



>>Entry Name: Lead oxide (Pb₃O₄), 9CI

Synonym(s): Lead(II,IV) oxide. Trilead tetraoxide. Lead tetraoxide. Red lead. Lead orthoplumbite. C.I. Pigment Red 105

CAS Registry Number: 1314-41-6

Pb₃O₄

Molecular Formula: O₄Pb₃

Molecular Weight: 685.598

Accurate Mass: 687.909541

Source/Synthesis: Formed by the action of heat on PbO or PbCO₃ in a current of air

Use/Importance: Pigment

Physical Description: Bright-red powder or cryst. Evolves O₂ on heating. Undergoes a phase transition at 163K

Melting Point: Mp 830 dec.°

Boiling Point: Bp 1472°

Solubility: Insol. H₂O, EtOH; sol. AcOH

Hazard & Toxicity: Toxic

Aldrich: 24154-7

References:

Clark, G.L. *et al.*, *J.A.C.S.*, 1937, **59**, 2305, (*synth*)

Gavarri, J.R. *et al.*, *J. Solid State Chem.*, 1975, **13**, 252; **14**, 91, (*cryst struct*)

Brauer, G., *Handbuch Prap. Anorg. Chem.*, 3rd edn., Ferdinand Enke Verlag, 1975, **2**, 774, (*synth*)

Vigorous, J.P. *et al.*, *Spectrochim. Acta A*, 1982, **38**, 393, (*ir, Raman*)

Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 8th edn., Van Nostrand Reinhold, 1992, LDS000