



>>Entry Name: Lead(II) sulfide (PbS), 9CI

CAS Registry Number: 1314-87-0

Related CAS Registry Numbers(s): 12179-39-4

Extra CAS Registry Numbers(s): 39377-56-5

PbS

Molecular Formula: PbS

Molecular Weight: 239.266

Accurate Mass: 239.948697

Percentage Composition: Pb 86.60%; S 13.40%

Source/Synthesis: Formed when acid solns. of Pb salts are treated with H₂S

Use/Importance: Used in photoconductive cells, transistors etc.

Physical Description: Silvery, metallic cryst. or black powder; *p*-type semiconductor when S rich and an *n*-type when Pb rich

Melting Point: Mp 1114°

Boiling Point: Subl. 1281°

Solubility: Spar. sol. H₂O

Hazard & Toxicity: Toxic

Aldrich: 37259-5

Fluka: 15366

>>Variant: Mineral-form

Synonym(s): Galena

CAS Registry Number: 12179-39-4

Molecular Formula: PbS

Molecular Weight: 239.266

Accurate Mass: 239.948697

Percentage Composition: Pb 86.60%; S 13.40%

Source/Synthesis: Widespread in sedimentary rocks

Use/Importance: Chief ore of lead

Physical Description: Lead grey, bright metallic, cubic, octahedral, or cubooctahedral cryst. Also tabular, skeletal and reticulated cryst.

References:

Dana's System of Mineralogy, Wiley, N.Y., 1951, **1**, 200, (*mineral*)

Roberts, D.B. *et al.*, *Mater. Res. Bull.*, 1975, **10**, 163, (*synth*)

Brauer, G., *Handbuch Prap. Anorg. Chem.*, 3rd edn., Ferdinand Enke Verlag, 1975, **2**, 778, (*synth*)

Kirk-Othmer Encycl. Chem. Technol., 3rd edn., Wiley, 1978, **14**, 166, (*rev*)

Eckert, H. *et al.*, *J.A.C.S.*, 1986, **108**, 2140, (*S-33 nmr*)

Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 8th edn., Van Nostrand Reinhold, 1992, LDZ000