



MATERIAL SAFETY DATA SHEET

FOR INDUSTRIAL USE ONLY

DESCRIPTION: Perkins MS-406

PAGE 1 OF 8

1. Chemical Product and Company Identification

DESCRIPTION: **Perkins MS-406**
 PRODUCT CODE: 11-M406P-.
 PRODUCT TYPE: Powder MUF Resin
 APPLICATION: General Purpose MUF Powder Adhesive

Manufacturer/Supplier Information

MSDS Prepared by:
 Borden Chemical, Inc.
 155 West A Street, Bldg. A-1
 Springfield, OR 97477

Emergency Phone Number
 Poison Control Center
 1-800-228-5635 ext 261

For additional health, safety or regulatory information, call 541-744-3256.

2. Composition, Information on Ingredients

The ingredients listed below have been associated with one or more immediate and/or delayed(*) health hazards. Risk of damage and effects depends upon duration and level of exposure. BEFORE USING, HANDLING, OR EXPOSURE TO THESE INGREDIENTS, READ AND UNDERSTAND THE MSDS.

	% by weight
50-00-0 *Formaldehyde	0.1-0.99
1332-58-7 *Kaolin	10-30
7783-20-2 Ammonium Sulfate	1-5
*Wood Flour	5-10

3. Hazards Identification

3.1 Emergency Overview

Appearance Off-White Dry Powder
 Odor Slight formaldehyde

CAUTION!

Combustible dust when finely divided or suspended in air.
 May cause allergic skin and respiratory reactions.
 May cause eye irritation

DESCRIPTION: Perkins MS-406

PAGE 2 OF 8

HMIS Rating

HEALTH = 1 (slight)
FLAMMABILITY = 1 (slight)
REACTIVITY = 0 (minimal)
CHRONIC = *

3.2 Potential Health Effects

Immediate Hazards

INGESTION: Not expected to be harmful under normal conditions of use.

INHALATION: Not expected to be harmful under normal conditions of use. However, if allowed to become airborne, may cause irritation of nose, throat and lungs.

SKIN: May cause irritation on prolonged or repeated contact.

EYES: May cause irritation on prolonged or repeated contact.

Delayed Hazards**Formaldehyde 50-00-0**

POTENTIAL CANCER HAZARD.

Rats chronically exposed to 14 ppm formaldehyde contracted nasal cancers. Based on animal data and limited epidemiological evidence, NTP and IARC have listed formaldehyde as a probable human carcinogen. OSHA regulates formaldehyde as a potential human carcinogen. May cause allergic skin reaction. Some reports suggest that formaldehyde may cause respiratory sensitization, such as asthma, and that pre-existing respiratory and skin disorders may be aggravated by exposure.

OSHA has identified 0.5 ppm as the "Action Level", 29CFR 1910.1048. Please refer to the OSHA Standard for guidance applicable to your specific operations.

Kaolin 1332-58-7

Chronic inhalation has resulted in benign pneumoconiosis. Pre-existing respiratory disorders may be aggravated by exposure. -- See Footnote C.

Wood Flour

POTENTIAL CANCER HAZARD. Wood dust has been classified by IARC as a carcinogen to humans (Group 1). This classification is based primarily on IARC's evaluation of increased risk of occurrence of adenocarcinomas in the nasal cavities and paranasal sinuses associated with exposure to wood dust. Wood dust is not listed by NTP nor regulated by OSHA as a carcinogen.

DESCRIPTION: Perkins MS-406

PAGE 3 OF 8

Delayed Hazards

Depending on species, may cause allergic skin and respiratory reactions.

Footnote C: As of the date of issuance of this document, this material has not been listed by NTP, classified by IARC nor regulated by OSHA as a carcinogen.

4. First Aid Measures

INGESTION: If accidentally swallowed, dilute by drinking large quantities of water. Immediately contact poison control center or hospital emergency room for any other additional treatment directions.

INHALATION: Remove to fresh air.

SKIN: In case of irritation, flush with water.

EYES: Immediately flush eyes with plenty of water. Call a physician if irritation persists.

