

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Common Name

NORBORD OSB BOARD

Supplier/ Manufacturer

Norbord Inc.
 1 Toronto Street, Suite 600
 Toronto, Ontario
 M5C 2W4
www.Norbord.com

EMERGENCY CONTACT

Call CHEMTREC 24h/24
Within USA and Canada: 1.800.424.9300
Outside USA and Canada: +1.703.527.3887
(collect calls accepted)

Synonym

Oriented Strand Board

Trade Name

OSB, TallWall, Windstorm, Stabledge, Solarbord, TruFlor, Pinnacle, Trubord, Rimboard, Rimboard Plus, Durastrand Rimboard, Durastrand Point Six, Point Six, SteadiTread, TruDeck, StableDeck ,QuakeZone, CE Marked, JAS Rated and Tai-Q.

Product Description

These panel products contain hardwood and/or softwood strands bonded with phenol formaldehyde copolymer adhesive resin and/or polymeric diphenylmethane diisocyanate (PMDI) adhesive resin and wax. The Solarbord product has a heat-reflecting foil laminated onto one side of the OSB (Oriented Strand Board) board.

SECTION 2. HAZARD (S) IDENTIFICATION

GHS Classification

This product is not classified as hazardous according to GHS criteria

WHIMS Classification

This product is not classified as hazardous according to WHIMS criteria

Other Hazards

Sawing, sanding or machining processes performed on these products may result in generation of dusts (wood dust and polymerized resin dust).

Emergency Overview

Sawing, sanding or machining wood or wood products can generate combustible dust. Wood dust may ignite or form explosive mixture with air in the presence of an ignition source. Product dust may be irritating to eyes, skin or respiratory system

POTENTIAL HEALTH EFFECTS:

The wood panels in purchase form do not represent health hazard. The health effects mentioned below could happen if the panel is mechanically processed and dusts (wood and polymerized resin) are generated in the environment.

Potential Acute Health Effects

Inhalation Inhalation of dust may cause irritation to upper respiratory system

Skin May cause chemical and/or mechanical irritation of the skin

Eyes May cause chemical and/or mechanical irritation of the skin

Ingestion Not an expected route of entry

Medical conditions aggravated by overexposure Respiratory ailments or pre-existing skin conditions may be aggravated by exposure to wood dust.

Potential Chronic Health Effects

Chronic effects Repeated exposure to dust may cause asthmatic and/or dermatitis symptoms and signs. Chronic exposure to some species of wood and sensitivity of some workers may cause the outbreak of some allergies that can become a potential health hazard to these individuals

Carcinogenicity Possible carcinogen See section 11 Toxicological Information

Mutagenicity Possible mutagen See section 11 Toxicological Information

Sensitization Possible Sensitizer See section 11 Toxicological Information

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS #	Wt. %
Variety of Hardwood (e.g., Aspen, Poplar, Black Poplar, Birch etc.) and/or Softwood (Southern Yellow Pine, Lodgepole Pine, Tamarack, Spruce...) - But not Western Red Cedar	Not applicable	84-99
Cured Phenol Formaldehyde Adhesive Resin Solid. (less than 0.01% of free formaldehyde) ¹	9003-35-4	1-10
Cured Polymeric Diphenylmethane Diisocyanate (PMDI) Adhesive (Once pressed these wood panels do not contain free or unreacted MDI) ¹	9016-87-9	0-10
Slack Wax	64742-61-6	0 - 5.0
Heat Reflecting Overlay (Foil, MDO) ²	Not available	0-2.5
Free Formaldehyde	50-00-0	<0.01
Zinc Borate ³	138265-88-0	0-3

¹PMDI or phenol-formaldehyde adhesive could not be used in some panel productions

²Foil and MDO (Medium Density Overlay) – Proprietary component information available with signed disclosure agreement.

³Zinc Borate only in treated OSB products; Borogard[®]ZB SDS available on request.

The above ingredients are bonded together under heat and pressure. The process cures the resin, but small amounts of formaldehyde may be released from the finished product. The finished product contains less than 0.01% free formaldehyde by weight.

SECTION 4. FIRST AID MEASURE

Eye Contact 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 Various species of wood dust may cause allergic contact dermatitis in sensitized individuals. In case of contact, flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and footwear. Wash clothing before reuse. Get medical attention if rash or persistent irritation or dermatitis occurs.

Inhalation 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.

