

Safety Data Sheet (SDS)



Zinc Borate-treated TimberStrand[®] LSL

1. Identification

TRADE NAME: Zinc Borate-treated TimberStrand[®] LSL

SYNONYMS and/or GRADES: Column, Treated Sill Plate

PRODUCT USES: Building Materials

CHEMICAL NAME/CLASS: Wood Products

MANUFACTURER'S NAME: Weyerhaeuser

ADDRESS: 33663 Weyerhaeuser Way S., Federal Way WA 98001-9620

EMERGENCY PHONE: (800) 424-9300 (CHEMTREC)

BUSINESS PHONE: (253) 924-3865


INTERNET ACCESS: See section 16

REVISED DATE: April 17, 2015


2. Hazard(s) Identification

Signal Word: DANGER

NOTE: This product is not hazardous in the form in which it is shipped by the manufacturer but may become hazardous as the result of downstream activities (e.g. cutting, sanding) which creates small particles resulting in the potential hazards as described below.

Classification	Hazard Statement(s)	Pictogram(s)
HEALTH Carcinogen- Category 1A (H350)*	Wood dust may cause nasopharyngeal cancer and/or cancer of the nasal cavities and paranasal sinuses by inhalation	

2. Hazard(s) Identification (cont'd.)

<p>Skin Irritation Category 2 (H315)</p> <p>Specific Target Organ Toxicity- Single Exposure (STOT) Category-3 (H335)</p>	<p>May cause skin irritation</p> <p>May cause respiratory irritation</p>	
<p>Eye Irritation Category 2B (H320)</p>	<p>Causes eye irritation</p>	<p>None</p>
<p>Combustible Dust (OSHA Defined Hazard)</p>	<p>If converted to small particles during further processing, handling, or by other means, may form combustible dust concentrations in air</p>	<p>None</p>

*Hazard codes (GHS)

HMIS Rating (Scale 0-4): **Health = 2*** **Fire = 1** **Physical Hazard = 0**
NFPA Rating (Scale 0-4): **Health = 1** **Fire = 1** **Reactivity = 0**

Precautionary Statement(s)/Codes (GHS):

Prevention Statements:

- P210: Keep away from sparks, flame or other heat sources.
- P243: Take precautionary measures against static discharge.
- P260 and P261: Avoid breathing dust.
- P280: Wear appropriate protective equipment for skin exposure. In case of inadequate ventilation wear an approved respirator suitable for conditions of use.
- P362 and P363: Take off contaminated clothing and wash before reuse.

Response Statements:

- P304 and P340: If inhaled and breathing becomes difficult, remove person to fresh air and keep comfortable for breathing.
- P308 and P313: If experiencing respiratory symptoms, following removal to fresh air, call a doctor or other qualified medical professional.
- P313: If skin irritation or rash occurs get medical advice/attention.
- P362: Wash contaminated clothing before reuse.
- P352 and P264: If on skin wash with plenty of soap and water.
- P338 and P351: If in eyes, rinse cautiously for several minutes. Remove contact lenses if present and easy to do so.

Disposal:

- P501: Dispose of in accordance with Federal, state and local regulations.

Ingredients of Unknown Acute Toxicity (>1%): NAP

3. Composition/Information on Ingredients

Ingredients	CAS#	Wt %
Wood (wood dust, hardwood)	None	93-94
Resin Solids: Polymeric Diphenylmethane Diisocyanate ¹ [C ₆ H ₃ (NCO)CH ₂] _n	9016-87-9	4-6
Co-binder	None	0.1-2
Wood Preservative (Zinc Borate Hydrate)	138265-88-0	0.1-1

Common names: ¹Polymeric MDI

4. First Aid Measures

Inhalation: Remove to fresh air if respiratory symptoms are experienced. Seek medical help if persistent irritation, severe coughing, breathing difficulty or other serious symptoms occur.

Eye Contact: Treat dust in eye as a foreign object. Flush with water to remove dust particles. Remove contact lenses if present and easy to do so. Avoid touching or rubbing eyes to avoid further irritation or injury. Seek medical help if irritation persists.

