

Kremersite

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Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. Crystals pseudo-octahedral, with balanced {011} and {210}.

Physical Properties: *Cleavage:* Perfect on {21 $\bar{1}$ } and {011}. Hardness = n.d.
D(meas.) = 2.175 (synthetic). D(calc.) = [2.13] Easily soluble in H₂O; very deliquescent.

Optical Properties: Translucent. *Color:* Ruby-red to red, brownish red; red-brown or yellowish in transmitted light. *Luster:* Vitreous.

Optical Class: [Biaxial (+)] (by analogy to erythrosiderite). *Orientation:* $X = a$; $Y = b$; $Z = c$.
 $\alpha = [1.733]$ $\beta = [1.763]$ $\gamma = [1.807]$ $2V(\text{meas.}) = [70^\circ]$

Cell Data: *Space Group:* $Pnma$. $a = 13.78$ $b = 9.85$ $c = 7.09$ $Z = 4$

X-ray Powder Pattern: Synthetic (NH₄, K)₂FeCl₅ • H₂O with NH₄:K ~1:1.
2.800 (100), 5.72 (80), 2.451 (65), 2.794 (60), 5.61 (55), 2.783 (55), 4.900 (40)

Chemistry:

	(1)	(2)
Na	0.16	
K	12.07	
NH ₄	6.17	12.56
Fe	16.89	19.44
Cl	55.15	61.73
H ₂ O	[9.56]	6.27
Total	[100.00]	100.00

(1) Vesuvius, Italy. (2) (NH₄, K)₂FeCl₅ • H₂O with NH₄:K = 1:1.

Occurrence: As sublimates around fumaroles.

Association: Erythrosiderite, molysite, hematite (Vesuvius, Italy); erythrosiderite (Kliuchevsky volcano, Russia).

Distribution: On Vesuvius, Campania, Italy. From the Kliuchevsky volcano, Kamchatka Peninsula, and at Kopeysk, Chelyabinsk coal basin, Southern Ural Mountains, Russia.

Name: Honors the German chemist, Peter Kremers (1827–?), who analyzed the mineral.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 101–103. (2) (1977) NBS Mono. 25, 14, 8. (3) Fleischer, M., R.E. Wilcox, and J.J. Matzko (1984) Microscopic determination of the nonopaque minerals. U.S. Geol. Sur. Bull. 1627, 187.