



>>Entry Name: Barium chloride, 8Cl

Synonym(s): Barium dichloride

CAS Registry Number: 10361-37-2

Related CAS Registry Numbers(s): 66905-91-7

BaCl₂

Molecular Formula: BaCl₂

Molecular Weight: 208.232

Accurate Mass: 207.842936

Percentage Composition: Ba 65.95%; Cl 34.05%

Source/Synthesis: Synth. by slow neutralisation of aq. Ba(OH)₂ with aq. HCl. Cryst. as hydrate which dec. on heating to form the anhydrous product. Anhydrous BaCl₂ prepd. by reaction of barium metal with NH₄Cl in liq. NH₃

Use/Importance: Commercially available. Component of speciality glasses, including Ir-transmitting glasses. Used to induce artery contraction

Physical Description: Colourless deliquescent orthorhombic cryst. Undergoes orthorhombic to cubic phase transition at 925°

Melting Point: Mp 963°

Boiling Point: Bp 1560°

Solubility: V. sol. H₂O (37.5 g per 100 cm³ at 26°; 59 g per 100 cm³ at 100°); prac. insol. EtOH

Other Data: ΔH_f° -859 kJ mol⁻¹; ΔG_f° -810.4 kJ mol⁻¹; S° 124 J K⁻¹ mol⁻¹

Hazard & Toxicity: OES: long-term 0.5 mg m⁻³ (as Ba). Muscle poison causing first stimulation then paralysis. LD_{Lo} (hmn, orl) 11.4 mg/kg

Aldrich: 20273-8

Fluka: 11721

>>Derivative: Monohydrate

CAS Registry Number: 22322-71-0

Molecular Formula: BaCl₂H₂O

Molecular Weight: 226.248

Accurate Mass: 225.853501

Percentage Composition: Ba 60.70%; Cl 31.34%; H 0.89%; O 7.07%

Source/Synthesis: Synth. by partial dehydration of the dihydrate

Physical Description: Dec. on heating with H₂O loss

Hazard & Toxicity: Highly toxic

>>Derivative: Dihydrate

CAS Registry Number: 10326-27-9

Molecular Formula: BaCl₂H₄O₂

Molecular Weight: 244.263

Accurate Mass: 243.864066

Percentage Composition: Ba 56.22%; Cl 29.03%; H 1.65%; O 13.10%

Source/Synthesis: Cryst. from aq. solns. of BaCl₂

Use/Importance: Commercially available

Physical Description: Colourless monoclinic cryst.; dec. on heating by H₂O loss (-2H₂O at 115°)

Solubility: V. sol. H₂O (58.7 g per 100 cm³ at 100°); prac. insol. EtOH

Other Data: ΔH_f° -1460 kJ mol⁻¹; ΔG_f° -1297 kJ mol⁻¹; S° 203 J K⁻¹ mol⁻¹

Aldrich: 21756-5

Fluka: 11762

Sigma: B8797

References: