



Pro Form Products Ltd.  
604 McGeachie Drive  
Milton, Ontario, L9T 3Y5  
Canada  
905-878-4990

**PRODUCT: PF 7770-2 PLIOGRIP® URETHANE STRUCTURAL ADHESIVE PART A  
(35 MINUTE OPEN)**

### SECTION 01: IDENTIFICATION

Initial supplier identifier..... Pro Form Products Ltd.  
604 McGeachie Drive  
Milton, Ontario L9T3Y5  
Tel (905) 878-4990 Fax (905) 878-1189

Product identifier..... PF 7770-2 PLIOGRIP® URETHANE STRUCTURAL ADHESIVE PART A (35 MINUTE OPEN)

Recommended use and restrictions on use .. (PART A). Adhesive applications. for industrial use only-keep out of reach of children . This product should not be used for any other purpose other than the ones described in this section.

Chemical family..... Aromatic isocyanate prepolymer.

NFPA rating..... Health: 3 Fire: 1 Reactivity: 1.

HMIS..... H: 2\* F: 1 R: 0.

24 hour emergency number:..... For transportation emergencies (in Canada) call CANUTEC 1-888-226-8832 (CAN-UTEC); IN THE UNITED STATES CALL CHEMTREC 1-800-424-9300.  
\*\* For medical emergencies contact your local poison control centre \*\*.

### SECTION 02: HAZARD IDENTIFICATION



Signal Word..... DANGER.

Hazard Classification..... Skin Irritation — Category 2. Skin Sensitizer — Category 1. Acute Toxicity 3. Respiratory Sensitizer — Category 1. STOT SE 3. Specific Target Organ Toxicity — Repeated Exposure — Category 1.

Hazard Description..... H315 Causes skin irritation. H317 May cause an allergic skin reaction. H331 Toxic if inhaled. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H335 May cause respiratory irritation. H372 Causes damage to the liver and kidneys through prolonged or repeated exposure.

Prevention..... P264 Wash thoroughly after handling. P280 Wear protective gloves and eye protection. P260 Do not breathe mist, vapours, or spray. P270 Do not eat drink or smoke while using this product. P272 Contaminated work clothing should not be allowed out of the workplace. P271 Use only outdoors or in a well ventilated area. P284 In case of inadequate ventilation wear respiratory protection.

Response ..... P302 + P352 - If on skin: wash with plenty of water. P362 + P364 - Take off contaminated clothing and wash before reuse. P333 + P313 If skin irritation or rash occurs, get medical advice/attention. P304 + P340 - If inhaled remove person to fresh air and keep comfortable for breathing. P311 Call a POISON CENTRE or doctor. P342 + P311 If experiencing respiratory symptoms; call poison center or doctor. P321 - For specific treatment see section 4 on this SDS.

Storage..... P403 + P233 Store in a well ventilated area. Keep container tightly closed. P405 Store locked up.

Disposal..... P501 Dispose all unused, waste or empty containers in accordance with local regulations.

### SECTION 03: COMPOSITION / INFORMATION ON INGREDIENTS

| CHEMICAL NAME AND SYNONYMS                     | CAS #      | WT. % |
|--|------------|-------|
| Benzene, 1,1'-methylenebis[4-isocyanato- (MDI) | 101-68-8   | 30-40 |
| Talc   | 14807-96-6 | 10-15 |
| 2,4-Diphenylmethane diisocyanate (MDI)         | 5873-54-1  | 0.5-1 |

**PRODUCT: PF 7770-2 PLOGRIP® URETHANE STRUCTURAL ADHESIVE PART A  
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**SECTION 04: FIRST-AID MEASURES**

|                             |  |
|-----------------------------|--|
| Eye contact.....            | Check for and remove any contact lenses, if safe and easy to do so. In case of contact, immediately flush eyes, keeping eyelids open, with plenty of water for at least 15 minutes. Obtain medical attention.  |
| Skin contact.....           | Immediately flush skin with plenty of soap and water. Remove contaminated clothing. Wash clothing before reuse. Do not peel solidified product off the skin. If irritation persists, seek medical attention.   |
| Inhalation.....             | If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen, obtain medical attention.  |
| Ingestion.....              | Rinse mouth with water. Never give anything by mouth to an unconscious person. If spontaneous vomiting occurs have victim lean forward with head down to prevent aspiration of fluid into the lungs. Obtain medical attention immediately.   |
| Additional information..... | Treat victims symptomatically. Skin: this compound is a known skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burns. If burned, treat as thermal burn. Ingestion: treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of this compound. Respiratory: this compound is a known pulmonary sensitizer. Treatment is essentially symptomatic. An individual having a skin or pulmonary sensitization reaction to this material should be removed from exposure to any isocyanate. In the event of an incident involving this product ensure that medical authorities are provided a copy of this safety data sheet. In all cases, if irritation persists seek medical attention. |

