

MATERIAL SAFETY DATA SHEET HARDWOOD PLYWOOD



**Canex Group Limited & Tianjin Canex Industry:
Construction Plywood, Furniture Plywood, Decorative Board
(Technical note: 01 March 2005)**

SECTION 1 – GENERAL INFORMATION

Trade Names: Hardwood Plywood, Particleboard Core Plywood, MDF Core Plywood, and Pro-core.

Description: This panel product contains a hardwood veneer face and back (occasionally a decorative soft wood face) bonded to wood components such as other wood veneer, particleboard, or medium density fiber board (MDF) using urea-formaldehyde resin.

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SECTION 2 – COMPOSITION

	Wt %	CAS Registry No.
Ligno-cellulosic Materials	90-93	
Polymerized Urea Formaldehyde Resin	6-9	9011-05-6

SECTION 3 – HAZARDOUS INGREDIENTS

	OSHA PEL	ACGIH TLV
Urea Formaldehyde: CAS#: LF571	0.5 ppm Action Level 0.75 ppm TWA 2 ppm STEL	0.30 ppm Ceiling
Wood Dust: Ligno-cellulosic fibers (all species except Western Red Cedar) ^{1,2}	15 mg/m ³ TWA (Total) 5 mg/m ³ TWA (RF) ³	1.0 mg/m ³ TWA (IF) ³
Western Red Cedar (in some products)	2.5 mg/m ³ TWA (RF) ³	0.5 mg/m ³ TWA (IF) ³

RF= Respirable Fraction IF = Inhalable Fraction

1. 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 – 5.0 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 . These were total dust test based limits.³ A common practice since 1989 has been to meet and exceed the lower 1989 limits which were supported by the wood products industry.

2. 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 in the Composition/Information on Ingredients section 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.

3. Considerable debate continues to surround the inhalable-to-total dust conversion factor. ACGIH has proposed to use a ratio of 2.5 "for interpreting studies with exposure measurements based on total dust sampling" for purposes of defining a TLV for inhalable dust. However, a recent NIOSH paper states "In the case of exposures to wood dust, several studies with side-by-side sampling have revealed that inhalable sampling will increase the apparent dustiness of an atmosphere by between 150 and 400%, with an average closer to the higher end of this range." [citing Harper (2002), Martin (1998), Tatum (2001), among others].

SECTION 3 – HAZARDOUS INGREDIENTS (CONT)

EMERGENCY OVERVIEW

The product may release small quantities of formaldehyde in gaseous form. Emissions decrease through time as the panel ages. Manual or mechanical cutting or abrasion processes performed on the product can result in generation of wood dust.

POTENTIAL ACUTE HEALTH EFFECTS:

Inhalation: Gaseous formaldehyde may cause temporary irritation to nose and throat. Some reports suggest that formaldehyde may cause respiratory sensitization, such as asthma, and that pre-existing respiratory disorders may be aggravated by exposure. Wood Dust may cause nasal dryness, irritation and obstruction. Coughing, wheezing, sneezing, sinusitis and prolonged colds have also been reported.

Eye Contact: Gaseous formaldehyde may cause temporary irritation or a burning sensation. Wood dust can cause mechanical irritation.

Skin Contact: Both formaldehyde solutions (liquid) and various species of wood dust may evoke allergic contact dermatitis in sensitized individuals.

Ingestion: Not likely to occur.

POTENTIAL CHRONIC HEALTH EFFECTS:

Some reports suggest that formaldehyde may cause respiratory sensitization, such as asthma, and that pre-existing respiratory disorders may be aggravated by exposure. Other studies show no impact on respiratory sensitization. International Agency for Research on Cancer (IARC) classifies formaldehyde as

a carcinogen to humans (Group 1). This classification is based primarily on IARC's evaluation of increased risk in the occurrence of cancers in the nasopharyngeal cavity (NPC) associated with occupational exposure to formaldehyde. The National Toxicology Program (NTP) includes formaldehyde in its Annual Report on carcinogens. OSHA regulates formaldehyde as a potential cancer agent.

In studies involving rats, formaldehyde has been shown to cause nasal cancer after long-term exposure to very high concentrations (14+ PPM), far above those normally found in the workplace.

Wood dust (and/or ligno-cellulosic fibers), depending on species, may cause respiratory sensitization and/or irritation. 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, hypopharynx, lung, lymphatic and hematopoietic systems, stomach, colon or rectum with exposure to wood dust. The National Toxicology Program (NTP) includes wood dust in its Annual Report on carcinogens.

HMS Ratings: Health: 1 Fire: 0 Physical Hazard: 0

Hazard Scale: *0 = Minimal*
 1 = Slight
 2 = Moderate
 3 = Serious
 4 = Severe

SECTION 4 – PHYSICAL AND CHEMICAL CHARACTERISTICS

Boiling point:	Not applicable
Specific Gravity (H ₂ O=1):	< 1
Vapor Density:	Not applicable
% Volatile by Volume:	0
Melting Point:	Not applicable
Solubility in H ₂ O (% by weight)	<0.1 %
Evaporation Rate (Butyl Acetate = 1):	Not applicable
pH:	Not applicable
Appearance and Odor*:	Light to dark in color.

