

Gel

#01
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MATERIAL SAFETY DATA SHEET

Product Name: CELLOSIZ(TM) HYDROXYETHYL
CELLULOSE QP-100 MH
MSDS#: 741

Effective Date: 08/20/2001

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2. COMPOSITION INFORMATION

Component	CAS #	Amount (%W/W)
Hydroxyethyl cellulose	9004-62-0	>= 85.5 %
Sodium acetate	127-09-3	<= 7.5%
Water	7732-18-5	>= 2 <= 5%
Cellulose	9004-34-6	<= 1.5%
Ethanedial	107-22-2	<= 0.5%

3. HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Appearance White

Physical State Powder

Odor Mild

Hazards of product CAUTION! STATIC IGNITION HAZARD CAN RESULT FROM HANDLING AND USE. DUST DISPERSED IN AIR MAY BE IGNITED AND BURN RAPIDLY. PLASTIC CONTAINER, IF PRESENT, MAY CAUSE STATIC IGNITION HAZARD. SLIPPERY WHEN WET.

3.2 POTENTIAL HEALTH EFFECTS

Effects of Single Acute Overexposure

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Inhalation Dust may cause irritation of the respiratory tract, experienced as nasal discomfort and discharge.

Eye Contact Dust may cause discomfort in the eye and slight excess redness of the conjunctiva.

Skin Contact No evidence of harmful effects from available information.

Skin Absorption No evidence of harmful effects from available information.

Swallowing No evidence of harmful effects from available information.

Chronic, Prolonged or Repeated Overexposure

Effects of Repeated Overexposure This product may contribute to nuisance dusts and possibly to respirable dusts. Avoid breathing dusts.

Other Effects of Overexposure None currently known.

Medical Conditions Aggravated by Exposure

Inhalation of material may aggravate asthma and inflammatory or fibrotic pulmonary disease.

3.3 POTENTIAL ENVIRONMENTAL EFFECTS

See Section 12 for Ecological Information.

4. FIRST AID PROCEDURES

4.1 INHALATION

Remove to fresh air.

4.2 EYE CONTACT

Immediately flush eyes with water and continue washing for several minutes. Remove contact lenses, if worn. Obtain medical attention if discomfort persists.

4.3 SKIN CONTACT

Wash skin with soap and water.

4.4 SWALLOWING

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If a large quantity (several ounces) has been swallowed, and if patient is fully conscious, give two glasses of water. Induce vomiting. This should be done only by medical or experienced first-aid personnel. Obtain medical attention.

4.5 NOTES TO PHYSICIAN

Toxicology studies have shown this or similar material to be of very low acute toxicity. There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

Flash Point - Closed Cup: *No test data available.*

Flash Point - Open Cup: *No test data available.*

Autoignition Temperature: 400 °C 752 °F , ASTM

Flammable Limits In Air:

Lower *No test data available.*

Upper *No test data available.*

5.2 EXTINGUISHING MEDIA

Apply water spray (fog), alcohol-type or all-purpose-type foams by manufacturer's recommended techniques for large fires. Use CO2 or dry chemical media for small fires.

5.3 EXTINGUISHING MEDIA TO AVOID

No information currently available.

5.4 SPECIAL FIRE FIGHTING PROCEDURES

Do not direct a solid stream of water or foam into burning molten material; this may cause spattering and spread the fire.

5.5 SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Use self-contained breathing apparatus and protective clothing.

5.6 UNUSUAL FIRE AND EXPLOSION HAZARDS

Avoid dispersion of dust in the air to reduce potential for dust ignition/rapid burning. Dust is easily ignited; avoid ignition sources. In the presence of flammable gases, liquids, or vapors,

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handle in inert nitrogen-blanketed equipment. Refer to National Fire Protection Association Document NFPA 69 for descriptions of explosion prevention systems.

Static ignition hazard can result from handling and use. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Special precautions may be necessary to dissipate static electricity for non-conductive containers. Use proper bonding and grounding during product transfer as described in National Fire Protection Association Document NFPA 77.

For CELLOSIZE HEC products in Flexible Intermediate Bulk Containers or plastic containers with a capacity greater than 226.8 kg (500 lb), a static ignition hazard can result from handling and use. Non-conductive containers cannot be grounded. For transfers between Flexible Intermediate Bulk Containers and another non-conductive container, special precautions may be necessary to dissipate static electricity. For conductive components (containers, personnel, equipment) use proper bonding and grounding during product transfer as described in National Fire Protection Association Document NFPA 77. Refer to National Fire Protection Association Document NFPA 69 for descriptions of explosion prevention systems.

