



MATERIAL SAFETY DATA SHEET

Section 1. Material Identification and Product Use	
Product	Unfinished Medium Density Fiberboard (MDF)
Product / Trade Name	Ranger Board, Various Grades Hmra ID 23054
Manufacturer	Ranger Board A Division of West Fraser Mills Ltd. Box 2000, Whitecourt, Alberta Canada T7S 1P9
General Use	Re-manufacturing, construction and furniture processes.
Product Description	A panel product manufactured from ligno-cellulosic fibers bonded together with a synthetic resin, and which may contain additives.

Section 2. Composition, Information on Ingredients	
Ligno-Cellulosic Materials	90 - 93 % by weight
Polymerized Urea-Formaldehyde Resin CAS No. 9011-05-6	6 – 12 % by weight
Formaldehyde CAS No. 50-00-0	Minimal emission of gaseous formaldehyde. Emissions decrease as panels age. Minimal health hazard risk with anticipated use under normal conditions. Refer to Section 6 - Health Effects Information
Wood Dust Synonyms: ligno-cellulosic fibers	Manual or mechanical cutting or abrasion processes performed on the product can result in generation of wood dust. In some conditions, wood dust may be a health hazard. Refer to Section 6 - Health Effects Information

Section 3. Physical Data	
Physical State	Solid
Appearance and Odor	Straw yellow to light brown
Boiling & Melting points	Not applicable
Specific Gravity (Water = 1)	< 1
Solubility in Water	Insoluble
pH	Not applicable
% Volatiles	Not applicable
Vapor Density	Not applicable
Vapor Pressure	Not applicable
Evaporation Rate	Not applicable

Section 4. Fire Fighting Measures	
Flash Point	Not applicable
Auto-Ignition Temperature	Variable; typically 200 - 275 °C (400 – 525 °F)

Explosive Limits in Air	Lower Explosive Limit: Wood dust: 40 g/m ³ Upper Explosive Limit: Wood dust: variable
Fire/Explosion Hazard	Dust clouds and build-up of dust present a fire/explosion hazard in contact with ignition sources. (electrical spark, hot metal sparks, open flame)
Extinguishing Media and Fire Fighting	Water preferred - apply by hose stream, fine spray, or foam. Dry Chemical or carbon dioxide for small fires only - follow with water. Use of Self-Contained Breathing Apparatus recommended when fighting fire.
Fire Prevention	Remove accumulation of wood dust. Wet down dust to reduce risk of ignition and dispersion of wood dust in air.

Section 5. Reactivity Data

Stability	Stable under normal conditions
Incompatibility	Avoid product contact with any temperature sources that could induce thermal decomposition. Avoid product contact with oxidizing agents and strong acids.
Decomposition Products	Thermal and/or thermal-oxidative decomposition can produce irritating and toxic fumes and gases including, carbon monoxide, polynuclear aromatic hydrocarbons, aldehydes, and organic acids.
Hazardous Polymerization	Not applicable

Section 6A. Health Effects Information - Formaldehyde (gaseous)

Routes of Entry	Inhalation, eye and skin contact
Signs/symptoms of exposure: - Skin and Eye Contact	Gaseous formaldehyde may cause temporary eye irritation or a burning sensation. Formaldehyde may evoke allergic contact dermatitis in sensitized individuals.
Signs/symptoms of exposure: - Inhalation	Gaseous formaldehyde may cause temporary irritation to nose and throat. Formaldehyde may aggravate pre-existing respiratory disorders and may cause respiratory sensitization. The International Agency for Research on Cancer (IARC) lists formaldehyde as a probable human carcinogen. The National Toxicology Program (NTP) includes formaldehyde in its Annual Report on carcinogens. OSHA regulates formaldehyde as a potential cancer agent.
Exposure Limits:	<u>ACGIH- Threshold Limit Values</u> Ceiling: 0.3 ppm <u>OSHA - Permissible Exposure Limits</u> TWA - 8 hour: 0.75 ppm STEL – 15 min: 2 ppm

Section 6B. Health Effects Information - Wood Dust

Routes of Entry	Inhalation, skin and eye contact
Signs/symptoms of exposure: - Skin and Eye contact	Wood dust can result in mechanical irritation of the eyes. Wood dust may evoke allergic contact dermatitis in sensitized individuals.

Signs/symptoms of exposure: - Inhalation	Wood dust, depending on species, may cause respiratory sensitization and / or irritation Inhalation of wood dust may result in nasal dryness, irritation and obstruction. Coughing, wheezing, sneezing, sinusitis and prolonged colds have been reported. The International Agency for Research on Cancer (IARC) has classified wood dust as a carcinogen to humans. This classification is based on the IARC's evaluation of increased risk in the occurrence of adenocarcinomas of the nasal cavities and paranasal sinuses associated with exposure to wood dust. The carcinogenic agent(s) in wood dust have not been identified. The National Toxicology Program lists wood dust as a known human carcinogen in the NTP's tenth <i>Report on Carcinogens</i> .
Exposure Limits: Softwood species, not including cedar	<u>ACGIH- Threshold Limit Values</u> TWA - 8hour: 1 mg/m ³ inhalabledust STEL – 15 min: 10.0 mg/ m ³ <u>OSHA – Permissible Exposure Limits</u> TWA - 8 hour: 5.0 mg/ m ³ (respirable fraction) 10.0 mg/ m ³ (total dust)

Section 7. Preventative Measures

Engineering Controls	Certain activities of the re-manufacturing process of this product could possibly produce wood dust or formaldehyde vapors. Provide adequate general and local exhaust ventilation to keep airborne contaminant concentration levels below the OSHA PEL's. Prevent accumulation of dust in work areas by regular removal of wood dust. For removal of fine dust, vacuum methods are preferred
Personal Protective Equipment	<u>Breathing Protection</u> If allowable exposure limits are approached or exceeded, wear NIOSH/MSHA approved breathing protection. For exposure to wood dust; a nuisance dust respirator is generally sufficient. For formaldehyde, use an appropriate cartridge-type respirator. <u>Skin Protection</u> Gloves and outer garments may be needed depending on dust conditions to prevent prolonged or repeated skin contact. <u>Eye Protection</u> Wear wide shield safety glasses during the re-manufacturing of this product.
Storage	Avoid storing in areas of high relative humidity and temperature. High temperature and inadequate ventilation could allow concentrations of formaldehyde vapors in the storage area. Adequate ventilation of the storage area will help reduce the build-up of formaldehyde vapors.
Fire Prevention Measures	This product should not be stored near a source of ignition. Prevent accumulations of fine dust particles.

Section 8. First Aid Measures

Inhalation	Remove to fresh air. Obtain medical attention if irritation persists, or if severe coughing or breathing difficulties occur.
Eyes	Flush with large amounts of water. Obtain medical attention, if irritation persists.
Skin	Wash with soap and water. Obtain medical attention if rash, persistent irritation or dermatitis occurs.

Section 9. Preparation of Material Safety Data Sheet

Preparation Date	June 15, 2005 (Review with minor revisions, re-dated)
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