



>>Entry Name: Magnesium hexafluorosilicate

Synonym(s): Hexafluorosilicate(2-) magnesium salt, 8Cl. Magnesium fluorosilicate

CAS Registry Number: 16949-65-8

Related CAS Registry Numbers(s): 17084-08-1

MgSiF₆

Molecular Formula: F₆MgSi

Molecular Weight: 166.381

Accurate Mass: 165.952387

Percentage Composition: F 68.51%; Mg 14.61%; Si 16.88%

Source/Synthesis: Synth. by reaction of aq. H₂SiF₆ with Mg(OH)₂ or MgCO₃. Cryst. as the hexahydrate

Use/Importance: Wood preservative, esp. in combination with pentachlorophenolates

Physical Description: White cryst.

Solubility: V. sol. H₂O (65 g per 100 cm³ at 25°); insol. Me₂CO

>>Derivative: Hexahydrate

CAS Registry Number: 18972-56-0

Molecular Formula: F₆H₁₂MgO₆Si

Molecular Weight: 274.472

Accurate Mass: 274.015777

Percentage Composition: F 41.53%; H 4.41%; Mg 8.86%; O 34.97%; Si 10.23%

Source/Synthesis: Cryst. from aq. solns. of MgSiF₆

Physical Description: White trigonal cryst. Dec. on heating with simultaneous loss of H₂O and SiF₄

Solubility: V. sol. H₂O (65 g per 100 cm³ at 18°); insol. EtOH

References:

Hassel, O., *Z. Kristallogr.*, 1930, **72**, 482, (*cryst struct, hexahydrate*)

Simpson, E.A. *et al.*, *J. Phys. Chem.*, 1953, **57**, 529, (*soln*)

Dereppe, J.M. *et al.*, *J. Chim. Phys. Phys.-Chim. Biol.*, 1964, **61**, 1076, (*pmr, F-19 nmr, hexahydrate*)

Hague, R. *et al.*, *Can. J. Chem.*, 1966, **44**, 2769, (*F-19 nmr*)

Ostrovskaya, T.V. *et al.*, *CA*, 1968, **68**, 56130, (*thermal dec, hexahydrate*)

Syoyama, S., *Acta Cryst. B*, 1972, **28**, 2626, (*polymorphs, hexahydrate*)

Andreev, S.N. *et al.*, *Zh. Fiz. Khim.*, 1972, **46**, 1793, (*ir, hexahydrate*)

Affanas'ev, M.L. *et al.*, *Dopov. Akad. Nauk Ukr. RSR, Ser. B: Geol., Khim. Biol. Nauki*, 1974, **36**, 322; *CA*, **81**, 84107, (*F-19 nmr, pmr, hexahydrate*)

Balicheva, T.G. *et al.*, *Zh. Neorg. Khim.*, 1983, **28**, 899, (*ir, anhyd, hydrate*)

Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 8th edn., Van Nostrand Reinhold, 1992, MAG250