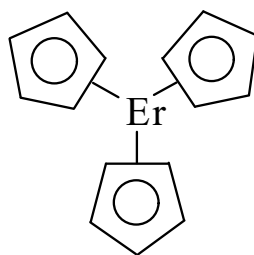




>>Entry Name: Tris(η^5 -2,4-cyclopentadien-1-yl)erbium, 9Cl

Synonym(s): Tricyclopentadienylerbium



CAS Registry Number: 39330-74-0

Molecular Formula: $C_{15}H_{15}Er$

Molecular Weight: 362.543

Accurate Mass: 361.047665

Percentage Composition: C 49.69%; H 4.17%; Er 46.14%

Source/Synthesis: Synth. e.g. from $ErCl_3$ and NaCp in THF

Use/Importance: With NaH, catalyst for alkene redn. via hydrometallation. Used to dope Er into InP and GaS by vapour deposition

Physical Description: Pink cryst.

Melting Point: Mp 285°

Boiling Point: Subl. 200° in vacuo

Solubility: Sol. THF

Other Data: Hydrol. by H_2O . Paramagnetic, $\mu_{eff} = 9.44\mu_B$

>>Derivative: Cyclohexylisocyanide complex

Synonym(s): Tris(2,4-cyclopentadien-1-yl)isocyanocyclohexaneerbium

CAS Registry Number: 37298-99-0

Molecular Formula: $C_{22}H_{26}ErN$

Molecular Weight: 471.714

Accurate Mass: 470.136814

Percentage Composition: C 56.02%; H 5.56%; Er 35.46%; N 2.97%

Physical Description: Solid

Melting Point: Mp 168°

Solubility: Sol. C_6H_6

>>Derivative: THF complex

CAS Registry Number: 90808-85-8

Molecular Formula: $C_{19}H_{23}ErO$

Molecular Weight: 434.65

Accurate Mass: 433.10518

Percentage Composition: C 52.50%; H 5.33%; Er 38.48%; O 3.68%

Source/Synthesis: Synth. from $ErCl_3 \cdot 4THF$ and $C_8H_{11}K$ then CpNa in THF

Physical Description: Pink cryst.

Other Data: Isostructural with $Cp_3Ln(THF)$ ($Ln = La, Pr, Na, Gd, Dy, Y, Lu$)

References:

Birmingham, J.M. *et al.*, *J.A.C.S.*, 1956, **78**, 42, (*synth*)

Pappalardo, R., *J. Chem. Phys.*, 1968, **49**, 1545, (*uv*)

Von Ammon, R. *et al.*, *Ber. Bunsen-Ges. Phys. Chem.*, 1972, **76**, 995, (*pmr, ir*)

Aleksanyan, V.T. *et al.*, *J. Organomet. Chem.*, 1977, **131**, 251, (*Raman*)

Qian, C. *et al.*, *J. Organomet. Chem.*, 1983, **247**, 161; 1988, **344**, 175, (*ir, use*)

Deacon, G.B. *et al.*, *Aust. J. Chem.*, 1984, **37**, 517, (*synth*)

Eggers, S.H. *et al.*, *J. Organomet. Chem.*, 1986, **311**, 313, (*cryst struct*)

Uwai, K. *et al.*, *Appl. Phys. Lett.*, 1987, **51**, 1010, (*use*)

Chen, W. *et al.*, *J. Organomet. Chem.*, 1994, **467**, 25, (*THF solvate, synth, cryst struct*)

Synthetic Methods of Organometallic and Inorganic Chemistry, (ed. Hermann, W.A.), Thieme, 1997, **6**, 88-90, (*synth*)