

Safety Data Sheet



PureBond® Assemblies with pMDI Composite Core/Crossbands

Product ID#

Date of issue: Sept-08-2015

(Prepared in accordance with OSHA HazCom Standard 29 CFR 1910.1200(g), Rev. 2012 & GHS Rev 03)

SECTION 1: PRODUCT AND COMPANY INFORMATION

Trade Name: PureBond® pMDI Composite Core; PureBond brand name when used together with composites can be used together with these additional, proprietary Columbia sub-brand designations: UV Wood (on pMDI Composite Cores), LabCoat® (on pMDI Composite Cores), Classic Core®, Classic Lam®, ValueCore® (Phenol formaldehyde bonded OSB center with hardwood face and back, presently discontinued), CFP 60's® (on pMDI Composite), Melawood® (on pMDI composite).

Product Description: Decorative hardwood plywood assembled with pMDI-bonded composite particleboard or pMDI-bonded medium density fiberboard (MDF) cores in assemblies laminated with Columbia's proprietary, formaldehyde-free, soy-based PureBond assembly process. Combination core panel constructions with pMDI MDF cross bands beneath the decorative veneer face and back. Lamination blanks featuring pMDI bonded MDF crossbands.

Synonyms: NAF or FF PB, NAF or FF MDF, combination panel or combi panel constructions, NAF (No-added formaldehyde) or NAUF (No-added urea formaldehyde) decorative hardwood plywood.

Company: Columbia Forest Products
7900 Triad Center Drive, Suite 200
Greensboro, NC 27409
1-800-637-1609

E-mail Address: www.columbiaforestproducts.com

24 Hour Emergency Phone: Contact: Paul Davis, Marketing Communications Manager
503-330-1852

SECTION 2: HAZARD IDENTIFICATION

Classification of the Substance Or Mixture

United States (US)

Classification according to OSHA 29 CFR 1910.1200 HCS

This product is generally an article but is regulated under OSHA for the release of wood dust during mechanical operations releasing dust. The classifications below are based upon wood dust and pMDI component.

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Skin Irritation Category 2

Eye Irritation Category 2B

Respiratory Sensitization Category 1

Skin Sensitization Category 1

Carcinogen Category 1A

Specific Target Organ Toxicity Single Exposure Category 3: Respiratory Tract Irritation

Specific Target Organ Toxicity Repeated Exposure Category 2

Other Classifications:

Combustible Dust (OSHA Defined Hazard) If converted to small particles during further processing, handling, or by other means, may form combustible dust concentrations in air.

Contains isocyanates. See information supplied by manufacture.

Label elements

Label according to OSHA HCS 2012

Hazard pictograms:



GHS07



GHS08

Signal word:

Danger

Hazard statements:

Causes skin irritation

Causes eye irritation

May cause allergy or asthma symptoms or breathing difficulties if inhaled

May cause an allergic skin reaction

May cause cancer via inhalation of respirable dust

May cause respiratory irritation

May cause damage to organs through prolonged or repeated exposure

May form combustible dust concentrations in air

Precautionary statements

Prevention:

Take precautionary measures against static discharge.

Avoid breathing dust.

Take off contaminated clothing and wash before reuse.

In case of inadequate ventilation wear an approved respirator suitable for conditions of use.
 Do not eat, drink or smoke when manufacturing or installing this product.

Response: IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.
 If experiencing respiratory symptoms, following removal to fresh air, call a Doctor or other qualified medical professional.
 IF ON SKIN: Wash with plenty of soap and water.
 If skin irritation or rash occurs get medical advice/attention.
 If In Eyes: Rinse cautiously for several minutes. Remove contact lenses if present and easy to do so.
 If eye irritation persists, get medical advice

Storage: Store away from incompatible materials.

Disposal: Dispose of waste and residues in accordance with local authority requirements.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures:

| Component | CAS No. | Weight % | Hazard Classification According to Regulation |
|---|-------------------------------------|----------|---|
| Wood Dust | Not listed RTECS #: ZC9850000 | ~ 98% | EU CLP: Self Classified: Skin Irrit 2; Eye Irrit 2; Skin Sens 1; Resp Sens 1; STOT SE 3 (Resp Irrit), Carc 1A OSHA HCS 2012: Skin Irrit 2; Eye Irrit 2; Skin Sens 1; Resp Sens 1; STOT SE 3 (Resp Irrit), Carc 1A |
| Polymerized methylene-diphenyl-diisocyanate (pMDI) ¹ | 9016-87-9 | < 10% | EU CLP: Self Classified: Skin Irrit 2; Eye Irrit 2; Skin Sens 1; Resp Sens 1; STOT SE 3 (Resp Irrit), STOT RE 2; Carc 2; Acute Tox 2 (inhl-mist) OSHA HCS 2012: Skin Irrit 2; Eye Irrit 2; Skin Sens 1A; Resp Sens 1A; STOT SE 3 (Resp Irrit), STOT RE 1 (lung); Acute Tox 2 (inhl-mist) |

