



>>Entry Name: Zirconium sulfides

CAS Registry Number: 37244-09-0

Molecular Formula: [SZr]

>>Variant: Zirconium sulfide (ZrS)

CAS Registry Number: 12067-18-4

Molecular Formula: SZr

Molecular Weight: 123.29

Accurate Mass: 121.876773

Percentage Composition: S 26.01%; Zr 73.99%

Source/Synthesis: Synth. from the elements at high temp. *in vacuo*

Physical Description: Phases down to Zr_{0.77}S are known

>>Variant: Zirconium sulfide (ZrS₂), 11Cl

CAS Registry Number: 12039-15-5

Molecular Formula: S₂Zr

Molecular Weight: 155.356

Accurate Mass: 153.848843

Percentage Composition: S 41.28%; Zr 58.72%

Source/Synthesis: Synth. by heating the elements to 800° or by reaction of ZrO₂ with CS₂ at 1300°

Use/Importance: Battery cathode; lubricant

Physical Description: Readily intercalates a wide range of spp.

>>Variant: Zirconium sulfide (ZrS₃), 11Cl

CAS Registry Number: 12166-31-3

Molecular Formula: S₃Zr

Molecular Weight: 187.422

Accurate Mass: 185.820913

Percentage Composition: S 51.33%; Zr 48.67%

Source/Synthesis: Synth. by heating the elements to 600° in a sealed tube

Physical Description: This phase is accurately stoichiometric

References:

- Conrad, B.R. *et al.*, *Chem. Ext. Defects Non-Met. Solids, Proc. Inst. Adv. Study*, 1969, 207, (*synth, cryst struct, Zr_{1-x}S*)
- Steiger, R.P. *et al.*, *High Temp. Sci.*, 1970, **2**, 398, (*synth, cryst struct, ZrS*)
- Brattas, L., *Acta Chem. Scand.*, 1972, **26**, 3441, (*synth, cryst struct, ZrS₂*)
- Brattas, L. *et al.*, *Acta Chem. Scand.*, 1973, **27**, 1290, (*props, ZrS₂*)
- Kaminskii, B.T. *et al.*, *Poroshk. Metall. (Kiev)*, 1973, 6; *CA*, **80**, 5305q, (*synth, ZrS₂*)
- Gleizes, A. *et al.*, *Bull. Soc. Chim. Fr.*, 1974, 1317, (*synth, cryst struct, ZrS₂*)
- Furuseh, S. *et al.*, *Acta Chem. Scand., Ser. A*, 1975, **29**, 623, (*cryst struct, ZrS₃*)
- Thakur, K.P., *Aust. J. Phys.*, 1977, **30**, 325, (*cryst struct, props, ZrS*)
- Boswell, F.W. *et al.*, *Mater. Res. Bull.*, 1979, **14**, 1111, (*intercalation, ZrS₂*)
- Mitchell, R.S. *et al.*, *Mineral. J.*, 1981, **10**, 344, (*cryst struct, ZrS₂*)
- U.S. Pat., 1985, 4 542 009; *CA*, **104**, 210025d, (*manuf, ZrS₂*)