



Material Safety Data Sheet  
Issued: 2009-08-07  
Revised: 2011-12-15

FS 194

**PRODUCT: TYTAN® PROFESSIONAL EXTREME CLIMATE PRO EXPANDING  
POLYURETHANE FOAM SEALANT**

### Material Safety Data Sheet

#### 1. Company and Product Identification

**Product type:** TYTAN® PROFESSIONAL EXTREME CLIMATE PRO EXPANDING  
POLYURETHANE FOAM SEALANT

**Product description :** Liquid urethane prepolymer mixture (Polyurethane  
Sealing Foam)

#### 2. Hazards Identification

**Emergency overview:**

**DANGER!**

Extremely flammable aerosol. Harmful by inhalation, in contact with skin and if swallowed. Irritating to eyes and skin. Prolonged exposure may cause chronic effects. Harmful May cause sensitization by skin contact

**OSHA regulatory status:** This product is considered hazardous under 29 CFR 1910.1200

**Potential health effects**

**Exposure Routes:**

Inhalation. Ingestion. Skin contact. Eye contact.

**Inhalation:** Vapors may irritate mucus membranes with tightness in chest, coughing, wheeziness or allergic asthma-like sensitivity. Extensive overexposure can lead to respiratory symptoms like bronchitis and pulmonary edema. These effects are usually reversible. Overexposure to gases may cause light headedness, headaches, or lethargy. Persons with cardiac arrhythmia may be at increased risk in severe exposure.

**Skin contact:** Causes localized skin irritation, reddening. Prolonged or repeated Exposure may lead to sensitization blistering, and/or dermatitis.

**Eye contact:** Causes eye irritation. For its adhesive feature, the foam contact with eyes may cause physical damage due to adhesive properties.

**Ingestion:** Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, and diarrhea.

**Target organs:** Central nervous system.

**Chronic effects:** May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion and blurred vision) and/or damage.

**Signs and symptoms:** Narcosis. Decrease in motor functions. Behavioral changes.

**Potential environmental effects:** May cause long-term adverse effects in the environment.



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**3. OSHA Hazard Components**

<u>CAS Number</u>	<u>Wt[%]</u>	<u>Component name</u>
9016-87-9	10-30	Methylenediphenyl diisocyanate Isomers (Polymeric MDI)
101-68-8	10-30	4,4'-methylenediphenyl diisocyanate (MDI)
75-37-6	5-20	R152a
115-10-6	3-15	Dimethyl ether
74-98-6	0-15	Propane
106-97-8	0-15	Butane
75-28-5	0-15	Isobutane

The above components are hazardous as defined in 29 CFR 1910.1200.

Not Available 25-50 Urethane Pre-Polymer Blend  
(Using Non-Hazardous Proprietary Polyol Blend)

**4. First Aid Measures**

**Eye Contact:** Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation persists after washing.

**Skin Contact:** Remove the foam from skin using a cloth. Remove contaminated clothes immediately. Remove uncured foam from skin using delicate solvent like acetone or mineral spirit (avoid contact with eyes). Hardened foam may be removed by persistent washing with soap and large water quantity. If irritation develops, use a delicate cream. Remove and isolate contaminated clothing and shoes. Get medical attention immediately. Wash clothing separately before reuse.

**Inhalation:** Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention immediately.

**Ingestion:** Rinse mouth. Do not induce vomiting without advice from poison control center. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If swallowed, seek medical advice immediately and show this container or label.

**Notes to physician:** In case of shortness of breath, give oxygen. Keep victim warm. Symptoms may be delayed.

**General advice:** If you feel unwell, seek medical advice (show the label where possible).

**5. Fire-Fighting Measures**

**Flammable properties:** Extremely flammable aerosol

**Flammability Limits:** Lower Explosive Limit: 1.5 Vol. %

Upper Explosive Limit: 11.0 Vol. %

**Extinguishing Media:** On large fires use dry chemical foam or water spray. On small fires use carbon dioxide (CO<sub>2</sub>), dry chemical or water spray.

**Firefighting equipment/instructions:** In the event of fire, cool tanks with water spray. Move containers from fire area if you can do it without risk. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Specific hazards:** Hardened foam is an organic matter and will burn in the presence of sufficient heat, oxygen and ignition source.





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**6. Accidental Release Measures**

**Personal Precautions:** ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Local authorities should be advised if significant spillages cannot be contained. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep upwind. Ventilate closed spaces before entering. Keep unnecessary personnel away. Stay upwind. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up.

**Environmental:** Prevent further leakage or spillage if safe to do so. Do not contaminate water.

**Precautions:** Dispose of plastic waste material (foam plastic) in accordance with all applicable guidelines and regulations.

**Clean-up Methods:** Remove from surfaces by scraping up excess material and removing residual residue with cloth and solvent such as acetone or mineral spirit, paint thinner, etc. Hardened foam can only be removed physically or mechanically by scraping, buffing. This material and its container must be disposed of as hazardous waste

**7. Handling and Storage**

**Handling:** Keep away from heat, spark, open flames and other sources of ignition. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin. Avoid contact with eyes. Do not use in areas without adequate ventilation. Wear personal protective equipment. Avoid prolonged exposure. Wash thoroughly after handling. Avoid release to the environment. Handle and open container with care.

**Storage:** Flammable compressed gas storage. Store in a well-ventilated place. Keep out of the reach of children. Keep away from food, drink and animal feeding stuffs. Store in cool, dry place. Recommended storage temperature is between 40°F to 78°F (4.4°C to 25.5°C). Do not store above 104°F (40°C) will shorten shelf life. Protect containers from heat. Contents are under pressure do not pierce the containers. Protect from freezing.

**8. Exposure Control / Personal Protection**

**Occupational exposure limits**

**US. ACGIH Threshold Limit Values**

Components:	Type:	Value:
Butane (106-97-8)	TWA	1000 ppm
Diphenylmethane -4,4'-diisocyanate (101-68-8)	TWA	0.005 ppm
Isobutane (75-28-5)	TWA	1000 ppm
Polymethylene polyphenyl isocyanate (9016-87-9)	TWA	0.005 ppm
Propane (74-98-6)	TWA	1000 ppm

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Components:	Type:	Value:
Diphenylmethane -4,4'-diisocyanate (101-68-8)	Ceiling	0.2 mg/m3 0.02 ppm
Polymethylene polyphenylisocyanate (9016-87-9)	Ceiling	0.2 mg/m3 0.02 ppm
Propane (74-98-6)	PEL	1800 mg/m3 1000 ppm

**Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)**

Components:	Type:	Value:
Butane (106-97-8)	TWA	1000 ppm
Diphenylmethane -4,4'-diisocyanate (101-68-8)	TWA	0.05 mg/m3 0.005 ppm
Polymethylene polyphenyl isocyanate (9016-87-9)	TWA	0.07 mg/m3 0.005 ppm
Propane (74-98-6)	TWA	1000 ppm



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**Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)**

Components:	Type:	Value:
Butane (106-97-8)	STEL	750 ppm
	TWA	600 ppm
Dimethyl ether (115-10-6)	TWA	1000 ppm
Diphenylmethane -4,4' -diisocyanate (101-68-8)	Ceiling	0.01 ppm
	TWA	0.005 ppm
Isobutane (75-28-5)	TWA	1000 ppm
Propane (74-98-6)	TWA	1000 ppm

**Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)**

Components:	Type:	Value:
Butane (106-97-8)	TWA	800 ppm
Diphenylmethane -4,4' -diisocyanate (101-68-8)	Ceiling	0.02 ppm
	TWA	0.005 ppm
Isobutane (75-28-5)	TWA	800 ppm
Polymethylene polyphenyl isocyanate (9016-87-9)	Ceiling	0.02 ppm
	TWA	0.005 ppm
Propane (74-98-6)	TWA	1000 ppm

**Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)**

Components:	Type:	Value:
Butane (106-97-8)	TWA	1900 mg/m <sup>3</sup> 800 ppm
Diphenylmethane -4,4' -diisocyanate (101-68-8)	TWA	0.051 mg/m <sup>3</sup> 0.005 ppm
Polymethylene polyphenyl isocyanate (9016-87-9)	TWA	0.051 mg/m <sup>3</sup> 0.005 ppm
Propane (74-98-6)	TWA	1800 mg/m <sup>3</sup> 1000 ppm

**Engineering measures:**

Ensure adequate ventilation, especially in confined areas. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Good general ventilation (typically 10 air changes per hour) 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 for usual handling:**

**Eyes protection:** Use proper protection – safety glasses as a minimum.

**Skin protection:** Wear suitable protective clothing. Protective gloves.

**Respiratory protection:** Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

**General hygiene considerations:** When using, do not eat, drink or smoke. Avoid contact with eyes. Avoid contact with skin.

**9. Physical and Chemical Properties**

**Physical State:** Aerosol

Rapidly curing foam dispensed by gaseous propellant from an aerosol container

**Color:** Light yellow

**Odor:** Characteristic

**Specific gravity@20°C (68°F):** ≤ 1,3 g/cm<sup>3</sup>

**Melting Point:** Not determined

**Boiling Point:** Not determined





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**Flash point:** 0°C (32°F) based for propellant  
**Auto igniting:** Product is not self igniting  
**Solubility in Water:** Insoluble; reacts with water  
**pH:** Not determined  
**VOC content:** 131 g/l  
**Note:** The above information is not intended for use in preparing product specification.

