



>>Entry Name: Aluminium selenide (Al₂Se₃)

CAS Registry Number: 1302-82-5

Al₂Se₃

Molecular Formula: Al₂Se₃

Molecular Weight: 290.843

Accurate Mass: 293.712638

Percentage Composition: Al 18.55%; Se 81.45%

General Statement: Dimorphic

Use/Importance: Commercially available

Other Data: E_g 3.1 eV

>>Variant: Cubic-form

Molecular Formula: Al₂Se₃

Molecular Weight: 290.843

Accurate Mass: 293.712638

Percentage Composition: Al 18.55%; Se 81.45%

General Statement: Cation deficient spinel struct.

Source/Synthesis: Synth. from elements at 6×10^4 atm. and 600°

Physical Description: Grey moisture-sensitive cryst.

>>Variant: Hexagonal-form

Molecular Formula: Al₂Se₃

Molecular Weight: 290.843

Accurate Mass: 293.712638

Percentage Composition: Al 18.55%; Se 81.45%

General Statement: Cation deficient wurtzite struct.

Source/Synthesis: Synth. from elements at 1000°

Physical Description: Grey moisture-sensitive solid (melt)

Melting Point: M_p 980°

Other Data: ΔH_f° -543 kJ mol⁻¹

References:

Inorg. Synth., 1946, **2**, 183, (synth)

Klemm, W. *et al.*, *Z. Anorg. Allg. Chem.*, 1948, **255**, 287, (synth, phase diagram)

Schneider, A. *et al.*, *Z. Anorg. Allg. Chem.*, 1954, **277**, 49, (cryst struct, hexagonal form)

Kauer, E. *et al.*, *Z. Naturforsch., A*, 1958, **13**, 531, (optical props)

Steigman, G.A. *et al.*, *Acta Cryst.*, 1966, **20**, 617, (cryst struct, hexagonal form)

Gromakov, S.D. *et al.*, *Russ. J. Phys. Chem. (Engl. Transl.)*, 1972, **46**, 91, (props)

Range, K.J. *et al.*, *Z. Naturforsch., B*, 1973, **28**, 353, (cryst struct, cubic form)

Berg, R.W. *et al.*, *Inorg. Chem.*, 1980, **19**, 2688, (Raman)

Popović, S. *et al.*, *J. Appl. Chem.*, 1980, **13**, 454, (quaternary compds)