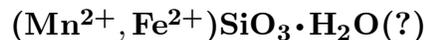


Neotocite

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Crystal Data: Amorphous to poorly crystalline. *Point Group:* n.d. Massive, compact.**Physical Properties:** *Fracture:* Conchoidal. *Tenacity:* Brittle. Hardness = 3–4
D(meas.) = 2.1–2.7 D(calc.) = n.d.**Optical Properties:** Opaque, translucent in thin fragments. *Color:* Black, dark brown to dark olive-green. *Streak:* Dark brown to black. *Luster:* Dull to resinous or vitreous, may be feebly metallic.*Optical Class:* Isotropic essentially. $n = 1.50\text{--}1.65$ **Cell Data:** *Space Group:* n.d. $Z = \text{n.d.}$ **X-ray Powder Pattern:** Montreal mine, Wisconsin, USA; indistinguishable from hisingerite.
4.36 (w), 3.59 (w), 1.54 (w), 2.59 (vw)**Chemistry:**

	(1)	(2)
SiO ₂	40.1	40.19
Al ₂ O ₃	1.3	
Fe ₂ O ₃	0.3	
Mn ₂ O ₃	7.7	
FeO		24.03
MnO	33.7	23.73
MgO	1.5	
CaO	1.3	
Na ₂ O	0.1	
K ₂ O	0.1	
H ₂ O ⁺	11.6	12.05
CO ₂	2.2	
Total	99.9	100.00

(1) Geevor mine, England. (2) (Mn, Fe)SiO₃·H₂O with Fe:Mn = 1:1.**Occurrence:** An alteration product of manganese-bearing silicate minerals.**Association:** Rhodonite, calcite, quartz.**Distribution:** In Sweden, from Gestrikland; at Långban, Jakobsberg, and the Harstigen mine, near Persberg, Värmland; and in the Brunsjö mine, near Grythyttan, Örebro. In Wheal Owles, Penwith, and the Geevor mine, St. Just, Cornwall, England. In the USA, from the Aravaipa district, Graham Co., Arizona; in California, in the Charles Mountain deposit, Humboldt Co., in the Elsinor area, Riverside Co., and at the Johe Ranch mine, San Louis Obispo Co.; from the Montreal mine, Gogebic Range, Iron Co., Wisconsin; and at the Foote mine, Kings Mountain, Cleveland Co., North Carolina. From Bueycito, Oriente Province, Cuba. In Japan, from Shidara, Aichi Prefecture; in the Kawazu mine, Shidzuoka Prefecture; and at Tamaga, Iwate Prefecture. Probably additional localities are not yet recognized.**Name:** From the Greek, meaning *of recent origin*, as it is an alteration product.**References:** (1) Dana, E.S. (1892) Dana's system of mineralogy, (6th edition), 704–705.
(2) Whelan, J.A. and S.S. Goldich (1961) New data for hisingerite and neotocite. *Amer. Mineral.*, 46, 1412–1423. (3) Clark, A.M., A.J. Easton, and M. Mount (1978) A study of the neotocite group. *Mineral. Mag.*, 42, 279–280, M26–M27. (4) Eggleton, R.A., J.H. Pennington, R.S. Freeman, and I.M. Threadgold (1983) Structural aspects of the hisingerite-neotocite series. *Clay Minerals*, 18, 21–31.

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