MDF Plaque

Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

Common Name	NORBORD MDF (Standard, Moisture resistant, High density, Low density)
Supplier/ Manufacturer	Norbord Industries Inc. 1 Toronto Street, Suite 500 Toronto, Ontario M5C 2W4
Synonym	Not available
Trade name	Norbord MDF
Product description	An engineered wood panel product manufactured from refined wood fibers bonded together with synthetic resins under heat and pressure.
Material Uses	Not Available

Chemical name	Not applicable
Chemical formula	Not applicable
CAS #	Mixture
Validation Date	2001-03-14
Print Date	2001-03-14
Responsible Name	Norbord Industries Inc.
In Case of Emergency	(514) 630-9354

Section 2. Composition and Information on Ingredients

Name	CAS #	% by Weight	LD50	LC50	Exposure Limits
Wood dusts (All soft and hard woods except western red cedar).		90			
Hardwood dust	Not available		Not available	Not available	ACGIH (2000) 1 mg/m³ TWA A1 OSHA PEL 15 mg/m³ TWA Total 5 mg/m³ Respirable Ontario OEL-reg 833 (2000) Proposed 3 mg/m³ TWAEV Total dust BC reg296-97 (1997) Non-allergenic 1 mg/m³ K1, A RQMT (Quebec) (1999) 5 mg/m³ TWA Total
Softwood dust	Not available		Not available	Not available	ACGIH (2000) 5 mg/m³ TWA 10 mg/m³ STEL/C OSHA PEL 15 mg/m³ TWA Total 5 mg/m³ Respirable Ontario OEL-reg 833 (2000)

Continued on Next Page

Melamine Urea Formaldehyde Resin (free formaldhyde gas is less than 1% of resin mixture) (HCOH) **(For Moisture Resistant panel)** or Urea Formaldehyde Liquid Resin (free formaldhyde gas is less than 1% of resin mixture) (HCOH) **(For Standard, High Density and Low Density panel)**	50-00-0	7-10 0.1 - 5.0	- Oral Rat 800 mg/kg - Oral Guinea Pig 260 mg/kg - Subcutaneous Rat 420 mg/kg - Dermal Rabbit 270 mg/kg	Inhalation Mouse 333 ppm/2 h Inhalation Rat 815 ppp/30 min.	**Proposed** 3 mg/m³ TWAEV Total dust **BC reg 296-97 (1997)** Non-allergenic 2.5 mg/m³ K1 **RQMT (Quebec) (1999)** 5 mg/m³ TWA Total **ACGIH (2000)** 0.3 ppm C SEN, A2 **OSHA PEL** 0.75 ppm TWA **Ontario OEL reg 833 (2000) Proposed** 0.3 ppm CEV **BC reg 296-97 (1997)** 0.3 ppm TWA 1.0 ppm C K2, Z, A **RQMT (Quebec) (1999)** 2.0 ppm ceiling C2
Paraffin Wax Emulsion (fume) (C_nH_{2n+2})	8002-74-2	0.1 - 1.0	Not available	Not available	**ACGIH (2000)** 2 mg/m³ TWA **OSHA PEL** Not available **Ontario OEL reg 833 (2000)** 2 mg/m³ TWAEV **BC reg 296-97 (1997)** 2 mg/m³ 8 hour EL 6 mg/m³ 15 minutes EL **RQMT (Quebec) (1999)** 2 mg/m³ TWA

Section 3. Hazards Identification

Emergency Overview	The product may release small quantities of formaldehyde in gaseous form. Emissions decrease through time as the panels age. Manual or mechanical cutting or abrasion processes performed on the product may result in generation of wood dust.
Routes of Entry	Inhalation and contact with skin and eyes.
Potential Acute Health Effects	

Continued on Next Page

No test data exists on actual mixture. Listed below is the data available on the identified ingredients.

May cause irritation to upper respiratory system, eyes and skin.
If inhaled may cause difficulty in breathing, headache, rapid heart beat, nausea and loss of sense of smell.

Formaldehyde
IDLH - 20 ppm
Oral LD_{Lo}
women- 36 mg/kg

Potential Chronic Health Effects

No test data exists on actual mixture. Listed below is the data available on the identified ingredients.

Formaldehyde
Carcinogenicity
IARC (Group 2A)- Probably Carcinogenic to Humans
ACGIH (A2)- Suspected Human Carcinogen
BC (K2)- A suspected human carcinogen

Wood Dust
Carcinogenicity
IARC (Group 1)- Carcinogenic to Humans
ACGIH (A1)- Certain hard woods, Confirmed Human Carcinogen
BC (K1)- A Confirmed Human Carcinogen

For further information concerning toxic and hazardous information consult the MSDSs for formaldehyde and wood dust.

