

## MATERIAL SAFETY DATA SHEET

### SECTION I - PRODUCT AND COMPANY IDENTIFICATION

**Product:** Thermofused Melamine Panel  
**Trade Name:** PANOLAM™  
**Product Code:** B-, P-, S-, W- three digit number  
**Product Description:** Decorative paper impregnated with amino-formaldehyde resin, thermofused to particleboard or medium density fiberboard  
**Product Use:** Manufacture of residential and office furniture, cabinets, shelving, store fixtures and hospitality furnishings

**CAS Number:** Not applicable  
**Chemical Family:** Mixture

**MSDS Date:** October 1, 2005  
**Previous Revision:** December 30, 2002

**Manufacturer Information:** PANOLAM INDUSTRIES  
20 Progress Drive  
Shelton, CT 06484  
(203) 925-1556

### SECTION II – COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL IDENTITY	CAS NUMBER	PER CENT BY WEIGHT
Ligno-Cellulosic Materials		85 – 95 %
Polymerized Amino-Formaldehyde Resins	9011-05-6	6 – 9 %

**OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200):**

CHEMICAL COMPONENT	OSHA PEL's	ACGIH TLV's
Formaldehyde (CAS# 50-00-0)	TWA: 0.75 ppm STEL: 2 ppm (15 min)	0.30 ppm Ceiling
Wood Dust/Ligno-cellulosic fiber <sup>1,2</sup>	TWA: 15.0 mg/m <sup>3</sup> (total dust) <sup>3</sup> TWA: 5.0 mg/m <sup>3</sup> (respirable fraction)	
Wood Dust/Ligno-cellulosic fiber (All species except Western Red Cedar)		TWA: 1.0 mg/m <sup>3</sup> (inhalable) <sup>3</sup>
Wood Dust/Ligno-cellulosic fiber (Western red cedar)		TWA: 0.5 mg/m <sup>3</sup> (inhalable) <sup>3</sup>

*ACGIH:* American Conference of Governmental Industrial Hygienists      *TLV:* Threshold Limit Value  
*OSHA:* Occupational Safety and Health Administration                      *PEL:* Permissible Exposure Limit  
*TWA:* Time-Weighted Average Exposure Concentration                      *STEL:* Short-Term Exposure Limit

1. In AFL-CIO v. OSHA 965 F. 2d 962 (11<sup>th</sup> 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<sup>3</sup>; STEL (15 min.) - 10.0 mg/m<sup>3</sup> (all soft and hard woods, except Western red cedar) Western red cedar: TWA - 2.5 mg/m<sup>3</sup>.
2. 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 in the Composition/Information on Ingredients 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.
3. Considerable debate continues to surround the inhalable-to-total dust conversion factor. ACGIH has proposed to use 2.5 "for interpreting studies with exposure measurements based on total dust sampling" for purposes of defining a TLV for inhalable dust. However, a recent NIOSH paper states "In the case of exposures to wood dust, several studies with side-by-side sampling have revealed that inhalable sampling will increase the apparent dustiness of an atmosphere by between 150 and 400%, with an average closer to the higher end of the range." [citing Harper (2002), Martin (1998), Tatum (2001), among others]

## SECTION III – HEALTH HAZARDS

**ROUTE OF ENTRY:** Skin contact [X] Skin absorption [ ] Eye contact [X]  
Inhalation [X] Ingestion [ ]

**EMERGENCY OVERVIEW:** The product may release small quantities of formaldehyde 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.

### **EFFECTS OF ACUTE EXPOSURE:**

**Inhalation:** Gaseous formaldehyde may cause temporary irritation to nose and throat. Wood dust may cause nasal dryness, irritation and obstruction. Coughing, wheezing, sneezing, sinusitis and prolonged colds have also been reported.

