

## Safety Data Sheet

## Firestone Building Products Company

## Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

## 1.1 Product identifier

**Product Name** | I.S.O. FIX™ II Adhesive

## 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Relevant identified use(s)** | Construction Adhesive

## 1.3 Details of the supplier of the safety data sheet

**Manufacturer** | Firestone Building Products Company

250 West 96th Street  
Indianapolis, IN 46260  
United States

firestonemsds@bfdp.com

**Telephone (General)** | 800-428-4442

## 1.4 Emergency telephone number

**Manufacturer** | (800) 424-9300 - CHEMTREC

**Manufacturer** | (703) 527-3887 - CHEMTREC - International

## Section 2: Hazards Identification

## EU/EEC

According to Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 453/2010]

According to EU Directive 67/548/EEC (DSD) or 1999/45/EC (DPD)

## 2.1 Classification of the substance or mixture

**CLP** | Compressed Gas - H280  
Skin Irritation 2 - H315  
Skin Sensitization 1 - H317  
Eye Irritation 2 - H319  
Acute Toxicity Inhalation 3 - H331  
Respiratory Sensitization 1 - H334  
Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation - H335  
Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects - H336  
Carcinogenicity 2 - H351  
Specific Target Organ Toxicity Repeated Exposure 2 - H373

**DSD/DPD** | Harmful (Xn)  
Irritant (Xi)  
Carcinogenic Substances - Category 3  
R20, R36/37/38, R40, R42/43, R48/20, R67

## 2.2 Label Elements

**CLP**

**DANGER**



**Hazard statements** | H280 - Contains gas under pressure; may explode if heated  
 H315 - Causes skin irritation  
 H317 - May cause an allergic skin reaction  
 H319 - Causes serious eye irritation  
 H331 - Toxic if inhaled  
 H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled  
 H335 - May cause respiratory irritation  
 H336 - May cause drowsiness or dizziness  
 H351 - Suspected of causing cancer.  
 H373 - May cause damage to organs through prolonged or repeated exposure.

## Precautionary statements

**Prevention** | P201 - Obtain special instructions before use.  
 P202 - Do not handle until all safety precautions have been read and understood.  
 P260 - Do not breathe gas/mist/vapours/spray.  
 P264 - Wash thoroughly after handling.  
 P271 - Use only outdoors or in a well-ventilated area.  
 P272 - Contaminated work clothing should not be allowed out of the workplace.  
 P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
 P281 - Use personal protective equipment as required.  
 P285 - In case of inadequate ventilation wear respiratory protection.

**Response** | P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
 P311 - Call a POISON CENTER or doctor/physician.  
 P302+P352 - IF ON SKIN: Wash with plenty of soap and water.  
 P362 - Take off contaminated clothing and wash before reuse.  
 P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.  
 P321 - Specific treatment, see supplemental first aid information.  
 P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P337+P313 - If eye irritation persists: Get medical advice/attention.  
 P308+P313 - IF exposed or concerned: Get medical advice/attention.  
 P314 - Get medical advice/attention if you feel unwell.

**Storage/Disposal** | P233 - Keep container tightly closed.  
 P410+P403 - Protect from sunlight. Store in a well-ventilated place.  
 P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

**Supplemental information** | 47 percent of this product consists of an ingredient of unknown toxicity.

## DSD/DPD



**Risk phrases** | R20 - Harmful by inhalation.  
 R36/37/38 - Irritating to eyes, respiratory system and skin.  
 R40 - Limited evidence of a carcinogenic effect.  
 R42/43 - May cause sensitisation by inhalation and skin contact.  
 R48/20 - Harmful: danger of serious damage to health by prolonged exposure through inhalation.  
 R67 - Vapours may cause drowsiness and dizziness.

**Safety phrases** | S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
 S36 - Wear suitable protective clothing.  
 S37 - Wear suitable gloves.  
 S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).  
 S53 - Avoid exposure - obtain special instructions before use.

## 2.3 Other Hazards

<b>CLP</b>	This material is a simple asphyxiant. May displace or reduce oxygen available for breathing especially in confined spaces. According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.
<b>DSD/DPD</b>	This material is a simple asphyxiant. May displace or reduce oxygen available for breathing especially in confined spaces. According to European Directive 1999/45/EC this material is considered dangerous.

