



>>Entry Name: Barium fluoride (BaF₂), 8Cl

CAS Registry Number: 7787-32-8

BaF₂

Molecular Formula: BaF₂

Molecular Weight: 175.324

Accurate Mass: 175.902038

Percentage Composition: Ba 78.33%; F 21.67%

General Statement: Fluorite struct.

Source/Synthesis: Prepd. by reaction of BaO or BaCO₃ with NH₄HF₂ or NH₄F. High purity BaF₂ has been obt. by fluorination of BaCl₂ at 600-1000° in a pyrocarbon crucible

Use/Importance: Commercially available. Component of speciality glasses, including ir-transmitting glasses. Forms solid solns. with wide variety of metal halides

Physical Description: Colourless, cubic cryst.

Melting Point: Mp 1368°

Boiling Point: Bp 2137°

Solubility: Spar. sol. H₂O (0.12 g per 100 cm³ at 25°)

Other Data: ΔH_f° -1209 kJ mol⁻¹; ΔG_f° -1158 kJ mol⁻¹; S° 96.4 J K⁻¹ mol⁻¹

Hazard & Toxicity: Highly toxic, corrosive

Aldrich: 23610-1

Fluka: 11765

Sigma: B5010

References:

Swanson, H.E. *et al.*, *Natl. Bur. Stand. Circ. (U.S.)*, 1953, **1**, 70, (*cryst struct*)

Kirk-Othmer Encycl. Chem. Technol., 3rd edn., Wiley, 1978, **10**, 684, (*uses*)

Volynets, F.K. *et al.*, *Zh. Prikl. Khim. (Leningrad)*, 1979, **52**, 458, (*synth*)

Luginina, A.A. *et al.*, *Zh. Neorg. Khim.*, 1981, **26**, 332, (*synth*)

Chase, M.W. *et al.*, *J. Phys. Chem. Ref. Data*, 1985, **14**, 333, (*thermodyn*)

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Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 8th edn., Van Nostrand Reinhold, 1992, BAM000