**SECTION 05: FIRE-FIGHTING MEASURES**

|  |  |
|--|--|
| Suitable and unsuitable extinguishing media  | Dry chemical. Carbon dioxide. Water spray.   |
| Specific hazards arising from the hazardous product, such as the nature of any hazardous combustion products | Aldehydes, carbon dioxide and carbon monoxide, halogenated hydrocarbons, hydrogen cyanide (hydrocyanic acid), isocyanates, ketones, nitrogen compounds, nitrogen oxides (nox), toxic fumes carbon dioxide and carbon monoxide, hydrogen cyanide (hydrocyanic acid), isocyanates, nitrogen oxides (nox), toxic fumes, aldehydes, ketones, halogenated hydrocarbons.   |
| Special protective equipment and precautions for fire-fighters   | Firefighter should be equipped with self-contained breathing apparatus and full protective clothing to protect against potentially toxic and irritating fumes. During a fire, isocyanate vapours and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. Cool fire-exposed containers with cold water spray. Heat will cause pressure buildup and may cause explosive rupture. Heat will cause pressure buildup and may cause explosive rupture. |
| Unusual fire / explosion hazards.....  | Reaction between water or foam and hot MDI can be vigorous.  |

**SECTION 06: ACCIDENTAL RELEASE MEASURES**

|                   |  |
|-------------------|--|
| Leak/spill.....   | Isolate area and keep unauthorized people away. Do not walk through spilled material. Wear recommended protective equipment. Ventilate. Open windows and doors to allow air circulation. Dike area to prevent spreading. The use of absorbent socks or spill pillows may be required. Stop leak if safe to do so. Prevent runoff into drains, sewers, and other waterways.   |
| Minor spills..... | Absorb isocyanates with sawdust or other absorbent. Cover spill area with suitable absorbent material (e.g., sand, earth, sawdust, vermiculite, Oil-Dri, Kitty Litter, etc.). Saturate absorbent material with neutralizing solution. Recommended portion is ten parts neutralizing solution to one part spilled material. Suggested neutralization solution: 90% water + 5% concentrated ammonia + 5% detergent (dish soap). Add an additional layer of absorbent material. Use shovel to move absorbent material around to ensure that all spilled material comes in contact with the neutralizing solution. Shovel all absorbed material, including absorbent socks or spill pillows, into an appropriate salvage drum. Add further amounts of neutralizing solution. Allow to stand (covered loosely) for 48 to 72 hours, to allow any gases to escape. Do not use neutralizing solution on a large spill. |
| Clean up.....     | Decontaminate spill area with decontamination solution. Area can then be washed with soap and water. Use a heat gun and a scraper to remove cured adhesive. Prior to using a heat gun, ensure that the surface can withstand the heat generated by the gun. Use a solvent such as; isopropanol, methyl ethyl ketone, or acetone, to clean up up residual curative.   |

**SECTION 07: HANDLING AND STORAGE**

|                                    |   |
|------------------------------------|---|
| Precautions for safe handling..... | Avoid skin and eye contact. Do not breathe vapours, mist or dust. Use adequate ventilation. Decomposition products can be highly toxic and irritating. Individuals with lung or breathing problems or prior allergic reactions to isocyanates must not be exposed to vapour or spray mist. Handle in accordance with good industrial hygiene and safety |
|------------------------------------|---|

**PRODUCT: PF 7770-2 PLOGRIP® URETHANE STRUCTURAL ADHESIVE PART A  
(35 MINUTE OPEN)**

**SECTION 07: HANDLING AND STORAGE**

Precautions for safe handling..... practices. Warning properties (irritation of the eyes, nose and throat or odour) are not adequate to prevent chronic overexposure from inhalation. Wash thoroughly after handling. Wear respiratory protection if material is heated, sprayed, used in confined space, or if exposure limit is exceeded. Employee education and training are important.

Conditions for safe storage, including any incompatibilities Store in tightly closed containers to prevent moisture contamination. Store in a cool, dry and well ventilated area. Exposure to vapours of heated isocyanates can be extremely dangerous.