SECTION 4: FIRST AID MEASURES

¹ The ingredient is the polymerized (cured) form of methylene-diphenyl-diisocyanate (MDI) resin in the raw composite panels used by Columbia for the production of PureBond assemblies. There is no detectable MDI monomer (CAS# 101-68-8) in the product as purchased.

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- Eye Contact:** In case of eye contact, immediately rinse eyes thoroughly with plenty of water. If wearing contact lenses, remove only after initial rinse, and continue rinsing eyes for at least 15 minutes. If irritation occurs or persists, consult a physician.
- Skin Contact:** In case of skin contact, while wearing protective gloves, carefully remove any contaminated clothing, including shoes, and wash skin thoroughly with soap and water. If irritation or symptoms occur or persist, consult a physician.
- Inhalation:** Remove to fresh air. If any trouble breathing, get immediate medical attention. Administer artificial respiration if breathing has ceased. If irritation or symptoms occur or persist, consult a physician.
- Ingestion:** Not applicable under normal use.
- Notes for the Doctor:** Any treatment that might be required for overexposure should be directed at the control of symptoms and the clinical conditions.

SECTION 5: FIRE-FIGHTING MEASURES

- Suitable Extinguishing Media:** Water fog, ammonium phosphate, sand.
- Unsuitable Extinguishing Media:** Heavy water (or jet) stream may cause dust to become airborne and create a flash fire hazard or an explosive atmosphere.
- Firefighting Procedures:** Follow established procedures for extinguishing wood source fire.
- Unusual Fire and Explosion Hazard:** Hardwood plywood does not present an explosion hazard. Sawing, sanding, or machining of hardwood plywood can produce wood dust as a by-product which may present an explosion hazard if a dust cloud contacts an ignition source.
- An airborne concentration of 40 grams of wood dust per cubic meter of air is often used as the LEL for wood dust. OSHA interprets the explosive level as having no visibility within 5 feet or less.
- Hazardous Combustion Products:** Burning of Hardwood plywood can result in carbon monoxide, carbon dioxide, hydrogen cyanide, aldehydes, organic acids, and polynuclear aromatic compounds.

Further Information: Flash point: 600°F for wood.
Auto- ignition temp.: Varies (typically 400°F to 500°F (204°-260°C)
Explosive limits in air: N/A for hardwood plywood. 40 g/m³ (LEL) for wood dust.

NFPA Rating (Scale 0-4): Health = 2 Fire = 1 Reactivity = 0

SECTION 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Evacuate personnel to safe areas. Remove all sources of ignition. Take precautionary measures against static discharges and against environmental release.

Personal Precautions and Protective Equipment: Pick up, vacuum, or sweep spills for recovery and/or disposal. Avoid generation of dust during clean-up. Wear goggles or safety glasses when manufacturing or machining any wood product. Wear NIOSH/MSHA approved respirator when the allowable limits may be exceeded. Other protective equipment, such as gloves and outer garments may be needed, depending on dust conditions

Environmental Precautions: Do not allow product to reach ground water, water courses, sewage, or drainage systems during clean-up.

Methods and Materials for Containment and Clean-up: All spills should be handled according to site requirements and based on precautions cited in the SDS. In the case of liquids, use proper absorbent materials. For laboratories and small-scale operations, incidental spills within a hood or enclosure should be cleaned by using a HEPA filtered vacuum or wet cleaning methods as appropriate. For large dry or liquid spills or those spills outside enclosure or hood, appropriate emergency response personnel should be notified. In manufacturing and large-scale operations, HEPA vacuuming prior to wet mopping or cleaning is required. See Sections 9 and 10 for additional physical, chemical, and hazard information.

Other Information: No further information is available.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling: No special precautions for handling product. Use good safety and industrial hygiene practices. Avoid creating

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dusty conditions. Provide good ventilation where dust conditions cannot be avoided during cleanup. Place recovered wood dust in a container for proper disposal.