5. Fire Fighting Measures

Flash point	Not applicable
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Autoignition temperature	Not applicable

Will burn.

Refer to NFPA Pamphlet No. 654, "Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids," if this material is to be reduced to or collected as a powder.

In case of fire, use water spray, dry chemical, "alcohol" foam or CO2. Use water to keep fire-exposed containers cool.

6. Accidental Release Measures

Sweep (scoop) up and remove to a chemical disposal area. Prevent entry into natural bodies of water.

7. Handling and Storage**7.1 Handling**

Handle in accordance with good industrial hygiene and safety practices. These practices include avoiding unnecessary exposure and removal of the material from eyes, skin and clothing.

Wash thoroughly after handling. Always use appropriate Personal Protective Equipment (PPE).

INHALATION: Avoid prolonged or repeated breathing of dust or

DESCRIPTION: Perkins MS-406

PAGE 4 OF 8

7.1 Handling

vapor.

SKIN: Avoid prolonged or repeated contact with skin and clothing.

EYES: Avoid prolonged or repeated contact with eyes.

7.2 Storage

Keep container closed.

Store in a cool, dry place.

Loosen closure cautiously before opening.

Use with adequate ventilation.

8. Exposure Controls/Personal Protection

8.1 Exposure Controls

If airborne contaminants are generated when the material is heated or handled, sufficient ventilation in volume and air flow patterns should be provided to keep air contaminant concentration levels below acceptable criteria.

8.2 Personal Protection

Where air contaminants can exceed acceptable criteria, use NIOSH/MSHA approved respiratory protection equipment. Respirators should be selected based on the form and concentration of contaminants in air in accordance with OSHA laws and regulations or other applicable standards or guidelines, including ANSI standards regarding respiratory protection. Use goggles if contact is likely. Wear impervious gloves as required to prevent skin contact.

8.3 Exposure Guidelines

Formaldehyde 50-00-0

ACGIH TLV: 0.3 ppm (0.37 mg/m³) Ceiling, A2 - See Appendix A**OSHA PEL: 0.75 ppm(0.9 mg/m³) TWA; 2 ppm(2.5mg/m³)15min STEL**

Kaolin 1332-58-7

ACGIH TLV: 2 mg/m³ TWA, respirable fraction**OSHA PEL: 15 mg/m³ TWA, total dust; 5 mg/m³ TWA, respirable fraction****REMANDED PEL: 10 mg/m³ TWA, total dust; 5 mg/m³ TWA, respirable fraction****OSHA 1989 PEL remanded, but in effect in some states**

Ammonium Sulfate 7783-20-2

ACGIH TLV: NONE ESTABLISHED

OSHA PEL: NONE ESTABLISHED

Wood Flour

ACGIH TLV: 5 mg/m³ TWA; 10 mg/m³ STEL (softwood)**OSHA PEL: 15 mg/m³TWA (total dust); 5 mg/m³(respirable)**

DESCRIPTION: Perkins MS-406

PAGE 5 OF 8

8.3 Exposure Guidelines**REMANDED PEL: 5 mg/m³ TWA; 10 mg/m³ STEL (all soft and hard woods)****OSHA 1989 PEL remanded, but in effect in some states**OTHER: ACGIH TLV: 1 mg/m³ TWA (certain hardwoods)**9. Physical and Chemical Properties**

Physical state	Solid
Appearance	Off-White Dry Powder
Odor	Slight formaldehyde
Odor threshold	Not available
Specific gravity	~0.5-0.7
pH	6.0-7.0 @ 25C
Viscosity, Brookfield	1000-2000 cps
Freezing point	Not available
Solubility in water	Dispersible
Octanol/water partition coefficient	Not available
Vapor pressure @ 25 C	Not applicable
Vapor density (air=1)	Not applicable
Evaporation rate (butyl acetate=1)	Not applicable
Boiling point, 760 mm Hg	Not applicable

10. Stability and Reactivity

Normally stable as defined in NFPA 704-12(4-3.1).

In common with most organic materials, this product should be treated as a combustible dust in the finely divided and suspended state.

