



>>Entry Name: Hafnium(IV) oxide (HfO₂), 11Cl

Synonym(s): Hafnium dioxide

CAS Registry Number: 12055-23-1

Related CAS Registry Numbers(s): 38284-69-4 38284-71-8 38284-73-0

Extra CAS Registry Numbers(s): 37230-85-6

HfO₂

Molecular Formula: HfO₂

Molecular Weight: 210.489

Accurate Mass: 211.936375

Percentage Composition: Hf 84.80%; O 15.20%

Source/Synthesis: May be synth. from the metal and H₂O at >600° and 10,000 atm.

Use/Importance: Commercially available. Used in catalytic systems, refractories and antireflection coatings

Physical Description: White solid; monoclinic to tetragonal phase change at 1790°

Aldrich: 32611-9

Fluka: 51310

>>Derivative: Hydrate

CAS Registry Number: 12259-41-5

Source/Synthesis: Synth. by pptn from aq. HfOCl₂ with NH₃

Physical Description: Colourless solid or gel

Other Data: Several hydrates are known: ½H₂O; 2½ and 1&lqu;. The water content varies with ageing but the amount of OH present is constant

References:

Ruh, R. *et al.*, *J. Am. Ceram. Soc.*, 1970, **53**, 126, (*cryst struct*)

Pozorovskaya, Z.N. *et al.*, *Russ. J. Inorg. Chem. (Engl. Transl.)*, 1972, **17**, 787, (*hydrates*)

Achour, M. *et al.*, *Rev. Int. Hautes Temp. Refract.*, 1975, **12**, 273, (*phase change*)

Toraya, H. *et al.*, *J. Am. Ceram. Soc.*, 1983, **66**, 148; 1982, **65**, C72, (*synth*)

Hann, R.E. *et al.*, *J. Am. Ceram. Soc.*, 1985, **68**, C285, (*cryst struct*)