Material Safety Data Sheet MSDS # GM7321

Revision Date: 03-22-06

Section I – Product and Company Identification

Trade Name: Mountain Grout
Product Name: Flex Classic

Company:
Green Mountain International, LLC
235 Pigeon Street
Waynesville, NC 28786
800-942-5151 US/Canada * 828-456-9970 International

24 Hr. Emergency Telephone Number:
Chemtrec: 800-424-9300

Section II – Composition/Information on Ingredients

	Wt. %	CAS#
TDI Prepolymer	40 – 70	Not disclosed
Toluene Diisocyanate (TDI)	< 10	26471-62-5
Polymeric Diphenylmethane Diisocyanate	30 - 60	9016-87-9

Section III – 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 respiratory sensitization and risk of serious damage to respiratory system. The onset of the respiratory symptoms may be delayed for several hours after exposure. A hyper-reactive response to even minimal concentrations of diisocyanates may develop in sensitized persons.

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.

Section IV –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 medial attention immediately. For lesser exposure, seek medical attention if swelling or redness occurs, or if irritation persists after being washed.

Ingestion: Aspiration hazard. If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Call a physician immediately.

Section IV –First Aid Measures (continued)

Inhalation: Remove individual from exposure, keep warm and at rest. Obtain immediate medical attention. Treatment is symptomatic for primary irritation or bronchiospasm. If breathing is labored, oxygen should be administered by qualified personnel. Apply artificial respiration if breathing has ceased or shows signs of failing. Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours.
Antidotes: No specific antidote.
NOTES TO PHYSICIAN: Symptomatic and supportive therapy as needed. Following severe exposure, medical follow-up should be monitored for at least 48 hours. May cause respiratory sensitization or asthma-like symptoms. Respiratory symptoms, including pulmonary edema, may be delayed. Gastric lavage may be indicated if ingested. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing for at least 48 hours. Aspiration hazard.

Section V – Fire Fighting Measures

Flash Point and Method: >(230°F) Closed Cup
Extinguishing Media: Dry Chemical, Carbon Dioxide, Chemical Foam, Water Fog or spray.
Hazardous Combustion Products: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
Explosion Hazards: Containers exposed to intense heat from fires should be cooled with water to prevent vapor pressure buildup, which could result in container rupture. Container areas exposed to direct flame contact should be cooled with large quantities of water as needed to prevent weakening of container structure.
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.
Comments: Reacts slowly with water to produce carbon dioxide, which may rupture closed containers. This reaction accelerates at higher temperatures.

Section VI– Accidental Release Measures

Small Spill: Clean up spills wearing proper personal protective equipment. (See Section VIII) 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: 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 VIII). 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. Clean spill area with decontamination solution and allow to stand for 15 minutes before removal. Test atmosphere for MDI and TDI.
General Procedures: 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 XV regarding reporting requirements.
Special Protective Equipment: See Section VIII. Clean-up crews should always wear Personal Protective Equipment.

Section VII – Handling and Storage

Handling: Wear proper personal protective equipment. Use in a well ventilated area. Avoid smoking, bare lights, or ignition sources. Keep containers securely sealed when not in use. Avoid physical damage to containers. Practice good hygiene procedures.
Storage: Containers can rupture if exposed to high heat. 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: (50°F) minimum to (120°F) maximum
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.
Comments: Reacts slowly with water to produce carbon dioxide which may rupture closed containers. This reaction accelerates at higher temperatures.
See Section X for more information on precautions concerning storage and handling of this material.

Section VIII – Exposure Controls/Personal Protection

Exposure Guidelines: **OSHA Hazardous Components (29 CFR 1910.1200)**

		Exposure Limits			
		OSHA PEL		ACGIH TLV	
		ppm	mg/m^3	ppm	mg/m^3
TDI Prepolymer	**TWA**	NE	NE	NE	NE
Toluene Diisocyanate (TDI)	**TWA**			0.005	
	STEL	0.02*		0.02	
Polymeric Diphenylmethane Diisocyanate	**TWA**		0.20*		0.05

OSHA Table Comments: NE = Not established *=Ceiling
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 (or goggles) and a face shield.
Skin: The following protective materials are recommended: Gloves – neoprene, nitrile rubber, butyl rubber. Thin latex disposable gloves should be avoided for repeated or long-term use. Protective clothing should be selected and used in accordance with 'Guidelines for the Selection of Chemical Protective Clothing' published by ACGIH.
Respiratory: During application, if exposure of product can exceed the PEL/TLV, use appropriate respiratory protection to protect from overexposure. Appropriate respiratory protection includes approved supplied-air respirators (SAR) operated in a positive pressure mode or, in non-IDLH (immediately dangerous to life and health) atmospheres, NIOSH approved air purifying respirators (APR), provided an appropriate cartridge change-out schedule is implemented. [29 CFR 1910.134 (d)(3)(iii)] All respirators used should follow the OHSA Respiratory Standard 29 CFR 1910.134.
Protective Clothing: Where contact is likely, wear chemical resistant gloves, a chemical suit, rubber boots, and chemical safety goggles plus a face shield.
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.
Comments: Other Protective Equipment: Safety showers and eye wash stations.

