The Dow Chemical Company 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.

1. Product and Company Identification

Product Name
GREAT STUFF™ Pestblock 12oz HC PU Insulating Foam Sealant ES

COMPANY IDENTIFICATION
The Dow Chemical Company
2030 Willard H. Dow Center
Midland, MI 48674
USA

Customer Information Number: 800-258-2436
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: 989-636-4400
Local Emergency Contact: 989-636-4400

2. Hazards Identification

Emergency Overview
Color: Gray
Physical State: Foam
Odor: Mild
Hazard of product:

DANGER! Extremely flammable liquid and vapor - Vapor may cause flash fire. Evacuate area. May cause allergic skin reaction. May cause allergic respiratory reaction. May cause eye irritation. May cause skin irritation. Vapor reduces oxygen available for breathing. May cause anesthetic effects. May cause respiratory tract irritation. Vapors may travel a long distance; ignition and/or flash back may occur. Keep upwind of spill. May cause lung injury. Stay out of low areas. Aerosol cans exposed to fire can rupture becoming flaming projectiles. Elevated temperatures can cause hazardous polymerization. Toxic fumes may be released in fire situations. Containers are under high pressure.

OSHA Hazard Communication Standard
This product is a “Hazardous Chemical” as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**Potential Health Effects**

**Eye Contact:** May cause eye irritation. May cause slight temporary corneal injury.

**Skin Contact:** Prolonged contact may cause moderate skin irritation with local redness. Material may stick to skin causing irritation upon removal. May stain skin.

**Skin Absorption:** Prolonged skin contact is unlikely to result in absorption of harmful amounts.

**Skin Sensitization:** Skin contact may cause an allergic skin reaction. Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

**Inhalation:** In confined or poorly ventilated areas, vapor can easily accumulate and can cause unconsciousness and death due to displacement of oxygen. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. May cause pulmonary edema (fluid in the lungs.) Effects may be delayed. May cause central nervous system depression. Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed. Excessive exposure may increase sensitivity to epinephrine and increase myocardial irritability (irregular heartbeats). Decreased lung function has been associated with overexposure to isocyanates.

**Respiratory Sensitization:** May cause allergic respiratory response. MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

**Ingestion:** Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Observations in animals include: Gastrointestinal irritation.

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

**Effects of Repeated Exposure:** Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols. Excessive exposure may produce organophosphate type cholinesterase inhibition. Signs and symptoms of excessive exposure may be headache, dizziness, incoordination, muscle twitching, tremors, nausea, abdominal cramps, diarrhea, sweating, pinpoint pupils, blurred vision, salivation, tearing, tightness in chest, excessive urination, convulsions.

**Cancer Information:** Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m3) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

**Birth Defects/Developmental Effects:** In laboratory animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother.

### 3. Composition Information

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl ether</td>
<td>115-10-6</td>
<td>&gt;= 1.0 - &lt;= 5.0 %</td>
</tr>
<tr>
<td>Propane</td>
<td>74-98-6</td>
<td>&gt;= 1.0 - &lt;= 5.0 %</td>
</tr>
<tr>
<td>Paraffin waxes and Hydrocarbon waxes, chlorinated</td>
<td>63449-39-8</td>
<td>&gt;= 5.0 - &lt;= 10.0 %</td>
</tr>
<tr>
<td>Isobutane</td>
<td>75-28-5</td>
<td>&gt;= 7.0 - &lt;= 13.0 %</td>
</tr>
<tr>
<td>Isocyanic acid, polymethylenepolyphenylene ester, polymer with ( \alpha,\alpha,\alpha'-1,2,3-) propanetriyltris[omega-( \omega- )-hydroxypoly</td>
<td>57029-46-6</td>
<td>&gt;= 30.0 - &lt;= 60.0 %</td>
</tr>
<tr>
<td>Polymethylenepolyphenyl polyisocyanate, polypropylene glycol copolymer</td>
<td>53862-89-8</td>
<td>&gt;= 10.0 - &lt;= 30.0 %</td>
</tr>
<tr>
<td>Diphenylmethane Diisocyanate, isomers and homologues</td>
<td>9016-87-9</td>
<td>&gt;= 10.0 - &lt;= 30.0 %</td>
</tr>
<tr>
<td>Tris(1-chloro-2-propyl) phosphate</td>
<td>13674-84-5</td>
<td>&gt;= 5.0 - &lt;= 10.0 %</td>
</tr>
<tr>
<td>4,4'-Methylene diphenyl diisocyanate</td>
<td>101-68-8</td>
<td>&gt;= 5.0 - &lt;= 10.0 %</td>
</tr>
</tbody>
</table>

