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MATERIAL SAFETY DATASHEET

Complies with ANSI Z400.1 format

HMIS Label

Health (potential chronic effects)	1*
Fire Hazard	0
Reactivity	0
Personal Protection – depends on usage	See Section 8

PRODUCTS: Plywood and Composite Wood Panels Produced with Urea Formaldehyde and Melamine-Urea Formaldehyde Resin Systems. Includes Laminated Panels and Panels with a Cured Water Based Pre-Finished Coating.

Roseburg Forest Products

Date of Preparation: rev. 08/01/11

Section 1: GENERAL INFORMATION

Chemical Name, Synonyms, Description: Chemical Name & Synonyms: Roseburg hardwood plywood and composite panels bonded with urea formaldehyde and melamine-urea formaldehyde resin systems. Includes laminated panels and panels with a cured water based pre-finished coating. This MSDS applies to all Roseburg panels included in the family of products listed below.

- Hardwood Plywood
- Pre-Finished Plywood (Cured Water Based)
- Composite Panel (Particleboard)
- Decorative Surface Panel
- Thermally Fused Melamine Panel
- Shelving

Chemical Family: Wood
Manufacturer Information:
Roseburg Forest Products
P.O. Box 1088
Roseburg, Oregon 97470
Telephone (541) 679-3311

Formula: Mixture

Prepared by: Roseburg Forest Products and DeEtta Burrows, MSPH, CIH Wise Steps, Inc.

Section 2: HAZARD IDENTIFICATION

2.1 Emergency Overview: Under normal use this product does not present any type of emergency conditions. If the product is in contact with strong oxidizers or exposure to temperatures greater than 400 degrees F a fire may be caused. Fire smoke contains hazard chemicals such as carbon monoxide, aldehydes and other toxic materials. Airborne wood and resin dust may explode if in high concentrations and combined with an ignition source.

2.2 OSHA regulatory status: This product is generally an article but is regulated under OSHA for the release of wood dust and total dust cured resins during mechanical operations releasing dust. The free formaldehyde levels are below OSHA reporting requirements.

2.3 Potential health effects (See section 11 Toxicology Information for further details)

Routes of Entry: Inhalation and skin contact

Target Organs: Eyes, skin, mucous membranes, upper respiratory tract.

Acute: Wood dust may cause dryness, irritation, coughing and sinusitis. Dust may irritate the eyes. Some wood species may cause skin and respiratory irritation. The irritation is generally caused by mechanical action on the skin or mucous membranes.

Chronic: Wood dust, depending on the species, may cause allergic contact dermatitis and respiratory sensitization with prolonged, repetitive contact or exposure to elevated dust levels. Prolonged exposure to dust from some wood species has been reported to be associated with nasal cancer.

Cancer Listing: Wood dust: NTP known to be a Human Carcinogen (10th Report), IARC Monographs Group 1: Carcinogenic to humans; sufficient evidence of carcinogenicity.

Formaldehyde: NTP and OSHA – Probable Human Carcinogen, IARC Group 1 for sufficient evidence that formaldehyde causes nasopharyngeal, a rare cancer in humans, and “limited evidence” for cancer of nasal cavity and sinuses, and a “strong but not sufficient evidence” for leukemia.

Medical Conditions That May Be Aggravated by Exposure: Wood dust may aggravate preexisting respiratory conditions or allergies. Formaldehyde may aggravate existing respiratory problems and cause allergies to susceptible persons.

2.4 Potential Environmental Effects: These wood products are not expected or known to pose an ecological hazard as the result of their intended uses.

Section 3 COMPOSITION/INFORMATION ON INGREDIENTS

These wood products are composed of wood and cured resins (urea formaldehyde resins). SEE Section 8 for exposure limits discussion.

Section 4 FIRST AID MEASURES

4.1: First aid procedures

Inhalation: Remove from area to fresh air. Seek medical attention if persistent irritation, severe coughing or breathing difficulty occurs.

Eye Contact: Immediately flush eyes with copious amounts of water for at least 15 minutes. Assure adequate flushing of the eyes by separating the eyelids with fingers. Seek medical care if irritation persists.