Conditions for Safe Storage: Store in well ventilated area. Keep away from sources of ignition as dried wood dust may pose a combustible dust hazard..

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Guideline:

Exposure Limits:

| Component | CAS No. | Agency | Exposure Limits |
|---------------------------------------|---|--------|--|
| Wood Dust (all soft and hard woods) | Not listed RTECS #: ZC9850000 | OSHA | PEL-TWA 15 mg/m ³ (total dust) |
| | | OSHA | PEL-TWA 5 mg/m ³ (respirable dust) |
| | | OSHA | PEL-TWA 5 mg/m ³ (recommended softwood and hardwood; see footnote ² below) |
| | | OSHA | STEL 10 mg/ mg/m ³ (recommended softwood and hardwood; ; see footnote below) |
| | | ACGIH | TLV-TWA 1 mg/m ³ (certain hardwoods); |
| | | ACGIH | TLV-TWA 5 mg/m ³ (softwood) |
| | | ACGIH | TLV-STEL 10 mg/m ³ |
| Methylene-diphenyl-diisocyanate (MDI) | 101-68-8 | OSHA | PEL-TWA 0.02 ppm |
| | | ACGIH | TLV -TWA 0.005 ppm |

² In AFL-CIO v. OSHA 965 F. 2d 962 (11th Cir. 1992), the court overturned OSHA's 1989 Air Contaminants Rule, including the specific PELs for wood dust that OSHA had established at that time. The 1989 PELs were: TWA - 5 mg/m³; STEL (15 min.) - 10.0 mg/m³(all soft and hard woods except Western red cedar); Western red cedar TWA-2.5 mg/m³. Wood dust is now officially regulated as an organic dust under the Particulates Not Otherwise Regulated (PNOR) or Inert or Nuisance Dust categories at PELs noted under PART II of this MSDS. However, a number of states have incorporated provisions of the 1989 standard in their state plans. Additionally, OSHA has announced that it may cite companies under the OSH Act General Duty Clause under appropriate circumstances for non-compliance with the 1989 PELs.V1.2

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- Engineering Controls:** Provide adequate ventilation and exhaust to keep airborne contaminant concentration levels below the OSHA PEL. Avoid dusty conditions, and use wet methods, if appropriate, to reduce airborne dust concentrations
- Eye/Face Protection:** Wear goggles or safety glasses when manufacturing or machining any wood product.
- Skin Protection:** Wear protective gloves such as rubberized cloth, canvas or leather gloves to minimize potential mechanical irritation from handling materials. Outer garments which cover the arms may be desirable in extremely dusty areas.
- Respiratory Protection:** Wear NIOSH/MSHA approved dust respirator when the allowable limits may be exceeded.
- General Hygiene Considerations:** Prevent/avoid creating/breathing dust. Wash after handling. Do not eat, drink, or smoke while manufacturing or installing this product.
- Environmental Exposure Control:** No data available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical Description: Hardwood veneers, unfinished and flat line UV finished multi-ply composite wood panels consisting of various combinations of hardwood or decorative veneer faces, bonded to other wood veneers using adhesives containing no added formaldehyde. Generally used in cabinets, furnishings, flooring, and in other non-structural applications. Typically provided as 4' X 8' hardwood panels with decorative veneer, or blanks (window decorative veneer). Other dimensions of hardwood plywood and veneers are available. Thickness of products range from 1/42" of an inch to over 1"

Appearance/Odor: Normal for natural wood. Light to dark in color. Color and odor vary by species and expired time since processing.

Safety Relevant Basic Data

pH Not applicable
Melting point/freezing point Not applicable
Initial boiling point Not applicable

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| and boiling range | |
| Auto- ignition temp.: | Varies (typically 400°F to 500°F (204°-260° C) |
| Explosive limits in air: | N/A for hardwood plywood. 40 g/m ³ (LEL) for wood dust. |
| Flash point | 600°F for wood. |
| Evaporation rate | Not applicable |
| Flammability (solid, gas) | Not applicable |
| Upper/lower flammability or explosive limits | Not applicable |
| Vapour pressure | Not applicable |
| Vapour density | Not applicable |
| Relative density | Not applicable |
| Specific gravity | Usually less than 1, but varies depending on wood species and moisture content. |
| Solubility(ies) | Insoluble. |
| Partition coefficient (n-octanol/water) | Not applicable |
| Viscosity | Not applicable |