5.7 HAZARDOUS COMBUSTION PRODUCTS

Combustion may produce the following products: Carbon monoxide and/or carbon dioxide. Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant.

6. ACCIDENTAL RELEASE MEASURES

Steps to be Taken if Material is Released or Spilled:

FOR SPILL: Cover with absorbent, sweep up, collect and dispose immediately. Will absorb moisture and become slippery. Observe government regulations.

Personal Precautions: Wear suitable protective equipment. See Section 8.2 - Personal Protection.

7. HANDLING AND STORAGE

7.1 HANDLING

General Handling

Electrically bond and ground all containers, personnel and equipment before transfer or use of material.

Avoid heat, sparks and flame under dust conditions.

Do not handle or empty in presence of flammable vapor.

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Clean up spills.
Keep container closed.
Store and use with adequate ventilation.
Wash thoroughly after handling.

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Ventilation

Special, local ventilation is recommended in areas where containers are opened and their contents are discharged or in any other areas where dusting conditions may develop.

Other Precautions

FIBC: For Flexible Intermediate Bulk Containers or plastic containers that may hold more than 226.8 kg (500 lb) - before transferring material, ground workers and conductive equipment to dissipate static electricity.

7.2 STORAGE

Store in accordance with good industrial practices. Storage information may be obtained from product-specific Storage and Handling Guides, or by calling Dow's Customer Information Group at 1-800-258-2436 (U.S.) or 1-800-331-6451 (Canada).

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1 EXPOSURE LIMITS

Component	Exposure Limits	Skin Form
Hydroxyethyl cellulose	10 mg/m3 TWA8 ACGIH	Inhalable Particulate Particulate matter containing no asbestos and crystalline silica <1%
	3 mg/m3 TWA8 ACGIH	Respirable particulate Particulate matter containing no asbestos and crystalline silica <1%
Cellulose	5 mg/m3 TWA8 OSHA 15 mg/m3 TWA8 OSHA 10 mg/m3 TWA8 ACGIH	Respirable fraction Total dust
Ethanedial	5 mg/m3 TWA8 OSHA 15 mg/m3 TWA8 OSHA 0.1 mg/m3 TWA8 AIHA WEEL 0.1 mg/m3 TWA8 ACGIH	Respirable fraction Total dust Aerosol and Vapor Inhalable fraction

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In the Exposure Limits Chart above, if there is no specific qualifier (i.e., Aerosol) listed in the Form Column for a particular limit, the listed limit includes all airborne forms of the substance that can be inhaled.

A "Yes" in the Skin Column indicates a potential significant contribution to overall exposure by the cutaneous (skin) route, including mucous membranes and the eyes, either by contact with vapors or by direct skin contact with the substance. A "Blank" in the Skin Column indicates that exposure by the cutaneous (skin) route is not a potential significant contributor to overall exposure.

8.2 PERSONAL PROTECTION

Respiratory Protection: Use dust respirator if dusting conditions exist.

Ventilation: Special, local ventilation is recommended in areas where containers are opened and their contents are discharged or in any other areas where dusting conditions may develop.

Eye Protection: Monogoggles.

Protective Gloves: Polyvinyl chloride coated

Other Protective Equipment: Eye Bath, Safety Shower

8.3 ENGINEERING CONTROLS

FIBC: For Flexible Intermediate Bulk Containers or plastic containers that may hold more than 226.8 kg (500 lb) - before transferring material, ground workers and conductive equipment to dissipate static electricity.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Powder

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Appearance: White

pH: *No test data available.*

Solubility in Water (by weight): *No test data available.*

Odor: Mild

Percent Volatiles: ~ 5.0 Wt%

Molecular Weight: 10000 - 1000000 g/mol

Boiling Point (760 mmHg): *No test data available.*

Freezing Point: *No test data available.*

Specific Gravity (H₂O = 1): *Not applicable.*

Vapor Pressure: *No test data available.*

Vapor Density (air = 1): *No test data available.*

Melting Point: 200 °C 392 °F Decomposes above

Bulk Density: 0.4 - 0.6 g/cm³ 25 - 37 lb/ft³

10. STABILITY AND REACTIVITY

10.1 STABILITY/INSTABILITY *Stable*

10.2 HAZARDOUS POLYMERIZATION *Will not occur.*

10.3 INHIBITORS/STABILIZERS *Not applicable.*

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11. TOXICOLOGICAL INFORMATION

SIGNIFICANT DATA WITH POSSIBLE RELEVANCE TO HUMANS

Pharmacokinetic and material balance studies have shown that only minor amounts of hydroxyethyl cellulose penetrate the skin under single sustained occluded conditions of cutaneous contact.

