



>>Entry Name: Andalusite

CAS Registry Number: 12183-80-1

Related CAS Registry Numbers(s): 12141-46-7 58425-86-8 159995-97-8

Extra CAS Registry Numbers(s): 1335-30-4

Al_2SiO_5

Molecular Formula: $\text{Al}_2\text{O}_5\text{Si}$

Molecular Weight: 162.046

Accurate Mass: 161.91458

Percentage Composition: Al 33.30%; O 49.37%; Si 17.33%

General Statement: Struct. comprises chains of distorted AlO_6 octahedra sharing edges, SiO_4 tetrahedra and pairs of edge-sharing AlO_5 trigonal bipyramids

Source/Synthesis: Occurs chiefly in slates and argillaceous schists as a contact mineral. Found in USA, Canada, Brazil, Spain, USSR, Korea, Australia and elsewhere

Use/Importance: Refractory in steel industry

Physical Description: Orthorhombic cryst.; various colours usually pink, reddish brown, rose red

Refractive Index: n_D 1.6400

Other Data: Hardness: 7.5 Mohs. See also Kyanite [HMR54-C](#)

References:

Burnham, C.W. *et al.*, *Z. Kristallogr.*, 1961, **115**, 269, (*cryst struct*)

Holm, J.L. *et al.*, *Am. Mineral.*, 1966, **51**, 1608, (*thermodyn props*)

Hafner, S.S. *et al.*, *J. Chem. Phys.*, 1970, **52**, 6037, (*Al-27 nqr*)

Winter, J.K. *et al.*, *Am. Mineral.*, 1979, **64**, 573, (*cryst struct*)

Smith, K.A. *et al.*, *Am. Mineral.*, 1983, **68**, 1206, (*Si-29 nmr*)

Mägi, M. *et al.*, *J. Phys. Chem.*, 1984, **88**, 1518

Lippmaa, E. *et al.*, *J.A.C.S.*, 1986, **108**, 1730, (*Al-27 nmr*)