

Material Safety Data Sheet (MSDS) - Engineered Bamboo



For Engineered Strand Bamboo Flooring

****This MSDS solely applies to Ambient™ bamboo flooring products.****

SECTION A of this MSDS refers to the *strand woven bamboo wear layer* (2-4mm thickness) of this flooring.

SECTION B of this MSDS refers to the *binding agents present in the multi-ply eucalyptus/HDF core* of this flooring.

I. PRODUCT IDENTIFICATION

PRODUCT NAME	Prefinished Engineered Strand Woven Bamboo Flooring
MANUFACTURER/ DISTRIBUTOR	Ambient Bamboo Floors Contact
APPLICATIONS	Residential and Commercial Flooring (Indoor Use Only)
PRODUCTS	Link

SECTION A - Strand Woven Bamboo Wear Layer

II. INGREDIENTS

NAME	PERCENT	EXPOSURE LIMITS	COMMENTS	REGULATORY AGENCY
BAMBOO	94-95%	PEL-TWA 15 mg/m ³ PEL-TWA 5 mg/m ³ TLV-TWA 3 mg/m ³ TLV-STEL 10 mg/m ³	Total dust Respirable dust fraction Respirable dust fraction Inhalable particles	OSHA OSHA ACGIH ACGIH
PHENOL FORMALDEHYDE RESIN SOLIDS	4-5%	PEL-TWA 0.75 ppm PEL-STEL 2 ppm TLV- Ceiling 0.3 ppm	Free gaseous formaldehyde Free gaseous formaldehyde Free gaseous formaldehyde	OSHA OSHA ACGIH
POLYMERIZED POLYURETHANE (UV FINISH)	0-1%	PEL-TWA None TLV-TWA None	None None	OSHA ACGIH

III. HAZARD IDENTIFICATION

Appearance and Odor: A natural or toasted honey (carbonized) bamboo fiber with no, to a slight odor.

Primary Health Hazards: The extent to which health hazards are of primary concern for this product is the exposure to dust particles generated during machining, sanding, cutting, sawing, planing or routing.

Primary Route(s) of Exposure:

(X) Eyes: Dust

() Ingestion: N/A

(X) Inhalation: Dust

(X) Skin: Dust

Medical Conditions Generally Aggravated by Exposure: Dust particles can trigger respiratory conditions or pre-existing allergies.

Chronic Health Hazards: No tests have shown any correlating long term effects of bamboo dust and respiratory conditions, or cancer.

Carcinogenicity:

() NTP - Formaldehyde, Group: N/A

() IARC Monographs - Formaldehyde, Group: N/A

() OSHA Regulated - Formaldehyde: N/A

IV. EMERGENCY AND FIRST-AID PROCEDURES

Ingestion: N/A

Eye Contact: Dust in eye may cause redness or watering, but should be treated as a foreign object. Flush with water several times. If irritation persists, you should seek medical attention.

Skin Absorption: Has not been known to occur under normal use

Inhalation: Out-of-the-box, or in whole form, this is N/A. Bamboo dust can cause sensitive individuals to experience respiratory difficulties, nasal irritation, cough or sneezing. Leave area and go to fresh air. Seek medical attention if respiratory difficulties or cough become severe, or nasal irritation persists.

V. FIRE AND EXPLOSION

Flash Point Method: N/A

Flammable Limits: N/A

LEL: N/A

UEL: N/A

Extinguishing Media: Carbon Dioxide, Dry Chemical or Sand. Water

Auto ignition Temperature: Variable (400-500 F)

Special Firefighting Procedures: None.

Unusual Fire/Explosion Hazards: None.

VI. ACCIDENTAL RELEASE MEASURES

Out-of-the-box, this procedure is N/A. However, dust generated from cutting, drilling, planing, routing or sanding and related machining may be shoveled or vacuumed and properly disposed of. A NOISH-approved dust respirator and goggles should be worn if dust exposure limits are exceeded.