SECTION 5. FIRE FIGHTING MEASURES

Flammability of the Product	These wood-based panels are flammable but difficult to ignite.
Auto-ignition Temperature	204 to 260 °C
Flash Point	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.
Extinguishing Media	Use water spray, dry chemical or carbon dioxide when fighting fires involving this material. Dry sand or earth can be used for small fire.
Hazardous Combustion Products	Burning of wood panel produces irritating and toxic emissions, including carbon dioxide, carbon monoxide, noxious fumes, aldehydes and organic acids.
Special Fire-Fighting Equipment/Procedure	Firefighters must wear fire resistant protective equipment. Wear self-contained breathing apparatus with full face piece operated under positive pressure demand mode.
Fire Hazards in Presence of Various Substances	There is risk of fire/explosion when high concentrations of 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	These products are not sensitive to mechanical impact.
Sensitivity/static discharge	These products are not sensitive to static discharge. However, fine dust clouds may be sensitive to static discharge and lead to a dust explosive hazards.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	See protective measures in section 8.
Environmental Precautions	None
Spill and Leak	Not likely to occur as a wood panel. Wood dust spill, sweep with wet technique or vacuum and avoid creating airborne dust conditions. Dried wood dust can be a source of combustible and explosion hazard. 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

Safe Handling Procedures	Avoid any source of heat or ignition and avoid creating "clouds" of dust during mechanical processes (sawing, sanding, drilling...) on wood panel. Wood dust can be source of fire and explosion hazards. Use in a well-ventilated area. Wash thoroughly after handling. Wash clothing before reuse. AVOID DUST CONTACT WITH EYES AND SKIN. AVOID BREATHING DUST.
Storage Requirement	Store away from incompatibles. Keep in a cool, dry and well-ventilated area. Keep away from any ignition source.
Incompatibility	Avoid contact with oxidizing agents and drying oils. Avoid open flame.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Ingredients	USA ACGIH (2015)	USA OSHA 29CFR1910.1000	QUEBEC OSHA (OEL S-2.1, r.15 - 2010)	ONTARIO OSHA OEL-reg 833 (2013)
Variety of Hardwood (e.g., Aspen, Poplar, Black Poplar, Birch etc.) and/or Softwood (Southern Yellow Pine, Lodgepole Pine, Tamarack, Spruce, ,) - But not Western Red Cedar	TLV-TWA (Inhalable Dust) 1 mg/m ³	PEL-TWA ¹ (Total Dust as PNOR) 15 mg/m ³ PEL-TWA ¹ (Total Dust) 5 mg/m ³	TWAEV (Total Dust) 5 mg/m ³	TWAEV (Softwood Total Dust) 5 mg/m ³ STEL (Softwood Total Dust)

		STEL-TWA ¹ (Total Dust) 10 mg/m ³		10 mg/m ³ TWA EV (Certain Hardwoods Total Dust) 1 mg/m ³
Cured Phenol Formaldehyde Adhesive Resin Solid. (less than 0.01% of free formaldehyde)	None Established	None Established	None Established	None Established
Cured Polymeric Diphenylmethane Diisocyanate (PMDI) Adhesive (Once pressed these wood panels do not contain free or unreacted MDI)	None Established	None Established	None Established	None Established
Formaldehyde ²	TWA/Ceiling 0.3 ppm	PEL 0.75 ppm STEL 2.0 ppm (See 29CFR1910.1048)	TWAEV/Ceiling 2.0 ppm	STEV 1 ppm Ceiling 1.5 ppm
Heat Reflecting Foil (Solarbord Only)	None Established	None Established	None Established	None Established
Slack Wax (as Paraffin Wax Fume)	TWA 2 mg/m ³	Not Regulated	TWAEV 2 mg/m ³	TWAEV 2 mg/m ³
Zinc Borate (as inorganic compounds)	TWA (Inhalable Dust) 2 mg/m ³	PEL-TWA (Total Dust as PNOR) 15 mg/m ³	TWAEV (Total Dust as PNOR) 10 mg/m ³	TWAEV 2 mg/m ³

¹ In *AFI - 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/m³; STEL(15 MIN.) - 10.0 mg/m³ (all soft and hard woods, except Western Red Cedar); Western Red Cedar; TWA - 2.5 mg/m³.**

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 Section 8 of this MSDS. **However, a number of states have incorporated provisions of the 1989 Standard in their state plans. Additionally, OSHA indicated that it may cite companies under the OSH Act General Duty Clause under appropriate circumstances for non-compliance with the 1989 PELs.**

²The OSHA 'Action Level' for Formaldehyde is 0.5 ppm based on an 8-hour TWA under 29 CFR 1910.1048. This level is not achieved under normal occupational exposures to these products. The British-Colombia formaldehyde Occupational Health and Safety Regulation's 8-hour TWA is 0.3 ppm. The formaldehyde 8-hour TWA exposure limits under the British-Columbia, Alberta, Quebec and Ontario Occupational Health and Safety Act have the "As Low As Reasonably Achievable" (ALARA) designation.

