

MATERIAL SAFETY DATA SHEET

Section I COMPANY/PRODUCT IDENTIFICATION

TRADE NAME: NORBORD MDF, NORBORD HDF
PRODUCT IDENTIFICATION: Medium Density Fiberboard (MDF), High Density Fiberboard (HDF)
DESCRIPTION: An engineered wood panel product manufactured from refined wood fibers bonded together with synthetic resins under heat and pressure.
Manufacturer's Name: Norbord Industries Inc.
Contact: Environmental and Technical Services
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Section II HAZARDOUS INGREDIENTS / IDENTITY INFORMATION

Hazardous Components	OSHA PEL	ACGIH TLV	%
Urea Formaldehyde Resin (Free Formaldehyde gas is less than 1% of resin mixture)	TWA = 0.75 ppm STEL = 2 ppm	Ceiling 0.3ppm	7-15%
Wax Emulsion	None	None	<1%
Wood Dust (All soft & hardwoods except Western red cedar)	TWA = 5 mg/m ³ STEL = 10 mg/m ³	TWA = 1mg/m ³ (Hardwood) TWA = 5/mg/m ³ (Softwood)	

NOTES: ACGIH = American Conference of Government Industrial Hygienists
 OSHA = Occupational Safety & Health Administration
 TLV = Threshold Limit Value

PEL = Permissible Exposure Limit
 TWA = Time-weighted Average
 STEL = Short-Term Exposure Limit

Section III PHYSICAL DATA

Boiling Point	Not Applicable
Specific Gravity	< 1
Vapor Density	Not Applicable
% Volatiles by Volume	0
Melting Point	Not Applicable
Vapor Pressure	Not Applicable
Solubility in Water (% by wt)	< 0.1%
Evaporation Rate (Butyl Acetate=1)	Not Applicable
pH	Not Applicable
Appearance and Odor	Light tan, with an odor characteristic of wood species.

Section IV FIRE AND EXPLOSION HAZARD DATA

Flash Point	Not Applicable.
Auto Ignition Temperature	Not Available (will depend upon duration of exposure to heat source and other variables).
Extinguishing Media	Water, Carbon dioxide, Sand.
Special Fire Fighting Procedures	None.
Unusual Fire and Explosion Hazards	Sawing, sanding or machining can produce wood dust as a by-product which may present an explosion hazard if a dust cloud contacts an ignition source. An airborne concentration of 40 grams of dust per cubic meter of air is often used as the LEL for wood dust.

Note: LEL = Lower Explosive Limit

Section V REACTIVITY DATA

Stability	Stable under normal conditions.
Incompatibility	Avoid contact with oxidizing agents. Avoid open flame. Product may ignite in excess of 400° F.
Hazardous Decomposition Products	Thermal and/or thermal oxidative decomposition can produce irritating and toxic fume and gases, including carbon monoxide, hydrogen cyanide, aldehydes, organic acids and polynuclear aromatic compounds.
Hazardous Polymerization	Not Applicable.

Section VI HEALTH HAZARD DATA

Exposure Limits:	(See Section II)
Routes of Entry:	
Eye Contact	Gaseous formaldehyde may cause temporary irritation or a burning sensation. Wood dust can cause mechanical irritation.
Skin Contact	Both formaldehyde and various species of wood dust may evoke allergic contact dermatitis in sensitized individuals.
Ingestion	Not likely to occur.
Inhalation	
(Gaseous formaldehyde)	Gaseous formaldehyde may cause temporary irritation to eyes, nose and throat. Some reports suggest that formaldehyde may cause respiratory sensitization, such as asthma, and that pre-existing respiratory sensitization may be aggravated by exposure. Formaldehyde is listed by the International Agency for Research on Cancer (IARC) as a probable human carcinogen. The National Toxicology Program (NTP) includes formaldehyde in the Annual Report on Carcinogens. Formaldehyde is regulated by OSHA as a 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 using this product. 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.
(Wood Dust)	Wood dust may cause nasal dryness, irritation, and obstruction. Coughing, wheezing, and sneezing; sinusitis and prolonged colds have also been reported. Depending on species, wood dust may cause respiratory sensitization and/or irritation. Prolonged exposure to wood dust has been reported by some observers to be associated with nasal cancer. IARC classifies wood dust as a carcinogen to humans (Group 1). This classification is based 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.
Emergency & First Aid Procedures:	
Eyes	Flush eyes with large amounts of water. Remove to fresh air. If irritation persists, get medical attention.
Skin	Wash affected areas with soap and water. Get medical advice if rash or persistent irritation or dermatitis occurs.
Ingestion	Not Applicable.

Section VII PRECAUTIONS FOR SAFE HANDLING AND USE

Formaldehyde	Provide adequate ventilation to reduce the possible buildup of formaldehyde gas, particularly when high temperatures occur.
Wood Dust	Avoid dusty conditions and provide good ventilation.

Section VIII CONTROL MEASURES

Ventilation	Provide adequate general and local exhaust ventilation to keep airborne contamination concentration levels below the OSHA PELs.
Personal Protective Equipment	Wear goggles or safety glasses when manufacturing or machining the product. Wear NIOSH/MSHA approved respirator when the allowable exposure limits may be exceeded. Other protective equipment such as gloves and outer garments may be needed depending on dust conditions.
Work or Hygienic Practices	Follow good hygienical housekeeping practices.

NOTICE: Data contained herein is provided in good faith and, to the best of our knowledge, represents accurate information. There is no guarantee of any kind, expressed or implied, concerning the accuracy or completeness of this information.