

# Material Safety Data Sheet



## LP® SolidStart® I-Joists

### 1. PRODUCT AND COMPANY INFORMATION

**Product Code:** Not applicable  
**Product Name:** I-Joists  
**Brand Name:** LP SolidStart I-Joists  
**Company:** LP Building Products, 414 Union Street, Suite 2000, Nashville, TN, USA 37219  
**Telephone:** 888.820.0325, +1.615.986.5600 for International Callers

### 2. COMPOSITION AND INGREDIENT INFORMATION

Component	% by Weight	CAS #	Exposure Limits	Cancer Designation
Wood	91-95	N/A	PNOS <sup>(1)</sup> TLV-TWA = 1 mg/m <sup>3</sup> (8-hr) WES-TWA = 1 mg/m <sup>3</sup> (8-hr)	IARC-1, NIOSH-Ca NTP-K, TLV-A1
Phenol-Formaldehyde Resin Solids • Formaldehyde <sup>(2)</sup>	1-9  <0.1	9003-35-4  50-00-0	N/A  PEL-TWA = 0.75 ppm (8-hr) PEL-STEL = 2.00 ppm TLV-Ceiling = 0.30 ppm WES-TWA = 0.50 ppm (8-hr) WES-TWA = 0.33 ppm (12-hr) WES-Ceiling = 1.00 ppm	N/A  EPA-B, IARC-1, NIOSH-Ca, NTP-R, OSHA-Ca, TLV-A2, NOHSC-2, EU-3
Polyurea / Polyurethane Solids <sup>(3)</sup>	0-6	N/A	N/A	N/A
Melamine-Formaldehyde Resin Solids • Formaldehyde <sup>(2)</sup>	0-2  <0.1	25036-1-9  50-00-0	N/A  PEL-TWA = 0.75 ppm (8-hr) PEL-STEL = 2.00 ppm TLV-Ceiling = 0.30 ppm WES-TWA = 0.50 ppm (8-hr) WES-TWA = 0.33 ppm (12-hr) WES-Ceiling = 1.00 ppm	N/A  EPA-B, IARC-1, NIOSH-Ca, NTP-R, OSHA-Ca, TLV-A2, NOHSC-2, EU-3

- (1) PNOS: PEL-TWA = 15 mg/m<sup>3</sup>, total dust; PEL-TWA = 5 mg/m<sup>3</sup>, respirable fraction; TLV-TWA = 10 mg/m<sup>3</sup> inhalable particulate, 3 mg/m<sup>3</sup> respirable particulate.
- (2) These products may contain trace (<0.1% by weight) amounts of free formaldehyde, which may be released depending on concentration and environmental conditions. Large scale chamber studies conducted by APA Engineered Wood Association have shown that these finished products off gas free formaldehyde at levels less than 0.041 ppm. No urea-formaldehyde resins (adhesives) were used in the manufacturing of these products.
- (3) This ingredient is a cured, inert and polymerized form of polymeric diphenylmethane diisocyanate (pMDI) adhesive

## 2. COMPOSITION AND INGREDIENT INFORMATION (CONT'D)

Component	% by Weight	CAS #	Exposure Limits	Cancer Designation
Phenol-Resorcinol-Formaldehyde Resin Solids • Formaldehyde <sup>(2)</sup>	1-9 <0.1	N/A 50-00-0	N/A PEL-TWA = 0.75 ppm (8-hr) PEL-STEL = 2.00 ppm TLV-Ceiling = 0.30 ppm WES-TWA = 0.50 ppm (8-hr) WES-TWA = 0.33 ppm (12-hr) WES-Ceiling = 1.00 ppm	N/A EPA-B, IARC-1, NIOSH-Ca, NTP-R, OSHA-Ca, TLV-A2, NOHSC-2, EU-3
Paraffin Wax	0-2	8002-74-2	PEL-TWA 2 mg/m <sup>3</sup> TLV-TWA 2 mg/m <sup>3</sup>	N/A
End Sealant	<1	N/A	No hazardous components per OSHA Guidelines	N/A
Zinc Borate <sup>(4)</sup>	0-3	138265-88-0	PNOS <sup>(1)</sup>	N/A
Bifenthrin <sup>(4)</sup>	<0.005	82657-04-3	No exposure limits assigned to this material	EPA-C

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(4) These ingredients can be found primarily in treated versions of these wood products. Trace amounts may be found in untreated versions. Zinc borate is a wood preservative/pesticide and is registered with the U.S. EPA as a pesticide.

