SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name:	**APF - Ace Power Flush**
Product Use Description:	Cleaning Agent
Restrictions on use:	Do not use product for anything outside above specified uses
Distributor:	Atlantic Chemical & Equipment Co. Inc. 3471 Atlanta Ind Pkwy – Ste 200 Atlanta, GA 30331 USA Phone: 1.800.929.2436
In case of emergency call:	CHEMTREC 1.800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Product hazard category

Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity - single exposure	Category 3

Label content

Pictogram

Signal word:	Warning
Hazardous warnings:	Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness.
Hazardous prevention measures:	Avoid breathing dust/fume/gas/mist/vapours/spray. Wash skin thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear eye protection/face protection. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER or doctor/physician if you feel unwell. If eye irritation persists: Get medical advice/attention. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Dispose of contents/container to an approved waste disposal plant.

Other hazards

Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing. Prolonged skin contact may defat the skin and produce dermatitis. Misuse or intentional inhalation abuse may lead to death without warning.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component:	CAS#	Concentration
trans-Dichloroethylene	156-60-5	63% - 73%
1,1,1,2,2,3,4,5,5,5-Decafluoropentane	138495-42-8	20% - 30%
Ethanol	64-17-5	1% - 11%

SECTION 4. FIRST AID MEASURES

General advice:	Never give anything by mouth to an unconscious person. Victim to lie down in the recovery position, cover and keep him warm. Give oxygen or artificial respiration if needed. When symptoms persist or in all cases of doubt seek medical advice.
Inhalation:	Remove from exposure, lie down. Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary. Consult a physician
Skin Contact:	Take off all contaminated clothing immediately. Wash off with warm water.
Eye Contact:	Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention. Remove contact lenses, if present and easy to do. Continue rinsing.
Ingestion:	Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Drink 1 or 2 glasses of water. If vomiting occurs, have victim lean forward to reduce the risk of aspiration. Consult a physician.
Most important symptoms Effects, acute & delayed:	Dizziness
Protection of first-aiders:	If potential for exposure exists refer to Section 8 for specific personal protective equipment
Notes to physician:	Do not give adrenaline or similar drugs.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	Water spray, water mist, dry chemical, carbon dioxide (CO2)
Unsuitable extinguishing media:	No applicable data available.
Specific hazards:	Fire or intense heat may cause violent rupture of packages. The product is not flammable. Vapors may form flammable mixture with air. Hazardous combustion products: hydrogen fluoride, fluorinated hydrocarbons, carbonyl fluoride, carbon oxides, hydrogen chloride.

SECTION 5. FIRE-FIGHTING MEASURES (continued)

Special protective equipment for firefighters	In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment. Wear neoprene gloves during cleaning up work after a fire. Exposure to decomposition products may be a hazard to health.
Further information	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Evacuate personnel to safe areas. Cool containers with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Note: review Fire Fighting Measures and Handling (Personnel) sections before proceeding with clean-up. Use appropriate Personal Protective Equipment during clean-up.

Safeguards (Personnel)	Evacuate personnel to safe areas. Ventilate area, especially low or enclosed places where heavy vapors might collect. In case of insufficient ventilation, wear suitable respiratory equipment. Refer to protective measures listed in sections 7 and 8
Environmental Precautions	Prevent further leakage or spillage. Prevent spreading over a wide area (e.g. by containment or oil barriers). Should not be released into the environment. Do not allow contact with soil, surface or ground water.
Spill Clean-Up	Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local and national regulations (see section 13.)
Accidental Release Measures	No applicable data available.

SECTION 7. HANDLING AND STORAGE

Handling (Personnel)	Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mist. Provide sufficient air exchange and/or exhaust in work rooms. For personal protection see section 8. Handle in accordance with good industrial hygiene and safety practice. When using do not eat, drink or smoke. Do not breathe vapors or spray mist, Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.
Handling (Physical Aspects)	Material should not be dispensed from its container by pouring, except for small sample containers where fume hoods or where other ventilation is used to manage the exposure limits. The use of a drum pump is recommended for dispensing from shipping containers.
Dust explosion class	Not applicable
Storage	Protect from contamination. Drainage facilities should be constructed for containment of small spills. Keep container tightly closed in a dry and well ventilated place. Store in original container. Avoid freezing temperatures. If stored below -10°C (14°F), mix prior to use.
Storage period	No applicable data available.
Storage temperature	< 52°C (< 126°F)

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls Use with sufficient ventilation to keep employee exposure below recommended limits.

Personal protective equipment

Respiratory protection	For rescue and maintenance work in storage tanks use self-contained breathing apparatus. Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing.
Hand protection	Material: solvent-resistant gloves
Eye protection	Safety glasses with side-shields. Additionally wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact with this material.
Skin and body protection:	Protective suit

Exposure Guidelines

Exposure Limit Values

trans-Dichloroethylene

PEL	(OSHA)	200 ppm	790 mg/m3	8 hr. TWA
TLV	(ACGIH)	200 ppm	TWA	

Ethanol

PEL	(OSHA)	1,000 ppm	1,900 mg/m3	8 hr TWA
TLV	(ACGIH)	1,000 ppm	STEL	

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form:	liquid
Color:	colorless
Odor:	ether-like
Odor threshold:	no applicable data available.
pH:	neutral
Melting point/freezing point:	Melting point/range <50°C (-58°F)
Boiling point/boiling range:	Boiling point/boiling range 41.0°C (105.8°F) at 1,013 hPa
Flash point:	Method: Pensky-Martens closed cup PMCC – does not flash No flash point was obtained, but the product may release flammable vapour
Evaporation rate:	No applicable data available
Flammability (solid, gas):	No applicable data available
Upper explosion limit:	13.5 vol%
Lower explosion limit:	4.3 vol%
Vapor Pressure:	347.9 hPa at 25°C (77°F)
Vapor density:	3.7
Density:	1.26 g/cm3 at 25°C (77°F) (as liquid)
Specific gravity:	(Relative density) No applicable data available
Bulk density:	No applicable data available
Water solubility:	3 g/l at 25°C (77°F), slightly soluble
Solubility(ies):	No applicable data available
Partition coefficient:	(n-octanol/water) No applicable data available
Auto-ignition temperature:	No applicable data available
Decomposition temperature:	No applicable data available
Viscosity:	0.48 mPa.s

SECTION 10. STABILITY AND REACTIVITY

Reactivity:	Stable at normal ambient temperature and pressure
Chemical stability:	The product is chemically stable. No decomposition if stored and applied as directed
Possibility of hazardous reactions:	No applicable data available.
Conditions to avoid:	Avoid open flames and high temperatures
Incompatible materials:	Alkali metals, Alkaline earth metals, Powdered metals, Powdered metal salts, nitrogen oxides (NOx) acids, bases & strong oxidizing agents, oxygen
Hazardous decomposition products:	Hazardous decomposition products formed under fire conditions: Fluorinated hydrocarbons, Hydrogen fluoride, Carbon dioxide (CO2), Carbon monoxide, hydrogen chloride gas, carbonyl fluoride

SECTION 11. TOXICOLOGICAL INFORMATION (non-mandatory)

Ace Power Flush APF (as packaged)

Sensitization:	Did not cause sensitization on laboratory animals.

trans-Dichloroethylene

Inhalation 4 h LC50:	96.4 mg/l, rat, Target Organs: Central nervous system Central nervous system depression
Dermal LD50:	> 5,000 mg/kg, rabbit
Oral LD50:	2,122 mg/kg, Mouse, Target Organs: Central nervous system Central nervous system depression
Skin irritation:	Mild skin irritation, rabbit
Eye irritation:	Irritation to eyes, reversing within 7 days, Rabbit
Repeated dose toxicity:	Inhalation, Rat No toxicologically significant effects were found Oral - Rat No toxicologically significant effects were found Mutagenicity: Animal testing did not show any mutagenic effects. Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Teratogenicity:	Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.
Further information:	Cardiac sensitization threshold limit: 793047 mg/m3

SECTION 11. TOXICOLOGICAL INFORMATION (continued)

1,1,1,2,2,3,4,5,5,5-Decafluoropentane

Inhalation 4 h LC50:	114 mg/l, rat, Central nervous system effects convulsions
Dermal LD50:	> 5,000 mg/kg, Rabbit
Oral LD50:	> 5,000 mg/kg, Rat
Skin irritation:	No skin irritation, Rabbit
Eye irritation:	No eye irritation, Rabbit
Repeated dose toxicity:	Inhalation, Rat No toxicologically significant effects were found
Mutagenicity:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Animal testing did not show any mutagenic effects.
Reproductive toxicity:	No toxicity to reproduction. Animal testing showed no reproductive toxicity.
Teratogenicity:	Animal testing showed no developmental toxicity

