


 Effective Date: 6/6/96
 Supersedes Date: 1/22/96

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Urea-Formaldehyde Bonded Wood Products: Particleboard and Medium Density Fiberboard (MDF)

PRODUCT USE: Building material - industrial or decorative

MANUFACTURER: G-P Flakeboard Limited
 657 Base Line
 Sault Ste. Marie, Ont.
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MSDS REQUEST: (404)652-5119

SECTION 2. COMPOSITION INFORMATION ON INGREDIENTS

<u>COMPONENT</u>	<u>% BY WEIGHT</u>	<u>CAS NO.</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Formaldehyde	<0.1	50-00-0	0.75 ppm TWA 2.0 ppm STEL	0.3 ppm Ceiling

SECTION 3. HAZARDS IDENTIFICATION

DESCRIPTION: Particleboard and MDF are manufactured from wood particles or fibers bonded together with urea-formaldehyde resin.

EMERGENCY OVERVIEW

Sawing, sanding or machining wood products can produce wood dust which can cause an explosion hazard. This product may release small quantities of formaldehyde in gaseous form. Emissions decrease through time as the board ages. Formaldehyde and/or wood dust may cause eye, nose, throat and skin irritation.

POTENTIAL HEALTH EFFECTS

INHALATION: Gaseous formaldehyde may cause temporary irritation to the nose and throat. Wood dust may cause nasal dryness, irritation, coughing and sinusitis. Repeated exposures (even below 5mg/m³) to certain wood dusts such as Western Red Cedar, can produce allergic responses in some sensitive individuals.

EYE CONTACT: Gaseous formaldehyde may cause temporary irritation to the eyes. Wood dust can cause mechanical irritation.

SKIN CONTACT: Both formaldehyde and various species of wood dust may evoke allergic contact dermatitis in sensitized individuals. If an allergy preexists or develops, it may be necessary to remove the sensitized worker from further exposure to formaldehyde bonded wood products.

INGESTION: Not applicable under normal conditions of use.

SECTION 4. FIRST AID MEASURES

INHALATION: Remove to fresh air. If persistent irritation, severe coughing or breathing difficulty occurs, get medical attention.

EYE CONTACT: Remove contact lenses. Flush eyes, including under eyelids, with large amounts of water. If irritation persists, get medical attention.

SKIN CONTACT: Wash affected areas with soap and water. If rash or persistent irritation or dermatitis occurs, get medical attention.

INGESTION: Not applicable under normal conditions of use.

SECTION 5. FIRE FIGHTING MEASURES

FLASH POINT: Not applicable.

EXPLOSIVE LIMITS: Sawing, sanding or machining wood products can produce wood dust as a by-product. Wood dust is a strong to severe explosion hazard if a dust "cloud" contacts an ignition source. 212°F (100°C) has been suggested as the upper temperature limit for continuous exposure for wood without risk of ignition (wood dust may require a still lower temperature). An airborne concentration of 40 grams of dust per cubic meter of air is often used as the lowest explosion limit (LEL) for wood dust.

HAZARDOUS COMBUSTION PRODUCTS: Thermal-oxidative degradation, or burning, of wood can produce irritating and potentially toxic fumes and gases including carbon monoxide, aldehydes and organic acids.

AUTOIGNITION TEMPERATURE: 400°-500°F (204°-260°C)

FIRE EXTINGUISHING MEDIA: Water. Partially burned dust is especially hazardous if dispersed into the air. Remove burned or wet dust to open area after fire is extinguished.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Not applicable for product in purchased form. Sweep or vacuum dust for recovery or disposal. Wood dust clean-up and disposal activities should be accomplished in a manner to minimize creation of airborne dust.

SECTION 7. HANDLING AND STORAGE

HANDLING: See Section 15 "Label Text."

STORAGE: Provide adequate ventilation to reduce the possible build up of formaldehyde gas, particularly when high temperatures occur. UF bonded wood products should not be stored where exposure to water could occur. Wood products are combustible and, therefore, should not be subjected to temperatures exceeding the autoignition temperature. Water spray may be used to wet down wood dust generated by sawing, sanding or machining to reduce the likelihood of ignition or dispersion of dust into the air.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Due to the explosive potential of wood dust when suspended in air, precautions should be taken during sanding, sawing or machining of wood products to prevent sparks or other ignition sources in ventilation equipment. Use of totally enclosed motors is recommended. Provide local exhaust as necessary to meet OSHA requirements for formaldehyde and wood dust exposure.

