

# ARSENIC DISULFIDE

ARD

## CAUTIONARY RESPONSE INFORMATION

<b>Common Synonyms</b>	Solid Red-brown Odorless
Realgar Red arsenic glass Red arsenic sulfide Red orpiment Ruby arsenic	Sinks in water.
<p><b>AVOID CONTACT WITH SOLID AND DUST. Keep people away.</b>  <b>Avoid inhalation.</b>  <b>Wear chemical protective suit with self-contained breathing apparatus.</b>  <b>Isolate and remove discharged material.</b>  <b>Notify local health and pollution control agencies.</b>  <b>Protect water intakes.</b></p>	
<b>Fire</b>	Not flammable. Wear chemical protective suit with self-contained breathing apparatus.
<b>Exposure</b>	<p>CALL FOR MEDICAL AID.  DUST  POISONOUS IF INHALED.  Harmful to skin.  Move to fresh air.  If breathing has stopped, give artificial respiration.  If breathing is difficult, give oxygen.</p> <p>SOLID  POISONOUS IF SWALLOWED.  Will burn eyes and skin.  Remove contaminated clothing and shoes.  Flush affected areas with plenty of water.  IF IN EYES, hold eyelids open and flush with plenty of water.  IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk and have victim induce vomiting.  IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.</p>
<b>Water Pollution</b>	HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.

### 1. CORRECTIVE RESPONSE ACTIONS

Stop discharge  
Collection Systems: Dredge

### 2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed  
2.2 Formula: As<sub>2</sub>S<sub>3</sub>  
2.3 IMO/UN Designation: 6.1/1557  
2.4 DOT ID No.: 1557  
2.5 CAS Registry No.: 1303-32-8  
2.6 NAERG Guide No.: 152  
2.7 Standard Industrial Trade Classification: 52342

### 3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Approved respirator; goggles; rubber gloves; clean protective clothing
- 3.2 **Symptoms Following Exposure:** (Acute and sub-acute poisoning are not common.) Repeated inhalation causes irritation of nose, laryngitis, mild bronchitis. Ingestion causes weakness, loss of appetite, gastrointestinal disturbances, peripheral neuritis, occasional hepatitis. Contact with eyes causes irritation. Irritates skin, especially where moist; if not treated, may cause ulceration.
- 3.3 **Treatment of Exposure:** Consult physician after all overexposure to this compound. INHALATION: move to fresh air. INGESTION: induce vomiting by giving warm salt water; repeat until vomit is clear. EYES: flush with water for at least 15 min. SKIN: wash well with water.
- 3.4 **TLV-TWA:** 0.01 mg/m<sup>3</sup> (as arsenic)  
3.5 **TLV-STEL:** Not listed.  
3.6 **TLV-Ceiling:** Not listed.  
3.7 **Toxicity by Ingestion:** Grade 4; LD<sub>50</sub><50 mg/kg  
3.8 **Toxicity by Inhalation:** Currently not available.  
3.9 **Chronic Toxicity:** Possible skin and lung cancer.  
3.10 **Vapor (Gas) Irritant Characteristics:** Currently not available  
3.11 **Liquid or Solid Characteristics:** Currently not available  
3.12 **Odor Threshold:** Odorless  
3.13 **IDLH Value:** 5 mg/m<sup>3</sup> as arsenic.  
3.14 **OSHA PEL-TWA:** 0.01 mg/m<sup>3</sup> as arsenic.  
3.15 **OSHA PEL-STEL:** Not listed.  
3.16 **OSHA PEL-Ceiling:** Not listed.  
3.17 **EPA AEGL:** Not listed

