

PureBond[®] Material Data Safety Sheet

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PART I: PRODUCT IDENTIFICATION

Product: Decorative hardwood plywood assembled with cores of all veneer; phenolic¹ particleboard; phenolic medium density fiberboard; phenolic oriented strandboard; phenolic combination core construction or Medite[®] MDI¹-resin bonded, medium density fiberboards; in assemblies laminated with Columbia's proprietary, formaldehyde-free, soy-based PureBond assembly process.

Aspen or poplar veneer core lamination blanks and bending plywood without decorative hardwood face and back veneers laminated with Columbia's proprietary, formaldehyde-free, soy-based PureBond assembly process.

Synonyms: NAF (No added formaldehyde) or NAUF (No-added urea formaldehyde) decorative hardwood plywood, LEED NC EQ 4.4 compliant hardwood plywood.

Trade Names: PureBond[®] brand and PureBond used together with these additional, proprietary designations: JayCore[®], KayCore[®], Classic Core[®] (specified with phenolic cross bands), UV Wood[®] (on PureBond panels)

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PART II: HAZARDOUS INGREDIENTS

Component:	Wood dust² (Generated as waste by-product of further fabrication by user)		
CAS No.:	None		
Exposure limits:	ACGIH TLV Softwoods and most hardwoods (except Beech, and Oak)	<u>PEL</u> 5 mg/m ³ TWA (15 min)	<u>STEL</u> 10 mg/m ³
	ACGIH TLV Certain Hardwoods (i.e. Beech and Oak)	1 mg /m ³ TWA	N/A
	OSHA All soft and hard woods (except Western Red Cedar)	5 mg/m ³ TWA	10 mg/m ³
	OSHA Western Red Cedar	2.5 mg/m ³ TWA	N/A

PART III: PHYSICAL PROPERTIES

Description: Solid wood flooring and hardwood veneers, unfinished and UV Finished multi-ply composite wood panels consisting of various combinations of hardwood or decorative veneer faces, bonded to other wood veneers or strawboard using adhesives containing no added formaldehyde. Generally used in cabinets, furnishings, flooring, and in other non-structural applications. Typically provided as solid wood strip flooring, 50"X100" lay-on hardwood veneers, and 4' X 8' hardwood panels. Other dimensions of hardwood plywood and veneers are available. Thickness of products range from 1/42" of an inch to over 1".

PART III: PHYSICAL PROPERTIES (Cont'd)

Specific gravity: Usually less than 1, but varies depending on wood species and moisture content.
Boiling point: Not applicable.
Solubility in water: Insoluble.
Appearance/Odor: Normal for natural wood. Light to dark in color. Color and odor vary by species and expired time since processing.

PART IV: FIRE AND EXPLOSION DATA

Flash point: 600° F for wood.
Autoignition temp.: Varies (typically 400° F to 500° F)
Explosive limits in air: N/A for hardwood plywood. 40 g/m³ (LEL) for wood dust.
Extinguishing media: Water, carbon dioxide, sand
Special fire fighting 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.

PART V: REACTIVITY DATA

Stability: Stable under normal conditions.
Incompatibility: Avoid contact with strong oxidizing agents and drying oils. Avoid open flame. Product may ignite at temperatures in excess of 400° F, depending on length of time of exposure.
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.
Conditions to avoid: Avoid open flames or other ignition source.
Storage: In a cool, dry place, away from ignition sources. Provide adequate ventilation.

PART VI: HEALTH AND HAZARD DATA:

Eye contact: Wood dust can cause mechanical irritation.
Skin contact: Wood dust from various species of wood may evoke allergic contact dermatitis in sensitized individuals.
Ingestion: Not likely to occur.
Inhalation: Wood dust may cause nasal dryness and/or irritation. Coughing, sneezing, wheezing, sinusitis, prolonged colds, and headaches have also been reported. May aggravate preexisting respiratory conditions or allergies. Wood dust may cause nasal obstruction.
Chronic effects: Depending on species, wood dust may cause dermatitis on prolonged, repetitive contact. Wood dust may cause respiratory sensitization and/or irritation. Pre-existing respiratory disorders may be aggravated by exposure.

