

## Material Safety Data Sheet

### SECTION 1: PRODUCT IDENTIFICATION

<b>Product Name:</b> Laminate Flooring Melamine Laminated High Density Fiberboard	<b>CAS #:</b> None
<b>Generic Name:</b> Melamine and wood laminate	<b>Formula:</b> Mixture
<b>Chemical Name:</b> Not applicable	<b>Hazard Label:</b> None
<b>Manufacturer:</b> KRONOTEX FLOORING, LLC	<b>Telephone:</b> 803.224.9150
<b>Address:</b> 810 Technology Drive Barnwell, SC 29812	<b>Emergency:</b> 800.424.9300
<b>Internet Address:</b> kronotexusa.com	

**Appearance and odor:**

These products consist of a manufactured high-density fiberboard substrate and a thin layer of decorative and wear-enhancing melamine. The substrate is made from wood fibers and bonded together with resin. The melamine is bound in resin-impregnated paper.

**Uses:** Building materials.

### SECTION 2: INGREDIENTS

Ingredient Name:	CAS #	Weight %	Exposure Limits
Softwood and hardwood fibers	None	>85	None for intact products.
Urea formaldehyde resin	9011-05-6	<13%	
Melamine urea formaldehyde resin	25036-13-9	<13%	
Paraffin wax	8002-74-2	<2	
<b>Dust from these products contains:</b>			A TWA of 0.5 mg/m <sup>3</sup> inhalable dust will comply with OSHA and ACGIH exposure limits for these wood and binder dusts.
Softwood and hardwood fibers	None	>85%	
Cured binder	None	<15%	
<b>KRONOTEX USA recommendation:</b> Keep workplace inhalable dust concentrations below 0.5 mg/m <sup>3</sup> TWA.			
<b>Note:</b> The ingredients are bonded together under heat and pressure. The process cures the resin but small amounts of formaldehyde from the resin may be released from the finished products. The finished products contain less than 0.01% free formaldehyde by weight. Potential exposures to dust will occur only when the product is broken or machined in poorly ventilated workplaces.			

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## SECTION 3: HAZARD IDENTIFICATION

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### OVERVIEW

**Dust Hazard:** Occupational exposure to wood dust from any timber product has been classified as hazardous according to the criteria of the Occupational Safety and Health Administration. Inhalation of excessive amounts of dust may cause temporary upper respiratory irritation and/or congestion, irritation of the eyes and skin or asthma. Repeated inhalation of wood dust increases the risk of nasal cancer and may increase the risk of lung fibrosis.

Wood dust may be produced from machining, breaking or handling the products. Dust and smoke created from cutting and/or burning this product may cause irritation to eyes, skin, and respiratory system. Avoid breathing dust and smoke. Avoid contact with eyes. Drilling, sawing, sanding or machining wood products generates wood dust, a substance known to the State of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection.

**Gas Hazard:** Formaldehyde gas may be released under some conditions particularly when the products are heated and laminated, or cut by laser cutting machines. However, in well-ventilated storage areas and workplaces, the concentration of formaldehyde is unlikely to exceed the OSHA PEL's of 0.75 PPM TWA and 2 PPM STEL.

All properties of the laminate flooring meet ANSI A208.2-2009 Medium Density Fiberboard (MDF) For Interior Applications standard, Section 3.4 Formaldehyde. The limits set forth in the standard have a tiered classification of formaldehyde emission levels. The levels been developed to include specifications that correspond with the California Air Resources Board's (CARB) Air Toxic Control Measure (ATCM) Phase 1 and Phase 2 emission requirements. Emissions shall not exceed the maximum limit of either 0.21ppm (Phase 1: January 1, 2009) or 0.11ppm (Phase 2: January 1, 2011) for MDF with a minimum thickness greater than 8mm. Emissions shall not exceed the maximum limit of either 0.21ppm (Phase 1: January 1, 2009) or 0.13ppm (Phase 2: January 1, 2011) for thin MDF with a maximum thickness less than or equal to 8mm.

Wood dust may be produced from machining the product, and formaldehyde gas may be produced from heating processes.

**Explosion Hazard:** Wood dust may ignite at temperatures greater than 204°C/400°F, and high concentrations-in-air ( $>60\text{g/m}^3$ ) may spontaneously explode.

### Potential Health Effects

#### Acute (short term) Health Effects:

##### Swallowed:

Swallowing is unlikely under normal conditions. Swallowing the dust may cause abdominal discomfort.

##### Eye:

Dust may be irritating to the eyes resulting in redness and watering.

