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## **ARSENIC PENTAFLUORIDE SDS- MATERIAL SAFETY DATA SHEET**

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### **24 Hour EMERGENCY CONTACT**

**U.S- CHEMTREC 1-800-424-9300**

**CANADA- CANUTEC 613-996-6666**

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## **1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

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### **Matheson Tri-Gas, Inc.**

*The telephone numbers listed below are emergency numbers, please contact your local branch for routine inquiries.*

#### **USA**

959 Route 46 East  
Parsippany, New Jersey  
07054-0624 USA  
**Phone: 973-257-1100**

#### **CANADA**

530 Watson Street  
Whitby, Ontario  
L1N 5R9 Canada  
**Phone: 905-668-3570**

**SUBSTANCE:** ARSENIC PENTAFLUORIDE SDS

**SYMBOL:** AsF<sub>5</sub>

**TRADE NAMES/SYNONYMS:**

ARSORANE, PENTAFLUORO-; ARSENIC FLUORIDE (ASF5); ARSENIC FLUORIDE; ASF5; MAT02015

**CHEMICAL FAMILY:** non-metallic, halides

**CREATION DATE:** Jan 24 1989

**REVISION DATE:** Mar 16 1999

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**2. COMPOSITION, INFORMATION ON INGREDIENTS**

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**COMPONENT:** ARSENIC PENTAFLUORIDE

**CAS NUMBER:** 7784-36-3

**EC NUMBER (EINECS):** 232-061-6

**PERCENTAGE:** 100.0

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**3. HAZARDS IDENTIFICATION**

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**NFPA RATINGS (SCALE 0-4):** HEALTH=3 FIRE=0 REACTIVITY=1



**WHMIS CLASSIFICATION:** ACD1EF

**EC CLASSIFICATION (ASSIGNED):**

O Oxidizing

T Toxic

C Corrosive

Xi Irritant

R 8-34-36-37-49



**EMERGENCY OVERVIEW:**

**Color:** colorless

**Physical Form:** fuming gas

**Major Health Hazards:** respiratory irritation (possibly severe), skin irritation (possibly severe), eye irritation (possibly severe), cancer hazard (in humans)

**Physical Hazards:** Containers may rupture or explode if exposed to heat. May ignite combustibles. May react on contact with water.

**POTENTIAL HEALTH EFFECTS:**

**INHALATION:**

**Short Term Exposure:** same as effects reported in short term ingestion, irritation (possibly severe), vomiting, digestive disorders, chest pain, difficulty breathing, headache, bluish skin color, lung congestion, nerve damage

**Long Term Exposure:** white lines on the fingernails, hair loss, tearing, tingling sensation, paralysis, cancer

**SKIN CONTACT:**

**Short Term Exposure:** irritation (possibly severe), blisters, frostbite

**Long Term Exposure:** itching

**EYE CONTACT:**

**Short Term Exposure:** irritation (possibly severe), frostbite, itching, tearing, blurred vision

**Long Term Exposure:** same as effects reported in short term exposure

**INGESTION:**

**Short Term Exposure:** frostbite

**Long Term Exposure:** no information on significant adverse effects

**CARCINOGEN STATUS:**

**OSHA:** Y

**NTP:** Y

**IARC:** Y

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**4. FIRST AID MEASURES**

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**INHALATION:**

When safe to enter area, remove from exposure. Use a bag valve mask or similar device to perform artificial respiration (rescue breathing) if needed. Keep warm and at rest. Get medical attention immediately.

**SKIN CONTACT:**

Wash if needed. If frostbite, freezing, or cryogenic burns occur, warm affected area in warm water. If this is not available, gently wrap affected parts in blankets. Allow circulation to return naturally. Get medical attention immediately.

**EYE CONTACT:**

Wash eyes immediately with large amounts of water, occasionally lifting upper and lower lids, until no evidence of chemical remains. Get medical attention immediately.

**INGESTION:**

It is unlikely that emergency treatment will be required. Get medical attention, if needed.

**NOTE TO PHYSICIAN:**

For inhalation, consider oxygen.

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**5. FIRE FIGHTING MEASURES**

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**FIRE AND EXPLOSION HAZARDS:**

Negligible fire hazard. 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:**

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. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile). Use extinguishing agents appropriate for surrounding fire. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Do not get water directly on material. Reduce vapors with water spray. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Consider downwind evacuation if material is leaking.

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**6. ACCIDENTAL RELEASE MEASURES**

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**WATER RELEASE:**

Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Keep out of water supplies and sewers.

**OCCUPATIONAL RELEASE:**

Stop leak if possible without personal risk. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas.

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**7. HANDLING AND STORAGE**

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Store and handle in accordance with all current regulations and standards. Store in a cool, dry place. Store in a well-ventilated area. Keep separated from incompatible substances.

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**8. EXPOSURE CONTROLS, PERSONAL PROTECTION**

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**EXPOSURE LIMITS:****ARSENIC PENTAFLUORIDE:****ARSENIC AND INORGANIC COMPOUNDS EXCEPT ARSINE:**

10 ug(As)/m<sup>3</sup> OSHA TWA

0.01 mg(As)/m<sup>3</sup> ACGIH TWA

2 ug(As)/m<sup>3</sup> NIOSH recommended ceiling 15 minute(s)

**VENTILATION:** Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

**EYE PROTECTION:** Wear splash resistant safety goggles with a faceshield. 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. OSHA REGULATED SUBSTANCES:  
U.S. OSHA 29 CFR 1910.1018.

