

MATERIAL SAFETY DATA SHEET



---

**1. PRODUCT AND COMPANY IDENTIFICATION**

TRADE NAME: Cell-Tek Geosynthetics

PRODUCT NAME: Gravel-Lok

DISTRIBUTED BY  
Cell-Tek Geosynthetics  
2431 Crofton Lane  
Suite 9  
Crofton, MD 21114  
Toll Free: 888-851-0051

24 HOUR EMERGENCY TELEPHONE NUMBER  
Chemtrec: United States 800-424-9300  
International 703-527-3887

---

**2. COMPOSITION / INFORMATION ON INGREDIENTS**

<u>Chemical Name</u>	<u>Wt. %</u>	<u>CAS</u>
MDI Prepolymer	30-50	Not disclosed
Polymeric Diphenylmethane Diisocyanate (PMDI)	40-60	9016-87-9
1,3-Dioxolan-2-one, 4-methyl-	<= 15	108-32-7

---

**3. HAZARDS IDENTIFICATION**

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: Brown liquid

IMMEDIATE CONCERNS: Irritating to eyes, respiratory system, and skin. Inhalation at levels above the occupational exposure limit could cause risk of damage to respiratory system. The onset of respiratory symptoms may be delayed for several hours after exposure.

POTENTIAL HEALTH EFFECTS

EYES: Liquids, vapors, or mists are irritating to the eyes and can cause stinging, burning, lachrymation, or tearing.

SKIN: Moderate irritant. Repeated and/or prolonged contact may cause skin sensitization.

**INGESTION:** Ingestion may cause irritation of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy, or diarrhea.

**INHALATION:** Inhalation of vapors or mist at concentrations above the TLV can cause respiratory tract irritation. (nose, throat, lungs) Chronic inhalation can result in sensitization.

**MEDICAL CONDITIONS AGGRAVATED:** Asthma, other respiratory disorders (bronchitis, emphysema, bronchia hyperreactivity), skin allergies, eczema.

**ROUTES OF ENTRY:** Inhalation, skin contact, eye contact, ingestion.

**SENSITIZATION:** Any individual with isocyanate sensitization should not be exposed to this product. These individuals can react to exposure well below the TLV. Symptoms can occur immediately or several hours after exposure.

---

#### **4. FIRST AID MEASURES**

**EYES:** Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

**SKIN:** Remove contaminated clothing. Wash affected areas thoroughly with soap and water. Wash clothing thoroughly before reuse. For severe exposure, seek medical attention immediately. For lesser exposure, seek medical attention if swelling or redness occurs, or if irritation persists after being washed.

**INGESTION:** Do not induce vomiting. Never give anything by mouth to a drowsy or unconscious person. If the individual is conscious, rinse mouth with water. Give 1 to 2 cups of water to drink. Seek immediate medical attention.

**INHALATION:** Remove individual from exposure, keep warm and at rest. If dizzy or shows signs of respiratory distress, obtain immediate medical attention. Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours.

---

#### **5. FIRE FIGHTING MEASURES**

**FLASHPOINT AND METHOD:** > 200°F (93.3°C) - Closed Cup

**EXTINGUISHING MEDIA:** Dry Chemical, Carbon Dioxide, Chemical Foam, Water Fog or Spray.

**HAZARDOUS COMBUSTION PRODUCTS:** Carbon Monoxide, Carbon Dioxide, Nitrous Oxide, and HCN.

**COMMENT:** Product reacts slowly with water to produce carbon dioxide which may rupture closed containers. This reaction accelerates at higher temperatures.

**FIRE FIGHTING PROCEDURES:** Isolate fuel supply from fire. Use water spray to cool fire-exposed surfaces and containers. Fire fighters should wear self-contained breathing apparatus in addition to emergency fire fighting protective clothing.

---

## **6. ACCIDENTAL RELEASE MEASURES**

**SMALL SPILL:** Clean up spills wearing proper personal protective equipment. (See section 8) Absorb with dry chemical absorbent, earth, sand, or any other inert material. Place in a chemical waste container. Move to outside well-ventilated area. Treat with 10 parts decontamination solution to 1 part isocyanate. Mix well. Allow to stand uncovered 48 hours before disposal.

**LARGE SPILL:** Eliminate all ignition sources. Evacuate and ventilate the area. Create a dike or trench to contain materials. Prevent entry into waterways, sewers, basements or confined areas. Clean-up personnel should wear appropriate personal protection equipment. (see section 8) Absorb with dry chemical absorbent, earth, sand, or any other inert material. Do not use combustible material such as sawdust. Place in a chemical waste container. Move to outside well-ventilated area. Treat with 10 parts decontamination solution to 1 part isocyanate. Mix well. Allow to stand uncovered 48 hours before disposal. Clean spill area with decontamination solution and allow to stand for 15 minutes before removal. Test atmosphere for MDI.

