Material Safety Data Sheet

UREA-Formaldehyde Bonded Panel Products

(Medium Density Fiberboard (MDF), Particleboard (except Redex) and Hardwood Plywoods)

This information and data herein are believed to be accurate and have been compiled from sources believed to be reliable. It is offered for your consideration, investigation and verification. Oshkosh Designs® makes no warranty of any kind, expressed or implied, concerning the accuracy or completeness of the information and data herein.

920.582.9977

Hazardous Ingredients

	ACGIH TLV	ACGIN STEL	OSHA TWA	OSHA STEL
Wood/Wood Dust	5 mg/m^3	10 mg/m^3	5 mg/m^{3**}	10 mg/m^3
Resin Solids (Dusts)	5 mg/m^3	10 mg/m^3	15 mg/m^3	-----
Free Formaldehyde (<0.1%)	1 ppm	1.5 ppm	0.75 mg/m^3 (total)	2 ppm
			15 mg/m^3 (total)	
			5 mg/m^3 (respirable)	

** 2.5/m^3 for Western Red Cedar

Physical Characteristics

Urea-formaldehyde panel products are white to brown in color and less dense than water. These products are chemically stable but should not be stored in areas where temperatures exceed 212°F or where exposure to open flames or oxidizing agents such as chlorine, strong acids or hydrogen peroxide is possible.

Fire and Explosion Data

Urea-formaldehyde panel products may ignite if exposed to temperatures exceeding 400°F. These products are combustible and may burn if exposed to open flames, high temperature objects or oxidizing chemicals.

Finely divided wood dust generated by sawing, sanding, grinding and similar operations can create a severe explosion hazard if the dust concentration exceeds 40 grams per cubic meter (dust cloud) and contacts an ignition source.

Normal fire fighting methods for wood fires such as water or CO_2 extinguishment may be used in case of fire. Toxic monoxide, aldehydes and polycyclic aromatic hydrocarbons. Remove panels and dust to open area after fire is extinguished to prevent reignition.

Health Hazards/Protective Measures

Dust: Panel dust can irritate eyes and breathing passages. Some wood species may cause skin irritation or respiratory irritation on prolonged repetitive contact by susceptible persons (i.e., allergies). Some researchers have observed instances where long-term exposure to wood dust may be associated with nasal cancer. Wood dust is listed as a cancer-causing substance by the International Agency for Research on Cancer (IARC).

Persons should where protective goggles and NIOSH-approved respirators for nuisance dust when working in areas where dust is generated.

Formaldehyde: These products release low amounts of formaldehyde. Particleboards and plywoods comply with the standards for formaldehyde off-gasses set by the U.S. Department of Housing and Urban Development (0.3 ppm). Medium Density Fiberboard (MDF) and hardboards are not regulated by HUD, but the off-gassing levels of formaldehyde are generally less than the 0.75 part per million standard required by OSHA (as measured by the HUD method of specified in 49 Fed. Reg. 32012).

Formaldehyde has been listed by IARC, NTP and OSHA as either a carcinogen (cancer-causing agent) or as a potential carcinogen. Formaldehyde may cause irritation of allergic contact dermatitis in sensitive individuals.

Material Safety Data Sheet

Wood Dust

This material safety data sheet applies to all untreated wood and untreated wood products.

General Wood Practice

Local ventilation should be provided to remove wood dust from workspaces when feasible. Users should wear protective gloves and goggles when handling or working on wood products to prevent injury. Good housekeeping practices should be used to minimize dust levels in the air and to reduce the possibility of slipping on dust collected on floor surfaces.

Caution!

Sawing, sanding or machining wood products can produce wood dust which can cause a flammable or explosive hazard.

Wood dust may cause lung, upper respiratory tract, eye and skin irritation. Some wood species may cause dermatitis and/or respiratory allergic effects.
The International Agency for Research on Cancer (IARC) has classified wood dust as a nasal carcinogen in humans.

- Avoid dust contact with ignition source.
- Sweep or vacuum dust for recovery or disposal.
- Avoid prolonged or repeated breathing of wood dust in air.
- Avoid dust contact with eyes and skin.

First Aid

- If inhaled, move to fresh air.
- In case of contact, flush eyes and skin with water.
- If irritation persists, call a physician.

- Preventive measures and first aid instructions are not required on labels/documents, but may be added voluntarily.
- Labels/documents must be legible and prominently displayed. There are no specific requirements for size, color or any specific text.
- This document is designed to address the requirements of the OSHA Hazard Communication Standard with respect to wood dust.

920.582.9977

Material Safety Data Sheet

Wood Dust

This information and data herein are believed to be accurate and have been compiled from sources believed to be reliable. It is offered for your consideration, investigation and verification. Oshkosh Designs® makes no warranty of any kind, expressed or implied, concerning the accuracy or completeness of the information and data herein.

