

Jasmundite



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Crystal Data: Tetragonal. *Point Group:* $\bar{4}2m$. As equant crystals, with forms {110}, {101}, {100} and {001}; in irregular grains up to several mm.

Physical Properties: *Fracture:* Conchoidal. *Hardness* = ~ 5 *D*(meas.) = 3.03
D(calc.) = 3.23

Optical Properties: Semitransparent. *Color:* Dark brown, greenish brown, brownish green; light brown in thin section. *Streak:* White. *Luster:* Resinous.
Optical Class: Uniaxial (+). $\omega = 1.715$ $\epsilon = 1.728$

Cell Data: *Space Group:* $I\bar{4}m2$. $a = 10.461(1)$ $c = 8.813(1)$ $Z = 2$

X-ray Powder Pattern: Bellerberg volcano, Germany.
2.832 (> 100), 3.242 (42), 2.615 (35), 1.849 (34), 1.5491 (21), 2.756 (17), 1.920 (16)

Chemistry:	(1)	(2)
SiO ₂	27.3	27.52
Al ₂ O ₃	0.4	
FeO	0.8	
MgO	0.9	
CaO	67.6	70.64
S ²⁻	2.7	3.67
-O = S	1.4	1.83
Total	98.3	100.00

(1) Bellerberg volcano, Germany; by electron microprobe, average of seven analyses; corresponds to $(\text{Ca}_{10.6}\text{Mg}_{0.2}\text{Fe}_{0.1}\text{Al}_{0.05})_{\Sigma=10.95}\text{Si}_{4.0}\text{O}_{18.25}\text{S}_{0.75}$. (2) $\text{Ca}_{11}(\text{SiO}_4)_4\text{O}_2\text{S}$.

Occurrence: In metamorphosed limestone inclusions in basalt.

Association: Mayenite, brownmillerite, larnite, portlandite, ettringite, calcite, vaterite, tobermorite, thaumasite.

Distribution: From the Bellerberg volcano, two km north of Mayen, Eifel district, Germany.

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References: (1) Dent Glasser, L.S. and C.K. Lee (1981) The structure of jasmundite, $\text{Ca}_{22}(\text{SiO}_4)_8\text{O}_4\text{S}_2$. *Acta Cryst.*, 37, 803–806. (2) Hentschel, G., L.S. Dent Glasser, and C.K. Lee (1983) Jasmundite, $\text{Ca}_{22}(\text{SiO}_4)_8\text{O}_4\text{S}_2$, a new mineral. *Neues Jahrb. Mineral., Monatsh.*, 337–342. (3) (1984) *Amer. Mineral.*, 69, 566–567 (abs. refs. 1 and 2).