



Material Safety Data Sheet (MSDS) - Bamboo Flooring Products

1. Product Identification-Bamboo

Product Manufacturing Location

Unfinished Vertical Grain Bamboo Flooring

Unfinished Horizontal Grain Bamboo Flooring USA Headquarters - Poulsbo, WA.

Prefinished Vertical Grain Bamboo Flooring

Prefinished Horizontal Grain Bamboo Flooring USA Headquarters - Poulsbo, WA.

Synonyms: Bamboo Flooring

2. Hazardous Ingredients/Identity Information

Name CAS# Percent Agency Exposure Limits Comments

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Bamboo1 None 94-95 OSHA

Respirator dust fraction

Inhalable particles

ACGIH PEL-TWA 15 mg/m³

PEL-TWA 5 mg/m³

TLV-TWA 3 mg/m³ formaldehyde resin solids² 9011-05-6 4-5 OSHA

OSHA

PEL-STEL 2 ppm

TLV- Ceiling 0.3 ppm free gaseous formaldehyde

Free gaseous formaldehyde –urea Formaldehyde free

UV Finish³ Polymerized polyurethane None 0-1 OSHA

ACGIH PEL-TWA None

TLV-TWA None

(A) Bamboo is a member of the grass family which has distinct makeup differences from that of normal hardwood. Bamboo would be regulated as an organic dust in the category referred to as "Particulates Not Otherwise Regulated" (PNOR), or Nuisance Dust by the OSHA regulations. The ACGIH classifies dust or particulate in this category as "Particulates Not otherwise Specified".

(B) Contains less than 0.1% free formaldehyde per EU1 Regulations-Urea Formaldehyde Free

(C) Hazard Identification

Appearance and Odor: A content of natural/blonde or caramel colored laminated bamboo solid strips bonded with low-fuming formaldehyde resin having a slightly aromatic odor.

Primary Health Hazards: The primary health hazards posed by this product are due to exposure to dust generated when working with this product (e.g. sanding, cutting, routing and or planing) and to a much lower extent free gaseous formaldehyde.

Primary Route(s) of Exposure:

() Ingestion:

(X) Skin: Dust

(X) Inhalation: Dust or gas

Medical Conditions Generally affected by Exposure: Gaseous formaldehyde or dust may aggravate preexisting respiratory conditions or allergies.

Chronic Health Hazards: Bamboo dust has not been associated with any long term health effects including cancer in animals as well as humans.

Carcinogenicity Listing:

(X) NTP: Formaldehyde, Group 2, A & B

(X) IARC Monographs: Formaldehyde, Group 2A;

(X) OSHA Regulated: Formaldehyde

Probably carcinogenic to humans; limited human evidence and sufficient evidence in experimental animals. Studies of cancer incidence among workers in a wide variety of occupations have failed to convincingly show carcinogenic activity of formaldehyde in humans. Gaseous formaldehyde has been shown to cause cancer in certain laboratory animals after long-term exposure to very high concentrations (14+ ppm), far above the levels of formaldehyde gas emitted by this product.

(D) Emergency and First-Aid Procedures

Ingestion: Not applicable under normal use and not recommended

Eye Contact: Dust may cause mechanical irritation. Treat dust in eye as foreign object. Flush with water to remove dust particles. Get medical help if irritation persists.

Skin Contact: Although not applicable for this product in its purchased form, high concentrations of gaseous formaldehyde may cause allergic contact dermatitis in sensitized individuals resulting in redness, itching, and occasionally, hives. Frequent handling of dust or product in its manufactured form may cause some minor drying of the skin, mechanical abrasion, cuts or slivers. Wash hands after handling and obtain medical help if rash or irritation occurs.

Skin Absorption: Not known to occur under normal situation.

Inhalation: Although not applicable for this product in its purchased form (actual formaldehyde gas release level < 0.01 ppm) as tested. However, gaseous formaldehyde may cause respiratory difficulties for some sensitized/allergic individuals. Bamboo dust may cause obstruction in the nasal passages, resulting in dryness of nose, dry cough and sneezing. Remove to fresh air. Get medical help if persistent irritation, severe coughing or breathing difficulty occurs.

(E) Fire and Explosion Data as known

Flash Point (Method Used): NAP

Flammable Limits:

LEL: NAP

UEL: NAP

Extinguishing Media: Water, carbon dioxide, sand or dry chemical.

