



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

PRODUCT: PF 459M MEDIUM ACTIVATOR FOR PF 459

SECTION 01: IDENTIFICATION

Product identifier..... PF 459M MEDIUM ACTIVATOR FOR PF 459
 Other means of identification
 Chemical family..... Mixture.
 Recommended use and restrictions on .. Accelerator and activator.
 use
 Initial supplier identifier..... Pro Form Products Ltd.
 604 McGeachie Drive
 Milton, Ontario L9T3Y5
 Tel (905) 878-4990 Fax (905) 878-1189
 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 **.
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 NFPA rating..... Health: 2 Fire: 3 Reactivity: 1.
 HMIS..... H: 2 F: 3 R: 1.

SECTION 02: HAZARD IDENTIFICATION



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. (narcotic effects). (respiratory system).
 Signal Word..... WARNING.
 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. %
Homopolymer of HDI	28182-81-2	30-60
4-Chlorobenzotrifluoride	98-56-6	10-30
n-Butyl Acetate	123-86-4	7-13

PRODUCT: PF 459M MEDIUM ACTIVATOR FOR PF 459**SECTION 03: COMPOSITION / INFORMATION ON INGREDIENTS**

2-Butoxyethyl Acetate

112-07-2

1-5

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

SECTION 04: FIRST-AID MEASURES

Inhalation.....	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen, obtain medical attention.
Ingestion.....	Do not induce vomiting. Rinse mouth with water. Give 1 to 2 glasses of water to drink. 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. Seek medical assistance as soon as possible.
Skin contact.....	Immediately remove all contaminated clothing; flush skin with water for at least 15 minutes. If irritation persists, seek medical attention.
Eye contact.....	Check for and remove any contact lenses, if safe and easy to do so. Flush for 15 minutes using plenty of water. If irritation persists seek medical attention.
Most important symptoms and effects, whether acute or delayed	Harmful if swallowed, in contact with skin or if inhaled. Causes skin and eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Direct contact with eyes may cause temporary irritation. Can cause skin sensitization. May cause respiratory irritation. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea.
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. 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. 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. The main hazard from ingestion is aspiration of the liquid into the lungs producing chemical pneumonitis. In the event of an incident involving this product ensure that medical authorities are provided a copy of this safety data sheet.

SECTION 05: FIRE-FIGHTING MEASURES

Suitable and unsuitable extinguishing media	"Alcohol" foam, CO ₂ , dry chemical. Do not use water in a jet. During a fire, isocyanate vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. Use cold water spray to cool exposed containers to minimize risk of rupture. Flammable liquid. Thermal decomposition products are toxic. May include: Oxides of carbon (CO, CO ₂). Oxides of nitrogen. Hydrogen cyanide. Isocyanic acid. Thermal decomposition may release isocyanate vapors. Dense black smoke.
Specific hazards arising from the hazardous product, such as the nature of any hazardous combustion products	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. During a fire, isocyanate vapours and other irritating, highly toxic gases may be generated by thermal decomposition or combustion.
Special protective equipment and precautions for fire-fighters	

SECTION 06: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	No action shall be taken involving any personal risk or without suitable training. Take precautions against static discharge. Use non-sparking tools and equipment to pick up the spilled material. 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.
Methods and materials for containment and cleaning up 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.
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 Canada, call Canutec at (613) 996-6666. If transportation spill occurs in United States, call Chemtrec 1-800-424-9300. Large quantities may be pumped into closed, but not sealed, containers for disposal. Process can generate heat.

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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 breathing vapours or mist. Individuals with lung or breathing problems or prior allergic reactions to isocyanates must not be exposed vapour or spray mist. Avoid all skin contact and ventilate adequately, otherwise wear an appropriate breathing apparatus. Handle and open container with care. Employees should wash hands and face before eating or drinking.

Conditions for safe storage, including any incompatibilities Keep away from heat, sparks, and open flames. Store in a cool, dry and well ventilated area. Keep container closed when not in use. Store away from sunlight. Do not store where product can come into contact with water.

