



## SECTION 1: IDENTIFICATION

### 1.1. GHS Product Identifier

**Product Form:** Polyurethane foam in container (pressurized)

**Product Name:** Sto TurboStick

**Product Code:** 81181

### 1.2. Recommended Use Of The Chemical And Restrictions On Use

**Use Of The Substance/Mixture:** Adhesive. Polyurethane. For professional use only.

### 1.3. Supplier's Details

**Company**

Sto Corp.

6175 Riverside Drive SW

Atlanta, GA 30331

(800)221-2397

[www.stocorp.com](http://www.stocorp.com)

### 1.4. Emergency Phone Number

**Emergency Number** : 800-424-9300 CHEMTREC

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the Substance or Mixture

**GHS UN classification**

Gases Under Pressure - Liquefied gas

Acute Toxicity-Category 4 (Inhalation)

Skin Irritation - Category 2

Eye Irritation - Category 2A

Respiratory Sensitization - Category 1

Skin Sensitization - Category 1

Specific Target Organ Toxicity - Single Exposure - Category 3

Specific Target Organ Toxicity - Repeated Exposure - Category 2 ( inhalation )

Full text of hazard classes and H-statements : see section 16

**GHS Label Elements, Including Precautionary Statements GHS UN**

**labeling**

**Hazard Pictograms (GHS-UN)**



**Signal Word (GHS-UN)**

: **Danger!**

**Hazard Statements (GHS-UN)**

: Contains gas under pressure; may explode if heated.

Causes skin irritation.

Causes serious eye irritation.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

Harmful if inhaled..

May cause respiratory irritation.

May cause damage to organs (respiratory tract) through prolonged or repeated exposure.

**Precautionary Statements (GHS-UN)**

: Keep away from heat/sparks/open flame/hot surfaces - No smoking.

Pressurized container: Do not pierce or burn, even after use.

Do not spray on an open flame or other ignition sources.

Use only outdoors or in a well-ventilated area.

Wear protective gloves/protective clothing/eye protection/face protection.

Do not breathe dust/fume/gas/mist/vapors/spray.

Wash thoroughly after handling.

Contaminated work clothing must not be allowed out of the workplace.

Do not eat, drink or smoke when using this product.

**2.2 Other hazards which do not result in classification:** No data available

**2.3 Unknown Acute Toxicity (GHS-UN):** No data available

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

| Component Name                                                        | CAS #      | Percent of Product* |
|-----------------------------------------------------------------------|------------|---------------------|
| Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer | 53862-89-8 | >= 30.0 - <= 60.0   |
| Diphenylmethane Diisocyanate, isomers and homologues                  | 9016-87-9  | >= 10.0 - <= 30.0   |
| 1,1,1,2 Tetrafluoroethane (HFC-134a)                                  | 811-97-2   | >= 10.0 - <= 30.0   |
| 4,4' -Methylenediphenyl diisocyanate                                  | 101-68-8   | >= 7.0 - <= 13.0    |
| N,N'-Dimorpholinodiethylether                                         | 6425-39-4  | >= 1.0 - <= 5.0     |

\*The chemical identity and/or percentage of composition is being withheld as a trade secret.

Note: CAS 101-68-8 is an MDI isomer (part of CAS 9016-87-9)

### SECTION 4: FIRST AID MEASURES

#### 4.1. Description of Necessary First-Aid Measures

**Inhalation:** Remove person to fresh air and keep comfortable for breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Call a doctor/physician if you feel unwell.

**Skin:** Wash with plenty of soap and water immediately. Take off immediately all contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical advice/attention. Discard items which cannot be decontaminated, including leather articles such as shoes, belts, and watchbands.

**Eyes:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If effects occurs consult or physician (ophthalmologist).

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

#### 4.2 Most Important Symptoms/Effects Most Important Symptoms/Effects, Acute and Delayed

**Acute:** Causes skin irritation. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction. May cause respiratory irritation. See medical attention notes below.

**Delayed :** May cause damage to organs through prolonged or repeated exposure: respiratory tract.

#### 4.3 Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary

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. Exposure may increase "myocardial irritability". Do not administer sympathomimetic drugs such as epinephrine unless absolutely necessary. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress.