## United States (US)

According to OSHA 29 CFR 1910.1200 HCS

### 2.1 Classification of the substance or mixture

<b>OSHA HCS 2012</b>	Compressed Gas - H280 Skin Irritation 2 - H315 Skin Sensitization 1A - H317 Eye Irritation 2 - H319 Acute Toxicity Inhalation 3 - H331 Respiratory Sensitization 1A - H334 Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation - H335 Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects - H336 Specific Target Organ Toxicity Repeated Exposure 1 - H372 Simple Asphyxiant
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### 2.2 Label elements

OSHA HCS 2012

#### DANGER



<b>Hazard statements</b>	Contains gas under pressure; may explode if heated - H280 Causes skin irritation - H315 May cause an allergic skin reaction - H317 Causes serious eye irritation - H319 Toxic if inhaled - H331 May cause allergy or asthma symptoms or breathing difficulties if inhaled - H334 May cause respiratory irritation - H335 May cause drowsiness or dizziness - H336 Causes damage to organs - Lungs through prolonged or repeated exposure - H372 May displace oxygen and cause rapid suffocation.
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#### Precautionary statements

<b>Prevention</b>	Do not breathe gas/mist/vapours/spray. - P260 Wash thoroughly after handling. - P264 Do not eat, drink or smoke when using this product. - P270 Use only outdoors or in a well-ventilated area. - P271 Contaminated work clothing should not be allowed out of the workplace. - P272 Wear protective gloves/protective clothing/eye protection/face protection. - P280 In case of inadequate ventilation wear respiratory protection. - P285
<b>Response</b>	IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. - P304+P341 Call a POISON CENTER or doctor/physician. - P311 If on skin: Wash with plenty of water . Take off contaminated clothing and wash before reuse. - P362 If skin irritation or rash occurs: Get medical advice/attention. - P333+P313 Specific treatment, see supplemental first aid information. - P321 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. - P305+P351+P338 If eye irritation persists: Get medical advice/attention. - P337+P313 Get medical advice/attention if you feel unwell. - P314

<b>Storage/Disposal</b>	Keep container tightly closed. - P233
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Protect from sunlight. Store in a well-ventilated place. - P410+P403  
 Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. - P501

**Supplemental information** | 60 percent of this product consists of an ingredient of unknown toxicity.

## 2.3 Other hazards

### OSHA HCS 2012

| Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

## Canada

According to WHMIS

## 2.1 Classification of the substance or mixture

### WHMIS

| Compressed Gas - A  
 Very Toxic - D1A  
 Other Toxic Effects - D2A  
 Other Toxic Effects - D2B

## 2.2 Label elements

### WHMIS



| Compressed Gas - A  
 Very Toxic - D1A  
 Other Toxic Effects - D2A  
 Other Toxic Effects - D2B

## 2.3 Other hazards

### WHMIS

| This material is a simple asphyxiant. May displace or reduce oxygen available for breathing especially in confined spaces.  
 In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

## Section 3 - Composition/Information on Ingredients

### 3.1 Substances

| Material does not meet the criteria of a substance in accordance with Regulation (EC) No 1272/2008.

### 3.2 Mixtures

Composition					
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive	Comments
Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	CAS:53862-89-8	30% TO 60%	NDA	EU DSD/DPD: Not Classified EU CLP: Not Classified OSHA HCS 2012: Not Classified	NDA
			Ingestion/Oral-Rat LD50 • 49 g/kg	EU DSD/DPD: Self Classified: Xn R20-48/20 Xn R42/43 Xi R36/37/38 EU CLP: Self Classified: Acute Tox. 2, H330; STOT RE 2, H373; Eye Irrit. 2,	

Polymethylene polyphenyl isocyanate	CAS:9016-87-9	10% TO 30%	Inhalation-Rat LC50 • 490 mg/m <sup>3</sup> 4 Hour(s) Skin-Rabbit LD50 • >9400 mg/kg	H319; STOT SE 3: Resp. Irrit., H335; Skin Irrit. 2, H315; Resp. Sens. 1, H334; Skin Sens. 1, H317 <b>OSHA HCS 2012:</b> Eye Irrit. 2; Skin Irrit. 2; Skin Sens. 1A; STOT SE 3: Resp. Irrit.; Resp. Sens. 1A; STOT RE 1 (Lungs); Acute Tox. 2 (inhl)	NDA
1,1,1,2-Tetrafluoroethane	CAS:811-97-2 EC Number:212-377-0	10% TO 30%	Inhalation-Rat LC50 • 1500 g/m <sup>3</sup> 4 Hour(s)	<b>EU DSD/DPD:</b> Self Classified: R67 <b>EU CLP:</b> Self Classified: Press Gas - Liq., H280; STOT SE 3: Narc., H336 <b>OSHA HCS 2012:</b> Press Gas - Liq.; STOT SE 3: Narc.	NDA
Isocyanic acid, methylenedi-p-phenylene ester	CAS:101-68-8 EC Number:202-966-0 EU Index:615-005-00-9	7% TO 13%	Ingestion/Oral-Rat LD50 • 9200 mg/kg Inhalation-Rat LC50 • 178 mg/m <sup>3</sup>	<b>EU DSD/DPD:</b> Annex VI, Table 3.2: Xn R20-48/20 Xi R36/37/38 Carc.Cat.3 R40 R42/43 <b>EU CLP:</b> Annex VI, Table 3.1: Carc. 2, H351; Acute Tox. 4, H332; STOT RE 2, H373; Eye Irrit. 2, H319; Skin Irrit. 2, H315; STOT SE 3: Resp. Irrit., H335; Resp. Sens. 1, H334; Skin Sens. 1, H317 <b>OSHA HCS 2012:</b> Eye Irrit. 2; Skin Irrit. 2; Skin Sens. 1A; STOT SE 3: Resp. Irrit.; Resp. Sens. 1A; STOT RE 1 (Lungs)	NDA
Amine catalyst	CAS:6425-39-4 EINECS:229-194-7	1% TO 5%	NDA	<b>EU DSD/DPD:</b> Not Classified <b>EU CLP:</b> Not Classified <b>OSHA HCS 2012:</b> Not Classified	NDA

