



>>Entry Name: Barium carbonate (BaCO₃)

Synonym(s): Carbonic acid, barium salt, 8Cl

CAS Registry Number: 513-77-9

BaCO₃

Molecular Formula: CBaO₃

Molecular Weight: 197.336

Accurate Mass: 197.889977

Percentage Composition: C 6.09%; Ba 69.59%; O 24.32%

General Statement: Struct. resembles aragonite (CaCO₃)

Source/Synthesis: Synth. by addition of aq. [NH₄]HCO₃ to aq. BaCl₂ at ≤ 45°

Use/Importance: Commercially available. Rat poison. Used in prep. of YBa₂Cu₃O_{7.8} high transition temp. superconductors

Physical Description: White orthorhombic cryst.; becomes hexagonal at 803° and cubic at 976°. Dec. on heating by CO₂ loss. Dissolves in acids to form corresp. Ba salts

Melting Point: Mp 1740° (90 atm.)

Solubility: Prac. insol. H₂O (2.2 x 10⁻³ g per 100 cm³ at 18°; 6.5 x 10⁻² g per 100 cm³ at 100°); insol. EtOH

Other Data: ΔH_f^o -1216 kJ mol⁻¹; ΔG_f^o -1138 kJ mol⁻¹; S^o 112 J K⁻¹ mol⁻¹

Hazard & Toxicity: Highly toxic. Irritant

Aldrich: 23710-8

Fluka: 11730

Sigma: B4885

>>Variant: Mineral-form

Synonym(s): Witherite

CAS Registry Number: 14941-39-0

Molecular Formula: CBaO₃

Molecular Weight: 197.336

Accurate Mass: 197.889977

Percentage Composition: C 6.09%; Ba 69.59%; O 24.32%

Source/Synthesis: Found as low-temp. mineral in hydrothermal vein deposits

Physical Description: Pseudo-hexagonal dipyrramids, white, sometimes with pale yellow, greenish or brown tinge

References:

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