**10. Stability and Reactivity**

**Chemical stability:** Material is stable under normal conditions.  
**Conditions to avoid:** Avoid storing temperatures exceeding 104°F (40°C). Protect against mechanical shocks, Avoid heat and moisture  
**Incompatible materials:** This product is incompatible with oxidizers, acids, base, amines, water, aluminum, copper, alcohols, metal compounds..  
**Hazardous decomposition products:** non known.  
**Possibility of hazardous reactions:** After application polymerization occurs.

**11. Toxicological Information**

**Acute toxicity:**

<b>Chemical name:</b>	<b>Oral LD50</b>	<b>Dermal LD50</b>	<b>Inhalation</b>
<b>LC50/4h</b>			
Methylenediphenyl diisocyanate Isomers :	>5000 mg/kg(rat)	>5000 mg/kg(rabbit)	490mg/m <sup>3</sup> (rat)
4,4'-methylenediphenyl Diisocyanate	>5000 mg/kg(rat)	>5000 mg/kg(rabbit)	178 mg/m <sup>3</sup> (rat)

**Local effects:** Harmful by inhalation, in contact with skin and if swallowed.  
Irritating to eyes.

**Sensitization:** Sensitization possible through inhalation. Sensitization possible through skin contact.

**Chronic effects:** May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion and blurred vision) and/or damage..

**IARC Monographs. Overall Evaluation of Carcinogenicity:**

Diphenylmethane-4,4'-diisocyanate (CAS 101-68-8) 3 Not classifiable as to carcinogenicity to humans.

Polymethylene polyphenyl isocyanate (CAS 9016-87-9) 3 Not classifiable as to carcinogenicity to humans.

**Epidemiology:** Not available.

**Mutagenicity:** Not available.

**Neurological effects:** Hazardous by OSHA criteria.

**Reproductive effects:** Not available.

**Teratogenicity:** Not available.

**Further information:** Symptoms may be delayed.

**12. Ecological Information**

**Ecotoxicity:** May cause long-term adverse effects in the environment.

<b>Chemical name:</b>	<b>Toxicity EC 50:</b>
Methylenediphenyl diisocyanate Isomers	>1000 mg/kg (daphnia)
Diisocyanate	>1000 mg/kg (daphnia)

**Environmental effects:** May cause long-term adverse effects in the environment.



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**Persistence and Degradability:** Not biodegradable  
**Bioaccumulation / Accumulation:** Does not accumulate in organisms  
**Partition coefficient (n-octanol/water):** Not available.  
**Mobility in environmental media:** No data available.

### 13. Disposal Consideration

**Disposal instructions:** This material and its container must be disposed of as hazardous waste. Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities. Do not dispose of waste into sewer. Do not allow this material to drain into sewers/water supplies. This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose in accordance with all applicable regulations.

**Waste from residues / unused Products:** Dispose of in accordance with local regulations.

### 14. Transport information

**DOT:**

**UN number:** UN1950

**Proper shipping name:** Aerosols

**Hazard class:** 2.1

**Subsidiary hazard class:** 6.1

**Labels required:** 2.2, 6.1

**Additional information:**

**Special provisions:** 153

**Packaging exceptions:** 306

**Packaging non bulk:** None

**Packaging bulk:** None

**ERG number:** 126

**IATA**

**UN number:** 1950

**Proper shipping name:** Aerosols, flammable

**Hazard class:** 2.1

**Additional information:**

**ERG code:** 10L

**IMDG:**

**UN number:** 1950

**Proper shipping name:** Aerosols, flammable

**Hazard class:** 2.1

**TDG:**

**Proper shipping name:** AEROSOLS, flammable

**Hazard class:** 2.1

**UN number:** N1950

**Marine pollutant:** No

**Additional information:**

**Special provisions** 80 SOR/2002-306





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**15. Regulatory information**

**US federal regulations:** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**TSCA Section 12(b) Export Notification(40 CFR 707, Subpt. D):**

Not regulated.

**US CAA Section 112 Hazardous Air Pollutants (HAPs) List:**

MDI (CAS 101-68-8)

MDI (CAS 9016-87-9)

**US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration:**

Diphenylmethane-4,4'-diisocyanate (CAS 101-68-8) 1.0 %

Polymethylene polyphenyl isocyanate (CAS 9016-87-9) 1.0 %

**US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance:**

Diphenylmethane-4,4'-diisocyanate (CAS 101-68-8) Listed.

Polymethylene polyphenyl isocyanate (CAS 9016-87-9) Listed.

