



>>Entry Name: Hafnium silicides

CAS Registry Number: 60304-33-8

Molecular Formula: [HfSi]

General Statement: A number of phases have been reported but none has been extensively studied

>>Variant: Hafnium silicide (Hf₂Si), 11Cl

CAS Registry Number: 12401-57-9

Molecular Formula: Hf₂Si

Molecular Weight: 385.066

Accurate Mass: 387.870017

Percentage Composition: Hf 92.71%; Si 7.29%

General Statement: Isostructural with CuAl₂

Source/Synthesis: Synth. by heating the elements to 1700°

>>Variant: Hafnium silicide (Hf₃Si₂), 11Cl

CAS Registry Number: 12401-59-1

Molecular Formula: Hf₃Si₂

Molecular Weight: 591.641

Accurate Mass: 595.793489

Percentage Composition: Hf 90.51%; Si 9.49%

General Statement: Isostructural with U₃Si₂

Source/Synthesis: Synth. by heating the elements

>>Variant: Hafnium silicide (Hf₅Si₄), 11Cl

CAS Registry Number: 12208-71-8

Molecular Formula: Hf₅Si₄

Molecular Weight: 1004.792

Accurate Mass: 1011.640433

Percentage Composition: Hf 88.82%; Si 11.18%

General Statement: Isostructural with Zr₅Si₄

Source/Synthesis: Synth. by heating the elements

>>Variant: Hafnium silicide (HfSi), 11Cl

CAS Registry Number: 12437-21-7

Molecular Formula: HfSi

Molecular Weight: 206.576

Accurate Mass: 207.923472

Percentage Composition: Hf 86.40%; Si 13.60%

General Statement: Struct. unknown

Source/Synthesis: Synth. by heating Hf and Si to 1500°, by initiating combustion of the elements at 250° or, in thin films on Si by heating to 700° or by arc-melting the elements

>>Variant: Hafnium silicide (HfSi₂), 11Cl

Synonym(s): Hafnium disilicide

CAS Registry Number: 12401-56-8

Molecular Formula: HfSi₂

Molecular Weight: 234.661

Accurate Mass: 235.900399

Percentage Composition: Hf 76.06%; Si 23.94%

General Statement: Isostructural with ZrSi₂

Source/Synthesis: Synth. by burning Hf and Si, by arc-melting the elements or in thin films by heating Hf on Si

References:

Post, B., *J. Chem. Phys.*, 1954, **22**, 1264, (*synth, cryst struct, HfSi, HfSi₂*)

Smith, J.F. *et al.*, *Acta Cryst.*, 1957, **10**, 341, (*synth, cryst struct, HfSi₂*)

Neshpoor, V.S., *Kristallografiya*, 1961, **6**, 466, (*struct, HfSi*)

Schob, O. *et al.*, *Monatsh. Chem.*, 1961, **92**, 1218, (*synth, cryst struct, Hf₂Si, HfSi₂*)

Rossteutcher, W. *et al.*, *Z. Metallkd.*, 1965, **56**, 813, (*synth, cryst struct, Hf₂Si, Hf₃Si₂, Hf₅Si₄*)

Karpinskii, O.G. *et al.*, *Izv. Akad. Nauk SSSR, Neorg. Mater.*, 1969, 166; *CA*, **71**, 65053e, (*synth, struct, HfSi, HfSi₂*)

Sundstrom, K.E. *et al.*, *Phys. Status Solidi A*, 1973, **20**, 653, (*synth, thin layer HfSi, HfSi₂*)

Sarkisyan, A.R. *et al.*, *Fiz. Goreniya Vzryva*, 1979, **15**, 112; *CA*, **91**, 25501f, (*synth, HfSi, HfSi₂*)