

Crystal Data: Monoclinic. *Point Group:* 2/m. Granular aggregates, massive, to 9 cm.

Physical Properties: *Cleavage:* Distinct on {010} and {100}; poor on {101}.
Fracture: Conchoidal. Hardness = 5–5.5 D(meas.) = 4.28–4.42 D(calc.) = 4.25 Brilliant yellow fluorescence under SW UV; kelly green cathodoluminescence.

Optical Properties: Opaque, transparent in small grains. *Color:* White, darkening on exposure to light. *Luster:* Dull to slightly greasy.

Optical Class: Biaxial (-). $\alpha = 1.760\text{--}1.762$ $\beta = 1.769\text{--}1.770$ $\gamma = 1.769\text{--}1.774$
 $2V(\text{meas.}) = 5^\circ\text{--}40^\circ$

Cell Data: *Space Group:* $P2_1/n$. $a = 17.628(4)$ $b = 8.270(3)$ $c = 30.52(2)$ $\beta = 90^\circ$
 $Z = 12$

X-ray Powder Pattern: Franklin, New Jersey, USA.

3.017 (100), 2.534 (75), 7.62 (45), 1.944 (45), 2.367 (40), 2.884 (33), 3.363 (23)

Chemistry:

	(1)	(2)
SiO ₂	24.10	25.3
FeO	0.48	
MnO	0.57	0.6
ZnO	30.61	32.3
PbO	27.63	26.8
MgO	0.23	0.4
CaO	16.36	16.4
H ₂ O ⁻	0.12	
Total	100.10	101.8

(1) Franklin, New Jersey, USA; corresponding to Pb_{1.23}(Ca_{2.89}Mn_{0.08}Mg_{0.06})_{Σ=3.03}Zn_{3.73}Si_{3.98}O₁₆. (2) Do.; by electron microprobe, average of 10 analyses, corresponding to Pb_{1.15}(Ca_{2.80}Mg_{0.09}Mn_{0.08})_{Σ=2.97}Zn_{3.80}Si_{4.04}O₁₆.

Occurrence: In a metamorphosed stratiform zinc orebody.

Association: Willemite, zincite, hardystonite, glaucochroite, andradite, franklinite, clinohedrite, leucophoenicite, larsenite, copper.

Distribution: From Franklin, Sussex Co., New Jersey, USA.

Name: To honor Professor Esper Signius Larsen, Jr. (1879–1961), American petrologist and mineralogist, Harvard University, Cambridge, Massachusetts, USA.

Type Material: n.d.

References: (1) Moore, P.B. and P.H. Ribbe (1965) A study of “calcium-larsenite” renamed esperite. *Amer. Mineral.*, 50, 1170–1178. (2) Palache, C., L.H. Bauer, and H. Berman (1928) Larsenite, calcium-larsenite and associated minerals at Franklin, N.J. *Amer. Mineral.*, 13, 334–340. (3) Palache, C. (1935) The minerals of Franklin and Sterling Hill, Sussex County, New Jersey. *U.S. Geol. Sur. Prof. Paper* 180, 81–82. (4) Dunn, P.J. (1985) The lead silicates from Franklin, New Jersey: occurrence and composition. *Mineral. Mag.*, 49, 721–727.