**SECTION 08: EXPOSURE CONTROLS / PERSONAL PROTECTION**

| INGREDIENTS                                       | TWA  | ACGIH TLV<br>STEL | PEL             | OSHA PEL<br>STEL        | REL NIOSH       |
|---|--|-------------------|-----------------|-------------------------|-----------------|
| Benzene,<br>1,1'-methylenebis[4-isocyanato- (MDI) | 0.005 ppm  | Not established   | 0.005 ppm TWA   | 0.005 ppm AB OEL<br>TWA | 0.05 mg/m3      |
| Talc  | 2 mg/m3<br>CA ON: 2mg/kg (TWA)   | Not established   | 2 mg/m3 TWA     | Not established         | Not established |
| 2,4-Diphenylmethane diisocyanate (MDI)            | Not established  | Not established   | Not established | Not established         | Not established |
| Eye/type.....                                     | Chemical safety goggles and full faceshield if a splash hazard exists. Contact lenses should not be worn when working with this chemical.  |                   |                 |                         |                 |
| Gloves/ type.....                                 | Chemical resistant gloves.   |                   |                 |                         |                 |
| Clothing/type.....                                | Wear adequate protective clothes. Wear long sleeves and trousers to prevent dermal exposure.   |                   |                 |                         |                 |
| Footwear/type.....                                | Safety boots per local regulations.  |                   |                 |                         |                 |
| Respiratory/type.....                             | In case of insufficient ventilation, wear suitable respiratory equipment. An approved air purifying respirator with organic vapour cartridges and particulate prefilter can be used to minimize exposure. However, this should be permitted only for short periods of time (< 1 hour) at relatively low concentrations (at or near the exposure limit). Protection provided by air-purifying respirators is limited. The use of a positive pressure air supplied respirator is mandatory when airborne concentrations are not known or airborne solvent levels are 10 times the appropriate exposure limit or spraying is performed in a confined space or with limited ventilation. Use NIOSH approved respirator or equipment. Do not exceed the use limits of the respirator. |                   |                 |                         |                 |
| Other/type.....                                   | Eye wash facility and emergency shower should be in close proximity. Educate and train employees on the safe use and handling of the product.  |                   |                 |                         |                 |
| Appropriate engineering controls.....             | Ventilate adequately. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination. Vent work area to ensure airborne concentrations are below the current occupational exposure limits. Avoid breathing mists; if general ventilation or local exhaust is inadequate, persons exposed to mists should wear approved breathing devices.  |                   |                 |                         |                 |

**SECTION 09: PHYSICAL AND CHEMICAL PROPERTIES**

Appearance/Physical state..... Part A: Viscous liquid.

Colour..... Beige.

Odour..... No data.

Odour threshold (ppm)..... Not available.

Vapour pressure (mm Hg)..... <0.013 hPa @ 25C.

Vapour density (air=1)..... >1.

pH..... No data.

Relative Density (Specific Gravity)..... 1.288 g/cm3 @ 20°C - 10.72 lb/USG @ 25°C.

Melting / Freezing point (deg C)..... Not available.

Solubility..... Practically insoluble in water.

Initial boiling point / boiling range (deg C)..... >200°C (>392°F).

Evaporation rate..... <1. (butyl acetate = 1).

Flash point (deg C), method..... >100°C, >212°F.

Auto ignition temperature (deg C)..... Not available.

Upper flammable limit (% vol)..... No data.

Lower flammable limit (% vol)..... No Data.

Partition coefficient — n-octanol/water..... Not available.

VOC (less water)..... No data.

Viscosity..... Not available.

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**SECTION 10: STABILITY AND REACTIVITY**

|  |   |
|--|---|
| Chemical stability.....  | Stable at normal temperatures and pressures.  |
| Reactivity .....   | Contact with moisture and other materials will react with isocyanates.  |
| Conditions to avoid, including static .....<br>discharge, shock or vibration | Acids, alcohols, aluminum, amines, ammonia, bases, copper alloys, fluorides, iron, isocyanates, oxidizers, phosphorus compounds, strong alkalis, water, zinc. |
| Hazardous decomposition products.....  | See hazardous combustion products section 5.  |
| Possibility of hazardous reactions.....                                      | Contact with moisture, other materials that react with isocyanates, or temperatures above 177C, may cause polymerization.                                     |