## Section 4 - First Aid Measures

### 4.1 Description of first aid measures

#### Inhalation

- | Move victim to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention.

#### Skin

- | Wash skin with soap and water. Remove contaminated clothing and shoes. 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. If irritation develops and persists, get medical attention.

#### Eye

- | Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. Get medical attention immediately.

#### Ingestion

- | Do NOT induce vomiting. Get medical attention immediately.

### 4.2 Most important symptoms and effects, both acute and delayed

- | Refer to Section 11 - Toxicological Information.

### 4.3 Indication of any immediate medical attention and special treatment needed

#### Notes to Physician

- | All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

## Section 5 - Firefighting Measures

## 5.1 Extinguishing media

**Suitable Extinguishing Media** | LARGE FIRE: Water spray, fog or regular foam.  
SMALL FIRES: Dry chemical, CO<sub>2</sub>, water spray or regular foam.

**Unsuitable Extinguishing Media** | Do not use a direct stream of water.

## 5.2 Special hazards arising from the substance or mixture

**Unusual Fire and Explosion Hazards** | Some components of this product will burn in a fire situation.  
Containers may explode when heated.  
Vaporizes quickly at room temperature.  
Combustion of this product causes dense black smoke.

**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.

## 5.3 Advice for firefighters

| Structural firefighters' protective clothing will only provide limited protection.  
Wear positive pressure self-contained breathing apparatus (SCBA).  
Move containers from fire area if you can do it without risk.  
LARGE FIRES: Cool containers with flooding quantities of water until well after fire is out.  
LARGE FIRES: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.

## Section 6 - Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

**Personal Precautions** | Ventilate enclosed areas. Do not walk through spilled material. Surfaces may become slippery after a spill. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Wear appropriate personal protective equipment, avoid direct contact.

**Emergency Procedures** | Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

### 6.2 Environmental precautions

| Avoid run off to waterways and sewers.

### 6.3 Methods and material for containment and cleaning up

**Containment/Clean-up Measures** | Stop leak if you can do it without risk.  
Absorb with materials such as: Dirt, Vermiculite, Sand, Clay. Do NOT use absorbent materials such as: Cement powder (Note: may generate heat).  
Carefully shovel or sweep up spilled material and place in suitable container.  
Suitable containers include: petal drums, plastic drums, polylined fiber pacs. Do not place in sealed containers.  
Wash the spill site with large quantities of water. Attempt to neutralize by adding suitable decontaminate 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.  
LARGE SPILLS: Dike far ahead of liquid spill for later disposal.

### 6.4 Reference to other sections

| Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

## Section 7 - Handling and Storage

### 7.1 Precautions for safe handling

**Handling**

- Use only with adequate ventilation. Do not puncture or incinerate container. Wear appropriate personal protective equipment, avoid direct contact. Do not breathe mist, vapors, spray. Avoid contact with skin, eyes, and clothing. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

**7.2 Conditions for safe storage, including any incompatibilities****Storage**

- Keep container tightly closed. Protect from atmospheric moisture. Store in a cool, dry place. Avoid temperatures above 50°C (122°F) Avoid storing in direct sunlight.

**7.3 Specific end use(s)**

- Refer to Section 1.2 - Relevant identified uses.