12. ECOLOGICAL INFORMATION

12.1 ENVIRONMENTAL FATE

Information may be available, call Union Carbide.

12.2 ECOTOXICITY

Information may be available, call Union Carbide.

12.3 FURTHER INFORMATION

None.

13. DISPOSAL CONSIDERATIONS

13.1 DISPOSAL

Landfill where permitted under appropriate Federal, State, and local regulations. Dispose in accordance with all applicable Federal, State, and local environmental regulations. Empty containers should be recycled or disposed of through an approved waste management facility.

13.2 DISPOSAL CONSIDERATIONS

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See Section 13.1

Disposal methods identified are for the product as sold. For proper disposal of used material, an assessment must be completed to determine the proper and permissible waste management options permissible under applicable rules, regulations and/or laws governing your location.

14. TRANSPORT INFORMATION

14.1 U.S. D.O.T.

NON-BULK

Proper Shipping Name : NOT REGULATED

BULK

Proper Shipping Name : NOT REGULATED

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. 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.

15. REGULATORY INFORMATION

15.1 FEDERAL/NATIONAL

|| OSHA HAZARD COMMUNICATION STANDARD

|| This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 TITLE III (EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW ACT) SECTION 313

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This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act 1986 and 40 CFR Part 372.

To the best of our knowledge this product does not contain chemicals at levels which require reporting under this statute.

COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION, AND LIABILITY ACT OF 1980 (CERCLA)
SECTION 103

This product contains the following substances subject to CERCLA Section 103 reporting requirements and are listed in 40 CFR Part 302.4.

To the best of our knowledge this product does not contain chemicals at levels which require reporting under this statute.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 TITLE III (EMERGENCY PLANNING AND
COMMUNITY RIGHT TO KNOW ACT) SECTIONS 302 AND 304

This product contains the following substances subject to SARA Section 302 reporting requirements and are listed in 40 CFR Part 302.4.

To the best of our knowledge this product does not contain chemicals at levels which require reporting under this statute.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 TITLE III (EMERGENCY PLANNING AND
COMMUNITY RIGHT TO KNOW ACT) SECTIONS 311 AND 312

Delayed (Chronic) Health Hazard : No
Fire Hazard : No
Immediate (Acute) Health Hazard : No
Reactive Hazard : No
Sudden Release of Pressure Hazard : No

TOXIC SUBSTANCES CONTROL ACT (TSCA)

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

EUROPEAN INVENTORY OF EXISTING COMMERCIAL CHEMICAL SUBSTANCES (EINECS)

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All components in this product are in compliance with EINECS.

CEPA - DOMESTIC SUBSTANCES LIST (DSL)

The components of this product are on the DSL or are exempt from reporting under the New Substances Notification Regulations.

15.2 STATE/LOCAL

PENNSYLVANIA (WORKER AND COMMUNITY RIGHT-TO-KNOW ACT)

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	CAS #	Amount
Cellulose	9004-34-6	<= 1.5000%

PENNSYLVANIA (WORKER AND COMMUNITY RIGHT-TO-KNOW ACT)

The following product components are cited in the Pennsylvania Special Hazardous Substance List, and are present at levels which require reporting.
To the best of our knowledge this product does not contain chemicals at levels which require reporting under this statute.

CALIFORNIA SCAQMD RULE 443.1 (SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 443.1, LABELING OF MATERIALS CONTAINING ORGANIC SOLVENTS)

VOC: Volatiles = substances with a vapor pressure greater than 0.5 mmHg @ 104 °C (219.2 °F)

9.71 g/l

10.44 g/l of material less exempted compounds

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This section provides selected regulatory information on this product including its components. This is not intended to include all regulations. It is the responsibility of the user to know and comply with all applicable rules, regulations and laws relating to the product being used.

16. OTHER INFORMATION

16.1 AVAILABLE LITERATURE AND BROCHURES

ADDITIONAL INFORMATION: Additional product safety information on this product may be obtained by calling your Dow Customer Service contact. Ask for the brochure:

CELLOSIZE HEC Storage and Handling(report)

CELLOSIZE HEC in Flexible Intermediate Bulk Container(report)

16.2 SPECIFIC HAZARD RATING SYSTEM

HMIS ratings for this product are: H - 1 F - 1 R - 0

NFPA ratings for this product are: H - 1 F - 1 R - 0

These ratings are part of specific hazard communications program(s) and should be disregarded where individuals are not trained in the use of these hazard rating systems. You should be familiar with the hazard communication applicable to your workplace.

