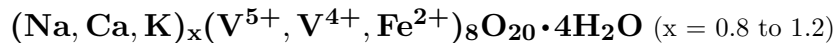


Corvusite

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Crystal Data: Monoclinic. *Point Group:* $2/m$. Rare crystals are lathlike, elongated $\parallel [010]$ and flattened on $\{100\}$, to $0.2 \mu\text{m}$; commonly massive, may display shrinkage cracks from loss of H_2O .

Physical Properties: *Fracture:* Conchoidal. *Tenacity:* Brittle. Hardness = 2.5–3
D(meas.) = 2.82 D(calc.) = 3.02

Optical Properties: Opaque, transparent in very thin lamellae. *Color:* Purplish blue-black to greenish black; olive-green to greenish yellow in thin fragments. *Streak:* Purplish blue-black. *Luster:* "Lustrous". $n = [2.05]$ (rule of Gladstone and Dale).

Optical Class: Biaxial.

R_1 – R_2 : (400) 10.3–20.7, (420) 9.8–19.8, (440) 9.3–18.9, (460) 9.0–18.0, (480) 8.7–17.3, (500) 8.5–16.6, (520) 8.4–16.0, (540) 8.2–15.6, (560) 8.2–15.1, (580) 8.1–14.7, (600) 8.0–14.3, (620) 8.0–14.0, (640) 8.0–13.7, (660) 8.0–13.5, (680) 8.0–13.4, (700) 8.0–13.3

Cell Data: *Space Group:* $C2/m$. $a = 11.706(4)$ $b = 3.644(1)$ $c = 11.11(1)$
 $\beta = 103.46(7)^\circ$ $Z = [1]$

X-ray Powder Pattern: Jack claim, Utah, USA; very close to fernandinite.
10.82 (100), 3.464 (18), 3.590 (6), 1.819 (6), 1.934 (4), 2.595 (3), 3.255 (2)

Chemistry:	(1)	(2)	(1)	(2)
UO_3	1.71	0.0	CaO	1.98
V_2O_5	64.89	85.3	Na_2O	1.44
V_2O_4	9.67		K_2O	1.06
SiO_2	0.30	0.0	H_2O^+	11.68
Al_2O_3		0.02	H_2O^-	[7.2]
Fe_2O_3	5.82	2.0	insol.	1.00
MgO	0.27	0.06	Total	99.90
				[100.0]

(1) Jack claim, Utah, USA; corresponds to $(\text{Na}_{0.40}\text{Ca}_{0.32}\text{K}_{0.20}\text{Fe}_{0.20}\text{Mg}_{0.06})_{\Sigma=1.18}(\text{V}_{7.56}\text{Fe}_{0.44})_{\Sigma=8.00}\text{O}_{20} \cdot 5.96\text{H}_2\text{O}$ (2) Do.; by electron microprobe, average of two analyses, all V as V_2O_5 , H_2O by difference; assuming Al as an impurity, $\text{V}^{5+}:\text{V}^{4+}$ from crystal-structure analysis, corresponds to $(\text{Na}_{0.73}\text{Ca}_{0.26}\text{K}_{0.08})_{\Sigma=1.07}(\text{V}_{7.47}^{5+}\text{Fe}_{0.40}^{2+}\text{V}_{0.14}^{4+})_{\Sigma=8.01}\text{O}_{20} \cdot 5.85\text{H}_2\text{O}$.

Occurrence: In roll-front uranium deposits in sandstone.

Association: Carnotite, fervanite, roscoelite, gypsum.

Distribution: In the USA, in Utah, from the Jack claim, La Sal Mountains, Grand Co., 16 km west of Gateway, Colorado, and in the Flat Top mine, Emery Co.; at the Ponto No. 3 claim, Gypsum Valley, San Miguel Co., and the Hummer mine, Paradox Valley, Montrose Co., Colorado. In Arizona, from the Monument No. 2 mine, Monument Valley, and in the Lukachukai Mountains, Apache Co., and in the Monument No. 1 and Mitten No. 2 mines, Monument Valley, Navajo Co.; probably widespread in carnotite deposits of the Colorado Plateau. In the Mounana uranium mine, Franceville, Gabon. From Balasauskandyk, northwestern Kara-Tau Mountains, Kazakhstan.

Name: From the Latin word for *raven*, in allusion to the similarity of the mineral's color to that of a raven.

Type Material: National School of Mines, Paris, France; National Museum of Natural History, Washington, D.C., USA, 96806.

References: (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 602–603. (2) Ross, M. (1959) Mineralogical applications of electron diffraction. II. Studies of some vanadium minerals of the Colorado Plateau. *Amer. Mineral.*, 44, 322–341. (3) Evans, H.T., Jr. and J.M. Hughes (1990) Crystal chemistry of the natural vanadium bronzes. *Amer. Mineral.*, 75, 508–521, esp. 515. (4) Evans, H.T., Jr., J.E. Post, D.R. Ross, and J.A. Nelen (1994) The crystal structure and crystal chemistry of fernandinite and corvusite. *Can. Mineral.*, 32, 339–351.

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