Skin Contact: Wood dust of certain species may elicit allergic contact dermatitis in sensitized individuals and can cause mechanical irritation. Wash affected areas with soap and water. Seek medical attention if rash, irritation or dermatitis persists.

Ingestion: Not applicable under normal use.

4.2 Note to Physicians: None

Section 5 FIRE FIGHTING MEASURES

5.1 Flammable Properties

Flash point: Not Applicable

Flammable limits: LEL Not Applicable, UEL Not Applicable, **Wood and Wood Dusts are combustible**

Autoignition Temperature: Variable typically 400 to 500 degrees F (204 to 260 C)

Building Code & Flame Spread Ratings: ASTM E-84 standard fire test flame spread places the products in a Class C or Class III category. Class C are generally approved for rooms and other areas within all but a few special service-type buildings.

5.2 Extinguishing Media: Water, carbon dioxide, sand, and chemical extinguisher.

5.3 Protection of Firefighters: Self-contained breathing apparatus (SCBA) recommended when fighting fire.

5.4. Hazardous Combustion Products: **FIRE** can result in carbon dioxide, carbon monoxide, oxides of nitrogen, aldehydes, cyanides and other hazardous gases and particles.

5.5. Unusual Fire & Explosion: Wood dust from sawing, sanding, or machining can be explosive in the presence of an ignition source depending on particle size and moisture content. Airborne concentrations of 40 grams per cubic meter are often used as the lower explosive limit (LEL) for wood dusts. OSHA interprets the explosive level as having no visibility within five feet or less. **NFPA Rating** Scale 0 – 4 Health = 1; Fire = 1, Reactivity = 0

Section 6 ACCIDENTAL RELEASE MEASURES

Steps to be Taken in Case Material is Released or Spilled: Not applicable for products in purchased form. Wood dust generated from sawing, sanding, or machining may be vacuumed or shoveled for recovery or disposal. Avoid dusty conditions and provide good ventilation. Use NIOSH/MSHA-approved respiratory protection and goggles where exposure limits may be exceeded.

Section 7 HANDLING AND STORAGE

7.1 Handling Precautions: Avoid repeated or prolonged inhalation of wood dust. No special handling precautions are warranted for products in purchased form.

7.2 Storage Precautions: Store in a well-ventilated, cool, dry place, away from ignition sources. Store flat, supported and protected from direct contact with the ground.

Section 8 EXPOSURE CONTROL / PERSONAL PROTECTION

8.1 Exposure Guidelines

Component	Percentage	Exposure Limits			
		OSHA PEL	OSHA STEL	ACGIH TLV-TWA	ACGIH TLV-STEL
Wood Solids*	80 - 95%	10 mg/m ³	None	1 mg/m ³ (I)	None
Cured Resin Solids	5 - 20%	PNOS - 10 mg/m ³	None	5 mg/m ³ (I)	None
Formaldehyde**	<0.1%	0.75 ppm	2 ppm	0.3 ppm C	None
Cured Finish (Coatings) or Melamine Surface Materials	<1%	10 mg/m ³	None	10 mg/m ³ (I)	None

* except for Western Red Cedar: 2.5 mg/m³ (OSHA) and 0.5 mg/m³ inhalable (TLV)

Note: OSHA = Occupational Safety & Health Administration PEL for wood is 15 mg/m³ but many state plans regulated wood dust at 10 mg/m³

ACGIH = American Conference of Governmental Industrial Hygienists

PEL = Permissible Exposure Limit

TWA = Time Weighted Average

TLV = Threshold Limit Value – recommended levels

STEL = Short Term Exposure Limit (15-minutes)

PNOS = Particles not otherwise specified

I = inhalable

C = Ceiling Limit, never to be exceeded

**These products are specially processed to meet the CARB Phase II requirements. Formaldehyde at these levels is not regulated by OSHA as formaldehyde containing.

8.2 Engineering Controls

Required Ventilation: Not applicable for the product in purchased form. If dust is generated provide local exhaust ventilation as needed so that exposures are below exposure limits.

8.3 Personal Protective Equipment (PPE)

Eye Protection: Goggles or safety glasses are recommended when manufacturing, sanding, sawing or machining product.