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 Not required if no transformation is performed on the product.
AVOID CONTACT WITH EYES.

Use safety glasses with side shields or dust resistant safety goggles if manual or mechanical cutting or abrasion processes is performed on the product.

Body Not required if no transformation is performed on the product.
AVOID CONTACT WITH SKIN.

Coveralls or long-sleeved shirt is recommended if manual or mechanical cutting or abrasion processes is performed on the product.

Remove and wash dust contaminated clothing before reuse.

Respiratory Not required if no transformation is performed on the product.
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 dust respirator N95 or higher.

Hands AVOID CONTACT WITH SKIN.

Advice on general occupational hygiene

Wear leather work gloves to protect skin against mechanical irritation and splinters.
Do not eat, drink and smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before accessing to eating area.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Solid	Odor	Depend on wood species and time since panel was produced.
Appearance	Wood panel	Threshold Odor	Not available
pH	Not available	Color	Light to dark brown
Melting /Freezing point (°C)	Not available	Vapour pressure (@20 °C)	Not available
Boiling point (°C)	Not available	Vapour density (Air=1)	Not available
Flash point (°C)	Not available	Solubility (in water)	Not soluble
Evaporation rate	Not available	Coefficient of water/oil distribution	Not Available
Auto-ignition temperature	204 to 260 °C	Decomposition temperature	Not available
Flammability (Solid, gas)	These wood panels are flammable in presence of ignition source		
Upper flammability/explosive limit (% by volume)	Higher: undetermined (varies with composition particle size, moisture level, rate of heating and dust concentration)		
Lower flammability/explosive limit (% by volume)	40 grams/m ³ (wood dust) 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.)		
Relative density (@25 °C)	Variable (dependent on wood species and moisture content)		
Viscosity	Not applicable		

SECTION 10. STABILITY AND REACTIVITY

Reactivity	Not available
Stability	Stable under normal conditions
Possible hazardous reactions	Not hazardous reactions will occur
Conditions to avoid	Keep away of ignition sources (excessive heat, open flames, sparks) and incompatible materials
Materials to avoid and incompatibility	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, aldehydes, isocyanate, organic acids and polynuclear aromatic compounds.

SECTION 11. TOXICOLOGICAL INFORMATION

In purchase form these products do not represent health hazard

Routes of exposures	Inhalation, skin and eyes contact
Toxicological data	No test data exists on the purchased form products. Listed below is the data available on individual chemical ingredients entering in the composition of the wood panels and wood dust. Exposure to wood dust may cause asthmatic symptoms and signs.

Chemical ingredients	LD ₅₀		LC ₅₀ (4-hours)		GHS
	Oral	Dermal	Inhalation	Irritation	
Polymeric Diphenylmethane Diisocyanate (PMDI) Adhesive	>5,000 mg/kg (rat)	>5,000 mg/kg (rat)	0,49 mg/l (rat)	100 mg (Mild) (rabbit)	Acute toxicity, Inhalation of dusts, category 2
Phenol Formaldehyde Adhesive Resin Solid.	>2,500 mg/kg (rat)	>5,000 mg/kg (rat)	0,49 mg/l (rat)	No Data	Acute toxicity, Inhalation of dusts, category 2
Free Formaldehyde	100 - 830 mg/kg (rat)	270 mg/kg (rabbit)	0,20 - 0.59 mg/l (rat) 0.45 mg/l (mouse)	No Data	Acute toxicity, Inhalation of dusts, category 1
Slack Wax	No Data	No Data	No Data	No Data	No Data
Heat Reflecting foil	No Data	No Data	No Data	No Data	No Data
Zinc Borate	10,000 mg/kg (rat)	10,000 mg/kg (rabbit)	5 mg/l (rat)	No Data	Acute toxicity, Inhalation of dusts, category 4
Variety of Hardwood (e.g., Aspen, Poplar, Black Poplar, Birch, etc.) and/or Softwood (Southern Yellow Pine, Lodgepole Pine, Tamarack, Spruce, etc.) - But not Western Red Cedar	No Data	No Data	No Data	No Data	No Data

Skin Irritation

No test data available on the wood panel itself. Data available on identified ingredients are listed below.