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

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

**Ingestion:** Not likely to occur under normal conditions of use

### **EFFECTS OF CHRONIC EXPOSURE:**

**Formaldehyde:** Some reports suggest that formaldehyde may cause respiratory sensitization, such as asthma, and that pre-existing respiratory disorders may be aggravated by exposure. Other studies show no impact on respiratory sensitization. The International Agency for Research on Cancer (IARC) classifies formaldehyde as a carcinogen to humans (Group 1). This classification is based on IARC's evaluation of increases in the occurrence of cancers in the nasopharyngeal cavity (NPC) associated with occupational exposure to formaldehyde. The National Toxicology Program (NTP) includes formaldehyde in its Annual Report on carcinogens. OSHA regulates formaldehyde as a potential cancer agent. In studies involving rats, 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.

**Wood Dust:** Wood dust (and/or ligno-cellulosic fibers), 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 National Toxicology Program (NTP) includes wood dust in its Annual Report on Carcinogens.

## SECTION IV – FIRST AID MEASURES

<b>Inhalation:</b>	Wood dust may cause unpleasant obstruction in the nasal passages, resulting in dryness of nose, dry cough, sneezing and headaches. Remove to fresh air. Get medical attention if irritation persists, or if severe coughing or breathing difficulty occurs.
<b>Eye Contact:</b>	Wood dust may cause mechanical irritation. Treat dust in eye as a foreign object. Flush eyes with large amounts of water. Remove to fresh air. If irritation persists, get medical attention.
<b>Skin Contact:</b>	Wash affected areas with soap and water. Get medical attention if rash or irritation persists or dermatitis occurs.
<b>Ingestion:</b>	Not likely to occur under normal conditions of use.

## SECTION V - FIRE OR EXPLOSION HAZARDS

<b>Conditions of flammability:</b>	Open Flame – Classified as a Class A Combustible Material
<b>Extinguishing media:</b>	Water, Dry Chemical, CO <sub>2</sub>
<b>Hazardous combustion products:</b>	CO, CO <sub>2</sub> , NH <sub>3</sub> , Aliphatic Aldehydes, Rosin Acids, Terpenes
<b>Special fire fighting procedures:</b>	Fire fighting procedures for extinguishing a Class A fire should be followed. Firefighters should wear Chemical Cartridge Respirators approved for Formaldehyde and Organic Vapors. Use water to wet down wood dust to reduce the likelihood of ignition or dispersion of dust into the air.
<b>Flash point &amp; method of determination:</b>	Not applicable
<b>Upper flammable limit:</b>	Not applicable
<b>Lower flammable limit:</b>	An airborne concentration of 40 grams of dust per cubic meter of air is often used as the LEL for wood dust.
<b>Auto-ignition temperature:</b>	200 – 250°C
<b>Explosion Hazards:</b>	Sawing, sanding or machining can produce wood dust (and/or ligno-cellulosic fibers), which may present a strong to severe explosion hazard if a dust cloud contacts an ignition source.

## SECTION VI – ACCIDENTAL RELEASE MEASURES

**Steps to be taken in case of a leak or spill:** Sweep or vacuum spills for recovery or disposal; avoid creating dust conditions.

## SECTION VII – HANDLING AND STORAGE

**Precautions to be taken in handling and storing:** This product should not be stored where exposure to water could occur, or near a source of ignition. Avoid storing in areas of high relative humidity and increased temperature. High temperature and inadequate ventilation could allow concentrations of formaldehyde vapors in the storage area. Adequate ventilation of the storage area will help reduce the build-up of the formaldehyde vapors. It is recommended to store product in an area of relative humidity and temperature that approximates end use.

## SECTION VIII – EXPOSURE CONTROL /PERSONAL PROTECTION

**Hand protection:** Not required; cloth, leather gloves recommended.

**Eye protection:** Wear side shield safety glasses or safety goggles during the machining of this product.

**Respiratory protection:** When machining, use a NIOSH approved dust mask. Avoid prolonged or repeated breathing of wood dust in air.

