

**SAFETY DATA SHEET****TopShield® PRO Roofing Adhesive Tanks – Part A****SECTION 1: Product and Company Identification**

**MATERIAL NAME:** TopShield® Roofing Adhesive Tanks – Part A  
**SYNONYMS:** Diphenylmethane Diisocyanate  
**CHEMICAL FAMILY:** Aromatic Isocyanates  
**PRODUCT USE:** Polyurethane Component/Industrial Chemicals  
Recommended use\*: polyurethane component; industrial chemicals  
Suitable for use in industrial sector: Polymers industry; chemical industry  
Unsuitable for use: Uses other than recommended

\* The "Recommended use" identified for this product is provided solely to comply with a federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

**Supplier Info:** Altenloh Brinck and Co.  
02105 COUNTY ROAD 12C  
BRYAN OH 43506, USA

**Phone:** 800-443-9602  
**24 Hour Emergency:** 800-424-9300 – CHEMTREC  
CCN # 838620

**SECTION 2: Hazards Identification****ACCORDING TO REGULATION 2012 OSHA HAZARD COMMUNICATION STANDARD; 29 CFR PART 1910.1200****2.1 CLASSIFICATIONS**

Acute Toxicity	4 (Inhalation - mist)
Eye Irritation	2B
Skin Irritation	2
Skin Sensitization	1B
Respiratory Sensitization	1
Specific Target Organ Toxicity	3 (irritating to respiratory system) single exposure
Specific Target Organ Toxicity	2 (by inhalation) repeated exposure
Gases under pressure	Compressed Gas
Simple Asphyxiant	Simple Asphyxiant (1)

**HAZARD CATEGORY****2.2 LABEL ELEMENTS****HAZARD SYMBOLS:****SIGNAL WORD:** Danger**HAZARD STATEMENTS:**

- H280:** Contains gas under pressure; may explode if heated. May displace oxygen and cause rapid suffocation.  
**H320:** Causes eye irritation.  
**H315:** Causes skin irritation.  
**H332:** Harmful if inhaled.  
**H334:** May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
**H317:** May cause an allergic skin reaction.  
**H335:** May cause respiratory irritation.  
**H373:** May cause damage to organs (Olfactory organs) through prolonged or repeated exposure (inhalation).

**PRECAUTIONARY STATEMENTS (PREVENTION):**

- P280:** Wear protective gloves.  
**P271:** Use only outdoors or in a well-ventilated area.  
**P260:** Do not breathe dust/gas/mist/vapors.  
**P261:** Avoid breathing mist.  
**P284:** In case of inadequate ventilation wear respiratory protection.  
**P272:** Contaminated work clothing should not be allowed out of the workplace.  
**P264:** Wash contaminated body parts thoroughly after handling.

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### TopShield® PRO Roofing Adhesive Tanks – Part A

#### PRECAUTIONARY STATEMENTS (RESPONSE):

- P312:** Call a POISON CENTER or physician if you feel unwell.
- P305 + P351 + P338:** **IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P304 + P340:** **IF INHALED:** Remove person to fresh air and keep comfortable for breathing.
- P314:** Get medical advice/attention if you feel unwell.
- P303 + P361:** **IF ON SKIN** (or hair): Wash with plenty of soap and water.
- P333 + P311:** If skin irritation or rash occurs: Call a POISON CENTER or physician.
- P332 + P313:** If skin irritation occurs: Get medical attention.
- P362 + P364:** Take off contaminated clothing and wash it before reuse.
- P337 + P311:** **If eye irritation persists:** Call a POISON CENTER or physician.

#### PRECAUTIONARY STATEMENTS (STORAGE):

- P410 + P403** Protect from sunlight. Store in a well-ventilated place.
- P403 + P233** Store in a well-ventilated place. Keep container tightly closed.
- P405** Store locked up.

#### PRECAUTIONARY STATEMENTS (DISPOSAL):

- P501** Dispose of contents and container to hazardous or special waste collection point according to federal, state, and local regulations.

