

Brewsterite

(Sr, Ba, Ca)Al₂Si₆O₁₆•5H₂O

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Crystal Data: Monoclinic. *Point Group:* 2/*m*. Crystals commonly equant or prismatic, striated and elongated along [100], to 1.5 cm. Platy, radial fibrous, and in granular aggregates. *Twinning:* Lamellar || {010}.

Physical Properties: *Cleavage:* {010}, perfect. *Fracture:* Uneven. *Tenacity:* Brittle. Hardness = 5–5.5 D(meas.) = 2.45 D(calc.) = [2.42]

Optical Properties: Transparent. *Color:* White, colorless, yellowish, gray, greenish; colorless in thin section. *Streak:* White. *Luster:* Vitreous to pearly on {010}. *Optical Class:* Biaxial (+). *Orientation:* Z ⊥ (010); X ∧ c = 19°–34° in various sectors of the crystal. *Dispersion:* r > v, weak, crossed. α = 1.510 β = 1.512 γ = 1.523 2V(meas.) = 65°

Cell Data: *Space Group:* P2₁/*m*. a = 6.793(2) b = 17.573(6) c = 7.759(2) β = 94.54(3)° Z = 2

X-ray Powder Pattern: Strontian, Scotland.
4.53 (10), 6.15 (9), 2.885 (9), 3.209 (8), 3.867 (7), 4.98 (4), 1.989 (4)

Chemistry:

	(1)	(2)
SiO ₂	54.42	54.02
Al ₂ O ₃	15.25	15.86
Fe ₂ O ₃	0.08	0.11
CaO	1.19	0.80
SrO	8.99	11.80
BaO	6.80	3.01
Na ₂ O		0.21
K ₂ O		0.14
H ₂ O	13.22	13.72
Total	99.95	99.67

(1) Strontian, Scotland; corresponds to (Sr_{0.58}Ba_{0.30}Ca_{0.14})_{Σ=1.02}Al_{1.98}Si_{6.00}O₁₆•4.86H₂O.

(2) Burpala massif, Russia; corresponds to (Sr_{0.76}Ba_{0.13}Ca_{0.10}Na_{0.04}K_{0.02}Fe_{0.01})_{Σ=1.06}Al_{2.06}Si_{5.94}O₁₆•4.86H₂O.

Mineral Group: Zeolite group.

Occurrence: Hydrothermally deposited in druses lining cavities in basalts and schists; more rarely in ore deposits.

Association: Zeolites, calcite, quartz.

Distribution: From Strontian, Argyllshire, Scotland. At St. Christophe, Bourg d'Oisans, Isère, and around Barèges, Hautes-Pyrénées, France. In the Burpala massif, about 120 km north of Lake Baikal, eastern Siberia, Russia. At Yellow Lake, near Olalla, British Columbia, Canada. Other localities are reported but require confirmation.

Name: Honoring Sir David Brewster (1781–1868), Scottish mineralogist.

References: (1) Dana, E.S. (1892) Dana's system of mineralogy, (6th edition), 576–577.

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