

Cavansite**Ca(V⁴⁺O)Si₄O₁₀•4H₂O**

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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 ₂	49.4	53.24
VO ₂	17.1	18.38
CaO	11.5	12.42
H ₂ O	[21.0]	15.96
rem.	0.8	
Total	[99.8]	100.00

(1) Oregon; by XRF, H₂O by estimation; actual H₂O content established by structure analysis.

(2) Ca(VO)Si₄O₁₀•4H₂O.

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.