



>>Entry Name: Magnesium chloride (MgCl₂), 8Cl, USAN
ENTRY UNDER REVIEW

CAS Registry Number: 7786-30-3

MgCl₂

Molecular Formula: Cl₂Mg

Molecular Weight: 95.21

Accurate Mass: 93.922746

Percentage Composition: Cl 74.47%; Mg 25.53%

Source/Synthesis: Prepd. by thermal dehydration of MgCl₂·[NH₄]Cl·6H₂O in the presence of NH₃ (via MgCl₂·[NH₄]Cl). Alternatively, aq. MgCl₂ is treated with [NH₄]Cl and NH₃ to precipitate Mg(NH₃)₆Cl₂ which is thermally dec. to anhyd. MgCl₂ and NH₃. Anhydrous MgCl₂ can also be prepd. by reaction of magnesium metal with [NH₄]Cl in liq. NH₃

Use/Importance: Commercially available. Reagent for *in situ* generation of active elemental magnesium. Electrolyte replenisher (pharmaceutical)

Physical Description: Hygroscopic white rhombohedral cryst.

Melting Point: Mp 714°

Boiling Point: Bp 1412°

Solubility: V. sol. H₂O (54.3 g per 100 cm³ at 20°; 72.7 g per 100 cm³ at 100°), sol. EtOH (7.4 g per 100cm³ at 30°)

Other Data: Δ*H*_f° -641.6 kJ mol⁻¹; Δ*G*_f° -592.1 kJ mol⁻¹; *S*° 89.6 J K⁻¹ mol⁻¹

Hazard & Toxicity: Irritant

Aldrich: 24413-9

Fluka: 63069

Sigma: J5905

>>Derivative: Hexahydrate

Synonym(s): Hexaaquamagnesium(2+) dichloride. **Bischofite**

CAS Registry Number: 7791-18-6

Extra CAS Registry Numbers(s): 13778-96-6

Molecular Formula: Cl₂H₁₂MgO₆

Molecular Weight: 203.302

Accurate Mass: 201.986136

Percentage Composition: Cl 34.88%; H 5.95%; Mg 11.96%; O 47.22%

Source/Synthesis: Mineral, occurs in salt deposits in Germany and USA

Use/Importance: Commercially available. Heat storage material, normally used with CaCl₂·6H₂O

Physical Description: Colourless monoclinic cryst. Dec. on heating → lower hydrates and accompanying hydrol.

Solubility: V. sol. H₂O (167 g per 100 cm³ at 25°, 367 g per 100 cm³); sol. EtOH

Other Data: Δ*H*_f° -2499 kJ mol⁻¹; Δ*G*_f° -2115 kJ mol⁻¹, *S*° 366 J K⁻¹ mol⁻¹

Aldrich: 25577-7

Fluka: 63065

Sigma: M9272

>>Derivative: Hexahydrate, molecular composite with β-cyclodextrin

Source/Synthesis: Obt. by evapn. of satd. aq. MgCl₂/β-cyclodextrin

>>Variant: Mineral-form

Synonym(s): Chloromagnesite

CAS Registry Number: 15230-53-2

Molecular Formula: Cl₂Mg

Molecular Weight: 95.21

Accurate Mass: 93.922746

Percentage Composition: Cl 74.47%; Mg 25.53%

References: