Ainsworth®

Engineered Performance for the World of Wood®

MATERIAL SAFETY DATA SHEET

This Material Safety Data Sheet meets or exceeds the requirements of the Canadian Controlled Product Regulations (WHMIS) and the United States Occupational Safety and Health Administration (OSHA) hazard communication standard 29 CFR 1910.1200.

1. Product and Supplier Identification

Products: ***Ainsworth****Engineered* OSB
CE Marked
JAS Rated
Rated Sheathing
Rim Board
T&G Flooring

Manufacturing Plants:

100 Mile House
Box 67, Exeter Road
100 Mile House, B.C., V0K 2E0, Canada
Telephone: (250) 395-6289
Facsimile: (250) 395-6276

Barwick
181 Nighswander Road, Highway 11
Barwick, ON, P0W 1A0, Canada
Telephone: (807) 487-2000
Facsimile: (807) 487-1131

Grande Prairie
Highway 40, Bag 6700
Grande Prairie, AB, T8V 6Y9, Canada
Telephone: (780) 831-2500
Facsimile: (780) 831-2501

Emergency Contact:
Call CHEMTREC Day or Night

Within USA and Canada: 1-800-424-9300
Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

2. Composition

Component	CAS #	Percent	Exposure Limits	LD_{50}	LC_{50}
Wood may consist of a variety of: *Lodgepole Pine, Tamarack, Birch, Spruce, Aspen, Black Poplar, Ash, Balm, Basswood, Maple, other Pines and assorted hardwoods – but <u>not</u> Western Red Cedar*	NA	87-99 as wood flakes and fines	"Wood Dust" ACGIH TLV-TWA 1 mg/m^3 ACGIH TLV-STEL not established OSHA PEL-TWA 5 mg/m^3 OSHA PEL-STEL 10 mg/m^3 OTHER See note (a), (c)	No data	No data
Polymeric Diphenylmethane Diisocyanate (MDI Resin) The product (fully cured) does not contain any free or active Polymeric Diphenylmethane Diisocyanate (MDI)	9016-87-9	0-10	None Established	No data	No data
Wax Emulsion	NA	0-5	None Established	No data	No data
Overlay[1] (Foil, MDO)	NA	0-2.5	None Established	No data	No data
Phenol-formaldehyde Resin Formaldehyde (less than 0.01% of free formaldehyde)	9003-35-4 50-00-0	0-10 < 0.1	None Established See note (b)	No data 100 mg/kg (oral/rat) 270 mg/kg (dermal/rabbit)	No data 203 mg/m^3 (inhalation/ rat)
Zinc Borate[2]	138265-88-0	0-3	PNOS[3]	10,000 mg/kg (ingestion/rat) 10,000 mg/kg (dermal/rabbit)	5 mg/L (inhalation/ rat)
Non-hazardous ingredients make up the remainder of the product.					

[1]Foil and MDO (Medium Density Overlays) - Proprietary component information available with signed disclosure agreement **.**
[2]Zinc Borate only in treated OSB products; Borogard® ZB MSDS available upon request.
[3]PNOS: Cal OSHA/PEL = 10 mg/m^3; OSHA/PEL (total dust) = 15 mg/m^3; OSHA/PEL (respirable dust) = 5 mg/m^3.

<u>Canada / United States</u>

(a) The Occupational Health and Safety (OHS) Regulation has adopted the American Conference of Governmental Industrial Hygienists (ACGIH) exposure limits for Wood Dust. The ACGIH exposure limits may vary from time to time and from one jurisdiction to another. Check with local regulatory agency for the exposure limits in your area. (The OHS list of allergenic wood dusts includes, but is not limited to Western Red Cedar, California Redwood, Mahogany, and Oak.)

(b) The OSHA 'Action Level' for Formaldehyde is 0.5 ppm based on an 8-hour TWA under 29 CFR 1910.1048. This level is <u>not</u> achieved under normal occupational exposures to this product. The Occupational Health and Safety Regulation's 8-hour EL is 0.3 mg/m3 with the As Low As Reasonably Achievable (ALARA) designation.

