

Crystal Data: Monoclinic. *Point Group:* 2. Flat crystals, to 17 cm, occur along bedding planes. Commonly as spherulitic aggregates of radiating acicular to prismatic crystals; as massive granular aggregates.

Physical Properties: *Cleavage:* Perfect on {100}; imperfect on { $\bar{1}02$ }, {010}.
Tenacity: Brittle. Hardness = 3.5 D(meas.) = 2.44–2.46 D(calc.) = 2.46 Piezoelectric; may fluoresce green under SW UV.

Optical Properties: Transparent. *Color:* Colorless. *Luster:* Vitreous, slightly pearly on cleavage surfaces.

Optical Class: Biaxial (-). *Orientation:* $Z = b$; $X \wedge c = 34^\circ$. $\alpha = 1.515$ $\beta = 1.533$ $\gamma = 1.535$
 $2V(\text{meas.}) = 55^\circ$

Cell Data: *Space Group:* $P2_1$. $a = 7.9814(12)$ $b = 7.0657(8)$ $c = 4.9054(4)$
 $\beta = 93.95(1)^\circ$ $Z = 2$

X-ray Powder Pattern: Green River Formation, Wyoming, USA.
8.01 (100), 4.06 (50), 3.48 (40), 3.24 (40), 4.31 (30), 3.54 (30), 3.21 (30)

Chemistry:

	(1)	(2)
SiO ₂	58.88	58.91
B ₂ O ₃	16.95	17.07
Al ₂ O ₃	0.04	
Fe ₂ O ₃	0.04	
MgO	0.03	
Na ₂ O	15.31	15.19
H ₂ O ⁺	8.90	8.83
Total	100.15	100.00

(1) Green River Formation, Wyoming, USA. (2) NaBSi₂O₅(OH)₂.

Occurrence: Commonly interbedded with oil shales or marls (Green River Formation, USA); in boron-bearing evaporite deposits (California, USA); rarely in vugs in phonolite (Point of Rocks, New Mexico, USA).

Association: Shortite, trona, pyrite (Green River Formation, USA); “opal” (Cave Springs Wash, Nevada, USA).

Distribution: In the USA, at Searles Lake, San Bernardino Co., in the Kramer borate deposit, Kern Co., and at Lake Tecopa, Inyo Co., California; widespread in the Green River Formation of Utah and Wyoming; from Cave Springs Wash, Silver Peak Range, Esmeralda Co., Nevada; and at Point of Rocks, Colfax Co., New Mexico. In Canada, at Mont Saint-Hilaire, Quebec. From Kremna, near Tito Uzice; Lopare; and near Bela Stena, Yugoslavia.

Name: Honors John W. Searles, who put down the deep well from which type material was extracted.

Type Material: Harvard University, Cambridge, Massachusetts, 81274; National Museum of Natural History, Washington, D.C., USA, R6457, 93270, 94734, 96080, 124352.

References: (1) Larsen, E.S. and W.B. Hicks (1914) Searlesite, a new mineral. *Amer. J. Sci.*, 38, 437–440. (2) Fahey, J.J. and J.M. Axelrod (1950) Searlesite from the Green River Formation of Wyoming. *Amer. Mineral.*, 35, 1014–1020. (3) Ghose, S. and C. Wan (1976) Structural chemistry of borosilicates, part II: searlesite, NaBSi₂O₅(OH): absolute configuration, hydrogen locations, and refinement of the structure. *Amer. Mineral.*, 61, 123–129.

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