Additional information on this product may be obtained by calling the The Dow Chemical Company Customer Information Group at 1-800-258-2436 (U.S.) or 1-800-331-6451 (Canada).

16.3 RECOMMENDED USES AND RESTRICTIONS

FOR INDUSTRY USE ONLY

16.4 REVISION

Version: 3.

Revision: 08/20/2001

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

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16.5 LEGEND

A	Asphyxiant
Bacterial/NA	Non Accimated Bacteria
F	Fire
H	Health
HMIS	Hazardous Materials Information System
N/A	Not available
NFPA	National Fire Protection Association
O	Oxidizer
P	Peroxide Former
R	Reactivity
TS	Trade Secret
VOL/VOL	Volume/Volume
W	Water Reactive
W/W	Weight/Weight

NOTICE: The Dow Chemical Company ("Dow") urges each customer or recipient of this MSDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this MSDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that its activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of Dow, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific MSDSs, Dow is not and cannot be responsible for MSDSs obtained from any source other than Dow. If you have obtained a Dow MSDS from a non-Dow source or if you are not sure that a Dow MSDS is current, please contact Dow for the most current version.

Foam #01 p.14

I. PRODUCT IDENTIFICATION

PRODUCT NAME.....: Flexible Polyurethane Foam
CHEMICAL FAMILY.....: Flexible Polyurethane
CHEMICAL NAME.....: Finished Goods - Commodities

II. HAZARDOUS INGREDIENTS

Not Applicable - Flexible Polyurethane foam is a fully reacted polymer

III. PHYSICAL DATA

APPEARANCE.....: Solid
COLOR.....: Will vary with the addition of Pigments
ODOR.....: None-Fully Reacted Polymer
SPECIFIC GRAVITY.....: Will vary with type of foam
BULK DENSITY.....: Will vary with type of foam
SOLUBILITY IN WATER.....: Insoluble
% VOLATILE BY VOLUME.....: None

IV. FIRE & EXPLOSION DATA

FLASH POINT °F(°C).....: Solid Material - Not Applicable
EXTINGUISHING MEDIA.....: Water, Foam, Dry Chemical
SPECIAL FIRE FIGHTING PROCEDURES/UNUSUAL FIRE OR EXPLOSION HAZARDS:
Full emergency equipment with a self-contained breathing apparatus and full protective clothing should be worn by fire-fighters. During a fire, irritating vapors and toxic gases will be generated.

V. HEALTH EFFECTS DATA

ANIMAL TOXICITY -

ORAL, LD50
(INGESTION).....: Ingestion of polyurethane foam by rats in amounts equivalent to 7.5 grams/kilogram eaten over a five day period caused no outward evidence of toxicity.

HUMAN EFFECTS

OF OVEREXPOSURE.....: No adverse health effects have been observed. Human experience indicates no irritation upon skin contact with polyurethane foam.

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EYE PROTECTION.....: None-Required During Handling
 SKIN PROTECTION.....: None-Required
 RESPIRATORY PROTECTION....: None-Required
 VENTILATION.....: None-Required
 OTHER.....: Safety glasses are advisable when sawing foam.
 Respiratory protection is recommended when cutting or shaping foam with a hot wire.

VIII. REACTIVITY DATA

STABILITY.....: Stable
 POLYMERIZATION.....: Will not occur
 INCOMPATIBILITY
 (MATERIALS TO AVOID)....: None
 HAZARDOUS DECOMPOSITION
 PRODUCTS.....: Burning polyurethane foams produce toxic decomposition products which are not significantly different from those of other nitrogen-containing polymer, such as wool, leather, nylon and ABS. The major toxicants are carbon monoxide, oxides of nitrogen, hydrogen cyanide and irritants

IX. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Collect as normal solid waste.
 WASTE DISPOSAL METHOD: Sanitary Landfill

X. SPECIAL PRECAUTIONS & STORAGE DATA

SPECIAL SENSITIVITY
 (HEAT, LIGHT, MOISTURE): Store away from sparks, flames or other ignition sources.
 PRECAUTIONS TO BE TAKEN
 IN HANDLING AND STORING: Store polyurethane foam in areas equipped with sprinkler system. For additional information, consult NIOSH Publication 76-154, "Urethane Foams-Good Practices for Employees Health and Safety."

XI. SHIPPING DATA

APPROVED BY.....: K.S. Booth/J.H. Chapman
 TITLE.....: Polyurethane Division Industrial Hygiene
 DATE APPROVED.....: 4/18/85