

# MATERIAL SAFETY DATA SHEET

## Hydroxypropyl MethylCellulose

Section I. Chemical Product and Company Identification	
<b>Product Name:</b> Cellulose Ether (HPMC) <b>CAS No:</b> 9004-65-3 <b>Synonym :</b> Hydroxypropyl MethylCellulose, HPMC, MHPC, Demacol ; Methocel K4M; Goniosol; Propylene Glycol Ether; Hypromellose; Ultra Tears <b>Chemical Name:</b> Hydroxypropyl MethylCellulose <b>Chemical Formula:</b>	<b>Contact Information:</b> XiLan Chemical Co. Ltd., 38, Zheda Road, Hangzhou, Zhejiang, China International Sales: +8613646811141 Order Online: <a href="http://XilanChem.com">XilanChem.com</a> 24HR Emergency Telephone : +1-800-424-9300 For non-emergency assistance: +8613646811141

II. HAZARDS IDENTIFICATION
<b>Emergency Overview</b> Spilled powder becomes slippery when wet. Major Health Hazards: No significant target effects reported. Physical Hazards: Dust/air mixtures may ignite or explode  <b>Potential Health Effects</b> <b>Eye Contact</b> Short Term Effects: Mechanical irritation Long Term Effects: No information is available <b>Skin Contact</b> Short Term Effects: No information available. Long Term Effects: No information available. <b>Ingestion</b> Short Term Effects: No information on significant adverse effects. Long Term Effects: Diarrhea. <b>Inhalation</b> Short Term Effects: Mechanical Irritation, chest pain Long Term Effects: No information is available.

III. FIRST AID
<b>EYES:</b> Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids until no evidence of chemical remains. Get medical attention immediately.

<b>SKIN:</b>	Remove contaminated clothing, jewelry, and shoes immediately. Wash with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15 - 20 minutes). Get medical attention, if needed.
<b>INGESTION:</b>	If vomiting occurs, keep head lower than hips to help prevent asphyxiation. Get medical attention, if needed.
<b>INHALATION:</b>	Remove from exposure immediately. Use a bag valve mask or similar device to perform artificial respiration (rescue breathing) if necessary. Get medical attention.

#### IV. FIRE FIGHTING MEASURES

<b>Fire and Explosion Hazard:</b>	Slight fire hazard when exposed to heat or flame. Dust/air mixtures may ignite or explode.
<b>Extinguishing:</b>	media include regular dry chemical, carbon dioxide, water, and regular foam. For larger fires, use regular foam or flood with fine water spray
<b>Firefighting:</b>	Move container from fire area if it can be done without risk. Do not scatter spilled material with high-pressure water streams. Dike for later disposal. Use extinguishing agents appropriate for surrounding fire. Avoid inhalation of material or combustion byproducts. Stay upwind and keep out of low areas.
<b>Flash Point:</b>	190°C / 374°F

#### IV. ACCIDENTAL RELEASE MEASURES

Collect spilled material in appropriate container for disposal. Keep out of water supplies and sewers. Keep unnecessary people away, isolate hazard area and deny entry.

#### V. HANDLING AND STORAGE

Store and handle in accordance with all current regulations and standards. Keep separated from incompatible substances. Store in tightly closed container. Store in a cool, dry place. Ventilation required. Use only with adequate exhaust ventilation. Follow an organized housekeeping plan. Keep floors and equipment clean.

#### VI. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure limits:** No occupational exposure limits established.

<b>Ventilation:</b>	Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.
<b>Eye Protection:</b>	Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.
<b>Clothing:</b>	Wear appropriate chemical resistant clothing.
<b>Gloves:</b>	Wear appropriate chemical resistant gloves.
<b>Respirator:</b>	Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.
	Any dust, mist and vapor respirator.
	Any air-purifying respirator with a high-efficiency particulate filter.
	Any powered air-purifying respirator with a dust, mist and fume filter.
	Any powered air-purifying respirator with a high-efficiency particulate filter.

