>>**Entry Name: Hafnium(*IV*) oxide (HfO_2),** 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

HfO_2

Molecular Formula: HfO_2
Molecular Weight: 210.489
Accurate Mass: 211.936375
Percentage Composition: Hf 84.80%; O 15.20%
General Statement: Isostructural with baddeleyite (ZrO_2). The Hf is seven coordinate
Source/Synthesis: May be synth. from the metal and H_2O 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. $HfOCl_2$ with NH_3
Physical Description: Colourless solid or gel
Other Data: Several hydrates are known: ½H_2O; 2½ and 1&1qu;. 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)*