

Material Safety Data Sheet

Hydroxypropyl Methyl Cellulose(HPMC)

1. PRODUCT IDENTIFICATION

PRODUCT NAME: HYDROXYPROPYL METHYL CELLULOSE(HPMC)
CHEMICAL DESCRIPTION : cellulose, 2-hydroxypropyl methyl ether
CAS NUMBER : 9004-65-3

2. COMPOSITION / INFORMATION ON INGREDIENTS

This product is considered hazardous according to the OSHA Hazard Communication Standard 29CFR1910.1200 due to flammable dust potential.

If this product is used in a manner that could generate particulates (dust), refer to MSDS Section 7, Handling and Storage, and Section 8, Recommended Exposure Limits and Personal Protective Equipment.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW Static charges generated by emptying package in or near flammable
WARNING! vapors may cause flash fire.
 May form flammable dust-air mixtures.
 May cause eye irritation by mechanical abrasion.
 May cause skin irritation by mechanical abrasion.
 Inhalation of dust may cause respiratory tract irritation.
 Surfaces subject to spills may become slippery.

Refer to Section 5 for Hazardous Combustion Products, and Section 10 for Hazardous Decomposition/Hazardous Polymerization Products.

4. FIRST AID MEASURES

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SKIN : Wash with soap and water. Get medical attention if irritation develops or persists.

EYE : Remove contact lenses. Hold eyelids apart. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes.
 Get medical attention if irritation persists.

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INHALATION Remove to fresh air. Get medical attention if nasal, throat or lung irritation develops.

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INGESTION : No adverse health effects are expected from accidental ingestion of small amounts of this product. For ingestion of large amounts: If conscious, drink one to two glasses of water (8-16 oz.). Do not induce vomiting. Get immediate medical attention. Never give anything by mouth to an unconscious person.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA : Water spray, dry chemical, foam, carbon dioxide or clean extinguishing agents may be used on fires involving this product.

FIRE FIGHTING PROCEDURES : Wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH approved (or equivalent) and full protective gear when fighting fires involving this product.

CONDITIONS TO AVOID : None known.

HAZARDOUS COMBUSTION PRODUCTS : Combustion products include: carbon monoxide , carbon dioxide and smoke

6. ACCIDENTAL RELEASE MEASURES

If product is not contaminated, scoop into clean containers for use. If product is contaminated, scoop into containers, and dispose appropriately. Avoid wetting spills, as surfaces can become very slippery. Apply absorbent to wet spills and sweep up for disposal. In case of accidental spill or release, refer to Section 8, Personal Protective Equipment and General Hygiene Practices.

7. HANDLING & STORAGE

GENERAL MEASURES : Ground all equipment.
Blanket vessel with inert gas when emptying bags where flammable vapors may be present.
Ground operator and pour material slowly into conductive, grounded chute.
For large bags (1000 lbs or greater) a ground cable MUST be attached to the bag ground connection.
Store in a cool, dry, well-ventilated area at approximately 68° F (20° C).
Keep container closed when not in use.

MATERIALS OR CONDITIONS TO AVOID : Avoid conditions that generate dust; product may form flammable dust-air mixtures. Avoid emptying package in or near flammable vapors; static charges may cause flash fire.
Keep away from heat, flame, sparks and other ignition sources.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

WORK PRACTICES & ENGINEERING CONTROLS : Eyewash fountains and safety showers should be easily accessible.
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Discharge from the ventilation system should comply with applicable air pollution control regulations.
Keep floors clean and dry. Clean up spills immediately.

GENERAL HYGIENIC PRACTICES : Avoid contact with eyes, skin, and clothing.
Avoid breathing dust.
Avoid contamination of food, beverages, or smoking materials.
Wash thoroughly after handling, and before eating, drinking or smoking.
Remove contaminated clothing promptly and clean thoroughly before reuse

RECOMMENDED EXPOSURE LIMITS : PARTICULATES (dust): If used under conditions that generate particulates (dust), the ACGIH TLV-TWA of 3 mg/m³ respirable fraction (10 mg/m³ total) should be observed.

PERSONAL PROTECTIVE EQUIPMENT : Safety glasses.
Impervious gloves.
Appropriate protective clothing.
Appropriate respiratory protection is required when exposure to airborne contaminants may exceed acceptable limits. Respirators should be selected and used in accordance with OSHA, Subpart I (29 CFR 1910.134) and manufacturers recommendations.

PROTECTIVE MEASURES DURING REPAIR AND MAINTENANCE : Eliminate ignition sources and prevent build-up of static electrical charges.
Completely isolate and thoroughly clean all equipment, piping, or vessels before beginning maintenance or repairs.
Keep area clean. Product will burn.

