

Crystal Data: Monoclinic. *Point Group:* 2/m. In fine granular, impure masses of minute fibers; single, fine-bladed crystals, to 1 mm in length.

Physical Properties: *Cleavage:* Good on {110}. *Hardness =* Very soft. VHN = 22–67, 39 average (15 g load). D(meas.) = 2.2, 2.30 (magnetite-contaminated). D(calc.) = 2.216

Optical Properties: Opaque, transmits light in very fine fibers. *Color:* Copper-red to bronze on fresh surface, may be chatoyant, tarnishes rapidly. *Streak:* Black. *Pleochroism:* Extreme: brilliant reddish orange through greenish grays and pinkish grays to dark gray with a barely perceptible bluish or greenish tint. *Anisotropism:* Strong.

R₁–R₂: (400) 10.2–23.8, (420) 9.8–28.8, (440) 10.1–27.3, (460) 10.9–20.8, (480) 11.3–15.6, (500) 11.3–16.6, (520) 11.0–23.3, (540) 10.6–25.7, (560) 10.3–25.7, (580) 10.0–31.6, (600) 9.8–36.6, (620) 9.7–43.1, (640) 9.8–46.9, (660) 10.0–44.3, (680) 10.6–39.3, (700) 11.0–35.3

Cell Data: *Space Group:* C2/c. *a* = 10.677–10.693 *b* = 9.083–9.115 *c* = 5.499–5.507
β = 92°10(2)′–92°23(4)′ *Z* = 4

X-ray Powder Pattern: Coyote Peak, California, USA.
6.935 (100), 5.342 (71), 4.556 (41), 3.467 (28), 2.310 (23), 2.902 (15), 3.317 (12)

Chemistry:	(1)	(2)	(3)
Na	14.1	11.2	12.84
K		0.12	
Fe	36.0	34.9	31.20
S	40.5	37.6	35.82
O	[9.4]	[16.2]	17.88
H			[2.26]
Total	[100.0]	[100.02]	100.00

- (1) Coyote Peak, California, USA; by electron microprobe, oxygen by difference; corresponds to Na_{0.96}Fe_{1.01}S_{1.96}•0.82H₂O, presence of H₂O confirmed by evolution, with 2H₂O established by crystal structure analysis. (2) Lovozero massif, Russia; by electron microprobe, average of ten analyses, oxygen by difference; corresponds to (Na_{0.81}K_{0.01})_{Σ=0.82}Fe_{1.04}S_{1.96}•1.50H₂O. (3) NaFeS₂•2H₂O.

Occurrence: Found in abundance, typically associated with other sulfides and fine grained magnetite, in discrete, late segregations within an alkalic mafic diatreme (Coyote Peak, California, USA); in pegmatites in nepheline syenite (Lovozero massif, Russia).

Association: Pyrrhotite, magnetite, rasvumite, djerfisherite, bartonite (Coyote Peak, California, USA); pyrite, murmanite (Lovozero massif, Russia).

Distribution: At Coyote Peak, near Orick, Humboldt Co., California, USA [TL]. From Mt. Alluaiv, Lovozero massif, Kola Peninsula, Russia. In Canada, at Mont Saint-Hilaire and near Saint-Amable, Quebec.

Name: For Dr. Richard Clarkson Erd (1924–), American mineralogist with the U.S. Geological Survey, who first synthesized the compound.

Type Material: n.d.

References: (1) Czamanske, G.K., B.F. Leonard, and J.R. Clark (1980) Erdite, a new hydrated sodium iron sulfide mineral. *Amer. Mineral.*, 65, 509–515. (2) Konnert, J.A. and H.T. Evans, Jr. (1980) The crystal structure of erdite, NaFeS₂•2H₂O. *Amer. Mineral.*, 65, 516–521. (3) Khomyakov, A.P., M.F. Korobitsyn, M.G. Dobrovolskaya, and A.I. Tsepina (1979) Erdite (NaFeS₂•2H₂O) — first occurrence in the USSR. *Doklady Acad. Nauk SSSR*, 249, 968–971 (in Russian). (4) Criddle, A.J. and C.J. Stanley, Eds. (1993) Quantitative data file for ore minerals, 3rd ed. Chapman & Hall, London, 157.

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