#### VII. PHYSICAL AND CHEMICAL PROPERTIES.

<b>Physical state:</b>	Solid
<b>Color:</b>	White to off-white
<b>Odor:</b>	Odorless
<b>Boiling Point:</b>	Not applicable
<b>Melting Point:</b>	Not available
<b>Vapor pressure:</b>	Not applicable
<b>Specific gravity:</b>	0.4500 @ 20°C/4°C
<b>Water solubility:</b>	1 g/ml @ 20°C. Soluble in cold, insoluble in hot
<b>pH:</b>	Not applicable
<b>Odor threshold:</b>	Not available
<b>Evaporation rate:</b>	Not applicable
<b>Solvent Solubility:</b>	Soluble in most polar organic solvents; insoluble in alcohol, chloroform and ether.

#### VIII. STABILITY AND REACTIVITY

<b>Reactivity:</b>	Stable at normal temperatures and pressures. Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.
<b>Incompatibilities:</b>	Oxidizing Materials

Oxidizers (Strong): Fire and explosion hazard.

Hazardous Decomposition: Thermal decomposition products may include toxic oxides of carbon.

Polymerization: Will not polymerize.

## IX. TOXICOLOGY INFORMATION

### **Toxicity data:**

**Acute exposure:** Was evaluated for ocular irritancy. 0.1 mg was instilled in eye of rabbit resulting in slight reversible eye irritation.

Was applied full strength to rabbit skin. 10 applications were made in 14 days and 3 applications were made on abraded skin. Solid HPMC was nonirritating, and not absorbed through the skin.

1.1% solution of HPMC was assessed for skin irritation in rabbits for a 24 hr. on both intact and abraded skin. Draize rating = 0.6 of possible 8.

### **LD50Data:**

LD50 oral in rats > 5g/kg

LD50 i.p. in rats = 5200 mg/kg

LD50 i.p.-mouse = 5gm/kg

TDL0 continuous oral – rat = 2250 gm/kg/30 day(s)

### **Repeated Exposure:**

HPMC was evaluated in a 90-day feeding study in rats and beagle dogs. Dogs were fed diet of 2, and 6% HPMC; rats were fed 0, 1, 3 and 10% HPMC. No evidence of toxicity was observed in rats or dogs based on observations of mortality, feed consumption, urinalysis, hematology and clinical chemistry and gross and microscopic evaluations. This study also looked at dogs and rats fed low viscosity HPMC in the diet at concentrations of 0, 1 and 5% for 90 days. No evidence of toxicity was observed.

In another study growth was slowed in rats fed a diet containing 10 or 20% HPMC for 90 days.

Similar results were observed when groups of 20 rats were fed a diet of 2, 10 and 25% for 30 days. Weight loss, early deaths and severe diarrhea was observed only at the 25% level.

In two dogs fed a diet containing 25 or 50 g HPMC daily for 30 days only the dog fed 50g experienced weight loss, diarrhea and anemia. Rabbits (6 per group) fed a diet of HPMC for 30 days at a concentration of 0, 2, 10, and 25% had no toxic effect. This material has very low toxicity by the oral route.

**Mutagenicity:**

HPMC has not been tested in any standard mutagenicity assays. However, methyl cellulose, a similar cellulose derivative, was tested in the Ames assay, host mediated assays (in vivo and in vitro), cytogenetic assays (in vivo and in vitro) and a dominant lethal test. No mutagenic activity was demonstrated.

**Chronic Toxicity/Carcinogenity:**

Rats fed a diet containing a 20 or 25% HPMC for one year showed no significant toxic effects other than a decreased growth rate. In a two-year study rats were fed 1,5, and 20%, only the high dose rats showed reduced growth rate. No significant microscopic effects or tumors were observed. Dogs fed up to 3g/day of HPMC showed no toxic effects.

**Reproductive Effects:**

HPMC has not been evaluated in any standard reproduction test. However, hydroxypropyl cellulose a similar cellulose derivative has been tested in both rats and rabbits. One study in rats indicated there was an increase in fetal resorptions, gross and skeletal malformations after a 1 and 4% HPMC I.p. injection. In another study HPMC was administered to rats teratogenic observed. At the highest dose this study was 250 times the anticipated human exposure. A review of 5 cellulose derivatives reported that no significant teratogenic or reproductive effects have been observed.

**Other Effects and Information:**

HPMC was evaluated for sensitization using the Magnusson Klignam guinea pig sensitization test and the Macquire method. In both assays HPMC did not produce any responses indicative of sensitization. Material is readily digested. In rats, given a single 500 mg/kg gauze dose, or 5 consecutive daily doses. Greater than 99% was recovered in the feces after a single dose and >97% after repeated administration.

A clinical study of a facial cleanser containing 1.1% HPMC was evaluated in 25 women for 14 days. Few subjects experienced irritation with this product and it was not found to be a skin irritant or a sensitizer.

**Health Effects**

*Inhalation:*

Acute Exposure – Dusts may cause mechanical irritation of the nose and throat and cause a coughing or chest discomfort.

Chronic exposure - No data available.

*Skin:*

<i>Eye:</i>	Acute Exposure – No data available
	Chronic Exposure- No data available
<i>Ingestion:</i>	Acute Exposure – Dusts may cause mechanical irritation
	Chronic Exposure- No data available
	Acute Exposure – Has been reported not to be absorbed from the gastrointestinal tract, however, a mild laxative effect has been reported. Large quantities may cause intestinal obstruction or stomach concretions.
	Chronic Exposure – Essentially all hydroxypropyl methylcellulose fed to human subjects was eliminated within 96 hours following single doses of 3.0-8.9 gm at least 1 week apart. Animals fed with doses containing 3% or less experienced no adverse effects. Higher levels produced malnutrition due to excessive bulk, but caused no organic damage. Diarrhea and depression of red blood cells

was reported in one dog.

#### X. ECOLOGICAL INFORMATION

Not available

#### XI. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations

#### XII. TRANSPORTATION INFORMATION

U.S. Department of Transportation: This product is not regulated by D.O.T. when shipped domestically by land.

LAND TRANSPORT ADR/RID: No classification assigned.

AIR TRANSPORT IATA/ICAO: No classification assigned.

MARITIME TRANSPORT IMDG: No classification assigned

#### XIII. REGULATORY INFORMATION

U.S. REGULATIONS:

TSCA INVENTORY STATUS: Y

TSCA 12 (b) Export Notification: Not listed

CERCLA Section 103 (40 CFR302.4): N

SARA Section 302 (40 CFR355-30): N

None of the chemicals in this material have an RQ.

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None of the chemicals in this product have a TPQ.  
SARA Section 304 (40 CFR355-40): N  
SARA Section 313 (40 CFR372.65): N  
Acute: N  
Chronic: N  
Fire: N  
Reactive: N  
Sudden Release: N  
OSHA Process Safety (29 CFR1910.119): N  
STATE REGULATIONS:  
California Propositions 65: N  
EUROPEAN REGULATIONS:  
EC NUMBER: Not assigned.  
GERMAN REGULATIONS:  
WATER HAZARD CLASS (WGK): 1 (Self-Classification by manufacturers and Distributors).

#### XIV: OTHER INFORMATION

Additional Information:

No additional information available

The following label hazard ratings are recommended for containers of Hydroxypropyl Methylcellulose:

NFPA

Fire: 1

Health: 1

Reactivity: 0

Specific Hazard: None

REFERENCES:

MSDS Hydroxypropyl Methylcellulose, OHS11284, CAS 9004-65-3

MDL data bank, revision date December 9, 1997

Section 2: Composition/Information on Ingredients

Section 3: Hazard identification

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