



# MATERIAL SAFETY DATA SHEET

Complies with ANSI Z400.1 2004 format

P.O. Box 1088 Roseburg, OR 97470  
Ph: 541-679-3311 Fax: 541-679-9683  
Website: [www.Roseburg.com](http://www.Roseburg.com)

| HMIS  |               |
|---|---------------|
| Health (*potential chronic effects)           | 1*            |
| Fire Hazard                                   | 0             |
| Reactivity                                    | 0             |
| Personal Protection – depends on specific use | See Section 8 |

**PRODUCTS: Prefabricated Wood I-Joist with Phenol Formaldehyde Adhesive, Phenol Resorcinol Formaldehyde Adhesive System and/or Melamine Formaldehyde Adhesive System.**

**Roseburg Forest Products**

**Date of Preparation: Rev: 04/15/13**

## Section 1: PRODUCT AND COMPANY IDENTIFICATION

**Chemical Name & Synonyms:** LVL Flanged RFPI®-Joist and Solid Sawn Flanged RFPI®-Joist pre-fabricated wood I-joists. (Engineered Wood Products)  
**General Use:** Wood construction products

### **Manufacturer Information:**

Roseburg Forest Products  
P.O. Box 1088  
Roseburg, Oregon 97470

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

**For Information Contact:** Technical Director (541) 679-3311

## 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 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 some species of wood dust has been reported to be associated with nasal cancer.

**Cancer Listing:**

**Wood dust:** NTP known to be a Human Carcinogen (10<sup>th</sup> Report), IARC Monographs:, Group 1

**Formaldehyde:** NTP and OSHA – Probable Human Carcinogen, IARC Group 1

**Medical Conditions That May Be Aggravated by Exposure:** Wood dust may aggravate preexisting respiratory conditions or allergies.

**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 (phenol formaldehyde resins, phenol resorcinol formaldehyde, and melamine formaldehyde resins) with end waterborne sealer that does not contain any hazardous compounds. These products do not contain free formaldehyde at concentrations greater than 0.1 ppm based on ASTM E1333 Large Chamber Test Method. These products do not contain any 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**

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

**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 as Wood Dust*             | 90-95%     | 10 mg/m <sup>3</sup>        | None      | 1 mg/m <sup>3</sup> (I) | None            |
| Cured Resin Solids as dust     | 5-10%      | PNOS - 10 mg/m <sup>3</sup> | None      | 5 mg/m <sup>3</sup> (I) | None            |
| Potential Trace Formaldehyde** | <0.1%      | 0.75 ppm                    | 2.0 ppm   | None                    | 0.3 ppm ceiling |

\* except for Western Red Cedar: 2.5 mg/m<sup>3</sup> (OSHA) and 0.5 mg/m<sup>3</sup> inhalable (TLV)

Note: OSHA = Occupational Safety & Health Administration  
 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

\*\***FORMALDEHYDE:** 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 (F<sup>0</sup>):** Not applicable

**Vapor Pressure (mm Hg):** Not applicable

**% Volatiles by Volume (@70<sup>0</sup>F(21<sup>0</sup>C)):** 0

**Vapor Density (air =1):** Not applicable

**Solubility in Water:** <0.1%

**pH:** Not applicable

**Evaporation Rate:** Not applicable

**Spec Gravity (H<sub>2</sub>O=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 400<sup>0</sup>F (204<sup>0</sup>C).

**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, phenol, 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 (10<sup>th</sup> 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.

**Formaldehyde:**

LVL flanged and solid sawn flanged RFPI-Joist products may release very small quantities of formaldehyde in a gaseous state at levels less than 0.1 ppm based on ASTM E1333 Large Chamber Test Methods. At these levels generally no effects are noted; however formaldehyde may be irritating to the eyes, nose, throat and skin. Formaldehyde may cause sensitization.

**Cancer Listing:**

Formaldehyde is listed by IARC as Carcinogenic to Humans (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. NTP included formaldehyde in the annual report on carcinogens. OSHA regulated formaldehyde as a potential carcinogen.

**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 (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 of California as causing cancer or reproductive toxicity. Formaldehyde and wood dust are on California's list of chemicals known to the State to cause cancer and methanol is on California's list known to the State to cause birth defects or other reproductive harm.

In the State of California the following warning is required to be posted in the work areas where wood products are used:

**Prop 65 WARNING:**

***Drilling, sawing, sanding or machining wood products generates wood dust and other substances known to the State of California to cause cancer. Avoid inhaling dust generated from wood products or use a dust mask or other safeguards for personal protection.***

***Wood products emit chemicals known to the State of California to cause birth defects or other reproductive harm.***

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*.

## **Section 16 OTHER INFORMATION**

Roseburg RFPI®-Joists are manufactured to the U.S. I-joist standard, ASTM D 5055. This standard requires the use of exterior exposure, moisture resistant adhesives. All series of Roseburg RFPI-Joists (inclusive of LVL flanged I-joists and solid sawn lumber flanged I-joists) are manufactured with phenol-formaldehyde, phenol-resorcinol-formaldehyde and/or melamine formaldehyde based adhesive systems and contain no added urea-formaldehyde resins. These exterior exposure adhesives form a chemically stable bond that emits such low amounts of formaldehyde gas it is often indistinguishable from background levels. Because these adhesives have long demonstrated very low emission levels, there are no U.S. standards or regulations governing formaldehyde emissions for prefabricated wood I-joists. California Air Resources Board (CARB) Regulation Section 93120.1 Definition (8) specifically exempts prefabricated wood I-joists that are manufactured to the requirements of ASTM D 5055-05. The federal law regarding formaldehyde emissions, which goes into effect in 2013, takes the same stance as CARB and specifically exempts I-joists. I-joists are also exempt from the U.S. HUD Manufactured Housing Standard because they are not a plywood or particle board product and are manufactured with a phenolic adhesive system.

Since there are no U.S. standards requiring the monitoring of emissions from I-joists, there are no standard test procedures either. However, in order to confirm low emission rates of formaldehyde, various I-joist products, including RFPI-Joists, have been tested based on test procedures for panel products in accordance with the ASTM E1333 Large Chamber Test method. The results of those tests confirm that I-joist products manufactured in accordance with ASTM D 5055, which includes RFPI-Joists, emit formaldehyde gas at levels well below 0.1 parts per million (ppm). As a reference, the HUD requirement is no more than 0.2 ppm for plywood or 0.3 ppm for particleboard.

Since RFPI-Joists contain no added urea-formaldehyde resins, it is Roseburg's opinion that RFPI-Joists should qualify for the LEED - Indoor Environmental Quality EQ Credit 4.4: Low-Emitting

Materials. However, the project specifier/end user is responsible to verify with LEED whether or not these materials will qualify for this credit. Forest Stewardship Council (FSC) certified RFPI-Joists are available from Roseburg Forest Products. FSC certified RFPI-Joists are manufactured under the Mixed Percentage system. LEED grants credit for Mixed Percentage products. FSC certified RFPI-Joists qualify for the LEED – Material and Resources MR Credit 7.0: Certified Wood. Depending on the location of a project, RFPI-Joists may qualify for the LEED - Materials and Resources MR Credit 5.1 or 5.2: Regional Materials.

**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

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**

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