

**Crystal Data:** Monoclinic. *Point Group:* 2/m. As minute bladed crystals, flattened on (010) and elongate on [100], exhibiting forms {010}, {0  $\bar{1}$  0}, {001}; {2 0 1}; as spherules.  
*Twinning:* On {001}.

**Physical Properties:** *Cleavage:* None observed. *Fracture:* Uneven.  
*Tenacity:* Very brittle. Hardness = ~ 4 D(meas.) = n.d. D(calc.) = 2.605

**Optical Properties:** Translucent to transparent. *Color:* Colorless to white; very pale beige in aggregates. *Streak:* White. *Luster:* Vitreous.  
*Orientation:* Z = b.  
*Optical Class:* Biaxial (+).  $\alpha = 1.578(1)$   $\beta = 1.580(1)$   $\gamma = 1.583(1)$  2V(meas.) = 82(5)°  
2V(calc.) = 79° *Orientation:* Z = b; X  $\wedge$  a = 45(2)°.

**Cell Data:** *Space Group:* P2<sub>1</sub>.  $a = 7.1222(4)$   $b = 19.8378(11)$   $c = 9.8071(5)$   
 $\beta = 111.287(1)^\circ$  Z = 4

**X-ray Powder Pattern:** Tvedalen, Larvik, Vestfold, south Norway.  
9.095 (100), 2.915 (92), 3.972 (76), 2.964 (70), 6.279 (42), 3.205 (37), 2.757 (33)

Chemistry:	(1)	(2)
SiO <sub>2</sub>	47.04	47.73
BeO	14.74	14.90
Al <sub>2</sub> O <sub>3</sub>	0.04	
BaO	0.03	
CaO	22.14	22.07
SrO	0.66	
Na <sub>2</sub> O	6.06	6.15
K <sub>2</sub> O	0.10	
<u>H<sub>2</sub>O</u>	<u>8.86</u>	<u>8.95</u>
Total	99.67	100.00

(1) Tvedalen, Larvik, Vestfold, south Norway; average of 17 electron microprobe and ICP analyses, H<sub>2</sub>O from stoichiometry, OH confirmed by IR, corresponding to (Na<sub>0.99</sub>Sr<sub>0.03</sub>K<sub>0.01</sub>) $\Sigma=1.03$ Ca<sub>2.01</sub>Be<sub>2.99</sub>Si<sub>3.98</sub>O<sub>13</sub>(OH)·2H<sub>2</sub>O. (2) NaCa<sub>2</sub>Be<sub>3</sub>Si<sub>4</sub>O<sub>13</sub>(OH)·2H<sub>2</sub>O.

**Mineral Group:** Zeolite group.

**Occurrence:** A late-stage hydrothermal mineral in a syenitic pegmatite in larvikite.

**Association:** Calcite, analcime, K-feldspar.

**Distribution:** Tuften larvikite quarry, Tvedalen, Larvik, Vestfold, south Norway.

**Name:** Honors Alf Olav Larsen (b. 1952), Norwegian self-taught mineralogist who has contributed to the description of six new mineral species.

**Type Material:** Department of Geology, Natural History Museum, University of Oslo, Norway (catalog number 42108); Canadian Museum of Nature, Ottawa (catalog number CMNMC 86066).

**References:** (1) Raade, G., J.D. Grice, and M.A. Cooper (2009) Alflarsenite, a new beryllium-silicate zeolite from a syenitic pegmatite in the Larvik plutonic complex, Oslo Region, Norway. *Eur. J. Mineral.*, 21, 893–900. (2) Grice, J.D., G. Raade, and M.A. Cooper (2010) Alflarsenite; structure and relationship to other Be-Si and zeolite framework structures. *Can. Mineral.*, 48, 255-266. (3) (2010) *Amer. Mineral.*, 95, 1121 (abs. ref. 1).