## 3. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

- Contact with strong oxidizers or exposure to temperature greater than 400°F (204°C) may cause a fire.
- Smoke from combustion may contain carbon monoxide, aldehydes and other toxic materials.
- Airborne wood dust may explode when combined with an ignition source.

### POTENTIAL HEALTH EFFECTS (BASED ON EXPECTED USE OF PRODUCT)

- Eyes: Dust may irritate the eyes.
- Skin: Dust may cause skin irritation.
- Ingestion: Not known.
- Inhalation: Dust can cause irritation to mucous membranes and the upper respiratory tract. Wood dust and formaldehyde are considered to be carcinogenic.

## 4. FIRST AID MEASURES

- **EYES:** For dust exposure, immediately flush eyes with plenty of water for at least 15 minutes.
- **SKIN:** Wash with soap and water. Get medical attention if irritation develops or persists.
- **INGESTION:** Not applicable under normal product use.
- **INHALATION:** Remove to fresh air, consult a physician.
- **NOTE TO PHYSICIANS:** Exposure to wood dust may aggravate symptoms in persons with pre-existing respiratory tract conditions and may cause skin or gastrointestinal symptoms.

## 5. FIRE FIGHTING MEASURES

### FLAMMABLE PROPERTIES:

- Flash point: N/A
- Combustible: Material may burn on contact with oxidizers or ignition sources.

### FLAMMABLE LIMITS:

- Lower flammable limit: N/A
- Upper flammable limit: N/A

**AUTOIGNITION TEMPERATURE:** Typically 400-500°F (204-260°C)

**EXPLOSION HAZARD:** Depending on moisture content and particle size, airborne wood dust may explode in the presence of an ignition source. Combustion is likely with dust concentrations greater than 30 - 60 g/m<sup>3</sup>.

**HAZARDOUS COMBUSTION PRODUCTS:** Carbon dioxide, carbon monoxide, nitrogen oxides, aldehydes, cyanides and other hazardous gases, vapors and particles.

**EXTINGUISHING MEDIA:** Extinguish with water, sand, dry chemicals or other agents rated for a Type A wood fire. Use a fire extinguisher rated for Type A fires.

**FIRE FIGHTING INSTRUCTIONS:** Evacuate the area and notify the fire department. If possible isolate the fire by moving other combustible materials away from the fire location. If the fire is small, use a hose-line or extinguisher rated for a Type A fire. If possible, dike and collect water used to fight fires. Fire fighters should wear normal protective equipment (full bunker gear) and positive-pressure self-contained breathing apparatus (SCBA).

## 6. ACCIDENTAL RELEASE MEASURES

Does not apply.

## 7. HANDLING AND STORAGE

**HANDLING:** Provide ventilation or other measures so that dust levels are below exposure limits listed in Section 2.

**STORAGE:** Keep dust away from ignition sources. Consult NFPA 68 and 70 for additional information.

## 8. EXPOSURE CONTROL / PERSONAL PROTECTION

**ENGINEERING CONTROLS:** Control airborne dust concentrations below exposure limits. Processing and storage areas should possess adequate ventilation.

**RESPIRATORY PROTECTION:** When respiratory protection is required or dust concentrations are unknown, use a NIOSH, MSHA or NOHSC approved air-purifying respirator for dust.

**SKIN PROTECTION:** Wear work gloves to prevent skin irritation.

**EYE PROTECTION:** Wear ANSI approved eye protection.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	N/A	Density:	28 – 70 lb/ft <sup>3</sup> (448 – 1,121 kg/m <sup>3</sup> )
Melting Point:	N/A	pH:	N/A
Vapor Pressure:	N/A	Odor:	Slight to none
Vapor Density:	N/A	Appearance:	Light brown wood products
Solubility in Water:	N/A		

## 10. STABILITY AND REACTIVITY

**CHEMICAL STABILITY:** Stable

**INCOMPATIBILITY:** Keep away from high temperatures and strong oxidizers, such as concentrated nitric acid, oxygen, hydrogen peroxide and chlorine.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Wood combustion can release carbon monoxide, hydrogen cyanide and other toxic materials.

