



>>>Entry Name: Hydrogen sulfide (H₂S), 11Cl

Synonym(s): Sulfane. Monosulfane. Dihydrogen sulfide. Sulfureted hydrogen

CAS Registry Number: 7783-06-4

Related CAS Registry Numbers(s): 13940-21-1

H₂S (C_{2v})

Molecular Formula: H₂S

Molecular Weight: 34.082

Accurate Mass: 33.98772

Percentage Composition: H 5.91%; S 94.09%

Source/Synthesis: Found in coal pits, gas wells, sulfur springs, produced from decaying sulfur-containing org. matter. Synth. from CaS + MgCl₂ + H₂O

Use/Importance: Widely used industrially. Commercially available. Mild reducing agent in acid soln.

Physical Description: Foul-smelling (bad eggs) poisonous colourless gas

Melting Point: Mp -82.9°

Boiling Point: Bp -59.4°

Solubility: Sl. sol. H₂O, EtOH

Density: d⁻⁶⁰ 0.993

pKa Value: pK_{a1} 6.88; pK_{a2} 14.15 (20°)

Other Data: Readily oxidised. ΔH_f(g) 20.1 kJ mol⁻¹; T_{crit} 100.5°, P_{crit} 89 atm.

Hazard & Toxicity: Highly toxic, causing death at 100 pm; anaesthetises the olfactory senses, so that intensity of smell is not a guide to concentration. Flammable

Aldrich: 29544-2

>>>Derivative: Monodeutero compd.

CAS Registry Number: 13762-18-0

Molecular Formula: DHS

Molecular Weight: 35.088

Source/Synthesis: Formed from D₂S + H₂S << >> 2HDS; K_{HDS} 3.88 at 24°

>>>Derivative: Dideutero compd.

Synonym(s): Hydrogen sulfide-*d*₂. Deuterium sulfide

CAS Registry Number: 13536-94-2

Molecular Formula: D₂S

Molecular Weight: 36.094

Source/Synthesis: Synth. from Al₂S₃ + D₂O

Physical Description: Colourless gas

Melting Point: Mp -86°

Boiling Point: Bp -60.18°

Other Data: D-S 133 pm; angle: 94.5°

>>>Derivative: Di-Li salt

>>>Derivative: Di-Na salt

>>>Derivative: Di-K salt

>>>Derivative: Mg salt

>>>Derivative: Ca salt

>>>Derivative: Sr salt