**CERCLA (Superfund) reportable quantity (lbs) (40 CFR 302.4):**

Polymethylene polyphenyl isocyanate : 5000

Butane: 100

Diphenylmethane-4,4'-diisocyanate: 5000

Dimethylether: 100

Isobutane: 100

Propane: 100

**Superfund Amendments and Reauthorization Act of 1986 (SARA) Hazard categories:**

Immediate Hazard - Yes

Delayed Hazard - Yes

Fire Hazard - Yes

Pressure Hazard - No

Reactivity Hazard - Yes

**Section 302 extremely hazardous substance (40 CFR 355, Appendix A): No**

**Section 311/312 (40 CFR 370): No**

**Drug Enforcement Administration (DEA) (21 CFR 1308.11-15):**

Not controlled

**WHMIS status:** Controlled

**WHMIS classification:**

B1 - Flammable/Combustible

D1A - Immediate/Serious-VERY TOXIC

D2A - Other Toxic Effects-VERY TOXIC

D2B - Other Toxic Effects-TOXIC

**WHMIS labeling:**



**Inventory status:**

**Country(s) or region Inventory name On inventory (yes/no)\*:**

Australia Australian Inventory of Chemical Substances (AICS) Yes

Canada Domestic Substances List (DSL) Yes

Canada Non-Domestic Substances List (NDSL) No

China Inventory of Existing Chemical Substances in China (IECSC) Yes

Europe European Inventory of Existing Commercial Chemical No

The logo for TYTAN Professional, featuring the word "TYTAN" in a bold, white, sans-serif font inside a dark blue rounded rectangle, with the word "PROFESSIONAL" in a smaller, white, sans-serif font below it, all set against a dark blue background.

PROFESSIONAL

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**Substances (EINECS)**

Europe European List of Notified Chemical Substances (ELINCS) No  
Japan Inventory of Existing and New Chemical Substances (ENCS) No  
Korea Existing Chemicals List (ECL) Yes  
New Zealand New Zealand Inventory Yes  
Philippines Philippine Inventory of Chemicals and Chemical Substances Yes  
(PICCS)

United States & Puerto Rico Toxic Substances Control Act (TSCA) Inventory No  
\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**State regulations:** This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

**US - California Hazardous Substances (Director's): Listed substance:**  
Butane (CAS 106-97-8) Listed.

Diphenylmethane-4,4'-diisocyanate (CAS 101-68-8) Listed.

**State regulations:**

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

**US - California Hazardous Substances (Director's): Listed substance:**  
Polymethylene polyphenyl isocyanate (CAS 9016-87-9) Listed.

**US - Massachusetts RTK - Substance: Listed substance:**  
Dimethyl ether (CAS 115-10-6) Listed.

Isobutane (CAS 75-28-5) Listed.

Polymethylene polyphenyl isocyanate (CAS 9016-87-9) Listed.

Propane (CAS 74-98-6) Listed.

**US - New Jersey Community RTK (EHS Survey): Reportable threshold:**

Dimethyl ether (CAS 115-10-6) 500 LBS

Isobutane (CAS 75-28-5) 500 LBS

Polymethylene polyphenyl isocyanate (CAS 9016-87-9) 500 LBS

Propane (CAS 74-98-6) 500 LBS

**US - New Jersey RTK - Substances: Listed substance:**

Dimethyl ether (CAS 115-10-6) Listed.

Isobutane (CAS 75-28-5) Listed.

Polymethylene polyphenyl isocyanate (CAS 9016-87-9) Listed.

Propane (CAS 74-98-6) Listed.

**US - Pennsylvania RTK - Hazardous Substances: Listed substance:**

Dimethyl ether (CAS 115-10-6) Listed.

Isobutane (CAS 75-28-5) Listed.

Polymethylene polyphenyl isocyanate (CAS 9016-87-9) Listed.

Propane (CAS 74-98-6) Listed.





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**16. Other information**

**Further information:** HMIS® is a registered trade and service mark of the NPCA.

**HMIS® ratings:** Health: 2\*

Flammability: 4

Physical hazard: 1

**NFPA ratings:** Health: 2

Flammability: 4

Instability: 1

**Disclaimer:** All information, recommendation or advice contained in this document or given by Selena Co. SA or any of its subsidiaries, affiliates or authorized representatives, whether written or oral, is given in good faith, to the best of its knowledge and based on current procedure in effect. Each user of the product shall convince himself, through all available sources (including finished product testing in its appropriate environment) of the suitability of the product supplied for its own particular purpose. Selena Co. SA, its subsidiaries and affiliates cannot be held responsible for any loss incurred through incorrect or faulty use of the product. The Material Safety Data Sheet related excessively to the described product. In case of applying it as a component of the other product, the MSDS is no more valid.