Eye Irritation

Dermatitis has been reported in humans; nature of the wood and origin of the dust has to be taken into consideration during cutting or sanding operations of this product.

Skin Sensitization

Conjunctivitis has been reported in humans, nature of the wood and origin of the dust has to be taken into consideration.

No test data available on the wood panel itself. Data available on identified ingredients are listed below.

Repeated exposure to some species of wood and sensitivity of some workers may cause the outbreak of some allergies that can become a potential health hazard to these individuals.

Respiratory Sensitization

However, considering the small quantity of the resins contained in these products and the polymerization of these resins during the press cycle, the risk of exposure to formaldehyde and/or MDI during cutting and sanding operations must be considered of very low.

No test data available on the product itself. Data available on identified ingredients are listed below.

Inhalation of wood dust 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 and MDI may cause respiratory sensitization, such as asthma, and pre-existing respiratory sensitization may be aggravated by exposure. However, considering the small quantity of the resins contained in these products and the polymerization of these resins during the press cycle, the risk of exposure to formaldehyde and/or MDI during cutting and sanding operations must be considered of very low.

Mutagenicity

No test data available on the product itself. Data available on identified ingredients are listed below.

Data on wood dust suggests that exposure to wood dust may cause cellular changes in the nasal epithelium.

Carcinogenicity	No test data available on the product itself. Data available on identified ingredients are listed below.
Formaldehyde	IARC (Group 1) Human carcinogen ACGIH (Group A2) Suspected human carcinogen NTP Known to be a human carcinogen
Wood Dust	IARC (Group 1) Human carcinogen ACGIH (Group A1) Oak and beech – Confirmed human carcinogen ACGIH (Group A2) Birch, mahogany, teak, walnut - Suspected human carcinogen ACGIH (Group A4) All other wood dusts - Not classifiable as a human carcinogen NTP Known to be a human carcinogen
Teratogenicity	Not available.
Synergetic Effects	Not available.
Potential Health Effects	
Inhalation	Wood dust May cause irritation to the upper respiratory system.
Skin	Wood dust may cause irritation to the skin.
Eyes	Wood dust may cause chemical and/or mechanical irritation to the eye.
Ingestion	Not likely to occur.

SECTION 12.ECOLOGICAL INFORMATION

Ecotoxicity	Not available. The product has not been tested.
Persistence and degradability	The product has not been tested. Depending on the kind of wood Possibly hazardous short term degradation products are unlikely. Long term degradation products may arise due to formaldehyde.
Bioaccumulation potential	Not available. The product has not been tested.
Mobility in soil	Not available. The product has not been tested.
Results of PBT and vPvB assessment	Not available. The product has not been tested.
Other adverse effects	
PMDI	PMDI represent low to very low environmental hazard. A pond study showed gross contamination caused no significant toxic effects on a wide variety of flora and in all trophic levels (including fish), no detectable diaminodiphenylmethane (MDA) and no evidence of bioaccumulation of MDI or MDA. (see Heimbach F. et al. 1996)

Category	Species	Test	Result	Reference
Algae	Scenedesmus subspicatus	72 h NOEC 1640 following OECD Guideline 201	No effects were noted	Blom et Oldersma (1994)
Invertebrates	Daphnia magna	Static test following OECD Guideline 202/1	24 h EC50 = ≥ 500 - 1000mg/l	Rhône –Poulenc (1977) Caspers et al. (1986)
	Limnea stagnalis		24 h EC50 = ≥ 1000 mg/l	Caspers et al. (1986)
Fish (Fresh water)	Branchydanio rerio (Zebrafish)	Static test following OECD Guideline 203	96h LC0 = ≥1000 mg/l	Rhône –Poulenc (1977) Caspers et al. (1986)
		Static test similar to OECD Guideline 203	24h LC0 = ≥ 500 mg/l	Rhône –Poulenc (1977)
	Oryzias latipes (medaka)	Static test similar to Semi-static test. Japanese standard test	96h LC0 = ≥ 3000 mg/l	Nakata (1983)
Formaldehyde is acutely toxic for aquatic organisms				
Category	Species	Test	Result	GHS Acute Hazard Category
Algae (Fresh water)	Scenedesmus quadricauda	Not specified	24 h EC50 = 14.7 mg/l	3
Invertebrates (Fresh water)	Daphnia magna	DIN 38412 Part 11	24 h EC50 = 42 mg/l	3
		OECD Guideline 203	48 h EC50 = 29 mg/l	3

