



## HI-Clear II Treated Products

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 See Section 16

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### 1. Product Identification

Product
Douglas fir / Hemlock Microllam® LVL Douglas fir Parallam® PSL Douglas fir / Hemlock/ Aspen TJI® Joist Aspen / TimberStrand® LSL Douglas fir Glulam Beams

Synonyms: iLevel™ Trus Joist® Wood Products Treated with HI-Clear II and Sold in Hawaii

Note: Production of these materials may vary in species used and in location where they are manufactured as production needs change.

### 2. Hazardous Ingredients/Identity Information

Name	CAS#	Percent	Agency	Exposure Limits	Comments
Wood (wood dust, hardwood or softwood)	None	88-98	OSHA	PEL-TWA 15 m <sup>3</sup> (See footnote A below)	Total dust (PNOR)
			OSHA	PEL-TWA 5 mg/m <sup>3</sup> (See footnote A below)	Respirable dust fraction (PNOR)
			ACGIH	TLV-TWA 1 mg/m <sup>3</sup>	Inhalable fraction
Polymeric phenol-formaldehyde or phenol-resorcinol formaldehyde resin solids <sup>B</sup>	9003-35-4	1-9	OSHA	PEL-TWA 0.75 ppm	Free gaseous formaldehyde
			OSHA	PEL-STEL 2 ppm	
			ACGIH	TLV-Ceiling 0.3 ppm	
Resin solids: Polymeric diphenylmethane diisocyanate (MDI) <sup>C</sup>	9016-87-9	4-6	OSHA ACGIH	None None	

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## 2. Hazardous Ingredients/Identity Information (cont.)

Name	CAS#	Percent	Agency	Exposure Limits	Comments
Paraffin wax	8002-74-2	0-2	OSHA ACGIH	PEL-TWA 2mg/m <sup>3</sup> TLV-TWA 2mg/m <sup>3</sup>	Paraffin wax fume Paraffin wax fume
Permethrin <sup>E</sup>	52645-53-1	<1	OSHA ACGIH	None None	
3 -iodo-2-propynyl butyl carbamate (IPBC) <sup>E</sup>	55406-53-6	<1	OSHA ACGIH	None None	
Light, Low Odor Petroleum hydrotreated solvent (carrier) <sup>D</sup>	64742-47-8	1-10	OSHA ACGIH	None None	

<sup>A</sup> 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/m<sup>3</sup> PEL-TWA and 10 mg/m<sup>3</sup> 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 incorporated the 1989 OSHA PEL's in their state plans. Additionally, OSHA indicated that it may cite employers under the OSH Act general duty clause in appropriate circumstances for noncompliance with the 1989 PEL's.

<sup>B</sup> These products may contain free formaldehyde (<0.1%, wt %), which may be released depending on concentration and environmental conditions. These products contain no added urea-formaldehyde resins. Large scale chamber studies conducted by the APA Engineered Wood Association on materials using similar manufacturing processes and adhesives as these products have shown that the finished products should off-gas levels below 0.1 ppm as well. Phenol-formaldehyde resin is used in face/surface material and/or center/core material.

<sup>C</sup> This ingredient is the polymerized form of MDI resin. This ingredient is only used in the Aspen LSL product listed in section 1 above.

<sup>D</sup> The level of solvent in these treated products will vary depending on the length of time following treatment, drying conditions and the product. Levels of up to 10% may be expected immediately after treatment however this falls to negligible levels within a few days at ambient conditions once the solvent is allowed to dry.

<sup>E</sup> Active ingredients used to protect against subterranean termite and borer damage, and decay.

## 3. Hazard Identification

### Primary Safety/Health Hazards:

**Warning:** HI-Clear II Treated Products dust may pose a combustible dust explosion hazard if dried and suspended in air in sufficient concentrations and in proximity to an ignition source. Users of this product should examine the potential to generate wood and organic resin dusts during handling and processing and related combustibility hazards and controls. See additional comments in MSDS.

The primary health hazard posed by this product is thought to be due to exposure to airborne wood dust.

**Appearance and Odor:** Laminated product with a slight aromatic and solvent resinous odor and natural wood color. The wood component of these products may consist of aspen, Douglas fir or hemlock.

### Primary Route(s) of Exposure:

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

**Medical Conditions Generally Aggravated by Exposure:** Wood dust may aggravate pre-existing respiratory conditions and allergies.