Decomposition products may include:CO, CO₂, aldehydes (including formaldehyde), hydrogen cyanide, particulate matter and other organic compounds by thermal decomposition in air.**Hazardous polymerization:**

Will not occur.

11. Toxicological Information

See Section 3 Hazards Identification information.

Formaldehyde 50-00-0

LC50: rat=203 mg/m³ (RTECS)

LD50: orl-rat=0.8 g/kg (Merck); skn-rbt=0.27 g/kg (Sax)

Kaolin 1332-58-7

LC50: Not available

LD50: Not available

Ammonium Sulfate 7783-20-2

LC50: Not available

LD50: Not available

DESCRIPTION: Perkins MS-406

PAGE 6 OF 8

11. Toxicological Information

Wood Flour

LC50: Not available

LD50: Not available

12. Ecological Information

No data for ecotoxicity has been found. Effects are expected to be minimal.

The material is a soil mobile liquid initially which will solidify on aging. Biodegradation is expected to be very slow; bioaccumulation negligible.

13. Disposal Considerations

Dispose of according to local, state/provincial, and federal requirements.

14. Transport Information

14.1 U.S. Department of Transportation (DOT)

The data provided in this section is for information only and may not be specific to your package size. You will need to apply the appropriate regulations to properly classify your shipment for transportation.

Non-Regulated

14.2 Canadian Transportation of Dangerous Goods (TDG)

Finished Goods - Non-regulated

Powdered Adhesive or Catalyst

15. Regulatory Information (Selected Regulations)

15.1 U.S. Federal Regulations

OSHA Hazard Communication Standard 29CFR1910.1200

This material presents possible health hazards as determined when reviewed according to the requirements of the Occupational Safety and Health Administration 29 CFR Part 1910.1200 "Hazard Communication" Standard.

DESCRIPTION: Perkins MS-406

PAGE 7 OF 8

SARA Title III: Section 311/312Delayed health hazard

SARA Title III Section 313 and 40 CFR Part 372

This product contains the following toxic chemical(s) subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986, and Subpart C-Supplier Notification Requirement of 40 CFR Part 372.

Formaldehyde	50-00-0	0.53%
Zinc Compounds	N982	2.50%

TSCA Section 8(b) Inventory

All reportable chemical substances are listed on the TSCA Inventory. We rely on certifications of compliance from our suppliers for chemical substances not manufactured by us.

15.2 Canadian Regulations

Workplace Hazardous Materials Information System (WHMIS)

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation (CPR) and the MSDS contains all the information required by the CPR.

CLASS D, DIV 2A, 2B

Canadian Environmental Protection Act (CEPA)

All reportable chemical substances are listed on the Domestic Substances List (DSL) or otherwise comply with CEPA new substance notification requirements.

National Pollutant Release Inventory (NPRI)

This product contains the following chemical(s) subject to the reporting requirements of the Canadian Environmental Protection Act (CEPA) subsection 16(1), National Pollutant Release Inventory.

Zinc (and Its Compounds)	7440-66-6	2.50%
--------------------------	-----------	-------

16. Other Information

DESCRIPTION: Perkins MS-406PAGE 8 OF 8

User's Responsibility

The OSHA Hazard Communication Standard 29CFR 1910.1200 and the Workplace Hazardous Materials Information System (WHMIS) require that the information contained on these sheets be made available to your workers. Educate and train your workers regarding OSHA and WHMIS precautions. Instruct your workers to handle this product properly. Consult with appropriate experts to guard against hazards associated with use of this product and its ingredients.

Disclaimer

SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE, except that the product shall conform to contracted specifications, and that the product does not infringe any valid United States or Canadian patent. No claim of any kind shall be greater in amount than the purchase price of the quantity of product in respect of which damages are claimed. In no event shall Seller be liable for incidental or consequential damages, whether Buyer's claim is based on contract, breach of warranty, negligence or otherwise.

CUR ISSUE 10-SEP-01
PREVIOUS ISSUE: 04-JUN-01

PRINT DATE: January 22, 2002 04:06 PM

040 11-M406P-. 300691

Delivery 0080746953

THIS IS THE LAST PAGE