

**Cavansite****Ca(V<sup>4+</sup>O)Si<sub>4</sub>O<sub>10</sub>•4H<sub>2</sub>O**

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**Crystal Data:** Orthorhombic. *Point Group:* 2/m 2/m 2/m. As prismatic crystals, to 1 mm, elongated || [001]; dominant forms {110} and {101}; as spherulitic rosettes, to 5 mm.

**Physical Properties:** *Cleavage:* Good on {010}. *Tenacity:* Brittle. *Hardness* = 3–4  
D(meas.) = 2.21–2.31 D(calc.) = 2.33

**Optical Properties:** Transparent. *Color:* Brilliant sky-blue to greenish blue.

*Luster:* Vitreous.

*Optical Class:* Biaxial (+). *Pleochroism:* Pronounced; X = Z = colorless; Y = blue.

*Orientation:* X = b; Y = a; Z = c. *Dispersion:* r < v, extreme. α = 1.542(2) β = 1.544(2)  
γ = 1.551(2) 2V(meas.) = 52(2)°

**Cell Data:** *Space Group:* Pcmn. a = 9.792(2) b = 13.644(3) c = 9.629(2) Z = 4

**X-ray Powder Pattern:** Owyhee Dam, Oregon, USA.

7.964 (100), 6.854 (50), 6.132 (25), 3.930 (25), 3.420 (25), 2.779 (25), 4.531 (13)

**Chemistry:**

	(1)	(2)
SiO <sub>2</sub>	49.4	53.24
VO <sub>2</sub>	17.1	18.38
CaO	11.5	12.42
H <sub>2</sub> O	[21.0]	15.96
rem.	0.8	
Total	[99.8]	100.00

(1) Oregon; by XRF, H<sub>2</sub>O by estimation; actual H<sub>2</sub>O content established by structure analysis.

(2) Ca(VO)Si<sub>4</sub>O<sub>10</sub>•4H<sub>2</sub>O.

**Polymorphism & Series:** Dimorphous with pentagonite.

**Occurrence:** In a brown tuff partly filling a fault fissure (Lake Owyhee State Park, Oregon, USA); in a vesicular basalt and red tuff breccia, as cavity fillings and in calcite veinlets (Chapman quarry, Oregon, USA); in pores of altered basalt breccia and tuffaceous andesite (Poona district, India).

**Association:** Pentagonite, calcite, heulandite, stilbite, analcime, apophyllite, thomsonite, copper (Oregon, USA); stilbite, calcite, heulandite, mordenite, chalcocite (India).

**Distribution:** From near Owyhee Dam, Lake Owyhee State Park, Malheur Co., and the Chapman quarry, Columbia Co., Oregon, USA. Remarkable specimens from quarries around Wagholi, Poona district, Maharashtra, India.

**Name:** For CALcium, VANadium, and SILicon in the composition.

**Type Material:** National Museum of Natural History, Washington, D.C., USA, 120583, 120584, 122769.

**References:** (1) Staples, L.W., H.T. Evans, Jr., and J.R. Lindsay (1973) Cavansite and pentagonite, new dimorphous calcium vanadium silicate minerals from Oregon. *Amer. Mineral.*, 58, 405–411. (2) Evans, H.T., Jr. (1973) The crystal structures of cavansite and pentagonite. *Amer. Mineral.*, 58, 412–424. (3) Wilke, H.-J., G. Schnorrer-Köhler, and A. Bahle (1989) Cavansit aus Indien. *Lapis*, 14(1), 39–42 (in German). (4) Kothavala, R. (1991) The Wagholi cavansite locality near Poona, India. *Mineral. Record*, 22, 415–420.