



>>Entry Name: Cobalt(II) thiocyanate, 9CI

Synonym(s): Thiocyanic acid, cobalt(2+) salt. Cobaltous thiocyanate

CAS Registry Number: 3017-60-5

Related CAS Registry Numbers(s): 14007-28-4 97126-35-7

Co(NCS)₂

Molecular Formula: C₂CoN₂S₂

Molecular Weight: 175.101

Accurate Mass: 174.883486

Percentage Composition: C 13.72%; Co 33.66%; N 16.00%; S 36.63%

General Statement: Much early confusion concerning hydrates. Commercial material is probably trihydrate

Source/Synthesis: Synth. from Co(NCS)₂(ROH)₂ (R = Me, Et) at 110° *in vacuo*

Use/Importance: Suggested use as humidity indicator, but CoCl₂ probably better

Physical Description: Green solid

Other Data: $\mu_{\text{eff}} = 4.69\mu_{\text{B}}$

Aldrich: 21613-5

Sigma: C5637

>>Derivative: Hemihydrate

CAS Registry Number: 25447-26-1

Source/Synthesis: Synth. from anhyd. compd. in moist air, then at 110° *in vacuo*

Physical Description: Yellow-brown solid

Other Data: $\mu_{\text{eff}} = 5.59\mu_{\text{B}}$

>>Derivative: Trihydrate

CAS Registry Number: 97126-35-7

Molecular Formula: C₂H₆CoN₂O₃S₂

Molecular Weight: 229.146

Accurate Mass: 228.915181

Percentage Composition: C 10.48%; H 2.64%; Co 25.72%; N 12.23%; O 20.95%; S 27.99%

Physical Description: Brown solid

Solubility: Sol. MeOH, EtOH, Et₂O

Other Data: Probably material often descr. as unspecified "hydrate" or when degree of hydration not specified at all

Aldrich: 34181-9

Sigma: C0210

References:

Flint, C.D. *et al.*, *J.C.S.(A)*, 1970, 442, (*synth, ir, uv-vis, magnetism*)