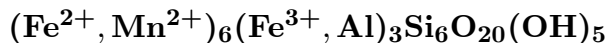


Deerite

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Crystal Data: Monoclinic. *Point Group:* $2/m$. Crystals acicular, lozenge-shaped in cross section, to 1 mm. *Twinning:* Submicroscopic with twin axis [001], pervasive.

Physical Properties: *Cleavage:* Good on {110}. Hardness = n.d. $D(\text{meas.}) = 3.837$
 $D(\text{calc.}) = [3.86]$

Optical Properties: Nearly opaque, transparent on thin edges. *Color:* Black.
Optical Class: Biaxial. *Pleochroism:* Slight; $X = \text{dark brown}$; $Y = Z = \text{dark brown-black}$.
Orientation: $Z = c$. $\alpha = 1.840(1)$ $\beta = \text{n.d.}$ $\gamma = 1.870(1)$ $2V(\text{meas.}) = \text{n.d.}$

Cell Data: *Space Group:* $P2_1/a$. $a = 10.786(8)$ $b = 18.88(2)$ $c = 9.564(9)$
 $\beta = 107.45(5)^\circ$ $Z = 4$

X-ray Powder Pattern: Laytonville district, California, USA. (ICDD 19-421).
9.03 (100), 3.01 (70), 2.64 (55), 2.54 (25), 3.22 (20), 2.37 (20), 9.45 (16)

Chemistry:	(1)	(2)	(3)	(4)
SiO ₂	33.44	33.40	33.27	33.50
Al ₂ O ₃	0.92	0.16	0.41	
Fe ₂ O ₃	22.09	20.89	21.41	22.26
FeO	36.77	34.79	35.64	40.06
MnO	2.86	5.72	0.74	
MgO	0.15	0.25	0.64	
H ₂ O	4.25	[4.25]	[4.25]	4.19
Total	100.48	[99.46]	[96.36]	100.00

(1) Laytonville district, California, USA. (2) Do.; by electron microprobe. (3) Ambin massif, Italy; by electron microprobe; H₂O and Fe²⁺:Fe³⁺ in (2–3) assumed same as (1). (4) Fe²⁺Fe³⁺Si₆O₂₀(OH)₅.

Occurrence: In meta-ironstones and Cu-Fe sulfide deposits, in blueschist facies metasediments formed at high pressure and low temperature.

Association: Howieite, zussmanite, stilpnomelane, spessartine, riebeckite, quartz, aegirine, grunerite, aragonite, manganoan siderite, ferroan kutnohorite (Laytonville district, California, USA).

Distribution: In the USA, in California, in the Laytonville quarry, at Covelo, and at Burn's Flats, Mendocino Co.; at Ward Creek, Cazadero, Sonoma Co.; and at Panoche Pass, San Benito Co.; in Oregon, at Wild Horse Lookout, Curry Co., and in the Powers quarry, Coos Co. From Salbertrand, Valfiorcia, and Beth-Ghinivert, Piedmont, Italy. At Termignon, Haute-Savoie, France. From Sifnos, Greece. At Süpüren-Karaalan, Eskişehir Province, Turkey. From the Diahöt Valley, and at Ouegoa Koumec, New Caledonia. A few other occurrences are known.

Name: To honor Professor William Alexander Deer (1910–), mineralogist-petrologist, Cambridge University, Cambridge, England.

Type Material: National Museum of Natural History, Washington, D.C., USA, 109455; The Natural History Museum, London, England, 1964,543.

References: (1) Agrell, S.O., M.G. Bown, and D. McKie (1965) Deerite, howieite and zussmanite, three new minerals from the Franciscan of the Laytonville district, Mendocino County, California. MSA meeting, Bozeman, Montana, July 26–31, 1964. *Amer. Mineral.*, 50, 278 (abs.). (2) Agrell, S.O. and M. Gay (1970) De la deerite dans les Alpes franco-italiennes. *Bull. Soc. fr. Minéral.*, 93, 263–264 (in French). (3) Fleet, M.E. (1977) The crystal structure of deerite. *Amer. Mineral.*, 62, 990–998. (4) Muir Wood, R. (1979) The iron-rich blueschist facies minerals: I. Deerite. *Mineral. Mag.*, 43, 251–259.

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