



>>Entry Name: Sodium sulfide (Na₂S), 8Cl

ENTRY UNDER REVIEW

Synonym(s): Disodium sulfide. Sodium monosulfide. Sodium sulfuret

CAS Registry Number: 1313-82-2

Related CAS Registry Numbers(s): 27610-45-3

Na₂S

Molecular Formula: Na₂S

Molecular Weight: 78.045

Accurate Mass: 77.951604

Percentage Composition: Na 58.91%; S 41.09%

Source/Synthesis: Manuf. by reduction of Na₂SO₄ with carbon or by reaction of Na₂CO₃ with sulfur and carbon. Synth. by dehydration of the nonahydrate in vacuum over H₂SO₄ or P₂O₅ and by heating in H₂ at 700°

Use/Importance: Used in the flotation of oxidised copper, lead and zinc ores. Component of photographic developers

Physical Description: White cubic cryst., deliquescent

Melting Point: Mp 1172°

Solubility: V. sol. H₂O (15 g per 100 cm³ at 10°; 57 g per 100 cm³ at 90°), spar. sol. EtOH; insol. Et₂O

Other Data: ΔH_f° -366 kJ mol⁻¹; ΔG_f° -355 kJ mol⁻¹; S° 96 J K⁻¹ mol⁻¹

Hazard & Toxicity: Reacts with acids to release H₂S

Aldrich: 40741-0

>>Derivative: Pentahydrate

CAS Registry Number: 1313-83-3

Molecular Formula: H₁₀Na₂O₅S

Molecular Weight: 168.121

Accurate Mass: 168.004429

Percentage Composition: H 6.00%; Na 27.35%; O 47.58%; S 19.07%

Source/Synthesis: Synth. by slow cooling of hot aq. solns. of Na₂S.9H₂O and NaOH

>>Derivative: Nonahydrate

CAS Registry Number: 1313-84-4

Molecular Formula: H₁₈Na₂O₉S

Molecular Weight: 240.182

Accurate Mass: 240.046689

Percentage Composition: H 7.55%; Na 19.14%; O 59.95%; S 13.35%

Source/Synthesis: Commercially available. Cryst. from aq. soln. synth. by bubbling H₂S through conc. aq. NaOH

Physical Description: Colourless tetragonal deliquescent cryst. (H₂O). Dec. on heating with H₂O loss

Solubility: V. sol. H₂O (48 g per 100 cm³ at 10°; 97 g per 100 cm³ at 100°), spar. sol. EtOH

Other Data: ΔH_f° -3082 kJ mol⁻¹

Hazard & Toxicity: Flammable, corrosive

Aldrich: 20804-3

Fluka: 71975

Sigma: S4766

References:

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