



>>Entry Name: Sodium thiosulfate, JAN, USAN

Synonym(s): Sodothiol. Thiosulfuric acid disodium salt, 8Cl. Sulfothiorine. Antichlor. Ametox. Sulfactol. NSC 45624

CAS Registry Number: 7772-98-7

$\text{Na}_2\text{S}_2\text{O}_3$

Molecular Formula: $\text{Na}_2\text{O}_3\text{S}_2$

Molecular Weight: 158.11

Accurate Mass: 157.908419

Percentage Composition: Na 29.08%; O 30.36%; S 40.56%

Source/Synthesis: Synth. by dehydration of the pentahydrate at 105°. Alternatively formed by reaction of S_2Cl_2 with Na_2O_2 or by reduction of $\text{Na}_2\text{S}_2\text{O}_4$ with sodium amalgam

Use/Importance: Cyanide antidote often administered with other antidotes, antifungal agent. Commercially available

Physical Description: Deliquescent, colourless, monoclinic cryst. Dec. on heating with ultimate formation of Na_2SO_4

Solubility: V. sol. H_2O (231 g per 100 cm^3 at 100°); insol. EtOH

Other Data: $\Delta H_f^\circ -1123 \text{ kJ mol}^{-1}$; $\Delta G_f^\circ -1028 \text{ kJ mol}^{-1}$; $S^\circ 155 \text{ J K}^{-1} \text{ mol}^{-1}$. Component of Komed and Tinver

Aldrich: 21726-3

Fluka: 72049

Sigma: S0282

>>Derivative: Pentahydrate

Synonym(s): Hypo. Sodium hyposulfite

CAS Registry Number: 10102-17-7

Molecular Formula: $\text{H}_{10}\text{Na}_2\text{O}_8\text{S}_2$

Molecular Weight: 248.186

Accurate Mass: 247.961244

Percentage Composition: H 4.06%; Na 18.53%; O 51.57%; S 25.84%

Source/Synthesis: Synth. by treatment of aq. NaOH with H_2S and SO_2

Use/Importance: Commercially available. Aq. solns. are used as a "fixer" in photography

Physical Description: Colourless monoclinic cryst., efflorescent. Dec. on heating by H_2O loss ($-5\text{H}_2\text{O}$ at 100°)

Melting Point: Mp 50°

Solubility: V. sol. H_2O (79 g per 100 cm^3 at 0°; 291 g per 100 cm^3 at 45°); insol. EtOH

Other Data: $\Delta H_f^\circ -2608 \text{ kJ mol}^{-1}$; $\Delta G_f^\circ -2230 \text{ kJ mol}^{-1}$; $S^\circ 372 \text{ J K}^{-1} \text{ mol}^{-1}$

Hazard & Toxicity: Low acute human toxicity. LD₅₀ (mus, ipr) 5600 mg/kg. LD₅₀ (mus, ivn) 2350 mg/kg

Aldrich: 31954-6

Fluka: 72048

Sigma: S8503

References:

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