If you are sensitized to diisocyanates, consult your physician regarding working with other respiratory irritants or sensitizers. 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).

### SECTION 5: FIRE-FIGHTING MEASURES

#### 5.1. Extinguishing Media

**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

**Unsuitable Extinguishing Media:** Do not use direct water stream. May spread fire.

#### 5.2 Special Hazards Arising from the Chemical

##### 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 fluoride. Hydrogen halides. Carbon dioxide

##### Unusual Fire and Explosion Hazards:

Some components of this product will burn in a fire situation. Container may vent and/or rupture due to fire. Vaporizes quickly at room

## Safety Data Sheet

temperature. Dense smoke is produced when product burns.

**5.3 Advice for firefighters**

Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. 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. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. 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.

Prevent entry into sewers, drains, ditches, underground or confined spaces and waterways when possible.

**5.4 Special Protective Equipment and Precautions for Firefighters**

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

**SECTION 6: ACCIDENTAL RELEASE MEASURES****6.1. Personal Precautions, Protective Equipment and Emergency Procedures**

Wear personal protective clothing and equipment, see **Section 8**

**6.2. Methods and Materials for Containment and Cleaning Up**

Contain spilled material if possible. Absorb with materials such as: Dirt. Vermiculite. Sand. Clay.

Do **NOT** use absorbent materials such as: Cement powder (Note: may generate heat).

Collect in suitable and properly labeled open containers. Do **not** place in sealed containers. Suitable containers include: Metal drums. Plastic drums. Polylined fiber pacs.

Wash the spill site with large quantities of water. Attempt to neutralize by adding suitable decontaminant solution:

Formulation 1: sodium carbonate 5 - 10%; liquid detergent 0.2 - 2%; water to make up to 100%, OR

Formulation 2: concentrated ammonia solution 3 - 8%; liquid detergent 0.2 - 2%; water to make up to 100%. If ammonia is used, use good ventilation to prevent vapor exposure.

See **Section 13, Disposal Considerations**, for additional information.

**Environmental Precautions**

Avoid release to the environment.

**6.3. Reference to Other Sections**

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

**SECTION 7: HANDLING AND STORAGE****7.1. Precautions for Safe Handling**

**Pressurized container:** Do not pierce or burn, even after use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only outdoors or in a well-ventilated area.

Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. Avoid breathing vapor

Keep container tightly closed. This material is hygroscopic in nature. Contents under pressure. Do not puncture or incinerate container. Do not enter confined spaces unless adequately ventilated. See **Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION**. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion

**7.2. Conditions for Safe Storage, Including Any Incompatibilities**

Store in a well-ventilated place. Keep container tightly closed.

Store locked up. Store in a dry place. Protect from atmospheric moisture. Maintain a nitrogen atmosphere. Do not store product contaminated with water to prevent potential hazardous reaction.

Do not expose to temperatures exceeding 50 °C/122 °F.

**Incompatible Materials:** Acids. Alcohols. Amines. Ammonia. Bases. Metal compounds. Strong oxidizers. Products based on diisocyanates like TDI and MDI react with many materials to release heat.

**Water:** 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

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1. Control Parameters****Component Exposure Limits**

| Component                            | Régulation | Type of Listing | Value             |
|--------------------------------------|------------|-----------------|-------------------|
| 1,1,1,2 Tetrafluoroethane (HFC-134a) | US WEEL    | TWA             | 1000 ppm          |
| 4,4' -Methylenediphenyl diisocyanate | DOW IHG    | TWA             | 0.005 ppm         |
|                                      | ACGIH      | TWA             | 0.005 ppm         |
|                                      | DOW IHG    | STEL            | 0.02 ppm          |
|                                      | OSHA Z-1   | C               | 0.2 mg/m3 0.02ppm |

**ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)**

There are no biological limit values for any of this product's components.