**HAZARDOUS POLYMERIZATION:** Will not occur.

## 11. TOXICOLOGICAL INFORMATION

**WOOD DUST:** Wood dust is known to be a human carcinogen. An increased incidence of adenocarcinoma of the nasal cavities and paranasal sinuses was observed in studies of people whose occupations are associated with wood dust exposure (10<sup>th</sup> Edition of the National Toxicology Program's Report on Carcinogens). Wood dust from some tree species may induce sensitization.

### FORMALDEHYDE:

Chronic (Cancer) Information: See Section 2 for carcinogenicity categories.

Teratology (Birth Defect) Information: N/A

Reproduction Information: Reproductive effects in animals have been reported in RTECS for formaldehyde.

Sensitizer: Exposure to low doses of formaldehyde may cause sensitization.

International Formaldehyde Emissions Classifications:

- Australia: This product meets EWPA requirements for an E<sub>0</sub> emissions class product with formaldehyde emissions less than or equal to 0.041 ppm (0.5 mg/L).
- Japan: This product meets JAS requirements for F ★ ★ ★ ★ class of performance with formaldehyde emissions on average less than 0.3 mg/L and maximum less than 0.4 mg/L.

### ZINC BORATE:

#### Acute Toxicity

- Ingestions – Low acute oral toxicity LD<sub>50</sub> in rats is greater than 10,000 mg/kg of body weight.
- Skin/dermal – Low acute dermal toxicity; LD<sub>50</sub> in rabbits is greater than 10,000 mg/kg of body weight. Zinc borate is poorly absorbed through intact skin.
- Skin irritation – Non-irritant
- Eye irritation – Draize test in rabbits produced mild eye irritation effects. Many years of occupational exposure to zinc borate indicates no adverse effects on human eyes. Therefore, zinc borate is not considered to be a human eye irritant in normal industrial use.
- Sensitization – Zinc borate is not a skin sensitizer.

*NOTE: Zinc borate can decompose, under biological conditions, to form hydroxide and boric acid.*

**BIFENTHRIN:** Bifenthrin is present in very low concentrations (<0.005%) and should not present a health hazard. Bifenthrin is not classified as a carcinogen by IARC, NTP, OSHA, ACGIH, NOHSC and OSH. The EPA has classified bifenthrin a Group C substance as possible human carcinogen based on the limited evidence of carcinogenicity in animals and in the absence of human data.

## 12. ECOLOGICAL INFORMATION

**UNTREATED PRODUCTS:** These wood products are not expected to pose an ecological hazard as a result of normal intended use.

**TREATED PRODUCTS:** Ecological information presented in the remainder of Section 12 is for zinc borate and bifenthrin. These ingredients would be primarily found in treated versions of these wood products. Trace amounts of zinc borate or bifenthrin may be present in untreated versions.

### ZINC BORATE:

#### ECOTOXICOLOGICAL INFORMATION:

- **General:** Both borate and zinc occur naturally in seawater at average concentrations of 5 mg/L boron and 8 microgram/L zinc or at lower concentrations, generally in fresh water. Zinc borate can decompose, under certain environmental conditions to form sparingly water-soluble zinc hydroxide and water-soluble boric acid.
- **Phytotoxicity:** Boron is an essential micronutrient for healthy growth of plants; however, it can be harmful to boron-sensitive plants in high quantities. Care should be taken to minimize the amount of zinc borate release to the environment.
- **Invertebrate Toxicity:** Daphnids (*Daphnia magna* straus) – 48-hr LC<sub>50</sub>: 76 mg/L zinc borate
- **Fish Toxicity:** Freshwater rainbow trout (*S. gairdneri*) – 96 hr LC<sub>50</sub>: 2.4 mg/L zinc borate  
Bluegill (*Lepomis macrochirus*) – 96 hr LC<sub>50</sub>: >335 mg/L zinc borate

#### ENVIRONMENTAL DATA:

- **Persistence/degradation:** under certain environmental conditions, zinc borate will slowly hydrolyze to form other inorganic chemicals such as zinc hydroxide and boric acid.
- **Soil Mobility:** Zinc borate is sparingly soluble in water and may be leachable through normal soil.