See Toxicological Information (section 11)

Section 4. First Aid Measures

Eye Contact	Gaseous formaldehyde may cause temporary irritation or a burning sensation. Wood dust may cause mechanical irritation. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes, holding lids apart to ensure flushing of each entire eye. Get medical attention immediately.
Skin Contact	Both Formaldehyde and various species of wood dust may cause allergic conatct dermatitis in sensitized individuals. In case of contact, flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and footwear. Get medical attention if rash or persistent irritation or dermatitis occurs. Wash clothing before reuse.
Inhalation	Gaseous formaldehyde may cause temporary irritation to eyes, nose and throat. Depending on species, wood dust may cause respiratory sensitization and/or irritation. If inhaled, remove to fresh air. Get medical advice if persistent irritation, severe coughing or breathing difficulty occurs.
Ingestion	Not likely to occur.
Notes to Physician	Respiratory ailments or pre-existing skin conditions may be aggravated by exposure to wood dust.

Continued on Next Page

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Section 5. Fire Fighting Measures

Flammability of the Product	FLAMMABLE.
Auto-ignition Temperature	204.44 to 260 C
Flash Points	Not available.
Flammable Limits	Higher: undetermined (varies with composition particle size, moisture level, rate of heating and dust concentration). Lower: 40 grams/m^3 (LEL) wood dust
Products of Combustion	Burning of wood products produces irritating and toxic emissions, including carbon dioxide, carbon dioxide, aldehydes and organic acids.
Fire Hazards in Presence of Various Substances	There is risk of fire when fine dust particles come in contact with a source of ignition as heat or flame.
Explosion Hazards in Presence of Various Substances	Dust explosion is strongly possible if dust concentrations rise to critical values (above 40 grams/m^3) and if there is a source of ignition present (flame, heat, static discharge, etc...). May explode when in contact with strong acids and oxidants.
Sensitivity/mechanical impact	Not available.
Sensitivity/static discharge	Not available.
Fire Fighting Media and Instructions	Use water spray or carbon dioxide when fighting fires involving this material. Use dry sand or earth to smother fire.

Section 6. Accidental Release Measures

Spill and Leak	Sweep or vacuum and avoid creating airborne dust conditions. Remove ignition source and provide good ventilation where dust conditions may occur. Place recovered wood dust in a container for proper disposal.

Section 7. Handling and Storage

Precautions	Avoid any source of heat and avoid creating "clouds" of dust which can be source of fire and explosion. Wash thoroughly after handling. Wash closing before reuse. AVOID CONTACT WITH EYES AND SKIN. AVOID BREATHING DUST.
Storage	Store away from incompatibles. Keep in a closed container in a cool and dry area. Keep away from any ignition source.
Incompatibility	Avoid contact with oxidizing agents and drying oils. Avoid open flame.

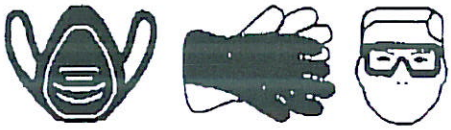
Section 8. Exposure Controls/Personal Protection

Engineering Controls	For reducing exposure to below recommended exposure limits, methods include mechanical ventilation using diluting or control of process, and process conditions or personal enclosure. System design should consider nature of contaminants and any explosive characteristics. Eyewash stations are recommended.
Personal Protection	

Eyes AVOID CONTACT WITH EYES*.
Use safety glasses with side shields or dust resistant safety goggles. Suitable eye protection should always be worn whenever cutting or shaping products with power tools.
*For more details refer to CSA Standard Z94.3-M88 "Industrial Eye and Face Protection".

Body AVOID CONTACT WITH SKIN.
Wear Coverall's.
Remove and wash dust contaminated clothing before reuse.

Continued on Next Page

Respiratory	**AVOID BREATHING DUST.** When engineering controls and work practices are not effective in controlling exposure to recommended exposure limits, wear suitable respiratory protection. If respirator required, use an appropriate NIOSH/MSHA approved device, and institute comprehensive program as per CSA Z94.4-M1984.
Hands	**AVOID CONTACT WITH SKIN.** Wear leather work gloves to protect skin from contact with wood dust, mechanical irritation and splinters.
Feet	Not applicable As determined by normal job requirements.
Protective Clothing (Pictograms)	

Consult Section 2 for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical State and Appearance	Solid
Molecular Weight	Not applicable
Molecular Formula	Not applicable
pH (1% Soln/Water)	Basic
Boiling/Condensation Point	Not available
Melting/Freezing Point	Not applicable
Critical Temperature	Not available
Specific Gravity	Variable (dependent on wood species and moisture content)
Vapor Pressure	Not applicable
Vapor Density	Not available
Volatility	Not available
Odor Threshold	Not available
Evaporation Rate	Not available
Water/oil dist. coeff.	Not applicable
Viscosity	Not applicable
Ionicity (In Water)	Not available
Dispersion Properties	Not available
Solubility	Insoluble in cold water, hot water.