##### Skin:

Skin contact with dust may result in skin itching and redness, and dermatitis in some people.

##### Inhaled:

Inhalation of dust may be irritating to the nose, throat and lungs.

**Chronic (long term) Health Effects:**

Repeated exposure over many years to uncontrolled wood dust increases the risk of nasal cavity cancer. Inhalation of wood dust may also increase the risk of lung fibrosis (scarring). There are also increased risks of respiratory and skin sensitization from wood dust and resin resulting in asthma and dermatitis respectively.

Wood dust has been evaluated by the International Agency for Research on Cancer (IARC) as group 1, carcinogenic to humans. The ACGIH has determined that certain hardwoods are A1 confirmed human carcinogens.

Effective December 18, 2009, the Office of Environmental Health Hazard Assessment (OEHHA) of the California Environmental Protection Agency is adding "Wood Dust" to the list of chemicals known to the state to cause cancer for the purposes of Proposition 65 Safe Drinking Water and Toxic Enforcement Act of 1986.

Formaldehyde has been evaluated by the International Agency for Research on Cancer (IARC) as group 1, carcinogenic to humans, by the European Union (EU) as a Category 3 carcinogen (possibly carcinogenic), and by the U.S. EPA as a classification B1 (probable human carcinogen).

**Reference:**

1. ANSI A208.2-2009 American National Standard: *Medium Density Fiberboard (MDF) For Interior Applications*. Composite Panel Association. Leesburg, VA. 2009.
2. Proposition 65: Safe Drinking Water and Toxic Enforcement Act of 1986. Section 25249.6 *Required Warning Before Exposure To Chemicals Known to Cause Cancer Or Reproductive Toxicity*. OEHHA. California. Language update 2003.

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**SECTION 4: FIRST-AID MEASURES**

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**Swallowed:**

If dust is swallowed, give water to drink. Seek medical attention if any abdominal discomfort.

**Eyes:**

Irrigate eyes thoroughly with plenty of water for at least 15 minutes. If symptoms persist seek medical attention.

**Skin:**

Wash thoroughly with mild soap and water. Remove clothing if contaminated with dust.

**Inhaled:**

Leave the dusty area.

**First-aid facilities:**

Provide eyewash facilities.

**Notes to doctor:**

Treat symptomatically.

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## SECTION 5: FIRE FIGHTING MEASURES

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### Unusual Fire / Explosion Hazards:

Wood dusts may form explosive mixtures with air. Burning or smouldering boards or dust, and boards cut by laser cutting machines can generate carbon dioxide, carbon monoxide, oxides of nitrogen, hydrogen cyanide and other pyrolysis products which are irritating to the respiratory tract. Avoid breathing smoke from laser cutting machines and from burning or smouldering materials. Full protective clothing and self-contained breathing apparatus should be worn for fire fighting. Extinguish fire with water, fog, foam, carbon dioxide or dry chemical.

**THE INTACT PRODUCT, DUST OR WASTES MUST NOT BE BURNED IN BARBECUES, STOVES, FIREPLACES OR OPEN FIRES BECAUSE IRRITATING GASES ARE EMITTED.**

### Flammable Properties and Explosive Limits:

<b>Flash Point:</b>	Not applicable	<b>Lower Explosive Limit (LEL):</b>	Not applicable
<b>FP Test Method:</b>	Not applicable	<b>Upper Explosive Limit (UEL):</b>	Not applicable
<b>Flame Classification:</b>	Not determined	<b>Auto-ignition Temperature:</b>	> 220°C
<b>Flame Propagation:</b>	Not determined	<b>Decomposition Temperature:</b>	Not applicable

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## SECTION 6: ACCIDENTAL SPILL AND RELEASE MEASURES

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### Spills and disposal:

Off-cuts and general waste material should be placed in containers and disposed of at approved landfill sites or incinerated in accordance with local authority guidelines. Burning cannot be used as a means of disposal without specific local authority and other regulatory agency approval.

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## SECTION 7: HANDLING AND STORAGE

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### Handling and storage:

No special transport or storage requirements are considered necessary.

The boards should be stored in well-ventilated areas away from source of heat, flames or sparks.

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## SECTION 8: EXPOSURE CONTROL AND PERSONAL PROTECTION

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### Summary:

Keep exposures as low as practicable with the aim of maintaining airborne dust levels below 0.5 mg/m<sup>3</sup> time-weighted average (TWA) measured as inhalable dust. All work with wood products must be carried out in such a way as to minimize exposure to dust. Under factory conditions, machining, sawing, drilling, routing, laser cutting or sanding of the wood must be done with equipment fitted with local exhaust ventilation devices capable of removing dust and smoke at source. Work areas should be kept clean by regular vacuuming or wet sweeping.

