

SDS# PF-08, PF-16
Date: October 2015

Total Pages: 6

Pro-Flush®

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Pro-Flush HVAC Flushing Solvent

Catalog Number: PF-08, PF-16

Manufactured by: DiversiTech Corporation
6650 Sugarloaf Parkway
Duluth, GA, 30097

Information Phone No.: 1+678.542.3600

EMERGENCY Phone No.: 1 800.255.3924 Chem-Tel (Chemical Emergencies)

PREPARED BY: V. Leone

SECTION 2. HAZARDOUS INGREDIENTS INFORMATION

GHS Classification:

Acute Toxicity Oral Category 4

Acute Toxicity Inhalation Category 4

Eye Irritation Category 2A

Hazardous to the Aquatic Environment, Chronic Hazard Category 3

Label Elements:



Signal Word Warning!

Hazard Statement(s)

H302 Harmful if swallowed.
H332 Harmful if inhaled.
H319 Causes serious eye irritation.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P102 Keep out of reach of children.
P103 Read label before use.
P261 Avoid breathing mist or vapours.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink, or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear safety goggle or a face shield.

Response

P312 Call a POISON CENTER or doctor if you feel unwell.
P301+312 IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
P330 Rinse mouth.
P304+340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + 351 + 338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + 313 If eye irritation persists: Get medical attention.
P501 Dispose of contents in accordance with the international and local regulations.

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SECTION 3. HAZARDOUS INGREDIENTS INFORMATION

INGREDIENT	CAS No.	EINECS No.	% Or Range	GHS Classification	
Acetone	67-64-1	200-662-2	10-20	H225: Highly flammable Liquid and vapour H319: Causes serious Eye irritation H401: Toxic to aquatic Life.	Category 2 Category 2A Category 2
t-Butyl Acetate	540-88-55	208-760-7	20-30	H226: Flammable Liquid and vapour H336: May cause Drowsiness or dizziness	Category 3 Category 3
trans 1,2 dichloroethane	156-60-5	205-860-2	50-60	H225: Highly flammable liquid and vapour H332: Harmful if inhaled. H412: Harmful to aquatic Life with long	Category 2 Category 4 Category 3
Ethyl Nonafluoroisobutyl Ether	163702-06-5	98-02-0209-00	10-20	H413: Aquatic Chronic	Category 4
Ethyl Nonafluorobutyl Ether	163702-05-4	98-02-0209-00	10-20	H413: Aquatic Chronic	Category 4

SECTION 4. FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation: Remove to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion: DO NOT INDUCE VOMITING! Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention if you feel unwell.

Skin Contact: Wash with soap and water. Rinse with copious amounts of fresh, running water. If irritation persists, get medical attention.

Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention if irritation occurs.

4.2. Signs and Symptoms of Exposure:

Inhalation: Components of Pro-Flush[™] are of a low order of toxicity in animals. At high levels of exposure, cardiac arrhythmia may occur. When oxygen levels are reduced to 12-14% by displacement, symptoms of asphyxiation, loss of coordination, increased pulse rate and deeper respiration will occur. Effects from inhalation of mists and vapors vary from mild to moderate irritation of the upper respiratory tract, depending on severity of exposure. Abusive or excessive inhalation of vapors may cause irritation to the upper respiratory tract, dizziness, nausea and other central nervous system effects.

Ingestion: Swallowing can cause gastro-intestinal irritation, nausea, vomiting, diarrhea. Aspiration of material into the lungs can cause chemical pneumonitis.

Skin Contact: Frequent or prolonged contact may cause mild irritation. Repeated contact may cause drying or flaking of skin.

Eye Contact: Mildly irritating.

Aggravation of Pre-existing Conditions: Persons with pre-existing skin disorders or eye problems or impaired respiratory function may be more susceptible to the effects of the product.

SECTION 5. FIREFIGHTING MEASURES

Suitable and Unsuitable Extinguishing Media:

Use dry chemical, carbon dioxide, foam or other media suitable for the primary source of the fire. Exposure to temperatures above 70°C/160°F may cause containers to burst. Pro-Flush[™] is not flammable at ambient temperatures and atmospheric pressure. However, based on similar mixtures, this material will become combustible when mixed with air under pressure and exposed to strong ignition sources. Contact with certain finely divided reactive metals may result in formation of explosive or exothermic reactions under specific conditions (e.g. very high temperatures and/or appropriate pressures). In the event of a liquid spill, ethyl nonafluoroisobutyl ether and ethyl nonafluorobutyl ether will evaporate from the mixture faster than the other components, leaving a mixture enriched with trans-1,2-dichloroethylene, acetone and t-butyl acetate. The enriched mixture may be flammable.

Special Equipment and Precautions for Fire-Fighters:

Firefighters should wear self-contained breathing apparatus for protection against suffocation and possible toxic decomposition products. Wear proper eye and skin protection. Use a water spray to keep fire-exposed containers cool and to knock down vapors that may result from product decomposition.

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SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures: Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal protective equipment and clothing during clean-up.

