



>>Entry Name: Tantalum(V) oxide (Ta₂O₅), 11Cl

Synonym(s): Tantalum pentoxide

CAS Registry Number: 1314-61-0

Extra CAS Registry Numbers(s): 59763-75-6

Molecular Formula: O₅Ta₂

Molecular Weight: 441.893

Accurate Mass: 441.870559

Percentage Composition: O 18.10%; Ta 81.90%

Use/Importance: Commercially available. Used as dielectric in capacitors, in catalysts and in antireflection coatings

Physical Description: White solid. Not amphoteric. V. inert

Melting Point: Mp 1872°

Aldrich: 38302-3

Fluka: 86300

Sigma: T5287

>>Derivative: Hydrate

Synonym(s): Tantallic acid

CAS Registry Number: 12337-18-7

Molecular Formula: H₂O₆Ta₂

Molecular Weight: 459.908

Accurate Mass: 459.881124

Percentage Composition: H 0.44%; O 20.87%; Ta 78.69%

Source/Synthesis: Synth. by hydrol. of Ta(OEt)₅ in aq. EtOH or from TaCl₅ and water vapour

Other Data: The degree of hydration is uncertain. Dehydrates at 290°

References:

Stephenson, N.C. *et al.*, *Acta Cryst. B*, 1971, **27**, 1037, (*cryst struct*)

Kolval, P.S. *et al.*, *Proc. - Annu. Meet., Electron Microsc. Soc. Am.*, 1972, **30**, 540, (*shear structs*)

Balachandran, U. *et al.*, *J. Mater. Sci. Lett.*, 1982, **1**, 219, (*cryst struct*)

Sakharov, V.V. *et al.*, *Russ. J. Inorg. Chem. (Engl. Transl.)*, 1983, **28**, 1093, (*synth, hydrate*)

U.S. Pat., 1985, 4 537 750; *CA*, **103**, 162662q, (*purif*)

Ogihara, T. *et al.*, *J. Mater. Sci.*, 1986, **21**, 2771, (*synth, hydrate*)

Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 8th edn., Van Nostrand Reinhold, 1992, TAF500