For substances listed in section 3 that are not listed here, there are no known or established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), Colombia, Nicaragua, Panama, or Peru. Exposure Controls

**Engineering Controls:**

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

**8.2 Individual Protection Measures, Such as Personal Protective Equipment (PPE)**

**Eye/face protection :** Wear chemical goggles or splash resistant safety glasses with a faceshield.

**Skin Protection:** Use gloves chemically resistant to this material.

**Respiratory Protection:** If airborne contaminant levels may exceed recommended exposure limits, NIOSH approved respiratory protection appropriate for employee exposure levels is recommended. Consult with a health and safety professional for specific respirators appropriate for your use ( recommended: organic vapor cartridge with a particulate pre-filter). For emergency situations an SCBA is recommended.

**Glove Recommendations:** Wear appropriate chemical resistant gloves. Examples of preferred glove barrier materials include: Chlorinated polyethylene. Neoprene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). Viton.

Examples of acceptable glove barrier materials include: Butyl rubber. Nitrile/butadiene rubber ("nitrile" or "NBR").

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.

**Other Information:** 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.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES****9.1. Information on Basic Physical and Chemical Properties**

|                                               |                                             |
|-----------------------------------------------|---------------------------------------------|
| <b>Appearance</b>                             | : Natural color                             |
| <b>Physical State</b>                         | : Liquid in pressurized container.          |
| <b>Odor</b>                                   | : Slight                                    |
| <b>Odor Threshold</b>                         | : 0.4 ppm                                   |
| <b>pH</b>                                     | : No data available                         |
| <b>Evaporation Rate</b>                       | : No data available                         |
| <b>Melting Point</b>                          | : No data available                         |
| <b>Freezing Point</b>                         | : No data available                         |
| <b>Boiling Point</b>                          | : No data available                         |
| <b>Flash Point</b>                            | : No data available                         |
| <b>Auto-ignition Temperature</b>              | : No data available                         |
| <b>Decomposition Temperature</b>              | : No data available                         |
| <b>Flammability (solid, gas)</b>              | : Not applicable                            |
| <b>Vapor Pressure</b>                         | : 2,100 kPa at 55 °C (131 °F) Estimated.    |
| <b>Relative Vapor Density at 20°C</b>         | : No data available.e                       |
| <b>Relative Density</b>                       | : 1.155 at 25 °C (77 °F) / 25 °C Calculated |
| <b>Specific Gravity</b>                       | : No data available                         |
| <b>Solubility</b>                             | : No data available                         |
| <b>Partition Coefficient: N-Octanol/Water</b> | : No data available                         |
| <b>Viscosity</b>                              | : No data available                         |

**SECTION 10: STABILITY AND REACTIVITY**

**10.1. Reactivity:** No data available.

**10.2. Chemical Stability:** Stable under recommended handling and storage conditions (see section 7). Unstable at elevated temperature,

**10.3. Possibility of Hazardous Reactions:** Can occur. Elevated temperatures can cause hazardous polymerization.

**10.4. Conditions to Avoid:** Keep away from heat, sparks and naked flames. Keep away from ignition sources - No smoking. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Avoid contact with incompatible materials.

**10.5. 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. Reactions with water contact may produce carbon dioxide gas and heat.

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

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on Toxicological Effects

**Inhalation :** May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation.

**Acute inhalation toxicity:** 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. 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. As product: The LC50 has not been determined.

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

**Acute dermal toxicity:** Prolonged skin contact is unlikely to result in absorption of harmful amounts. As product: The dermal LD50 has not been determined.

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

**Ingestion:** Unlikely due to nature of product. Large amounts may cause GI irritation.

**Acute oral toxicity:**

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. As product: Single dose oral LD50 has not been determined.

**Acute Toxicity Estimates Product: Sto Turbostick**

**Oral LD50 (Rat) > 2000 mg/kg**

**Dermal LD50 (Rabbit) > 2000 mg/kg**

**Immediate Effects:** Causes skin irritation. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. May cause respiratory irritation.

**Delayed Effects:** Delayed respiratory reaction may occur including pulmonary edema.

**Irritation/Corrosivity Data :** Prolonged contact may cause moderate skin irritation with local redness. Material may stick to skin causing irritation upon removal. May stain skin

**Respiratory Sensitization :** May cause allergic respiratory reaction. 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

**Dermal Sensitization :** May cause an allergic skin reaction.

**Component Carcinogenicity :** Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m<sup>3</sup>) 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

**Germ Cell Mutagenicity:** 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. For the component(s) tested: 1,1,1,2- tetrafluoroethane Animal genetic toxicity studies were negative.

