>>**Entry Name: Barium sulfide (BaS),** 8Cl

**CAS Registry Number:** 21109-95-5

BaS

**Molecular Formula:** BaS
**Molecular Weight:** 169.393
**Accurate Mass:** 169.877302
**Percentage Composition:** Ba 81.07%; S 18.93%
**General Statement:** NaCl struct.
**Source/Synthesis:** Manuf. from $BaSO_4$ by reduction with graphite, coke or natural gas. Prepd. by reduction of $BaSO_4$ with $H_2$ at 950° for 1 h
**Use/Importance:** Readily converted to $BaO_2$ by reaction with $O_2$
**Physical Description:** Colourless cubic cryst. Moisture-sensitive. Hydrol. in $H_2O$ with formation of $Ba(OH)_2$ and $H_2S$
**Melting Point:** Mp 1200°
**Other Data:** $\Delta H_f^\circ$ –464 kJ $mol^{-1}$; $\Delta G_f^\circ$ –459 kJ $mol^{-1}$; $S^\circ$ 78 J $K^{-1}$ $mol^{-1}$
**Hazard & Toxicity:** Toxic

**References:**


Güntert, O.J. *et al.*, *Z. Kristallogr.*, 1956, **107**, 357, *(cryst struct)*
Muyskens, D.J. *et al.*, *Encycl. Chem. Process. Des.*, 1977, **4**, 50, *(uses, bibl)*
Chase, M.W. *et al.*, *J. Phys. Chem. Ref. Data*, 1985, **14**, 352, *(thermochem data)*
Eckert, H. *et al.*, *J.A.C.S.*, 1986, **108**, 2140, *(S-33 nmr)*
Hill, W.D.*, J. Chem. Educ.*, 1986, **63**, 441, *(reactions)*
Lewis, R.J.*, Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, BAP250