Skin Contact: Wood dust may elicit contact dermatitis. Seek medical help if rash, irritation or dermatitis persists.

Skin Absorption: Not known to be absorbed through the skin.

Ingestion: Not applicable under normal use.

Symptoms or Effects:

Acute Symptoms/Effects – Wood dust may cause mechanical and/or chemical irritation of the respiratory system. Wood dust can cause physical obstructions in the nasal passages, resulting in dryness of nose, dry cough, and sneezing. Wood dust may cause mechanical irritation of the eyes.

Delayed Symptoms/Effects – Unique delayed effects are not anticipated after exposure. See Section 11 for additional information on chronic effects.

5. Fire-fighting Measures

Extinguishing Media and Restrictions: Water, carbon dioxide and sand.

Specific Hazards, Anticipated Combustion Products: Natural decomposition of organic materials such as wood may produce toxic gases and an oxygen deficient atmosphere in enclosed or poorly ventilated areas. Thermal decomposition (i.e. smoldering, burning) can release carbon monoxide, oxides of nitrogen, carbon dioxide, aliphatic aldehydes, resin acids, terpenes, polycyclic aromatic hydrocarbons, zinc hydroxide and boric acid.

Autoignition Temperature: Variable [typically 400°-500°F (204°-260°C)].

Special Firefighting Equipment/Procedures: No special equipment anticipated. Beware of potential combustible dust explosion hazard.

Unusual Fire and Explosion Hazards: Depending on moisture content and more importantly, particle diameter and airborne concentration, Zinc Borate-treated TimberStrand[®] dust in a contained area may explode in the presence of an ignition source. Product dust may similarly deflagrate (combustion without detonation like an explosion) if ignited in an open or loosely contained area. An airborne concentration of 40 grams (40,000 mg) of dust per cubic meter of air is often used as the LEL for wood dusts. Reference NFPA Standards 654, 664 and the NFPA *Fire Protection Handbook* for guidance. Ventilation systems should be kept clean and precautions should be taken to prevent sparks or other ignition sources.

6. Accidental Release Measures

Steps to be taken in case Material Is Released or Spilled: Sweep or vacuum up for recovery and disposal. Avoid creating dusty conditions whenever feasible. Maintain good housekeeping to avoid accumulation of product dust on exposed surfaces. Use approved filtering facepiece respirator (“dust mask”) or higher levels of respiratory protection as indicated and goggles where ventilation is not possible and exposure limits may be exceeded or for additional worker comfort.

7. Handling and Storage

Precautions to be taken in Handling and Storage: Product dust may pose a combustible dust hazard. Keep away from ignition sources. Avoid eye contact. Avoid prolonged or repeated contact with skin. Avoid prolonged or repeated breathing of dusts. Store in well-ventilated, cool, dry place away from open flame.

8. Exposure Control Measures/Personal Protection

Exposure Limits/Guidelines:

Ingredient(s)	Agency	Exposure Limit(s)	Comments
Wood (wood dust, softwood and hardwood)	OSHA	PEL-TWA 15 mg/m ³ (see footnote ^A below)	Total dust (PNOR)
	OSHA	PEL-TWA 5 mg/m ³ (see footnote ^A below)	Respirable dust fraction (PNOR)
	ACGIH	TLV-TWA 1 mg/m ³	Inhalable fraction
Polymeric Diphenylmethane Diisocyanate ^B	OSHA	None	
	ACGIH	None	
Wood Preservative (Zinc Borate Hydrate) ^C	OSHA	PEL-TWA 15 mg/m ³ (PNOR)	Total dust
	OSHA	PEL-TWA 5 mg/m ³ (PNOR)	Respirable dust fraction
	ACGIH	TLV-TWA 10 mg/m ³ (PNOS)	Total dust
	ACGIH	TLV-TWA 3 mg/m ³ (PNOS)	Respirable dust fraction