**Tumorigenic Data :** No information available for the product.

**Reproductive Toxicity :** No information available for the product.

**Specific Target Organ Toxicity - Single Exposure :** Contains component(s) which are classified as specific target organ toxicant, single exposure, category 3 (respiratory tract)

**Specific Target Organ Toxicity - 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

**Aspiration hazard :** Not expected to be an aspiration hazard.

**Medical Conditions Aggravated by Exposure:** Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome). Exposure may increase "myocardial irritability".

## SECTION 12: ECOLOGICAL INFORMATION

**12.1. Toxicity****Sto TurboStick:**

**Persistence and Degradability:** Expected to biodegrade very slowly in the environment.

**Bioaccumulative Potential :** No information available for the product.

**Mobility :** In water and soil the movement of material is expected to be limited by its reaction to water forming insoluble compounds.

**Bioconcentration :** No information available for the product.

**Other Toxicity:** No additional information available for the product.

**Product components:**

**Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer**

**Acute toxicity to fish:** Not expected to be acutely toxic to aquatic organisms.

**Diphenylmethane Diisocyanate, isomers and homologues**

**Acute toxicity to fish:** 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). Based on information for a similar material: LC50, Danio rerio (zebra fish), static test, 96 Hour, > 1,000 mg/l, OECD Test Guideline 203 or Equivalent.

**Acute toxicity to aquatic invertebrates:** Based on information for a similar material: EC50, Daphnia magna (Water flea), static test, 24 Hour, > 1,000 mg/l, OECD Test Guideline 202 or Equivalent.

**Acute toxicity to algae/aquatic plants:** Based on information for a similar material: NOEC, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate inhibition, 1,640 mg/l, OECD Test Guideline 201 or Equivalent.

**Toxicity to bacteria:** Based on information for a similar material: EC50, activated sludge, static test, 3 Hour, Respiration rates., > 100 mg/l

**Toxicity to soil-dwelling organisms:** EC50, Eisenia fetida (earthworms), Based on information for a similar material:, 14 d, > 1,000 mg/kg

**Toxicity to terrestrial plants:** EC50, Avena sativa (oats), Growth inhibition, 1,000 mg/l  
EC50, Lactuca sativa (lettuce), Growth inhibition, 1,000 mg/l

**1,1,1,2 Tetrafluoroethane (HFC-134a)**

**Acute toxicity to fish:** 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). LC50, Oncorhynchus mykiss (rainbow trout), semi-static test, 96 Hour, 450 mg/l

**Acute toxicity to aquatic invertebrates:** EC50, Daphnia magna (Water flea), 48 Hour, 980 mg/l

**Toxicity to bacteria:** EC50, Pseudomonas putida, static test, 6 Hour, Growth inhibition, > 730 mg/l

**4,4'-Methylenediphenyl diisocyanate**

**Acute toxicity to fish:** 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). Based on information for a similar material: LC50, Danio rerio (zebra fish), static test, 96 Hour, > 1,000 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates:** Based on information for a similar material: EC50, Daphnia magna (Water flea), static test, 24 Hour, > 1,000 mg/l, OECD Test Guideline 202 or Equivalent

**Acute toxicity to algae/aquatic plants:** Based on information for a similar material: NOEC, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate inhibition, 1,640 mg/l, OECD Test Guideline 201 or Equivalent

**Toxicity to bacteria:** Based on information for a similar material: EC50, activated sludge, static test, 3 Hour, Respiration rates., > 100 mg/l

**Toxicity to soil-dwelling organisms:** EC50, Eisenia fetida (earthworms), Based on information for a similar material:, 14 d, > 1,000 mg/kg

**Toxicity to terrestrial plants:** EC50, Avena sativa (oats), Growth inhibition, 1,000 mg/l  
EC50, Lactuca sativa (lettuce), Growth inhibition, 1,000 mg/l