Note: CAS 101-68-8 is an MDI isomer that is part of CAS 9016-87-9.
4. First-aid measures

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 not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

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. An MDI skin decontamination study demonstrated that cleaning very soon after exposure is important, and that a polyglycol-based skin cleanser or corn oil may be more effective than soap and water. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Suitable emergency safety shower facility should be available in work area.

Eye Contact: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

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.

Indication of immediate medical attention and special treatment needed

Maintain adequate ventilation and oxygenation of the patient. May cause respiratory sensitization or asthma-like symptoms. Bronchodilators, expectorants and antitussives may be of help. Treat bronchospasm with inhaled beta2 agonist and oral or parenteral corticosteroids. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. Exposure may increase “myocardial irritability”. Do not administer sympathomimetic drugs such as epinephrine unless absolutely necessary. If you are sensitized to diisocyanates, consult your physician regarding working with other respiratory irritants or sensitizers. Although cholinesterase depression has been reported with this material, it is not of benefit in determining exposure and need not be considered in the treatment of persons exposed to the material. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.
Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome). Repeated excessive exposure may aggravate preexisting lung disease.

5. Fire Fighting Measures

Suitable extinguishing media

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Extinguishing Media to Avoid: Do not use direct water stream. Straight or direct water streams may not be effective to extinguish fire.

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: Nitrogen oxides. Isocyanates. Hydrogen chloride. Carbon monoxide. Carbon dioxide. Hydrogen cyanide.

Unusual Fire and Explosion Hazards: Contains flammable propellant. Aerosol cans exposed to fire can rupture and become flaming projectiles. Propellant release may result in a fireball. Vapors are
heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Dense smoke is produced when product burns.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Water may not be effective in extinguishing fire. Do not use direct water stream. May spread fire. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Eliminate ignition sources. Move container from fire area if this is possible without hazard. Use water spray to cool fire-exposed containers and fire-affected zone until fire is out.

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). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Evacuate area. Only trained and properly protected personnel must be involved in clean-up operations. Keep personnel out of low areas. Keep personnel out of confined or poorly ventilated areas. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. For large spills, warn public of downwind explosion hazard. Check area with combustible gas detector before reentering area. Ground and bond all containers and handling equipment. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Vapor explosion hazard. Keep out of sewers. See Section 10 for more specific information. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to Section 7, Handling, for additional precautionary measures.

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

Methods and materials for containment and cleaning up: Contain spilled material if possible. Ground and bond all containers and handling equipment. Isolate area until gas has dispersed. Use non-sparking tools in cleanup operations. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Check area with combustible gas detector before reentering area. Ground and bond all containers and handling equipment. Collect in suitable and properly labeled containers. Absorb with materials such as: Clay. Dirt. Milsorb®. Sand. Sawdust. Vermiculite. See Section 10 for more specific information. See Section 13, Disposal Considerations, for additional information.

7. Handling and Storage

Handling

General Handling: Keep away from heat, sparks and flame. Avoid contact with eyes. Avoid contact with skin and clothing. Avoid prolonged or repeated contact with skin. Avoid breathing vapor. Wash thoroughly after handling. Keep container closed. Use only with adequate ventilation. Keep out of reach of children. No smoking, open flames or sources of ignition in handling and storage area. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Contents under pressure. Do not puncture or incinerate container. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Do not enter confined spaces unless adequately ventilated. Never use air pressure for transferring product. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.
Storage
Minimize sources of ignition, such as static build-up, heat, spark or flame. Store in a dry place. See Section 10 for more specific information.