^A In *AFL-CIO v OSHA*, 965 F. 2d 962 (11th Cir. 1992), the Court overturned OSHA’s 1989 Air Contaminants Rule, including the specific PEL’s for wood dust that OSHA had established at that time. The 1989 vacated PEL’s were: 5 mg/m³ PEL-TWA and 10 mg/m³ STEL (15 min), all softwood and hardwood except Western Red Cedar. Wood dust is now regulated by OSHA as “Particulates Not Otherwise Regulated” (PNOR), which is also referred to as “nuisance dust”. However, some states have regulated wood dust PEL’s in their state plans. Additionally, OSHA indicated that it may cite employers under the OSH Act general duty clause in appropriate circumstances.

^B This ingredient is the polymerized form of MDI resin.

^C Wood preservative/pesticide. Registered pesticide with the U.S. EPA: EPA registration number 1624-120.

Ventilation:

LOCAL EXHAUST – Provide local exhaust as needed so that exposure limits are met. Ventilation to control dust should be considered where potential explosive concentrations and ignition sources are present. The design and operation of any exhaust system should consider the possibility of explosive concentrations of product dust within the system. See “SPECIAL” section below. Use of tool mounted exhaust systems should also be considered, especially when working in enclosed areas.

MECHANICAL (GENERAL) – Provide general ventilation in processing and storage areas so that exposure limits are met.

8. Exposure Control Measures/Personal Protection (cont'd.)

SPECIAL – Ensure that exhaust ventilation and material transport systems involved in handling this product contain explosion relief vents or suppression systems designed and operated in accordance with applicable standards if the operating conditions justify their use.

OTHER ENGINEERING CONTROLS – Cutting and machining of product should preferably be done outdoors or with adequate ventilation and containment.

Personal Protective Equipment:

RESPIRATORY PROTECTION – Use filtering face piece respirator (“dust mask”) tested and approved under appropriate government standards such as NIOSH (US), CSA (Canada), CEN (EU), or JIS (Japan) where ventilation is not possible and exposure limits may be exceeded or for additional worker comfort or symptom relief. Use respiratory protection in accordance with jurisdictional regulatory requirements similar to the OSHA respiratory protection standard 29CFR 1910.134 following a determination of risk from potential exposures.

EYE PROTECTION – Approved goggles or tight fitting safety glasses are recommended when excessive exposures to dust may occur (e.g. during clean up) and when eye irritation may occur.

PROTECTIVE GLOVES – Cloth, canvas, or leather gloves are recommended to minimize potential slivers or mechanical irritation from handling product.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT – Outer garments which cover the arms may be desirable in extremely dusty areas.

WORK/HYGIENE PRACTICES – Follow good hygienic and housekeeping practices. Clean up areas where product dust settles to avoid excessive accumulation of this combustible material. Minimize compressed air blowdown or other practices that generate high airborne-dust concentrations.

9. Physical/Chemical Properties

Appearance: Zinc Borate-treated TimberStrand® consists of layers of laminated solid wood which are glued together with a polymerized methylene bisphenyl diisocyanate (MDI) resin. The product has a slight aromatic/wood odor. The wood component may consist of hardwoods, not including cedar.

Odor/ Odor Threshold(s):	NAV
pH:	NAP
Melting/Freezing Point:	NAP
Boiling Point (@ 760 mm Hg) and Range:	NAP
Flash Point:	NAP
Evaporation Rate:	0
Flammability:	NAP
Lower / Upper Explosive Limits:	40,000 mg of dust per cubic meter of air is often used as the LEL for wood dusts.
Vapor Pressure (mm Hg):	NAP
Vapor Density (air = 1; 1 atm):	NAP
Relative Density:	NAP
Solubility:	<0.1
Partition Coefficient (n-octonal/water):	NAP
Autoignition Temperature:	Variable [typically 400°-500°F (204°-260°C)]
Decomposition Temperature:	NAV
Viscosity:	NAP
Other Properties:	NAP

10. Stability and Reactivity

Reactivity: NAP

Hazardous Polymerization: May occur Will not occur

Stability: Unstable Stable

Conditions to Avoid: Avoid open flame. Product may ignite at temperatures in excess of 400°F (204°C).

