



>>Entry Name: Diamminetetakis(thiocyanato-*N*)chromate(*III*)(1-), 11Cl, 10Cl, 9Cl

Synonym(s): Diamminetetra-thiocyanatochromate(*III*)

CAS Registry Number: 16248-93-4

$[\text{Cr}(\text{NCS})_4(\text{NH}_3)_2]^{(-)}$

Molecular Formula: $\text{C}_4\text{H}_6\text{CrN}_6\text{S}_4^{(-)}$

Molecular Weight: 318.392

Accurate Mass: 317.894183

Percentage Composition: C 15.09%; H 1.90%; Cr 16.33%; N 26.40%; S 40.28%

General Statement: *trans*-Octahedral

Use/Importance: Used as a starting material

Solubility: Forms spar. sol. salts with cations.

Other Data: V. many salts and derivs. known

>>Derivative: K salt

CAS Registry Number: 34430-73-4

Source/Synthesis: Synth. aq. NH_4 salt + KNO_3

Physical Description: Light-sensitive solid (aq. KNO_3)

>>Derivative: NH_4 salt, monohydrate

Synonym(s): Reinecke's salt

CAS Registry Number: 13573-16-5

Extra CAS Registry Numbers(s): 13573-17-6

Source/Synthesis: Synth. from NH_4SCN fused with $(\text{NH}_4)_2\text{Cr}_2\text{O}_7$ and product extracted with H_2O

Physical Description: Light-sensitive ruby-red cryst. (H_2O)

Solubility: Sol. H_2O , EtOH, Me_2CO ; insol. C_6H_6 , dec. by boiling H_2O

Other Data: Treatment with aq. HCl and extraction with Et_2O gives $\text{H}[\text{Cr}(\text{NCS})_4(\text{NH}_3)_2]$

Aldrich: 18368-7

Fluka: 83550

Sigma: R7756

References:

Aldrich Library of Infrared Spectra, 3rd edn., 1981, 525C, (*ir*)

Sigma-Aldrich Library of Stains, Dyes and Indicators, 618

Takeuchi, Y. *et al.*, *Z. Kristallogr.*, 1957, **109**, 29, (*cryst struct*)

Bennett, M.A. *et al.*, *Inorg. Chem.*, 1967, **6**, 1625, (*synth, uv, ir*)

Garner, C.S. *et al.*, *Transition Met. Chem. (New York)*, 1970, **6**, 59, (*rev*)

Brauer, G., *Handbuch Prap. Anorg. Chem.*, 3rd edn., Ferdinand Enke Verlag, 1975, **3**, 1516, (*synth*)

Rojas, G.E. *et al.*, *J. Phys. Chem.*, 1986, **90**, 87, (*flash photol*)

Compr. Coord. Chem., Pergamon, Oxford, 1987, **3**, 837, (*rev*)