Auto-ignition Temperature: Variable [typically 400-500oF (204-260oC)]

Special Firefighting Procedures: None.

Unusual Fire and Explosion Hazards: None

(F) Accidental Release Measures

Steps to be Taken In Case Material Is Released or Spilled: Not applicable for product in purchased form. Dust generated from sawing, sanding, drilling, or routing of products may be vacuumed or shoveled for recovery or disposal. Avoid dusty conditions and provide good ventilation. An OSHA-approved dust respirator should be worn if dust exposure maximums are exceeded.

(G) Handling and Storage

Precautions to be Taken In Handling and Storage: No special handling precautions are required for products in purchased form. Keep in temperate, dry place away from any open flame. This product will release small quantities of gaseous formaldehyde (<0.01 ppm in accordance with ASTM E1333 test methods). Store in well ventilated area.

(H) Exposure Control Measures

Personal Protective Equipment:

RESPIRATORY PROTECTION -- Not applicable for product in purchased form. An OSHA-approved dust respirator is recommended when allowable exposure limits are exceeded.

PROTECTIVE GLOVES -- Not required. However appropriate gloves are recommended to minimize potential irritation from slivers from handling and machining product.

EYE PROTECTION -- Not applicable for product in purchased form. Goggles or safety glasses are recommended when machining this product.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT -- Not applicable for product in purchased form. Outer garments may be desirable in extremely dusty areas.

WORK/HYGIENE PRACTICES -- Follow good hygienic and housekeeping practices. Clean up areas where wood dust settles to avoid excessive accumulation of this combustible material. Minimize blow down cleaning or other objectionable practices that generate airborne-dust concentrations.

Ventilation:

LOCAL EXHAUST -- Provide local exhaust or air flow as needed so that exposure limits are met.

MECHANICAL (GENERAL) -- Provide general ventilation in processing and storage areas so that exposure limits are met.

SPECIAL - None.

OTHER - None.

(I) Toxicological Information

None available for product in purchased form as flooring

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: OSHA Regulated Hazardous Substances, Government Institutes, Inc.,

(J) Disposal Considerations for Waste or Remnants

Waste Disposal Method: If disposed of or discarded in its purchased form, incineration is preferable. Dry land disposal is acceptable in most states. It is, however, the user's responsibility to determine at the time of disposal whether your product meets RCRA criteria for hazardous waste. Follow applicable federal, state, and local regulations.

(K) Transport Information

Not regulated as a hazardous material by the U.S. Department of Transportation.

Not listed as a hazardous material in Canadian Transportation of Dangerous Goods (TDG) regulations.

(L) Regulatory Information

TSCA

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

Chemicals noted:

Formaldehyde CAS# 50-00-0

DSL

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

Chemicals Noted:

Formaldehyde CAS# 50-00-0

WHMIS Classification

Not a controlled product

STATE RIGHT-TO KNOW

California Prop 65 -This product contains formaldehyde which depending on temperature and

humidity may be emitted from the product. Formaldehyde is a compound that is known in the State of California to cause cancer. Higuera Hardwoods LLC DBA Higuera Imports has evaluated formaldehyde emission rates from its products (typical range of 0-0.01 ppm) and have found these rates to be below the no significant risk level that would require product warning labels.

SARA 313 Information

This product contains formaldehyde at a concentration that subjects the chemical to SARA Title III Section 313 supplier notification requirements. However, the emissions characteristics and concentrations have been measure using ASTM E1333 test methods (typical average concentration of 0.015 ppm equates to a yearly emission rate of 0.01 lbs/yr). This emission rate falls well below the Threshold Planning Requirement for Formaldehyde of 500 lbs.

SARA 311/312 Hazard Category

This product has been reviewed according to the EPA "Hazard Categories and is considered, under applicable definitions, to meet the following categories:

- 1 A fire hazard - no
- 2 A reactivity hazard - no
- 3 sudden release hazard - no
- 4 An immediate (acute) health hazard - yes - dust only
- 5 A delayed (chronic) health hazard - no

Date Prepared: 09/28/05

User's Responsibility: The information contained in this Material Safety Data Sheet is based on the experience of occupational health and safety professionals and comes from sources believed to be accurate or otherwise technically correct. It is the user's responsibility to determine if this information is suitable for their applications and to follow safety precautions as may be necessary. The user has the responsibility to make sure that this sheet is the most up-to-date issue.