions**

Precautions to be taken in handling of wood dust: Clean areas where wood dust settles regularly. Avoid conditions which create sparks or other conditions favoring ignitions. Take special precautions when working in dusty conditions that exceed TWA or STEL standards. In areas of excessive dust levels electric motors may need to be totally enclosed for proper operation and safety from ignition.

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