**SECTION 11: TOXICOLOGICAL INFORMATION**

| INGREDIENTS                                    | LC50   | LD50  |
|--|--|---|
| Benzene, 1,1'-methylenebis[4-isocyanato- (MDI) | 490 mg/m <sup>3</sup> 4 hr 0.369 mg/L 4 hr   | 9,200 mg/kg rat oral >7,900 mg/kg rabbit dermal |
| Talc   | Not available  | Not available                                   |
| 2,4-Diphenylmethane diisocyanate (MDI)         | No data  | No data   |
| Route of exposure.....                         | In the workplace, 4,4'-diphenylmethane diisocyanate (MDI) is mainly absorbed through the airways. The product is poorly absorbed by the skin. Eye contact. Skin contact. Inhalation.   |   |
| Effects of acute exposure.....                 | SKIN: Irritant. Can cause reddening, itching and swelling. Persons previously sensitized can experience allergic skin reaction with symptoms of reddening, itching, swelling and rash. Cured material is difficult to remove. Contact with MDI can cause discoloration. EYE: Product liquid, aerosols or vapours are irritating. Can cause tearing, reddening and swelling. May cause temporary corneal injury. INHALATION: Vapour/mists at concentrations above the exposure limits can irritate (burning sensation) the mucous membranes in the respiratory tract. This can cause a runny nose, sore throat, coughing, chest discomfort, difficulty breathing and reduced pulmonary functioning. Persons with pre-existing, nonspecific bronchial hyperactivity can respond to concentrations below the TLV with similar symptoms as well as asthma attack. These symptoms can be delayed up to several hours after exposure. Effects are usually reversible. INGESTION: May cause irritation. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea. Talc can be absorbed into the lungs and the digestive tract, and adversely affect lung function. |   |
| Effects of chronic exposure.....               | The main effect of repeated exposure to diphenylmethane-4,4'-diisocyanate (MDI) is respiratory sensitization causing asthma. As a result of previous repeated overexposure or a single large dose, certain individuals develop sensitization, which will cause them to react to a later exposure to product at levels well below the TLV. Symptoms, including chest tightness, wheezing, cough, shortness of breath or asthma attack, could be immediate or delayed. 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. Prolonged or repeated exposure may cause lung damage, including a decrease in lung function. Possible risk of irreversible effects. Prolonged skin contact may cause reddening, swelling, rash, blistering, and in some cases, skin sensitization. Sensitization can be permanent. Prolonged vapour contact with eyes may cause conjunctivitis. Talc has been shown to cause fibrosis of the lungs.  |   |
| Sensitizing capability of material.....        | Isocyanates are known to cause skin and respiratory sensitization in humans. Animal tests have indicated that respiratory sensitization can result from skin contact with diisocyanates.   |   |
| Carcinogenicity of material.....               | 4,4'-Methylenediphenyl diisocyanate is listed by IARC as a Group 3 carcinogen. This product contains non-asbestiform Talc, which is classified as a Group 3 (not classifiable as to carcinogenicity to humans) by IARC.  |   |
| Reproductive effects.....                      | No data on reproductive effects were found in the literature sources consulted. MDI: It crosses the placenta in animals.   |   |
| Mutagenicity.....                              | The data do not allow for an adequate assessment of the mutagenic effect.  |   |
| Note.....                                      | This product is an inert plastic when fully cured, and as such, is non-hazardous. Exposure to unreacted chemicals can occur when handling the individual components in pails or when using cartridges from the time of dispensing until the mixed material has cured. The mixed material is actually curing as it is dispensed in an increasingly viscous form, making it unlikely to present an inhalation hazard. The semi-viscous mixture does not flow like a liquid when dispensed, thus minimizing the possibility of accidental skin contact.   |   |

**SECTION 12: ECOLOGICAL INFORMATION**

|                                    |  |
|------------------------------------|--|
| Environmental.....                 | Do not allow to enter waters, waste water or soil. |
| Persistence and degradability..... | Not available.                                     |

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### SECTION 13: DISPOSAL CONSIDERATIONS

Information on safe handling for disposal and methods of disposal, including any contaminated packaging . Dispose of waste in accordance with all applicable federal, provincial/State and local regulations. Industrial incineration is the preferred method. Empty containers retain product residue; observe all precautions for the product. Decontaminate containers prior to disposal. Empty decontaminated containers should be crushed to prevent reuse. Do not heat or cut empty containers with electric or gas torch as vapours and gases may be toxic.

### SECTION 14: TRANSPORT INFORMATION

TDG Classification..... Not regulated.  
 IATA Classification (Air)..... Not regulated.  
 IMDG Classification (Marine)..... Not regulated.  
 Marine Pollutant..... No.  
 Proof of Classification..... In accordance with Part 2.2.1 of the Transportation of Dangerous Goods Regulations (July 2, 2014) - we certify that classification of this product is correct. .

### SECTION 15: REGULATORY INFORMATION

CEPA status..... On Domestic Substances List (DSL).  
 TSCA inventory status..... All components are listed.  
 OSHA..... This product is considered hazardous under the OSHA Hazard Communication Standard.  
 SARA Title III  
 Section 302 - extremely hazardous ..... None.  
 substances  
 Section 311/312 - hazard categories..... Immediate health, delayed health.  
 Section 313..... 4,4'-methylenediphenyl diisocyanate.  
 EPA hazardous air pollutants (HAPS) ..... Methylene Diphenyl Diisocyanate (MDI).  
 40CFR63  
 California Proposition 65..... This product does not contain any chemical(s) known to the State of California to cause cancer or reproductive toxicity.