**DECONTAMINATION SOLUTION:** Decontamination solution: concentrated ammonia (5%), detergent (2%), and water (93%)

**RELEASE NOTES:** Spills and releases may have to be reported to Federal and/or local authorities. See Section 15 regarding reporting requirements.

**COMMENT:** Dispose of by any standard method of disposal in accordance with good industrial practice and in compliance with federal, state, and local environmental protection regulations.

---

## **7. HANDLING AND STORAGE**

**HANDLING:** Wear proper personal protective equipment. Use in a well ventilated area. Avoid smoking, bare lights, or ignition sources. Avoid physical damage to containers.

**STORAGE:** Protect from atmospheric moisture. Keep containers sealed in order to avoid contamination. Do not reseal if contaminated. After container has been opened, blanket with nitrogen before resealing. Store indoors in a cool, well-ventilated area.

**STORAGE TEMPERATURE:** 55°F – 120°F (12.8°C – 48.9°C)

**SHELF LIFE:** 1 Year

**SPECIAL SENSITIVITY:** Material is hygroscopic and reacts with water. It will form cured particles or a film when exposed to atmospheric moisture. Blanket containers with nitrogen before resealing.

---

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE GUIDELINES:

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

<u>CHEMICAL NAME</u>	<u>EXPOSURE LIMITS</u>				<u>SUPPLIER OEL</u>
	<u>OSHA PEL</u>		<u>ACGIH TLV</u>		
	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	ppm mg/m <sup>3</sup>
MDI Prepolymer	<b>TWA</b>	NE	NE	NE	NE
Polymeric Diphenylmethane Diisocyanate (PMDI)	<b>TWA</b>	NE	NE	NE	NE
Diphenylmethane 4,4'- Diisocyanate (MDI)	<b>TWA</b>	0.02*	0.20*	0.005	0.051
1,3-Dioxolan-2-one, 4-methyl-	<b>TWA</b>	NE	NE	NE	NE

NOTE: Diphenylmethane 4,4'- diisocyanate (CAS# 101-68-8) is present in Polymeric MDI

### KEY:

NE = Not Established

\* = Ceiling Value

**ENGINEERING CONTROLS:** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

### PERSONAL PROTECTIVE EQUIPMENT

**EYES AND FACE:** Wear safety glasses with side shields.

**SKIN:** Wear gloves and clothing to cover exposed skin.

**RESPIRATORY:** During application, if exposure of product can exceed the PEL/TLV, use appropriate respiratory protection to protect from overexposure.

**WORK HYGIENIC PRACTICES:** Follow good normal hygiene practices. Avoid contact with skin. Avoid eating, drinking, or smoking while using this product. Wash hands thoroughly after use.

**OTHER USE PRECAUTIONS:** Medical supervision of all employees who handle or come in contact with respiratory sensitizers is recommended. Persons with respiratory problems including asthmatic-type conditions, chronic bronchitis, or other chronic respiratory diseases or recurrent skin eczema or skin allergies should be evaluated for their suitability of working with this product. Once a person is diagnosed as sensitized, no further exposure of the material that caused the sensitization should be permitted. The Occupational Exposure limits do not apply to previously sensitized individuals.

**OTHER PROTECTIVE EQUIPMENT:** Safety showers and eye wash stations are recommended.

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

ODOR: Slightly musty

COLOR: Brown

BOILING POINT: Not Determined

FREEZING POINT: Not Determined

SOLUBILITY IN WATER: Insoluble

VAPOR PRESSURE: < 0.0001 mm Hg at 77°F (25°C)

SPECIFIC GRAVITY: 1.150 – 1.180 (water = 1) at 77°F (25°C)

VISCOSITY: 400 – 700 Centipoise at 77°F (25°C)

---

## 10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Temperature extremes. Container contamination. Moisture.

STABILITY: Stable under recommended storage conditions.

POLYMERIZATION: Polymerization may occur at elevated temperatures in the presence of alkalies, tertiary amines, and metal compounds.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon Monoxide, Carbon Dioxide, Nitrous Oxide, and HCN.

INCOMPATIBLE MATERIALS: This product will react with any materials containing active hydrogens such as water, alcohol, amines, bases and acids. The reaction with water is very slow under 122°F (50°C), but is accelerated at higher temperatures.

