



Material Safety Data Sheet Particleboard – All Types

MSDS No: 885

SECTION 1 - PRODUCT and COMPANY INFORMATION

Product Identifier: **FLOOR UNDERLAYMENT TYPES PBU AND ENSTRON® – INDUSTRIAL TYPES M1, M2 AND M3**

General Use: Re-manufacturing, construction and furniture processes.

Product Description: A composite panel product manufactured from cellulosic materials bonded together with thermo-setting synthetic resin binders, and which contains additives.

MANUFACTURER: Potlatch Forest Products Corporation
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SECTION 2 - HAZARDS IDENTIFICATION

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR (1)			
		ACGIH - TLV		OSHA-PEL	
		TWA	STEL	TWA	STEL
Inland Softwoods	None	1.0 mg/m ³ Inhalable	-	5 mg/m ³ Inhalable	10 mg/m ³
Western Red Cedar	None	0.5 mg/m ³ Inhalable	-	2.5 mg/m ³	-
Hardwoods	None	1.0 mg/m ³ Inhalable	-	5 mg/m ³	10 mg/m ³
Formaldehyde	50-0-0	-	0.3 ppm (Ceiling) 0.37 mg/m ³	0.75 ppm 0.9 mg/m ³	2 ppm 2.5 mg/m ³

- Although OSHA's air contaminant rule, including OSHA's wood dust PEL's, was struck down in AFL-CIO v. OSHA, 965 f. 2d 962 (11th Cir. 1992), a number of states have incorporated those provisions in their state plans. The 1989 PELs and STELs are shown in the table above.
- Wood dust is now officially regulated as an organic dust under the Particulates Not Otherwise Regulated (PNOR) or Inert or Nuisance Dust categories at the PELs noted in the Hazards Identification table above. 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 OSH Act General Duty Clause under appropriate circumstances for non-compliance with the 1989 PELs.

EMERGENCY OVERVIEW: This panel product may release small quantities, fraction of a part per million, of formaldehyde in gaseous form. These emissions decrease through time as the panels age. Manual or mechanical cutting or abrasion processes performed on the product can result in generation of wood dust, which may present an explosion hazard. Wood dust may cause eye, nose and throat irritation.

POTENTIAL HEALTH HAZARDS:

WOOD DUST

ACUTE

INHALATION:

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

EYE CONTACT: Wood dust can cause mechanical irritation.

SKIN CONTACT: The U-F resin component of this product contains trace amounts of formaldehyde, which along with various species of wood dust may evoke allergic contact dermatitis in sensitized individuals.

INGESTION: Not applicable under normal conditions.

CHRONIC

Wood dust (and/or ligno-cellulosic fibers), depending on species, 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 the 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. Wood dust has been listed by the National Toxicology Program (NTP) as a known human carcinogen. It is not regulated by OSHA as a carcinogen.

FORMALDEHYDE

ACUTE

INHALATION: Gaseous formaldehyde may cause temporary irritation to nose and throat. Some reports suggest that formaldehyde may cause respiratory sensitization, such as Asthma, and that pre-existing respiratory disorders may be aggravated by exposure.

EYE CONTACT: Gaseous formaldehyde may cause temporary irritation or a burning sensation.

SKIN CONTACT: The U-F resin component of this product contains trace amounts of formaldehyde, which along with various species of wood dust may evoke allergic contact dermatitis in sensitized individuals.

CHRONIC

ACGIH: A2 – Suspected Human Carcinogen

California: - Carcinogen

NTP: - Suspect carcinogen

IARC: - Group 1 carcinogen

OSHA: - Potential cancer agent

In studies involving rats, formaldehyde has been shown to cause nasal cancer after long-term exposure to very high concentrations (14+ PPM), far above those normally found in the workplace. The National Cancer Institute (NCI) conducted an epidemiological study of industrial workers exposed to formaldehyde (published June 1986). The NCI concluded that the data provides little

evidence that mortality from cancer is associated with formaldehyde exposure at the levels experienced by workers in the study.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

MAIN COMPONENTS	CAS #	PERCENT WT. (RANGE)
Inland Softwoods	NAP	87% - 95%
Western Red Cedar	NAP	0.0% - 8.0%
Hardwoods	NAP	0.0% - 3.5%
pMDI	9016-87-9	0.0% - 2.5%
Polymerized Urea - Formaldehyde Resin	9011-05-6	0.0% - 7%

SECTION 4 - FIRST AID MEASURES

INHALATION: Wood dust may cause unpleasant deposit/obstruction in the nasal passages resulting in dryness of nose, dry cough, sneezing and headaches. Remove to fresh air. Obtain medical attention if persistent irritation, severe coughing or breathing difficulty occurs.