Shelf life: Use within 12 Months
Storage temperature: 20 - 30 °C

8. Exposure Controls / Personal Protection

<table>
<thead>
<tr>
<th>Component</th>
<th>List</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-Methylenediphenyl diisocyanate</td>
<td>ACGIH</td>
<td>TWA</td>
<td>0.005 ppm</td>
</tr>
<tr>
<td></td>
<td>OSHA Table Z-1</td>
<td>Ceiling</td>
<td>0.2 mg/m3 0.02 ppm</td>
</tr>
<tr>
<td>Diphenylmethane Diisocyanate, isomers and homologues</td>
<td>ACGIH</td>
<td>TWA</td>
<td>0.005 ppm</td>
</tr>
<tr>
<td></td>
<td>OSHA Table Z-1</td>
<td>Ceiling</td>
<td>0.2 mg/m3 0.02 ppm</td>
</tr>
<tr>
<td>Methyl ether</td>
<td>AIHA WEEL</td>
<td>TWA</td>
<td>1,880 mg/m3 1,000 ppm</td>
</tr>
<tr>
<td>Isobutane</td>
<td>ACGIH</td>
<td>TWA</td>
<td>1,000 ppm</td>
</tr>
<tr>
<td>Propane</td>
<td>OSHA Table Z-1</td>
<td>PEL</td>
<td>1,800 mg/m3 1,000 ppm</td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td>TWA</td>
<td>1,000 ppm</td>
</tr>
</tbody>
</table>

Personal Protection

Eye/Face Protection: Use safety glasses (with side shields).

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 gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate (“EVAL”). Examples of acceptable glove barrier materials include: Neoprene. Nitrile/butadiene rubber (“nitrile” or “NBR”). Viton. Polyvinyl chloride (“PVC” or “vinyl”). 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: Atmospheric levels should be maintained below the exposure guideline.

When atmospheric levels may exceed the exposure guideline, use an approved air-purifying respirator equipped with an organic vapor sorbent and a particle filter. For situations where the atmospheric levels may exceed the level for which an air-purifying respirator is effective, use a positive-pressure air-supplying respirator (air line or self-contained breathing apparatus). For emergency response or for situations where the atmospheric level is unknown, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

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 only with adequate ventilation. Local exhaust ventilation may be necessary for some operations. Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. Exhaust systems should be designed to move the air away from the source of
vapor/aerosol generation and people working at this point. The odor and irritancy of this material are inadequate to warn of excessive exposure. Lethal concentrations may exist in areas with poor ventilation.

9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td></td>
</tr>
<tr>
<td>Physical State</td>
<td>Foam</td>
</tr>
<tr>
<td>Color</td>
<td>Gray</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>Melting Point</td>
<td>No test data available</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>No test data available</td>
</tr>
<tr>
<td>Boiling Point (760 mmHg)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash Point - Closed Cup</td>
<td>-104 °C (-155 °F) Calculated Calculated</td>
</tr>
<tr>
<td>Evaporation Rate (Butyl Acetate = 1)</td>
<td>No test data available</td>
</tr>
<tr>
<td>Acetate = 1</td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Flammable gas</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>1.151 kPa @ 55 °C Estimated. Container is under pressure.</td>
</tr>
<tr>
<td>Vapor Density (air = 1)</td>
<td>No test data available</td>
</tr>
<tr>
<td>Specific Gravity (H2O = 1)</td>
<td>1.06 Estimated.</td>
</tr>
<tr>
<td>Solubility in water (by weight)</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Partition coefficient, n-octanol/water (log Pow)</td>
<td>No data available for this product. See Section 12 for individual component data.</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>No test data available</td>
</tr>
<tr>
<td>Decomposition</td>
<td>No test data available</td>
</tr>
<tr>
<td>Temperature</td>
<td></td>
</tr>
<tr>
<td>Kinematic Viscosity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No</td>
</tr>
</tbody>
</table>

10. Stability and Reactivity

Reactivity
No dangerous reaction known under conditions of normal use.

Chemical stability
Stable under recommended storage conditions. See Storage, Section 7. Unstable at elevated temperatures.

Possibility of hazardous reactions
Can occur. Elevated temperatures can cause hazardous polymerization.

