



>>Entry Name: Lead oxide (Pb₂O₃), 9Cl

Synonym(s): Dilead trioxide. Lead sesquioxide

CAS Registry Number: 1314-27-8

Pb₂O₃

Molecular Formula: O₃Pb₂

Molecular Weight: 462.398

Accurate Mass: 463.937999

Source/Synthesis: Prep. from PbO₂ by hydrothermal dissociation

Use/Importance: Oxidation catalyst for CO in exhaust gases

Physical Description: Reddish-yellow powder or monoclinic cryst.

Melting Point: Mp 370 dec.°

Solubility: Insol. H₂O

>>Variant: Oxygen-deficient-form

Synonym(s): Lead oxide (Pb₁₂O₁₇), 9Cl. Dodecalead heptadecaoxide

Molecular Formula: O₁₇Pb₁₂

Molecular Weight: 2758.39

Accurate Mass: 2767.633079

Percentage Composition: O 9.86%; Pb 90.14%

Source/Synthesis: Intermediate phase in the lead oxide system

>>Variant: Oxygen-excess-form

Synonym(s): Lead oxide (Pb₁₂O₁₉), 9Cl. Dodecalead nonadecaoxide

CAS Registry Number: 12293-98-0

Molecular Formula: O₁₉Pb₁₂

Molecular Weight: 2790.389

Accurate Mass: 2799.622909

Percentage Composition: O 10.89%; Pb 89.11%

Source/Synthesis: Intermediate phase in the lead oxide system

References:

- Clark, G.L. *et al.*, *J.A.C.S.*, 1937, **59**, 2305, (*synth*)
Bystrom, A., *Ark. Kemi, Mineral. Geol.*, 1945, **A20**; *CA*, 1947, **41**, 4053g, (*Pb₁₂O₁₇*, *Pb₁₂O₁₉*)
Anderson, J.S. *et al.*, *J. Inorg. Nucl. Chem.*, 1959, **11**, 272, (*Pb₁₂O₁₇*, *Pb₁₂O₁₉*)
White, W.B. *et al.*, *J. Am. Ceram. Soc.*, 1964, **47**, 242, (*synth*, *Pb₁₂O₁₇*)
Pamfilov, A.V. *et al.*, *Zh. Fiz. Khim.*, 1967, **41**, 1072, (*electric props*, *Pb₁₂O₁₇*)
Bouvaist, J. *et al.*, *C. R. Hebd. Seances Acad. Sci. Ser. C*, 1969, **269**, 486, (*synth*)
Keester, K.L. *et al.*, *Mater. Res. Bull.*, 1969, **4**, 757, (*uv-vis*, *Pb₁₂O₁₇*)
Bouvaist, J. *et al.*, *Acta Cryst. A*, 1970, **26**, 501, (*cryst struct*, *nd*)
Kirk-Othmer Encycl. Chem. Technol., 3rd edn., Wiley, 1978, **14**, 165, (*rev*)
Boher, P. *et al.*, *J. Solid State Chem.*, 1984, **55**, 54, (*struct*, *Pb₁₂O₁₇*)