**Section 8 - Exposure Controls/Personal Protection****8.1 Control parameters**

Exposure Limits/Guidelines						
	Result	ACGIH	Belgium	Canada Alberta	Canada British Columbia	Canada Manitoba
Isocyanic acid, methylenedi-p-phenylene ester (101-68-8)	TWAs	0.005 ppm TWA (listed under Methylene bisphenyl isocyanate (MDI))	0.005 ppm TWA; 0.052 mg/m <sup>3</sup> TWA	0.005 ppm TWA; 0.05 mg/m <sup>3</sup> TWA	0.005 ppm TWA (listed under Methylene bisphenyl isocyanate (MDI))	0.005 ppm TWA (listed under Methylene bisphenyl isocyanate (MDI))
	Ceilings	Not established	Not established	Not established	0.01 ppm Ceiling (listed under Methylene bisphenyl isocyanate (MDI))	Not established
Polymethylene polyphenyl isocyanate (9016-87-9)	TWAs	Not established	Not established	0.005 ppm TWA; 0.07 mg/m <sup>3</sup> TWA	Not established	Not established

**Exposure Limits/Guidelines (Con't.)**

	Result	Canada New Brunswick	Canada Nova Scotia	Canada Ontario	Canada Quebec	Canada Saskatchewan
Isocyanic acid, methylenedi-p-phenylene ester (101-68-8)	TWAs	0.005 ppm TWA (listed under Methylene bisphenyl isocyanate); 0.051 mg/m <sup>3</sup> TWA (listed under Methylene bisphenyl isocyanate)	0.005 ppm TWA (listed under Methylene bisphenyl isocyanate (MDI))	0.005 ppm TWA (designated substances regulation, listed under Isocyanates, organic compounds (Methylene bisphenyl isocyanate (MDI))); 0.005 ppm TWA (applies to workplaces to which the designated substances regulation does not apply, listed under Methylene bisphenyl isocyanate (MDI))	0.005 ppm TWAEV; 0.051 mg/m <sup>3</sup> TWAEV	0.005 ppm TWA (listed under Methylene bisphenyl isocyanate (MDI))
	Ceilings	Not established	Not established	0.02 ppm Ceiling (designated substances regulation, listed under Isocyanates, organic compounds)	Not established	Not established

(Methylene bisphenyl isocyanate (MDI))						
Exposure Limits/Guidelines (Con't.)						
	Result	Canada Yukon	Denmark	Germany DFG	Germany TRGS	NIOSH
Isocyanic acid, methylenedi-p-phenylene ester (101-68-8)	TWAs	Not established	0.005 ppm TWA; 0.05 mg/m <sup>3</sup> TWA	Not established	0.05 mg/m <sup>3</sup> TWA AGW (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed, ceiling factor 2, exposure factor 1)	0.005 ppm TWA (listed under Methylene bisphenyl isocyanate); 0.05 mg/m <sup>3</sup> TWA
	Ceilings	0.02 ppm Ceiling (Methylene bisphenyl isocyanate (MDI)); 0.2 mg/m <sup>3</sup> Ceiling (Methylene bisphenyl isocyanate (MDI))	Not established	0.05 mg/m <sup>3</sup> Peak (inhalable fraction)	Not established	0.020 ppm Ceiling (10 min); 0.2 mg/m <sup>3</sup> Ceiling (10 min)
	MAKs	Not established	Not established	0.05 mg/m <sup>3</sup> TWA MAK (see also polymeric MDI, inhalable fraction)	Not established	Not established
Polymethylene polyphenyl isocyanate (9016-87-9)	TWAs	Not established	Not established	Not established	0.05 mg/m <sup>3</sup> TWA AGW (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed, inhalable fraction, as MDI, exposure factor 1)	Not established
	Ceilings	Not established	Not established	0.05 mg/m <sup>3</sup> Peak (inhalable fraction)	Not established	Not established
	MAKs	Not established	Not established	0.05 mg/m <sup>3</sup> TWA MAK (inhalable fraction)	Not established	Not established
1,1,1,2-Tetrafluoroethane (811-97-2)	TWAs	Not established	Not established	Not established	1000 ppm TWA AGW (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed, exposure factor 8); 4200 mg/m <sup>3</sup> TWA AGW (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed, exposure factor 8)	Not established
	Ceilings	Not established	Not established	8000 ppm Peak; 33600 mg/m <sup>3</sup> Peak	Not established	Not established
				1000 ppm TWA MAK;		



	MAKs	Not established	Not established	4200 mg/m3 TWA MAK	Not established	Not established
Exposure Limits/Guidelines (Con't.)						
			Result	OSHA		
Isocyanic acid, methylenedi-p-phenylene ester (101-68-8)			Ceilings	0.02 ppm Ceiling; 0.2 mg/m3 Ceiling		