### BIFENTHRIN:

**ECOTOXICOLOGICAL INFORMATION:** The active ingredient, bifenthrin, is highly toxic to fish and aquatic arthropods with LC<sub>50</sub> values ranging from 0.0038 to 17.8 mg/L. In general, the aquatic arthropods are the most sensitive species. Care should be taken to avoid contamination of the aquatic environment. Bifenthrin had no effect on mollusks at its limit of water solubility. Bifenthrin is only slightly toxic to both waterfowl and upland game birds (LC<sub>50</sub> values range from 1800 mg/kg to >2,150 mg/kg).

**ENVIRONMENTAL DATA:** The active ingredient, bifenthrin, has moderate stability in the soil under aerobic conditions (half life range from 65-125 days depending on soil type) and is stable at a wide range of pH values. Bifenthrin has a high Log Pow (>6.0), a high affinity for organic matter, and is not mobile in soil. Therefore, there is little potential for movement into ground water. There is the potential for bifenthrin to bioconcentrate (BCF=11,750).

## 13. DISPOSAL CONSIDERATIONS

Dispose of waste according to federal, state, provincial and local requirements.

## 14. TRANSPORTATION INFORMATION

**DOT CLASSIFICATION:** Zinc borate is regulated as a hazardous material by the U.S. Department of Transportation (DOT), if transported in quantities greater than 1,000 pounds (454 kilograms) in one package. Since the amount of zinc borate in the product does not exceed this quantity, the U.S. DOT does not consider the product to be a hazardous material. Therefore, as shipped, this product is not regulated by the U.S. DOT.

**TDB CLASSIFICATION:** Zinc borate is regulated as a hazardous substance under Canadian Transportation of Dangerous Goods (TDB) regulation. However, as shipped, the amount of zinc borate in this product falls below the regulated limit of 110 pounds (50 kilograms). The product would not be considered a hazardous material by Canadian TDB.

## 14. TRANSPORTATION INFORMATION (CONT'D)

**INTERNATIONAL CLASSIFICATION:** Zinc borate has no United Nations (UN) number and is not regulated under international rail, roads, water or air transportation regulations. However, as shipped, the amount of zinc borate in this product falls below 1,000 pounds (454 kilograms) in one package and is not considered a hazardous material.

**Proper Shipping Name:** N/A  
**Hazard Class Number and Description:** Not hazardous  
**UN ID Number:** N/A  
**Packing Group:** N/A  
**Information Reported for Product/Size:** N/A

## 15. REGULATORY INFORMATION

OSHA Hazard Communications:	CFR 1910.1200 (b)(6)(iv)	CERCLA RQ:	N/A
EPCRA EHS RQ Section 302:	N/A	EPA CAA Section 112 (r):	N/A
EPCRA Section 313:	N/A	Uniform Fire Code:	N/A

**STATE RIGHT-TO-KNOW DATA:** This product is known to contain substances listed on the following State Right to Know (RTK) or Hazardous Substances Lists.

- California Proposition 65 Warning – Drilling, sawing, sanding or machining wood products generates wood dust, a substance known to the State of California to cause cancer. This product also contains formaldehyde, a chemical known to the State of California to cause cancer. Depending on environmental conditions, free formaldehyde may be emitted from this product. As noted in Footnote 2 of Section 2, LP Building Products has evaluated formaldehyde emission from the finished product and found levels to be below that of significant risk.
- Pennsylvania – When cut or otherwise machined, this product may emit wood dust. This product contains formaldehyde which, depending on environmental conditions, may be released. Wood dust and formaldehyde appear on Pennsylvania's Appendix A – Hazardous Substances Lists.
- New Jersey – This product contains formaldehyde, a substance which appears on New Jersey's Environmental Substances Lists.
- Minnesota – Minnesota Statutes, 1984, Sections 144.495 and 325F.181 do not apply to this product. Those statutes apply to plywood, particleboard, MDF and other products manufactured with urea-formaldehyde adhesives.

## 16. OTHER INFORMATION

This Material Safety Data Sheet (MSDS) is intended solely for safety education and not for use as specifications or warranties. The information in this MSDS was obtained from usually reliable sources and is provided without any representation for warranties regarding the accuracy or correctness. Since the handling, use and storage is beyond our control, LP assumes no responsibility and disclaims liability for any loss, damage, or expense arising there from.