### 3. Hazard Identification (cont.)

#### Signs and Symptoms of Exposure:

**Acute Health Hazards:** Wood dust can cause eye irritation. Certain species of wood dust can elicit allergic contact dermatitis in sensitized individuals. Wood dust may cause respiratory irritation, nasal dryness, coughing, sneezing and wheezing as a result of inhalation. Formaldehyde may cause temporary irritation of skin, eyes, or respiratory system. Formaldehyde may cause sensitization in susceptible individuals.

**Chronic Health Hazards:** 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 wood dust has been reported by some observers to be associated with nasal cancer. Additional information related to carcinogenicity for wood dust and formaldehyde is listed below.

#### Carcinogenicity Listing:

- NTP:** Wood dust, Known Human Carcinogen. Formaldehyde, Reasonably Anticipated to be a Human Carcinogen.
- IARC Monographs:** Wood dust, Group 1 - carcinogenic to humans. Formaldehyde, Group 1-carcinogenic to humans.
- OSHA Regulated:** Formaldehyde Gas

**Wood Dust - NTP:** According to its Report on Carcinogens, Eleventh 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. Strong and consistent 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.

**Formaldehyde - NTP:** According to its Report on Carcinogens, Eleventh Edition, NTP states, Formaldehyde (gas) is reasonably anticipated to be a human carcinogen based on limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.

**Formaldehyde: IARC - Group 1:** Carcinogenic to humans, sufficient evidence of carcinogenicity. A working group of IARC has determined that there is sufficient evidence that formaldehyde causes nasopharyngeal cancer in humans, a rare cancer in developed countries and "strong but not sufficient evidence" for leukemia. However, numerous epidemiological studies have failed to demonstrate a relationship between formaldehyde exposure and nasal cancer or pulmonary diseases such as emphysema or lung cancer.

### 4. Emergency and First-Aid Procedures

**Ingestion:** Not applicable under normal use.

**Eye Contact:** Wood and resin dust may cause mechanical irritation. Treat dust in eye as foreign object. Flush with water to remove dust particles. Seek medical help if irritation persists.

#### 4. Emergency and First-Aid Procedures (cont'd.)

**Skin Contact:** Wood dust of certain species can elicit allergic contact dermatitis in sensitized individuals, as well as mechanical irritation resulting in erythema and hives. Prolonged contact with treated wood and/or treated wood dust, especially when freshly treated at the plant, may cause irritation to the skin. Seek medical help if rash, irritation or dermatitis persists. Resin dust may also cause skin reactions in susceptible individuals.

**Skin Absorption:** Not known to occur under normal use.

**Inhalation:** Wood and resin dust may cause unpleasant obstruction in the nasal passages, resulting in dryness of nose, dry cough, sneezing and headaches. Remove to fresh air. Seek medical help if persistent irritation, severe coughing or breathing difficulty occurs.

#### 5. Fire and Explosion Data

**Flash Point (Method Used):** NAP

**Flammable Limits:** LFL = See below under "Unusual Fire and Explosion Hazards" UFL= NAP

**Extinguishing Media:** Water, carbon dioxide, sand

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

**Special Firefighting Procedures:** None

**Unusual Fire and Explosion Hazards:** Depending on moisture content and more importantly, particle diameter and airborne concentration, wood and resin dust may explode in the presence of an ignition source. For wood dust, an airborne concentration of 40 grams (40,000 mg) of dust per cubic meter of air is often used as the LEL. Reference NFPA Standards 654 and 664 for guidance. Ventilation systems should be kept clean and precautions should be taken to prevent sparks or other ignition sources.

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

**NFPA Rating (Scale 0-4):** Health = 1 Fire = 1 Reactivity = 0

#### 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 dried wood and resin dust on exposed surfaces. Dried wood and resin dust may pose a combustible dust hazard. Place recovered wood dust in a container for proper disposal.

#### 7. Handling and Storage

**Precautions to be Taken In Handling and Storage:** Dried wood and resin 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 wood dust. These products may release some formaldehyde in gaseous form. Specific handling and storage conditions should be assessed to determine potential formaldehyde concentrations. Store in well-ventilated, cool, dry place away from open flame.

#### 8. Exposure Control Measures, Personal Protection

##### Personal Protective Equipment:

**RESPIRATORY PROTECTION** – Use NIOSH approved filtering face piece respirator ("dust mask") or higher levels of respiratory protection as indicated if there is a potential to exceed the exposure limits or for symptom relief or worker comfort. Use respiratory protection in accordance with regulatory requirements such as the OSHA respiratory protection standard 29 CFR 1910.134 following a determination of risk.