**Body protection:** Outer garments may be desirable when machining.

**Foot protection:** Safety shoes.

**Ventilation controls:** PANOLAM™ thermofused melamine panels emit less than 0.3 ppm formaldehyde when tested according to the ASTM E 1333 large scale chamber standard test. In practice, actual formaldehyde levels will depend upon product loading rates, ambient temperature and humidity. Forced ventilation may be required to maintain formaldehyde concentrations in the workplace below the regulated values. Use vacuum (explosion proof) or local ventilation to maintain dust levels below the regulated value when machining.

## SECTION IX - PHYSICAL DATA

**Physical state (room temperature):** Solid

**Odor:** Pungent odor in process, otherwise mild wood odor;

**Appearance:** Colored solid or print

**Odor threshold:** 1 ppm (recognition)

**Boiling point:** Not applicable

**Freezing point:** Not applicable

**Percent volatile by volume:** Not applicable

<b>Specific gravity:</b>	0.7 - 0.8
<b>Evaporation rate:</b>	Not applicable
<b>Vapor pressure:</b>	Not applicable
<b>Vapor density:</b>	Not applicable
<b>pH:</b>	Not applicable
<b>Coefficient of water/oil distribution:</b>	Not applicable
<b>Solubility in water:</b>	<0.1%

## SECTION X – STABILITY AND REACTIVITY

<b>Stability:</b>	Stable under normal conditions.
<b>Conditions to Avoid:</b>	Avoid product contact with any high temperature sources that could induce thermal decomposition. High relative humidity and temperature can also increase the rate of formaldehyde emissions.
<b>Incompatibility (Materials to Avoid):</b>	Avoid oxidizing agents, drying oils and strong acids
<b>Hazardous decomposition products:</b>	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.
<b>Hazardous polymerization:</b>	Will not occur.

## SECTION XI- TOXICOLOGICAL PROPERTIES

<b>Toxicity:</b>	LD <sub>50</sub> : Not available LC <sub>50</sub> : Not available
<b>Irritancy:</b>	Both formaldehyde and wood dust may cause irritation of skin, eyes, throat and nose.
<b>Sensitization:</b>	Some reports suggest that formaldehyde may cause respiratory sensitization, such as asthma, and that pre-existing respiratory disorders may be aggravated by exposure.
<b>Carcinogenicity:</b>	<u>FORMALDEHYDE</u> - IARC has classified formaldehyde as a carcinogen to humans (Group 1). California's Safe Drinking Water and Toxic Enforcement Act of 1986, commonly known as "Proposition 65" (Cal. Health and Safety Code SS 25249.5-25249.13) has recognized formaldehyde as a chemical known to the state to cause cancer. <u>WOOD DUST</u> – IARC classifies wood dust as a carcinogen to humans (Group 1). NTP classifies wood dust as a “known human carcinogen” in its 10 <sup>th</sup> edition of its Report on Carcinogens.
<b>Reproductive toxicity:</b>	There is one Soviet report of menstrual disorders and secondary sterility in women exposed to formaldehyde and some other chemicals.
<b>Teratogenicity:</b>	No information available.
<b>Mutagenicity:</b>	Insufficient human or animal effect information.
<b>Toxicologically synergistic products:</b>	No information available.

## SECTION XII – ECOLOGICAL INFORMATION

### Ecotoxicity:

**General Product Information:** Not available for product in purchased form. See Component Analysis.

### Component Analysis – Aquatic Toxicity - Formaldehyde (50-00-0)

Test & Species	Conditions
6 Hr LC <sub>50</sub> fathead minnow	24.1 mg/L flow through
96 Hr LC <sub>50</sub> bluegill	0.10 mg/L flow through
5 min EC <sub>50</sub> Photobacterium phosphorium	9.0 mg/L
15 min EC <sub>50</sub> Photobacterium phosphorium	7.26 mg/L
25 min EC <sub>50</sub> Photobacterium phosphorium	6.81 mg/L
96 Hr EC <sub>50</sub> water flea`	20 mg/L

**Environmental Fate:** Not available for product in purchased form.

## SECTION XIII – WASTE DISPOSAL METHOD

**Waste disposal method:** This product is not considered a hazardous waste under EPA Hazardous Waste Regulations 40 CFR Part 261, however, State and local requirements for waste disposal may differ and should be reviewed. Incinerate or landfill in accordance with local, provincial, state, federal regulations.