(c) Wood dust is regulated as an organic dust in a category known as "Particles Not Otherwise Regulated" (PNOR), or nuisance dust. Certain jurisdictions recommend the use of OSHA PEL's as the standard for exposure in the workplace. Wood dust can potentially be liberated by sawing and sanding type activities associated with the application of this product.

3. Hazards Identification

Hazard Summary: In the short term (acute) both wood dust and residual formaldehyde, when inhaled, may produce respiratory symptoms and eye nose and throat irritation. Long term (chronic) effects may take on several forms. Repeat contact with wood dust containing residue formaldehyde, may result in lesions in the upper respiratory system.

Routes of Entry: Inhalation and skin contact are the major routes of entry while ingestion and eye contact are likely to be only minor. Persons with a non-specific bronchial hyperactivity can respond to concentrations below the TLV which may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in the lungs). These effects are usually reversible. Chemical or hypersensitive pneumonitis with flu like symptoms has also been reported. Sneezing, coughing, rhinorrhea, fever, muscular aches and pains, laboured breathing, nasopharyngitis, laryngitis, and bronchitis. Wood dust can mechanically irritate the eyes and skin. Damage to the cornea may occur. Areas most commonly affected are the face, eyelids, hands, and forearms. Wood dust can deposit in and even obstruct nasal passages resulting in dryness of the nose, cough, and headache. Splinters from some softwoods may produce septic wounds that may take an extremely long time to heal.

Chronic Health Effects: Dermatitis may result from prolonged or repetitive skin contact. Some individuals can become sensitized upon prolonged or repeated exposure to wood dusts and formaldehyde. Inhalation may aggravate pre-existing respiratory conditions or allergies. Repeated or prolonged inhalation may result in asthma and/or rhinitis. These conditions may be attributed to the irritation of wood dust or may be due to the presence of biologically active chemical agents. Cases of pulmonary fibrosis have been reported in individuals with long-term exposure to wood dust. Woods can be contaminated with saprophytic fungus that can cause an allergic condition called hypersensitivity pneumonitis that can lead to pulmonary damage over prolonged periods of time. Repeated or prolonged exposure to the eyes can cause conjunctivitis.

IARC concluded that there is sufficient information to classify formaldehyde and wood dust as a human carcinogen.

Evidence has shown that formaldehyde can cause a relatively rare form of cancer (nasopharyngeal cancer). IARC has also found that there is limited evidence that formaldehyde may cause certain types of leukemia.

OSHA states that “wood dust becomes a potential health problem when wood particles from processes such as sanding and cutting become airborne; breathing these particles may cause allergic respiratory symptoms, mucosal and non-allergic respiratory symptoms, and cancer; the extent of these hazards and the associated wood types have not been clearly established”. Wood dust is listed by IARC as a Group 1 carcinogen; by NTP as a known carcinogen; by ACGIH (A1) as a confirmed human carcinogen for certain hard woods; and by BC (K1) as a confirmed human carcinogen.

4. First Aid Measures

EYE CONTACT: Treat dust as ‘foreign object’. Flush contaminated eye(s) with lukewarm, gently running water for 15 minutes, or until dust particles are removed. Seek medical attention if irritation persists.

SKIN CONTACT: Flush contaminated area(s) with lukewarm, gently flowing water for 5 minutes, or until dust is removed. Remove contaminated clothing. Launder clothing before reuse. Seek medical attention if irritation develops.

INHALATION: Remove victim to fresh air. If symptoms persist, obtain medical attention. If breathing has stopped, a trained person should perform artificial respiration. Get medical attention immediately.

INGESTION: Do not induce vomiting. If vomiting occurs naturally, have victim lean forward to avoid aspiration. Seek medical attention.

