MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MATHESON TRI-GAS, INC.
150 Allen Road Suite 302
Basking Ridge, New Jersey 07920
Information: 1-800-416-2505

Emergency Contact:
CHEMTREC 1-800-424-9300
Calls Originating Outside the US:
703-527-3887 (Collect Calls Accepted)

SUBSTANCE: PHOSPHORUS PENTAFLUORIDE

TRADE NAMES/SYNONYMS:
MTG MSDS 75; PHOSPHORANE, PENTAFLUORO-; PHOSPHORUS FLUORIDE (PF5);
PENTAFLUOROPHOSPHANE; PENTAFLUOROPHOSPHORUS; PHOSPHORUS FLUORIDE; STCC
4904125; UN 2198; F5P; MAT18735; RTECS TH4070000

CHEMICAL FAMILY: non-metallic, halides

CREATION DATE: Feb 16 1989
REVISION DATE: Dec 11 2008

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: PHOSPHORUS PENTAFLUORIDE
CAS NUMBER: 7647-19-0
PERCENTAGE: 100.0

3. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=3  FIRE=0  REACTIVITY=2

EMERGENCY OVERVIEW:
COLOR: colorless
PHYSICAL FORM: gas
ODOR: irritating odor, pungent odor
MAJOR HEALTH HAZARDS: skin burns, eye burns
PHYSICAL HAZARDS: Containers may rupture or explode if exposed to heat. May ignite combustibles. May react on contact with air, heat, light or water.

POTENTIAL HEALTH EFFECTS:
INHALATION:
4. FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

SKIN CONTACT: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get immediate medical attention. Thoroughly clean and dry contaminated clothing before reuse. Destroy contaminated shoes.

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

INGESTION: If a large amount is swallowed, get medical attention.

NOTE TO PHYSICIAN: For inhalation, consider oxygen.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Negligible fire hazard. Containers may rupture or explode if exposed to heat. Oxidizer. May ignite or explode on contact with combustible materials.

EXTINGUISHING MEDIA: carbon dioxide, regular dry chemical

Large fires: Use regular foam or flood with fine water spray.

FIRE FIGHTING: Do not get water inside container. Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. Keep unnecessary people away, isolate hazard area and deny entry.
6. ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:

7. HANDLING AND STORAGE


8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:
PHOSPHORUS PENTAFLUORIDE:
No occupational exposure limits established.

VENTILATION: Provide local exhaust or process enclosure ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Wear appropriate chemical resistant gloves.

RESPIRATOR: Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.

Any chemical cartridge respirator with acid gas cartridge(s).
Any chemical cartridge respirator with a full facepiece and acid gas cartridge(s).
Any air-purifying respirator with a full facepiece and an acid gas canister.
For Unknown Concentrations or Immediately Dangerous to Life or Health -
Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.
Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.
9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: gas
COLOR: colorless
ODOR: irritating odor, pungent odor
MOLECULAR WEIGHT: 125.97
MOLECULAR FORMULA: P-F5
BOILING POINT: -120 F (-84.5 C)
FREEZING POINT: -137 to -133 F (-94 to -91.6 C)
VAPOR PRESSURE: 21432 mmHg @ 21 C
VAPOR DENSITY (air=1): 4.46 @ 20 C
SPECIFIC GRAVITY: Not applicable
DENSITY: 5.805 g/L
WATER SOLUBILITY: reacts
PH: Not applicable
VOLATILITY: 100%
ODOR THRESHOLD: Not available
EVAPORATION RATE: Not applicable
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not applicable

10. STABILITY AND REACTIVITY

REACTIVITY: May react violently with water at normal temperature and pressure.

CONDITIONS TO AVOID: Minimize contact with material. Avoid inhalation of material or combustion by-products. Containers may rupture or explode if exposed to heat.

INCOMPATIBILITIES: metals, combustible materials, reducing agents

HAZARDOUS DECOMPOSITION:
Thermal decomposition products: halogenated compounds, oxides of phosphorus

POLYMERIZATION: Will not polymerize.

11. TOXICOLOGICAL INFORMATION

PHOSPHORUS PENTAFLUORIDE:
LOCAL EFFECTS:
Corrosive: inhalation, skin, eye
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: respiratory disorders
12. ECOLOGICAL INFORMATION

Not available

13. DISPOSAL CONSIDERATIONS

Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D003. Dispose in accordance with all applicable regulations.

14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:
PROPER SHIPPING NAME: Phosphorus pentafluoride
ID NUMBER: UN2198
HAZARD CLASS OR DIVISION: 2.3
LABELING REQUIREMENTS: 2.3; 8
QUANTITY LIMITATIONS:
PASSENGER AIRCRAFT OR RAILCAR: Forbidden
CARGO AIRCRAFT ONLY: Forbidden
ADDITIONAL SHIPPING DESCRIPTION: Toxic-Inhalation Hazard Zone B

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:
SHIPPING NAME: Phosphorus pentafluoride, compressed
UN NUMBER: UN2198
CLASS: 2.3; 8

15. REGULATORY INFORMATION

U.S. REGULATIONS:
CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4): Not regulated.


SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370 Subparts B and C):
ACUTE: Yes
CHRONIC: No
FIRE: Yes  
REACTIVE: Yes  
SUDDEN RELEASE: Yes


STATE REGULATIONS:  
California Proposition 65: Not regulated.

CANADIAN REGULATIONS:  
WHMIS CLASSIFICATION: AD1E

NATIONAL INVENTORY STATUS:  
U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDSL): Not determined.

16. OTHER INFORMATION

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