SECTION 08: EXPOSURE CONTROLS / PERSONAL PROTECTION

INGREDIENTS	TWA	ACGIH TLV STEL	PEL	OSHA PEL STEL	REL NIOSH
Homopolymer of HDI	5 mg/m3 Supplier: 0.5 mg/m3 (TWA)	Not established	5 mg/m3	Not established	5 mg/m3
4-Chlorobenzotrifluoride	Not established	Not established	Not established	Not established	Not established
n-Butyl Acetate	50 ppm CA ON: 50ppm (TWA), 150ppm (STEL)	150 ppm	150 ppm	200 ppm	150 ppm / STEL 200 ppm
2-Butoxyethyl Acetate	20 ppm TLV	Not established	Not established	Not established	5 ppm
Appropriate engineering controls.....	Local exhaust should be used to maintain levels below the TLV whenever isocyanate is processed, heated or spray applied. Provide natural or mechanical ventilation to control exposure levels below airborne exposure limits. Local mechanical exhaust ventilation should be used at sources of air contamination, such as open process equipment, or during purging operations, to capture gases and fumes that may be emitted. Standard reference sources regarding industrial ventilation (ie. ACGIH industrial ventilation) should be consulted for guidance about adequate ventilation.				
Personal Protective Equipment Respiratory/type.....	Whenever concentrations of isocyanates exceed the exposure limit or are not known, respiratory protection must be worn. An air-purifying particulate/organic vapour cartridge respirator is required anytime inhalation of vapour above the exposure limit is possible. . 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.				
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. The following gloves are recommended :. Nitrile rubber. Butyl rubber. Neoprene. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.				
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.				
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.				

SECTION 09: PHYSICAL AND CHEMICAL PROPERTIES

Appearance/Physical state..... Liquid.
 Colour..... Clear to pale yellow.
 Odour..... Characteristic odour.
 Odour threshold (ppm)..... Not available.
 pH..... Not available.
 Melting / Freezing point (deg C)..... < -24 C.
 Initial boiling point / boiling range (deg C). >100°C.
 Flash point (deg C), method..... 29 °C. (estimate; lowest flash point ingredient).
 Evaporation rate..... Not available.

PRODUCT: PF 459M MEDIUM ACTIVATOR FOR PF 459**SECTION 09: PHYSICAL AND CHEMICAL PROPERTIES**

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).....	1.161.
Pounds / USG.....	9.69.
Solubility.....	Reacts slowly with water to liberate CO2 gas.
Partition coefficient — n-octanol/water.....	Not available.
Auto ignition temperature (deg C).....	Not available.
Decomposition temperature.....	Not available.
Viscosity.....	15 sec Zahn #2.
% Volatile by weight.....	12.
VOC (less water).....	1.16 lbs/USG; 139 g/L.

SECTION 10: STABILITY AND REACTIVITY

Reactivity	Contact with moisture and other materials will react with isocyanates.
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 discharge, shock or vibration	Avoid heat, spark, open flames. Moisture.
Incompatible materials.....	Water, Amines, Strong bases, Alcohols, Copper alloys. Strong oxidizing agents.
Hazardous decomposition products.....	No hazardous decomposition products when stored and handled correctly. Thermal decomposition may produce acrid smoke and irritating fumes. See hazardous combustion products section 5.

SECTION 11: TOXICOLOGICAL INFORMATION

INGREDIENTS	LC50	LD50
Homopolymer of HDI	390-453 mg/m3 rat 4 hours	> 5,000 mg/kg (rat, oral); > 5,000 mg/kg (rabbit, dermal)
4-Chlorobenzotrifluoride	4479 ppm	>6,800 mg/kg (rat oral); >2,700 mg/kg (rabbit dermal)
n-Butyl Acetate	>33 mg/L vapour, 5.2 mg/L (rat) dust/mist	10760 mg/kg (rat, oral) 14112 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. Ingestion.	
Symptoms related to the physical, chemical and toxicological characteristics		
Skin contact.....	Causes skin irritation. Causes reddening, stinging and swelling. Persons previously sensitized can experience allergic reaction with symptoms of reddening, itching, swelling and rash.	
Skin absorption.....	Not available.	
Eye contact.....	Causes eye irritation. Can cause tearing, reddening and swelling. May cause temporary corneal damage. Vapours can produce irritation. Symptoms include tearing and reddening.	
Inhalation (acute).....	Isocyanate 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, difficult breathing and reduced pulmonary functioning. Solvent vapours may be irritating to the eyes, nose and throat, resulting in redness, burning and itching of eyes, dryness of the throat and tightness in the chest.	
Ingestion.....	May be harmful if swallowed. May cause central nervous system effects such as headache, nausea, vomiting and weakness.	
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 exposure limit.	
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.....	None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.	
Reproductive effects.....	No data on reproductive effects were found in the literature sources consulted.	
Specific Target Organ Toxicity	May cause drowsiness or dizziness. May cause respiratory irritation.	

PRODUCT: PF 459M MEDIUM ACTIVATOR FOR PF 459**SECTION 12: ECOLOGICAL INFORMATION**

Ecotoxicity.....	Product data not available.
Persistence and degradability.....	Product data not available.
Bioaccumulative potential.....	Product data not available.
Mobility in soil.....	Product data not available.
Other adverse effects.....	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.
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.....	Potential marine pollutant.
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 substances	None.
Section 311/312 - hazard categories.....	Immediate health, delayed health, fire hazard.
Section 313.....	None above De minimus % limit.
EPA hazardous air pollutants (HAPS) 40CFR63	Hexamethylene diisocyanate.
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 .

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 data sheet	2021-01-15