



>>Entry Name: Copper(II) nitrate (Cu(NO₃)₂)

Synonym(s): Cupric nitrate

CAS Registry Number: 3251-23-8

Related CAS Registry Numbers(s): 10402-29-6

Cu(NO₃)₂

Molecular Formula: CuN₂O₆

Molecular Weight: 187.556

Accurate Mass: 186.915236

Percentage Composition: Cu 33.88%; N 14.94%; O 51.18%

Use/Importance: Commercially available. Has a wide variety of uses in dyeing and printing industries; nitrating agent; used in fungicides and other biocides. Used for oxidn. of alcohols to aldehydes and ketones

Aldrich: 30534-0

Fluka: 61149

>>Variant: α-form

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General Statement: Lattice struct. in which half the nitrato groups form 3 approx. coplanar Cu-O bonds and half form 2 Cu-O bonds approx. perpendicular to the coplanar bonds

Physical Description: Deep blue-green deliquescent cryst. (by subl.)

Melting Point: Mp 255-256°

Boiling Point: Subl. 150-225°

Solubility: Sol. H₂O, EtOAc, dioxan

Hazard & Toxicity: Irritant; reacts vigorously with Et₂O

>>Derivative: 2.5 Hydrate

CAS Registry Number: 19004-19-4

Aldrich: 22339-5

Sigma: C2646

>>Derivative: Trihydrate

CAS Registry Number: 10031-43-3

Source/Synthesis: Occurs naturally as mineral *Gerhardite* which has also been formulated as Cu₂(NO₃)(OH)₃

Physical Description: Emerald green to dark green; transparent

Melting Point: Mp 115°

Solubility: Sol. H₂O forming acidic soln., EtOH; spar. sol. EtOAc

Other Data: Deliquescent

Fluka: 61194

Sigma: C4030

>>Derivative: Hexahydrate

Physical Description: Blue deliquescent cryst.

Other Data: Readily loses 3H₂O at 26.4°

>>Derivative: Bis-MeCN complex

see Bis(acetonitrile)dinitratocopper(II), [JWQ08-A](#)

>>Derivative: MeNO₂ complex

see Dinitrato(nitromethane)copper(II), [JWQ07-Z](#)

References: