

Crystal Data: Monoclinic. *Point Group:* $2/m$. As anhedral grains flattened on {010}; subhedral interlocking grains; granular, massive. *Twinning:* Common, polysynthetic \parallel {100}; a second set may be \perp the first.

Physical Properties: *Cleavage:* {100}, good; {010}, imperfect. Hardness = n.d. D(meas.) = 3.28–3.33 D(calc.) = 3.326

Optical Properties: Transparent to translucent. *Color:* White to gray; colorless in thin section. *Luster:* Vitreous.

Optical Class: Biaxial (+). *Orientation:* $Z = b$; $X \wedge c = 13^\circ$ – 14° . *Dispersion:* $r < v$, weak. $\alpha = 1.700$ – 1.715 $\beta = 1.715$ – 1.723 $\gamma = 1.725$ – 1.740 $2V(\text{meas.}) = 60^\circ$ – 63°

Cell Data: *Space Group:* $P2_1/n$. $a = 5.502(1)$ $b = 6.745(1)$ $c = 9.297(1)$ $\beta = 94.59(2)^\circ$ $Z = 4$

X-ray Powder Pattern: Synthetic. (ICDD 9-351).

2.795 (100), 2.744 (95), 2.780 (90), 2.608 (65), 2.188 (65), 2.731 (40), 2.716 (40)

Chemistry:

	(1)	(2)	(3)
SiO ₂	31.00	33.89	34.88
Al ₂ O ₃	1.12		
Fe ₂ O ₃	trace		
FeO	0.64		
MgO	0.69		
CaO	64.98	65.56	65.12
Na ₂ O		0.36	
H ₂ O ⁺	0.61		
CO ₂	0.82		
P ₂ O ₅		0.32	
Total	99.86	100.13	100.00

(1) Scawt Hill, Ireland; minor spurrite impurity. (2) Do.; by electron microprobe, average of three analyses. (3) Ca₂SiO₄.

Occurrence: In contact metamorphic terranes involving sedimentary carbonate rocks.

Association: Spurrite, melilite, gehlenite, merwinite, perovskite, wollastonite (Scawt Hill, Ireland); rankinite, kilchoanite, scawtite, hydrogrossular (Tokatoka district, New Zealand); brownmillerite, mayenite, melilite, spurrite (Hatrurim Formation, Israel).

Distribution: At Scawt Hill and Ballycraigy, near Larne, Co. Antrim, Ireland. In Scotland, from Camas Mòr, Isle of Muck, and at Camphouse, Ardnamurchan, Argyllshire. From the Bellerberg volcano, two km north of Mayen, Eifel district, Germany. In the Hatrurim Formation, Israel. From near Rehia, and in Golden Gully, Tokatoka district, about 150 km north of Auckland, New Zealand. From near Gosse Pile, Tomkinson Ranges, and in the Deering Hills, South Australia. In the USA, at Marble Canyon, Culberson Co., Texas.

Name: For Larne, Ireland, in the vicinity of which the mineral was initially observed.

Type Material: n.d.

References: (1) Tilley, C.E. (1929) On larnite (calcium orthosilicate, a new mineral) and its associated minerals from the limestone contact-zone of Scawt Hill, Co. Antrim. Mineral. Mag., 22, 77–86. (2) (1929) Amer. Mineral., 14, 338 (abs. ref. 1). (3) Jost, K.H., B. Ziemer, and R. Seydel (1977) Redetermination of the structure of β -dicalcium silicate. Acta Cryst., 33, 1696–1700. (4) Deer, W.A., R.A. Howie, and J. Zussman (1986) Rock-forming minerals, (2nd edition), v. 1B, disilicates and ring silicates, 248–255.

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