Incompatibility (Materials to Avoid): Avoid contact with oxidizing agents.

Hazardous Decomposition or By-Products: Thermal decomposition (i.e. smoldering, burning) can release carbon monoxide, oxides of nitrogen, carbon dioxide, aliphatic aldehydes, resin acids, terpenes, polycyclic aromatic hydrocarbons, zinc hydroxide and boric acid. Natural decomposition of organic materials such as wood may produce toxic gases and an oxygen deficient atmosphere in enclosed or poorly ventilated areas. Spontaneous and rapid hazardous decomposition will not occur.

Sensitivity to Static Discharge: Airborne wood dust may be ignited by a static discharge depending on airborne concentrations, particle size and moisture content.

11. Toxicological Information

Likely Route(s) of Exposure:

- Ingestion:
- Skin: Dust
- Inhalation: Dust
- Eye: Dust

Signs and Symptoms of Exposure:

Wood Dust - NTP: According to its Report on Carcinogens, Thirteenth Edition, NTP states, "Wood dust is known to be a human carcinogen based on sufficient evidence of carcinogenicity from studies in humans". An association between wood dust exposure and cancer of the nasal cavity has been observed in many case reports, cohort studies, and case-control studies that specifically addressed nasal cancer. Associations with cancer of the nasal cavities and paranasal sinuses were observed both in studies of people whose occupations are associated with wood dust exposure and in studies that directly estimated wood dust exposure. This classification is based primarily on increased risk in the occurrence of adenocarcinomas of the nasal cavities and paranasal sinuses associated with exposure to wood dust. The evaluation did not find sufficient evidence to associate cancers of the oropharynx, hypopharynx, lung, lymphatic and hematopoietic systems, stomach, colon or rectum with exposure to wood dust. There is inadequate evidence for the carcinogenicity of wood dust from studies in experimental animals according to NTP.

Wood Dust: 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 to 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 oropharynx, hypopharynx, lung, lymphatic and hematopoietic systems, stomach, colon or rectum.

Carcinogenicity Listing(s):

- NTP: Wood dust, Known Human Carcinogen.
- IARC Monographs: Wood dust, Group 1 - Carcinogenic to Humans.
- OSHA Regulated:

Toxicity Data: No specific information available for product in purchased form. Individual component information is listed below.

Components:

Wood dust (softwood or hardwood)

Dusts generated from sawing, sanding or machining the product may cause respiratory irritation, nasal dryness and irritation, coughing and sinusitis. NTP and IARC (Group 1) classify wood dust as a human carcinogen. See Section 2 above.

11. Toxicological Information (cont'd.)

Zinc borate hydrate

LD₅₀ in rats is greater than 10,000 mg/kg of body weight.

Skin/dermal – Low acute dermal toxicity; LD₅₀ in rabbits is greater than 10,000 mg/kg of body weight.

Zinc borate wood preservative used 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 wood preservative used indicates no adverse effects on human eyes.

Therefore, zinc borate wood preservative used is not considered to be a human eye irritant in normal industrial use.

Sensitization – Zinc borate wood preservative used is not a skin sensitizer.

Note: Zinc borate wood preservative can decompose, under biological conditions, to form zinc hydroxide and boric acid.

Target Organs: Eyes, skin, and respiratory system.

Note: Weyerhaeuser evaluated the studies referenced in the ACGIH® TLV® Documentation for Wood Dust and others which included potential allergenic references for wood species which may cause skin or respiratory sensitization. There are a limited number of studies of highly variable consistency which reference sensitization from some species of wood. When the total weight of evidence is considered this product is considered to be an eye, skin and repository irritant and not a respiratory or skin sensitizer according to health hazard classification criteria.

12. Ecological Information

Ecotoxicity: NAV for finished product.