RESPIRATORY PROTECTION: Wear NIOSH/OSHA approved respirator when the permissible OSHA exposure limits to formaldehyde and/or wood dust may be exceeded.

EYE PROTECTION: Recommend goggles or safety glasses as conditions indicate when sawing, sanding or machining wood products.

SKIN PROTECTION: Other protective equipment such as gloves and outer garments may be needed to reduce skin contact.

Following are wood dust exposure limits which are in accord with those recommended by OSHA in the 1989 revision of PELs.

<u>WOOD SPECIES</u>	<u>CAS NO.</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Softwoods	NONE	5 mg/m ³ TWA 10 mg/m ³ STEL	5 mg/m ³ TWA 10 mg/m ³ STEL
Western Red Cedar	NONE	2.5 mg/m ³ TWA	1 mg/m ³ TWA
Hardwoods except Western Red Cedar	NONE	5 mg/m ³ TWA 10 mg/m ³ STEL	1 mg/m ³ TWA

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: Light tan to dark tan. Color and odor are dependent upon wood species.

PHYSICAL STATE:	Solid.	BOILING POINT:	Not Applicable.
PH	Not Applicable.	MELTING POINT:	Not Applicable.
VAPOR PRESSURE:	Not Applicable.	SOLUBILITY IN WATER:	Insoluble.
VAPOR DENSITY:	Not Applicable.	SPECIFIC GRAVITY:	<1.0

SECTION 10. STABILITY AND REACTIVITY

STABILITY: Stable.

CONDITIONS TO AVOID: Wood dust generated from sawing, sanding or machining the product is extremely combustible. Keep in cool dry place away from ignition sources.

INCOMPATIBILITY (MATERIALS TO AVOID): Oxidizing agents and drying oils.

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal-oxidative degradation, or burning, of wood can produce irritating and potentially toxic fumes and gases including carbon monoxide, aldehydes and organic acids.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

WOOD DUST: Wood dust generated from sawing, sanding or machining this product may cause nasal dryness, irritation, coughing and sinusitis. Wood dust is not considered a potential cancer hazard by OSHA or the National Toxicology Program (NTP). The International Agency for Research on Cancer (IARC) classifies wood dust as a carcinogen to humans (Group I). 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.

FORMALDEHYDE: Exposure to gaseous formaldehyde may cause temporary irritation to the nose and throat as well as lead to respiratory disorders. However, in a thorough review of sensory/respiratory irritation studies of formaldehyde from the standpoint of occupational exposure, an expert panel has observed exposure up to concentrations of 0.3 ppm failed to produce irritation. At 0.5 ppm no irritation will usually be reported, especially if persons are exposed only 8 hours per day. With regard to respiratory disorders, studies have concluded the threshold for long-term chronic pulmonary effects is between 0.4 and 3 ppm and for chronic obstructive pulmonary disease is 2 ppm. Additionally, persons with asthma respond no differently than healthy individuals at concentrations as high as 3 ppm. Some reports, however, suggest formaldehyde may cause asthma and that preexisting respiratory disorders may be aggravated by exposure.

Epidemiology studies of workers exposed to formaldehyde have failed to consistently identify an association between formaldehyde exposure and cancer. In animal studies, rats and mice exposed to high levels of formaldehyde developed nasal cancer while hamsters did not. These exposure levels are far above those levels normally found in the workplace. These animal studies provide inference of carcinogenic hazard for humans. Although human tissue may be inherently susceptible to formaldehyde carcinogenicity, this effect may require exposure to concentrations that humans could not tolerate because of its pungent odor.

Formaldehyde is listed by the International Agency for Research on Cancer (IARC) as a probable human carcinogen (Group 2A). The National Toxicology Program (NTP) included formaldehyde in the Annual Report on Carcinogens. OSHA regulates formaldehyde as a potential carcinogen for exposures exceeding 0.5 ppm.