Skin Protection: Protective Gloves: Cloth, canvas or leather gloves are recommended for protection against mechanical irritation or wood splinters.

Respiratory Protection: Not applicable for products in purchased form. Use a NIOSH/MSHA approved respirator when the allowable exposure limits may be exceeded during mechanical processing.

General Hygiene Considerations: None required for product in purchased form. Other protective equipment, such as gloves and outer garments, may be needed depending on dust conditions.

Section 9 PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point (F⁰): Not applicable
Vapor Pressure (mm Hg): Not applicable
% Volatiles by Volume (@70⁰F(21⁰C)): 0
Vapor Density (air =1): Not applicable

Solubility in Water: <0.1%
pH: Not applicable
Evaporation Rate: Not applicable
Spec Gravity (H₂O=1): 0.40-0.80, variable depends on wood species and moisture

Section 10 STABILITY AND REACTIVITY

Stability: Stable

Conditions to Avoid: Avoid open flame. Product may ignite at temperatures in excess of 400⁰F (204⁰C).

Incompatible Materials: Concentrated acids or bases will alter the product. Avoid contact with magnesium, aluminum, zinc (galvanized), tin, chromium, brass and bronze. Contact with these materials may generate hydrogen which is explosive. Exposure to elevated temperatures or strong acids or bases will cause polymerization with evolution of formaldehyde, phenol and/or water.

Hazardous Decomposition Products: Thermal and/or thermal-oxidative decomposition can produce irritating toxic fumes and gases, including carbon monoxide, carbon dioxide, formaldehyde, sulfur oxides, nitrogen oxides, and hazardous particles.

Hazardous Polymerization: Will not occur

Section 11 TOXICOLOGICAL INFORMATION

Toxicity Data: None available for products in purchased form. Individual component information is provided below if available.

Wood Dust:

The wood in this product is a potential mixture of soft and hardwoods. Overexposures to wood dusts may cause respiratory ailments including bronchitis, impairment of breathing functions, and asthma. Certain exotic woods contain alkaloids that can cause headache, anorexia, nausea, and difficulty with breathing.

Wood Dust Carcinogenicity Listing: Wood dust is listed by NTP known to be a Human Carcinogen (10th Report), IARC Monographs: Wood dust, Group 1 - IARC Group 1: Carcinogenic to humans; sufficient evidence of carcinogenicity. This classification is primarily based on studies showing an association between occupational exposure to wood dust and adenocarcinoma of the nasal cavities and paranasal sinuses. IARC did not find sufficient evidence of an association between occupational exposure to wood dust and cancers of the hypopharynx, oropharynx, lymphatic and hematopoietic systems, lungs, stomach, colon or rectum.

Section 12 ECOLOGICAL INFORMATION

No information available at this time. As with all foreign substances do not allow to enter the storm drainage systems. These wood products are not expected to pose an ecological hazard as a result of their intended use.

Section 13 DISPOSAL CONSIDERATIONS

Follow safe solid waste disposal guidelines in accordance with federal, state and local regulations. If disposed of or discarded in its purchased form, incineration is the preferred method. Dry land disposal is acceptable in most states. It is however, the user's responsibility to determine at the time of disposal whether the product meets RCRA criteria for hazardous waste.

Section 14 TRANSPORT INFORMATION

Not regulated as a hazardous material by the U.S. Department of Transportation.

Section 15 REGULATORY INFORMATION

It is the user's responsibility to determine what regulatory information is relevant dependant upon the usage of this product.

EPA – TSCA: The resin components are listed in TSCA inventory

EPA – CERCLA: The following ingredient is on the SARA Section 302 EHS, 304 EHS and CERCLA lists: Formaldehyde CAS #50-00-0

EPA SARA 313: No chemicals subject to Section 313 in the product (contains less than 0.1% formaldehyde – de minimis concentration)

EPA SARA 311/312 Hazard Category: Under Section 311 and 312 considered: an immediate acute health hazard, a delayed chronic health hazard but not a fire or reactivity or sudden release hazard.

