The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Identification of the substance/preparation and of the company/undertaking

Product Name
ETHOCEL* Standard 45 Premium Ethylcellulose

Use of the substance/preparation

COMPANY IDENTIFICATION
The Dow Chemical Company
2030 Willard H. Dow Center
Midland, MI 48674
USA

Customer Information Number: 800-258-2436

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: 989-636-4400
Local Emergency Contact: 912 22 67978600

2. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>Amount</th>
<th>Classification:</th>
<th>CAS #</th>
<th>EC #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cellulose, ethyl ether</td>
<td>98.0 %</td>
<td>Not classified.</td>
<td>9004-57-3</td>
<td>Polymer</td>
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<tr>
<td>Water</td>
<td>2.0 %</td>
<td>Not classified.</td>
<td>7732-18-5</td>
<td>231-791-2</td>
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</table>

3. Hazards Identification

This product is not classified as dangerous according to EC criteria.

4. 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.

Skin Contact: Wash skin with plenty of water.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Ingestion: No emergency medical treatment necessary.

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

5. Fire Fighting Measures


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.

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.

Hazardous Combustion Products: 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.

6. Accidental Release Measures

Steps to be Taken if Material is Released or Spilled: 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.

Personal Precautions: Material becomes slippery when wet. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

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

7. Handling and Storage

Handling

General Handling: No smoking, open flames or sources of ignition in handling and storage area. Good housekeeping and controlling of dusts are necessary for safe handling of product. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Keep away from heat, sparks and flame. Keep container closed. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Storage

Store in a dry place.
8. Exposure Controls / Personal Protection

Exposure Limits

<table>
<thead>
<tr>
<th>Component</th>
<th>List</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cellulose, ethyl ether</td>
<td>Dow IHG</td>
<td>TWA</td>
<td>10 mg/m³</td>
</tr>
</tbody>
</table>

**Personal Protection**

**Eye/Face Protection:** Use safety glasses. Safety glasses should be consistent with EN 166 or equivalent. If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles. Chemical goggles should be consistent with EN 166 or equivalent.

**Skin Protection:** No precautions other than clean body-covering clothing should be needed.

**Hand Protection:** Chemical protective gloves should not be needed when handling this material. Consistent with general hygienic practice for any material, skin contact should be minimized.

**Respiratory Protection:** Atmospheric levels should be maintained below the exposure guideline. In dusty or misty atmospheres, use an approved particulate respirator. Use the following CE approved air-purifying respirator: Particulate filter, type P2.

**Ingestion:** Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

**Engineering Controls**

**Ventilation:** Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

9. Physical and Chemical Properties

**Physical State**

- Powder

**Color**

- White to tan

**Odor**

- Odorless to mild

**Flash Point - Closed Cup**

- No test data available

**Flammable Limits In Air**

- Lower: No test data available
- Upper: No test data available

**Autoignition Temperature**

- No test data available

**Vapor Pressure**

- Not applicable

**Boiling Point (760 mmHg)**

- Not applicable.

**Vapor Density (air = 1)**

- Not applicable

**Specific Gravity (H2O = 1)**

- No test data available

**Freezing Point**

- Not applicable

**Melting Point**

- No test data available

**Solubility in Water (by weight)**

- Insoluble in water

**pH**

- Not applicable

**Kinematic Viscosity**

- Not applicable

10. Stability and Reactivity

**Stability/Instability**

Stable under recommended storage conditions. See Storage, Section 7.

**Conditions to Avoid:** Avoid temperatures above 160°C (320°F). Exposure to elevated temperatures can cause product to decompose. Avoid static discharge. Avoid moisture.

**Incompatible Materials:** Avoid contact with oxidizing materials.
Hazardous Polymerization
Will not occur.

Thermal Decomposition
Decomposition products depend upon temperature, air supply and the presence of other materials.

11. Toxicological Information

Acute Toxicity
Ingestion
Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.
Estimated LD50, Rat > 5,000 mg/kg

Eye Contact
Mechanical injury only.

Skin Contact
Prolonged exposure not likely to cause significant skin irritation.
Skin Absorption
Prolonged skin contact is unlikely to result in absorption of harmful amounts.
Estimated LD50, Rabbit > 5,000 mg/kg

Inhalation
Vapors are unlikely due to physical properties. No adverse effects are anticipated from single exposure to dust.

Repeated Dose Toxicity
Repeated ingestion of similar cellulosics by humans has not resulted in known significant adverse effects.

Chronic Toxicity and Carcinogenicity
For the major component(s): Did not cause cancer in laboratory animals.

12. Ecological Information

CHEMICAL FATE

Movement & Partitioning
No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

Persistence and Degradability
No appreciable biodegradation is expected.

ECOTOXICITY
Not expected to be acutely toxic to aquatic organisms.

13. Disposal Considerations

Any disposal practice must be in compliance with all local and national laws and regulations. Do not dump into any sewers, on the ground, or into any body of water.

14. Transport Information

ROAD & RAIL
NOT REGULATED
15. Regulatory Information

European Inventory of Existing Commercial Chemical Substances (EINECS)
This product is a polymer according to the definition in Directive 92/32/EEC (7th Amendment to Directive 67/548/EEC) and all of its starting materials and intentional additives are listed in the European Inventory of Existing Commercial Chemical Substances (EINECS) or in compliance with European (EU) chemical inventory requirements.

Classification and User Label Information
This product is not classified as dangerous according to EC criteria.

16. Other Information

Product Literature
Additional information on this and other Dow products may be obtained by visiting our web page at www.dow.com.

Revision
Identification Number: 79589 / 1001 / Issue Date 2007/06/06 / Version: 1.0
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

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<tr>
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<td>HAZ_DES</td>
<td>Hazard Designation</td>
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