



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

**PRODUCT: PF 451S SLOW ACTIVATOR FOR PF 451**

### SECTION 01: IDENTIFICATION

Product identifier..... PF 451S SLOW ACTIVATOR FOR PF 451  
 Other means of identification  
 Chemical family..... Aliphatic polyisocyanate. Solvent blend.  
 Recommended use and restrictions on .. Paints.  
 use  
 Initial supplier identifier..... Pro Form Products Ltd.  
 604 McGeachie Drive  
 Milton, Ontario L9T3Y5  
 Tel (905) 878-4990 Fax (905) 878-1189  
 NFPA rating..... Health: 2 Fire: 3 Reactivity: 1.  
 HMIS..... H: 2 F: 3 R: 1.  
 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..... WARNING.  
 Hazard Classification..... Flammable Liquid 3. Skin Irritation — Category 2. Skin Sensitizer — Category 1. Eye Irritation — Category 2A. Acute Toxicity (Inhalation) — Category 4. Specific Target Organ Toxicity — Single Exposure — Category 3. (respiratory system). (narcotic effects).  
 Hazard Description..... H226 Flammable liquid and vapour. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H332 Harmful if inhaled. H335 May cause respiratory irritation. H336 May cause drowsiness or dizziness.  
 Prevention..... P210 Keep away from heat, sparks, open flames and hot surfaces. No smoking. P233 Keep container tightly closed. P240 Ground and bond container and receiving equipment. P241 Use explosion proof equipment. P242 Use only non-sparking tools. P243 Take precautionary measures against static discharge. P261 Avoid breathing mists, vapours and sprays. P264 Wash thoroughly after handling. P271 Use only outdoors or in a well ventilated area. P272 Contaminated work clothing should not be allowed out of the workplace. P280 Wear protective gloves and eye protection.  
 Response ..... P370 + P378 In case of fire - use dry chemical powder, CO2 or foam to extinguish. P303 + P361 + P353 If on skin or in hair: take off all contaminated clothing immediately. Rinse thoroughly with water and use safety shower . 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. P305 + P351 + P338 If in eyes rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing until medical help arrives. P337 + P313 - If eye irritation persists get medical attention. P304 + P340 - If inhaled remove person to fresh air and keep comfortable for breathing. P312 Call a POISON CENTER/doctor if you feel unwell.  
 Storage..... P233 Keep container tightly closed. P403 + P235 Store in well ventilated area. Keep cool. P405 Store locked up.  
 Disposal..... P501 Dispose all unused, waste or empty containers in accordance with local regulations.  
 Note ..... This product mixture has been classified based on its ingredients.

### SECTION 03: COMPOSITION / INFORMATION ON INGREDIENTS

CHEMICAL NAME AND SYNONYMS	CAS #	WT. %
4-Chlorobenzotrifluoride	98-56-6	60-80
Homopolymer of HDI	28182-81-2	15-40
2-Butoxyethyl Acetate	112-07-2	0.1-1

<<The actual concentration(s) withheld as a trade secret>> .

**PRODUCT: PF 451S SLOW ACTIVATOR FOR PF 451****SECTION 04: FIRST-AID MEASURES**

Eye contact.....	In case of contact, immediately flush eyes, keeping eyelids open, with plenty of water for at least 15 minutes. Check for and remove any contact lenses, if safe and easy to do so. Consult a physician if irritation continues.
Skin contact.....	Immediately remove all contaminated clothing; flush skin with water for at least 15 minutes. Wash clothing before reuse. 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. Do not induce vomiting. If spontaneous vomiting occurs have victim lean forward with head down to prevent aspiration of fluid into the lungs. Never give anything by mouth to an unconscious person.
Most important symptoms and effects, ..... whether acute or delayed	Harmful if swallowed, in contact with skin or if inhaled. Can cause skin sensitization. Causes skin and eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Direct contact with eyes may cause temporary irritation. High vapour concentrations may be irritating to the respiratory tract. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea.
Additional information.....	Treat victims symptomatically. Eye: stain for evidence of corneal injury. If cornea is burned, instill antibiotic steroid preparation frequently. Workplace vapours have produced reversible corneal epithelial edema impairing vision. Skin: this compound is a known skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burns. If burned, treat as thermal burn. In all cases, if irritation persists seek medical attention. In the event of an incident involving this product ensure that medical authorities are provided a copy of this safety data sheet. Contains a respiratory sensitizer @ <0.1%.

**SECTION 05: FIRE-FIGHTING MEASURES**

Suitable and unsuitable extinguishing ..... media	Dry chemical. Carbon dioxide. Foam. In cases of larger fires, water spray should be used. Do not use water in a jet.
Specific hazards arising from the ..... hazardous product, such as the nature of any hazardous combustion products	Flammable liquid. Thermal decomposition products are toxic. May include: Oxides of carbon (CO, CO <sub>2</sub> ). Oxides of nitrogen. Isocyanates. Dense black smoke. Other potentially toxic fumes.
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. Solvent vapours may be heavier than air and may build up and travel along the ground to an ignition source, which may result in a flash back to the source of the vapours. Cool fire-exposed containers with cold water spray. Heat will cause pressure buildup and may cause explosive rupture.