### SECTION 16: OTHER INFORMATION

Prepared by: ..... REGULATORY AFFAIRS. Trivalent Data Systems Ltd. www.trivalent.com.  
 Telephone number:..... (800) 387-7981.  
 Disclaimer:..... DISCLAIMER: All information appearing herein is based upon data obtained from experience and recognized technical sources. To the best of our knowledge, it is believed to be correct as of the date of issue but we make no representations as to its accuracy or sufficiency and do not suggest or guarantee that any hazards listed herein are the only ones which exist. The hazard information contained herein is offered solely for the consideration of the user, subject to his own investigation and verification of compliance with applicable regulations, including the safe use of the product under every foreseeable condition. The information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process.  
 Review Date:..... 2022-11-30.  
 Date of the latest revision of the safety .. 2017-05-18  
 data sheet



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### SECTION 01: IDENTIFICATION

Initial supplier identifier..... Pro Form Products Ltd.  
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Tel (905) 878-4990 Fax (905) 878-1189

Product identifier..... PF 7770-2 PLIOGRIP® URETHANE STRUCTURAL ADHESIVE PART B (35 MINUTE OPEN)

Recommended use and restrictions on .. (PART B). Adhesive applications. for industrial use only-keep out of reach of children . This use product should not be used for any other purpose other than the ones described in this section.

Chemical family..... Aromatic isocyanate prepolymer.

NFPA rating..... Health: 3 Fire: 1 Reactivity: 1.

HMIS..... H: 2\* F: 1 R: 0.

24 hour emergency number:..... For transportation emergencies (in Canada) call CANUTEC 1-888-226-8832 (CAN-UTEC); IN THE UNITED STATES CALL CHEMTREC 1-800-424-9300.  
\*\* For medical emergencies contact your local poison control centre \*\*.

### SECTION 02: HAZARD IDENTIFICATION



Signal Word..... DANGER.

Hazard Classification..... Skin Irritation — Category 2. Skin Sensitizer — Category 1. Respiratory Sensitizer — Category 1. Reproductive Toxicity — Category 2. Specific Target Organ Toxicity — Repeated Exposure — Category 1.

Hazard Description..... H315 Causes skin irritation. H317 May cause an allergic skin reaction. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H361 Suspected of damaging fertility or the unborn child. H372 Causes damage to the liver and kidneys through prolonged or repeated exposure.

Prevention..... P201 Obtain special instructions before use. P202 Do not handle this product until all safety instructions have been read and understood. P264 Wash thoroughly after handling. P280 Wear protective gloves and eye protection. P272 Contaminated work clothing should not be allowed out of the workplace. P270 Do not eat drink or smoke while using this product. P284 In case of inadequate ventilation wear respiratory protection. P260 Do not breathe mist, vapours, or spray.

Response ..... P302 + P352 - If on skin: wash with plenty of water. P362 + P364 - Take off contaminated clothing and wash before reuse. P333 + P313 If skin irritation or rash occurs, get medical advice/attention. P304 + P340 - If inhaled remove person to fresh air and keep comfortable for breathing. P342 + P311 If experiencing respiratory symptoms; call poison center or doctor. P308 + P313 If exposed or concerned, get medical advice/attention. P321 - For specific treatment see section 4 on this SDS.

Storage..... P405 Store locked up.

Disposal..... P501 Dispose all unused, waste or empty containers in accordance with local regulations.

### SECTION 03: COMPOSITION / INFORMATION ON INGREDIENTS

| CHEMICAL NAME AND SYNONYMS | CAS #      | WT. % |
|----------------------------|------------|-------|
| Talc                       | 14807-96-6 | 20-30 |
| BENTONITE                  | 71011-26-2 | 1.5-5 |
| PIPERAZINE                 | 110-85-0   | 0.5-1 |

**PRODUCT: PF 7770-2 PLOGRIP® URETHANE STRUCTURAL ADHESIVE PART B  
(35 MINUTE OPEN)**

**SECTION 04: FIRST-AID MEASURES**

|                             |  |
|-----------------------------|--|
| Eye contact.....            | Check for and remove any contact lenses, if safe and easy to do so. In case of contact, immediately flush eyes, keeping eyelids open, with plenty of water for at least 15 minutes. Obtain medical attention.  |
| Skin contact.....           | Immediately flush skin with plenty of soap and water. Remove contaminated clothing. Wash clothing before reuse. Do not peel solidified product off the skin. If irritation persists, seek medical attention.   |
| Inhalation.....             | If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen, obtain medical attention.  |
| Ingestion.....              | Rinse mouth with water. Never give anything by mouth to an unconscious person. If spontaneous vomiting occurs have victim lean forward with head down to prevent aspiration of fluid into the lungs. Obtain medical attention immediately.   |
| Additional information..... | Treat victims symptomatically. Skin: this compound is a known skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burns. If burned, treat as thermal burn. Ingestion: treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of this compound. Respiratory: this compound is a known pulmonary sensitizer. Treatment is essentially symptomatic. An individual having a skin or pulmonary sensitization reaction to this material should be removed from exposure to any isocyanate. In the event of an incident involving this product ensure that medical authorities are provided a copy of this safety data sheet. In all cases, if irritation persists seek medical attention. |