5. Fire Fighting Measures

Flash point:	Not available
Autoignition temperature:	204^{o}C (400^{o}F)
Lower Flammability Limit:	40 g/m^{3} dust
Upper Flammability Limit:	Not applicable
Sensitivity to Impact:	Not sensitive

Sensitivity to Static Discharge: Yes, if dust concentration exceeds the LEL (Lower Flammability Limit)

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Hazardous Combustion Products: Thermal oxidative degradation of wood produces irritating and toxic smoke and gases. These include carbon monoxide, aldehydes, terpenes, carbon particulate, organic acids, and polycyclic and aromatic hydrocarbons.

Extinguishing Media: Water spray is an effective agent. Carbon dioxide and sand are also effective.

Fire Fighting Instructions: Wood dust generated from cutting and sanding activity pose a strong to severe explosion hazard in the presence of an ignition source. Particle size and water content are key parameters. Wood dust may ignite at temperatures in excess of 204^{o}C. Use water spray to wet wood dust. Normal fire fighting procedures must be followed to avoid inhalation of smoke and gases and to reduce exposure to heat and flame.

6. Accidental Release Measures

Personal Protection: Wear appropriate personal protective equipment.

Environmental Precautions: Not applicable.

Cleanup Procedures: Avoid dusty conditions. Vacuum dust from sanding and cutting activities. If sweeping or shoveling is necessary, avoid inhaling wood dust by damp sweeping or using a dust mask or other safeguard for personal protection. Provide good ventilation. Do not use compressed air (blowing) for clean-up.

7. Handling and Storage

Handling Procedures: Avoid generation of dust. Use good housekeeping and hygiene practices.

Storage: Avoid excessive heat, open flames, and other sources of ignition. Avoid contact with oxidizing agents. Provide adequate ventilation to reduce the potential buildup of dust and gases.

8. Exposure Controls, Personal Protection

Engineering Controls: Use general and local exhaust ventilation to limit exposures below the exposure limits. These controls may be augmented by the use of process or personnel enclosures, control of process conditions, or by process modification. The presence of formaldehyde requires that exposures be kept as low as reasonably achievable.

Respiratory Protection: If respiratory protection is warranted, a NIOSH approved respirator with an efficiency rating of N95 or higher must be used. (See 42 CFR 84).

Skin Protection: It is a good practice to limit skin contact. Wear coveralls or other suitable work clothes, protective leather or cotton gloves, and safety boots. Contaminated clothing should be laundered before reuse.

Eye and Face Protection: Eye protection is required. The wearing of contact lenses is not recommended.

Other: Have a safety shower and eye wash station readily available.

9. Physical and Chemical Properties

Appearance:	Wood paneling	**Melting Point:**	Not applicable
Odour:	Slightly aromatic	**Boiling Point:**	Not applicable
pH:	Not applicable	**Critical Temperature:**	Not applicable
Vapour Pressure:	Extremely low or not applicable	**Relative Density:**	0.40 – 0.80
Solubility:	< 0.1% in water	**Partition coefficient:**	Not available
Vapour Density:	Various or not applicable	**Evaporation Rate:**	Not applicable

10. Stability and Reactivity

Chemical Stability: Product is stable.

Incompatibility: Avoid contact with strong acids, strong bases, flammables, oxidizers, and temperatures in excess of 200°C. Avoid fluorine / oxygen mixtures with greater than 59% fluorine.

Conditions to avoid: Keep away from sources of ignition, fluorine / oxygen mixtures, strong oxidizing agents, halogens, or chlorinating agents.

Hazardous Decomposition Products: Thermal oxidative degradation of wood produces irritating and toxic smoke and gases. These include carbon monoxide, aldehydes, terpenes, carbon particulate, organic acids, and polycyclic and aromatic hydrocarbons.

Hazardous Polymerization: Hazardous polymerization will not occur.

