



>>Entry Name: Zirconium silicate (ZrSiO₄)

Synonym(s): Zirconium(IV) orthosilicate

CAS Registry Number: 10101-52-7

Extra CAS Registry Numbers(s): 12741-11-6

ZrSiO₄

Molecular Formula: O₄SiZr

Molecular Weight: 183.307

Accurate Mass: 181.86129

Percentage Composition: O 34.91%; Si 15.32%; Zr 49.77%

Source/Synthesis: Prepd. by heating SiO₂ with ZrO₂

Use/Importance: Refractory material

Physical Description: Colourless cryst.

Melting Point: Mp 2550°

Solubility: Insol. H₂O, EtOH

Aldrich: 38328-7

Fluka: 96598

>>Variant: Mineral-form

Synonym(s): Zircon. Cyrtolite

CAS Registry Number: 14940-68-2

Molecular Formula: O₄SiZr

Molecular Weight: 183.307

Accurate Mass: 181.86129

Percentage Composition: O 34.91%; Si 15.32%; Zr 49.77%

Source/Synthesis: Widespread occurrence as an accessory mineral in igneous rocks

Physical Description: Colourless; usually shades of brown, green, grey, yellow and red, tetragonal cryst.

References:

Curtis, C.E. *et al.*, *J. Am. Ceram. Soc.*, 1953, **36**, 195, (*synth*)

Robinson, K. *et al.*, *Am. Mineral.*, 1971, **56**, 782, (*cryst struct*)

Hubin, R. *et al.*, *Spectrochim. Acta A*, 1971, **27**, 683, (*ir*)

Syme, R.W.G. *et al.*, *J. Phys. Chem.*, 1977, **10**, 1335, (*Raman*)

Kirk-Othmer Encycl. Chem. Technol., 3rd edn., Wiley, 1978, **5**, 163, (*rev*)

Speer, J.A., *Rev. Mineral.*, 1980, 67, (*rev*)

Deer, W.A. *et al.*, *Rock Forming Minerals*, 2nd edn., Longman, 1982, **1A**, 418, (*mineral*)

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

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