**Ventilation:**

Local exhaust ventilation should be provided at areas of machining to remove airborne dust. General dilution ventilation should be provided as necessary to keep airborne dust below the applicable exposure limits and guidelines. A professional industrial hygienist should determine the need for a ventilation system and a professional engineer should design the specific ventilation system.

**Special Considerations for Repair/Maintenance of Contaminated Equipment:**

Use personal protective equipment as discussed above. Where possible, vacuum all equipment before repair/maintenance to remove excessive dust.

**Eye Protection:**

Avoid contact with eyes. Safety glasses with side shields or dust resistant safety goggles should be worn if there is a risk of dust getting into the eye, such as when using power tools. (See CSA Standard Z94.3-07 "Industrial Eye and Face Protectors".)

**Skin:**

Avoid contact with skin. Wear gloves and coveralls. Wash skin with mild soap and water after working with these products. Wash work clothes regularly and separately from other clothes.

**Respiratory:**

Avoid breathing dust. When engineering controls and work practices do not control exposure to below recommended levels, wear suitable respiratory protection. If a respirator is required, use an approved NIOSH/MSHA-approved device and institute a comprehensive program per OSHA 29 CFR 1910.134.

**Smoking:**

Inhalation of airborne particles from other sources, including those from cigarette smoke, may increase the risk of lung disease. All storage and work areas should be smoke free zones and other airborne contaminants should be kept to a minimum.

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**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

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<b>Boiling Point (°F/°C):</b>	Not applicable
<b>Evaporation Rate (Butyl acetate = 1):</b>	Not applicable
<b>Melting Point:</b>	Not applicable
<b>pH:</b>	Not applicable
<b>Saturation in Air (%):</b>	Not applicable
<b>Solids Content:</b>	Not applicable
<b>Specific Gravity (Water = 1):</b>	0.5 - 0.85
<b>Vapor Density (Air = 1):</b>	Not applicable
<b>Vapor Pressure:</b>	Not applicable
<b>Viscosity:</b>	Not applicable
<b>VOC's (g/liter):</b>	Not applicable
<b>Volatile by Volume (%):</b>	Not applicable
<b>Water Solubility (%):</b>	Insoluble

<b>Color:</b>	Light tan to dark brown
<b>Taste:</b>	Not available
<b>Odor:</b>	Slight pine or burnt wood

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## **SECTION 10: STABILITY AND REACTIVITY**

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**Reactivity:**

These products are not reactive.

**Hazardous Decomposition Products:**

Thermal-oxidative degradation of this and other wood products produces irritating and toxic smoke and gases. These include carbon monoxide, aldehydes, carbon particles, and organic acids.

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## **SECTION 11: TOXICOLOGICAL AND EPIDEMIOLOGICAL DATA**

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Any health hazards associated with these products have been evaluated on the basis of the individual ingredients, and these hazards should be assumed to be additive. The hazards described in this document have been evaluated based on a threshold of 1.0% for all hazardous ingredients and 0.1% for all carcinogens.

**Routes of Entry:**

Inhalation and contact with skin and eyes.

**Acute Effects:**

The dust, which may be generated during manual or mechanical cutting, drilling, sanding or other abrading processes, and the smoke generated by heating or laser cutting, may cause temporary irritation of the eyes and upper respiratory system. The symptoms are expected to subside after exposure has stopped and are not expected to cause any long-term effects. Allergic skin and lung reactions have been reported with exposure to various wood dusts and cured resin. These rashes resemble other allergic skin reactions caused by plants, and usually heal rapidly.

**Chronic Effects:**

The risk of nasal cancer has been associated with wood dust exposure. In the 1960s, studies linking wood dust exposure in the furniture industry with nasal cancer were first reported in England. The link was confirmed in several other European countries and furniture industries. The studies showing a link to nasal cancer have been primarily conducted in industries using hardwood. The International Agency for Research on Cancer (IARC) evaluated dusts from both hardwood and softwood in 1995 and concluded that: "there is sufficient evidence in humans for the carcinogenicity of wood dust. There is inadequate evidence in experimental animals for the carcinogenicity of wood dust. Wood dust is carcinogenic to humans (Group 1)".