SECTION 10: STABILITY AND REACTIVITY

| | |
|--|---|
| Stability: | Stable at normal temperature and storages condition. |
| Conditions to avoid: | Avoid open flame. Product may ignite at temperatures in excess of 400°F, depending on length of time of exposure. |
| Incompatible materials: | Oxidizing agents and drying oils. |
| Hazardous decomposition products: | Thermal and/or thermal oxidative decomposition of wood can produce irritating and toxic fumes and gases, including carbon monoxide, hydrogen cyanide, aldehydes, organic acids, and polynuclear aromatic compounds. |
| Hazardous polymerization: | Will not occur. |
| Sensitivity to static discharge: | May cause explosion in critical concentrations and conditions |

SECTION 11: TOXICOLOGICAL INFORMATION

Toxicological data have not been determined specifically for this product. Individual component information is listed below.

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Acute Effects:

Methylene-diphenyl-diisocyanate (MDI):

Oral LD₅₀: > 2,000 mg/kg (rat)
Dermal LD₅₀: > 2,000 mg/kg (rabbit)
Inhalation 4h LC₅₀: 0.369 mg/L (rat)

Wood dust: No data available

Eye Irritation: MDI may cause temporary irritation or a burning sensation. Wood dust can cause mechanical irritation.

Skin Irritation: Prolonged skin contact may cause skin irritation.

Respiratory Irritation: Wood dust and/or MDI may cause nasal dryness and/or irritation. Coughing, sneezing, wheezing, sinusitis, prolonged colds, and headaches have also been reported. Both may aggravate pre-existing respiratory conditions or allergies. Wood dust may also cause nasal obstruction.

Respiratory Sensitization: MDI and/or wood dust may cause respiratory sensitization and/or irritation. Pre-existing respiratory disorders may be aggravated by exposure.

Skin Sensitization: Both MDI and wood dust from various species of wood may evoke allergic contact dermatitis in sensitized individuals.

Carcinogenicity: Prolonged exposure to wood dust has been reported by some observers of European furniture workers to be associated with nasal cancer. IARC classifies wood dust as a carcinogen to humans (Group 1). This classification is based primarily on IARC's evaluation of increased risk in the occurrence of adenocarcinomas of the nasal cavities and paranasal sinuses associated with exposure to wood dust. IARC did not find sufficient evidence to associate cancers of the oropharynx, lung, lymphatic, and hematopoietic systems, stomach, colon, or rectum with exposure to wood dust. The National Toxicology Program (NTP) has also listed wood dust as a known human carcinogen. Wood dust is not listed as a carcinogen by ACGIH or OSHA. A large case control nasal cancer mortality study in North Carolina, Mississippi, Washington and Oregon (1962-1977) did not demonstrate an association between nasal cancer and occupations normally associated with wood dust.

MDI is not listed by NTP, IARC or regulated by OSHA as a carcinogen; however it has been shown to alter cells in certain experiments. Although inconclusive, these cellular changes indicate potential carcinogenicity.

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Mutagenicity: No data available for wood dust. MDI is not classified to GHS for mutagenicity.

Reproductive Effects: No data available for wood dust. MDI is not classified to GHS for reproductive toxicity.

Specific Target Organ Toxicity Single Exposure: May cause respiratory irritation

Specific Target Organ Toxicity Repeated Exposure: May cause damage to organs (respiratory system) through prolonged exposure

Target Organs: Eyes, skin, respiratory system.

Routes of Exposure: Inhalation, dermal, eye.

Signs and Symptoms of Exposure:
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicological data have not been determined specifically for this product. The ecological assessment of this material is based on an evaluation of its components.

Ecotoxicity No data available for wood dust. Wood dust may contain ingredients that are considered hazardous to aquatic organism. MDI is not considered to be toxic to aquatic organisms.

Persistence/Degradability: Wood dust would be expected to be biodegradable. No degradation was observed for MDI when tested according to OECD Guideline 302C.

Bioaccumulation/Accumulation: No data available for wood dust. MDI is unavailable in aqueous solution and therefore no bioaccumulation is expected. It has a measured BCF of 92 when tested according to OECD Guideline 305E.

Mobility in Soil: No data available.

Results of PBT and vPvB assessment: No data available.

Other Adverse Effects: No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods: Disposal must be in accordance with applicable federal, state/provincial, and/or local regulations. Incineration is the

preferred method of disposal, when appropriate. Disposal is the responsibility of the generator.