EYE CONTACT: Dusts generated from this product may cause mechanical irritation. Treat dust in eye as foreign object. Flush eyes with large amounts of water to remove dust particles. If irritation persists, get medical attention.

SKIN CONTACT: Wood dust of certain species can elicit allergic contact dermatitis in sensitized individuals, as well as erythema and hives. Obtain medical help if rash or irritation persists or dermatitis occurs.

INGESTION: Not applicable under normal use.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing respiratory problems, eye problems, dermatitis and other skin disorders can be aggravated by exposures to dusts.

SECTION 5 - FIRE-FIGHTING MEASURES

FLASH POINT: Not applicable

EXPLOSION HAZARDS: This product does not present a fire or explosion hazard. Manual or mechanical cutting or abrasion processes performed on the product can result in generation of wood dust, which may present an explosion hazard.

LEL: Depending on moisture content and more importantly, particle diameter, wood dust may explode in the presence of an ignition source. An airborne concentration of 40 Grams (40,000 Milligrams) of dust per cubic meter of air is often used as the LEL for wood dust.

UEL: Not applicable

* When extinguishing a fire in a wood dust or fiber pile care needs to be taken. A direct stream of water, into the pile from a hose, could cause the burning material to become airborne creating a risk of explosion or in spreading the fire to other areas. Source: Handbook of

Industrial Loss Prevention, 1967, Factory Mutual Engineering Corporation, McGraw-Hill Book Company New York, NY.

FIRE FIGHTING INSTRUCTIONS: Fire fighting procedures for a Class A fire should be followed. Use water to wet down wood dust to reduce the likelihood of ignition or dispersion of dust into the air. Remove burned, charred or wet dust to open secure area after fire is extinguished.

FIRE EXTINGUISHING MEDIA: Water, Carbon Dioxide, Foam, Dry Chemical, Halon and any Class "ABC" extinguishing media.

AUTOIGNITION TEMPERATURE

- 1) 275 C (527 F): Source: Textbook of Wood Technology 4th Edition, A.J. Panshin & Carl de Zeeuw, 1980, McGraw-Hill Book Company New York, NY.
- 2) 200 C (392 F): Source: Principles of Fire Protection, Arthur E. Cote and Percy Bugbee, 1988, National Fire Protection Association, Quincy, MA.
- 3) It is difficult to identify the specific ignition temperature of wood because of the large number of variables involved. Source: Essentials of Fire Fighting 4th Fourth Edition, 1998, Edited by Richard Hall and Barbara Adams, Fire Protection Publications, Oklahoma State University, Stillwater, OK.
- 4) Ignition of wood takes place when wood is subject to sufficient heat and in atmospheres that have sufficient oxygen. Ignition can be of two types: piloted or unpiloted. Piloted ignition occurs in the presence of an ignition source (such as a spark or flame). Unpiloted ignition is ignition that occurs where no pilot source is available. The surface temperature of wood materials has been measured somewhere between 300 C and 400 C (572 F to 752 F) prior to piloted ignition. Unpiloted ignition depends on special circumstances that result in different ranges of ignition temperatures. At this time, it is not possible to give specific ignition data that apply to a broad range of cases. With convection heating of wood, unpiloted ignition has been reported as low as 270 C (518 F) and as high as 470 C (878 F). Source: Wood Handbook Wood as an Engineering Material, 1999, Forest Products Laboratory, U.S. Department of Agriculture, Madison, WI.

