Material Safety Data Sheet (MSDS)
LP® SolidStart™ I-Joists

1. PRODUCT AND COMPANY INFORMATION

Producty Code: NA
Product Name: I-Joists / I-Beams
Brand Name: LP SolidStart I-Joists
Company: LP Buuilding Products, 414 Union Street, Suite 2000, Nashville, TN USA37219
Telephone: 888.820.0325, +1.615.986.5600 for International Callers

2. COMPOSTION AND INGREDIENT INFORMATION

COMPONENT	% By Weight	CAS #	Exposure Limits	Cancer Designation
Wood	91-95	NA	PNOS(1) TLV-TWA=1mg/m3 (8-hr) WES-TWA=1mg/m3(8-hr)	IARC-1, NIOSH-Ca NTP-K, TLV-A1
Phenol-Formaldehyde Resin Solids -Formaldehyde(2)	1-9 <0.1	9003-35-4 50-00-0	NA PEL-TWA=0.75ppm (8hr) PEL-STEL=2.00ppm TLV-Ceiling=0.30ppm WES-TWA=0.50ppm (8-hr) WES-TWA=0.33ppm (12-hr) WES-Ceiling=1.00ppm	NA EPA-B, IARC-1, NIOSH-Ca, NTP-R OSHA-Ca, TLV-A2 NOHSC-2, EU-3
Polyurea/Polyurethane Solids(3)	0-6	NA	NA	NA
Melamine Formaldehyde Resin Solids -Formaldehyde(2)	0-2 <0.1	25036-1-9 50-00-0	NA PEL-TWA=0.75ppm (8hr) PEL-STEL=2.00ppm TLV-Ceiling=0.30ppm WES-TWA=0.50ppm (8-hr) WES-TWA=0.33ppm (12-hr) WES-Ceiling=1.00ppm	NA EPA-B, IARC-1, NIOSH-Ca, NTP-R OSHA-Ca, TLV-A2 NOHSC-2, EU-3

(1) PNOS: PEL-TWA=15mg/m3, total dust; PEL-TWA=5mg/m3, respiration fraction; TLV-TWA=10mg/m3 inhalable particulate, 3 mg/m3 rerspirable particulate.
(2) These products may contain trace (<0.1% by weight) amounts of free formaldehyde, which may me 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-formadehyde resins (adhesives) were used in the manufacturing of these products.
(3) This ingredient is a cured, inert and polymerized form of polymeric diphenylmethane diisocyante (pMDI) adhesive.

COMPOSTION AND INGREDIENT INFORMATION CONT'D

COMPONENT	% By Weight	CAS #	Exposure Limits	Cancer Designation
Phenol-Resorcinol-Formaldehyde Resin Solids -Formaldehyde(2)	1-9 <0.1	NA 50-00-0	NA PEL-TWA=0.75ppm (8hr) PEL-STEL=2.00ppm TLV-Ceiling=0.30ppm WES-TWA=0.50ppm (8-hr) WES-TWA=0.33ppm (12-hr) WES-Ceiling=1.00ppm	NA 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 2mg/m3 TLV-TWA 2mg/m3	NA
End Sealant	<1	NA	No Hazardous Cpmponents per OSHA Guidelines	NA
Zinc Borate (4)	0-3	138265-88-0	PNOS (1)	NA
Bifenthrin (4)	<0.005	82657-04-3	No ExposureLimits assigned to this Material	EPA-C

(1) PNOS: PEL-TWA=15mg/m3, total dust; PEL-TWA=5mg/m3, respiration fraction; TLV-TWA=10mg/m3 inhalable particulate, 3 mg/m3 rerspirable particulate.
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(3) This ingredient is a cured, inert and polymerized form of polymeric diphenylmethane diisocyante (pMDI) adhesive.
(4) These ingrediants can be found primarily in treated versions of these products. Trace amounts may be found in untreated verions. Zinc Borate is a wood preservative/pesticide and is registered with the U.S EPA as a pesticide.

3. HAZARDOUS IDENTIFICATION

EMERGENCY OVERVIEW

- Contact with strong oxidisers 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.
- Airbourne 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 skion irritaion
- Ingestion: Not Known
- Inhalation: Dust can cause irritation to moucos 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: NA 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 PRPOERTIES:
- Flash Point: NA
- Combustible: Material may burn on contact with oxidizers or ignition sources.