**Exposure Control Notations**

**Germany TRGS**

•Polymethylene polyphenyl isocyanate (9016-87-9): **Carcinogens:** (Category 3 (as inhalable aerosol, alveola fraction)) | **Developmental Toxins:** (Based on current data, this substance cannot be classified in categories 1-3 (as inhalable aerosol, alveoli fraction)) | **Reproductive Toxins:** (Based on current data, this substance cannot be classified in categories 1-3 (as inhalable aerosol, alveola fraction)) | **Germ Cell Mutagens:** (Based on current data, this substance cannot be classified in categories 1-3 (as inhalable aerosol, alveola fraction)) | **Skin:** (skin notation (calculated as MDI))

•Isocyanic acid, methylenedi-p-phenylene ester (101-68-8): **Carcinogens:** (Category 3 (as inhalable aerosol, alveola fraction)) | **Developmental Toxins:** (Based on current data, this substance cannot be classified in categories 1-3 (as inhalable aerosol, alveoli fraction)) | **Reproductive Toxins:** (Based on current data, this substance cannot be classified in categories 1-3 (as inhalable aerosol, alveola fraction)) | **Germ Cell Mutagens:** (Based on current data, this substance cannot be classified in categories 1-3 (as inhalable aerosol, alveola fraction))

**Germany DFG**

•Polymethylene polyphenyl isocyanate (9016-87-9): **Carcinogens:** (Category 4 (no significant contribution to human cancer)) | **Pregnancy:** (no risk to embryo/fetus if exposure limits adhered to (inhalable fraction)) | **Sensitizers:** (respiratory and skin sensitizer (inhalable fraction)) | **Skin:** (skin notation)

•Isocyanic acid, methylenedi-p-phenylene ester (101-68-8): **Carcinogens:** (Category 4 (no significant contribution to human cancer)) | **Pregnancy:** (no risk to embryo/fetus if exposure limits adhered to (inhalable fraction, see also polymeric MDI)) | **Sensitizers:** (respiratory and skin sensitizer (inhalable fraction)) | **Skin:** (skin notation)

•1,1,1,2-Tetrafluoroethane (811-97-2): **Pregnancy:** (no risk to embryo/fetus if exposure limits adhered to)

**8.2 Exposure controls**

**Engineering Measures/Controls**

| Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

**Personal Protective Equipment**

**Respiratory**

| In case of insufficient ventilation, wear suitable respiratory equipment. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

**Eye/Face**

| Wear protective eyewear (goggles, face shield, or safety glasses).

**Skin/Body**

| Wear appropriate chemical resistant gloves. Wear long sleeves and/or protective coveralls.

**Environmental Exposure Controls**

| Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.

**Key to abbreviations**

ACGIH = American Conference of Governmental Industrial Hygiene  
MAK = Maximale Arbeitsplatz Konzentration is the maximum permissible concentration

NIOSH = National Institute of Occupational Safety and Health

OSHA = Occupational Safety and Health Administration

TWAEV = Time-Weighted Average Exposure Value

TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

**Section 9 - Physical and Chemical Properties**

## 9.1 Information on Physical and Chemical Properties

<b>Material Description</b>			
Physical Form	Liquid	Appearance/Description	Natural colored foam with a very slight odor.
Color	Natural	Odor	Slight
Odor Threshold	Data lacking		
<b>General Properties</b>			
Boiling Point	Data lacking	Melting Point	Data lacking
Decomposition Temperature	Data lacking	pH	Data lacking
Specific Gravity/Relative Density	1.155 Water=1 @ 25 C(77 F) (calculated)	Water Solubility	Data lacking
Viscosity	Data lacking	Explosive Properties	Not explosive.
Oxidizing Properties:	Not an oxidizer.		
<b>Volatility</b>			
Vapor Pressure	2100 kPa @ 55 C(131 F) (estimated)	Vapor Density	Data lacking
Evaporation Rate	Data lacking		
<b>Flammability</b>			
Flash Point	Data lacking	UEL	Data lacking
LEL	Data lacking	Autoignition	Data lacking
Flammability (solid, gas)	Not relevant.		
<b>Environmental</b>			
Octanol/Water Partition coefficient	Data lacking		

## 9.2 Other Information

- No additional physical and chemical parameters noted.

## Section 10: Stability and Reactivity

### 10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

### 10.2 Chemical stability

- Stable

### 10.3 Possibility of hazardous reactions

- Hazardous polymerization will not occur.

