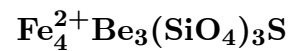


Danalite



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Crystal Data: Cubic. *Point Group:* $\bar{4}3m$. As octahedral and dodecahedral crystals, to 10 cm; as irregular segregations.

Physical Properties: *Cleavage:* Poor on {111}, { $\bar{1}\bar{1}\bar{1}$ }. *Fracture:* Subconchoidal to uneven. *Tenacity:* Brittle. Hardness = 5.5–6 D(meas.) = 3.28–3.46 D(calc.) = 3.36

Optical Properties: Semitransparent. *Color:* Yellow, pink, reddish brown, red; in thin section, colorless to pink. *Luster:* Vitreous or greasy.

Optical Class: Isotropic. $n = 1.747\text{--}1.771$

Cell Data: *Space Group:* $P\bar{4}3n$. $a = 8.20\text{--}8.23$ $Z = 2$

X-ray Powder Pattern: Needlepoint Mountain, Canada.

3.35 (100), 1.932 (70), 1.012 (60), 2.193 (50), 1.118 (50), 1.043 (50), 3.68 (40)

Chemistry:

	(1)	(2)	(3)	(4)
SiO ₂	29.48	34.08	30.76	32.26
FeO	37.53	30.66	44.27	51.44
MnO	11.53	13.28	7.37	
ZnO	4.87	2.97	0.89	
BeO	14.17	16.32	[13.42]	13.42
CaO			0.07	
S	5.04	5.61	5.41	5.74
–O = S	2.52	2.80	[2.70]	2.86
Total	100.10	100.12	[99.49]	100.00

(1) Redruth, England; corresponds to $(\text{Fe}_{2.96}^{2+}\text{Mn}_{0.92}^{2+}\text{Zn}_{0.34})_{\Sigma=4.22}\text{Be}_{3.32}\text{Si}_{2.78}\text{O}_{12}\text{S}$. (2) Imalka, Russia; corresponds to $(\text{Fe}_{2.28}^{2+}\text{Mn}_{1.00}^{2+}\text{Zn}_{0.19})_{\Sigma=3.47}\text{Be}_{3.48}\text{Si}_{3.02}\text{O}_{12}\text{S}$. (3) Bartlett, New Hampshire, USA; by electron microprobe, BeO calculated from stoichiometry. (4) $\text{Fe}_4\text{Be}_3(\text{SiO}_4)_3\text{S}$.

Polymorphism & Series: Forms two series, with genthelvite, and with helvite.

Occurrence: In granites, granite pegmatites, zones of contact metamorphism, skarns, and gneisses.

Association: Magnetite, garnet, fluorite (skarn); albite, cassiterite, pyrite, muscovite (tin-bearing pegmatites); arsenopyrite, quartz, chlorite (hydrothermal deposits).

Distribution: In the USA, at Rockport and Gloucester, Essex Co., Massachusetts; on Moat Mountain, Conway, Carroll Co., New Hampshire; at Iron Mountain, Sierra Co., New Mexico; and from the Black Hills, south of Jerome, Yavapai Co., Arizona. From Needlepoint Mountain, McDame area, British Columbia, and on Walrus Island, James Bay, Quebec, Canada. In Sweden, from Yxsjö, Örebro. At Redruth, St. Just, Lanlivery, Falmouth, and Lanivet, Cornwall, England. In Russia, from Imalka, Transbaikal, and other less-well-defined localities. From the Kara mine, Tasmania, and on Mt. Francisco, Ribawa area, Western Australia. In the Mihara mine, Hiroshima Prefecture, Japan.

Name: To honor James Dwight Dana (1813–1895), American geologist and mineralogist, Yale University, New Haven, Connecticut, USA.

Type Material: Harvard University, Cambridge, Massachusetts, 85384; National Museum of Natural History, Washington, D.C., USA, 124353; The Natural History Museum, London, England, 1976,422.

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