Oshkosh Designs® will not be liable for claims relating to any party's use of, or reliance on, information and data contained herein regardless of whether it is claimed that the information and data are inaccurate, incomplete or otherwise misleading.

Oshkosh DESIGNS
911 E. Main Street
Winneconne, WI 54986

General Information

Trade Name	Wood dust (untreated)
Synonyms	Sawdust, sanderdust
CAS. Number	None
Description	Particles generated by any manual or mechanical cutting or abrasion process performed on wood.

Physical Data

Boiling Point	Not Applicable
Specific Gravity	Variable (dependent on wood species and moisture content)
Vapor Density	Not Applicable
% Volatiles by Volume	Not Applicable
Melting Point	Not Applicable
Vapor Pressure	Not Applicable
Solubility in H_2O (% by weight)	Insoluble
Evaporation Rate (Butyl Acetate = 1)	Not Applicable
pH	Not Applicable
Appearance and Odor	Light to dark colored granular solid. Color and odor are dependent on the wood species and time since dust was generated.

Fire and Explosion Data

Flash Point	Not Applicable
Autoignition Temperature	Variable (typically 400-500°F)
Explosive Limits in Air	40 grams/m^3 (LEL)
Extinguishing Media	Water, CO_2, Sand
Special Fire Fighting Procedures	Use water to wet down wood dust to reduce the likelihood of ignition or dispersion of dust into the air. Remove burned or wet dust to open area after fire is extinguished.
Usual Fire and Explosion Hazard	Wood dust is a strong to severe explosion hazard if a dust "cloud" contacts an ignition source.

General Applicable Control Measures

Ventilation	Provide adequate general and local exhaust ventilation to maintain healthy working conditions.
Safety Equipment	Wear goggles or safety glasses. Other protective equipment such as gloves and approved dust respirators may be needed depending upon dust conditions.

Spill/Leak Clean Up Procedures

Recovery or Disposal	Sweep or vacuum spills for recovery or disposal; avoid creating dust conditions. Provide good ventilation where dust conditions may occur. Place recovered wood dust in a container for proper disposal.

Health Effects Information

Exposure Limit	ACGIH TLV®—TWA 5.0 mg/m^3 STEL (15 min.)—10 mg/m^3 (softwood) TWA—1.0 mg/m^3 (certain hardwoods such as Beech and Oak)
OSHA PEL	TWA—15.0 mg/m^3 (total dust) 5.0 mg/m^3 (respirable fraction) [1] See additional important information below
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, sneezing, sinusitis and prolonged colds have also been reported.
Chronic Effects	Wood dust, depending on the species, may cause dermatitis on prolonged, repetitive contact; may cause respiratory sensitization and/or irritation. IARC classifies wood dust as a carcinogen to humans (Group 1). This classification is based primarily on IARC's evaluation of increased risk in occurrence of adenocarcinomas of the nasal cavities and paranasal sinuses associated with exposure to wood dust. IARC did not find sufficient evidence to associate cancers of the oropharynx, hypopharynx, lung, lymphatic and hematopoietic systems, stomach, colon or rectum with exposure to wood dust.

Reactivity Data

Conditions Contributing to Instability	Stable under normal conditions.
Incompatibility	Avoid contact with oxidizing agents and drying oils. Avoid open flame. Product may ignite at temperatures in excess of 400°F.
Hazardous Decomposition Products	Thermal oxidative degradation of wood procedures irritating and toxic fumes and gases, including CO, aldehydes and inorganic acids.
Conditions Contributing to Polymerization	Not Applicable

Precautions and Safe Handling

Eye Contact	Avoid
Skin Contact	Avoid repeated or prolonged contact with skin. Careful bathing and clean clothes are indicated after exposure.
Inhalation	Avoid repeated or prolonged breathing of wood dust in air.
Oxidizing Agents and Drying Oils	Avoid contact
Open Flame	Avoid

Emergency and First Aid Procedures

Eyes	Flush with water to remove dust particles. If irritation persists, get medical attention.
Skin	Get medical advice if a rash or persistent irritation or dermatitis occurs before returning to work where wood dust is present.
Inhalation	Move to fresh air. If persistent irritation, severe coughing and/or breathing difficulties occur, get medical advice before returning to work where wood dust is present.
Ingestion	Not Applicable

[1] 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^3; STEL (15 min.)—10.0 mg/m^3 (all soft and hardwoods except Western Red Cedar); Western Red Cedar; TWA—2.5 mg/m^3.

Wood dust is now officially regulated as an organic dust under the Particulates Not Otherwise Regulated (PNOR) or Inert or Nuisance Dust categories at PELs noted under Health Effects Information section of th is MSDS. However, a number of states have incorporated provisions of the 1989 standard in their state plans. Additionally, OSHA has announced that it may cite companies under the OSHA Act General Duty Clause under appropriate circumstances for non-compliance with the 1989 PELs.