LIBERTY WOODS INTERNATIONAL, INC.
MATERIAL SAFETY DATA SHEET MSDS

PRODUCT IDENTIFICATION:	Hardwood Plywood (Urea-Formaldehyde Bonded)*
SYNONYMS:	None
TRADE NAME:	Birch, Okoume, Obeche, Maple, Poplar, and Oak Plywood.
DESCRIPTION:	This panel product contains a hardwood veneer face bonded to wood components such as other wood veneer lumber or veneer strips using urea-formaldehyde resin.
POTENTIAL AIRBORNE RELEASES:	The product may release small quantities of formaldehyde (CAS No. 50-00-0) in gaseous form. Emissions decrease through time as the panels age. Manual or mechanical cutting or abrasion processes performed on the product can result in generation of wood dust.

PHYSICAL DATA:

Boiling Point	Not applicable
Specific Gravity (H_2O = 1)	< 1
Vapor Density	Not applicable
% Volatiles by Volume	0
Melting Point	Not applicable
Vapor Pressure	Not applicable
Solubility in H_2O (% by wt.)	< 0.1%
Evaporation Rate (Butyl Acetate = 1)	Not applicable
pH	Not applicable
Appearance and Odor	Light to dark color. Color and odor are dependent upon wood species.

*This fact sheet is for products that have not been finished (coated, laminate, or overlaid) or treated (i.e., with preservative or fire retardant).

FIRE AND EXPLOSION DATA:

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 Explosion Hazards"
Extinguishing Media	Water. Carbon Dioxide. Sand.
Special Fire Fighting Properties	None
Unusual Fire and Explosion Hazards	Sawing, sanding or machining 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 dust per cubic meter of air is often used as the LEL of wood dust.

REACTIVITY DATA:

Conditions contributing to Instability: Stable under normal conditions.

Incompatibility: Avoid contact with oxidizing agents. Avoid open flame. Product may ignite in excess of 400°F.

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

Hazardous Polymerization: Not applicable.

HEALTH EFFECTS INFORMATION:

Exposure Limits:

Formaldehyde	OSHA PEL - TWA	0.75 ppm
	OSHA PEL - STEL	2 ppm
	ACGIH TLV - CEILING	0.3 ppm
Wood Dust	OSHA PEL – TWA	15.0 mg/m^3 (Total Dust) 5.0 mg/m^3 (Respirable Fraction)

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

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

Ingestion: Not likely to occur.

Inhalation:

Gaseous Formaldehyde: May cause temporary irritation to eyes, 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.

Formaldehyde is listed by the International Agency for Research on Cancer (IARC) as a probable human carcinogen. The National Toxicology Program (NTP) includes formaldehyde in the Annual Report on Carcinogens. Formaldehyde is regulated by OSHA as a potential cancer agent.

In studies involving rates, 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 using this product.

The National Cancer Institute (NCI) conducted an epidemiological study of industrial workers exposed to formaldehyde (published June 1986). The NCI concluded that the data provides little evidence that mortality from cancer is associated with formaldehyde exposure at the levels experienced by workers in the study.

Wood Dust	May cause nasal dryness, irritation and obstruction. Coughing, wheezing, and sneezing; sinusitis and prolonged colds have also been reported. 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 American Conference of Governmental Industrial Hygeienists (ACGIH) has categorized wood dust (certain hardwoods) as a confirmed human carcinogen.

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/m^3; STEL (15 min.) - 10.0 mg/m^3 (all soft and hard woods, except Western Red Cedar; TWA - 2.5 mg/m^3.

   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 the Health Effects Information 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.

PRECAUTIONS, SAFE HANDLING:

Formaldehyde:	Provide adequate ventilation to reduce the possible buildup of formaldehyde gas, particularly when high temperatures occur.
Wood Dust:	Avoid dusty conditions and provide good ventilation. Avoid eye contact. Avoid repeated or prolonged contact with Skin. Careful bathing and clean clothes are indicated after expose. Avoid prolonged or repeated breathing of wood dust in the air. Avoid contact with oxidizing agents and drying oils. Avoid open flames.

GENERALLY APPLICABLE CONTROL MEASURES:

Ventilation:	Provide adequate general and local exhaust ventilation to keep airborne contaminant concentration levels below the OSHA PELs.
Personal Protective Equipment	Wear goggles/ safety glasses when manufacturing or machining the product. Wear NIOSH/MSHA approved respirator when the allowable exposure limits may be exceeded. Other protective equipment such a gloves and outer garments may be needed depending on dust conditions.

EMERGENCY AND FIRST AID PROCEDURES:

Eyes	Flush eyes with large amounts of water. Remove to fresh air. If irritation persists, get medical attention.
Skin	Wash affected areas with soap and water. Get medical advice if rash or persistent irritation or dermatitis occurs.
Inhalation	Remove to fresh air. Get medical advice if persistent irritation, severe coughing or breathing difficulty occurs.
Ingestion	Not applicable.
Spill/Leak Clean Up Procedures	Sweep or vacuum spills for recovery or disposal; avoid creating dust conditions. Provide good ventilation where dust conditions may occur. Place recovered wood dust in a container for proper disposal.

Manufacturer Name and Address	Effective Date	Supersedes Date	Prepared By
Liberty Woods International, Inc. Agent for various Chinese Mills 1903 Wright Place, Suite 360, Carlsbad, CA 92008	06/22/05	--------	Staff

IMPORTANT: The information 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. Liberty Woods International, Inc. (LWI) makes no warranty of any kind, express or implied, concerning the accuracy or completeness of the information and data herein. LWI 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 incumbent upon the user to obtain the most up-to-date information.

MAY 2004

LIBERTY WOODS INTERNATIONAL, INC.

1903 WRIGHT PLACE, SUITE 360
CARLSBAD, CA 92008
760-438-8030

WOOD DUST

(For all Untreated Wood and Untreated Wood Products)

CAUTION!

SAWING, SANDING OR MACHINING WOOD PRODUCTS CAN PRODUCE WOOD DUST WHICH CAN CAUSE A FLAMMABLE OR EXPLOSIVE HAZARD.

WOOD DUST MAY CAUSE LUNG, UPPER RESPIRATORY TRACT, EYE AND SKIN IRRITATION. SOME WOOD SPECIES MAY CAUSE DERMATITIS AND/OR ALLERGIC RESPIRATORY EFFECTS. THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC) HAS CLASSIFIED WOOD DUST AS A NASAL CARCINOGEN IN HUMANS.

*Avoid dust contact with ignition source.
*Sweep or vacuum dust for recovery or disposal.
*Avoid prolonged or repeated breathing of wood dust in air
*Avoid dust contact with eyes and skin.

*FIRST AID: If inhaled, remove to fresh air. In case of contact, flush eyes and skin with water. If irritation persists, call a physician.

For additional information, see the Material Safety Data Sheet