## ABBREVIATIONS

ACGIH	American Conference of Industrial Hygienists
ANSI	American National Standards Institute
BCF	Bioconcentration factor
CAA	Clean Air Act
CAS #	Chemical Abstract Services Number – Registry that identifies and discloses specific chemical information
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
EC <sub>50</sub>	Effective concentration that inhibits the endpoint to 50% of control population
EHS	Extremely Hazardous Substance
EPA	Environmental Protection Agency
EPA-B	EPA Group B – Probable carcinogenic to humans with sufficient evidence from animals, but little or no human data
EPA-C	EPA Group C – Possibly carcinogenic to humans with limited animal evidence, but limited, little or no human data
EPA-E	EPA Group E – Evidence of non-carcinogenicity for humans
EPCRA	Emergency Planning and Community Right-To-Know Act
EU	European Union
EU-3	EU Category 3 – Concern for humans, but available information not adequate to make satisfactory assessment
EWPAA	Engineered Wood Products Association of Australasia
g/m <sup>3</sup>	Grams per cubic meter
IARC	International Agency for Research on Cancer
IARC-1	IARC Group 1 – Carcinogenic to humans
JAS	Japanese Agricultural Standards
kg/m <sup>3</sup>	Kilograms per cubic meter
lb/ft <sup>3</sup>	Pounds per cubic foot
LC <sub>50</sub>	Median lethal concentration in air resulting in death to 50% of experimental animals
LD <sub>50</sub>	Administered lethal dose resulting in death to 50% of experimental animals
Log Pow	Log octanol water partition coefficient (Hansch Coefficient)
µg/L	Micrograms per liter
mg/m <sup>3</sup>	Milligrams per cubic meter
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter
MDF	Medium Density Fiberboard
MSHA	Mine Safety Health Act
N/A	Not applicable
NFPA	National Fire Protection Association
NIOSH	National Institute of Occupational Safety and Health
NIOSH-Ca	NIOSH Classification – Potential occupational carcinogen, with no further categorization
NOHSC	National Occupational Health and Safety Commission (Australia)
NOHSC-2	NOHSC (Australia) Category 2 – Should be regarded as if carcinogenic to humans
NTP	National Toxicology Program
NTP-K	NTP Group K or 1 – Known to be a human carcinogen
NTP-R	NTP Group R or 2 – Reasonably anticipated to be a carcinogen
OSH	Occupational Health and Safety (New Zealand)
OSHA	Occupational Safety and Health Administration
OSHA-Ca	OSHA Carcinogen Classification – Carcinogen defined with no further categorization
pH	Measure of acidity or basicity of an aqueous solution
PEL	Permissible Exposure Limit
PNOS	Particle not otherwise specified
ppm	Parts per million
RTECS	Registry of Toxic Effects of Chemical Substances
RQ	Reportable Quantity
STEL	Short-Term Exposure Limit
TLV	Threshold Limit Value
TLV-A1	TLV Class A1 – Confirmed Human Carcinogen
TLV-A2	TLV Class A2 – Suspected Human Carcinogen
TWA	Time-weighted average exposure
WES	Workplace Exposure Standards (New Zealand)

## BIBLIOGRAPHY

1. Guide to Occupational Exposure Values, American Conference of Governmental Industrial Hygienists, 2002.
2. Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Q-1, 2003.
3. Dangerous Properties of Industrial Materials, Sax's, 1998 CD-Folio.
4. CESARS, Chempendium, Canadian Centre for Occupational Health and Safety, Q-1, 2003.
5. Integrated Risk Information System, EPA, on-line.
6. EPA Title III List of Lists.
7. Handbook of Fire Protection Engineering, 2<sup>nd</sup> Edition.
8. 49 CFR 172.101, Hazardous Materials Table, from Chempendium. Q-1, 2003.
9. Documentation of the TLVs<sup>®</sup>, American Conference of Governmental Industrial Hygienists, 2002.
10. 10th Edition of the National Toxicology Program's Report on Carcinogens, 2002.
11. TLVs<sup>®</sup> and BEIs<sup>®</sup>, American Conference of Governmental Industrial Hygienists, 2003.
12. IARC bulletin No. 153.

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**California Proposition 65 Warning: Use of this product may result in exposure to wood dust, known to the State of California to cause cancer.**