Erythrosiderite $K_2Fe^{3+}Cl_5 \cdot H_2O$

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. As tabular pyramidal crystals, flattened on {100}, showing {100}, {210}, {201}, {101}, {011}, {010}, to 0.03 mm.

Physical Properties: *Cleavage:* Perfect on {210} and {011}. Hardness = n.d. D(meas.) = n.d. D(calc.) = 2.364 Easily soluble in H_2O; very deliquescent.

Optical Properties: Translucent. *Color:* Ruby-red to red and brownish red; brownish red to yellowish in transmitted light. *Luster:* Vitreous.
Optical Class: Biaxial (+). *Orientation:* $X = a$; $Y = c$; $Z = b$. *Dispersion:* $r > v$, strong.
$\alpha = 1.715$ $\beta = 1.75$ $\gamma = 1.79$–1.80 2V(meas.) = 62°

Cell Data: *Space Group: Pnma.* $a = 13.75$ $b = 9.924$ $c = 6.93$ $Z = 4$

X-ray Powder Pattern: Synthetic.
2.782 (100), 5.566 (40), 2.427 (40), 5.68 (35), 2.440 (25), 2.993 (19), 2.841 (16)

Chemistry:

	(1)	(2)
K	24.21	23.74
Fe	16.81	16.96
Cl	53.30	53.83
H_2O	[5.68]	5.47
Total	[100.00]	100.00

(1) Vesuvius, Italy; H_2O by difference. (2) $K_2FeCl_5 \cdot H_2O$.

Occurrence: As sublimates around fumaroles (Vesuvius, Italy); rimming rinneite in bedded salt deposits (Stassfurt, Germany; Kansk-Taseev depression, Russia).

Association: Kremersite, molysite, hematite (Vesuvius, Italy); rinneite (Stassfurt, Germany; Kansk-Taseev depression, Russia).

Distribution: On Vesuvius, Campania, Italy. In Germany, at Stassfurt, 34 km south of Magdeburg, Saxony-Anhalt. From Aislaby, near Whitby, Yorkshire, England. In the Kansk-Taseev depression, Siberia, and at the Kliuchevsky volcano, Kamchatka Peninsula, Russia.

Name: From the Greek for *red* and *iron*, in allusion to its color and composition.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 101–103. (2) Bellanca, A. (1948) La struttura dell'eritrosiderite. Periodico Mineral, 17, 59–72 (in Italian with English abs.). (3) Kolosov, A.S., A.M. Pustyl'nikov, and T.M. Zharkova (1968) Complex chlorides of iron and manganese in Cambrian salt deposits of the Kansk-Taseev depression. Doklady Acad. Nauk SSSR, 181, 1472–1475 (in Russian). (4) (1977) NBS Mono. 25, 14, 27.