## SECTION XIV – TRANSPORT INFORMATION

<b>PIN Number</b>	Not applicable
<b>TDG Shipping Name</b>	Not applicable
<b>TDG Hazard Class</b>	Not applicable
<b>DOT Class</b>	Not a DOT hazardous material

It is the responsibility of the transporting organization to follow all applicable laws, regulations, and rules relating to the transportation of the material.

## SECTION XV – REGULATORY INFORMATION

**NFPA Rating:** Health: 1 Flammability: 1 Reactivity: 0

**HMIS Rating:** Health: 1 Flammability: 1 Reactivity: 0

**OSHA (29CFR 1910.1200):** Wood products are not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200. However, formaldehyde emissions and wood dust generated by sawing, sanding, or machining this product may be hazardous.

**TSCA:** All components are listed on the TSCA Inventory

**SARA 302/CERCLA:** **SARA 302:** Formaldehyde TPQ = 500 lbs  
**CERCLA:** Formaldehyde RQ=100 lbs.

**SARA 311/312:** Immediate (Acute) Health Hazard: No  
Delayed (Chronic) Health Hazard: No  
Fire Hazard: No  
Reactive Hazard: No  
Sudden Release of Pressure Hazard: No

**SARA 313:** This product does not contain chemical(s) in concentrations that should require reporting under SARA 313.

**HUD:** This material conforms to the formaldehyde emission requirements for particleboard of the U.S. Department of Housing and Urban Development. Under 24 CFR 3280 Manufactured Home Construction and Safety Standards, formaldehyde emissions must be less than 0.3 ppm for particleboard tested in accordance with FTM-2, the NPA/HPMA Large Scale Chamber Test.

### STATE REGULATIONS:

The following components appear on one or more of the following state hazardous substances lists and may also appear on similar lists in states not on the chart.

COMPONENT	CAS	CA	MA	MN	NJ	PA	RI
Formaldehyde	50-00-0	Yes	Yes	Yes	Yes	Yes	Yes
Wood dust, all soft and hard woods		No	No	Yes	No	Yes	Yes

**California Proposition 65:** This product contains formaldehyde, a substance known to the State of California to cause cancer per California’s Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) Section 25249.8. Based on information gathered on the formaldehyde emissions of particleboard and MDF substrates used in the production of our TFM panels, in accordance with the statute, it has been determined that the formaldehyde emissions of our TFM panels are below the “no significant risk” level and do not require warnings per Section 25249.10.

**WHMIS:** This product is not considered a controlled product. It has been classified in accordance with the hazard criteria of the *Controlled Products Regulations* and the MSDS contains all the information required by the *Controlled Products Regulations*.

**DSL:** All materials are listed

## **SECTION XVI – OTHER INFORMATION**

**Label: WOOD DUST  
CAUTION!**

**WOOD DUST CAN BE PRODUCED BY SAWING, SANDING,  
OR MACHINING WOOD AND WOOD PRODUCTS**

**FLAMMABLE – POSSIBLE EXPLOSION HAZARD**

**MAY CAUSE RESPIRATORY, EYE AND SKIN IRRITATION**

**SOME SPECIES MAY CAUSE DERMATITIS OR ALLERGIC  
RESPONSE**

**THE INTERNATIONAL AGENCY FOR RESEARCH ON  
CANCER (IARC) CLASSIFIES WOOD DUST AS A NASAL  
CARCINOGEN IN HUMANS**

**THE NATIONAL TOXICOLOGY PROGRAM (NTP)  
CLASSIFIES WOOD DUST AS A KNOWN HUMAN  
CARCINOGEN**

**For additional information see the Material Safety Data Sheet**

### **DISCLAIMER:**

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. Buyer assumes all risk of use, storage and handling of the product in compliance with applicable federal, state, provincial and local laws and regulations. Panolam Industries 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. Panolam Industries 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.