



>>Entry Name: Magnesium nitrate hexahydrate

Synonym(s): Hexaaquamagnesium dinitrate

CAS Registry Number: 13446-18-9

$\text{Mg}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$

Molecular Formula: $\text{H}_{12}\text{MgN}_2\text{O}_{12}$

Molecular Weight: 256.406

Accurate Mass: 256.02407

Percentage Composition: H 4.72%; Mg 9.48%; N 10.93%; O 74.88%

Use/Importance: Commercially available. Component of heat storage mixtures

Physical Description: Colourless, deliquescent monoclinic cryst. Dec. on heating with loss of H_2O and nitrogen oxides, ultimately forming MgO

Melting Point: $\text{Mp } 89^\circ$

Solubility: V. sol. H_2O (125 g per 100 cm^3 at 25°); sol. EtOH, liq. NH_3

Other Data: $\Delta H_f^\circ -2613 \text{ kJ mol}^{-1}$; $\Delta G_f^\circ -2081 \text{ kJ mol}^{-1}$; $S^\circ 452 \text{ J K}^{-1} \text{ mol}^{-1}$

Hazard & Toxicity: Oxidiser, irritant

Aldrich: 20369-6

Fluka: 63079

Sigma: M5296

>>Variant: Mineral-form

Synonym(s): Nitromagnesite

CAS Registry Number: 15491-26-6

Molecular Formula: $\text{H}_{12}\text{MgN}_2\text{O}_{12}$

Molecular Weight: 256.406

Accurate Mass: 256.02407

Percentage Composition: H 4.72%; Mg 9.48%; N 10.93%; O 74.88%

Source/Synthesis: Mineral found as efflorescence

Physical Description: White transparent cryst.

References:

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 1257A, (ir)

Mozzi, R.L. *et al.*, *Acta Cryst.*, 1961, **14**, 1296, (cryst struct)

Mashovets, V.P. *et al.*, *Zh. Strukt. Khim.*, 1966, **7**, 825, (vap press, thermodynamics)

Peleg, M., *Isr. J. Chem.*, 1973, **11**, 535, (Raman)

Nirsha, B.M. *et al.*, *Izv. Akad. Nauk SSSR, Neorg. Mater.*, 1980, **16**, 1597, (thermal dec)

Chan, R.K., *CA*, 1982, **96**, 165619, (uses)

Mu, J. *et al.*, *Thermochim. Acta*, 1982, **56**, 253, (thermal dec)