Conditions to Avoid: Avoid temperatures above 50 °C (122 °F). Elevated temperatures can cause container to vent and/or rupture. Exposure to elevated temperatures can cause product to decompose.

Incompatible Materials: Avoid contact with: Acids. Alcohols. Amines. Ammonia. Bases. Metal compounds. Strong oxidizers. Products based on diisocyanates like TDI and MDI react with many materials to release heat. The reaction rate increases with temperature as well as with increased contact; these reactions can become violent. Contact is increased by stirring or if the other material acts as a solvent. Products based on diisocyanates such as TDI and MDI are not soluble in water and will sink to the bottom, but react slowly at the interface. The reaction forms carbon dioxide gas and a layer of solid polyurea. Reaction with water will generate carbon dioxide and heat.

Hazardous decomposition products
Decomposition products depend upon temperature, air supply and the presence of other materials. Toxic gases are released during decomposition.

11. Toxicological Information

**Acute Toxicity**

**Ingestion**
As product: Single dose oral LD50 has not been determined.  
Estimated. LD50, Rat > 2,000 mg/kg

**Dermal**
As product: The dermal LD50 has not been determined.  
Estimated. LD50, Rabbit > 2,000 mg/kg

**Inhalation**
As product: The LC50 has not been determined.

**Eye damage/eye irritation**
May cause eye irritation. May cause slight temporary corneal injury.

**Skin corrosion/irritation**
Prolonged contact may cause moderate skin irritation with local redness. Material may stick to skin causing irritation upon removal. May stain skin.

**Sensitization**

**Skin**
Skin contact may cause an allergic skin reaction. Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

**Respiratory**
May cause allergic respiratory response. MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

**Repeated Dose Toxicity**
Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols. Excessive exposure may produce organophosphate type cholinesterase inhibition. Signs and symptoms of excessive exposure may be headache, dizziness, incoordination, muscle twitching, tremors, nausea, abdominal cramps, diarrhea, sweating, pinpoint pupils, blurred vision, salivation, tearing, tightness in chest, excessive urination, convulsions.

**Chronic Toxicity and Carcinogenicity**
Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m3) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

**Developmental Toxicity**
In laboratory animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother.

**Reproductive Toxicity**
No relevant information found.

**Genetic Toxicology**
In vitro genetic toxicity studies were negative for component(s) tested. Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative. Animal mutagenicity studies were predominantly negative.

12. Ecological Information

**Toxicity**

Data for Component: Methyl ether
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
Fish Acute & Prolonged Toxicity
LC50, guppy (Poecilia reticulata), static renewal, 96 h: > 4,000 mg/l

Aquatic Invertebrate Acute Toxicity
LC50, water flea Daphnia magna, 48 h, immobilization: > 4,000 mg/l

Data for Component: Propane
No relevant data found.

Data for Component: Paraffin waxes and Hydrocarbon waxes, chlorinated
Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species).

Fish Acute & Prolonged Toxicity
LC50, rainbow trout (Oncorhynchus mykiss), static, 96 h: > 100 mg/l

Aquatic Invertebrate Acute Toxicity
EC50, water flea Daphnia magna, static, 48 h, immobilization: 0.037 mg/l

Data for Component: Isobutane
No relevant data found.

Data for Component: Isocyanic acid, polymethylenepolyphenylene ester, polymer with \(\alpha.,\alpha.,\alpha.'-1,2,3-propanetriyltris[\omega-.hydroxypropy]
Not expected to be acutely toxic to aquatic organisms.

Data for Component: Polymethylene polyphenyl polyisocyanate, polypropylene glycol copolymer
Not expected to be acutely toxic to aquatic organisms.