Contaminated Packaging: Disposal must be in accordance with applicable federal, state/provincial, and/or local regulations.

SECTION 14: TRANSPORT INFORMATION

This material is not regulated for transportation when it is shipped without mixture with other hazardous components. This classification is based on the evaluation of available information until full testing is completed or additional information is available to further classify hazards for transportation. Therefore, the use of PG I UN-specification packaging is recommended to ensure safe transportation of this material.

US DOT (Ground) No data available
Proper Shipping Description: No data available
Canadian TDG (Ground) No data available
Proper Shipping Description: No data available
ICAO (Air) No data available
Proper Shipping Description: No data available
IMDG (Water) No data available
Proper Shipping Description: No data available

SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

United States

| | |
|--|--|
| Methylene-diphenyl-diisocyanate (CAS#101-68-8) | |
| Listed on the United States TSCA (Toxic Substance Control Act) inventory | |
| Listed on SARA Section 313 (Specific toxic chemical listing) | |
| SARA Section 311/312 Hazard Class | Immediate (acute) health hazard Delayed (chronic) health hazard |
| SARA Section 313-TRI Reporting | 1-5% |
| OSHA | Not listed |
| Wood dust (CAS# NA) | |
| Listed on SARA Section 313 (Specific toxic chemical listing) | |

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| | |
|-----------------------------------|--|
| SARA Section 311/312 Hazard Class | Fire hazard Immediate (acute) health hazard Delayed (chronic) health hazard |
| 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 activities may be considered hazardous. |

United States - California

| | |
|---|------------|
| Methylene-diphenyl-diisocyanate (CAS#101-68-8) | |
| U.S. – California – Proposition 65 – Carcinogens List | Not listed |
| U.S. – California – Proposition 65 – Reproductive List | Not listed |
| Wood dust (CAS# NA) | |
| U.S. – California – Proposition 65 – Carcinogens List | Yes |
| Drilling, sawing, sanding or machining wood products generates wood dust, a substance known to the State of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection. California Health and Safety Code Section 25249.6. | |

Canada

| | |
|---|---|
| Methylene-diphenyl-diisocyanate (CAS#101-68-8) | |
| Listed on the Canadian DSL (Domestic Substances List) inventory | |
| WHMIS Classification | Class D Division 1 Subdivision A – Very toxic material causing immediate and serious toxic effects Class D Division 2 Subdivision A – Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects |
| Wood dust (CAS# NA) | |
| Listed on the Canadian DSL (Domestic Substances List) inventory | |
| WHMIS Classification | Controlled Product: D2A – Wood dust: IARC Group 1 |

SECTION 16: OTHER INFORMATION

Disclaimer

This document has been prepared based on data considered to be accurate at date of preparation. No warranty is made as to the accuracy or completeness of the foregoing data and safety information. User is responsible to evaluate all available information

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when using product for any particular use and to comply with all laws and regulations.

Preparation Date: September 8, 2015

Revision Date: N/A

Glossary:

ACGIH - American Conference of Governmental Industrial Hygienists

Carc - Carcinogenic

CAS - Chemical Abstract Service

CLP – The Classification, Labelling and Packaging Regulation

DOT - Department of Transportation

EPA = U.S. Environmental Protection Agency

Eye Irrit - Eye Irritation

GHS - Globally Harmonized System

HEPA - High Efficiency Particulate Arresting

IARC - International Agency for Research on Cancer, IARC Group 1 or 2A

LD50 - Lethal Dose, 50% for oral and dermal

LC50 - Lethal Concentration, 50% for inhalation

NA – Not Available

NTP - National Toxicology Program

OSHA – Occupational Safety and Health Administration

PBT - Persistent Bioaccumulative Toxic

PEL – Permissible Exposure Limit

PG - Packing Group

PPE - Personal Protective Equipment

Resp Sens – Respiratory Sensitization

SARA – Superfund Amendments and Reauthorization Act

Skin Irrit - Skin Irritation

Skin Sens – Skin Sensitization

STEL – Short-Term Exposure Limit (15 minutes)

STOT - Specific Target Organ Toxicity

TLV – Threshold Limit Value

TSCA - Toxic Substances Control Act

TWA - Time Weighted Average

UN - United Nations

vPvB - Very Persistent and Very Bioaccumulative

WHMIS - (Canada) Workplace Hazardous Materials Information System