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

**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. Rubber gloves are recommended if handling the product while it is still wet.

**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 wood and resin dust settles to avoid excessive accumulation of this combustible material. Minimize compressed air blowdown or other practices that generate high airborne-dust concentrations.

### **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 wood 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.

**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** – Cutting & Machining of product should preferably be done outdoors or with adequate ventilation & containment.

## 9. Physical/Chemical Properties

**Physical Description:** Laminated product with a slight aromatic and solvent resinous odor and natural wood color. The wood component of these products may consist of aspen, Douglas fir or hemlock.

<b>Boiling Point (@ 760 mm Hg):</b>	NAP
<b>Evaporation Rate (Butyl Acetate = 1):</b>	NAP
<b>Freezing Point:</b>	NAP
<b>Melting Point:</b>	NAP
<b>Molecular Formula:</b>	NAP
<b>Molecular Weight:</b>	NAP
<b>Oil-water Distribution Coefficient:</b>	NAP
<b>Odor Threshold:</b>	NAV
<b>pH:</b>	NAP
<b>Solubility in Water (% by weight):</b>	<0.1
<b>Specific Gravity (H<sub>2</sub>O = 1):</b>	Variable; depends on wood species and moisture
<b>Vapor Density (air = 1; 1 atm):</b>	NAP
<b>Vapor Pressure (mm Hg):</b>	NAP
<b>Viscosity:</b>	NAP
<b>% Volatile by Volume (@ 70°F (21°C)):</b>	0

## 10. Stability and Reactivity

**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.

## 10. Stability and Reactivity (cont'd.)

**Hazardous Decomposition or By-Products:** Thermal decomposition (i.e. smoldering, burning) products include carbon monoxide, oxides of nitrogen, carbon dioxide, aliphatic aldehydes including formaldehyde, resin acids, iodine vapors, terpenes and polycyclic aromatic hydrocarbons. 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.

**Hazardous Polymerization:**  May occur  Will not occur

**Sensitivity to Mechanical Impact:** NAP

**Sensitivity to Static Discharge:** NAP

## 11. Toxicological Information

**Toxicity Data:** None available for product in purchased form. Individual component information for ingredients listed in Section 2 are listed below if available.

### Components:

#### Wood dust (softwood or hardwood)

Wood dust generated from sawing, sanding or machining the product – may cause nasal dryness, irritation, coughing and sinusitis. NTP and IARC classify wood dust as a human carcinogen (IARC Group 1). See Section 3 above.

#### Formaldehyde

Human inhalation  $TC_{Lo}$  of  $17 \text{ mg/m}^3$  for 30 minutes produced eye and pulmonary results; human inhalation  $TC_{Lo}$  of  $300 \text{ ug/m}^3$  produced nose and central nervous system results;  $LC_{50}$  (rat, inhalation) =  $1,000 \text{ mg/m}^3$ , 30 minutes;  $LC_{50}$  (mice, inhalation) =  $400 \text{ mg/m}^3$ , 2 hours. IARC classifies formaldehyde as a human carcinogen (IARC Group 1). NTP classifies formaldehyde as Reasonably Anticipated to be a Human Carcinogen. See Section 3 above.

#### Permethrin

LD50 oral rat 1,500mg/kg

LD50 dermal rabbit >5,000 mg/kg

#### 3-iodo-2-propynyl butyl carbamate

LD50 oral rat 1,056 mg/kg

LD50 dermal rat >2,000 mg/kg

**Target Organs:** Respiratory system, skin and eyes for wood dust and formaldehyde.

## 12. Ecological Information

**Environmental Fate:** Not intended for direct exterior exposure. Not intended for direct contact with aquatic environment.