---

## 11. TOXICOLOGICAL INFORMATION

	ORAL LD50 (rat)	DERMAL LD50 (rabbit)	INHALATION LC50 (rat)
Diphenylmethane 4,4'- diisocyanate	> 5000 mg/kg	> 5000 mg/kg	490 mg/m <sup>3</sup> /4h (respirable aerosol)
1,3-Dioxolan-2-one, 4-methyl-	> 5000 mg/kg	> 2000 mg/kg	Believed to be practically non-toxic

EYE EFFECTS: Moderate Irritant.

SKIN EFFECTS: Moderate Irritant.

### CARCINOGENICITY

IARC: Not classified as a carcinogen.

NTP: Not classified as a carcinogen.

OSHA: Not classified as a carcinogen.

ACGIH: Not classified as a carcinogen.

---

## 12. ECOLOGICAL INFORMATION

ECTOTOXICOLOGICAL INFORMATION: Polymeric MDI: LC<sub>50</sub> (Zebra Fish) >1000 mg/L. EC<sub>50</sub> (Daphnia magna) (24 hour) >1000 mg/L. EC<sub>50</sub> (E. Coli) >100 mg/L.

CHEMICAL FATE INFORMATION: Immiscible with water, but will react with water to produce inert and non-biodegradable solids.

COMMENTS: No testing for product as a whole.

---

## 13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Disposal should be in accordance with local, state, provincial or national regulations.

EMPTY CONTAINER: Empty containers should be decontaminated and either passed to an approved drum recycler or destroyed.

RCRA HAZARD CLASS: If discarded as purchased, this material is not a hazardous waste under RCRA 40 CFR 261.

COMMENTS: The generation of waste should be avoided or minimized whenever possible. Chemical waste, even small quantities, should never be poured down drains, sewers or waterways.

---

## 14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

Not regulated when shipped below RQ (reportable quantity).

RQ = 10,000 lbs

Single containers at or above the RQ are regulated as: NA3082, Other Regulated Substances, Liquid, N.O.S. (Methylene Diphenyl Diisocyanate), 9, PG III, RQ.

---

## 15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 HAZARD CATEGORIES: Toxic, Irritating substance, Sensitizing substance, Acute, Chronic

313 REPORTABLE INGREDIENTS: Diisocyanate Compounds

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

Polymeric MDI is a mixture containing approximately 50% Diphenylmethane 4,4'- diisocyanate [MDI] (CAS# 101-68-8). MDI has a RQ of 5,000 lbs.

Any spill or release above the RQ must be reported to the National Response

Center (800-424-8802).

Reportable spill quantity: 10,000 lbs

**TSCA (TOXIC SUBSTANCE CONTROL ACT)**

TSCA REGULATORY: All ingredients are on TSCA inventory.

RCRA STATUS: Not hazardous if discarded in its purchased form. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal whether a material containing the product or derived from the product should be classified as a hazardous waste (40 CFR 261.20-24).

---

**16. OTHER INFORMATION**

HMIS RATING: Health - \*2, Flammability - 1, Physical Hazard - 1

HMIS RATING NOTES: If present, the asterisk signifies a chronic health hazard.

Rating system: 0 = low hazard to 4 = high hazard

MANUFACTURER OR SUPPLIER DISCLAIMER: The information in this MSDS was obtained from sources that we believe are reliable. The information is provided without warranty, implied or expressed, concerning accuracy. The manufacturer or supplier assumes no legal responsibility for use or reliance on this information. This MSDS is provided solely for the purpose of conveying health, safety, and environmental information. This MSDS is not a specification data sheet. Some of the information and conclusions may be derived from sources other than test data on the material itself.

**KEY LEGEND INFORMATION:**

ACGIH - American Conference of Governmental Industrial Hygienists

EPA - Environmental Protection Agency

IARC - International Agency for Research on Cancer

NTP - National Toxicology Program

OEL - Occupational Exposure Limit

OSHA - Occupational Safety and Health Administration

PEL - Permissible Exposure Limit

STEL - Short Term Exposure Limit

TLV - Threshold Limit Value

TWA - Time Weighted Average

PREPARED BY: L.P.

DATE ISSUED: 09/13/2005

MSDS #: KS2574

REVISION # and DATE: Rev #4, 03/23/2009

CHANGES FROM LAST VERSION: Section 2 (Immediate Concerns), Section 8 (Exposure Limits, Note), Section 11 (Toxicology Information), Section 14 (RQ), Section 15 (CERCLA)