SECTION 12. DISPOSAL CONSIDERATIONS

This product is not considered hazardous waste under Federal Hazardous Waste Regulations 40 CFR 261. Please be advised, however, state and local requirements for waste disposal may be different from federal regulations.

Incinerate or landfill in accordance with local, state and federal regulations.

SECTION 13. TRANSPORT INFORMATION

This product is not a DOT hazardous material.

SECTION 14. REGULATORY INFORMATION

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

TSCA: This product complies with TSCA inventory requirements.

SARA 313: None.

HUD: The Department of Housing and Urban Development (HUD) regulation 24 CFR 3280 provides for third-party certification of particleboard manufactured with urea-formaldehyde resin for formaldehyde emissions. The maximum allowable level for particleboard is 0.3 ppm at a loading ratio of 0.13 square feet/cubic foot. Certification is made in accordance with FTM-2-1985 [ASTM E1333-90], Large Scale Test Method for Determining Formaldehyde Emissions from Wood Products. Particleboard manufactured by G-P Flakeboard is certified to meet this HUD standard.

CALIFORNIA: Proposition 65 provides for labeling and disclosure of the presence of chemical(s) known to the State to cause cancer or reproductive toxicity if ordinary use of these product will result in exposures above a no significant risk level. Particleboard contains formaldehyde and may, depending on conditions such as temperature and relative humidity, emit formaldehyde gas. Formaldehyde gas is listed under Proposition 65 as a chemical known to the State to cause cancer. G-P Flakeboard has evaluated the emission rates of formaldehyde gas from the products it manufactures according to the State regulations and has determined they are below the no significant risk level and do not require warnings.

MINNESOTA: Minnesota Statute 1984 sections 144.495 and 325F.18 require all particleboard and plywood sold or used in Minnesota meet the HUD Formaldehyde Emission Standard, 24 CFR Sections 3280.308 and 3280.406.

ANSI A208.2-1994 MEDIUM DENSITY FIBERBOARD (MDF): This industry consensus standard limits formaldehyde emissions from MDF to 0.3 ppm at a loading ratio of 0.08 square feet/cubic foot. MDF manufactured by G-P Flakeboard meets our company standard of 0.2 ppm at the same loading ratio.

ANSI A208.1-1993 PARTICLEBOARD: This industry consensus standard limits formaldehyde emissions from emissions from particleboard flooring products (underlayment and mobile home decking) to 0.2 ppm at a loading ratio of 0.13 square feet/cubic foot. Industrial particleboard manufactured by G-P Flakeboard meets this emission limitation as our own company standard.

CANADIAN WHMIS: This product(s) is not considered a controlled product.

SECTION 15. OTHER INFORMATION

LABEL TEXT:

Untreated Wood Products
CAUTION!

SAWING, SANDING OR MACHINING WOOD PRODUCTS CAN PRODUCE WOOD DUST WHICH CAN CAUSE A FLAMMABLE OR EXPLOSIVE HAZARD.

WOOD DUST MAY CAUSE LUNG, UPPER RESPIRATORY TRACT, EYE AND SKIN IRRITATION. SOME WOOD SPECIES MAY CAUSE DERMATITIS AND/OR RESPIRATORY ALLERGIC EFFECTS. THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC) HAS CLASSIFIED WOOD DUST AS A NASAL CARCINOGEN IN HUMANS.

Avoid dust contact with ignition source.
Wood dust clean-up and disposal activities should be accomplished in a manner to minimize creation of airborne dust.
Avoid breathing dust.
Avoid dust contact with eyes and skin.

FIRST AID: If inhaled, remove to fresh air. In case of contact, flush eyes and skin with water. If irritation persists, call a physician.

For additional information, see the G-P Flakeboard Limited Material Safety Data Sheet for this product.

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HMIS RATING: Health - 0; Flammability - 1; Reactivity - 0

MSDS REVISION SUMMARY: MSDS now includes references to Medium Density Fiberboard (MDF); Section 8 wood dust exposure limits have been clarified; Section 11 Formaldehyde paragraph has been revised

IMPORTANT: 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 and local laws and regulations. G-P FLAKEBOARD LIMITED 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. G-P Flakeboard Limited 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.