### 4. FIRE HAZARDS

- 4.1 **Flash Point:**  
Not flammable
- 4.2 **Flammable Limits in Air:** Not pertinent
- 4.3 **Fire Extinguishing Agents:** Water
- 4.4 **Fire Extinguishing Agents Not to Be Used:** Not pertinent
- 4.5 **Special Hazards of Combustion Products:** Poisonous fumes of the compound may be formed in fires. If ignited, will form sulfur dioxide gas.
- 4.6 **Behavior in Fire:** May ignite at very high temperatures
- 4.7 **Auto Ignition Temperature:** Not pertinent
- 4.8 **Electrical Hazards:** Not pertinent
- 4.9 **Burning Rate:** Not pertinent
- 4.10 **Adiabatic Flame Temperature:** Not pertinent
- 4.11 **Stoichiometric Air to Fuel Ratio:** Not pertinent
- 4.12 **Flame Temperature:** Not pertinent
- 4.13 **Combustion Molar Ratio (Reactant to Product):** Currently not available
- 4.14 **Minimum Oxygen Concentration for Combustion (MOCC):** Not listed

### 5. CHEMICAL REACTIVITY

- 5.1 **Reactivity with Water:** No reaction
- 5.2 **Reactivity with Common Materials:** Currently not available
- 5.3 **Stability During Transport:** Stable
- 5.4 **Neutralizing Agents for Acids and Caustics:** Not pertinent
- 5.5 **Polymerization:** Not pertinent
- 5.6 **Inhibitor of Polymerization:** Not pertinent

### 6. WATER POLLUTION

- 6.1 **Aquatic Toxicity:** Currently not available
- 6.2 **Waterfowl Toxicity:** Currently not available
- 6.3 **Biological Oxygen Demand (BOD):** Currently not available
- 6.4 **Food Chain Concentration Potential:** Currently not available
- 6.5 **GESAMP Hazard Profile:** Not listed

### 7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 99+%; Technical
- 7.2 **Storage Temperature:** Ambient
- 7.3 **Inert Atmosphere:** No requirement
- 7.4 **Venting:** Open
- 7.5 **IMO Pollution Category:** Currently not available
- 7.6 **Ship Type:** Currently not available
- 7.7 **Barge Hull Type:** Currently not available

### 8. HAZARD CLASSIFICATIONS

- 8.1 **49 CFR Category:** Poison
- 8.2 **49 CFR Class:** 6.1
- 8.3 **49 CFR Package Group:** II
- 8.4 **Marine Pollutant:** No
- 8.5 **NFPA Hazard Classification:** Not listed
- 8.6 **EPA Reportable Quantity:** 1
- 8.7 **EPA Pollution Category:** X
- 8.8 **RCRA Waste Number:** Not listed
- 8.9 **EPA FWPCA List:** Yes

### 9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 **Physical State at 15° C and 1 atm:** Solid
- 9.2 **Molecular Weight:** 214
- 9.3 **Boiling Point at 1 atm:** 1,049°F = 565°C = 838°K
- 9.4 **Freezing Point:** 585°F = 307°C = 580°K
- 9.5 **Critical Temperature:** Not pertinent
- 9.6 **Critical Pressure:** Not pertinent
- 9.7 **Specific Gravity:** 3.5 at 20°C (solid)
- 9.8 **Liquid Surface Tension:** Not pertinent
- 9.9 **Liquid Water Interfacial Tension:** Not pertinent
- 9.10 **Vapor (Gas) Specific Gravity:** Not pertinent
- 9.11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent
- 9.12 **Latent Heat of Vaporization:** Not pertinent
- 9.13 **Heat of Combustion:** Not pertinent
- 9.14 **Heat of Decomposition:** Not pertinent
- 9.15 **Heat of Solution:** Not pertinent
- 9.16 **Heat of Polymerization:** Not pertinent
- 9.17 **Heat of Fusion:** Currently not available
- 9.18 **Limiting Value:** Currently not available
- 9.19 **Reid Vapor Pressure:** Currently not available

### NOTES

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9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
	N O T  P E R T I N E N T		N O T  P E R T I N E N T		N O T  P E R T I N E N T		N O T  P E R T I N E N T

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
	I N S O L U B L E		N O T  P E R T I N E N T		N O T  P E R T I N E N T		N O T  P E R T I N E N T