



>>Entry Name: Hexakis(cyano-C)chromate(3-), 11Cl, 9Cl, 8Cl

ENTRY UNDER REVIEW

Synonym(s): Hexacyanochromate(III)

CAS Registry Number: 14875-14-0

Related CAS Registry Numbers(s): 20558-40-1 20792-64-7 23540-71-8

$[\text{Cr}(\text{CN})_6]^{3(-)} (O_h)$

Molecular Formula: $\text{C}_6\text{CrN}_6^{3(-)}$

Molecular Weight: 208.102

Accurate Mass: 207.958953

Percentage Composition: C 34.63%; Cr 24.99%; N 40.38%

Other Data: Undergoes slow aquation to give $[\text{Cr}(\text{OH}_2)_6]^{3(+)}$

>>Derivative: Tri-K salt

CAS Registry Number: 13601-11-1

Molecular Formula: $\text{C}_6\text{CrK}_3\text{N}_6$

Molecular Weight: 325.397

Percentage Composition: C 22.15%; Cr 15.98%; K 36.05%; N 25.83%

Source/Synthesis: Synth. from aq. $\text{Cr}(\text{OAc})_3$ and KCN

Physical Description: Light-sensitive pale yellow cryst. (H_2O or aq. MeOH)

Solubility: V. sol. H_2O , slow dec., aided by heat and light; insol. alcohols

Other Data: $\mu_{\text{eff}} = 3.87\mu_{\text{B}}$ (298K)

>>Derivative: Cs, Mn(II) salt

CAS Registry Number: 82990-00-9

Molecular Formula: $\text{C}_6\text{CrCsMnN}_6$

Molecular Weight: 395.946

Accurate Mass: 395.802429

Percentage Composition: C 18.20%; Cr 13.13%; Cs 33.57%; Mn 13.88%; N 21.23%

Source/Synthesis: Synth. from $\text{Cs}_3\text{Cr}(\text{CN})_6$ and MnCl_2 in H_2O

Physical Description: Yellow cryst. + $1\text{H}_2\text{O}$

Other Data: Fcc struct. Contains ordered Cr(III)-CN-Cr(II) arrangement with high spin Mn(II). Ferrimagnetic, T_{N} 90K. Superexchange interactions occur via CN bridges

>>Derivative: Hexaamminechromium(3+) salt

CAS Registry Number: 23540-70-7

Molecular Formula: $\text{C}_6\text{H}_{18}\text{Cr}_2\text{N}_{12}$

Molecular Weight: 362.281

Accurate Mass: 362.058756

Percentage Composition: C 19.89%; H 5.01%; Cr 28.70%; N 46.40%

Physical Description: Yellow solid

>>Derivative: Tris(1,2-ethanediamine-*N,N'*)chromium(3+) salt

CAS Registry Number: 55782-98-4

Molecular Formula: $\text{C}_{12}\text{H}_{24}\text{Cr}_2\text{N}_{12}$

Molecular Weight: 440.394

Accurate Mass: 440.105706

Percentage Composition: C 32.73%; H 5.49%; Cr 23.61%; N 38.17%

Physical Description: Yellow solid + $2\text{H}_2\text{O}$

>>Derivative: Hexakis(urea-O)chromium(3+) salt

CAS Registry Number: 23540-67-2

Molecular Formula: $\text{C}_{12}\text{H}_{24}\text{Cr}_2\text{N}_{18}\text{O}_6$

Molecular Weight: 620.431

Accurate Mass: 620.09364

Percentage Composition: C 23.23%; H 3.90%; Cr 16.76%; N 40.64%; O 15.47%

Source/Synthesis: Synth. from aq. $[\text{Cr}(\text{urea})_6]\text{Cl}_3$ and $\text{K}_3[\text{Cr}(\text{CN})_6]$

Physical Description: Light green cryst.