#### HAZARDS NOT OTHERWISE CLASSIFIED

**Labeling of special preparations (GHS):** CONTAINS ISOCYANATES. INHALATION OF ISOCYANATE MISTS OR VAPORS MAY CAUSE RESPIRATORY IRRITATION, BREATHLESSNESS, CHEST DISCOMFORT AND REDUCED PULMONARY FUNCTION. OVEREXPOSURE WELL ABOVE THE PEL MAY RESULT IN BRONCHITIS, BRONCHIAL SPASMS AND PULMONARY EDEMA. LONG-TERM EXPOSURE TO ISOCYANATES HAS BEEN REPORTED TO CAUSE LUNG DAMAGE, INCLUDING REDUCED LUNG FUNCTION WHICH MAY BE PERMANENT. ACUTE OR CHRONIC OVEREXPOSURE TO ISOCYANATES MAY CAUSE SENSITIZATION IN SOME INDIVIDUALS, RESULTING IN ALLERGIC RESPIRATORY REACTIONS INCLUDING WHEEZING, SHORTNESS OF BREATH AND DIFFICULTY BREATHING. ANIMAL TESTS INDICATE THAT SKIN CONTACT MAY PLAY A ROLE IN CAUSING RESPIRATORY SENSITIZATION.

### SECTION 3: Composition/Information on Ingredients

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200		
Ingredient	CAS#	Weight %
Diphenylmethane Diisocyanate, Isomers and Homologues	9016-87-9	25-75%
Diphenylmethane-4,4'-diisocyanate (MDI)	101-68-8	25-50%
Methylenediphenyl diisocyanate	26447-40-5	3-7%
Isocyanic acid, polymethylenepolyphenylene ester, polymer with.alpha.-hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl)	57636-09-6	1-3%
1,3-Diazetidine-2,4-dione, 1,3-bis[4-[(4-isocyanatophenyl)methyl]phenyl]-	17589-24-1	.3-3%
Trans-1,3,3,3-Tetrafluoroprop-1-ene	29118-24-9	3-7%
Nitrogen	7727-37-9	0-1%

#### 4.1 DESCRIPTION OF FIRST AID MEASURES

##### General advice:

First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Immediately remove contaminated clothing.

##### If inhaled:

Remove the affected individual into fresh air and keep the person calm. Assist in breathing if necessary. Immediate medical attention required.

##### If on skin:

Wash affected areas thoroughly with soap and water. If irritation develops, seek medical attention.

##### If in eyes:

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. Remove contact lenses, if present. Immediate medical attention required.

##### If swallowed:

Rinse mouth and then drink 200-300 ml of water. Do not induce vomiting. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Immediate medical attention required.

**SAFETY DATA SHEET****TopShield® PRO Roofing Adhesive Tanks – Part A****4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED**

Additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11., Eye irritation, skin irritation, allergic symptoms

**Information on: Diphenylmethane-4,4'-diisocyanate (MDI)**

**Symptoms:** Overexposure may cause: Eye irritation, skin irritation, erythema, chest discomfort, dyspnea, asthma, nausea, headache, vomiting, dizziness, diarrhea, abdominal cramps, Inhalation may provoke the following symptoms:; irritation of respiratory tract, coughing, wheezing

**Hazards:** Respiratory sensitization may result in allergic (asthma-like) signs in the lower respiratory tract including wheezing, shortness of breath and difficulty breathing, the onset of which may be delayed. Repeated inhalation of high concentrations may cause lung damage, including reduced lung function, which may be permanent. Substances eliciting lower respiratory tract irritation may worsen the asthma-like reactions that may be produced by product exposures.

**Additional Hazards:** Symptoms can appear later.

**4.3 NOTE TO PHYSICIAN**

**Antidote:** Specific antidotes or neutralizers to isocyanates do not exist.

**Treatment:** Treatment should be supportive and based on the judgement of the physician in response to the reaction of the patient.

