



>>Entry Name: Barium hydroxide (Ba(OH)₂), 8Cl

CAS Registry Number: 17194-00-2

Ba(OH)₂

Molecular Formula: BaH₂O₂

Molecular Weight: 171.342

Accurate Mass: 171.910712

Percentage Composition: Ba 80.15%; H 1.18%; O 18.68%

General Statement: Normally obt. as various hydrates, esp. octahydrate

Source/Synthesis: Prepd. by thermal dehydration of the hydrates

Physical Description: White powder. Dec. on heating with H₂O loss

Melting Point: Mp 398°

Other Data: ΔH_f° -946.3 kJ mol⁻¹; ΔG_f° -859.5 kJ mol⁻¹; S° 107 J K⁻¹ mol⁻¹

Hazard & Toxicity: Highly toxic, corrosive

Aldrich: 43337-3

Fluka: 11782

>>Derivative: Monohydrate

CAS Registry Number: 22326-55-2

Molecular Formula: BaH₄O₃

Molecular Weight: 189.357

Accurate Mass: 189.921277

Percentage Composition: Ba 72.52%; H 2.13%; O 25.35%

Source/Synthesis: Prep. by thermal dec. of the octahydrate at 110° in a dry nitrogen stream

Use/Importance: Commercially available

Other Data: A monoclinic modification has been cryst. from EtOH

Aldrich: 34238-6

Fluka: 11783

Sigma: B6666

>>Derivative: Trihydrate

CAS Registry Number: 66905-77-9

Source/Synthesis: Cryst. from the melt obt. by thermal dec. of the octahydrate at 110°

Physical Description: Colourless orthorhombic cryst.

>>Derivative: Hexahydrate

CAS Registry Number: 80424-03-9

Molecular Formula: BaH₁₄O₈

Molecular Weight: 279.433

Accurate Mass: 279.974102

Percentage Composition: Ba 49.14%; H 5.05%; O 45.81%

>>Derivative: Octahydrate

CAS Registry Number: 12230-71-6

Molecular Formula: BaH₁₈O₁₀

Molecular Weight: 315.463

Accurate Mass: 315.995232

Percentage Composition: Ba 43.53%; H 5.75%; O 50.72%

Use/Importance: Commercially available

Physical Description: Colourless, monoclinic cryst.; dec. on heating with H₂O loss

Melting Point: Mp 78°

Solubility: Sol. H₂O (5.6 g per 100 cm³ at 15°; 95 g per 100 cm³ at 78°); spar. sol. EtOH; insol. Me₂CO

Other Data: ΔH_f° -3342 kJ mol⁻¹; ΔG_f° -2793 kJ mol⁻¹; S° 427 J K⁻¹ mol⁻¹

Aldrich: 21757-3

Sigma: B2507

References: