Methocel E4M (Hypermellose 2910 USP)

SAFETY DATA SHEET

Section 1 Identification of the substance/mixture and of the company/undertaking

Product Identifier:
Identification on the label/ Tradename: METHOCEL E4M Hydroxypropyl Methylcellulose USP
Identification of the Product:
Formula: No information available
Chemical Name: methylhydroxypropylcellulose
CAS: 9004-65-3

Relevant identified uses of the substance and uses advised against:
Identified Uses: Pharma active ingredients
Uses Advised Against: No information available

Name, address, and telephone number of the manufacturer:
Refer to Supplier

Name, address, and telephone number of the supplier:
Encore Scientific
801 West New Orleans Street Broken Arrow, OK, USA 74011
Supplier’s Telephone #
800-454-2304 Monday to Friday 8:00 am to 6:00 pm (Central time)
24 Hr. Emergency Tel #
INFOTRAC: (800) 535-5053 (Within Continental US and Canada); (352)323-3500 (International)

Section 2 Hazards Identification

Classification of Substance: This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200. Combustible dust.

Signal Word: Warning
Hazard Statement (s): N/A
Pictogram (s): N/A

Precautionary Statements:
P210 Keep away from heat/sparks/open flames/hot surfaces – No smoking.
P240 Ground/bond container and receiving equipment.
P241 Use explosion=proof electrical/ventilating/light/equipment.
P243 Take precautionary measures against static discharge.

Hazards Not Otherwise Classified: May form explosive dust – air mixture. Slipping hazard.

Ingredient(s) With Unknown Toxicity: No data available.
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Section 3 Composition/information on ingredients

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydroxypropyl methyl cellulose</td>
<td>9004-65-3</td>
<td>85-90%</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>7647-14-5</td>
<td>0.5-5.0%</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>1.0-10.0%</td>
</tr>
</tbody>
</table>

Section 4 First aid measures

Description of first aid measures

Eye Contact: Flush eyes with plenty of water; remove contact lenses after the first 1-2 minutes then continue flushing for several minutes. Only mechanical effects expected. If effects occur, consult a physician, preferably an ophthalmologist.

Inhalation: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.

Ingestion: No emergency medical treatment necessary.

After skin contact: Wash off with plenty of water.

General Information: If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

Section 5 Fire-Fighting measures

EXTINGUISHING MEDIA: Water. Foam. Dry chemical or CO2. Use fire-extinguishing media appropriate for surrounding materials.

UNSUITABLE EXTINGUISHING MEDIA: None known.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.
Section 5 Fire-Fighting measures (Continued)

Unusual Fire and Explosion Hazards: Do not permit dust to accumulate. When suspended in air dust can pose an explosion hazard. Minimize ignition sources. If dust layers are exposed to elevated temperatures, spontaneous combustion may occur. Pneumatic conveying and other mechanical handling operations can generate combustible dust. To reduce the potential for dust explosions, electrically bond and ground equipment and do not permit dust to accumulate. Dust can be ignited by static discharge.

Advice for firefighters
Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. Cool surroundings with water to localize fire zone. Hand held dry chemical or carbon dioxide extinguishers may be used for small fires. Dust explosion hazard may result from forceful application of fire extinguishing agents.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

Section 6 Accidental release measures

Personal precautions, protective equipment, and emergency procedures: Keep unnecessary personnel away. Wear appropriate personal protective equipment. Avoid inhalation of dust from the spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Sweep up. Use care to minimize generation of airborne dust. Do not use water for cleanup. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Section 7 Handling and storage

Precautions for safe handling: Keep away from heat, sparks and flame. No smoking, open flames or sources of ignition in handling and storage area. Electrically ground and bond all equipment. Good housekeeping and controlling of dusts are necessary for safe handling of product. Pneumatic conveying and other mechanical handling operations can generate combustible dust. To reduce the potential for dust explosions, electrically bond and ground equipment and do not permit dust to accumulate. Dust can be ignited by static discharge. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage, including any incompatibilities: Store in a cool, dry place. See Section 10 for more specific information.
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Section 8 Exposure Controls/Personal Protection

Occupational exposure limits

Control parameters
Exposure limits are listed below, if they exist.

<table>
<thead>
<tr>
<th>Component</th>
<th>Regulation</th>
<th>Type of listing</th>
<th>Value/Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydroxypropyl methyl cellulose</td>
<td>Dow IHG</td>
<td>TWA Total dust</td>
<td>10 mg/m³</td>
</tr>
</tbody>
</table>

Biological limit values: No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls: Airborne exposure should be controlled primarily by engineering controls such as general dilution ventilation, local exhaust ventilation, or process enclosure. Local exhaust ventilation is generally preferred to general exhaust because it can control the contaminant at its source, preventing dispersion into the work area. An industrial hygiene survey involving air monitoring may be used to determine the effectiveness of engineering controls.

Eye/face protection: Safety glasses with sideshields are recommended. Face shields or goggles may be required if splash potential exists or if corrosive materials are present. Approved eye protection (e.g., bearing the ANSI Z87 or CSA stamp) is preferred. Maintain eyewash facilities in the work area.

Skin Protection

Hand protection: Chemically compatible gloves. For handling solutions, ensure that the glove material is protective against the solvent being used. Use handling practices that minimize direct hand contact. Employees who are sensitive to natural rubber (latex) should use nitrile or other synthetic nonlatex gloves. Use of powdered latex gloves should be avoided due to the risk of latex allergy.

Other protection: No precautions other than clean body-covering clothing should be needed.

Thermal hazards: Wear appropriate thermal protective clothing, when necessary.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions, no respiratory protection should be needed; however, in dusty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: Particulate filter.

Section 9 Physical and chemical properties

Physical State: Solid
Appearance: White to off-white
Odor: Odorless
Odor Threshold: No test data available
pH: Not applicable
<table>
<thead>
<tr>
<th><strong>Section 9 Physical and chemical properties (Continued)</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>Melting Point/Range</strong></td>
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<tr>
<td><strong>Boiling Point/Range</strong></td>
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<tr>
<td><strong>Flash Point</strong></td>
</tr>
<tr>
<td><strong>Evaporation Rate</strong></td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
</tr>
<tr>
<td><strong>Flammability or explosive limits</strong></td>
</tr>
<tr>
<td><strong>Upper</strong></td>
</tr>
<tr>
<td><strong>Lower</strong></td>
</tr>
<tr>
<td><strong>Vapor Pressure</strong></td>
</tr>
<tr>
<td><strong>Vapor Density</strong></td>
</tr>
<tr>
<td><strong>Vapor density</strong></td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
</tr>
<tr>
<td><strong>Solubility</strong></td>
</tr>
<tr>
<td><strong>Partition coefficient (n-octanol/water):</strong></td>
</tr>
<tr>
<td><strong>Viscosity:</strong></td>
</tr>
<tr>
<td><strong>Dynamic:</strong></td>
</tr>
<tr>
<td><strong>Kinematic:</strong></td>
</tr>
<tr>
<td><strong>Other information</strong></td>
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</table>

<table>
<thead>
<tr>
<th><strong>Section 10 Stability and reactivity</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>Reactivity:</strong></td>
</tr>
<tr>
<td><strong>Chemical stability:</strong></td>
</tr>
<tr>
<td><strong>Possibility of hazardous reactions:</strong></td>
</tr>
<tr>
<td><strong>Conditions to avoid:</strong></td>
</tr>
<tr>
<td><strong>Incompatible materials:</strong></td>
</tr>
<tr>
<td><strong>Hazardous decomposition products:</strong></td>
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<table>
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<tr>
<th><strong>Section 11 Toxicological information</strong></th>
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<tbody>
<tr>
<td><strong>Acute toxicity</strong></td>
</tr>
<tr>
<td><strong>Acute oral toxicity:</strong></td>
</tr>
<tr>
<td><strong>For similar material(s): LD50, Rat, &gt; 10,000 mg/kg</strong></td>
</tr>
<tr>
<td><strong>Acute dermal toxicity:</strong></td>
</tr>
<tr>
<td><strong>Acute inhalation toxicity:</strong></td>
</tr>
<tr>
<td><strong>Skin corrosion/irritation:</strong></td>
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</tbody>
</table>
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Section 11 Toxicological information (Continued)

Serious eye damage/eye irritation: Solid or dust may cause irritation or corneal injury due to mechanical action.

Sensitization: A similar material did not cause allergic skin reactions when tested in humans.

For respiratory sensitization: No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure): Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure): Repeated ingestion of similar cellulosics by humans has not resulted in known significant adverse effects.

Carcinogenicity: Similar cellulosics did not cause cancer in long-term animal studies.

Teratogenicity: Similar cellulosics did not cause birth defects or other toxic effects to the fetus in laboratory animal studies.

Reproductive toxicity: In animal studies, a similar cellulotic has been shown not to interfere with reproduction.

Mutagenicity: Similar cellulosics were negative in both in vitro and animal genetic toxicity studies.

Aspiration Hazard: Based on physical properties, not likely to be an aspiration hazard.

Section 12 Ecological information

Toxicity

Acute toxicity to fish: Material is practically non-toxic to aquatic organisms on an acute basis; (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Persistence and degradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

Biological oxygen demand (BOD)

<table>
<thead>
<tr>
<th>Incubation Time</th>
<th>BOD</th>
</tr>
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<tbody>
<tr>
<td>5 d</td>
<td>0 %</td>
</tr>
<tr>
<td>10 d</td>
<td>0 %</td>
</tr>
<tr>
<td>20 d</td>
<td>0 %</td>
</tr>
</tbody>
</table>

Bioaccumulative potential: Bioaccumulation: No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

Mobility in soil: Not available.
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Section 13 Disposal considerations

Disposal instructions: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer. Incinerator or other thermal destruction device. Landfill.

Section 14 Transport information

DOT: Not regulated as dangerous goods.
IATA: Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

General information: It is the shipper’s responsibility to determine the correct transport classification at the time of shipment.

Section 15 Regulation information

Classification for SEA transport (IMO-IMDG):
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code: Not regulated for transport Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):
Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

OSHA Hazard Communication Standard: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Section 15 Regulation information (Continued)

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103: This material does not contain any components with a CERCLA RQ.

Pennsylvania Worker and Community Right-To-Know Act: To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986): This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

United States TSCA Inventory (TSCA): All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

Section 16 Other information

Date of Preparation/Last Revision: 07/03/2017/

Further information: This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

Notice to reader: Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.