Odor	Dependent on wood species and time since dust was generated.
Taste	Not available
Color	Light to dark brown

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Section 10. Stability and Reactivity

Stability and Reactivity	The product is stable.
Conditions of Instability	Not available
Incompatibility with Various Substances	Wood dust can ignite if it comes in contact with strong oxidizing agents such as perchloric acid and nitric acids, and with strong acids such as sulfuric acid and if it comes in contact with drying oils such as linseed oil.
Hazardous Decomposition Products	Thermal and/or thermal oxidative decomposition can produce irritating and toxic fumes and gases, including carbon monoxide, hydrogen cyanide, aldehydes, organic acids and polynuclear aromatic compounds.
Corrosivity	Not applicable

Section 11. Toxicological Information

Routes of Entry	Inhalation and contact with skin and eyes.
Chronic Effects on Humans	No test data exists on the actual mixture. Listed below is the data available on wood dust and formaldehyde: Exposure to wood dust may cause asthmatic symptoms and signs. Chronic exposure to some species of wood and sensitivity of some worker's may cause the outbreak of some allergies that can become a potential health hazard to these individuals. Frequent or prolonged exposure to formaldehyde can cause hypersensitivity leading to contact dermatitis, possibly of an eczematoid nature.
Acute Effects on Humans	No test data exists on the actual mixture. Listed below is the data available on wood dust and formaldehyde:
Skin Contact	CAUSES IRRITATION AND SENSITIZATION. Dermatitis has been reported in humans, nature of the wood and origin of the dust has to be taken into consideration as well a exposure to formaldehyde.
Skin Absorption	Not available
Eye Contact	CAUSES EYE IRRITATION. Conjunctivitis has been reported in humans, nature of the wood and origin of the dust has to be taken into consideration. Exposure to formaldehyde may cause conjunctivitis and lacrymation.
Inhalation	CAUSES IRRITATION AND SENSITIZATION. No test data available on actual mixture. Data available on identified ingredients are listed below. Inhalation of wood dust may irritate the respiratory tract by causing: drying of the mucus, sneezing, irritating cough and expectoration. May cause some difficulty in breathing such as: bronchitis, nasal discharge, respiratory tract obstruction and more. May sensitize the respiratory system and cause asthmatic symptoms and signs. People with existing respiratory tract ailments, (e.g. bronchitis) should avoid exposures to wood dust as they may suffer severe irritation and difficulty in breathing. Some reports suggest that formaldehyde may cause respiratory sensitization, such as asthma, and pre-existing respiratory sensitization may be aggravated by exposure.
Ingestion	Not applicable Not likely to occur.
Irritancy of product	No test data available on actual mixture. Data available on identified ingredients demonstrate irritancy to mucous membrane, upper respiratory system, eyes and skin.
Sensitization	No test data available on actual mixture. Data available on identified ingredients demonstrate sensitization to upper respiratory system, eyes and skin.

Continued on Next Page

Carcinogenic Effects	No test data available on actual mixture. Data available on: **Formaldehyde** IARC (Group 2A)- Probably Carcinogenic to Humans ACGIH (A2)- Suspected Human Carcinogen BC (K2)- A Suspected Human Carcinogen **Wood Dust** IARC (Group 1) Carcinogenic to Humans Nasal carcinoma has been reported in furniture industries and an increase of Hodgkin's disease has been reported in other wood working industries especially in sawmills. ACGIH (A1) Certain hard woods-Confirmed Human Carcinogen BC (K1)- A Confirmed Human Carcinogen
Teratogenicity	Not available
Mutagenicity	No test data available on actual mixture. Data available on: Wood dust Exposure to wood dust may cause cellular changes in the nasal epithelium.
Reproductive Effects	No test data availableon actual mixture. Data available on: **Formaldehyde** Reproductive toxin
Name of toxicological synergistic products	Not available

Section 12. Ecological Information

Ecotoxicity	Not available
BOD5 and COD	Depending on the kind of wood
Products of Biodegradation	Depending of the kind of wood Possibly hazardous short term degradation products are unlikely. Long term degradation products may arise due to formaldehyde.
Toxicity of the Products of Biodegradation	Not available
Special Remarks on the Environment	Biodegradation of the wood may lower oxygen levels in water which may be hazardous to aquatic life.

Section 13. Disposal Considerations

Waste Information	Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14. Transport Information

Classification	Not applicable
PIN	Not applicable
Special Provisions for Transport	Not available

Continued on Next Page

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Section 15. Regulatory Information

U.S. Federal Regulations	The product is not controlled under the US Hazard Communication Rule (29 CFR 1900.1200).
Canadian Regulations	The product is not controlled under WHMIS. It has been classified according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.
Other Regulations	Not available

Section 16. Other Information

Other Special Considerations	The 16 heading format MSDS complies with WHMIS criteria and follows the structure set forth by ANSI Z400.1-1998.

Validated by Norbord Industries Inc. on 2001-03-14.	Printed 2001-03-14.

Notice to Reader

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