11. Toxicological Information

Acute Exposure:	No specific toxicological data is available. See Section 3
Chronic Exposure:	See Section 3
Exposure Limits:	See Section 2
Irritancy:	See Section 3
Sensitization:	See Section 3
Carcinogenicity:	See Section 3
Teratogenicity:	None reported
Reproductive toxicity:	None reported
Mutagenicity:	None reported
Synergistic products:	None reported

12. Ecological Information

Environmental toxicity: No data available.

Biodegradability: No data available.

13. Disposal Considerations

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. Incineration or dry-land disposal is acceptable in most jurisdictions.

14. Transport Information

Canadian Transportation of Dangerous Goods Regulations: Not Dangerous Goods.

United States Hazardous Materials Regulations (49 CFR): Not a Hazardous Material.

15. Regulatory Information

Canadian Federal Regulations:

Canadian Environmental Protection Act: Formaldehyde is listed on the Domestic Substances List.
WHMIS Classification: Wood Products are not Controlled Products.

United States Federal Regulations:

Toxic Substances Control Act (TSCA): All ingredients are listed in the inventory.

OSHA: Wood and wood products are considered manufactured articles and are exempt under OSHA's Hazard Communications Standard 29 CFR 1919, 1200. Wood dust, a by-product generated from sawing, sanding or machining wood and wood products, is considered hazardous and is regulated under the Hazard Communications Standard 29 CFR 1910, 1200.
CERCLA: Not a Hazardous Substance under 40 CFR Part 302.
SARA 313: Not subject to the reporting requirements of 40 CFR Part 372.
SARA 311/312 EPA Hazard Categories: Delayed (chronic) health, immediate (acute) health.
SARA 302: No ingredients subject to 40 CFR Part 355.
Proposition 65: 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).

16. Other Information

Abbreviations:

ACGIH TLV-TWA	American Conference of Governmental Industrial Hygienists – Threshold Limit Value – Time Weighted Average
ACGIH TLV-STEL	American Conference of Governmental Industrial Hygienists – Threshold Limit Value – Short Term Exposure Limit
ALARA	As Low As Reasonably Achievable
BC	British Columbia
CAS #	Chemical Abstract Services number (identifies specific chemical)
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFR	Code of Federal Regulations
Dust	A finely divided solid 0.017 in. or less in diameter that is capable of passing through a U.S. No. 40 standard sieve
EL	Exposure Limit
EPA	Environmental Protection Agency
IARC-2A	International Agency for Research on Cancer-Probably Carcinogenic to Humans
g/m^3	Grams per cubic meter
LC50	Concentration in air resulting in death to 50% of experimental animals
LD50	Administered dose resulting in death to 50% of experimental animals
LEL	Lower Explosion (Flammability) Limit
MDI	Polymeric Diphenylmethane Diisocyanate
MDO	Medium Density Overlays
mg/kg	Milligrams per Kilogram
mg/m^3	Milligrams per cubic meter
NA	Not applicable
NIOSH-Ca	National Institute of Occupational Safety and Health-Potential occupational carcinogen, with no further categorization
NTP	National Toxicology Program
OHS	Occupational Health and Safety
OSHA-Ca	Occupational Safety and Health Administration-Carcinogen defined with no further categorization
OSHA PEL-TWA	Occupational Safety and Health Administration - Time Weighted Average
OSHA PEL-STEL	Occupational Safety and Health Administration - Short-Term Exposure Limit
PEL	OSHA Permissible Exposure Limit
PNOR	Particles Not Otherwise Regulated
PNOS	Particles Not Otherwise Specified
ppm	Parts per million
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
TLV-A1	Threshold Limit Value-Confirmed Human Carcinogen
TLV-A2	Threshold Limit Value-Suspected Human Carcinogen
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average
WHMIS	Workplace Hazardous Materials Information System

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Notice: The opinions expressed herein are those of qualified experts within Ainsworth. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of the information and the condition of the use of the product are not under the control of Ainsworth, it is the user's obligation to determine conditions of safe use of the product.