



>>Entry Name: Magnesium perchlorate

ENTRY UNDER REVIEW

Synonym(s): Magnesium chlorate(VII). Perchloric acid, magnesium salt, 8Cl. Chloric(VII) acid magnesium salt

CAS Registry Number: 10034-81-8

Extra CAS Registry Numbers(s): 64010-42-0

Mg(ClO₄)₂

Molecular Formula: Cl₂MgO₈

Molecular Weight: 223.206

Accurate Mass: 221.882066

Percentage Composition: Cl 31.77%; Mg 10.89%; O 57.34%

Source/Synthesis: Synth. by thermal dec. of the hexahydrate

Use/Importance: Commercially available. Dehydrating agent. Catalyst for photochem. redn. of alkenes by NADH models. Feeding stock additive

Physical Description: Colourless deliquescent solid. Dec. on heating with formation of MgO

Solubility: V. sol. H₂O (99.3 g per 100 cm³ at 25°), EtOH (24.0 g per 100cm³ at 25°)

Other Data: ΔH_f° -569 kJ mol⁻¹; ΔG_f° -432 kJ mol⁻¹; S° 213 J K⁻¹ mol⁻¹

Hazard & Toxicity: Oxidiser, irritant. Potentially explosive when mixed with org. or organomet. compds.

Aldrich: 22228-3

Sigma: M5168

>>Derivative: Hexahydrate

Synonym(s): Hexaaquamagnesium(2+) perchlorate

CAS Registry Number: 13446-19-0

Molecular Formula: Cl₂H₁₂MgO₁₄

Molecular Weight: 331.297

Accurate Mass: 329.945456

Percentage Composition: Cl 21.40%; H 3.65%; Mg 7.34%; O 67.61%

Source/Synthesis: Cryst. from aq. soln. containing Mg(ClO₄)₂

Use/Importance: Commercially available

Physical Description: Colourless orthorhombic cryst. Dec. on heating with H₂O loss

Other Data: (Pseudo-hexagonal) struct. ΔH_f° -2446 kJ mol⁻¹; ΔG_f° -1863 kJ mol⁻¹; S° 521 J K⁻¹ mol⁻¹

Hazard & Toxicity: Oxidiser, irritant

Aldrich: 30930-3

References:

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Balicheva, T.G. *et al.*, *Zh. Strukt. Khim.*, 1964, **5**, 29, (ir, hexahydrate)
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Patel, M.B. *et al.*, *J. Raman Spectrosc.*, 1983, **14**, 406, (hydrate, Raman)
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White, M.A. *et al.*, *J. Chem. Phys.*, 1986, **84**, 3484, (hydrate, polymorphs, ir)
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