

Cronstedtite



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Crystal Data: Triclinic, monoclinic, or hexagonal. *Point Group:* See polytypes.

As hexagonal prisms, tapering toward one end and vertically striated. In divergent fibrous groups; cylindrical, reniform, massive. *Twining:* Twin axis [001]; interpenetrating trigonal pyramids produce six-rayed composite crystals.

Physical Properties: *Cleavage:* Perfect on {001}. *Tenacity:* Thin laminae are elastic. Hardness = 3.5 D(meas.) = 3.34–3.35 D(calc.) = n.d.

Optical Properties: Nearly opaque. *Color:* Coal-black to brownish black; thin laminae emerald-green by transmitted light, brown to yellow-brown on edges. *Streak:* Dark olive-green. *Luster:* Brilliant.

Optical Class: Biaxial; pseudo-uniaxial (-). *Pleochroism:* In browns and blacks. $\omega = 1.72\text{--}1.80$ $2V(\text{meas.}) = \text{n.d.}$

Cell Data: *Space Group:* *P1*. $a = 5.472(8)$ $b = 9.467(19)$ $c = 14.241(39)$
 $\alpha = 90.015(20)^\circ$ $\beta = 90.042(18)^\circ$ $\gamma = 89.952(15)^\circ$ $Z = 4$

X-ray Powder Pattern: Wheal Jane, Cornwall, England. (ICDD 17-470).
7.09 (100), 3.54 (85), 2.722 (50), 2.439 (40), 1.586 (40), 2.305 (16), 1.680 (16)

Chemistry:

	(1)	(2)
SiO ₂	16.42	15.04
Al ₂ O ₃	0.90	
Fe ₂ O ₃	29.72	39.97
FeO	41.86	35.97
CaO	1.32	
H ₂ O	10.17	9.02
Total	100.39	100.00

(1) Herja, Romania. (2) Fe₂²⁺Fe³⁺(SiFe³⁺)O₅(OH)₄.

Polymorphism & Series: Stacking polytypes have space groups:

P1, *Cc*, *Cm*, *P31m*, *P6₃cm*, *P6₃*, *P3₁*, *P31c*, and *R3*.

Mineral Group: Kaolinite-serpentine group.

Occurrence: A low-temperature hydrothermal product in ore veins.

Association: Siderite, pyrite, sphalerite, clinocllore, quartz.

Distribution: At Příbram, Kutná Hora, Chvaletice, Chyňava, and other places in the Czech Republic. Exceptional groups from Herja (Kisbánya), Romania. From Hagental, Harz Mountains, Germany. In the Salsigne gold mine, 15 km north of Carcassone, Aude, France. In England, from Wheal Jane, Kea; at Wheal Maudlin, Lanlivery; and in the Penlee quarry, Newlyn, Cornwall. In the USA, at Long Hill, Fairfield Co., Connecticut; in the Cornucopia mine, Nye Co., Nevada. From Santa Eulalia, Chihuahua, Mexico. At Conghonas do Campo, Minas Gerais, Brazil. From Llallagua, Bolivia. Additional minor occurrences are known.

Name: To honor the Swedish mineralogist and chemist, Axel Fredrik Cronstedt (1722–1765).

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