Section 1 - Product and Company Information

Product Name                      HYDROXYETHYL CELLULOSE
Product Number                   308633
Brand                              ALDRICH
Company                            Sigma-Aldrich
Street Address                     3050 Spruce Street
City, State, Zip, Country         SAINT LOUIS MO 63103 US
Technical Phone:                   314 771 5765
Emergency Phone:                   414 273 3850 Ext. 5996
Fax:                               800 325 5052

Section 2 - Composition/Information on Ingredient

Substance Name                    2-HYDROXYETHYL CELLULOSE
CAS #                              9004-62-0
SARA 313                           No

Synonyms:                         AW 15 (Polysaccharide) * BL 15 * Cellosize
                                       4400H16 * Cellosize QP * Cellosize QP3 *
                                       Cellosize QP 1500 * Cellosize QP 4400 * Cellosize
                                       QP 30000 * Cellosize UT 40 * Cellosize WP *
                                       Cellosize WP 300 * Cellosize WP 4400 * Cellosize
                                       WP 300H * Cellosize WP 400H * Cellosize WPO 9H17
                                       * Cellulose hydroxyethylate * Cellulose
                                       hydroxyethyl ether * Fuji hec-BL 20 * Glutofix
                                       600 * HEC * Hec-Al 5000 * Hercules N 100 * Hesp
                                       * Hetastarch * Hydroxyethyl cellulose *
                                       2-Hydroxyethyl cellulose * Hydroxyethyl cellulose
                                       ether * 2-Hydroxyethyl cellulose ether *
                                       Hydroxyethyl ether cellulose * J 164 * Natrosol *
                                       Natrosol 250 * Natrosol 250G * Natrosol 250H *
                                       Natrosol 300H * Natrosol 250HHP * Natrosol 250HHR
                                       * Natrosol 250HR * Natrosol 250H4R * Natrosol
                                       250HX * Natrosol 240JR * Natrosol 150L * Natrosol
                                       180L * Natrosol 250L * Natrosol LR * Natrosol
                                       250M * Natrosol 250MH * OETs * Tylose H 20 *
                                       Tylose H 300 * Tylose H series * Tylose P *
                                       Tylose PS-X * Tylose P-X * Tylose P-Z series *
                                       Unicel QP 300 H * Unicel QP 520

RTECS Number:                    FJ5958000

Section 3 - Hazards Identification

HMIS RATING
HEALTH: 0
FLAMMABILITY: 0
REACTIVITY: 0

NFPA RATING
HEALTH: 0
FLAMMABILITY: 0
Section 4 - First Aid Measures

ORAL EXPOSURE
If swallowed, wash out mouth with water provided person is conscious. Call a physician.

INHALATION EXPOSURE
If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

DERMAL EXPOSURE
In case of contact, immediately wash skin with soap and copious amounts of water.

EYE EXPOSURE
In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

EXPLOSION DATA
Dust Potential: This material, like most materials in powder form, is capable of creating a dust explosion.

FLASH POINT
N/A

AUTOIGNITION TEMP
N/A

FLAMMABILITY
N/A

EXTINGUISHING MEDIA
Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING
Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE(S) OF PERSONAL PRECAUTION(S)
Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of dust.

METHODS FOR CLEANING UP
Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING
User Exposure: Avoid inhalation. Avoid contact with eyes, skin,
and clothing. Avoid prolonged or repeated exposure.

STORAGE
Suitable: Keep tightly closed.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS
Safety shower and eye bath. Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT
Respiratory: Wear dust mask.
Hand: Protective gloves.
Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES
Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>At Temperature or Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
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<tr>
<td>Physical State: Solid</td>
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<td>Color: Faintly beige</td>
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<td>Form: Powder</td>
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<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<td>MP/MP Range</td>
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<td>Solubility</td>
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N/A = not available

Section 10 - Stability and Reactivity

STABILITY
Stable: Stable.
Materials to Avoid: Strong oxidizing agents.
HAZARDOUS DECOMPOSITION PRODUCTS
Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION
Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE
Skin Contact: May cause skin irritation.
Skin Absorption: May be harmful if absorbed through the skin.
Eye Contact: May cause eye irritation.
Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.
Ingestion: May be harmful if swallowed.

SIGNS AND SYMPTOMS OF EXPOSURE
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

TOXICITY DATA

Intravenous
Woman
5100 MG/KG
LDLO
Remarks: Brain and Coverings: Increased intracranial pressure.
Behavioral: Somnolence (general depressed activity).
Vascular: Change in plasma or blood volume.

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Mouse
Dose: 500 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (3-7D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION
Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT
Proper Shipping Name: None
Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA
Non-Hazardous for Air Transport: Non-hazardous for air transport.
Section 15 - Regulatory Information

UNITED STATES REGULATORY INFORMATION
  SARA LISTED: No
  TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION
  WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
  DSL: Yes
  NDSL: No

Section 16 - Other Information

DISCLAIMER
  For R&D use only. Not for drug, household or other uses.

WARRANTY
  The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.
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