### 10.4 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. Do not attempt to clean or re-use empty containers.

### 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. 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.

### 10.6 Hazardous decomposition products

- 1 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

Components		
Polymethylene polyphenyl isocyanate (10% TO 30%)	9016-87-9	<b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • 49 g/kg; <b>Behavioral:Somnolence (general depressed activity); Gastrointestinal:Hypermotility, diarrhea; Nutritional and Gross Metabolic:Changes in Chemistry or Temperature:Body temperature decrease;</b> Inhalation-Rat LC50 • 490 mg/m <sup>3</sup> 4 Hour(s); <b>Sense Organs and Special Senses:Eye:Other; Lungs, Thorax, or Respiration:Respiratory depression;</b> <b>Blood:Hemorrhage;</b> Skin-Rabbit LD50 • >9400 mg/kg; <b>Irritation:</b> Eye-Rabbit • 100 mg • Mild irritation; <b>Reproductive:</b> Inhalation-Rat TCLo • 12 mg/m <sup>3</sup> 6 Hour(s)(6-15D preg); <b>Reproductive Effects:Maternal Effects:Other effects; Reproductive Effects:Effects on Embryo or Fetus:Extra embryonic structures; Reproductive Effects:Specific Developmental Abnormalities:Musculoskeletal system</b>
Isocyanic acid, methylenedi-p-phenylene ester (7% TO 13%)	101-68-8	<b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • 9200 mg/kg; <b>Behavioral:Somnolence (general depressed activity); Behavioral:Ataxia; Nutritional and Gross Metabolic:Changes in Chemistry or Temperature:Body temperature decrease;</b> Inhalation-Rat TCLo • 2.4 mg/m <sup>3</sup> 6 Hour(s); <b>Lungs, Thorax, or Respiration:Structural or functional change in trachea or bronchi; Lungs, Thorax, or Respiration:Other changes; Biochemical:Metabolism (intermediary):Other proteins;</b> <b>Irritation:</b> Eye-Rabbit • 100 mg • Moderate irritation; Skin-Rabbit • 500 mg 24 Hour(s)
1,1,1,2-Tetrafluoroethane (10% TO 30%)	811-97-2	<b>Acute Toxicity:</b> Inhalation-Rat LC50 • 1500 g/m <sup>3</sup> 4 Hour(s); <b>Reproductive:</b> Inhalation-Rat TCLo • 30 pph 6 Hour(s)(6-15D preg); <b>Reproductive Effects:Maternal Effects:Other effects; Reproductive Effects:Effects on Embryo or Fetus:Fetotoxicity (except death, e.g., stunted fetus)</b>

GHS Properties	Classification
<b>Acute toxicity</b>	EU/CLP • Acute Toxicity - Inhalation 3 - ATEmix(inhl) = 0.758 mg/L OSHA HCS 2012 • Acute Toxicity - Inhalation 3 - ATEmix(inhl) = 0.653 mg/L
<b>Aspiration Hazard</b>	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
<b>Carcinogenicity</b>	EU/CLP • Carcinogenicity 2 OSHA HCS 2012 • Data lacking
<b>Germ Cell Mutagenicity</b>	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
<b>Skin corrosion/Irritation</b>	EU/CLP • Skin Irritation 2 OSHA HCS 2012 • Skin Irritation 2
<b>Skin sensitization</b>	EU/CLP • Skin Sensitizer 1 OSHA HCS 2012 • Skin Sensitizer 1A
<b>STOT-RE</b>	EU/CLP • Specific Target Organ Toxicity Repeated Exposure 2 OSHA HCS 2012 • Specific Target Organ Toxicity Repeated Exposure 1
<b>STOT-SE</b>	EU/CLP • Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects; Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation OSHA HCS 2012 • Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects; Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation
<b>Toxicity for Reproduction</b>	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking

<b>Respiratory sensitization</b>	<b>EU/CLP • Respiratory Sensitizer 1</b> <b>OSHA HCS 2012 • Respiratory Sensitizer 1A</b>
<b>Serious eye damage/Irritation</b>	<b>EU/CLP • Eye Irritation 2</b> <b>OSHA HCS 2012 • Eye Irritation 2</b>

## Potential Health Effects

### Inhalation

- Acute (Immediate)** | Toxic if inhaled. May cause respiratory irritation. May affect the central nervous system. Symptoms may include dizziness, drowsiness, lethargy, coma and death. This material is a simple asphyxiant. May displace or reduce oxygen available for breathing especially in confined spaces.
- Chronic (Delayed)** | May cause allergy or asthma symptoms or breathing difficulties if inhaled.

### Skin

- Acute (Immediate)** | Causes skin irritation. May cause skin sensitization. Symptoms include redness, and skin rash.
- Chronic (Delayed)** | No data available

### Eye

- Acute (Immediate)** | Causes serious eye irritation.
- Chronic (Delayed)** | No data available

### Ingestion

- Acute (Immediate)** | Ingesting large amounts may cause gastrointestinal disturbances including diarrhea, nausea, and vomiting.
- Chronic (Delayed)** | No data available

### Other

- Chronic (Delayed)** | Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols.

### Carcinogenic Effects

- | 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.

