

Common Name: **SODIUM HYDROSULFIDE**

Synonyms: Sodium Bisulfide; Sodium Hydrogen Sulfide; Sodium Mercaptan; Sodium Sulfide

CAS No: 16721-80-5

Molecular Formula: NaHS

RTK Substance No: 1705

Description: Colorless to lemon-colored, crystalline solid with a rotten egg odor

HAZARD DATA

Hazard Rating	Firefighting	Reactivity
3 - Health *2 - Fire 1 - Reactivity DOT#: UN 2318 (less than 25% water of crystallization) ERG Guide #: 135 Hazard Class: 4.2 (Spontaneously Combustible)	Sodium Hydrosulfide , when not solution, may be SPONTANEOUSLY COMBUSTIBLE. FLAMMABLE <i>Hydrogen Sulfide</i> gas may form with heating. Use dry chemical, CO ₂ , water spray or foam as extinguishing agents. DO NOT apply directly on Sodium Hydrosulfide itself as splattering may occur. POISONOUS GASES ARE PRODUCED IN FIRE, including <i>Sulfur Oxides</i> and <i>Hydrogen Sulfide</i> . Use water spray to keep fire-exposed containers cool. Sodium Hydrosulfide may form an ignitable vapor/air mixture in closed tanks or containers.	Sodium Hydrosulfide reacts with STRONG ACIDS (such as HYDROCHLORIC, SULFURIC and NITRIC); MOIST AIR and MOISTURE to release flammable and toxic <i>Hydrogen Sulfide</i> gas. Sodium Hydrosulfide is not compatible with OXIDIZING AGENTS (such as PERCHLORATES, PEROXIDES, PERMANGANATES, CHLORATES, NITRATES, CHLORINE, BROMINE and FLUORINE) and METALS (such as ZINC, ALUMINUM and COPPER, and their ALLOYS).

SPILL/LEAKS

Isolation Distance:

Spill: 25 meters (75 feet)

Fire: 800 meters (1/2 mile)

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

For **Sodium Hydrosulfide** in solution, cover with dry sand or earth and place into sealed containers for disposal.Keep **Sodium Hydrosulfide** out of confined spaces, such as sewers, because of the possibility of an explosion due to *Hydrogen Sulfide* gas formation.

DO NOT wash into sewer.

For water spills, add Sodium Carbonate (Na₂CO₃).**Sodium Hydrosulfide** is very toxic to aquatic life.

PHYSICAL PROPERTIES

Odor Threshold:	Rotten egg odor
Flash Point:	194°F (90°C) (Hydrate form)
LEL:	4.3% (as <i>Hydrogen Sulfide</i>)
UEL:	46% (as <i>Hydrogen Sulfide</i>)
Vapor Density:	1.17 (air = 1)
Specific Gravity:	1.79 (water = 1)
Water Solubility:	Soluble
Boiling Point:	212°F (100°C)
Melting Point:	662°F (350°C)
Molecular Weight:	56.06

EXPOSURE LIMITS

ACGIH: 1 ppm, 8-hr TWA; 5 ppm STEL (as *Hydrogen Sulfide*)**IDLH:** 100 ppm (as *Hydrogen Sulfide*)

The Protective Action Criteria values are:

PAC-1 = 0.51 ppm PAC-2 = 27 ppm PAC-3 = 50 ppm (as *Hydrogen Sulfide*)

PROTECTIVE EQUIPMENT

Gloves:	Neoprene (>8-hr breakthrough)
Coveralls:	Tychem® Responder (>8-hr breakthrough)
Respirator:	SCBA

HEALTH EFFECTS

Eyes:	Severe irritation, burns and possible eye damage
Skin:	Severe irritation and burns
Inhalation:	Nose, throat and lung irritation, with coughing and severe shortness of breath (pulmonary edema) Headache, dizziness, disorientation, and passing out Higher levels can cause seizures and death

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.
Quickly remove contaminated clothing and wash contaminated skin with large amounts of soap and water. Seek medical attention immediately.
Begin artificial respiration if breathing has stopped and CPR if necessary.
Transfer promptly to a medical facility.
Medical observation is recommended as symptoms may be delayed.