Data for Component: Diphenylmethane Diisocyanate, isomers and homologues
The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species. Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity
Based on information for a similar material: LC50, Danio rerio (zebra fish), static, 96 h: > 1,000 mg/l

Aquatic Invertebrate Acute Toxicity
Based on information for a similar material: EC50, water flea Daphnia magna, static, 24 h: > 1,000 mg/l

Aquatic Plant Toxicity
Based on information for a similar material: NOEC, Scenedesmus subspicatus (new name: Desmodesmus subspicatus), static, Growth rate inhibition, 72 h: 1,640 mg/l

Toxicity to Micro-organisms
Based on information for a similar material: EC50; activated sludge, static, 3 h: > 100 mg/l

Toxicity to Soil Dwelling Organisms
EC50, Earthworm Eisenia foetida, adult, 14 d: > 1,000 mg/kg

Data for Component: Tris(1-chloro-2-propyl) phosphate
Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity
LC50, bluegill (Lepomis macrochirus), static, 96 h: 84 mg/l

Aquatic Invertebrate Acute Toxicity
EC50, water flea Daphnia magna, static, 48 h, immobilization: 63 mg/l

Aquatic Plant Toxicity
EcC50, green alga Pseudokirchneriella subcapitata (formerly known as Selenastrum capricornutum), static, biomass growth inhibition, 96 h: 47 mg/l

Toxicity to Micro-organisms
EC50, OECD 209 Test; activated sludge, 3 h: 784 mg/l

Data for Component: 4,4'-Methylenediphenyl disocyanate
The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species. Material is practically non-toxic to aquatic
organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

**Fish Acute & Prolonged Toxicity**
Based on information for a similar material: LC50, Danio rerio (zebra fish), static, 96 h: > 1,000 mg/l

**Aquatic Invertebrate Acute Toxicity**
Based on information for a similar material: EC50, water flea Daphnia magna, static, 24 h: > 1,000 mg/l

**Aquatic Plant Toxicity**
Based on information for a similar material: NOEC, Scenedesmus subspicatus (new name: Desmodesmus subspicatus), static, Growth rate inhibition, 72 h: 1,640 mg/l

**Toxicity to Micro-organisms**
Based on information for a similar material: EC50; activated sludge, static, 3 h: > 100 mg/l

**Toxicity to Soil Dwelling Organisms**
EC50, Earthworm Eisenia foetida, adult, 14 d: > 1,000 mg/kg

**Persistence and Degradability**

**Data for Component: Methyl ether**
Material is expected to biodegrade only very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

**OECD Biodegradation Tests:**

<table>
<thead>
<tr>
<th>Biodegradation</th>
<th>Exposure Time</th>
<th>Method</th>
<th>10 Day Window</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indirect Photodegradation with OH Radicals</td>
<td>28 d</td>
<td>OECD 301A Test</td>
<td>fail</td>
</tr>
</tbody>
</table>

**Theoretical Oxygen Demand:** 2.08 mg/mg

**Data for Component: Propane**
No relevant data found.

**Indirect Photodegradation with OH Radicals**

<table>
<thead>
<tr>
<th>Rate Constant</th>
<th>Atmospheric Half-life</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.66E-12 cm³/s</td>
<td>6.4 d</td>
<td>Estimated.</td>
</tr>
</tbody>
</table>

**Theoretical Oxygen Demand:** 3.64 mg/mg

**Data for Component: Paraffin waxes and Hydrocarbon waxes, chlorinated**
Expected to degrade only slowly in the environment.

**Theoretical Oxygen Demand:** 2.89 mg/mg

**Data for Component: Isobutane**
Biodegradation may occur under aerobic conditions (in the presence of oxygen).

**Indirect Photodegradation with OH Radicals**

<table>
<thead>
<tr>
<th>Rate Constant</th>
<th>Atmospheric Half-life</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.44E-12 cm³/s</td>
<td>4.4 d</td>
<td>Estimated.</td>
</tr>
</tbody>
</table>

**Theoretical Oxygen Demand:** 3.58 mg/mg

**Data for Component: Isocyanic acid, polymethylene(polyphenylene) ester, polymer with α,α,α′-1,2,3-propanetriyltris[ω-hydroxypoly**

**Data for Component: Diphenylmethylene Diisocyanate, isomers and homologues**
In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

**OECD Biodegradation Tests:** Based on information for a similar material:
**Product Name:** GREAT STUFF(TM) Pestblock 12oz HC PU  
**Issue Date:** 09/08/2011  
**Insulating Foam Sealant ES**

