

Common Name: **AMMONIUM SULFIDE**

Synonyms: Ammonium Monosulfide; Diammonium Sulfide

CAS No: 12135-76-1

Molecular Formula: (NH₄)₂S

RTK Substance No: 0115

Description: Yellow, crystalline solid, usually in a water solution, with a very strong rotten egg and *Ammonia*-like odor

HAZARD DATA

Hazard Rating	Firefighting	Reactivity
<p>3 - Health</p> <p>3 - Fire</p> <p>0 - Reactivity</p> <p>DOT#: UN 2683</p> <p>ERG Guide #: 132</p> <p>Hazard Class: 8 (Corrosive)</p>	<p>CORROSIVE AND FLAMMABLE LIQUID</p> <p>Use dry chemical, water spray or foam as extinguishing agents.</p> <p>POISONOUS GASES ARE PRODUCED IN FIRE, including <i>Hydrogen Sulfide</i>, <i>Sulfur Oxides</i>, <i>Nitrogen Oxides</i> and <i>Ammonia</i>.</p> <p>CONTAINERS MAY EXPLODE IN FIRE.</p> <p>Use water spray to keep fire-exposed containers cool.</p> <p>Vapor is heavier than air and may travel a distance to cause a fire or explosion far from the source and flash back.</p> <p>Ammonium Sulfide may form an ignitable vapor/air mixture in closed tanks or containers.</p>	<p>Ammonium Sulfide reacts explosively with OXIDIZING AGENTS (such as PERCHLORATES, PEROXIDES, PERMANGANATES, CHLORATES, NITRATES, CHLORINE, BROMINE and FLUORINE).</p> <p>Ammonium Sulfide reacts with STRONG ACIDS (such as HYDROCHLORIC, SULFURIC and NITRIC) to produce toxic and flammable <i>Hydrogen Sulfide</i> gas.</p> <p>Ammonium Sulfide reacts with STRONG BASES (such as SODIUM HYDROXIDE and POTASSIUM HYDROXIDE) to produce <i>Ammonia</i>.</p> <p>Ammonium Sulfide slowly produces <i>Hydrogen Sulfide</i> and <i>Ammonia</i> in the presence of MOISTURE.</p> <p>Ammonium Sulfide corrodes COPPER and ZINC and their ALLOYS.</p>

SPILL/LEAKS

Isolation Distance:

Spill: 50 meters (150 feet)

Fire: 800 meters (1/2 mile)

Absorb liquids in dry sand, earth, or a noncombustible material and place into sealed containers for disposal.

Collect *solid* material in the most convenient and safe manner and place into sealed containers for disposal.

Use only non-sparking tools and equipment.

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

Dangerous to aquatic life at high concentrations.

PHYSICAL PROPERTIES

Odor Threshold: Rotten egg and *Ammonia*-like odor

Flash Point: 72°F (22°C)

LEL: 4%

UEL: 46%

Specific Gravity: 1.0 (water = 1)

Water Solubility: Soluble

Boiling Point: Decomposes

Melting Point: Decomposes

pH: 9.5 (45% aqueous solution)

Molecular Weight: 68.14

EXPOSURE LIMITS

NIOSH: 10 ppm, 10-minute Ceiling

ACGIH: 1 ppm, 8-hr TWA; 5 ppm STEL

IDLH: 100 ppm

The Protective Action Criteria values are:

PAC-1 = 10 ppm PAC-2 = 15 ppm PAC-3 = 15 ppm

PROTECTIVE EQUIPMENT

Gloves: Silver Shield®/4H®, Viton and Barrier® (>8-hr breakthrough for *Sulfur compounds*)

Coveralls: Tychem® BR, Responder and TK (>8-hr breakthrough for *Hydrogen Sulfide*)

Respirator: >10 ppm - SCBA
Use turn out gear or flash protection if fire/ignition is the greatest hazard

HEALTH EFFECTS

Eyes: Irritation and burns with possible eye damage

Skin: Irritation and burns

Inhalation: Nose, throat and lung irritation, with coughing, wheezing and shortness of breath

Headache, dizziness, lightheadedness, and passing out

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.

Quickly remove contaminated clothing and wash contaminated skin with large amounts of water. Seek medical attention.

Begin artificial respiration if breathing has stopped and CPR if necessary.

Transfer promptly to a medical facility.