Fish (Fresh water)	Morone Saxatilis	Not Specified	96 h LC50 = 6.7 mg/l	2
	Fathead minnow	Flow-through	96 h L50 = 24.1 mg/l	3
	Micropterus Dolomieu	Not Specified	96 h LC50 = 54.4 mg/l	3

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Information

Canadian Environmental Protection Act: Not a hazardous waste as sold. Comply with all provincial and local regulations. Incineration or dry-land disposal is acceptable in most jurisdictions.

Resource Conservation and Recovery Act (RCRA): Not a United States Environmental Protection Agency (EPA) hazardous waste as sold. Comply with all state and local regulations. It is the user's responsibility to determine at the time of disposal if their waste product meets RCRA, Title 40 CFR 261 criteria for hazardous wastes. Incineration or dry-land disposal is acceptable in most jurisdictions.

SECTION 14. TRANSPORT INFORMATION

Regulatory Information	UN Number	Proper Shipping Name	Classes	Packing Group	Label	Other Information
Canada - TDG Classification	NR	NR	NR	NR	NR	None
US - DOT Classification	NR	NR	NR	NR	NR	None
ICAO/IATA	NR	NR	NR	NR	NR	None
Marine pollutant	No component of this product is listed as a marine pollutant by the DOT (49 CFR 172.101, Appendix B.)					

SECTION 15. REGULATORY INFORMATION

U.S. Federal Regulations

The product in purchase form is not controlled under the US Hazard Communication Rule (29 CFR 1900.1200).

- TSCA** All listed ingredients appear on the TSCA inventory and/or are exempted.
- CERCLA** Formaldehyde (100 lbs reportable quantity) is on the CERCLA chemical substance inventory.
- OSHA** Wood products are not hazardous under the criteria of the federal OSHA Hazard Communication Standard 29 CFR 1910.1200 (Hazcom 2012). However, wood dust and other chemical substances generated by mechanical activities performed on this product are regulated under this standard. Workplace exposure to formaldehyde is specifically regulated under 29 CFR 1910.1048.

SARA Title III Section 311/312 Hazard Category:

Hazard classification under 40 CFR 370 Hazard Classes:

An immediate acute health hazard	Yes	A delayed chronic health hazard	Yes	A fire Hazard	Yes
A corrosive hazard	No	A reactive hazard	No	A sudden release Hazard	No

SARA Section 313 Reporting:

This product does not contain any chemical substance(s) listed under 40 CFR 372.65 and in concentrations that should required reporting under SARA 313.

State Right-to-Know

While freshly pressed and/or depending of the environmental conditions (temperature and relative humidity) a very small level of formaldehyde may be released from the panels.

Chamber tests performed on OSB panels and conducted by the APA Engineered Association have demonstrated that the formaldehyde level from the off-gas of these type of panels were negligible (below 0.1 ppm).

However, the user should ensure that its specific mechanical process, handling, storage, and ventilation conditions will not contribute to formaldehyde emission exceeding the safe threshold level.

California Proposition 65

Warning

Warning:

Drilling, sawing, sanding or machining wood products generates wood dust, a substance known to the State of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards to avoid inhaling wood dust (California Health and Safety Code Section 25249.6).

The paint applied on the edges of this product may contain titanium dioxide which is a substance "as airborne, unbound particles of respirable size" qualified accordingly to the California Sate to cause cancer.

In purchase form the titanium dioxide contained in the paint will remain fixed in the paint applied on the edges of the panel. If the panel is machined (cut, sanded, drilled...) a small quantity of titanium dioxide dust may be released. However, considering the very small quantity of paint (<0.2 %) applied on the edges of this product and the small quantity of titanium dioxide contained in the paint, it is not believe that the titanium dioxide exposure will present a health risk.