#### Key to abbreviations

LC = Lethal Concentration      MOD = Moderate  
LD = Lethal Dose                TC = Toxic Concentration  
MLD = Mild

## Section 12 - Ecological Information

### 12.1 Toxicity

- | Material data lacking.

### 12.2 Persistence and degradability

- | Material data lacking.

### 12.3 Bioaccumulative potential

- | Material data lacking.

### 12.4 Mobility in Soil

- | Material data lacking.

### 12.5 Results of PBT and vPvB assessment

- | No PBT and vPvB assessment has been conducted.

## 12.6 Other adverse effects

┆ No studies have been found.

## Section 13 - Disposal Considerations

### 13.1 Waste treatment methods

**Product waste**                   ┆ Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

**Packaging waste**               ┆ Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

## Section 14 - Transport Information

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	UN3500	Chemical Under Pressure, N.O.S. (1,1,1,2-Tetrafluoroethane)	2.2	NDA	NDA
TDG	UN3500	CHEMICAL UNDER PRESSURE, N.O.S. (1,1,1,2-Tetrafluoroethane)	2.2	NDA	NDA
IMO/IMDG	UN3500	CHEMICAL UNDER PRESSURE, N.O.S. (1,1,1,2-Tetrafluoroethane)	2.2	NDA	NDA
ADN	UN3500	CHEMICAL UNDER PRESSURE, N.O.S. (1,1,1,2-Tetrafluoroethane)	2.2	NDA	NDA
ADR/RID	UN3500	CHEMICAL UNDER PRESSURE, N.O.S. (1,1,1,2-Tetrafluoroethane)	2.2	NDA	NDA
IATA/ICAO	UN3500	Chemical Under Pressure, N.O.S. (1,1,1,2-Tetrafluoroethane)	2.2	NDA	NDA

**14.6 Special precautions for user**                   ┆ None specified.

**14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**               ┆ Data lacking.

## Section 15 - Regulatory Information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

**SARA Hazard Classifications**   ┆ Acute, Chronic, Pressure(Sudden Release of)

State Right To Know				
Component	CAS	MA	NJ	PA
1,1,1,2-Tetrafluoroethane	811-97-2	No	No	No
Amine catalyst	6425-39-4	No	No	No
Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	No	No	Yes
Polymethylene				

polyphenyl isocyanate	9016-87-9	No	Yes	No
Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	No	No	No

Inventory						
Component	CAS	Canada DSL	Canada NDSL	EU EINECS	EU ELNICS	TSCA
1,1,1,2-Tetrafluoroethane	811-97-2	Yes	No	Yes	No	Yes
Amine catalyst	6425-39-4	Yes	No	Yes	No	Yes
Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Yes	No	Yes	No	Yes
Polymethylene polyphenyl isocyanate	9016-87-9	Yes	No	No	No	Yes
Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Yes	No	No	No	Yes

## Belgium

### Labor

#### Belgium - Substances and Preparations - Carcinogens and Mutagens

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

## Bulgaria

### Environment

#### Bulgaria - Air Quality - Maximum Admissible Hazardous Contaminant Levels - 24 Hour

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

#### Bulgaria - Air Quality - Maximum Admissible Hazardous Contaminant Levels - 30 Minute

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

#### Bulgaria - Air Quality - Maximum Admissible Hazardous Contaminant Levels - Annual

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed

• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

## Canada

### Labor

#### Canada - WHMIS - Classifications of Substances

• 1,1,1,2-Tetrafluoroethane	811-97-2	A
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	D1A, D2A, D2B
• Polymethylene polyphenyl isocyanate	9016-87-9	D1A, D2A, D2B
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

#### Canada - WHMIS - Ingredient Disclosure List

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	0.1 %
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

### Environment

#### Canada - 2004 NPRI (National Pollutant Release Inventory)

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Part 1, Group 1 Substance
• Polymethylene polyphenyl isocyanate	9016-87-9	Part 1, Group 1 Substance
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

#### Canada - 2005 NPRI (National Pollutant Release Inventory)

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Part 1, Group 1 Substance
• Polymethylene polyphenyl isocyanate	9016-87-9	Part 1, Group 1 Substance
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

#### Canada - CEPA - Greenhouse Gases Subject to Mandatory Reporting

• 1,1,1,2-Tetrafluoroethane	811-97-2	1300 GWP
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

#### Canada - CEPA - Priority Substances List

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

#### Canada - DWQ (Drinking Water Quality) - IMACs

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

**Other****Canada - Accelerated Reduction/Elimination of Toxics (ARET)**

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

**Canada New Brunswick****Environment****Canada - New Brunswick - Ozone Depleting Substances - Schedule A**

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

**Canada - New Brunswick - Ozone Depleting Substances - Schedule B**

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

**Denmark****Environment****Denmark - List of Undesirable Substances - Product Groups/Function**

• 1,1,1,2-Tetrafluoroethane	811-97-2	Aerosols (listed under Fluorinated greenhouse gases); Refrigeration equipment (listed under Fluorinated greenhouse gases); Insulating foam (listed under Fluorinated greenhouse gases)
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Binders; Curing agents; Glues; Paints; Coatings; Molding compounds
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