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

PART VI: HEALTH AND HAZARD DATA (Cont'd)

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.

PART VII: PRECAUTIONS AND SAFE HANDLING

Ventilation:	Provide adequate ventilation and exhaust to keep airborne contaminant concentration levels below the OSHA PELs.
Personal protective equipment:	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.
Fire prevention:	Avoid open flames or other ignition sources. Keep fire extinguisher readily available.

PART VIII: EMERGENCY AND FIRST AID PROCEDURES

Eyes:	Flush with large amounts of water. Remove to fresh air. If irritation persists, seek medical attention.
Skin:	Wash affected area with soap and water. If rash, persistent irritation, or dermatitis occurs, seek medical attention.
Inhalation:	Remove to fresh air. Get medical advice if persistent irritation, severe coughing, or breathing difficulty occurs.
Ingestion:	Not applicable.

PART IX: SPILL, LEAK, STORAGE, AND DISPOSAL

Pick up, vacuum, or sweep spills for recovery and/or disposal. Avoid creating dusty conditions. Provide good ventilation where dust conditions cannot be avoided during cleanup. Place recovered wood dust in a container for proper disposal. Dispose in accordance with Federal, State, and Local regulations. Disposal is the responsibility of the generator.

PART X: KEY TO COMMONLY USED ACRONYMS

ACGIH:	American Conference of Government and Industrial Hygienists
CARB	California Air Resources Board
EPA:	Environmental Protection Agency
HUD:	US Department of Housing and Urban Development
IARC:	International Agency for Research on Cancer
LEED:	Leadership in Energy and Environmental Design (LEED) Green Building Rating System
LEL:	Lowest explosion limit
Mg/m ³ :	Milligrams per cubic meter
MSDS:	Material Safety Data Sheet

PART X: KEY TO COMMONLY USED ACRONYMS (Cont'd)

NTP:	National Toxicology Program
OSHA:	Occupational Safety and Health Administration
PEL:	Permissible exposure limit
PPM:	Parts per million
STEL:	Short term exposure limit
TLV:	Threshold limit value
TWA:	Time weighted average
USGBC:	United States Green Building Council

PART XI: USER RESPONSIBILITY

Important: This information is offered in good faith. It is believed to be accurate and has been compiled from sources believed to be reliable. It is offered for your consideration, investigation, and verification. Columbia Forest Products makes no warranty of any kind, expressed or implied, concerning the accuracy or completeness of the information and data herein. Furthermore, Columbia Forest Products will not be liable for claims relating to any party's use of, or reliance on information and data contained herein, regardless of whether it is claimed that the information and data are inaccurate, incomplete, or otherwise misleading.

It is the responsibility of the user to comply with local, state, and/or federal regulations concerning the storage, use, processing, and disposal of the product or subsequently generated waste. It is the responsibility of the user to ensure that this MSDS is the most current version.

FOOTNOTES

1. These adhesives, phenol formaldehyde and diphenylmethane diisocyanate (MDI), unlike urea formaldehyde adhesives, are chemically reacted into stable bonds during pressing which do not have the potential to hydrolyze and re emit formaldehyde back into the atmosphere. Once the phenol formaldehyde and MDI platform adhesive systems are reacted, the final panel products have such low formaldehyde emission levels (background or "de minimis" levels of 30 ppb or less) that they easily meet or, in certain cases, are exempted from the world's leading formaldehyde emission and building standards. These standards include the California Air Resources Board (CARB) formaldehyde emissions criteria (which exempts softwood plywood phenol-formaldehyde bonded panel products) and the USGBC LEED® Green Building Rating System (which recognizes composite panel products with no-added urea formaldehyde in the both core and shop-applied lamination adhesives.) There is more information on CARB including web links to the Air Toxic Control Measure (ATCM) site at www.cfpwood.com. See also a reference from the engineered wood association for more information on emissions properties of phenol-formaldehyde bonded substrates. <http://www.apawood.org/pdfs/unmanaged/j330.pdf> Information on LEED criteria can be located at: www.USGBC.org
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.