Section IX – Physical and Chemical Properties

Physical State:	Liquid
Color:	Brown
Odor:	Slightly musty
Boiling Point:	Not Determined
Freezing Point:	Not Determined
Specific Gravity:	1.12 to 1.14 (water=1) at (77°F)
Solubility in Water:	Insoluble
Viscosity:	700 to 900 cps at (77°F)

Section X – 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: Toxic fumes including nitrogen oxides and carbon monoxide.
Incompatible materials: Materials containing active hydrogens such as water, alcohol, amines, bases and acids. Oxidizing agents.

Section XI – Toxicological Information

Ingredients	Oral LD50(rat)	Dermal LD50 (rabbit)	Inhalation LC50(rat)
Toluene Diisocyanate (TDI)	5800 – mg/kg	> 16000 – mg/kg	100 – 360 mg/m3/4h
Polymeric Diphenylmethane Diisocyanate	> 5000 – mg/kg	> 5000 – mg/kg	490 mg/m3/4h (respirable aerosol)

Eye Effects: The vapor, aerosol, and liquid are irritant.
Skin Effects: Some components of this formulation may cause skin irritation. May cause allergic skin reaction in susceptible individuals.
Carcinogenicity:

IARC: Toluene Diisocyanate is listed as a substance that may reasonably be anticipated to be a carcinogen.
NTP: Toluene Diisocyanate is listed as a substance that may reasonably be anticipated to be a carcinogen.
OSHA: No components of this product are regulated as carcinogens.
ACGIH: Not classified as a carcinogen.

Mutagenicity: There is no substantial evidence of mutagenic potential.
Reproductive Effects: No adverse reproductive effects are anticipated.
General Comments: 1. A study was conducted where groups of rats were exposed for 6 hours/day, 5 days/week for a lifetime to atmospheres of respirable polymeric MDI aerosol at concentrations of 0, 0.2, 1, or 6 mg/m3. No adverse effects were observed at 0.2 mg/m3. At the 1 mg/m3 concentration, minimal nasal and lung irritant effects were seen. Only at the top concentration (6.0 mg/m3) was there an increased incidence of a benign tumor of the lungs (adenoma). One malignant pulmonary tumor (adenocarcinoma) was seen in the 6.0 mg/m3 group. MDI administration to rats in this study did not change the distribution and incidence of tumors from those seen in control animals. The increased incidence of lung tumors is associated with prolonged respiratory irritation and the concurrent accumulation of yellow material in the lung. In the absence of prolonged exposure to high concentrations leading to chronic irritation and lung damage, it is highly unlikely that tumor formation will occur. **2.** Rat and mouse toxicity and carcinogenicity studies were conducted with two years of inhalation exposure to vapors of TDI at concentrations of 0.05 and 0.15 ppm. No indication of carcinogenic effects were observed. However, mice exposed to 0.15 ppm for two years showed reduced weight gain and signs of irritation in the upper and lower respiratory tract. No other effect of toxicological significance was observed. There are two studies which allege that workers exposed to TDI at or near the current TLV have experienced impaired ventilatory capacities. These findings have not been independently substantiated. **3.** There are reports that chronic exposure to diisocyanates by inhalation may result in permanent decreases in lung function.

Section XII – Ecological Information

Ecotoxicological Information:

Polymeric MDI**:** LC_{50} (Zebra Fish) > 1000 mg/L
EC_{50} (Daphnia magna) (24 hour) > 1000 mg/L
EC_{50} (E.Coli) > 100 mg/L

Chemical Fate Information: Immiscible with water, but will react with water to produce inert and non-biodegradable solids.

General Comments: No testing for product as a whole.

Section XIII – 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/EPA Waste Information: If discarded in its purchased form, this material is not a hazardous waste under RCRA 40 CFR 261.

General 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.

Comments: Refer to Section VI for additional information.

Section XIV – Transport Information

DOT (Department of Transportation)

Proper Shipping Name: Not regulated when shipped below RQ.

Reportable Quantity (RQ) under CERCLA: 1000 lbs. (Toluene Diisocyanate [CAS 26471-62-5]) The RQ for this component is 100 lbs.

Other Shipping Information: Single containers with 5,000 lbs or more of 4,4'-Methylene Diphenyl Diisocyanate are regulated as: Other Regulated Substances, Liquid, N.O.S. (Methylene Diphenyl Diisocyanate), 9, NA3082, PGIII, RQ.

Section XV – Regulatory Information

United States

SARA Title III (Superfund Amendments and Reauthorization Act):

311/312 Hazard Categories: Toxic, Irritating substance, Sensitizing substance.

313 Reportable Ingredients:

Toluene Diisocyanate CAS# 26471-62-5
Diisocyanate Compounds (Category Code N120)

CERCLA (Comprehensive Response, Compensation, and Liability Act)

CERCLA RQ:

Toluene Diisocyanate (CAS# 26471-62-5) = 100 lbs.
4,4 Methylene Diphenyl Diisocyanate (CAS# 101-68-8) = 5000 lbs.

Reportable Spill Quantity: 1000 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).

OSHA Hazard Comm. Rule: This material is classified as a hazardous material under the criteria outlined in the OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200).

California Proposition 65: This product contains chemicals known to the state of California to cause cancer or birth defects.

Section XV – Regulatory Information (continued)

General Comments: Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Section XVI – Other Information

Prepared by: L. P.

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.

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Comments:

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

Green Mountain International, LLC
235 Pigeon Street, Waynesville, NC 28786
Ph: 800-942-5151 Fx: 888-632-5360
Int'l: 828-456-9970 Fx: 828-456-9699
www.mountaingrout.com