HAZARDOUS COMBUSTION PRODUCTS: Sawing, sanding or machining can produce wood dust (and/or ligno-cellulosic fibers) as a by-product that may present an explosion hazard.

Additional information: See the National Fire Protection Association's standard 664 "Standard for the Prevention of Fires and Explosions in Wood Processing and Woodworking Facilities" (2007 Edition) for more details on wood dust explosions. Copies of this standard are available from the NFPA web site www.nfpa.org

SECTION 6 - ACCIDENTAL RELEASE MEASURES

LAND OR WATER SPILL: Not applicable to panel products in purchased form.

SECTION 7 - HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: No special handling precautions are required for products in purchased form. This product should not be stored where exposure to water could occur or near a source of ignition. Avoid storing in areas of high relative humidity and temperature. Store in cool, dry place away from open flame.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Certain activities in the re-manufacturing and use of this product could possibly produce wood dust or formaldehyde vapors. Provide adequate general and local exhaust ventilation to keep airborne contaminant concentrations below the safe exposure limits.

PERSONAL PROTECTION (If necessary, refer to the appropriate OSHA or Canadian PPE Standards)

RESPIRATORY PROTECTION: None needed under normal use. Wear NIOSH/MSHA approved respiratory protection when safe exposure limits are exceeded.

EYE PROTECTION: Safety glasses with side shields recommended when re-manufacturing or otherwise working with this product.

PROTECTIVE CLOTHING: Other protective equipment such as puncture resistant gloves and outer garments may be needed depending on how product is used and/or dust conditions present.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Generally, light cream color – Raw material dependent.	VAPOR DENSITY: Not applicable
SPECIFIC GRAVITY: generally < 0.8	EVAPORATION RATE: Not applicable
SOLUBILITY IN WATER: Insoluble	MELTING/FREEZING POINT: Not applicable
pH: Not applicable	ODOR: Raw Material Dependent- generally pine
BOILING POINT: Not applicable	VAPOR PRESSURE: Not Applicable
VISCOSITY: Not applicable	PHYSICAL STATE: Solid

SECTION 10 - STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions

REACTIVITY: Avoid product contact with any temperature sources that could induce thermal decomposition. Avoid product contact with oxidizing agents and strong acids.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION: Thermal and/or thermal-oxidative decomposition can produce irritating and toxic fumes and gases, including hydrogen cyanide, carbon oxides, polynuclear aromatic hydrocarbons, aldehydes and organic acids.

SECTION 11 - TOXICOLOGY INFORMATION

TOXICITY DATA: Currently there are no toxicological data for product in purchased form.

Toxicity Hazard Rating for wood dust is 3.3 (moderately toxic). Based on The National Library

of Medicine's toxicity rating of 1 = none and 6 = supertoxic. A probable oral lethal dose of wood dust (human) would be 0.5 to 5.0 g/kg. This would be about 3/4 of a pound of wood dust for a 150 pound person.

CARCINOGENICITY: Wood dust is not considered a potential carcinogen by OSHA. IARC classifies wood dust as a carcinogen to Humans (Group 1). This classification is primarily based on IARC's evaluation of increased risk in the occurrences of adenocarcinomas of the nasal cavities and paranasal sinuses associated with exposure to hardwood dust. IARC did not find sufficient evidence to associate cancers of the oropharynx, hypopharynx, lung, lymphatic and hemotopoietic systems, stomach, colon or rectum with exposure to wood dust. Wood dust has been listed by NTP as a known human carcinogen.

The trace Formaldehyde component of this product is classified by the NTP as Reasonably Anticipated to Be a Human Carcinogen, by OSHA as a Carcinogen Defined with no Further Classification and by IARC as Probably Carcinogenic to Humans. PMDI is not listed as a carcinogen by ACGIH, NTP, IARC, or OSHA. The remaining components of this product are not found on the following lists: Federal OSHA Z List, NTP, IARC and Cal/OSHA.

SENSITIZATION TO THE PRODUCT: Some individuals can become sensitized to wood dusts and develop allergy-like symptoms upon repeated exposure.