The IARC also re-evaluated formaldehyde in 2006 and, its summary, concluded the following: Epidemiological studies provided sufficient evidence that formaldehyde causes nasopharyngeal cancer; limited evidence for sinonasal cancer; and not sufficient evidence for a casual association between leukemia and cancers of the oral cavity, oro-and hypopharynx, pancreas, larynx, lung, and brain. Overall, IARC classifies formaldehyde as a human carcinogen (Group 1). Also, IARC identifies formaldehyde as a common cause of contact dermatitis and is thought to act as a sensitizer on the skin.

Although these products contains less than 0.01% free formaldehyde, people using the products may be exposed to low concentrations of formaldehyde if the products are heated (as in laminating), are cut by laser cutting machines, and/or if dust particles come in contact with the moist mucous membranes lining the upper respiratory tract. Extensive literature searches and research carried out by independent occupational and environmental health specialists have not indicated any risks over and above those associated with wood dust without binder. This research includes the 1999 formaldehyde risk assessment carried out by US scientists in collaboration with the US EPA and Health Canada. The risk assessment concludes that if a non-smoking worker were exposed to 0.004 PPM of formaldehyde continuously for 80 years, and also to 0.1 PPM for 40 years at work, then the predicted additional risk of respiratory tract cancer would be 4.1 per 1,000,000,000. The controls needed for minimizing the potential for formaldehyde exposure from these products will be the same as those for control of dust exposures.

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## **SECTION 12: ECOLOGICAL INFORMATION**

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### **Ecotoxicity:**

Not available. These products should be used only for their designated purposes.

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## **SECTION 13: DISPOSAL CONSIDERATIONS**

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### **Summary:**

Federal, state and local authority guidelines and regulations should be followed in the disposal of waste products.

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## **SECTION 14: TRANSPORT INFORMATION**

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### **Transportation Summary:**

These products are not regulated as dangerous goods. No special transport requirements are necessary.

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## **SECTION 15: REGULATORY INFORMATION**

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KRONOTEX USA has assessed these products in accordance with the criteria of the United States Hazards Communications Rule (29 CFR 1900.1200).

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## **SECTION 16: HEALTH & SAFETY INFORMATION TO USERS**

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Kronotex USA Melamine Laminated Fiberboard

**Ingredients:** Wood fibre or particles, paraffin wax, and heat-cured resin.

**Risk:** Dust and smoke from these products are irritating to eyes, skin and respiratory system. May cause sensitization by inhalation (asthma) and skin contact (dermatitis). Repeated inhalation of the dust increases the risk of nasal cavity cancer and may increase the risk of lung fibrosis (scarring).

**Safety:** Avoid repeated or prolonged contact with skin.  
Avoid contact with eyes.  
Avoid breathing dust and smoke.  
Wear coveralls, gloves (AS 2161), and dust-resistant eye protection.  
If ventilation is not adequate to maintain workplace concentrations below TLV's and PEL's, respiratory protection (mask) must be worn.  
Keep work areas clean by wet sweeping and/or vacuuming.  
Wash work clothes regularly and separately from other clothes.

**First Aid:** Irrigate eyes with plenty of water.  
Wash skin with soap and water.

**Disposal:** Follow above safety instructions. Collect wastes in containers for disposal in accordance with federal, state or local requirements or guidelines.

**Do not burn the dust, wastes or intact product.**

**Fire:** Dust may form an explosive mixture in air.  
Electrically ground all exhaust equipment and prevent high dust concentrations in confined spaces.  
Extinguish with water, CO<sub>2</sub>, foam or dry chemical extinguishers. Firefighters must wear self-contained breathing apparatus.

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**SECTION 17: OTHER INFORMATION and CONTACT POINT**

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Further information may be obtained by contacting KRONOTEX USA.

**ChemTrec Emergency telephone: 800-424-9300**

**MSDS Revision Summary:**

<b>Date</b>	<b>Reason</b>
5-1-2005	Change of address, telephone numbers, corporate name, formaldehyde classification update, and inhalable wood dust update.
7-16-2008	Formaldehyde toxicity information update, eye protection CSA Standard update, and respiratory program reference update.
11-24-2010	Dust and smoke hazard update, formaldehyde hazard update with CARB emission levels, California Prop 65 reference added in potential health effects, reference to ANSI A208.2-2009 added.

**Disclaimer:** The information and data in this MSDS are believed to be accurate and have been compiled from sources believed to be reliable. The information is offered for consideration, investigation and verification. Users assume all risk of use, storage and handling of the products in compliance with applicable federal, state and local laws and regulations. KRONOTEX USA makes no warranty of any kind, express or implied, concerning the accuracy or completeness of the information and data herein. The implied warranties of merchantability and fitness for a particular purpose are specifically excluded. KRONOTEX USA 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.