



>>Entry Name: Barium oxide (BaO), 8Cl

CAS Registry Number: 1304-28-5

BaO

Molecular Formula: BaO

Molecular Weight: 153.326

Accurate Mass: 153.900147

Percentage Composition: Ba 89.57%; O 10.43%

General Statement: NaCl struct.

Source/Synthesis: Prepd. by thermal dec. of Ba(NO₃)₂, Ba(OH)₂·8H₂O, BaCO₃ or BaO₂. Manuf. by heating BaSO₄ by d.c. concurrently with plasma gas to 2000-3000 K; the product condenses to a fine powder with particle size of 1-50 μm

Use/Importance: Commercially available. An effective drying agent. Component of speciality glasses, glazes and ceramics. Doping agent for ZnO varistors

Physical Description: V. pale yellow cubic cryst. Moisture-sensitive. Reacts with H₂O → Ba(OH)₂

Melting Point: Mp 1913°

Boiling Point: Bp 2000°

Solubility: Mod. sol. EtOH; insol. Me₂CO

Other Data: ΔH_f^o -548 kJ mol⁻¹; ΔG_f^o -520 kJ mol⁻¹; S^o 72.1 J K⁻¹ mol⁻¹

Hazard & Toxicity: Corrosive, toxic

Aldrich: 28849-7

Fluka: 11793

Sigma: B5135

References:

Zollweg, R.J., *Phys. Rev.*, 1955, **100**, 671, (*cryst struct*)

Nakhodova, A.P. *et al.*, *CA*, 1964, **60**, 15404h, (*synth*)

Habashy, G.M. *et al.*, *J. Inorg. Nucl. Chem.*, 1972, **34**, 57, (*synth*)

U.S.S.R. Pat., 1977, 557 999; *CA*, **87**, 55212, (*manuf*)

Ger. Pat., 1981, 149203; *CA*, 1982, **96**, 106598, (*manuf*)

Chase, M.W. *et al.*, *J. Phys. Chem. Ref. Data*, 1985, **14**, 348, (*thermodynamics*)

Sigma-Aldrich Library of Chemical Safety Data, 1988, **2**, 337A

Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 8th edn., Van Nostrand Reinhold, 1992, BAO000