**5.1 EXTINGUISHING MEDIA**

**Suitable extinguishing media:** water spray, dry powder, carbon dioxide, foam

**Unsuitable extinguishing media for safety reasons:** water jet

**5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE**

**Hazards during firefighting:** nitrous gases, fumes/smoke, isocyanate, vapor

**5.3 ADVICE FOR FIRE-FIGHTERS**

**Protective equipment for firefighting:** Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

**Further information:** Keep containers cool by spraying with water if exposed to fire. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

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**Section 6: Accidental Release Measures**

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**6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES**

Clear area. Ensure adequate ventilation. Wear suitable personal protective clothing and equipment.

**6.2 ENVIRONMENTAL PRECAUTIONS**

Do not discharge into drains/surface waters/groundwater/subsoil/soil.

**6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP**

**For small amounts:** Absorb isocyanate with suitable absorbent material (see § 40 CFR, sections 260, 264 and 265 for further information). Shovel into open container. Spill area can be decontaminated with the following recommended decontamination solution: Mixture of 90 % water, 5-8 % household ammonia, 2-5 % detergent. Allow solution to stand for at least 10 minutes. Pick up with suitable absorbent material. Place into appropriately labeled waste containers. Do not make container pressure tight. Move container to a well-ventilated area (outside). Allow to stand for at least 48 hours to allow escape of evolved carbon dioxide. Dispose of absorbed material in accordance with regulations.

**For large amounts:** For spills, stop leaks and provide diking to contain the material. Prevent entry into sewage systems, ground and surface waters. If temporary control of isocyanate vapor is required, a blanket of protein foam or other suitable foam (available from most fire departments) may be placed over the spill. Transfer as much liquid as possible via pump or vacuum device into closed but not sealed containers for disposal.

**For residues:** The following measures should be taken for final cleanup: Spill area can be decontaminated with the following recommended decontamination solution: Mixture of 90 % water, 5-8 % household ammonia, 2-5 % detergent. Wash down spill area with decontamination solution. Allow solution to stand for at least 10 minutes. Pick up with suitable absorbent material. Place into appropriately labeled waste containers. Do not make container pressure tight. Move container to a well-ventilated area (outside). Allow to stand for at least 48 hours to allow escape of evolved carbon dioxide. Dispose of absorbed material in accordance with regulations.

**7.1 PRECAUTIONS FOR SAFE HANDLING**

Keep cylinders (valves) closed tightly during transport and storage. Do not puncture as contents are under pressure. Protect from moisture and sunlight. Avoid inhalation of dusts/mists/vapors during application and only use product in a well-ventilated area. Avoid contact with eyes, skin, and clothing. Wear protective equipment as required. Do not reuse cylinders for any purpose.

**Protection against fire and explosion:** No special precautions necessary. Contents under pressure. Extreme temperatures (>170° F) can cause cylinders to rupture or explode

**Storage stability:** Protect against freezing. Do not store above 95°F. The stated temperature limit is noted for health and safety in the workplace. To maximize product shelf life, ideal storage temperature is 55-90° F.

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### TopShield® PRO Roofing Adhesive Tanks – Part A

#### SECTION 8: Exposure Controls / Personal Protection

##### 8.1 COMPONENTS WITH OCCUPATIONAL EXPOSURE LIMITS

INGREDIENT	CAS Number	OSHA-PEL	ACGIH-TLV	NIOSH-REL	Other
Diphenylmethane Diisocyanate, Isomers and Homologues	9016-87-9	0.02ppm	0.005ppm	None Listed	
Diphenylmethane-4,4'-diisocyanate (MDI)	101-68-8	0.02ppm	0.005ppm	0.005ppm	
Methylenediphenyl diisocyanate	26447-40-5	None Listed	None Listed	None Listed	
Isocyanic acid, polymethylenepolyphenylene ester, polymer with.alpha.-hydro-.omega.- hydroxypoly(oxy-1,2-ethanediyl)	57636-09-6	None Listed	None Listed	None Listed	
1,3-Diazetidine-2,4-dione, 1,3-bis[4-[(4- isocyanatophenyl) methyl]phenyl]-	17589-24-1	None Listed	None Listed	None Listed	
Trans-1,3,3,3-Tetrafluoroprop-1-ene	29118-24-9	None Listed	None Listed	None Listed	800 ppm