**SECTION 06: ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective ..... equipment and emergency procedures	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. Use non-sparking tools and equipment to pick up the spilled material.
Methods and materials for containment and cleaning up	
Major spills.....	If temporary control of isocyanate vapour is required, a blanket of protein foam may be placed over spill. If transportation spill occurs in United States, call Chemtrec 1-800-424-9300. If transportation spill occurs in Canada, call Canutec at (613) 996-6666.
Minor spills.....	Large quantities may be pumped into closed, but not sealed, containers for disposal. 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.
Clean up.....	Decontaminate spill area with decontamination solution. Area can then be washed with soap and water.

**SECTION 07: HANDLING AND STORAGE**

Precautions for safe handling.....	Keep away from heat, sparks, and open flame. Ground handling equipment. Always adopt precautionary measures against build-up of static which may arise from appliances, handling and the containers in which product is packed. Avoid skin and eye contact. Avoid breathing vapours or mist. Use adequate ventilation. Wear respiratory protection if material is heated, sprayed, used in confined space, or if exposure limit is exceeded. Keep container closed when not in use. Handle and open container with care. Do not reseal if contamination is suspected. Employees should wash hands and face before eating or drinking.
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**PRODUCT: PF 451S SLOW ACTIVATOR FOR PF 451****SECTION 07: HANDLING AND STORAGE**

Conditions for safe storage, including any incompatibilities

Keep away from heat, sparks, and open flames. Store in a cool, dry and well ventilated area. Store in tightly closed containers to prevent moisture contamination. Avoid: Water, Amines, Strong bases, Alcohols, Copper alloys. Do not store above 40 deg c.

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

INGREDIENTS	TWA	ACGIH TLV STEL	PEL	OSHA PEL STEL	REL	NIOSH
4-Chlorobenzotrifluoride	Not established	Not established	Not established	Not established	Not established	Not established
Homopolymer of HDI	5 mg/m3 Supplier: 0.5 mg/m3 (TWA)	Not established	5 mg/m3	Not established	5 mg/m3	
2-Butoxyethyl Acetate	20 ppm TLV	Not established	Not established	Not established	5 ppm	
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. Explosion-proof exhaust ventilation.					
Personal Protective Equipment Respiratory/type.....	Whenever concentrations of isocyanates exceed the exposure limit or are not known, respiratory protection must be worn. Use NIOSH approved respirator or equipment. Do not exceed the use limits of the respirator. 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.					
Eye/type.....	Chemical safety goggles. Chemical safety goggles and full faceshield if a splash hazard exists.					
Gloves/ type.....	Wear skin protection equipment. The selection of skin protection equipment depends on the nature of the work to be performed. Contact glove supplier for recommendations.					
Clothing/type.....	Wear adequate protective clothes. Wear long sleeves and trousers to prevent dermal exposure.					
Footwear/type.....	Safety boots per local regulations.					
Other/type.....	Eye wash facility and emergency shower should be in close proximity. Employees should wash their hands and face before eating, drinking, or using tobacco products.					
Monitoring.....	Exposure levels must be monitored by accepted monitoring techniques to ensure that the TLV is not exceeded.					
Medical surveillance.....	Medical supervision of all employees who handle or come in contact with isocyanates is recommended. These should include preemployment and periodic medical examinations with pulmonary function test (FEC, FVC as a minimum). Persons with asthmatic-type conditions, chronic bronchitis, other chronic respiratory diseases or recurring skin eczema or sensitization should be excluded from working with isocyanates. Once a person is diagnosed as sensitized to an isocyanate, no further exposure can be permitted. Persons with asthmatic-type conditions, chronic bronchitis, other chronic respiratory diseases or recurrent skin eczema or sensitization should be excluded from working with isocyanates. Once a person is diagnosed as sensitized to an isocyanate, no further exposure can be permitted.					

**SECTION 09: PHYSICAL AND CHEMICAL PROPERTIES**

Appearance/Physical state.....	Liquid.
Colour.....	Clear to pale yellow.
Odour.....	Characteristic odour. Aromatic.
Odour threshold (ppm).....	Not available.
pH.....	Not available.
Melting / Freezing point (deg C).....	< -24 C.
Initial boiling point / boiling range (deg C).....	>35 C.
Flash point (deg C), method.....	43 C. (estimate; lowest flash point ingredient).
Evaporation rate.....	Not available.
Flammability (solids and gases).....	Not applicable. Flammable liquid.
Upper flammable limit (% vol).....	10.5.
Lower flammable limit (% vol).....	0.9.
Vapour pressure (mm Hg).....	Not available.
Vapour density (air=1).....	Not available.
Relative Density (Specific Gravity).....	1.276.
Pounds / USG.....	10.65.
Solubility.....	Reacts slowly with water to liberate CO2 gas.
Partition coefficient — n-octanol/water.....	Not available.
Auto ignition temperature (deg C).....	Not available.