**SECTION 05: FIRE-FIGHTING MEASURES**

|  |  |
|--|--|
| Suitable and unsuitable extinguishing media  | Dry chemical. Carbon dioxide. Water spray.   |
| Specific hazards arising from the hazardous product, such as the nature of any hazardous combustion products | Aldehydes, carbon dioxide and carbon monoxide, halogenated hydrocarbons, hydrogen cyanide (hydrocyanic acid), isocyanates, ketones, nitrogen compounds, nitrogen oxides (nox), toxic fumes carbon dioxide and carbon monoxide, hydrogen cyanide (hydrocyanic acid), isocyanates, nitrogen oxides (nox), toxic fumes, aldehydes, ketones, halogenated hydrocarbons.   |
| Special protective equipment and precautions for fire-fighters   | Firefighter should be equipped with self-contained breathing apparatus and full protective clothing to protect against potentially toxic and irritating fumes. During a fire, isocyanate vapours and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. Cool fire-exposed containers with cold water spray. Heat will cause pressure buildup and may cause explosive rupture. Heat will cause pressure buildup and may cause explosive rupture. |
| Unusual fire / explosion hazards.....  | Reaction between water or foam and hot MDI can be vigorous. (from PART A).   |

**SECTION 06: ACCIDENTAL RELEASE MEASURES**

|                   |  |
|-------------------|--|
| Leak/spill.....   | Isolate area and keep unauthorized people away. Do not walk through spilled material. Wear recommended protective equipment. Ventilate. Open windows and doors to allow air circulation. Dike area to prevent spreading. The use of absorbent socks or spill pillows may be required. Stop leak if safe to do so. Prevent runoff into drains, sewers, and other waterways.   |
| Minor spills..... | Absorb isocyanates with sawdust or other absorbent. Cover spill area with suitable absorbent material (e.g., sand, earth, sawdust, vermiculite, Oil-Dri, Kitty Litter, etc.). Saturate absorbent material with neutralizing solution. Recommended portion is ten parts neutralizing solution to one part spilled material. Suggested neutralization solution: 90% water + 5% concentrated ammonia + 5% detergent (dish soap). Add an additional layer of absorbent material. Use shovel to move absorbent material around to ensure that all spilled material comes in contact with the neutralizing solution. Shovel all absorbed material, including absorbent socks or spill pillows, into an appropriate salvage drum. Add further amounts of neutralizing solution. Allow to stand (covered loosely) for 48 to 72 hours, to allow any gases to escape. Do not use neutralizing solution on a large spill. |
| Clean up.....     | Decontaminate spill area with decontamination solution. Area can then be washed with soap and water. Use a heat gun and a scraper to remove cured adhesive. Prior to using a heat gun, ensure that the surface can withstand the heat generated by the gun. Use a solvent such as; isopropanol, methyl ethyl ketone, or acetone, to clean up up residual curative.   |

**SECTION 07: HANDLING AND STORAGE**

|                                    |   |
|------------------------------------|---|
| Precautions for safe handling..... | Avoid skin and eye contact. Do not breathe vapours, mist or dust. Use adequate ventilation. Decomposition products can be highly toxic and irritating. Individuals with lung or breathing problems or prior allergic reactions to isocyanates must not be exposed to vapour or spray mist. Handle in accordance with good industrial hygiene and safety |
|------------------------------------|---|

**PRODUCT: PF 7770-2 PLOGRIP® URETHANE STRUCTURAL ADHESIVE PART B (35 MINUTE OPEN)**

**SECTION 07: HANDLING AND STORAGE**

Precautions for safe handling..... practices. Warning properties (irritation of the eyes, nose and throat or odour) are not adequate to prevent chronic overexposure from inhalation. Wash thoroughly after handling. Wear respiratory protection if material is heated, sprayed, used in confined space, or if exposure limit is exceeded. Employee education and training are important.

Conditions for safe storage, including any incompatibilities Store in tightly closed containers to prevent moisture contamination. Store in a cool, dry and well ventilated area. Exposure to vapours of heated isocyanates can be extremely dangerous.