**N,N'-Dimorpholinodiethylether**

**Acute toxicity to fish:** Material is practically non-toxic to fish on an acute basis (LC50 > 100 mg/L). May increase pH of aquatic systems to > pH 10 which may be toxic to aquatic organisms. LC50, Danio rerio (zebra fish), static test, 96 Hour, > 2,150 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates:** EC50, Daphnia (water flea), static test, 48 Hour, > 100 mg/l, OECD Test Guideline 202 or

Equivalent Acute toxicity to algae/aquatic plants EC50, Algae, static test, 72 Hour, > 100 mg/l, OECD Test Guideline 201 or Equivalent

**Toxicity to bacteria:** EC50, Bacteria, static test, 3 Hour, 100 mg/l, activated sludge test (OECD 209)

**Component Persistence and degradability:**

**Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer**

**Biodegradability:** Expected to degrade slowly in the environment.

**Diphenylmethane Diisocyanate, isomers and homologues**

**Biodegradability:** In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas



## Safety Data Sheet

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. **10-day Window:** Not applicable

**Biodegradation:** 0 % **Exposure time:** 28 d **Method:** OECD Test Guideline 302C or Equivalent

**1,1,1,2 Tetrafluoroethane (HFC-134a)**

**Biodegradability:** Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability. **10-day Window:** Fail

**Biodegradation:** 4 % **Exposure time:** 28 d **Method:** OECD Test Guideline 301D or Equivalent

**Theoretical Oxygen Demand:** 0.47 mg/mg

**Photodegradation Test Type:** Half-life (indirect photolysis)

**Sensitization:** OH radicals

**Atmospheric half-life:** 1,700 d **Method:** Estimated

**4,4' -Methylenediphenyl diisocyanate**

**Biodegradability:** 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. **10-day Window:** Not applicable

**Biodegradation:** 0 % **Exposure time:** 28 d **Method:** OECD Test Guideline 302C or Equivalent

**N,N'-Dimorpholinodiethylether**

**Biodegradability:** Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability. **10-day Window:** Fail

**Biodegradation:** 0 - 10 % **Exposure time:** 28 d **Method:** OECD Test Guideline 301A or Equivalent

**Theoretical Oxygen Demand:** 2.49 mg/mg

**Photodegradation Test Type:** Half-life (indirect photolysis)

**Sensitization:** OH radicals

**Atmospheric half-life:** 0.03 d **Method:** Estimated

**Component Mobility in Soil**

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

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

**1,1,1,2 Tetrafluoroethane (HFC-134a):** Potential for mobility in soil is high (Koc between 50 and 150). Partition coefficient (Koc): 97 Estimated.

**4,4' -Methylenediphenyl diisocyanate:** In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

**N,N'-Dimorpholinodiethylether:** Potential for mobility in soil is low (Koc between 500 and 2000). 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.

**Partition coefficient (Koc):** 784 Estimated.

**SECTION 13: DISPOSAL CONSIDERATIONS****13.1. Waste treatment methods**

**Waste Disposal Recommendations:** Dispose of contents/container in accordance with local, regional, national, and international regulations. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer. Incinerator or other thermal destruction device. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.

**Ecology - Waste Materials:** Avoid release to the environment. Keep out of sewers and waterways.

**SECTION 14: TRANSPORT INFORMATION**

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

**In Accordance with UN RTDG, IMDG, and IATA**

| UN RTDG                                                    | IMDG                                                       | IATA                                                       |
|------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|
| <b>14.1. UN Number</b>                                     |                                                            |                                                            |
| 3500                                                       |                                                            |                                                            |
| <b>14.2. UN Proper Shipping Name</b>                       |                                                            |                                                            |
| Chemical under pressure, n.o.s.(1,1,1,2-Tetrafluoroethane) | Chemical under pressure, n.o.s.(1,1,1,2-Tetrafluoroethane) | Chemical under pressure, n.o.s.(1,1,1,2-Tetrafluoroethane) |

|                                         |                        |     |
|-----------------------------------------|------------------------|-----|
| <b>14.3. Transport Hazard Class(es)</b> |                        |     |
| 2.2                                     | 2.2                    | 2.2 |
| Reportable Quantity: MDI                | Not a Marine Pollutant |     |

**14.6. Special Precautions For User:** Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations

**14.7. Transport in Bulk According to Annex II of MARPOL and The IBC Code**

Consult IMO regulations before transporting ocean bulk.