**Environmental Toxicity:** NAV for finished product.

### Components:

#### Formaldehyde

96 hr  $LC_{50}$  Fathead Minnow 24mg/L

96 hr  $LC_{50}$  Bluegill 0.10 mg/L

5 min  $EC_{50}$  Photobacterium phosphoreum 9mg/L

96 hr  $EC_{50}$  Water flea 20 mg/L

#### Permethrin

96 hr  $LC_{50}$  Rainbow Trout 9,000mg/L

96 hr  $LC_{50}$  Mosquito fish 15,000 mg/L

#### 3-iodo-2-propynyl butyl carbamate

96 hr  $LC_{50}$  Fish <1,000 mg/L

### 13. Disposal Considerations

#### Waste Disposal Method:

**CAUTION:** Do not burn treated wood in open fires, stoves, fireplaces, or residential boilers because toxic chemicals may be produced in the smoke and ash. Treated wood from commercial or industrial use (for example, construction sites) may be burned only in commercial or industrial incinerators or boilers in accordance with federal, state, provincial and local regulations. Do not use treated wood as a compost or mulch. Check local disposal requirements in your area prior to landfilling.

### 14. Transport Information

Mode: (Air, Land, water) Not regulated as a hazardous material by the U.S. Department of Transportation. Not listed as a hazardous material in Canadian Transportation of Dangerous Goods (TDG) regulations.

<b>Proper Shipping Name:</b>	NAP
<b>Hazard Class:</b>	NAP
<b>UN/NA ID Number:</b>	NAP
<b>Packing Group:</b>	NAP
<b>Information Reported for Product/Size:</b>	NAP

### 15. Regulatory Information

**TSCA:** The following ingredients are on the TSCA chemical substance inventory: Phenol formaldehyde resin, polymeric diphenylmethane diisocyanate (MDI), paraffin wax, 3-iodo-2-propynyl butyl carbamate and hydrotreated light petroleum distillates. Permethrin is excluded from TSCA regulation under FIFRA Section 3(2) (B) (ii) when used as a pesticide.

**CERCLA:** The following ingredients are on the CERCLA chemical substance inventory: Formaldehyde (100lbs RQ).

**DSL:** The following ingredients are listed under the Canadian Domestic Substance List: Formaldehyde, 3-iodo-2-propynyl butyl carbamate, polymeric diphenylmethane diisocyanate (MDI), paraffin wax and hydrotreated light petroleum distillates.

**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. Workplace exposure to formaldehyde is specifically regulated under 29 CFR, 1910.1048.

#### **STATE RIGHT-TO-KNOW:**

California Proposition 65 – This product contains formaldehyde, which depending on temperature and humidity, may be emitted from the product. Weyerhaeuser has evaluated formaldehyde emission rates from its products and have found these rates to be below the significant risk level. The user should determine whether formaldehyde emissions resulting from its site specific use, handling, ventilation design, capacity and final construction design for this product could exceed the safe harbor level.

**Warning:** Drilling, sawing, sanding or machining wood products generates wood dust, a substance known to the State of California to cause cancer.

Pennsylvania – This product contains formaldehyde which, depending on temperature and humidity, may be emitted from the product. When cut or otherwise machined, the product may emit wood dust. The product may also contain paraffin wax. Formaldehyde, wood dust, and paraffin wax appear on Pennsylvania's Appendix A, Hazardous Substance Lists.

New Jersey – This product contains formaldehyde which, depending on temperature and humidity, may be emitted from the product. When cut or otherwise machined, the product may emit wood dust. The product also contains permethrin, polymeric diphenylmethane diisocyanates, and 3-iodo-2-propynyl butyl carbamate, substances/chemicals which appear on New Jersey's Environmental Hazardous Substance List.

## 15. Regulatory Information (cont'd.)

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 formaldehyde at *de minimis* concentrations (0.1%) and is not subjected to the SARA Title III Section 313 supplier notification requirements.

**SARA 311/312 Hazard Category:** This product has been reviewed according to 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

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

**WHMIS Classification:** Controlled Product: D2A - wood dust and formaldehyde: IARC Group 1

## 16. Additional Information

**Date Prepared:** 11/02/2010

**Date Revised:** 11/21/2014

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

**Weyerhaeuser MSDS available on:**

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

**User's Responsibility:** The information contained in this Material 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 make sure that this MSDS is the most up-to-date issue.

### 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
IARC	=	International Agency for Research on Cancer
IATA	=	International Air Transport Association
IMDG	=	International Maritime Dangerous Goods
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
LFL	=	Lower Flammable Limit
MSHA	=	Mine Safety and Health Administration
NAP	=	Not Applicable
NAV	=	Not Available
NIOSH	=	National Institute for Occupational Safety and Health
NPRI	=	Canadian National Pollution Release Inventory

## 16. Additional Information (cont'd.)

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)
UFL	=	Upper Flammable Limit
WHMIS	=	Workplace Hazardous Materials Information System