Canadian Domestic Substance List (DSL) inventory includes Formaldehyde CAS# 50-00-0

WHMIS Ingredient Disclosure List: Formaldehyde CAS#50-00-0, Controlled Product D2A

California's Safe Drinking Water and Toxic Enforcement Act of 1986 (Initiative Measure, Proposition 65): Title 22 California Code of Regulations requires that a clear and reasonable warning be given before exposure to chemicals listed by the State as causing cancer or reproductive toxicity. Formaldehyde and Wood Dust are on California's list of chemicals known to the State to cause cancer. Solvents found in the uncured resin coating contain n-methyl pyrrolidone (developmental) and ethylbenzene as a cancer agent. The warning required to be posted in the work areas where these products are used is:

Prop 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 for personal protection.

Minnesota Statutes 1984 Section 144.495 and 325 F.18 required that all particleboard and medium-density fiberboard sold or used in Minnesota meet the HUD Formaldehyde Emissions Standard, 24 CFR Sections 3280.308 and 3280.406.

New Jersey: Under certain conditions, this product may release free formaldehyde vapors. Formaldehyde is a substance listed on New Jersey's *Environmental Hazardous Substance List*.

Pennsylvania: Under certain conditions, this product may release free formaldehyde vapors. Sawing, sanding or machining this product may generate wood dust. Formaldehyde and certain hardwoods as oak and softwoods are substances that appear on Pennsylvania's *Appendix A – Hazardous Substance List*.

Independent third-party testing done in accordance with ASTM E1333 Large Chamber Test, confirms that the emissions are less than 0.2 ppm. Thus these panels meet Department of Housing and Urban Development (HUD) Manufacturing Home Construction and Safety Standards, 24 CFR Part 3280, which does not permit the emission rates to exceed 0.2 ppm.

SECTION 16 OTHER INFORMATION

HMIS Hazard Rating (0- Insignificant, 1- Slight, 2- Moderate, 3- High, 4- Extreme, * = chronic effects) Health – 1* Flammability - 0 Reactivity - 0 Personal Protective Equipment – Depends on use conditions – see Section 8

Definition of Common Terms:

ACGIH = American Conference of Governmental Industrial Hygienists

C = Ceiling Limit

CAS# = Chemical Abstracts System Number

CARB = Consortium for Advanced Residential Buildings

DOT = U. S. Department of Transportation

DSL = Domestic Substance List

EC50 = Effective concentration that inhibits the endpoint to 50% of control population

EPA = U.S. Environmental Protection Agency

HMIS = Hazardous Materials Identification System

IARC = International Agency for Research on Cancer

LC50 = Concentration in air resulting in death to 50% of experimental animals

LCLo = Lowest concentration in air resulting in death

LD50 = Administered dose resulting in death to 50% of experimental animals

LDLo = Lowest dose resulting in death

LEL = Lower Explosive Limit

NAP = Not Applicable

NAV = Not Available

NIOSH = National Institute for Occupational Safety and Health

NFPA = National Fire Protection Association

NPRI = Canadian National Pollution Release Inventory

NTP = National Toxicology Program

OSHA = Occupational Safety and Health Administration

PEL = Permissible Exposure Limit

RCRA = Resource Conservation and Recovery Act

STEL = Short-Term Exposure Limit (15 minutes)

STP = Standard Temperature and Pressure

TCLo = Lowest concentration in air resulting in a toxic effect

TDG = Canadian Transportation of Dangerous Goods

TDLo = Lowest dose resulting in a toxic effect

TLV = Threshold Limit Value

TSCA = Toxic Substance Control Act

TWA = Time-Weighted Average (8 hours)

UEL = Upper Explosive Limit

WHMIS Workplace Hazardous Materials Information System

Disclaimer

Roseburg Forest Products believes the information contained in this MSDS to be accurate at the time of preparation and has been compiled using sources believed to be reliable. However, Roseburg Forest Products makes no warranty, either expressed or implied, concerning the accuracy or completeness of the information presented. It is the responsibility of the user to comply with local, state, and federal regulations concerning use of this product. It is the further

responsibility of the buyer to research and understand safe methods of storing, handling and disposal of this product.