##### 8.2 PERSONAL PROTECTIVE EQUIPMENT

**Engineering Controls:** Provide adequate ventilation to maintain personal exposure limits

**Eye Protection:** Wear safety glasses with side shields, chemical goggles, or face shield.

**Hand/Body Protection:** Wear protective gloves and clothing to prevent all skin contact. Suitable glove materials may include, chloroprene rubber (Neoprene), nitrile rubber (Buna N), chlorinated polyethylene, polyvinylchloride (Pylox), butyl rubber, depending upon conditions of use. Remove contaminated clothing immediately and clean before re-use or dispose it if necessary.

**Respiratory protection:** When workers are facing concentrations above the occupational exposure limits (PEL, TLV, REL, ect.) they must use appropriate certified respirators. NIOSH-certified air-purifying respirators equipped with an organic vapor sorbent and particulate filter can be used as long as appropriate precautions and change out schedules are in place. For emergency or non-routine, high exposure situations, including confined space entry, use a NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.

#### Section 9: Physical and Chemical Properties

<b>Form:</b>	Liquid
<b>Odor:</b>	Faintly aromatic
<b>Color:</b>	Amber
<b>pH Value:</b>	No applicable information available
<b>Freezing Point:</b>	< -19.00°C
<b>Boiling Point:</b>	200° C (5.00 mmHg)
<b>Flash Point:</b>	> 200° C (open cup)
<b>Flammability:</b>	Not flammable
<b>Lower Explosion Limit:</b>	5 - 15° C below flash point
<b>Autoignition:</b>	> 470° C
<b>Vapor Pressure:</b>	0.00001 mmHg (20.00° C)
<b>Density:</b>	1.2220 g/cm3 (20.00° C)
<b>Relative Density:</b>	No applicable information available
<b>Vapor Density:</b>	Not applicable
<b>Self-ignition Temp:</b>	Not classified as self-igniting
<b>Thermal Decomposition:</b>	No decomposition if stored and handled as prescribed
<b>Viscosity, Dynamic:</b>	200.00 mPa.s (25° C)
<b>Viscosity, Kinematic:</b>	No applicable information available
<b>Solubility in Water:</b>	Reacts with water
<b>Miscibility with Water:</b>	Reacts with water
<b>Evaporation Rate:</b>	Value can be approximated from Henry's Law Constant

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### TopShield® PRO Roofing Adhesive Tanks – Part A

#### Section 10: Stability and Reactivity

##### 10.1 REACTIVITY

**Corrosion to metals:** No corrosive effect on metal.

**Oxidizing properties:** Not an oxidizer.

##### 10.2 CHEMICAL STABILITY

The product is stable if stored and handled as prescribed/indicated in section 7.

##### 10.3 POSSIBILITY OF HAZARDOUS REACTIONS

Reacts with water, with formation of carbon dioxide. Reacts with alcohols. Reacts with acids. Reacts with alkalis. Reacts with amines.

Risk of exothermic reaction. Risk of polymerization. Contact with certain rubbers and plastics can cause brittleness of the substance/product with subsequent loss in strength.

##### 10.4 CONDITIONS TO AVOID

Avoid moisture.

##### 10.5 INCOMPATIBLE MATERIALS

Acids, amines, alcohols, water, Alkalines, strong bases, Substances/products that react with isocyanates.

##### 10.6 HAZARDOUS DECOMPOSITION PRODUCTS

**Decomposition products:** Hazardous decomposition products: carbon monoxide, carbon dioxide, hydrogen cyanide, nitrogen oxides, aromatic isocyanates, gases/vapors

**Thermal decomposition:** No decomposition if stored and handled as prescribed/indicated.

#### Section 11: Toxicological Information

##### 11.1 PRIMARY ROUTES OF EXPOSURE

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

##### 11.2 ACUTE TOXICITY/EFFECTS

**Assessment of acute toxicity:** Of moderate toxicity after short-term inhalation. Inhalation of vapors may cause irritation of the mucous membranes of the nose, throat or trachea, breathlessness, chest discomfort, difficult breathing and reduced pulmonary function. Inhalation exposure well above the PEL may result additionally in eye irritation, headache, chemical bronchitis, asthma-like findings or pulmonary edema. Isocyanates have also been reported to cause hypersensitivity pneumonitis, which is characterized by flu-like symptoms, the onset of which may be delayed.