VII. HANDLING AND STORAGE

Precautions to be Taken In Handling and Storage: Out-of-the-box there is no special handling required for this product. These products may release very small quantities of formaldehyde in gaseous form. Under foreseeable conditions of use, these products release less than 0.010 ppm in standard large chamber test conditions. This product should be kept in cool, dry environment and not exposed to high heat or flame. Store in well-ventilated area.

VIII. EXPOSURE CONTROL MEASURES

Personal Protective Equipment:

RESPIRATORY PROTECTION: Not required when taken out-of-the-box, however a NOISH-approved dust respirator is recommended for high dust producing activities such as cutting, drilling, planing or routing.

PROTECTIVE GLOVES: Not required when taken out-of-the-box, however some sort of work glove is recommended to avoid splinters or silvers after machining and handling the product.

EYE PROTECTION: Not required, but strongly recommended when machining or milling any material.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Are not required, but long sleeves and/or pants might be desirable.

WORK/HYGIENE PRACTICES: It is recommended to clean up dusty areas to avoid excess accumulation. Minimize practices that generate high air-borne dust particles.

Ventilation:

LOCAL EXHAUST: Provide local exhaust as needed so that exposure limits are met.

MECHANICAL: Good ventilation in processing and storage areas should be provided so that exposure limits are met.

IX. PHYSICAL/CHEMICAL PROPERTIES

Boiling Point: N/A

Vapor Pressure: N/A

Vapor Density: N/A

Specific Gravity: 1.03 g/ml

Melting Point: N/A

Evaporation Rate: N/A

Solubility in Water: <0.1

% Volatile by Vol: 0

X. STABILITY AND REACTIVITY

Stability:

() Unstable

(X) Stable

Conditions to Avoid: Excessive moisture, condensation or water vapor as this may cause warping or popping of the boards. Open flame or conditions above 400 F may cause the product to ignite.

Incompatibility (Materials to Avoid): Avoid contact with oxidizing agents.

Hazardous Decomposition or By-Products: Thermal decomposition by-products include carbon monoxide, carbon dioxide, aliphatic aldehydes, rosin acids, terpenes, and polycyclic aromatic hydrocarbons.

Hazardous Polymerization: Will not occur.

Sensitivity to Mechanical Impact: N/A

Sensitivity to Static Discharge: N/A

XII. TOXICOLOGICAL INFORMATION

The product, in the finished form, has no reportable toxicological information. Formaldehyde OSHA Hazard rating = 3 for local and systemic acute and chronic exposures; highly toxic. Irritation studies: human skin, 150 ug/3 days, intermittent exposure produced mild results; human eye, 1 ppm/6 minutes, produced mild results. Toxicity studies: human inhalation TCLO of 8 ppm reported but response not specified; human inhalation TCLO of 17/mg/m³ for 30 minutes produced eye and pulmonary results; human inhalation TCLO of 300ug/m³ produced nose and CNS results; LC50 (rat, inhalation) = 1,000 mg/m³/30 minutes; LC50 (mice, inhalation) = 400mg/m³/2 hours.

Sources: Lewis, R.J., Sr. *1992 Sax's Dangerous Properties of Industrial Materials*, Eighth Edition, Van Nostrand Reinhold, NY.; *NIOSH Registry of Toxic Effects of Chemical Substances (RTECS)*, 1983-1984 Cumulative Supplement to 1981-1982 Edition and May 1995; *OSHA Regulated Hazardous Substances*, Government Institutes, Inc., February 1990.

XII. ECOLOGICAL INFORMATION

Ambient Bamboo (Moso species) is a rapidly renewable product, and can contribute up to two LEED credits. This product does not contribute to the diminishment of natural wood forests.

XIII. DISPOSAL CONSIDERATIONS

Waste Disposal Method: In out-of-the-box product form, incineration is the preferred disposal method. However, if you choose Land disposal, refer to the RCRA criteria and local requirements, and determine if the material is considered hazardous waste. Take the appropriate steps according the information acquired above.

