DOW CHEMICAL COMPANY LIMITED 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.

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

1.1 Product identifiers
Product Name
METHOCEL™ 240 S Hydroxypropyl Methylcellulose

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses

1.3 Details of the supplier of the safety data sheet
COMPANY IDENTIFICATION
DOW CHEMICAL COMPANY LIMITED
DIAMOND HOUSE, LOTUS PARK,
KINGSBURY CRESCENT,
STAINES
England
TW18 3AG
UNITED KINGDOM

Customer Information Number: 0203 139 4000
SDSQuestion@dow.com

1.4 EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: 0031 115 694 982
Local Emergency Contact: 00 31 115 69 4982

Section 2. Hazards Identification

2.1 Classification of the substance or mixture
Classification according to EU Directives 67/548/EEC or 1999/45/EC
This product is not classified as dangerous according to EC criteria.

2.2 Label elements

Labelling according to EC Directives

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

Contains: Glyoxal; ethandial May produce an allergic reaction.

2.3 Other Hazards

No information available.

### Section 3. Composition/information on ingredients

#### 3.2 Mixture

This product is a mixture.

<table>
<thead>
<tr>
<th>CAS-No. / EC-No. / Index</th>
<th>REACH No.</th>
<th>Amount</th>
<th>Component</th>
<th>Classification:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>REGULATION (EC) No 1272/2008</td>
</tr>
<tr>
<td>CAS-No. 9004-65-3</td>
<td>—</td>
<td>&gt; 99.0%</td>
<td>Modified cellulose#</td>
<td>Not classified</td>
</tr>
<tr>
<td>EC-No. Polymer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS-No. 107-22-2</td>
<td>—</td>
<td>&lt; 1.0%</td>
<td>Glyoxal; ethandial</td>
<td>Muta., 2, H341 Acute Tox., 4, H332 Eye Irrit., 2, H319 Skin Irrit., 2, H315 Skin Sens., 1, H317</td>
</tr>
<tr>
<td>EC-No. 203-474-9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Index 605-016-00-7</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS-No. / EC-No. / Index</th>
<th>Amount</th>
<th>Component</th>
<th>Classification:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td>67/548/EEC</td>
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<tr>
<td>CAS-No. 9004-65-3</td>
<td>&gt; 99.0%</td>
<td>Modified cellulose#</td>
<td>Not classified.</td>
</tr>
<tr>
<td>EC-No. Polymer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS-No. 107-22-2</td>
<td>&lt; 1.0%</td>
<td>Glyoxal; ethandial</td>
<td>Muta. 3: R68; Xn: R20; Xi: R36/38; R43</td>
</tr>
<tr>
<td>EC-No. 203-474-9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Index 605-016-00-7</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

# Substance(s) with an Occupational Exposure Limit.
For the full text of the H-Statements mentioned in this Section, see Section 16.
See Section 16 for full text of R-phrases.

### Section 4. First-aid measures

#### 4.1 Description of first aid measures
General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

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

Skin Contact: Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.

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.

Ingestion: No emergency medical treatment necessary.

4.2 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), no additional symptoms and effects are anticipated.

4.3 Indication of immediate medical attention and special treatment needed
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

5.1 Extinguishing Media
Water. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers.

5.2 Special hazards arising from the substance or mixture

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. Nitrogen oxides.

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.

5.3 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

6.1 Personal precautions, protective equipment and emergency procedures: Spilled material may cause a slipping hazard. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

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

6.3 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.

Section 7. Handling and Storage

7.1 Precautions for safe handling

Handling

General 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.

7.2 Conditions for safe storage, including any incompatibilities

Storage

Store in a dry place. See Section 10 for more specific information.

Storage temperature: 5 - 35 °C

7.3 Specific end uses

See the technical data sheet on this product for further information.

Section 8. Exposure Controls / Personal Protection

8.1 Control parameters

Exposure Limits

<table>
<thead>
<tr>
<th>Component</th>
<th>List</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modified cellulose</td>
<td>Dow IHG</td>
<td>TWA Total dust</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>Glyoxal; ethandial</td>
<td>AIHA WEEL</td>
<td>TWA Inhalable fraction and vapor.</td>
<td>0.1 mg/m³ 0.042 ppm D-SEN</td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td>TWA Inhalable fraction and vapor.</td>
<td>0.1 mg/m³ SEN</td>
</tr>
</tbody>
</table>

A "SEN" notation following the exposure guideline refers to the potential to produce sensitization, as confirmed by human or animal data.

A D-SEN notation following the exposure guideline refers to the potential to produce dermal sensitization, as confirmed by human or animal data.

