



>>Entry Name: Hydroxylamine, 9CI

Synonym(s): Hydroxylamine. Amino hydroxide

CAS Registry Number: 7803-49-8

H₂NOH (C_s)

Molecular Formula: H₃NO

Molecular Weight: 33.03

Accurate Mass: 33.021464

Percentage Composition: H 9.15%; N 42.41%; O 48.44%

Source/Synthesis: Synth. from [NH₂OH₂]Cl + sodium butoxide

Use/Importance: May act as an oxidising agent (esp. when acidified) or more commonly as a reducing agent. Antioxidant for photographic developers etc. Reducing agent often used in analysis e.g. Hg(*II*) to metal, Fe(*III*) to Fe(*II*); photometric detn. of V(*V*)

Physical Description: White thermally unstable hygroscopic cryst.

Melting Point: Mp 33°

Boiling Point: Bp₂₂ 58°

Solubility: V. sol. H₂O, alcohols, liq. NH₃; sol. acids

Density: d³³ 1.204

pKa Value: pK_a 5.95 (25°)

Other Data: Dec. rapidly at 20° esp. in moist air or CO₂

Hazard & Toxicity: Explodes when heated

Aldrich: 43822-7

Fluka: 55458

>>Derivative: Hydrochloride

Synonym(s): Hydroxylamine hydrochloride. Hydroxylammonium chloride

CAS Registry Number: 5470-11-1

Molecular Formula: ClH₄NO

Molecular Weight: 69.49

Accurate Mass: 68.998141

Percentage Composition: Cl 51.02%; H 5.80%; N 20.16%; O 23.02%

Use/Importance: Commercially available. Powerful reducing agent, catalyst and copolym. inhibitor

Melting Point: Mp 159 dec.°

Hazard & Toxicity: Toxic, corrosive; explodes on heating

Aldrich: 43136-2

Fluka: 55469

Sigma: H2391

>>Derivative: Sulfate (2:1)

Synonym(s): Hydroxylamine sulfate. Hydroxylammonium sulfate

CAS Registry Number: 10039-54-0

Extra CAS Registry Numbers(s): 13973-61-0

Molecular Formula: H₈N₂O₆S

Molecular Weight: 164.139

Accurate Mass: 164.010308

Percentage Composition: H 4.91%; N 17.07%; O 58.48%; S 19.54%

Use/Importance: Powerful reducing agent. Commercially available

Melting Point: Mp 170°

Solubility: Sol. H₂O

Hazard & Toxicity: Toxic, corrosive

Aldrich: 21025-0

Fluka: 55490

Sigma: H0127