XIV. TRANSPORT INFORMATION

Not regulated as a hazardous material by U.S. Department of Transportation. Not listed as hazardous material in Canadian Transportation of Hazardous Goods regulations.

XV. REGULATORY INFORMATION

TSCA: All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

Chemicals listed: Formaldehyde CAS# 50-00-0

DSL: All ingredients are listed or are not required to be listed under the Canadian Domestic Substance List.

Chemicals listed: Formaldehyde CAS# 50-00-0

WHMIS Classification

Not a controlled product

State Right to Know:

- **California Prop 65** – This product contains formaldehyde which may be emitted from product. Formaldehyde is a compound that is known in the State of California to cause cancer. Ambient has emission-tested its products for formaldehyde, and finds the emissions rate to be well below a significant risk level that would require product warnings.
- **Pennsylvania** – This product contains formaldehyde which depending on humidity and temperature may be emitted from product.

SARA Section 313 Information:

This product contains formaldehyde at a concentration that lists it with the chemical to SARA Title III, Section 313 supplier notification requirements. This product falls considerably below the Threshold Planning Requirement for Formaldehyde of 500 lbs.

SARA Section 311/312 Hazard Category

Under the above referenced category, and reviewed against definitions, the product meets:

- An immediate (acute) health hazard: Yes – dust only
- A delayed (chronic) health hazard: No
- A fire hazard: No
- A reactivity hazard: No
- A sudden release hazard: No

XVI. ADDITIONAL INFORMATION

Prepared by: Ambient™ Bamboo Floors

Date Updated: 01/01/2021

USER RESPONSIBILITY: The information contained in this MSDS comes from sources believed to be accurate or otherwise technically correct, and information from occupational health and safety professionals, and regulatory agencies. It is the

user's responsibility to determine if this information is suitable for their applications, and to follow safety precautions as necessary. The user has the responsibility to make sure that this sheet is the most up-to-date initial or revision issue.

GLOSSARY

ACGIH-	American Conference of Government Industrial Hygienists Ceiling limit
CAS# -	Chemical Abstracts Numbering System
DSL-	Canadian Domestic Substance List
EPA-	U.S. Environmental Protection Agency
IARC-	International Agency for Research on Cancer
LCLo-	Lowest concentration in air resulting in death
LC50-	Administered dose resulting in death to 50% of experimental animals
LDLo-	Lowest dose resulting in death
MSHA-	Mining Safety and Health Administration
ND-	Not determined
N/A-	Not applicable
NAV-	Not available
NIOSH-	National Institute for Occupational Safety and Health
NTP-	National Toxicology Program
OSHA-	Occupational Safety and Health Administration
PEL-	Permissible Exposure Level
PPM-	Parts of gas or vapor per million parts of air
RCRA-	Resource Conservation and Recovery Act
SARA-	Superfund Amendments and Reauthorization Act
STEL-	Short-Term Exposure Limit (15 minutes)
TDG-	Canadian Transportation of Dangerous Goods
TCLo-	Lowest concentration in air resulting in a toxic effect
TDLo-	Lowest dose resulting in a toxic effect
TLV-	Threshold Limit Value
TSCA-	Toxic Substance Control Act
TWA-	Time-Weighted Average (8 hours)
WHMIS-	Workplace Hazardous Materials Information System

SECTION B - Dynea Adhesive

II. INGREDIENTS

INGREDIENT NAME	PERCENT	EC No.	CAS No.	R-PHRASES*
Urea Formaldehyde Polymer [-]	90-100%	--	--	--
Formaldehyde [T]	< 0.8%	200- 001-8	50-00-0	R-23/24/25, 34, 43, 40

*See section 16 for explanations of R-phrases.

Composition Comments: Harmful components are listed according to guideline for safety data sheets. Other components, not classified as harmful, are indicated by a hyphen [-].

III. HAZARD IDENTIFICATION

May cause sensitization by skin contact.

