

Common Name: **ARSINE**

Synonyms: Arsenic Hydride; Hydrogen Arsenide

CAS No: 7784-42-1

Molecular Formula: AsH<sub>3</sub>

RTK Substance No: 0163

Description: Colorless gas with a garlic-like odor

**HAZARD DATA**

Hazard Rating	Firefighting	Reactivity
<b>4 - Health</b> <b>4 - Fire</b> <b>2 - Reactivity</b>  <b>DOT#:</b> UN 2188 <b>ERG Guide #:</b> 119 <b>Hazard Class:</b> 2.3 (Toxic gas)	<b>FLAMMABLE GAS</b> Stop flow of gas or allow fire to burn itself out. <b>POISONOUS GASES ARE PRODUCED IN FIRE,</b> including <i>Arsenic Oxide</i> and <i>Arsenic Trioxide</i> . <b>CONTAINERS MAY VENT RAPIDLY AND EXPLODE IN FIRE.</b>  Use water spray to keep fire-exposed containers cool and "wash" the aerosol particulate from the air.  Vapor is heavier than air and may travel a distance to cause a fire or explosion far from the source.	<b>Arsine</b> reacts with <b>OXIDIZING AGENTS</b> (such as <b>PERCHLORATES, PEROXIDES, PERMANGANATES, CHLORATES, NITRATES, CHLORINE, BROMINE and FLUORINE</b> ); <b>STRONG ACIDS</b> (such as <b>HYDROCHLORIC, SULFURIC and NITRIC</b> ); <b>POTASSIUM</b> ; and <b>AMMONIA</b> .

**SPILL/LEAKS**

**Isolation Distance:**

Small Spills: 60 meters (200 feet)

Large Spills: 420 meters (1,400 feet)

Fire: 9.5 km (5.9 miles)

Keep **Arsine** out of confined spaces, such as sewers, because of the possibility of an explosion.

Can contaminate ground water with *Arsenic Trioxide* if water is used during a fire.

**PHYSICAL PROPERTIES**

<b>Odor Threshold:</b>	Does not provide adequate warning
<b>Flash Point:</b>	Flammable
<b>LEL:</b>	5.1%
<b>UEL:</b>	78%
<b>Vapor Density:</b>	2.7 (air = 1)
<b>Vapor Pressure:</b>	11,000 mm Hg at 68°F (20°C)
<b>Specific Gravity:</b>	2.69 (water = 1)
<b>Water Solubility:</b>	Soluble
<b>Boiling Point:</b>	-67°F (-55°C)
<b>Ionization Potential:</b>	9.89 eV
<b>Molecular Weight:</b>	77.95

**EXPOSURE LIMITS**

**OSHA:** 0.05 ppm, 8-hr TWA

**NIOSH:** 0.0006 ppm, Ceiling (15-min)

**ACGIH:** 0.005 ppm, 8-hr TWA

**IDLH:** 3 ppm

**PROTECTIVE EQUIPMENT**

<b>Gloves:</b>	Teflon® (inner glove); insulated (outer glove)
<b>Coveralls:</b>	DuPont Tychem® BR, LV, Responder® and TK; Kappler Zytron® 500; and Saint-Gobain ONESuit®TEC (>8-hr breakthrough)
<b>Respirator:</b>	>0.0006 ppm - Supplied air

**HEALTH EFFECTS**

<b>Eyes:</b>	Contact with liquid can cause frostbite
<b>Skin:</b>	Contact with liquid can cause frostbite
<b>Inhalation:</b>	Lung irritation with coughing and/or shortness of breath
<b>Chronic:</b>	<i>Inorganic Arsenic compounds</i> cause liver, kidney, lung and bladder cancer in humans

**FIRST AID AND DECONTAMINATION**

<b>Remove</b>	the person from exposure.
<b>Flush</b>	eyes with large amounts of water for at least 15 minutes. Remove contact lenses if worn.
<b>Immerse</b>	affected part in warm water.
<b>Begin</b>	artificial respiration if breathing has stopped and CPR if necessary.
<b>Transfer</b>	to a medical facility.
<b>Medical</b>	observation is recommended as symptoms may be delayed.