Methods and Material for Containment and Clean-Up: Contain and absorb liquid with clay, vermiculite or other inert substance, sweep up and package in a container suitable for disposal. Wash away residues with water. Dispose of absorbed material in accordance with Federal, local and state regulations.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling: Keep in a tightly closed container. Protect from physical damage. Keep this and all chemicals out of the reach of children. Avoid contact with eyes and skin. Avoid inhalation of vapors and mists. Wash thoroughly after handling.

Conditions for Safe Storage, Including any Incompatibilities: Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatible materials. Observe all warnings and precautions listed for the product.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Airborne Exposure Limits:

Substance:	CAS No.	EINECS No.	OSH A PEL	ACIGHTLV	8hrTWA	UK WEL 15min STEL
Acetone	67-64-1	200-662-2	750ppm	750ppm	1210 mg/m3	3620 mg/m3
t-Butyl Acetate	540-88-5	208-760-7	200ppm	200ppm	966 mg/m3	1210 mg/m3
trans 1,2 Dichloroethene	156-60-5	205-860-2	200ppm	None	No Data	No Data
Ethyl Nonafluoroisobutyl Ether	163702-06-5	200ppm	No Data		No Data	
Ethyl Nonafluorobutyl Ether	163702-05-4	200ppm	No Data		No Data	

Appropriate Engineering Controls:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, [*Industrial Ventilation. A Manual of Recommended Practices*](#), most recent edition, for details.

Personal Respirators: Not required for normal use in accordance with label directions.

Skin Protection: Use rubber, neoprene or nitrile gloves to minimize skin contact.

Eye Protection: Use chemical safety goggles and/or a full face shield where splashing is possible. A source of running water or other eyewash provisions should be nearby.

Work Hygienic Practices: Use proper industrial hygiene practices to minimize hazardous exposure. Wash hands after handling this material, and before eating, smoking or using the bathroom.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear colorless liquid
Odor:	Sweet odor
Odor Threshold:	Not established
pH @ 25°C:	Not applicable
Melting Point (Pour Point):	175°F
Boiling Point:	41°C/106°F
Flash Point:	No Flash Point to boil
Evaporation Rate (Water = 1):	>1
Flammable Limits:	No data for mixture
LEL:	N/A
UEL:	N/A
Vapor pressure (mm Hg):	~1psig, ~16psia
Vapor Density (Air = 1):	3.8 @ 70°F
VOC Content:	0% (all components are VOC exempt)
Solubility in water:	~7 grams/liter
Octanol/Water Partition Coefficient:	Not available
Autoignition Temperature:	Not available
Decomposition Temperature:	Not available

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SECTION 10. STABILITY AND REACTIVITY

Chemical Stability: Stable under ordinary conditions of use and storage.

Possibility of Hazardous Reactions: Will not occur.

Conditions to Avoid: Heat, incompatibles.

Incompatible Materials: Avoid contact with strong oxidizing agents, strong alkalis and strong acids.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, hydrogen sulfide, phosgene.

SECTION 11. TOXICOLOGICAL INFORMATION

Potential Health Effects:

Inhalation: Components of Pro-Flush[™] are of a low order of toxicity in animals. At high levels of exposure, cardiac arrhythmia may occur. When oxygen levels are reduced to 12-14% by displacement, symptoms of asphyxiation, loss of coordination, increased pulse rate and deeper respiration will occur. Effects from inhalation of mists and vapors vary from mild to moderate irritation of the upper respiratory tract, depending on severity of exposure. Abusive or excessive inhalation of vapors may cause irritation to the upper respiratory tract, dizziness, nausea and other central nervous system effects.

Ingestion: Swallowing can cause gastro-intestinal irritation, nausea, vomiting, diarrhea. Aspiration of material into the lungs can cause chemical pneumonitis.

Skin Contact: Frequent or prolonged contact may cause mild irritation. Repeated contact may cause drying or flaking of skin.

Eye Contact: Mildly irritating.

Aggravation of Pre-existing Conditions: Persons with pre-existing skin disorders or eye problems or impaired respiratory function may be more susceptible to the effects of the product.

Carcinogenic effects: Not classified

Teratogenicity/Reproductive toxicity: Not classified

Mutagenic effects: Not classified

Numerical Measures of Toxicity:

Acetone:

Inhalation, rat: LC50 = 50100 mg/m³/8H;

Oral, mouse: LD50 = 3 gm/kg Oral, rabbit: D50 = 5340 mg/kg Oral, rat: LD50 = 5800 mg/kg Skin, rabbit: LD50 = 20 gm/kg.

t-Butyl acetate:

Draize test, rabbit, eye: 100 uL Mild irritant Draize test, rabbit, skin: 500 uL/24H Mild irritant Inhalation, rat: LC50 = >2230 mg/m³/4H

Oral, rat: LD50 = 4100 mg/kg Skin, rabbit: LD50 = >2 gm/kg

trans 1,2 Dichloroethene:

Acute Dermal (rabbit) LD50: > 5,000mg/kg Acute Inhalation (rat) 4-hr. LC50: >24,100 ppm

Ethyl Nonafluoroisobutyl Ether:

Acute Oral Toxicity, LD50-Rat: >2.0 grams/KG body weight.