**SECTION 08: EXPOSURE CONTROLS / PERSONAL PROTECTION**

| INGREDIENTS                           | TWA  | ACGIH TLV STEL  | PEL             | OSHA PEL STEL   | REL NIOSH       |
|---------------------------------------|--|-----------------|-----------------|-----------------|-----------------|
| Talc                                  | 2 mg/m3<br>CA ON: 2mg/kg (TWA)   | Not established | 2 mg/m3 TWA     | Not established | Not established |
| BENTONITE                             | Not Established  | Not Established | Not Established | Not Established | Not Established |
| PIPERAZINE                            | Not established  | Not established | Not established | Not established | Not established |
| Eye/type.....                         | Chemical safety goggles and full faceshield if a splash hazard exists. Contact lenses should not be worn when working with this chemical.  |                 |                 |                 |                 |
| Gloves/ type.....                     | Chemical resistant gloves.   |                 |                 |                 |                 |
| Clothing/type.....                    | Wear adequate protective clothes. Wear long sleeves and trousers to prevent dermal exposure.   |                 |                 |                 |                 |
| Footwear/type.....                    | Safety boots per local regulations.  |                 |                 |                 |                 |
| Respiratory/type.....                 | In case of insufficient ventilation, wear suitable respiratory equipment. An approved air purifying respirator with organic vapour cartridges and particulate prefilter can be used to minimize exposure. However, this should be permitted only for short periods of time (< 1 hour) at relatively low concentrations (at or near the exposure limit). Protection provided by air-purifying respirators is limited. The use of a positive pressure air supplied respirator is mandatory when airborne concentrations are not known or airborne solvent levels are 10 times the appropriate exposure limit or spraying is performed in a confined space or with limited ventilation. Use NIOSH approved respirator or equipment. Do not exceed the use limits of the respirator. |                 |                 |                 |                 |
| Other/type.....                       | Eye wash facility and emergency shower should be in close proximity. Educate and train employees on the safe use and handling of the product.  |                 |                 |                 |                 |
| Appropriate engineering controls..... | Ventilate adequately. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination. Vent work area to ensure airborne concentrations are below the current occupational exposure limits. Avoid breathing mists; if general ventilation or local exhaust is inadequate, persons exposed to mists should wear approved breathing devices.  |                 |                 |                 |                 |

**SECTION 09: PHYSICAL AND CHEMICAL PROPERTIES**

Appearance/Physical state..... Part B: Viscous liquid.

Colour..... Green.

Odour..... No data.

Odour threshold (ppm)..... Not available.

Vapour pressure (mm Hg)..... 3 hPa @ 25°C. (calculated).

Vapour density (air=1)..... >1.

pH..... No data.

Relative Density (Specific Gravity)..... 1.225 g/cm3 @ 20°C - 10.2 lb/usg @ 25°C.

Melting / Freezing point (deg C)..... Not available.

Solubility..... Insoluble in water.

Initial boiling point / boiling range (deg C). No data.

Evaporation rate..... 1.0. (butyl acetate = 1).

Flash point (deg C), method..... >93.4°C, >200°F .

Auto ignition temperature (deg C)..... Not available.

Upper flammable limit (% vol)..... No data.

Lower flammable limit (% vol)..... No Data.

Partition coefficient — n-octanol/water..... Not available.

VOC (less water)..... No data.

Viscosity..... Not available.



**PRODUCT: PF 7770-2 PLOGRIP® URETHANE STRUCTURAL ADHESIVE PART B  
(35 MINUTE OPEN)**

**SECTION 10: STABILITY AND REACTIVITY**

|  |   |
|--|---|
| Chemical stability.....  | Stable at normal temperatures and pressures.  |
| Reactivity .....   | Contact with moisture and other materials will react with isocyanates.  |
| Conditions to avoid, including static .....<br>discharge, shock or vibration | Acids, alcohols, aluminum, amines, ammonia, bases, copper alloys, fluorides, iron, isocyanates, oxidizers, phosphorus compounds, strong alkalis, water, zinc. |
| Hazardous decomposition products.....  | See hazardous combustion products section 5.  |
| Possibility of hazardous reactions.....                                      | Contact with moisture, other materials that react with isocyanates, or temperatures above 177C, may cause polymerization.                                     |

