



>>Entry Name: Osmium(III) chloride (OsCl₃)

Synonym(s): Osmium trichloride. Osmium chloride

CAS Registry Number: 13444-93-4

OsCl₃

Molecular Formula: Cl₃Os

Molecular Weight: 296.558

Accurate Mass: 296.868023

Percentage Composition: Cl 35.86%; Os 64.14%

Source/Synthesis: Synth. by thermal dec. of OsCl₄ at 470° in a Cl₂ atm.

Use/Importance: Catalyst for polym. of norbornene in polar solvs.

Physical Description: Dark grey cryst.

Melting Point: Mp 450 dec.°

Solubility: Insol. org. solvs., liq. Cl₂, conc. mineral acids

Other Data: Dec. at 450° to the metal. Paramagnetic $\mu_{\text{eff}} = 1.28\mu_{\text{B}}$ at 79K, $\mu_{\text{eff}} = 1.66\mu_{\text{B}}$ at 388K

Aldrich: 39859-4

Fluka: 75638

>>Derivative: Hydrate

Synonym(s): Osmium chloride hydrate

CAS Registry Number: 14996-60-2

Use/Importance: Commercially available

Other Data: Variable H₂O content

Aldrich: 20906-6

Sigma: O0756

>>Derivative: Trihydrate

CAS Registry Number: 135296-80-9

Source/Synthesis: Synth. from Os metal and Cl at 7 atm. and 550-600°, or by dissociation of OsCl₄ at 400°

Use/Importance: Used as a catalyst for polym. of norbornene

References:

Kolbin, N.I. *et al.*, *Zh. Neorg. Khim.*, 1963, **8**, 2422; 1964, **9**, 1029; *Russ. J. Inorg. Chem. (Engl. Transl.)*, 1963, **8**, 1270; 1964, **9**, 563, (*synth, cryst struct, props*)

Michelotti, F.W. *et al.*, *J. Polym. Sci., Part A*, 1965, **3**, 695, (*use*)

U.S. Pat., 1967, 3 336 275; *CA*, **67**, 74003h, (*use*)

Fung, K.W. *et al.*, *Inorg. Chem.*, 1971, **10**, 1347, (*uv*)

Belova, V.I. *et al.*, *Zh. Neorg. Khim.*, 1971, **16**, 2871; *Russ. J. Inorg. Chem. (Engl. Transl.)*, 1971, **16**, 1527, (*magn*)

White, D.L. *et al.*, *Biochim. Biophys. Acta*, 1976, **436**, 577, (*pe*)