Acute Toxicity Test Information on: Diphenylmethane-4,4'-diisocyanate (MDI)					
Test	Type of Value	Species	Value	Exposure Time	Notes
Oral	LD50	rat (male/female)	> 2000mg/kg (Directive 84/449/EEC, B.1)		
Inhalation	ATE	rat	1.96 mg/l (OECD Guideline 403)	4 hours	An aerosol was tested
	LC50	rat	2.24 mg/l (OECD Guideline 403)	1 hour	An aerosol was tested
Dermal	LD50	rabbit (male/female)	> 9400 mg/kg		

**Assessment other acute effects/ STOT single:** Causes temporary irritation of the respiratory tract.

**Irritation / corrosion:** Assessment of irritating effects: Irritating to eyes, respiratory system and skin. Skin contact may result in dermatitis, either irritative or allergic. Overexposure to the eyes may cause irritation, redness, scratching of the cornea, and tearing. Repeated or prolonged skin contact can cause drying and cracking of the skin.

Irritation Information on: Diphenylmethane-4,4'-diisocyanate (MDI)			
Test	Species	Result	Method
Skin	Rabbit	Irritant	OECD Guideline 404
Eye	Rabbit	Non-irritant	OECD Guideline 405

**Assessment of sensitization:** Sensitization after skin contact possible. The substance may cause sensitization of the respiratory tract. As a result of previous repeated overexposures or a single large dose, certain individuals will develop isocyanate sensitization (chem-

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ical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the PEL/TLV. These symptoms, which include chest tightness, wheezing, cough, shortness of breath, or asthmatic attack, could be immediate or delayed up to several hours after exposure. Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air, or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Chronic overexposure to isocyanates has also been reported to cause lung damage, including a decrease in lung function, which may be permanent. Prolonged contact can cause reddening, swelling, rash, scaling, or blistering. In those who have developed a skin sensitization, these symptoms can develop as a result of contact with very small amounts of liquid material, or even as a result of vapor-only exposure. Animal tests indicate that skin contact may play a role in causing respiratory sensitization. Studies in animals suggest that dermal exposure may lead to pulmonary sensitization. However, the relevance of this result for humans is unclear.

**Aspiration Hazard:** No aspiration hazard expected.

**11.3 CHRONIC TOXICITY/EFFECTS**

**Assessment of repeated dose toxicity:** The substance may cause damage to the olfactory epithelium after repeated inhalation. The substance may cause damage to the lung after repeated inhalation. These effects are not relevant to humans at recommended occupational levels of exposure.

**Information on: Diphenylmethane-4,4'-diisocyanate (MDI)**

*Experimental/calculated data: similar to OECD guideline 453 rat (Wistar) (male/female) Inhalation 2 yrs, 6 hr/day 0, 0.2, 1, 6 mg/m<sup>3</sup>, olfactory epithelium*

*NOAEL: 0.2 mg/m<sup>3</sup>*

*LOAEL: 1 mg/m<sup>3</sup>*

*The substance may cause damage to the olfactory epithelium after repeated inhalation. These effects are not relevant to humans at occupational levels of exposure. Repeated inhalative uptake of the substance did not cause damage to the reproductive organs.*

**Genetic toxicity:** The substance was mutagenic in various bacterial test systems; however, these results could not be confirmed in tests with mammals.