**PRODUCT: PF 451S SLOW ACTIVATOR FOR PF 451****SECTION 09: PHYSICAL AND CHEMICAL PROPERTIES**

Decomposition temperature..... Not available.  
 Viscosity..... 14 sec Zahn #2.  
 VOC (less water)..... 0.15 lbs/USG; 17.97 g/L.  
 % Volatile by volume..... 0.68.

**SECTION 10: STABILITY AND REACTIVITY**

Reactivity ..... Contact with moisture, other materials that react with isocyanates, or temperatures above 177 C, may cause polymerization.  
 Chemical stability..... Stable at normal temperatures and pressures.  
 Possibility of hazardous reactions..... Contact with moisture, other materials that react with isocyanates, or temperatures above 177C, may cause polymerization.  
 Conditions to avoid, including static ..... Avoid heat, spark, open flames. Electrostatic charge.  
 discharge, shock or vibration  
 Incompatible materials..... Water, Amines, Strong bases, Alcohols, Copper alloys. Strong oxidizing agents.  
 Hazardous decomposition products..... No hazardous decomposition products when stored and handled correctly. See hazardous combustion products section 5.

**SECTION 11: TOXICOLOGICAL INFORMATION**

INGREDIENTS	LC50	LD50
4-Chlorobenzotrifluoride	4479 ppm	>6,800 mg/kg (rat oral); >2,700 mg/kg (rabbit dermal)
Homopolymer of HDI	390-453 mg/m3 rat 4 hours	> 5,000 mg/kg (rat, oral); > 5,000 mg/kg (rabbit, dermal)
2-Butoxyethyl Acetate	> 450 ppm rat 6h	1,600 mg/kg (rat, oral) 1,480 mg/kg (rabbit, dermal)
Route of exposure.....	Eye contact. Skin contact. Inhalation. Skin absorption.	
Symptoms related to the physical, chemical and toxicological characteristics		
Effects of acute exposure.....	Hazardous in contact with skin, by ingestion, and by inhalation. Irritating to eyes, skin and respiratory system. Ingestion can result in the irritation of the digestive tract. Breathing of high vapour concentrations may cause anesthetic effects and serious health effects. May be harmful if absorbed through the skin.	
Effects of chronic exposure.....	Reports have associated repeated or prolonged overexposure to solvents with permanent brain and nervous system damage. 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 exposure limit. Sensitization can be permanent.	
Skin absorption.....	May be harmful if absorbed through the skin.	
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.....	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC or ACGIH.	
Reproductive effects.....	No component of this product present at levels greater than or equal to 0.1% .	
Mutagenicity.....	None known.	
Specific Target Organ Toxicity .....	May cause respiratory irritation. May cause drowsiness or dizziness.	

**SECTION 12: ECOLOGICAL INFORMATION**

Environmental..... No product data. 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. Empty containers must be handled with care due to product residue.

**SECTION 14: TRANSPORT INFORMATION**

TDG Classification..... UN1263 - PAINT RELATED MATERIAL - Class 3 - Packing Group III - This product meets the limited quantity exemption when packaged in containers less than 5 liters .  
 DOT Classification (Road)..... UN1263 - PAINT RELATED MATERIAL - Class 3 - Packing Group III - This product meets the limited quantity exemption when packaged in containers less than 5 liters . Refer to 49CFR 172.101 for additional non-bulk packaging requirements.

**PRODUCT: PF 451S SLOW ACTIVATOR FOR PF 451****SECTION 14: TRANSPORT INFORMATION**

IATA Classification (Air)..... UN1263 - PAINT RELATED MATERIAL - Class 3 - Packing Group III. Limited Quantity. Do not ship by air without checking appropriate IATA regulations.  
 IMDG Classification (Marine)..... UN1263 - PAINT RELATED MATERIAL - Class 3 - Packing Group III - EmS: F-E S-E . Limited Quantity. Check IMDG regulations for limited quantity exemptions.  
 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, fire hazard.  
 Section 313..... None above De minimus % limit.  
 EPA hazardous air pollutants (HAPS) ..... Hexamethylene diisocyanate.  
 40CFR63  
 California Proposition 65..... This product does not contain any chemical(s) known to the State of California to cause cancer or reproductive toxicity. For more information, go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**SECTION 16: OTHER INFORMATION**

Prepared by: ..... REGULATORY AFFAIRS. Trivalent Data Systems Ltd. [www.trivalent.com](http://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.  
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 Date of the latest revision of the safety .. 2020-08-14  
 data sheet