## SECTION 15: REGULATORY INFORMATION

### 15.1. U.S. Federal Regulations

#### U.S. Federal Regulations

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

| Components                                           | CASRN     |
|------------------------------------------------------|-----------|
| Diphenylmethane Diisocyanate, isomers and homologues | 9016-87-9 |
| 4,4' -Methylenediphenyl diisocyanate                 | 101-68-8  |

#### SARA Section 311/312 (40 CFR 370 Subparts B and C) reporting categories

Gas Under Pressure; Acute toxicity (any route of exposure); Skin Corrosion/Irritation; Respiratory/Skin Sensitization; Serious Eye Damage/Eye Irritation; Specific Target Organ Toxicity (single or repeated exposure)

#### Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103

Calculated RQ exceeds reasonably attainable upper limit.

| Components                           | CASRN    | RQ (RCRA Code) |
|--------------------------------------|----------|----------------|
| 4,4' -Methylenediphenyl diisocyanate | 101-68-8 | 5000 lbs RQ    |

### 15.2 U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

#### California Safe Drinking Water and Toxic Enforcement Act (Proposition 65) :

This product and its components contain no products listed under California Proposition 65.

**United States TSCA Inventory:** All components of this product are in compliance with the inventory listing requirements of the US Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

**Pennsylvania Worker and Community Right-To-Know Act:** To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

### 15.3 International Regulations and Component Analysis Inventory

None available

## SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

|                                               |                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Date of Preparation or Latest Revision</b> | : 2022/05/13<br>Classification revisions and expanded physician notes.                                                                                                                                                                                                                                                                                                      |
| <b>Data Sources</b>                           | : Information and data obtained and used in the authoring of this safety data sheet could come from database subscriptions, official government regulatory body websites, product/ingredient manufacturer or supplier specific information, and/or resources that include substance specific data and classifications according to GHS or their subsequent adoption of GHS. |
| <b>Other Information</b>                      | : According To The United Nations Ghs (Rev. 6, 2015)                                                                                                                                                                                                                                                                                                                        |

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

UN Latin America GHS SDS (Bolivia, Colombia, Ecuador, El Salvador, Guatemala, Honduras, Nicaragua, Panama, Peru)

#### HMIS Rating

Health: 2 \* Flammability: 1 Physical Hazard: 3

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe \* = Chronic hazard

#### Abbreviations



## Safety Data Sheet

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; C - Ceiling Value; CA - Canada; CA/MA/MN/NJ/PA - California/Massachusetts/Minnesota/New Jersey/Pennsylvania\*; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CFR - Code of Federal Regulations (US); CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DOW IHG-Dow Industrial Hygiene Guideline; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EC - European Commission; EEC - European Economic Community; EIN - European Inventory of (Existing Commercial Chemical Substances); EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; F - Background (for Venezuela Biological Exposure Indices); IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; ISHL - Japan Industrial Safety and Health Law; IUCLID - International Uniform Chemical Information Database; JP - Japan; Kow - Octanol/water partition coefficient; KR KECI Annex 1 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL); KR KECI Annex 2 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL), KR - Korea; LD50/LC50 - Lethal Dose/ Lethal Concentration; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MX - Mexico; Ne- Non-specific; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; Nq - Non-quantitative; NSL - Non-Domestic Substance List (Canada); NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; OSHA Z-1: USA Occupational Exposure Limits (OSHA) Table z1 Limits for Air Contaminants PEL- Permissible Exposure Limit; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorization, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; Sc - Semi-quantitative; STEL - Short-term Exposure Limit; TCCA - Korea Toxic Chemicals Control Act; TDG - Transportation of Dangerous Goods; TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; US WEEL- USA Workplace Environmental Exposure Levels; TW - Taiwan; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UN/NA - United Nations /North American; US - United States; VLE - Exposure Limit Value (Mexico); VN (Draft) - Vietnam (Draft); WHMIS - Workplace Hazardous Materials Information System (Canada).