California's listing was based on the IARC TIO2 classification as Group 2B Possibly carcinogenic to humans based on studies that showed evidence of carcinogenicity in rats exposed to very high concentrations. (IARC Monographs, Volume 93 Summary). An elevated lung cancer risk associated to titanium dioxide exposure couldn't have been demonstrated in two major epidemiology studies (European and US) among titanium dioxide workers.

Boffetta P, Soutar A, Cherrie JW et al. (2004) Mortality among workers employed in the titanium dioxide production industry in Europe. Cancer Causes Control; 15: 697-706.

Fryzek JP, Chadda B, Marano D et al. (2003) A cohort mortality study among titanium dioxide manufacturing workers in the United States. J Occup Environ Med; 45: 400-9.

New Jersey

Machined processes performed on these wood panels may generate wood dust and titanium dioxide dust. Very small quantity of formaldehyde and wax fume may be released from hot panel. All these substances are on the New Jersey's Hazardous Substance Lists.

Pennsylvania

Machined processes performed on these wood panels may generate wood dust and titanium dioxide. Very small quantity of formaldehyde and wax fume may be released from hot panel. All these substances are on the Pennsylvania's Appendix A, Hazardous Substance Lists.

Minnesota

This product is not regulated by the Minnesota 2012 sections 144.495 and 325F.181 in regard to the HUD Formaldehyde Emission Standard, 24 CFR Sections 3280.308 and 3280.406. This product does not contain urea-formaldehyde resin and does not correspond to a plywood, MDF or particleboard product.

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 SDS contains all the information required by the CPR.

DSL

Excepted wood, all listed ingredients appear on the DSL (Domestic Substance List) list

International Regulations

Europe Inventory	(CLP)	All components are listed or exempted and the product is exempted
Australian inventory	(AICS)	All components are listed or exempted and the product is exempted
China inventory	(IECSC)	All components are listed or exempted and the product is exempted
Japan inventory	(ENCS)	All components are listed or exempted and the product is exempted
Japan inventory	(ISHL)	All components are listed or exempted and the product is exempted
Korea inventory	(KECI)	Not determined.
New Zealand Inventory	(NZIoC)	All components are listed or exempted and the product is exempted
Philippines inventory	(PICCS)	All components are listed or exempted and the product is exempted

SECTION 16. OTHER INFORMATION

HMIS Rating

1	Health
1	Flammability
0	Reactivity
E	Protective Equipment

NFPA Rating

**Glossary Terms**

ACGIH	American Conference of Governmental Industrial Hygienists
CSA	Chemical Abstracts System Number
CFR	Code of Federal Regulation
GHS	Globally Harmonized System
IARC	International Agency for Research on Cancer
LC50	Concentration L50 (the concentration in air of a chemical which kills 50% of a experimental animal population)
LD50	Lethal Dose 50 (the administered dose of a chemical which kills 50% of a experimental animals population)
LEL	Lower Explosion Limit
MDI	4'4'-Diphenylmethane Diisocyanate
mg/kg	Milligram per kilogram
mg/m³	Milligram per cubic meter
MSHA	Mining Safety and Health Administration
NIOSH	National Institute of Occupational Safety and Health
NFPA	National Fire Protection Association
NR	Not Regulated
NTP	National Toxicology Program
OECD	Organization for Economic Co-operation and Development
OEL	Occupational Exposure Limit
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
PPM	Parts per million
RCRA	Resource Conservation and Recovery Act
STEL	Short –Term Exposure Limit (United States)
STEV	Short-Term Exposure Value (Ontario)
TWA	Time Weighted Average (United States)
TWAEV	Time Weighted Average Value (Ontario)
VEMP	Valeur d'exposition moyenne pondérée (Québec) = TWAEV = TWA
VECD	Valeur d'exposition de courte durée (Québec) = STEV = STEL
WHISM	Workplace Hazardous Materials Information System

Other Special Considerations This 16 heading format SDS complies or exceeds the Canadian WHMIS criteria, the GHS and the OSHA hazard communication standard 29 CFR 1910.1200. (Hazcom 2012).

Preparation Date: 03/31/2015

Revision Date: 07/21/2016

Version:1.3

Modifications:

- **Gathered brand names**
- **Minor grammatical changes**

Notice to Reader

The 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. Buyer assumes all risk of use, storage and handling of the product in compliance with applicable Federal, State and Local laws and regulations. Norbord makes no warranty of any kind, express or implied, concerning the accuracy or completeness of the information and data herein. Norbord 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. It is incumbent upon the user to obtain the most up-to-date information.