**RESPIRATOR:** The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.

**0.1 mg/m<sup>3</sup>**

Any air-purifying respirator with a full facepiece and a high-efficiency particulate filter.  
Any supplied-air respirator with a full facepiece.

**0.5 mg/m<sup>3</sup>**

Any air-purifying respirator with a full facepiece and a high-efficiency particulate filter.  
Any supplied-air respirator with a full facepiece.

Any self-contained breathing apparatus with a full facepiece.

**10 mg/m<sup>3</sup>**

Any powered, air-purifying respirator with a full facepiece and a high-efficiency particulate filter.  
Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode.

**20 mg/m<sup>3</sup>**

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode.

**For Unknown Concentrations or Immediately Dangerous to Life or Health -**

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**PHYSICAL STATE:** gas

**COLOR:** colorless

**PHYSICAL FORM:** fuming gas

**ODOR:** Not available

**MOLECULAR WEIGHT:** 169.91

**MOLECULAR FORMULA:** AS-F5

**BOILING POINT:** -63 F (-53 C)

**FREEZING POINT:** -112 F (-80 C)

**VAPOR PRESSURE:** 11790 mmHg @ 20 C

**VAPOR DENSITY (air=1):** Not available

**SPECIFIC GRAVITY (water=1):** Not applicable

**WATER SOLUBILITY:** reacts

**DENSITY:** 7.71 g/L

**PH:** Not applicable

**VOLATILITY:** Not applicable

**ODOR THRESHOLD:** Not available

**EVAPORATION RATE:** Not applicable

**COEFFICIENT OF WATER/OIL DISTRIBUTION:** Not applicable

**SOLVENT SOLUBILITY:**

**Soluble:** alcohol, ether, benzene

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## 10. STABILITY AND REACTIVITY

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### REACTIVITY:

Avoid contact with water or moisture. May react with evolution of heat on contact with water.

### CONDITIONS TO AVOID:

Protect from physical damage and heat. Containers may rupture or explode if exposed to heat.

### INCOMPATIBILITIES:

bases, combustible materials, metals

### HAZARDOUS DECOMPOSITION:

Thermal decomposition products: oxides of arsenic, fluorinated compounds

### POLYMERIZATION:

Will not polymerize.

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## 11. TOXICOLOGICAL INFORMATION

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### ARSENIC PENTAFLUORIDE:

#### CARCINOGEN STATUS:

OSHA: Carcinogen; NTP: Known Human Carcinogen; IARC: Human Sufficient Evidence, Animal Limited Evidence, Group 1; EC: Category 1

#### LOCAL EFFECTS:

Irritant: inhalation, skin, eye

Corrosive: inhalation, skin, eye

#### TARGET ORGANS:

nervous system

#### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

diabetes, heart or cardiovascular disorders, immune system disorders or allergies, kidney disorders, liver disorders, nervous system disorders, skin disorders and allergies

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## 12. ECOLOGICAL INFORMATION

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Not available

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## 13. DISPOSAL CONSIDERATIONS

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Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D003. Hazardous Waste Number(s): D004. Dispose of in accordance with U.S. EPA 40 CFR 262 for concentrations at or above the Regulatory level. Regulatory level- 5.0 mg/L. Dispose in accordance with all applicable regulations.

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## 14. TRANSPORT INFORMATION

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**U.S. DOT 49 CFR 172.101. SHIPPING NAME-UN NUMBER; HAZARD CLASS; PACKING GROUP; LABEL:**

Compressed gases, toxic, n.o.s. (arsenic pentafluoride)-UN1955; 2.3; Poison gas



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## 15. REGULATORY INFORMATION

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### U.S. REGULATIONS:

**TSCA INVENTORY STATUS:** Y

**TSCA 12(b) EXPORT NOTIFICATION:** Not listed.

**CERCLA SECTION 103 (40CFR302.4):** N

**SARA SECTION 302 (40CFR355.30):** N

**SARA SECTION 304 (40CFR355.40):** N

**SARA SECTION 313 (40CFR372.65):**Y

**ARSENIC AND INORGANIC COMPOUNDS (as As)**

**SARA HAZARD CATEGORIES, SARA SECTIONS 311/312 (40CFR370.21):**

**ACUTE:** Y

**CHRONIC:** Y

**FIRE:** Y

**REACTIVE:** Y

**SUDDEN RELEASE:** Y

**OSHA PROCESS SAFETY (29CFR1910.119):** N

### STATE REGULATIONS:

**California Proposition 65:** Y

Known to the state of California to cause the following:

**ARSENIC AND INORGANIC COMPOUNDS (as As)**

Cancer (Feb 27, 1987)

Developmental toxicity (May 01, 1997)

### EUROPEAN REGULATIONS:

**EC NUMBER (EINECS):** 232-061-6

**EC RISK AND SAFETY PHRASES:**

R 8	Contact with combustible material may cause fire.
R 34	Causes burns.
R 36	Irritating to eyes.
R 37	Irritating to respiratory system.
R 49	May cause cancer by inhalation.
S 2	Keep out of reach of children.
S 20	When using do not eat or drink.
S 24	Avoid contact with skin.
S 25	Avoid contact with eyes.
S 26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 27	Take off immediately all contaminated clothing.
S 39	Wear eye/face protection.
S 46	If swallowed, seek medical advice immediately and show this container or label.

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**16. OTHER INFORMATION**

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