IV. EMERGENCY AND FIRST-AID PROCEDURES

GENERAL

Symptoms and Effects:

- Accidents and overexposure to *powder/dust* from this product may cause irritation to eyes and to the respiratory system.
- Accidents and overexposure to this product may cause irritation by *liquid/fumes* in the eyes, liquid/fumes on the skin and by inhalation of fumes.
- Symptoms by exposure of *liquid/fumes* in the eyes are pain, tears and impaired vision.
- Symptoms by inhalation of *powder/dust* are coughing and difficulties with breathing.
- Symptoms by inhalation of *fumes* are upper respiratory irritation.
- Symptoms of exposure to *skin and mucous membranes* are irritation and discoloration.

General Advice Concerning First Aid: Remove victim immediately from source of exposure. Provide rest, warmth, and fresh air. Keep affected person under observation. Get medical attention if necessary or contact emergency facility.

FIRST AID MEASURES (SPECIFIC)

Inhalation: Fresh air.

Ingestion: If the affected person is awake, give water or other drink to flush the mouth and to dilute chemicals that have been swallowed. Contact doctor/hospital for continued treatment or transport to hospital.

Skin: Wash skin with soap and water. Remove contaminated clothing. If any signs of damage/irritation to the skin, contact doctor or hospital.

Eyes: Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Contact doctor/hospital for continued treatment or transport to hospital

V. FIRE AND EXPLOSION

Extinguishing Media: Use extinguishing media appropriate for surrounding fire. DO NOT use CO₂ or dry chemicals.

Specific Hazards: Dust could form explosive mixture with air.

Hazardous Combustion Products: Common combustion products.

Protective Measures in the Event of Fire: Fire personnel exposed to gases from the product are recommended to use respiratory protection. Avoid skin contact/inhalation of dust/vapors. *(See also: Section 8)*

VI. ACCIDENTAL RELEASE MEASURES

Personal Protection: Wear necessary protective equipment. *(See also: Section 8)*

Environmental Protection: Limit the leakage field. Block up contaminated area. Runoff or release to sewer, waterway or ground is forbidden. The product is soluble in water.

Spill Clean-Up Methods: Collect in containers and seal securely. Remove containers and flush area with water. Inform the appropriate authorities if large amounts are involved. *(See also: Section 13)*

VII. HANDLING AND STORAGE

Usage Precautions: Avoid spilling, skin and eye contact. Avoid breathing dust.

Provide

sufficient ventilation. Eye wash facilities should be available when handling this product

Usage Description: Read and follow manufacturer's recommendations.

Storage Precautions: Keep dry, in closed containers.

VIII. EXPOSURE CONTROL MEASURES

INGREDIENT NAME	CAS No.	REFERENCE	LT EXP. 8 HOURS	ST EXP. 15 MINS
Formaldehyde...%	50-00-0	Maximum Exposure Limit (MEL)	2 ppm	2 ppm
Total Inhalable Dust	--	Occupational Exposure Standard (OES)	10 mg/m ³	--
Respirable Dust	--	Occupational Exposure Standard (OES)	4 mg/m ³	--

Process Conditions: Eye wash facilities should be available when handling this product.

Ventilation: Provide adequate general and local exhaust ventilation.

Respirators: Respiratory protection must be used if air concentration exceeds acceptable level.

Recommended filter: Combination filter: Gas cartridge (organic substances). Gas cartridge (acid gases). Dust filter P2 (for fine dust).

Protective Gloves: Use chemical resistant gloves that comply with acceptable standard. Suitable material: Polyvinyl chloride (PVC). Rubber (natural or latex). Neoprene. IN the selection of protective equipment, the user must ensure that the equipment complies with the relevant standard. If there is any doubt the user should show this data sheet to the supplier of the equipment to ensure that the correct equipment is available to potential users.

Eye Protection: Use approved safety goggles or face shield.

Other Protection: Wear appropriate clothing to prevent any possibility of skin contact.



