

Common Name: **ARSENIC PENTAFLUORIDE**

Synonyms: Arsenic Fluoride

CAS No: 7784-36-3

Molecular Formula:  $AsF_5$

RTK Substance No: 4171

Description: Colorless gas that forms white fumes in air

**HAZARD DATA**

Hazard Rating	Firefighting	Reactivity
<b>4 - Health</b> <b>0 - Fire</b> <b>1 - Reactivity</b>  <b>DOT#:</b> UN 1955 <b>ERG Guide #:</b> 123 <b>Hazard Class:</b> 2.3 (Poison Gas)	Stop flow of gas and use fine water spray to disperse and knock down acid vapors. Extinguish fire using an agent suitable for type of surrounding fire. <b>Arsenic Pentafluoride</b> itself does not burn. POISONOUS GASES ARE PRODUCED IN FIRE, including <i>Hydrogen Fluoride</i> and <i>Arsenic</i> . CONTAINERS MAY EXPLODE IN FIRE. Use water spray to keep fire-exposed containers cool.	<b>Arsenic Pentafluoride</b> reacts with WATER; MOIST AIR; STEAM; and STRONG ACIDS (such as HYDROCHLORIC, SULFURIC and NITRIC) to form toxic <i>Hydrogen Fluoride</i> and <i>Arsenic Pentoxide</i> . <b>Arsenic Pentafluoride</b> reacts violently with DIACETYLENE. <b>Arsenic Pentafluoride</b> is not compatible with REDUCING AGENTS (such as LITHIUM, SODIUM, ALUMINUM and their HYDRIDES); STRONG BASES (such as SODIUM HYDROXIDE and POTASSIUM HYDROXIDE); ORGANIC MATERIALS; and MATERIALS containing SILICA (such as GLASS). <b>Arsenic Pentafluoride</b> reacts with NICKEL; NICKEL ALLOYS; and COPPER in the presence of SULFUR DIOXIDE.

**SPILL/LEAKS**

**Isolation Distance:**

Small Spill: 100 meters (300 feet)

Large Spill: 800 meters (1/2 mile)

Fire: 800 meters (1/2 mile)

Stop flow of gas. If source of leak is a cylinder and the leak cannot be stopped in place, remove the leaking cylinder to a safe place in the open air, and repair leak or allow cylinder to empty.

Use water spray to knock down vapors.

Turn leaking cylinder with leak up to prevent escape of gas in liquid state.

**PHYSICAL PROPERTIES**

<b>Flash Point:</b>	Noncombustible
<b>Vapor Density:</b>	5.86 (air = 1)
<b>Vapor Pressure:</b>	>760 mm Hg at 68°F (20°C)
<b>Specific Gravity:</b>	6.27 (water = 1)
<b>Water Solubility:</b>	Decomposes
<b>Boiling Point:</b>	-63°F (-53°C)
<b>Freezing Point:</b>	-112°F (-80°C)
<b>Molecular Weight:</b>	169.9

**EXPOSURE LIMITS**

**OSHA:** 3 ppm, 8-hr TWA

**NIOSH:** 3 ppm, 10-hr TWA; 6 ppm, 15-min Ceiling

**ACGIH:** 0.5 ppm, 8-hr TWA; 2 ppm, Ceiling

**IDLH:** 30 ppm

The Protective Action Criteria values are:

PAC-1 = 1 ppm PAC-2 = 24 ppm PAC-3 = 44 ppm

(All of the above are for *Hydrogen Fluoride*)

**PROTECTIVE EQUIPMENT**

<b>Gloves:</b>	Barrier®, Teflon® and Kel-F® (>8-hr breakthrough for <i>Hydrogen Fluoride</i> )
<b>Coveralls:</b>	Tychem® Responder® and TK; and Trelchem® HPS (>8-hr breakthrough for <i>Hydrogen Fluoride</i> )
<b>Respirator:</b>	SCBA

**HEALTH EFFECTS**

<b>Eyes:</b>	Irritation, burns, red and watery eyes
<b>Skin:</b>	Irritation, burns, itching, rash and loss of pigment
<b>Inhalation:</b>	Nose and throat irritation with coughing, wheezing and hoarseness Weakness, headache, nausea, vomiting, and muscle cramps
<b>Chronic:</b>	<i>Arsenic compounds</i> cause skin, liver, and lung cancer in humans

**FIRST AID AND DECONTAMINATION**

**Remove** the person from exposure.  
**Flush** eyes with large amounts of water for at least 30 minutes. Remove contact lenses if worn. Seek medical attention immediately.  
**Immediately** flush with large amounts of water. Apply 2.5% *Calcium Gluconate* gel to the affected skin. Seek medical assistance immediately.  
**Begin** artificial respiration if breathing has stopped and CPR if necessary.  
**Transfer** to a medical facility.