>>**Entry Name: Sodium sulfide (Na_2S),** 8CI
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

Na_2S

Molecular Formula: Na_2S
Molecular Weight: 78.045
Accurate Mass: 77.951604
Percentage Composition: Na 58.91%; S 41.09%

Source/Synthesis: Manuf. by reduction of Na_2SO_4 with carbon or by reaction of Na_2CO_3 with sulfur and carbon. Synth. by dehydration of the nonahydrate in vacuum over H_2SO_4 or P_2O_5 and by heating in H_2 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. H_2O (15 g per 100 cm^3 at 10°; 57 g per 100 cm^3 at 90°), spar. sol. EtOH; insol. Et_2O
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 H_2S

Aldrich: 40741-0

>>**Derivative:** Pentahydrate

CAS Registry Number: 1313-83-3
Molecular Formula: $H_{10}Na_2O_5S$
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 $Na_2S.9H_2O$ and NaOH

>>**Derivative:** Nonahydrate

CAS Registry Number: 1313-84-4
Molecular Formula: $H_{18}Na_2O_9S$
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 H_2S through conc. aq. NaOH
Physical Description: Colourless tetragonal deliquescent cryst. (H_2O). Dec. on heating with H_2O loss
Solubility: V. sol. H_2O (48 g per 100 cm^3 at 10°; 97 g per 100 cm^3 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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