Zinc borate hydrate:

Invertebrate Toxicity: Daphnids (*Daphnia magna* Straus) – 48-hr LC₅₀: 76 mg/L Borogard® ZB

Fish Toxicity: Freshwater rainbow trout (*s. Gairdneri*) – 96-hr LC₅₀: 2.4 mg/L Zinc borate wood preservative Bluegill (*lepomis macrochirus*) – 96-hr LC₅₀: >335 mg/L Zinc borate wood preservative.

Biopersistence and Degradability: The wood portions of this product would be expected to be biodegradable.

Polymeric MDI

The effects from a simulated accidental pollution event in a pond with polymeric MDI on different trophic levels of the aquatic ecosystem were investigated (Heimbach F. et.al., 1996). Neither monomeric MDI nor its potential reaction product MDA (4, 4'-diphenylmethanedi-amine) was detected in water or accumulated by fish. The MDI polymerized to inert polyurea on the sediment of the test ponds. This polymerization formed carbon dioxide, released as bubbles which floated to the water surface. There was no direct effect on the pelagic community (phytoplankton, zooplankton, fish, and macrophytes) of the test ponds. The atmospheric concentration of MDI arising from a release is naturally low on account of MDI's very low volatility. It is expected that airborne MDI will have a rather short half-life as a consequence of ready degradation to inorganic compounds by hydroxyl radicals present in the troposphere. 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 wood preservative released to the environment.

Bioaccumulation: NAV

Soil Mobility: Zinc borate is sparingly soluble in water and may be leachable through normal soil.

Other adverse effects: NAP

13. Disposal Considerations

Waste Disposal Method: Dry land disposal or incineration is acceptable in most areas. It is, however, the user's responsibility to determine at the time of disposal whether your waste meets any jurisdictional criteria. Note that wood dust may pose a combustible dust hazard.

14. Transport Information

Mode: DOT classification

Zinc borate is regulated as a hazardous material by the U.S. Department of Transportation (DOT) if transported in quantities greater than 1000 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. Department of Transportation.

TDG classification

Zinc borate is regulated as a hazardous substance under Canadian Transportation of Dangerous Goods (TDG) regulation. However, as shipped the amount of zinc borate in this product falls below the regulated limit of 110 lbs. (50 kg), the product would not be considered a hazardous material.

UN Proper Shipping Name:	NAP
UN/NA ID Number:	NAP
Hazard Class:	NAP
Packing Group:	NAP
Environmental Hazards (Marine Pollutant):	NAP
Special Precautions:	NAP

15. Regulatory Information

TSCA: The following ingredients are on the TSCA inventory: Polymeric Diphenylmethane Diisocyanate (MDI); soybean oil (contained in co-binder ingredient) and zinc borate.

CERCLA: Zinc borate is listed (RQ 1000 lbs).

DSL: Polymeric diphenylmethane diisocyanate (MDI) and soybean oil and zinc borate are on the Canada DSL.

OSHA: Wood products are not hazardous under the criteria of the federal OSHA Hazard Communication Standard 29 CFR 1910.1200. However, wood dust generated by sawing, sanding or machining this product may be hazardous.

STATE RIGHT-TO-KNOW:

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.

Pennsylvania – When cut or otherwise machined, the product may emit wood dust, wood dust, soybean oil (CAS# 8001-22-7) and zinc borates appear on Pennsylvania's Appendix A, Hazardous Substance List.

New Jersey – When cut or otherwise machined, the product may emit wood dust. Wood dust is on the New Jersey Environmental Hazardous Substance List.

Minnesota – Minnesota Statutes, 1984, Sections 144.495 and 325F.181 do not apply to this product; these statutes apply to plywood, particleboard and MDF and other products manufactured with urea-formaldehyde resins.

SARA 313 Information: To the best of our knowledge, this product contains no chemical subjected to the SARA Title III Section 313 supplier notification requirements.