**Europe****Other****EU - CLP (1272/2008) - Annex VI - Table 3.2 - Classification**

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Xn; R20-48/20 Xi; R36/37/38 Carc.Cat.3; R40 R42/43
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed



**EU - CLP (1272/2008) - Annex VI - Table 3.2 - Concentration Limits**

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	5%≤C: Xi; R:36/37/38 0.1% ≤C: R:42
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

**EU - CLP (1272/2008) - Annex VI - Table 3.2 - Labelling**

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Xn R:20-36/37/38-40-42/43-48/20 S:(1/2)-23-36/37-45
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

**EU - CLP (1272/2008) - Annex VI - Table 3.2 - Notes - Substances and Preparations**

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	C, 2
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

**EU - CLP (1272/2008) - Annex VI - Table 3.2 - Safety Phrases**

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	S:(1/2)-23-36/37-45
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

**Germany****Labor****Germany - Immission Control - Qualifying Quantities for Major Accident Prevention**

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

**Germany - Immission Control - Qualifying Quantities for Safety Reporting**

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

**Germany - TRGS 505 - Specific Lead Regulations**

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

**Germany - TRGS 511 - Specific Ammonium Nitrate Regulations**

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

## Environment

### Germany - TA Luft - Types and Classes

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	organic Substance: 5.2.5, Class I
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

### Germany - TA Luft - Emission Limits for Carcinogenic Substances

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

### Germany - TA Luft - Emission Limits for Fibers

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

### Germany - TA Luft - Emission Limits for Inorganic Dusts

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

### Germany - TA Luft - Emission Limits for Inorganic Gases

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

### Germany - TA Luft - Emission Limits for Organic Substances

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	0.10 kg/h Mass flow (Class I); 20 mg/m <sup>3</sup> Mass concentration (Class I)
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

### Germany - Water Classification (VwVwS) - Annex 1

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed

• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed
<b>Germany - Water Classification (VwVwS) - Annex 2 - Water Hazard Classes</b>		
• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	ID Number 635, hazard class 1 - low hazard to waters
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed
<b>Germany - Water Classification (VwVwS) - Annex 3</b>		
• 1,1,1,2-Tetrafluoroethane	811-97-2	ID Number 2350, hazard class 1 - low hazard to waters
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	ID Number 4476, hazard class 1 - low hazard to waters

## United States

### Labor

#### U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

#### U.S. - OSHA - Specifically Regulated Chemicals

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

### Environment

#### U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	(listed under Methylene diphenyl diisocyanate)
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

#### U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	5000 lb final RQ; 2270 kg final RQ
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

**U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities**

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

**U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs**

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

**U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs**

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

**U.S. - CERCLA/SARA - Section 313 - Emission Reporting**

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	1.0 % de minimis concentration (listed under Chemical Category N120, Diisocyanates)
• Polymethylene polyphenyl isocyanate	9016-87-9	1.0 % de minimis concentration (listed under Chemical Category N120, Diisocyanates)
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

**U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing**

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

**United States - California****Environment****U.S. - California - Proposition 65 - Carcinogens List**

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

**U.S. - California - Proposition 65 - Developmental Toxicity**

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed

• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

**U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)**

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

**U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)**

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

**U.S. - California - Proposition 65 - Reproductive Toxicity - Female**

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

**U.S. - California - Proposition 65 - Reproductive Toxicity - Male**

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

**United States - Pennsylvania****Labor****U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List**

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

**U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances**

• 1,1,1,2-Tetrafluoroethane	811-97-2	Not Listed
• Isocyanic acid, methylenedi-p-phenylene ester	101-68-8	Not Listed
• Polymethylene polyphenyl isocyanate	9016-87-9	Not Listed
• Polypropylene glycol, polymethylenepolyphenylene isocyanate polymer	53862-89-8	Not Listed
• Amine catalyst	6425-39-4	Not Listed

**15.2 Chemical Safety Assessment**

1 No Chemical Safety Assessment has been carried out.

**Section 16 - Other Information**

**Relevant Phrases (code & full text)**

| H330 - Fatal if inhaled  
| H332 - Harmful if inhaled

**Last Revision Date**

| 17/June/2014

**Preparation Date**

| 17/June/2014

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**Key to abbreviations**

NDA = No Data Available

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