**SECTION 11: TOXICOLOGICAL INFORMATION**

| INGREDIENTS                             | LC50   | LD50  |
|---|--|---|
| Talc                                    | Not available  | Not available                                   |
| BENTONITE                               | No Data  | No Data   |
| PIPERAZINE                              | No data  | 1,900 mg/kg oral rat; 4,000 mg/kg dermal rabbit |
| Route of exposure.....                  | Eye contact. Skin contact. Inhalation.   |   |
| Effects of acute exposure.....          | Can cause moderate skin or eye irritation. Excessive vapours may cause nasal and respiratory tract irritation. Breathing of high vapour concentrations may cause anesthetic effects and serious health effects. Talc can be absorbed into the lungs and the digestive tract, and adversely affect lung function.   |   |
| Effects of chronic exposure.....        | As a result of previous repeated overexposure or a single large dose, certain individuals develop sensitization, which will cause them to react to a later exposure to product at levels well below the TLV. Symptoms, including chest tightness, wheezing, cough, shortness of breath or asthma attack, could be immediate or delayed. 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. Prolonged or repeated exposure may cause lung damage, including a decrease in lung function. Possible risk of irreversible effects. Prolonged skin contact may cause reddening, swelling, rash, blistering, and in some cases, skin sensitization. Sensitization can be permanent. Prolonged vapour contact with eyes may cause conjunctivitis. Talc has been shown to cause fibrosis of the lungs. |   |
| Sensitizing capability of material..... | Piperazine is suspected of being both a dermal and respiratory sensitizing agent. May cause sensitization by inhalation. May cause sensitization by skin contact.  |   |
| Carcinogenicity of material.....        | This product contains non-asbestiform Talc, which is classified as a Group 3 (not classifiable as to carcinogenicity to humans) by IARC . Piperazine: ACGIH Evaluation: Substance not classifiable as a human carcinogen (group A4) .  |   |
| Reproductive effects.....               | Piperazine: May cause adverse effects.   |   |
| Mutagenicity.....                       | The data do not allow for an adequate assessment of the mutagenic effect.  |   |
| Note.....                               | This product is an inert plastic when fully cured, and as such, is non-hazardous. Exposure to unreacted chemicals can occur when handling the individual components in pails or when using cartridges from the time of dispensing until the mixed material has cured. The mixed material is actually curing as it is dispensed in an increasingly viscous form, making it unlikely to present an inhalation hazard. The semi-viscous mixture does not flow like a liquid when dispensed, thus minimizing the possibility of accidental skin contact.   |   |

**SECTION 12: ECOLOGICAL INFORMATION**

Environmental..... Do not allow to enter waters, waste water or soil.

**SECTION 13: DISPOSAL CONSIDERATIONS**

Information on safe handling for disposal and methods of disposal, including any contaminated packaging . Dispose of waste in accordance with all applicable federal, provincial/State and local regulations. Industrial incineration is the preferred method. Empty containers retain product residue; observe all precautions for the product. Decontaminate containers prior to disposal. Empty decontaminated containers should be crushed to prevent reuse. Do not heat or cut empty containers with electric or gas torch as vapours and gases may be toxic.

**SECTION 14: TRANSPORT INFORMATION**

TDG Classification..... Not regulated.  
 IATA Classification (Air)..... Not regulated.  
 IMDG Classification (Marine)..... Not regulated.  
 Marine Pollutant..... No.  
 Proof of Classification..... In accordance with Part 2.2.1 of the Transportation of Dangerous Goods Regulations (July 2, 2014) - we certify that classification of this product is correct. .

**PRODUCT: PF 7770-2 PLIOGRIP® URETHANE STRUCTURAL ADHESIVE PART B  
(35 MINUTE OPEN)**

### SECTION 15: REGULATORY INFORMATION

|  |  |
|--|--|
| CEPA status.....                                   | On Domestic Substances List (DSL).   |
| TSCA inventory status.....                         | All components are listed.   |
| OSHA.....  | This product is considered hazardous under the OSHA Hazard Communication Standard.                                       |
| SARA Title III                                     |  |
| Section 302 - extremely hazardous substances ..... | None.  |
| Section 311/312 - hazard categories.....           | Immediate health, delayed health.  |
| Section 313.....                                   | None.  |
| EPA hazardous air pollutants (HAPS) 40CFR63 .....  | None.  |
| California Proposition 65.....                     | This product does not contain any chemical(s) known to the State of California to cause cancer or reproductive toxicity. |

### SECTION 16: OTHER INFORMATION

|  |   |
|--|---|
| Prepared by: .....   | REGULATORY AFFAIRS. Trivalent Data Systems Ltd. <a href="http://www.trivalent.com">www.trivalent.com</a> .  |
| Telephone number:.....                                     | (800) 387-7981.   |
| Disclaimer:.....   | DISCLAIMER: All information appearing herein is based upon data obtained from experience and recognized technical sources. To the best of our knowledge, it is believed to be correct as of the date of issue but we make no representations as to its accuracy or sufficiency and do not suggest or guarantee that any hazards listed herein are the only ones which exist. The hazard information contained herein is offered solely for the consideration of the user, subject to his own investigation and verification of compliance with applicable regulations, including the safe use of the product under every foreseeable condition. The information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process. |
| Review Date:.....  | 2022-11-30.   |
| Date of the latest revision of the safety data sheet ..... | 2017-05-18  |