*Information on: Diphenylmethane-4,4'-diisocyanate (MDI)*

*Genetic toxicity in vitro: OECD Guideline 471 Ames-test Salmonella typhimurium: with and without metabolic activation ambiguous*

*Information on: Diphenylmethane-4,4'-diisocyanate (MDI)*

*Genetic toxicity in vivo: OECD Guideline 474 Micronucleus assay rat (male) Inhalation negative No clastogenic effect reported.*

**Carcinogenicity:** A carcinogenic potential cannot be excluded after prolonged exposure to severely irritating concentrations. These effects are not relevant to humans at occupational levels of exposure. IARC Group 3 (not classifiable as to human carcinogenicity).

*Information on: Diphenylmethane-4,4'-diisocyanate (MDI)*

*Assessment of carcinogenicity: A carcinogenic potential cannot be excluded after prolonged exposure to severely irritating concentrations. These effects are not relevant to humans at occupational levels of exposure. IARC Group 3 (not classifiable as to human carcinogenicity).*

*Information on: Methylenediphenyl diisocyanate*

*Assessment of carcinogenicity: A carcinogenic potential cannot be excluded after prolonged exposure to severely irritating concentrations. These effects are not relevant to humans at occupational levels of exposure. IARC Group 3 (not classifiable as to human carcinogenicity).*

*Information on: 1,3-Diazetidine-2,4-dione, 1,3-bis[4-[(4-isocyanatophenyl)methyl]phenyl]- Assessment of carcinogenicity: Indication of possible carcinogenic effect in animal tests. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.*

*Experimental/calculated data: OECD Guideline 453 rat Inhalation 0, 0.2, 1, 6 mg/m<sup>3</sup> Result: Lung tumors*

**Reproductive toxicity:** Repeated inhalative uptake of the substance did not cause damage to the reproductive organs.

**Teratogenicity:** The substance did not cause malformations in animal studies; however, toxicity to development was observed at high doses that were toxic to the parental animals.

**Development:** OECD Guideline 414 rat Inhalation 0, 1, 4, 12 mg/m<sup>3</sup> NOAEL Mat.: 4 mg/m<sup>3</sup>

*NOAEL Teratog.: 4 mg/m<sup>3</sup>*

*The substance did not cause malformations in animal studies; however, toxicity to development was observed at high doses that were toxic to the parental animals.*

**Other Information:** The product has not been tested. The statement has been derived from the properties of the individual components.



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The isocyanate component is a respiratory sensitizer. It may cause allergic reaction leading to asthma-like spasms of the bronchial tubes and difficulty in breathing. Medical supervision of all employees who handle or come into contact with isocyanates is recommended. Contact may aggravate pulmonary disorders. Persons with history of respiratory disease or hypersensitivity should not be exposed to this product. Preemployment and periodic medical examinations with respiratory function tests (FEV, FVC as a minimum) are suggested. Persons with asthmatic conditions, chronic bronchitis, other chronic respiratory diseases, recurrent eczema or pulmonary sensitization should be excluded from working with isocyanates. Once a person is diagnosed as having pulmonary sensitization (allergic asthma) to isocyanates, further exposure is not recommended.

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**Section 12: Ecological Information**

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**Aquatic toxicity:** There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations. Based on long-term (chronic) toxicity study data, the product is very likely not harmful to aquatic organisms. The product may hydrolyse. The test result maybe partially due to degradation products. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

*Toxicity to fish: LC0 (96 h) > 1,000 mg/l, Brachydanio rerio (OECD Guideline 203, static)*

*Aquatic invertebrates: EC50 (24 h) > 1,000 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)*

*Aquatic plants: EC0 (72 h) 1,640 mg/l (growth rate), Scenedesmus subspicatus (OECD Guideline 201, static)*

**Microorganisms/Effect on activated sludge:**

*Toxicity to microorganisms: OECD Guideline 209 aquatic aerobic bacteria from a domestic water treatment plant/EC50 (3 h): > 100 mg/l*

**Persistence and degradability:** Poorly biodegradable. The product is unstable in water. The elimination data also refer to products of hydrolysis.

