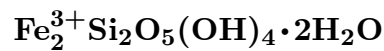


Hisingerite



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Crystal Data: Amorphous to poorly crystalline. *Point Group:* n.d. Commonly massive, compact; may be minutely spherical.

Physical Properties: *Fracture:* Conchoidal. *Tenacity:* Brittle. *Hardness* = 2.5–3
D(meas.) = 2.43–2.67 D(calc.) = n.d.

Optical Properties: Transparent to translucent. *Color:* Black, dark brown; dark green masses may turn brown in light; in thin section, greenish brown or golden yellow. *Streak:* Yellowish brown. *Luster:* Resinous, vitreous, greasy.

Optical Class: Isotropic; locally anisotropic. $n = 1.50\text{--}1.66$

Cell Data: *Space Group:* n.d.

X-ray Powder Pattern: Riddarhyttan, Sweden; easily confused with neotocite.
4.45 (s), 3.53 (s), 2.56 (s), 1.71 (s), 1.54 (s)

Chemistry:

	(1)	(2)
SiO ₂	35.08	34.15
Al ₂ O ₃	1.38	
Fe ₂ O ₃	40.28	45.38
FeO	2.23	
MgO	0.35	
CaO	0.36	
H ₂ O	20.78	20.47
Total	100.46	100.00

(1) Riddarhyttan, Sweden. (2) Fe₂Si₂O₅(OH)₄•2H₂O.

Occurrence: A secondary mineral, formed from the weathering, or late-stage deuteric or hydrothermal alteration, of iron-bearing silicates or sulfides; by late-stage hydrothermal activity during sulfide ore deposition.

Association: Olivine, pyroxene, pyrite, chalcopyrite, pyrrhotite.

Distribution: In small amounts, easily overlooked, from many localities worldwide. Some for described material are: at Riddarhyttan, Västmanland, and Långban, Värmland, Sweden. From Fagul Cetatii, Balan, Romania. At Salberg, Norway. Found near Helsingfors, Finland. From Llallagua, Bolivia. In the USA, in the Hibbing district, St. Louis Co., Minnesota; in Arizona, at the Castle Dome mine, Gila Co., and on the Mildren and Steppe claims, Cababi district, Pima Co.; at the Gap Nickel mine, Lancaster Co., Pennsylvania. In Canada, from the Wilcox mine, Parry Sound, Ontario; at the Tetrault mines, near Montauban-les-mines, Quebec; and from Goldfields, Saskatchewan. In the Kawayama mine, Yamaguchi Prefecture; the Sano mine, Wakayama Prefecture; the Suzuyama mine, Kagoshima Prefecture; and other localities in Japan.

Name: For the Swedish chemist and mineralogist, Vilhelm Hisinger (1766–1852).

References: (1) Dana, E.S. (1892) Dana's system of mineralogy, (6th edition), 702–703. (2) Whelan, J.A. and S.S. Goldich (1961) New data for hisingerite and neotocite. *Amer. Mineral.*, 46, 1412–1423. (3) 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. (4) Farmer, V.C. (1992) Possible confusion between so-called ferrihydrites and hisingerites. *Clay Minerals*, 27, 373–378.