Ethanol

Inhalation 4h LC50:	124.7 mg/l, Rat – vapour
Oral LD50	10,470 mg/kg, Rat – narcotic effects
Skin irritation:	No skin irritation, Rabbit
Eye irritation:	Eye irritation, Rabbit
Repeated dose toxicity:	Oral, Rat - No toxicologically significant effects were found. Inhalation, Rat – No toxicologically significant effects were found.
Carcinogenicity:	Not classifiable as a human carcinogen. Overall weight of evidence indicates that the substance is not carcinogenic.
Mutagenicity:	Animal testing did not show any mutagenic effects. Testing on bacterial or mammalian cell cultures did not show mutagenic effects.
Reproductive toxicity:	No toxicity to reproduction. Animal testing showed effects on reproduction at levels equal to or above those causing parental toxicity.
Teratogenicity:	Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.

Carcinogenicity: None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC,HTP, or OSHA as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity

trans-Dichloroethylene

96 h LC50:	Lepomis macrochirus (Bluegill sunfish) 74 mg/l
96 h EC50:	Pseudokirchneriella subcapitata (green algae) 798 mg/l
48 h LC50:	Daphnia magna (Water flea) 79 mg/l

1,1,1,2,2,3,4,5,5,5-Decafluoropentane

96 h LC50:	Oncorhynchus mykiss (rainbow trout) 13.9 mg/l
96 h LC50:	Pimephales promelas (fathead minnow) 27.2 mg/l
96 h LC50:	Danio rerio (zebra fish) 13 mg/l
72 h EC50:	Pseudokirchneriella subcapitata (green algae) >120 mg/l
48 h LC50:	Daphnia magna (Water flea) 11.7 mg/l
21 d:	NOEC Daphnia magna (Water flea) 1.72 mg/l

Ethanol

96 h EC50:	Pseudokirchneriella subcapitata (green algae) 10,000 mg/l
96 ErC50:	Pseudokirchneriella subcapitata (green algae) 675 mg/l OECD Test Guideline 201
48 h EC50:	Daphnia magna (Water flea) 5,012 mg/l
30 d:	NOEC Fish (unspecified species) 245 mg/l

Environmental Fate

trans-Dichloroethylene

Biodegradability:	Not biodegradable 8 % OECD Test Guideline 301D

1,1,1,2,2,3,4,5,5,5-Decafluoropentane

Biodegradability:	Not readily biodegradable
Bioaccumulation:	Bioaccumulation is unlikely

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product: Can be used after re-conditioning. If recycling is not practicable, dispose of in compliance with local regulations. The product should not be allowed to enter drains, water courses or the soil.

Contaminated packaging: If recycling is not practicable, dispose of in compliance with local regulations

SECTION 14. TRANPORT INFORMATION

Not classified as dangerous in the meaning of transport regulations.

SECTION 15. REGULATORY INFORMATION

TSCA : 1,1,1,2,2,3,4,5,5,5-DECAFLUOROPENTANE (CAS# 138495-42-8) is controlled by TSCA Section 5, Significant New Use Rule (SNUR; 40 CFR 721.5645) The approved uses are: precision and general cleaning, carrier fluid, displacement drying, printed circuit board cleaning, particulate removal and film cleaning, process medium, heat transfer fluid (dielectric and non-dielectric), and test fluid. Processors and users of this substance must also comply with the applicable general SNUR requirements set forth in 40 CFR 721 subpart A, including export notification requirements if applicable (40 CFR 721.20), and the applicable record keeping requirements set forth at 40 CFR 721.125.

SECTION 15. REGULATORY INFORMATION (continued)

SARA 313 Regulated Chemical(s):
trans-Dichloroethylene

PA Right to Know Regulated Chemical(s):
Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): trans-Dichloroethylene, Ethanol

NJ Right to Know Regulated Chemical(s):
Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as mutagens or teratogens): trans-Dichloroethylene, Ethanol

CERCLA Reportable Quantity:
1,471 lbs
Based on the percentage composition of this chemical in the product: trans-Dichloroethylene

SECTION 16. OTHER INFORMATION SDS Preparation/Revision: May 2015

Manufacturer's Statement: The information contained in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Preparer shall not be liable for damages arising out of or in connection with the information obtained herein. No warranty of any kind is expressed or implied as to the accuracy, completeness or adequacy of the information obtained herein.