FLAMMABLE LIMITS:
- Lower flammable limit: NA
- Upper fammable limit: NA

AUTO-IGNITION TEMPERATURE: Typically 400-500° F (204-260°C)
EXPLOSION HAZARD: depending on moisture content and particle size, airbourne wood dust may explode in the presence of an ignition source. Combustion is likely with dust concentrations greater than 30-60 g/m3.
HAZARDOUS COMBUSTION PRODUCTS: Carbon Dioxide, Carbon Monoxide, Nitrogen Oxides, Aldehydes, Cyanides and other hazardous gases, vapours and particles.
FIRE FIGHTING INSTRUCTIONS: Evacuate the are 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 or extinguiser 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

EXPOSURE CONTROLS: Control airbourne dust concentraiotns below exposure limits. Processing and storage areas should posess adequate ventilation.
RESPIRATORY VENTILATION: When respiratory ventilationm is reuiqred or dust concentrations are unknown, use a NIOSH, MSHA pr NOHSC approved air-puriying respirator for dust
SKIN PROTECTION: Wear work gloves to prevent skin irritation
EYE PROTECTION: Wear ANSI approved protection

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: NA		Density:	28-70 lb/ft3 (448-1121 kg/m3)
Melting Point: NA		pH:	NA
Vapor Pressure:	NA	Odor:	Slight to None
Vapour density:	NA	Appearance:	Light Brown wood products
Solubility in water	NA		

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable
INCOMPATIBILITY: Keep away from high temperatures and strong oxidizers, such as concentrated nitirc 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. TOXILOGICAL 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 associated with wood dust exposure (10th 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: NA
Reproduction Information: Reproductive effects in animals have been reported in RTECS for formaldehyde.
Sensitizer: Exposure to low doses of formaldehyde may cause sensitization.
Internaltional formaldehyde Emissions Classification:

- Australia: this Product meets EWPAA requirements for an E0 emissions class product with formaldehyde emmisions less than or equal to 0.041ppm (0.5mg/L).
- Japan: This product meets JAS requirements for F**** class of perfromace 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 LD50 in rats is greater than 10,000mg/kg of body weight
- Skin/dermal – Low acute dermal toxicity; LD50 in rabbits is greater than 10,000mg/kg of body weight. Zinz Borate is poorly absorbded through intact skin.
- Skin irritation - Non-Irritant.
- Eye irritaion - Draize test in rabbits produced mild eye irritaion effects. Many years of occupational exposure to Zinc Borate indicates no adverse effects on
- human eys. Therfore, Zinc Borate is not considered to be a human eye irritant in normal industrial uses.
- Sensitization – Zinc Borate is not a skin sensitizer.
  NOTE: Zinc Borate can decompose, under biological conditions, to from hyroxide and Boric Acid

BIFENTHRIN:
Bifenthrin is present in very low concentrations (<0.005%) and should not present a health hazard. Bifenthrin is not classifed as a carcinogenic by IARC, NTP, OSHA, ACGIH, NOHSC ans OSH. The EPA has classified Bifenthrin a group C substance as possible human carcinogen based on the limited evidence of carcinogenicity in aniamals 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 primary 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 LC50: 76 mg/L zinc borate
• Fish Toxicity: Freshwater rainbow trout (S. gairdneri) – 96 hr LC50: 2.4 mg/L zinc borate
Bluegill (Lepomis macrochirus) – 96 hr LC50: >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 LC50 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 (LC50 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 bio concentrate (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.
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. REGULARTORY 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 know 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 Statues, 1984, Sections 144.495 and 325F.181 do not apply to this product. Those statues 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.

17. 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
EC50	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/m3	Grams per cubic meter
IARC	International Agency for Research on Cancer
IARC-1	IARC Group 1 – Carcinogenic to humans
JAS	Japanese Agricultural Standards
kg/m3	Kilograms per cubic meter
lb/ft3	Pounds per cubic foot
LC50	Median lethal concentration in air resulting in death to 50% of experimental animals
LD50	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/m3	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)

18. 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.
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5. Integrated Risk Information System, EPA, on- line.
6. EPA Title III List of Lists.
7. Handbook of Fire Protection Engineering, 2nd Edition.
8. 49 CFR 172.101, Hazardous Materials Table, from Chempendium. Q-1, 2003.
9. Documentation of the TLVs®, American Conference of Governmental Industrial Hygienists, 2002.
10. 10th Edition of the National Toxicology Program's Report on Carcinogens, 2002.
11. TLVs® and BEIs®, American Conference of Governmental Industrial Hygienists, 2003.
12. IARC bulletin No. 153.

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