



>>Entry Name: **Tris(2,4-pentanedionato-*O,O'*)ytterbium(III)**

Synonym(s): Tris(acetylacetonato)ytterbium(III). Ytterbium(III) acetylacetonate. Yb(acac)₃

CAS Registry Number: 14284-98-1

As Tris(1,1,1,5,5,5-hexafluoro-2,4-pentanedionato-*O,O'*)ytterbium(III), [HQZ98-I](#) with
 $R^1 = R^2 = CH_3$

Molecular Formula: C₁₅H₂₁O₆Yb

Molecular Weight: 470.367

Accurate Mass: 469.069193

Percentage Composition: C 38.30%; H 4.50%; O 20.41%; Yb 36.79%

Other: Gelest AKY920

>>Derivative: Monohydrate

CAS Registry Number: 23591-49-3

Molecular Formula: C₁₅H₂₃O₇Yb

Molecular Weight: 488.383

Percentage Composition: C 36.89%; H 4.75%; O 22.93%; Yb 35.43%

Melting Point: Mp 125°

Solubility: Sol. acetylacetone

Other Data: 7-Coord. capped trigonal prismatic struct.

>>Derivative: Trihydrate

Molecular Formula: C₁₅H₂₇O₉Yb

Molecular Weight: 524.413

Percentage Composition: C 34.36%; H 5.19%; O 27.46%; Yb 33.00%

Melting Point: Mp 165°

Other Data: Possibly 8-coord. with one H₂O molecule in coordination sphere

>>Derivative: 2,7-Dimethyl-1,8-naphthyridine complex

CAS Registry Number: 62865-53-6

Molecular Formula: C₂₅H₃₁N₂O₆Yb

Molecular Weight: 628.57

Accurate Mass: 627.153591

Percentage Composition: C 47.77%; H 4.97%; N 4.46%; O 15.27%; Yb 27.53%

Physical Description: White cryst.

>>Derivative: Bipy complex

CAS Registry Number: 81240-88-2

Molecular Formula: C₂₅H₂₉N₂O₆Yb

Molecular Weight: 626.554

Accurate Mass: 625.137941

Percentage Composition: C 47.92%; H 4.67%; N 4.47%; O 15.32%; Yb 27.62%

Physical Description: Colourless cryst. (EtOH aq.)

Other Data: Has 8-coord. Yb. Loses bipy at 120-130° *in vacuo*

References:

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Stites, J.G. *et al.*, *J.A.C.S.*, 1948, **70**, 3142, (*synth*)

Pope, G.W. *et al.*, *J. Inorg. Nucl. Chem.*, 1961, **20**, 304, (*synth*)

Purushotham, D. *et al.*, *Anal. Chim. Acta*, 1965, **33**, 182, (*synth*)

Richardson, M.F. *et al.*, *Inorg. Chem.*, 1968, **7**, 2495, (*synth, ir*)

Cunningham, J.A. *et al.*, *Inorg. Chem.*, 1969, **8**, 22, (*cryst struct*)

Watkins, E.D. *et al.*, *Inorg. Chem.*, 1969, **8**, 29, (*cryst struct*)

NgSee, M. *et al.*, *J. Inorg. Nucl. Chem.*, 1977, **39**, 71, (*naphthyridine complex*)

Gmelin Handbook Inorg. Chem., Syst. No. 39 Suppl. Vol., 1981, **D3**, 62, (*rev, bibl*)

Dzyubenko, N.G. *et al.*, *Zh. Neorg. Khim.*, 1990, **35**, 1471; *Russ. J. Inorg. Chem. (Engl. Transl.)*, 1990, **35**, 883, (*bipy complex, cryst struct*)