

Stilbite**NaCa₂Al₅Si₁₃O₃₆•14H₂O**

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Crystal Data: Monoclinic. *Point Group:* 2/m. Crystals typically thin tabular, flattened on [010], to 14 cm; in fascicled, sheaflike, or globular aggregates. *Twinning:* Ubiquitous on {001}, cruciform and penetration twins.

Physical Properties: *Cleavage:* {010}, perfect. *Fracture:* Uneven. *Tenacity:* Brittle. Hardness = 3.5–4 D(meas.) = 2.19(1) D(calc.) = 2.23

Optical Properties: Transparent to translucent. *Color:* White, yellowish, gray, pink, reddish, orange, light brown to dark brown; colorless in thin section. *Streak:* White. *Luster:* Vitreous, pearly on cleavage.

Optical Class: Biaxial (-). *Orientation:* Y = b; X ∧ c = 5°. *Dispersion:* r < v. α = 1.484–1.500 β = 1.492–1.507 γ = 1.494–1.513 2V(meas.) = 30°–49°

Cell Data: *Space Group:* F2/m. a = 13.595–13.657 b = 18.197–18.309 c = 17.775–17.842 β = 90.05°–90.91° Z = [4]

X-ray Powder Pattern: Montresta, Sardinia, Italy.

9.13 (100), 4.065 (58), 3.028 (36), 2.780 (21), 4.679 (16), 4.627 (15), 3.199 (13)

Chemistry:

	(1)
SiO ₂	52.70
Al ₂ O ₃	17.71
CaO	7.76
Na ₂ O	2.39
K ₂ O	1.09
H ₂ O ⁺	16.32
H ₂ O ⁻	2.08
Total	100.05

(1) Pedemonte, Bellinzona, Tessin, Switzerland; corresponds to (Na_{1.12}K_{0.34})_{Σ=1.46}Ca_{2.02}Al_{5.08}Si_{12.82}O₃₆•13.24H₂O.

Mineral Group: Zeolite group.

Occurrence: A low-temperature hydrothermal mineral, in amygdules and cavities in basalts, andesites, and various metamorphic rocks. Formed in hot springs deposits, and as a cementing agent in some sandstones and conglomerates.

Association: Zeolites, prehnite, calcite, quartz.

Distribution: A common zeolite, with many occurrences of large and fine crystals. In Iceland, at the Helgustadir mine, Reydarfjord, and the Teigarhorn, Berufjord. On several of the Faeroe Islands. In the Glasgow district, Dumbartonshire, Scotland. At Strzegom (Striegau), Poland. In the USA, at Great Notch and Paterson, Passaic Co., New Jersey; on the south fork of the Toulte River, Cowlitz Co., and at Skookumchuck Dam, near Bucoda, Thurston Co., Washington; from Goble, Columbia Co., and near Dollar, Lynn Co., Oregon. Along the Bay of Fundy, Nova Scotia, Canada. From Guanajuato, Mexico. At Rio das Antas, Bento Gonçalves, Rio Grande do Sul, Brazil. From around Gunnedah and Tambar Springs, New South Wales, and Arkaroola, South Australia. Exceptional crystals from the Bombay, Poona, and Nasik districts, Maharashtra, India.

Name: From the Greek for *luster*, in reference to its pearly luster.

Type Material: Natural History Museum, Paris, France, Haüy 4059.

References: (1) Dana, E.S. (1892) Dana's system of mineralogy, (6th edition), 583–585.

(2) Deer, W.A., R.A. Howie, and J. Zussman (1963) Rock-forming minerals, v. 4, framework silicates, 377–385. (3) Galli, E. (1971) Refinement of the crystal structure of stilbite. Acta Cryst., 27, 833–841. (4) Passaglia, E., E. Galli, L. Leonardo, and G. Rossi (1978) The crystal chemistry of stilbites and stellerites. Bull. Minéral., 101, 368–375.

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