



>>Entry Name: Magnesium sulfate monohydrate

Synonym(s): Sulfuric acid, magnesium salt, monohydrate, 8C1

CAS Registry Number: 14168-73-1

MgSO₄·H₂O

Molecular Formula: H₂MgO₅S

Molecular Weight: 138.384

Accurate Mass: 137.947337

Percentage Composition: H 1.46%; Mg 17.56%; O 57.81%; S 23.17%

Source/Synthesis: Prepd. by dehydrating the heptahydrate at 160-190° and an H₂O partial pressure of 22.5 mm Hg

Physical Description: Colourless monoclinic cryst. Hygroscopic. Readily converts to the higher hydrates. Dec. on heating → MgSO₄

Solubility: V. sol. H₂O (68 g per 100 cm³ at 100°)

Other Data: Δ*H*_f^o -1609.7 kJ mol⁻¹

Aldrich: 43418-3

Fluka: 63141

>>Variant: Mineral-form

Synonym(s): Kieserite

CAS Registry Number: 14567-64-7

Molecular Formula: H₂MgO₅S

Molecular Weight: 138.384

Accurate Mass: 137.947337

Percentage Composition: H 1.46%; Mg 17.56%; O 57.81%; S 23.17%

Source/Synthesis: Occurs in sedimentary deposits e.g. in assoc. with NaCl

Physical Description: Colourless to grey or yellow cryst.

References:

Lendormy, N., *Chim. Anal. (Paris)*, 1962, **44**, 255; *CA*, **57**, 9433c, (*MgH₂SO₄*)

Oswald, H.R., *Helv. Chim. Acta*, 1965, **48**, 590, (*cryst struct*)

Heide, K., *Naturwissenschaften*, 1966, **53**, 550, (*thermal dec*)

Hezel, A. *et al.*, *Spectrochim. Acta*, 1966, **22**, 1949, (*ir*)

Lallemant, M. *et al.*, *Rev. Chim. Miner.*, 1974, **11**, 113, (*dissn press*)

Skokanova, Z. *et al.*, *Czech. J. Phys., Sect. B (Engl. Transl.)*, 1978, **28**, 220, (*magnetism*)

Ko, H.C. *et al.*, *CA*, 1980, **93**, 14057, (*thermochem data*)

Kushnir, S.V., *Vestn. L'vov. Politekh. Inst.*, 1985, **191**, 7; *CA*, 1986, **104**, 80800, (*synth*)

Murin, J., *Czech. J. Phys., Sect. B (Engl. Transl.)*, 1986, **36**, 740; *CA*, **105**, 125740, (*pmr*)