SARA 311/312 Hazard Category: This product has been reviewed according the EPA "Hazard Categories: promulgated under SARA Title III, Sections 311 and 312 and is considered, under applicable definitions, to meet the following categories:

An immediate (acute) health hazard	Yes
A delayed (chronic) health hazard	Yes
A corrosive hazard	No
A fire hazard	No
A reactivity hazard	No
A sudden release hazard	No

15. Regulatory Information (cont'd.)

FDA: Not intended for use as a food additive or indirect food contact item.

WHMIS Classification: Wood and products made from wood are exempt from WHMIS per the Hazardous Products Act. However, wood dust is considered to be a controlled product: D2A (wood dust: IARC Group 1).

16. Other Information

Date Prepared: 09/27/2010

Date Revised: 04/17/2015

Prepared By: Weyerhaeuser Company Environment, Health, and Safety.

Weyerhaeuser SDS available on:

<http://www.weyerhaeuser.com/Sustainability/Customers/ProductStewardship/SafetyDataSheets>

User's Responsibility: The information contained in this Safety Data Sheet is based on the experience of occupational health and safety professionals and comes from sources believed to be accurate or otherwise technically correct. It is the user's responsibility to determine if the product is suitable for its proposed application(s) and to follow necessary safety precautions. The user has the responsibility to ensure that the most current SDS is used.

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
EC#	= Identifying Number Assigned to Chemicals Contained in the European Inventory of Existing Chemical Substances (EINECS)
EC ₅₀	= Effective Concentration That Inhibits the Endpoint to 50% of Control Population
EPA	= U.S. Environmental Protection Agency
GHS	= Globally Harmonized System of Classification and Labelling of Chemicals
HMIS	= (Canada) Hazardous Materials Identification System
HNOC	= Hazards Not Otherwise Classified
IARC	= International Agency for Research on Cancer
IATA	= International Air Transport Association
IMDG	= International Maritime Dangerous Goods
LC ₅₀	= Concentration in Air Resulting in Death To 50% of Experimental Animals
LCLo	= Lowest Concentration in Air Resulting in Death
LD ₅₀	= Administered Dose Resulting in Death to 50% of Experimental Animals
LDLo	= Lowest Dose Resulting in Death
LEL	= Lower Explosive Limit
LFL	= Lower Flammable Limit
MSHA	= Mine Safety and Health Administration
NAP	= Not Applicable
NAV	= Not Available
NIOSH	= National Institute for Occupational Safety and Health
NFPA	= National Fire Protection Association
NPRI	= (Canada) National Pollution Release Inventory
NTP	= National Toxicology Program
OSHA	= Occupational Safety and Health Administration
PEL	= Permissible Exposure Limit
PNOR	= Particulate Not Otherwise Regulated
PNOS	= Particulate Not Otherwise Specified
RCRA	= Resource Conservation and Recovery Act
STEL	= Short-Term Exposure Limit (15 minutes)

16. Other Information (cont'd.)

STP	=	Standard Temperature and Pressure
TCLo	=	Lowest Concentration in Air Resulting in a Toxic Effect
TDG	=	(Canada) 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)
UFL	=	Upper Flammable Limit
WHMIS	=	(Canada) Workplace Hazardous Materials Information System

Zinc Borate-treated TimberStrand[®] LSL



Danger

Wood dust may cause nasopharyngeal cancer and/or cancer of the nasal cavities and paranasal sinuses by inhalation. May cause respiratory, skin and eye irritation.

May form combustible dust concentrations in air if small particles are formed during processing or handling.

Precautions: Avoid breathing dust and wear appropriate protective equipment for respiratory, skin or eye exposures. Prevent dust release and accumulations to minimize hazards. Take off contaminated clothing and wash before reuse. Keep dust away from ignition sources such as heat, sparks, and flame.

First Aid: If on skin wash with plenty of mild soap and water. If in eyes, rinse cautiously for several minutes. Remove contact lenses if present and easy to do so. If experiencing respiratory symptoms, remove to fresh air. Contact a qualified medical professional for serious or persistent skin, eye or respiratory symptoms.

Weyerhaeuser

33663 Weyerhaeuser Way South

Federal Way, WA 98001

1-800-525-5440



Weyerhaeuser