Protective Equipment

IX. PHYSICAL/CHEMICAL PROPERTIES

Appearance: Powder, Dust
Color: White/Yellow
Odor: Formaldehyde
Solubility Description: Soluble in water.
pH Value (Diluted Solution): 7.0-8.0
Concentration (%M): 2:1
Flash Point: > 212°F
Method: Setaflash closed cup

X. STABILITY AND REACTIVITY

Stability:

- () Unstable
(X) Stable

Hazardous Decomposition or By-Products: Unlikely under normal industrial use.

XII. TOXICOLOGICAL INFORMATION

Sensitization: Formaldehyde is classified as a recognized allergen by skin contact.

Health Hazards (General): In the industry, irritating properties represent the main hazard.

Inhalation: Dust may irritate respiratory system. Gas or vapor is harmful upon prolonged exposure or in high concentrations.

Ingestion: May cause discomfort.

Skin: May cause sensitization by skin contact. Prolonged or repeated exposure may cause severe irritation.

Eyes: Irritating to eyes.

Medical Considerations: FORMALDEHYDE - Formaldehyde is classified as a category 3 carcinogen. In animal experiments, carcinogenic effects have been demonstrated only at very high dose levels. Such effects have not been demonstrated in humans.

COMPONENT: Formaldehyde...%

Toxic dose - LD50: 800 mg/kg (rat, oral)

Carcinogenicity: IARC Int. Agency for Cancer Research - NTP Carcinogens (DHHS)

XII. ECOLOGICAL INFORMATION

Ecotoxicity: Not regarded as dangerous for the environment under current legislation.

Mobility: Soluble in water.

Bioaccumulative Potential: No bioaccumulation expected.

Persistence and Degradability: Urea formaldehyde polymer - slowly but not readily biodegradable, Formaldehyde - readily biodegradable (BOD5/COD: 0.68)

XIII. DISPOSAL CONSIDERATIONS

Disposal Methods: Disposal should take place according to national and local regulations. Confirm disposal procedures with local authorities.

Cured resin is regarded as non-hazardous waste. Material safety data sheet for cured resin is available.

Waste Class: EWC-code: 08 04 09. [EWC-code will depend on the use of this product.]

Contaminated Packaging: Empty packaging as much as possible. Drained packaging should be recycled if possible.

XIV. TRANSPORT INFORMATION

Road Transport - ADR Class: Not dangerous according to ADR/RID/IMDG/IATA.

XV. REGULATORY INFORMATION

Contains: Formaldehyde...%

Risk Phrases: R-43 - May cause sensitization by skin contact.

Safety Phrases: S-22 - Do not breathe dust.

S-24 Avoid contact with skin.

S-37 Wear suitable gloves.



UK/EU Regulatory References: Occupational Exposure Standard. Dangerous Substances Directive 67\548.

Dangerous Preparations Directive 1999/45/EEC. Safety data

sheet directive 91/155. Directive 2001/58. Directive 91/689. Directive 94/904.

Label for Supply

XVI. ADDITIONAL INFORMATION

Explanations of R-phrases (II. INGREDIENTS)

R-23/24/25 Toxic by inhalation, in contact with skin, and if swallowed.

R-34 Causes burns.

R-43 May cause sensitization by skin contact.

R-40 Limited evidence of a carcinogenic effect.

USER NOTES:

The classification of this product as irritating for supply is consistent with the concentration of formaldehyde analyzed by traditional volumetric techniques. This method includes the addition of water to the adhesive, so that the classification is relevant to the risk also when the resin is used.

An alternative method, approved by the UK Authorities, involves the measurement of formaldehyde gas emitted from the powder resin. By this method, very low

concentrations of formaldehyde are analyzed. Accordingly, the resin in the powder state, is not classified as a health hazard when this alternative method is used.

The classification and labelling of the resin will therefore differ, depending upon the analytical approach employed.

Customers should not therefore make a commercial preference, based upon the different approaches employed for classifying the products.

Disclaimer: The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not, therefore, be construed as guaranteeing specific properties