Acute Inhalation Toxicity, 4-hour LC50-Rat: 92,000ppm

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity: Rainbow trout LC50=5540 mg/L/96H; Sunfish (tap water), death at 14250 ppm/24H; Mosquito fish (turbid water) TLm=13000 ppm/48H

Environmental Fate: Volatilizes, leeches, and biodegrades when released to soil.

Physical/Chemical: No information available.

t-Butyl Acetate

Ecotoxicity: Bacteria: Phytobacterium phosphoreum: EC50 = 6.38-11.1 mg/L; 5, 15, 30 minutes; Microtox test; 15 degrees C Based on a log Kow of 1.38, the BCF value for tert-butyl acetate can be estimated to be 6.6 by a recommended regression-derived equation. This BCF value suggests that bioconcentration is not significant.

Environmental: Chemical hydrolysis of tert-butyl acetate in moist, very alkaline soils (pH approaching 10 or higher) may be important, but hydrolysis in soils of pH 9 or lower is not expected to be important. Based on an estimated Koc value of 134, tert-butyl acetate may be subject to significant leaching in soil. Volatilization from dry soil surfaces may be rapid.

Physical: ATMOSPHERIC FATE: tert-Butyl acetate will exist almost entirely in the vapor-phase in the ambient atmosphere due to its expected high vapor pressure. The half-life for the vapor-phase reaction of tert-butyl acetate with photochemically produced hydroxyl radicals has been estimated to be about 26 days in an average atmosphere indicating that this reaction may be the dominant atmospheric degradation mechanism. Physical removal via washout may be possible. **Other:** Do not empty into drains.

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SECTION 12. ECOLOGICAL INFORMATION (cont.)

Other: For more information, see "HANDBOOK OF ENVIRONMENTAL FATE AND EXPOSURE DATA."

Ethyl Nonafluoroisobutyl Ether
Ethyl Nonafluorobutyl Ether

Test Organism	Test Type	Result
Water flea, <i>Daphnia magna</i>	48 hours Effect Concentration 50%	>2.55 mg/l
Fathead Minnow, <i>Pimephales promelas</i>	96 hours Lethal Concentration 50%	>2.75 mg/l
Green algae, <i>Selenastrum capricornutum</i>	96 hours Effect Concentration 50%	>2.32 mg/l

SECTION 13. DISPOSAL CONSIDERATIONS

Dispose of spill-clean up and other wastes in accordance with Federal, State, and local regulations. Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. All spent material must be disposed of in accordance with all applicable Federal and State RCRA Regulations. Consult with appropriate regulatory agencies before disposing of waste material. The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method. The unused product is an RCRA hazardous waste if discarded. The RCRA ID number is: U079 (1,2 dichloroethylene); U002 (Acetone, Ignitability)

SECTION 14. TRANSPORTATION INFORMATION

US DOT: Not regulated for ground transport in quantities below 5 liters.

International (Water, I.M.O.) Dangerous Goods Description: UN3082, Environmentally Hazardous Substance, Liquid, NOS (Contains trans 1,2 dichloroethylene), 9, PGIII (Ltd.QTY)

Marine Pollutant: No

SECTION 15. REGULATORY INFORMATION

US EPA

Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA) Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center [(800) 424-8802] and to your Local Emergency Planning Committee.

RQ: 2000 pounds (1,2 dichloroethylene)

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on threshold planning quantities and release reporting based on reportable quantities in 40 CFR 355 (used for SARA 302, 304, 311, and 312) is not required.

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313). This material is not subject to reporting requirements.

Toxic Substances Control Act (TSCA) Status: The ingredients of this product are on the TSCA inventory.

State Right to Know

California Proposition 65: None listed

Massachusetts: Hazardous substances and extraordinarily hazardous substances must be identified.

Pennsylvania: Hazardous substances must be identified.

California SCAQMD Rule 443.1 (VOC's): 0%

SARA 311/312: Acute: **No** Chronic: **No** Fire: **No** Pressure: **Yes** Reactivity: **No**

WHMIS:

This SDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by the CPR.

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SECTION 15. REGULATORY INFORMATION (cont.)

Acetone meets the Canadian WHMIS criteria for classes: B2: Flammable and combustible material: Flammable liquid D2B- Poisonous and Infectious material-Other Effects: Toxic Foreign Inventory Status:

Ethyl Nonafluoroisobutyl Ether: Not listed

Ethyl Nonafluorobutyl Ether: Not listed

Trans-1,2-Dichloroethylene Europe: ELINCS #419 170 6 #205-860-2

Trans-1,2-Dichloroethylene Japan: MOL 2-(13)-143

Canada: Notified Listed DSL

Australia: Notified

SECTION 16. OTHER INFORMATION:

Revision Summary: All Sections: New GHS Format

SDS DATE REVISED: 10/13/2015

HMIS III Ratings

HMIS III[®]

Health	2
Flammability	1
Physical Hazard	1
Personal Protection	B

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