8.2 Exposure controls

Personal Protection

Eye/Face Protection: Use safety glasses (with side shields). Safety glasses (with side shields) 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: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Hand protection: Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials
include: Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). When prolonged or frequently repeated contact may occur, a glove is recommended to prevent contact with the solid material. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

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. 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: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

### Section 9. Physical and Chemical Properties

#### 9.1 Information on basic physical and chemical properties

**Appearance**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Powder</td>
</tr>
<tr>
<td>Color</td>
<td>White to off-white</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No test data available</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Boiling Point (760 mmHg)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash Point - Closed Cup</td>
<td>No test data available</td>
</tr>
<tr>
<td>Evaporation Rate (Butyl Acetate = 1)</td>
<td>Not applicable to solids</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No test data available</td>
</tr>
<tr>
<td>Flammable Limits In Air</td>
<td>Lower: No test data available</td>
</tr>
<tr>
<td></td>
<td>Upper: No test data available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor Density (air = 1)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity (H2O = 1)</td>
<td>No test data available</td>
</tr>
<tr>
<td>Solubility in water (by weight)</td>
<td>Completely soluble in water</td>
</tr>
<tr>
<td>Partition coefficient, n-octanol/water (log Pow)</td>
<td>No data available for this product.</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>No test data available</td>
</tr>
<tr>
<td>Temperature</td>
<td>No test data available</td>
</tr>
<tr>
<td>Kinematic Viscosity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
</tr>
</tbody>
</table>

#### 9.2 Other information
Section 10. Stability and Reactivity

10.1 Reactivity
No dangerous reaction known under conditions of normal use.

10.2 Chemical stability
Stable under recommended storage conditions. See Storage, Section 7.

10.3 Possibility of hazardous reactions
Polymerization will not occur.

10.4 Conditions to Avoid:
- Avoid temperatures above 130°C (266°F). Exposure to elevated temperatures can cause product to decompose.
- Avoid static discharge.

10.5 Incompatible Materials:
- Avoid contact with oxidizing materials.
- Avoid contact with: Strong acids. Strong bases.

10.6 Hazardous decomposition products
Decomposition products depend upon temperature, air supply and the presence of other materials.

Section 11. Toxicological Information

11.1 Information on toxicological effects

Acute Toxicity
Ingestion
Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.
Single dose oral LD50 has not been determined.
For the major component(s): LD50, Rat > 5,000 mg/kg

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

Dermal
Prolonged skin contact is unlikely to result in absorption of harmful amounts.
The dermal LD50 has not been determined.
For the major component(s): LD50, Rabbit > 5,000 mg/kg

Inhalation
No adverse effects are anticipated from single exposure to dust. For respiratory irritation and narcotic effects: No relevant data found.
The LC50 has not been determined.

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

Skin corrosion/irritation
Essentially nonirritating to skin.

Sensitization
Skin
For the minor component(s): Skin contact may cause an allergic skin reaction.

Respiratory
No relevant data found.

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

Chronic Toxicity and Carcinogenicity
Similar cellulosics did not cause cancer in long-term animal studies.

Developmental Toxicity
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 cellulosic has been shown not to interfere with reproduction.

Genetic Toxicology
Similar cellulosics were negative in both in vitro and animal genetic toxicity studies.
Component Toxicology - Ethanedial

| Inhalation | LC50, 4 h, Rat | 2.44 mg/l |

Section 12. Ecological Information

12.1 Toxicity
Not expected to be acutely toxic to aquatic organisms.

12.2 Persistence and Degradability
No appreciable biodegradation is expected.

Biological oxygen demand (BOD):

<table>
<thead>
<tr>
<th>BOD 5</th>
<th>BOD 10</th>
<th>BOD 20</th>
<th>BOD 28</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0 %</td>
<td></td>
</tr>
</tbody>
</table>

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

12.4 Mobility in soil
Mobility in soil: No data available.

12.5 Results of PBT and vPvB assessment
This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

12.6 Other adverse effects
No specific, relevant data available for assessment.

Section 13. Disposal Considerations

13.1 Waste treatment methods
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.

Section 14. Transport Information

ROAD & RAIL
NOT REGULATED

OCEAN
NOT REGULATED

AIR
NOT REGULATED

INLAND WATERWAYS
NOT REGULATED
Section 15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

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.

15.2 Chemical Safety Assessment

Not applicable.

Section 16. Other Information

Hazard statement in the composition section

H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H341 Suspected of causing genetic defects.

Risk-phrases in the Composition section

R20 Harmful by inhalation.
R36/38 Irritating to eyes and skin.
R43 May cause sensitization by skin contact.
R68 Possible risk of irreversible effects.

Product Literature

Additional information on this and other products we offer may be obtained by contacting us. Ask for a product information brochure or data on how to access our website.

Revision

Identification Number: 79537 / A279 / Issue Date 22.04.2013 / Version: 5.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

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