SECTION 12 - ECOLOGICAL INFORMATION

ENVIRONMENTAL STABILITY: The wood portion of this product will eventually decompose if left in the environment. The remaining components of this product are relatively stable under ambient, environmental conditions.

EFFECT OF MATERIAL ON PLANTS AND ANIMALS: This product is not expected to cause harm to plants or animals in the environment.

EFFECT OF CHEMICAL ON AQUATIC LIFE: This panel product is not expected to cause harm in an aquatic environment unless a large quantity is left in a body of water.

SECTION 13 - DISPOSAL CONSIDERATIONS

This panel product is recyclable. It is, however, the user's responsibility to determine at the time of disposal if it meets any EPA RCRA applicable criteria for hazardous waste. Disposal must follow applicable federal, state, provincial and local regulations.

SECTION 14 - TRANSPORTATION INFORMATION

This product is not considered hazardous as defined by 49 CFR 172.101 by the U.S. Department of Transportation.

PROPER SHIPPING NAME: Not Regulated

HAZARD CLASS NUMBER AND DESCRIPTION: Not applicable

UN IDENTIFICATION NUMBER: Not applicable

PACKAGING GROUP: Not applicable

DOT LABEL (S) REQUIRED: Not applicable

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2000): Not applicable

MARINE POLLUTANT: No component of this product is listed as a marine pollutant by the DOT (49 CFR 172.101, Appendix B.)

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOOD REGULATIONS: This product is not considered as dangerous goods, per regulations of Transport Canada.

SECTION 15 - REGULATORY INFORMATION

U.S. OSHA: Wood products are not considered hazardous under the criteria of the Federal OSHA Hazard Communication Standard, 29 CFR 1910.1200. However, wood dusts generated by sawing, sanding or machining these products may be hazardous.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): Formaldehyde, is a trace component in this product, and is on the California Proposition 65 List as a chemical known to the State of California to cause cancer. WARNING. This product contains a trace component that is known to the State of California to cause cancer or other reproductive harm.

HUD: The Department of Housing and Urban Development (HUD) regulation 24 CFR 3280 sets standards and provides for third party certification of particleboard formaldehyde emissions.

ANSI A208.1-1999 Particleboard Standard: Industry consensus standard sets formaldehyde emission levels for industrial and flooring particleboard. Our products are manufactured to meet these ANSI Standards.

RCRA : pMDI is not a hazardous waste in purchased form nor in this product.

Sara/Cercla: This product does not contain chemicals in concentrations that should require reporting under SARA 313 (formaldehyde).

SECTION 16 - OTHER INFORMATION

pMDI

The polymeric diphenylmethane diisocyanate binder used in some of our panels is generally reacted into polyurea and biurets, a small number of urethane and polyurete bonds may also be formed. This product does not liberate MDI vapor or aerosol. MDI and pMDI are not classified as carcinogenic by ACGIH or IARC, they are not regulated as carcinogens by OSHA nor listed as carcinogens by NTP.

Potlatch Forest Products Corporation believes the information contained in this Material Safety Data Sheet is based on sources believed to be accurate, or otherwise technically correct, at the time of preparation. Potlatch makes no warranty, expressed or implied, concerning the accuracy of the information presented in this MSDS. It is the user's responsibility to determine if this information is suitable for their applications and to follow safety precautions as may be necessary. It is the responsibility of the user to comply with local, state and federal regulations concerning use of this product.

Definition of Common Terms:

- ACGIH = American Conference of Governmental Industrial Hygienists
- C = Ceiling Limit
- CAS# = Chemical Abstracts System Number
- IARC = International Agency for Research on Cancer

MSHA	=	Mine Safety and Health Administration
NAP	=	Not Applicable
NAV	=	Not Available
NIOSH	=	National Institute for Occupational Safety and Health
NTP	=	National Toxicology Program
OSHA	=	Occupational Health and Safety Administration
pMDI	=	Polymeric Diphenylmethane Diisocyanate
PEL	=	Permissible Exposure Limit
STEL	=	Short Term Exposure Limit (15 minutes)
TLV	=	Threshold Limit Value
TWA	=	Time-Weighted Average (8 hours)
U- F	=	Urea- Formaldehyde Resin