*Color and odor are dependent upon wood species.

SECTION 5 – FIRST AID MEASURES

Inhalation:

Wood dust may cause unpleasant obstruction in the nasal passages, resulting in dryness of nose, dry cough, sneezing and headaches. Remove to fresh air. Get medical attention if irritation persists, severe coughing or breathing difficulty occurs.

Eye Contact:

Wood dust may cause mechanical irritation. Treat dust in eye as foreign object. Flush eyes with large amounts of water. Remove to fresh air. If irritation persists, get medical attention.

Skin Contact:

Wash affected areas with soap and water. Get medical attention if rash or irritation persists or dermatitis occurs.

Ingestion:

Not Applicable.

SECTION 6 – FIRE AND EXPLOSION DATA

Wood Dust is classified as a Class A combustible material

Flash Point: Not applicable

Autoignition Temperature: Not available (will depend upon duration of exposure to heat source and other variables).

Explosive Limits in Air: See below under “Unusual fire and Explosive Hazards”.

Extinguishing Media: Water, Carbon Dioxide, and Sand

Special Fire Fighting Procedures: None.

Unusual Fire and Explosion Hazards: Sawing, sanding or machining can produce wood dust as a by- product that may present an explosion hazard if a dust cloud contacts an ignition source. Particle size will determine LEL.

SECTION 7 – REACTIVITY

Stability: Stable under normal conditions

Conditions to avoid: Avoid contact with oxidizing agents. Avoid open flame. Product may ignite in excess of 400°F. High relative humidity and temperature may increase the rate of emission of formaldehyde.

Incompatibility (materials to avoid). Avoid open flame and oxidizing agents.

Hazardous Decomposition: Thermal and/or thermal oxidative decomposition's can produce irritating and toxic fumes and gases, including carbon monoxide, hydrogen cyanide, aldehydes, organic acids and polynuclear aromatic compounds.

Hazardous Polymerizations: Not applicable

SECTION 8 – HEALTH HAZARD DATA

Acute Health Hazards: Signs and symptoms of exposure, emergency and first aid procedures.

Ingestion: Not applicable

Inhalation: Formaldehyde may cause temporary irritation to the nose and throat. Wood dust may cause unpleasant deposits and obstructions in nasal passages, dryness of nose, dry cough and headaches.

Eye Contact: Formaldehyde may cause temporary irritation or a temporary burning sensation. Wood dust may cause mechanical irritation. Treat dust in eye as a foreign object. Flush with water to remove dust particle. Get medical attention if irritation persists.

Skin Contact: Formaldehyde or wood dust may cause allergic contact dermatitis in sensitized individuals. Wood dust may also mechanically irritate the skin and cause erythema and hives. Get medical attention if rash, irritation or dermatitis persists.

Medical conditions Generally Aggravated by Exposure: Formaldehyde or wood dust may irritate preexisting respiratory conditions or allergies.

Chronic Health Hazards: Formaldehyde has been shown to cause cancer in certain laboratory animals after long terms exposure to high concentration. Wood dust may cause dermatitis, respiratory sensitization and/or irritation after repeated contact, and has been asserted to cause paranasal sinus cancer from certain European oak and beech.

Carcinogenicity:

	Wood Dust ¹	Formaldehyde
National Toxicology Program	yes	yes
IARC Monographs	yes (Group 1)	yes
OSHA Regulated	yes	yes

1. Oak and Beech are considered confirmed human A1 carcinogens. Birch, mahogany, teak, and walnut are suspected and are assigned the A2 classification. All other tree species are assigned the A4 classification (Not Classifiable as a Human Carcinogen).

SECTION 9 – PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken if spilled or released: Not applicable in purchased form. Wood dust may be vacuumed or shoveled for recovery or disposal. Avoid dusty conditions and provide good ventilation. Use NIOSH-MSHA approved respirator and goggles where ventilation is not possible.

Waste Disposal method: Place recovered wood dust in container for proper disposal, landfill or incinerate in accordance with federal, state and local regulations.

Precautions to be taken in handling and storage: Keep in dry place away from open flame. This product will release small amounts of formaldehyde. Store in a well-ventilated area.

SECTION 10 – CONTROL MEASURES

Respiratory Protection: Not applicable for this product in purchased form. A NIOSH-MSHA approved respirator is recommended when the allowable exposure limits may be exceeded.

Protective Goggles: Not required. Cloth canvas, or leather glove are recommended.

Eye Protection: Not applicable for product in purchased form. Goggles or safety glasses are recommended when product is machined

Other protection clothing or equipment: Outer garments may be desirable in extremely dusty areas.

Work Hygienic Practices: Follow good hygienic and housekeeping practices.

Disclaimer:

This product and data herein are believed to be accurate and have been compiled from sources believed to be reliable. It is offered for your consideration, investigation, and verification. There are no warranty of any kind, express or inferred, concerning the accuracy or completeness of the information and data herein.