



>>Entry Name: Nickel(II) cyanide (Ni(CN)₂)

CAS Registry Number: 557-19-7

Ni(CN)₂

Molecular Formula: C₂N₂Ni

Molecular Weight: 110.725

Accurate Mass: 109.941494

Percentage Composition: C 21.70%; N 25.30%; Ni 53.01%

Source/Synthesis: Synth. from Hexaaquanickel(II)(2+) [JWL44-J](#) + CN⁽⁻⁾ (not excess), followed by heating to 180-200°

Use/Importance: Catalyses double CO insertions at α-hydroxy alkynes

Physical Description: Grey-brown or yellow-brown solid (reports conflict)

Solubility: Sol. MeOAc

>>Derivative: Tetrahydrate

Molecular Formula: C₂H₈N₂NiO₄

Molecular Weight: 182.786

Accurate Mass: 181.983754

Percentage Composition: C 13.14%; H 4.41%; N 15.33%; Ni 32.11%; O 35.01%

Physical Description: Light green plates or powder

Solubility: Sol. NH₄OH, alk.

Other Data: Loses 4H₂O at 200°

Hazard & Toxicity: Poisonous

References:

Inorg. Synth., 1946, **2**, 228, (*synth*)

Sidgwick, N.V., *The Chemical Elements and their Compds.*, Oxford, 1950, 1434

Remy, H., *Treatise Inorg. Chem.*, Elsevier, 1956, **2**, 315

Brauer, G., *Handbuch Prap. Anorg. Chem.*, 3rd edn., Ferdinand Enke Verlag, 1975, **3**, 1698, (*synth*)

Zhon, Z. *et al.*, *Organometallics*, 1996, **15**, 3282, (*use*)

Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 8th edn., Van Nostrand Reinhold, 1992, NDB500