



>>Entry Name: Lead(II) telluride (PbTe)

CAS Registry Number: 1314-91-6

PbTe

Molecular Formula: PbTe

Molecular Weight: 334.8

Accurate Mass: 337.882856

Source/Synthesis: Synth. by heating Pb and Te together

Use/Importance: Used in photoelectric cells, in heat-sensing instruments and in thermoelectric elements

Physical Description: Silver-grey cryst. Semiconductor and photoconductor

Melting Point: Mp 917°

Solubility: Insol. H₂O, EtOH

Hazard & Toxicity: Toxic by ingestion and inhalation

Aldrich: 25426-6

>>Variant: Mineral-form

Synonym(s): Altaite

CAS Registry Number: 12037-86-4

Molecular Formula: PbTe

Molecular Weight: 334.8

Accurate Mass: 337.882856

Percentage Composition: Pb 61.89%; Te 38.11%

Source/Synthesis: Occurs with gold, silver, and antimony. Small amounts found in USA, Canada, Australia and USSR

Physical Description: Tin-white cubic cryst. with yellowish tint

Other Data: Hardness: 3 Mohs

References:

- Montignie, E., *Bull. Soc. Chim. Fr.*, 1947, 750, (*synth*)
Dana's *System of Mineralogy*, 7th Ed., Wiley, N.Y., 1951, **1**, 205, (*mineral*)
Brady, E.L., *J. Electrochem. Soc.*, 1954, **101**, 466, (*synth*)
Grove, R.E. *et al.*, *Spectrochim. Acta*, 1960, **16**, 730, (*spectra*)
Kulifay, S.M., *J.A.C.S.*, 1962, **83**, 4916, (*synth*)
Weinberg, I., *J. Chem. Phys.*, 1962, **36**, 1112, (*Pb-207 nmr*)
Panson, A.J. *et al.*, *Inorg. Chem.*, 1964, **3**, 940, (*synth*)
Koch, W. *et al.*, *Z. Phys. A*, 1978, **289**, 17, (*Te-125 nmr*)
Kirk-Othmer Encycl. Chem. Technol., 3rd edn., Wiley, 1978, **14**, 166, (*rev*)
Yellin, N. *et al.*, *Mater. Res. Bull.*, 1983, **18**, 823, (*synth*)
Fujii, Y. *et al.*, *Solid State Commun.*, 1984, **49**, 135, (*phase transitions*)
Peck, C.A. *et al.*, *Powder Diff.*, 1987, **2**, 230, (*cryst struct*)