



>>Entry Name: Beryl

CAS Registry Number: 1302-52-9

Related CAS Registry Numbers(s): 12415-33-7

Extra CAS Registry Numbers(s): 12428-23-8

$\text{Be}_3\text{Al}_2[\text{Si}_6\text{O}_{18}]$

Molecular Formula: $\text{Al}_2\text{Be}_3\text{O}_{18}\text{Si}_6$

Molecular Weight: 537.502

Accurate Mass: 536.769656

Percentage Composition: Al 10.04%; Be 5.03%; O 53.58%; Si 31.35%

General Statement: Unbranched single ring silicate; Si_6O_{18} rings are linked by AlO_6 octahedra and BeO_4 tetrahedra to form parallel channels which may occlude HCl

Source/Synthesis: Mineral from USA, Canada, Colombia, Afghanistan, USSR etc.

Use/Importance: Gemstone: varieties incl. *Emerald*, *Aquamarine*, *Goshenite*, *Heliodor*, *Morganite*, *Yorobyevite*

Physical Description: Colourless, white, blue-green, green-yellow, yellow, blue cryst.

References:

Solov'eva, L.N. *et al.*, *J. Struct. Chem. (Engl. Transl.)*, 1966, **7**, 446, (*cryst struct*)

Morozin, B., *Acta Cryst. B*, 1972, **28**, 1899, (*cryst struct*)

Pavarennykh, A.S., *Mineral. Zh.*, 1979, **1**, 3, (*ir*)

Lehmann, G., *Phys. Chem. Miner.*, 1983, **9**, 278, (*epr*)

Magi, M. *et al.*, *J. Phys. Chem.*, 1984, **88**, 1518, (*Si-29 nmr*)

Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 8th edn., Van Nostrand Reinhold, 1992, BFO500