<table>
<thead>
<tr>
<th>Biodegradation</th>
<th>Exposure Time</th>
<th>Method</th>
<th>10 Day Window</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 %</td>
<td>28 d</td>
<td>OECD 302C Test</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

**Data for Component: Tris(1-chloro-2-propyl) phosphate**  
Material is expected to biodegrade only very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.  
**OECD Biodegradation Tests:**

<table>
<thead>
<tr>
<th>Biodegradation</th>
<th>Exposure Time</th>
<th>Method</th>
<th>10 Day Window</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 %</td>
<td>28 d</td>
<td>OECD 301E Test</td>
<td>fail</td>
</tr>
</tbody>
</table>

**Indirect Photodegradation with OH Radicals**

<table>
<thead>
<tr>
<th>Rate Constant</th>
<th>Atmospheric Half-life</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.47E-11 cm³/s</td>
<td>0.24 d</td>
<td>Estimated.</td>
</tr>
</tbody>
</table>

**Theoretical Oxygen Demand:** 1.17 mg/mg

**Data for Component: 4,4’-Methylenediphenyl diisocyanate**  
In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related disiocyanates.  
**OECD Biodegradation Tests:** Based on information for a similar material:

<table>
<thead>
<tr>
<th>Biodegradation</th>
<th>Exposure Time</th>
<th>Method</th>
<th>10 Day Window</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 %</td>
<td>28 d</td>
<td>OECD 302C Test</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

**Bioaccumulative potential**

**Data for Component: Methyl ether**

- **Bioaccumulation**: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
- **Partition coefficient, n-octanol/water (log Pow)**: 0.10 Measured

**Data for Component: Propane**

- **Bioaccumulation**: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
- **Partition coefficient, n-octanol/water (log Pow)**: 2.36 Measured

**Data for Component: Paraffin waxes and Hydrocarbon waxes, chlorinated**

- **Bioaccumulation**: Bioconcentration potential is low (BCF less than 100 or Log Pow greater than 7).
- **Partition coefficient, n-octanol/water (log Pow)**: 7.4 Estimated.

**Data for Component: Isobutane**

- **Bioaccumulation**: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
- **Partition coefficient, n-octanol/water (log Pow)**: 2.76 Measured

**Data for Component: Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.,.alpha.,.alpha.-1,2,3-propanetriyltris[.omega.-hydroxypoly**

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

**Data for Component: Polymethylenepolyphenyl polyisocyanate, polypropylene glycol copolymer**

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

**Data for Component: Diphenylmethane Diisocyanate, isomers and homologues**

- **Bioaccumulation**: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

**Data for Component: Tris(1-chloro-2-propyl) phosphate**

- **Bioaccumulation**: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
- **Partition coefficient, n-octanol/water (log Pow)**: 2.59 Measured
- **Bioconcentration Factor (BCF)**: 0.8 - 4.6; common carp (Cyprinus carpio); Measured

**Data for Component: 4,4’-Methylenediphenyl diisocyanate**

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

**Mobility in soil**

**Data for Component: Methyl ether**

- **Mobility in soil**: Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient, soil organic carbon/water (Koc): 1.29 - 14 Estimated.
Henry’s Law Constant (H): 9.78E-04 atm*m3/mole; 25 °C Measured

Data for Component: Propane
Mobility in soil: Potential for mobility in soil is very high (Koc between 0 and 50).
Henry’s Law Constant (H): 7.07E-01 atm*m3/mole; 25 °C Measured

Distribution in Environment: Mackay Level 1 Fugacity Model:

<table>
<thead>
<tr>
<th>Air</th>
<th>Water.</th>
<th>Biota</th>
<th>Soil</th>
<th>Sediment</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 %</td>
<td>0 %</td>
<td>0 %</td>
<td>0 %</td>
<td>0 %</td>
</tr>
</tbody>
</table>

Data for Component: Paraffin waxes and Hydrocarbon waxes, chlorinated
Mobility in soil: Given its very low Henry’s constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process. Expected to be relatively immobile in soil (Koc > 5000).
Partition coefficient, soil organic carbon/water (Koc): > 5,000 Estimated.
Henry’s Law Constant (H): < 1.0E-07 atm*m3/mole; 25 °C Estimated.