9. PHYSICAL & CHEMICAL PROPERTIES

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PHYSICAL STATE:	powder
COLOR:	white to off-white
ODOR:	odorless
Specific Gravity :	0.3 - 0.35
Percent Volatile :	negligible at 20 C
Solubility In Water :	limited by viscosity
pH Value :	5 - 7 (1% solution)

10. STABILITY & REACTIVITY

HAZARDOUS DECOMPOSITION PRODUCTS : None known.

HAZARDOUS POLYMERIZATION : Not anticipated under normal or recommended handling and storage conditions.

GENERAL STABILITY CONSIDERATIONS : Stable under recommended handling and storage conditions.

INCOMPATIBLE MATERIALS : Incompatible with: acids , oxidizing agents , alkalies , strong sunlight or ultraviolet light and free-radicals

11. TOXICOLOGICAL INFORMATION

CARCINOGENICITY INFORMATION : Not listed as a carcinogen by NTP. Not regulated as a carcinogen by OSHA. Not evaluated by IARC.

REPORTED HUMAN EFFECTS : No human toxicity studies have been carried out with this product. Due to the physical nature of this material, may cause eye, skin and respiratory irritation.

REPORTED ANIMAL EFFECTS : Single oral dose of 4 g/kg caused no toxicity to rats. Not an eye or skin irritant; not a skin sensitizer. Dietary administration of concentrations as high as 10% for 30 and 90 days caused no adverse effects in rats or rabbits. Higher dietary concentrations (> 20%) caused diarrhea, weight loss or growth retardation, decreased food consumption and deaths of rats. No adverse effects were seen in dogs fed 5% and 6% in diets for 90 days.

12 ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION : No ecological studies have been carried out on this product.

BIODEGRADABILITY : This product is biodegradable.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL : Landfilling in a permitted solid or hazardous waste facility is recommended. Handling, transportation, and disposal of material should be conducted in a manner to prevent a nuisance dust hazard. Fully containerize the material before handling, and protect from exposure to the outdoors. Ensure there are no restrictions on disposing of bulk or semi-bulk quantities of waste material. Disposal should be in accordance with all Federal, State and local regulations.

14. TRANSPORT INFORMATION

This product is not subject to DOT, ICAO, IMDG or ADR regulations.

15. REGULATORY INFORMATION

CHEMICAL INVENTORIES	U.S. TSCA: The components of this product are included on the TSCA Inventory. Canadian CEPA : Included on DSL Inventory. Korean KECL : Included on KECL Inventory.
SARA TITLE III - SECTIONS 302/304	This product is not an Extremely Hazardous Substance subject to reporting under 40CFR355.
SARA TITLE III - SECTION 311 AND 312	NHH: Not a health hazard HC-3: Fire hazard
SARA TITLE III - SECTION 313	This product does not contain any chemicals subject to reporting under Section 313 of Title III of the Superfund Amendments and Reauthorization Act and 40CFR372.
CERCLA	This product does not contain any chemicals subject to reporting as a CERCLA Hazardous Substance under 40CFR302.4.

RCRA

This product is not a hazardous waste as listed in 40CFR261.33. It does not exhibit any of the hazardous characteristics listed in 40CFR261, Subpart C.

16. OTHER INFORMATION

HMIS RATINGS:	Health	1	Slight Hazard
	Fire	1	Slight Hazard
	Reactivity	0	Minimal Hazard

LIST OF ACGIH: American Conferences of Governmental Industrial Hygienists
 ACRONYMS : AIHA WEEL: American Industrial Hygienists Association – Workplace Environmental Exposure Level
 CASRN: Chemical Abstracts Service Registry Number
 CERCLA: Comprehensive Emergency Response, Compensation and Liability Act
 HMIS: Hazardous Materials Identification System
 IARC: International Agency for Research on Cancer
 NTP: National Toxicology Program
 OSHA: Occupational Safety and Health Administration
 PEL: OSHA Permissible Exposure Limit
 RCRA: Resource Conservation and Recovery Act
 RQ: Reportable Quantity
 SARA: Superfund Amendment Reauthorization Act
 STEL: Short-Term Exposure Limit
 TLV: Threshold Limit Values (registered trademark of ACGIH)
 TPQ: Threshold Planning Quantity
 TSCA: Toxic Substance Control Act
 TWA: Time Weighted Average

DISCLAIMER :

The information and recommendations contained in this Material Safety Data Sheet have been compiled from sources believed to be reliable and to represent the most reasonable current opinion on the subject when the MSDS was prepared. No warranty, guaranty or representation is made as to the correctness or sufficiency of the information. The user of this product must decide what safety measures are necessary to safely use this product, either alone or in combination with other products.