*Elimination information: 0 % BOD of the ThOD (28 d) (OECD Guideline 302 C) (aerobic, activated sludge) Poorly biodegradable.*

**Assessment of stability in water:** In contact with water the substance will hydrolyse slowly.

*Information on Stability in Water (Hydrolysis): t1/2 20 h (25 °C)*

**Bioaccumulative potential:** Significant accumulation in organisms is not to be expected.

*Bioconcentration factor: 200 (28 d), Cyprinus carpio (OECD Guideline 305 E)*

**Mobility in soil:** The substance will not evaporate into the atmosphere from the water surface. Adsorption to solid soil phase is not expected.

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**Section 13: Disposal Considerations**

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**Disposal of waste chemical:** Dispose of in a licensed facility according to federal, state, and local hazardous waste regulations. Do not discharge chemical into sewer system or allow to contaminate soil.

**Disposal of empty container/canister/cylinder/tanks and dispense gun:**

1. Discharge canisters with included dispense gun and mix tip as foam completely into a waste container until one canister is empty of material.
2. Remove dispense gun manifold and discharge residual chemical into a sealed waste container (ie: plastic bucket) until residual chemical and gas are evacuated and both canisters are depressurized.
3. Dispose of empty canisters, dispense gun, and hoses according to federal, state, and local regulations for the treatment of hazardous and nonhazardous wastes. Consult your local waste disposal service for guidance.
4. Dispose of captured residual chemical in a licensed facility according to applicable federal, state, and local regulations. Do not discharge chemical into sewer system or allow to contaminate soil.

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### TopShield® PRO Roofing Adhesive Tanks – Part A

#### Section 14: Transport Information

<b>Land Transport:</b>	USDOT
ID number:	UN 3500
Hazard label:	2.2
Proper shipping name:	CHEMICAL UNDER PRESSURE, N.O.S. (contains TRANS-1,3,3,3-TETRAFLUOROPROP-1-ENE, NITROGEN)
<b>Sea Transport:</b>	IMDG
Hazard class:	2.2
ID number:	UN 3500
Hazard label:	2.2
Marine pollutant:	NO
Proper shipping name:	CHEMICAL UNDER PRESSURE, N.O.S. (contains TRANS- 1,3,3,3-TETRAFLUOROPROP-1-ENE, NITROGEN)
<b>Air Transport:</b>	IATA/ICAO
Hazard class:	2.2
ID number:	UN 3500
Hazard label:	2.2
Proper shipping name:	CHEMICAL UNDER PRESSURE, N.O.S. (contains TRANS- 1,3,3,3-TETRAFLUOROPROP-1-ENE, NITROGEN)

**Further information:**

DOT: This product is regulated if the amount in a single receptacle exceeds the Reportable Quantity (RQ). Please refer to Section 15 of this SDS for the RQ for this product.

#### Section 15: Regulatory Information

##### 15.1 FEDERAL REGULATIONS

**Registration Status:**

Chemical	TSCA, US	released / listed
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EPCRA 311/312 (Hazard categories): Refer to SDS section 2 for GHS hazard classes applicable for this product.

**EPCRA 313:**

CAS Number	Chemical name	
101-68-8	Diphenylmethane-4,4'-diisocyanate (MDI)	
9016-87-9	P-MDI	
CERCLA RQ	CAS Number	Chemical name
5000 LBS	101-68-8; 9016-87-9	Diphenylmethane-4,4'-diisocyanate (MDI); P-MDI

##### 15.2 STATE REGULATIONS

State RTK	CAS Number	Chemical name
PA	101-68-8	Diphenylmethane-4,4'-diisocyanate (MDI)
NJ	101-68-8	Diphenylmethane-4,4'-diisocyanate (MDI)

**NFPA Hazard codes:**

Health: 2	Fire: 1	Reactivity: 1	Special:
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**HMIS III rating:**

Health: 2	Flammability: 1	Physical hazard: 1
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HMIS	
HEALTH	2
FLAMMABILITY	1
PHYSICAL HAZARD	1



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### TopShield® PRO Roofing Adhesive Tanks – Part A

#### Section 16: Other Information

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