LIBERTY WOODS INTERNATIONAL, INC.
MATERIAL SAFETY DATA SHEET

PRODUCT IDENTIFICATION:	Hardwood Plywood (Urea-Formaldehyde Bonded)*
SYNONYMS:	None
TRADE NAME:	Meranti or Virola 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, laminated, 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)

[1]**See Important Footnote below concerning OSHA PELs for wood dust.**

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.

[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 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, C 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.

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 r Equipment: 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.

Manufacturer Name and Address	Effective Date	Supersedes Date	Prepared By
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