Data for Component: Isobutane
Mobility in soil: Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient, soil organic carbon/water (Koc): 35 Estimated.
Henry’s Law Constant (H): 1.19E+00 atm*m3/mole; 25 °C Measured

Distribution in Environment: Mackay Level 1 Fugacity Model:

<table>
<thead>
<tr>
<th>Air</th>
<th>Water.</th>
<th>Biota</th>
<th>Soil</th>
<th>Sediment</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 %</td>
<td>0 %</td>
<td>0 %</td>
<td>0 %</td>
<td>0 %</td>
</tr>
</tbody>
</table>

13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

14. Transport Information

DOT Non-Bulk

CONSUMER COMMODITY RECLASSIFIED AS ORM-D MATERIAL

DOT Bulk
15. Regulatory Information

OSHA Hazard Communication Standard
This product is 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 of 1986) Sections 311 and 312
Immediate (Acute) Health Hazard
Delayed (Chronic) Health Hazard
Fire Hazard
Reactive Hazard
Sudden Release of Pressure Hazard

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diphenylmethane Diisocyanate, isomers and homologues</td>
<td>9016-87-9</td>
<td>&gt;= 10.0 - &lt;= 30.0 %</td>
</tr>
<tr>
<td>4,4'-Methylene diphenyl diisocyanate</td>
<td>101-68-8</td>
<td>&gt;= 5.0 - &lt;= 10.0 %</td>
</tr>
<tr>
<td>Paraffin waxes and Hydrocarbon waxes, chlorinated</td>
<td>63449-39-8</td>
<td>&gt;= 5.0 - &lt;= 10.0 %</td>
</tr>
</tbody>
</table>

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:
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.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diphenylmethane Diisocyanate, isomers and homologues</td>
<td>9016-87-9</td>
<td>&gt;= 10.0 - &lt;= 30.0 %</td>
</tr>
<tr>
<td>Isobutane</td>
<td>75-28-5</td>
<td>&gt;= 7.0 - &lt;= 13.0 %</td>
</tr>
<tr>
<td>Propane</td>
<td>74-98-6</td>
<td>&gt;= 1.0 - &lt;= 5.0 %</td>
</tr>
<tr>
<td>Methyl ether</td>
<td>115-10-6</td>
<td>&gt;= 1.0 - &lt;= 5.0 %</td>
</tr>
<tr>
<td>4,4'-Methylene diphenyl diisocyanate</td>
<td>101-68-8</td>
<td>&gt;= 5.0 - &lt;= 10.0 %</td>
</tr>
</tbody>
</table>

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.
California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)
This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

US. Toxic Substances Control Act
All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

CEPA - Domestic Substances List (DSL)
At least one component of this product is not on the DSL. Products containing such substances cannot enter in Canada until these substances are properly notified under the New Substances Notifications Regulations of the CEPA.

16. Other Information

Recommended Uses and Restrictions
Polyurethane foam.

Revision
Identification Number: 1055685 / 1001 / Issue Date 09/08/2011 / Version: 1.1
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

<table>
<thead>
<tr>
<th>N/A</th>
<th>Not available</th>
</tr>
</thead>
<tbody>
<tr>
<td>W/W</td>
<td>Weight/Weight</td>
</tr>
<tr>
<td>OEL</td>
<td>Occupational Exposure Limit</td>
</tr>
<tr>
<td>STEL</td>
<td>Short Term Exposure Limit</td>
</tr>
<tr>
<td>TWA</td>
<td>Time Weighted Average</td>
</tr>
<tr>
<td>ACGIH</td>
<td>American Conference of Governmental Industrial Hygienists, Inc.</td>
</tr>
<tr>
<td>DOW IHG</td>
<td>Dow Industrial Hygiene Guideline</td>
</tr>
<tr>
<td>WEEL</td>
<td>Workplace Environmental Exposure Level</td>
</tr>
<tr>
<td>HAZ_DES</td>
<td>Hazard Designation</td>
</tr>
<tr>
<td>Action Level</td>
<td>A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.</td>
</tr>
</tbody>
</table>

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