

Crystal Data: Hexagonal. *Point Group:* $\bar{3}2/m$. Crystals tabular on {0001}, to 8 mm; also equant, bounded by {0001} and {101 $\bar{1}$ }; as botryoidal crusts, spherulitic, powdery, massive. *Twinning:* On {0001}, as contact twins.

Physical Properties: *Cleavage:* {101 $\bar{1}$ }, imperfect. *Tenacity:* Brittle. Hardness = 5.5 D(meas.) = 5.41 D(calc.) = 5.52 Weakly magnetic.

Optical Properties: Opaque. *Color:* Black; pale brownish rose in reflected light. *Streak:* Black. *Luster:* Metallic. *Optical Class:* Uniaxial. *Pleochroism:* Distinct; *O* = pale golden brown; *E* = rose-brown. *Anisotropism:* Strong.

*R*₁–*R*₂: (400) 18.4–22.2, (420) 18.6–22.3, (440) 18.8–22.4, (460) 19.0–22.6, (480) 19.0–22.9, (500) 18.9–23.2, (520) 19.0–23.4, (540) 19.0–23.4, (560) 19.1–23.2, (580) 19.2–23.0, (600) 19.3–23.0, (620) 19.6–23.2, (640) 20.0–23.5, (660) 20.6–23.8, (680) 21.1–24.2, (700) 21.8–24.8

Cell Data: *Space Group:* $R\bar{3}m$. *a* = 3.02–3.04 *c* = 17.10–17.12 *Z* = 3

X-ray Powder Pattern: Locality unknown. (ICDD 12-752). 2.508 (100), 1.512 (40), 2.86 (35), 1.658 (35), 2.238 (25), 1.434 (20), 2.58 (18)

Chemistry:	(1)	(2)	(3)
Cu	42.14	41.32	41.97
Fe	33.56	37.26	36.89
O	[19.74]	[21.21]	21.14
rem.	3.52	0.21	
Total	[98.96]	[100.00]	100.00

(1) Yekaterinburg, Russia; remnant is Al₂O₃. (2) Bisbee, Arizona, USA; average of two analyses, remnant is hematite. (3) CuFeO₂.

Occurrence: Principally as a secondary mineral near the base of the oxidized zone of copper deposits; less commonly a primary mineral.

Association: Cuprite, copper, tenorite, malachite, hematite, kaolinite.

Distribution: In the Mednorudyanskoye copper deposit, Nizhni Tagil, near Yekaterinburg (Sverdlovsk), Ural Mountains, and elsewhere in Russia. From the Cartagenera mine, near Pedroso, Sevilla, Spain. In the Tolvaddon mine, Marazion, Cornwall, England. In Germany, from Pfaffenreuth and Waldsassen, Bavaria; in the Clara mine, near Oberwolfach, Black Forest. At Tary-Ekan, Karamazan, Tajikistan. From Mina Remolinos Nuevo, Atacama, Chile. At the Ojuela mine, Mapimí, Durango, Mexico. In the USA, good crystals from Bisbee, Cochise Co., and in the United Verde mine, Jerome, Yavapai Co., Arizona; from the Alpha mine, Kimberly, White Pine Co., and Eureka, Eureka Co., Nevada; from the Pope-Shenon copper mine near Salmon, Lemhi Co., Idaho; in the Kirwin mineralized area, Park Co., Wyoming. From Akjoujt, Mauritania. In the Malanjhand copper deposit, north of Durg, Madhya Pradesh, India. A few other less-well-defined localities are known.

Name: For the French mineralogist and crystallographer, Gabriel Delafosse (1796–1878).

Type Material: National School of Mines, Paris, France.

References: (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 674–675. (2) Pabst, A. (1946) Notes on the structure of delafossite. *Amer. Mineral.*, 31, 539–546. (3) Wiedersich, H., J.W. Savage, A.H. Muir, Jr., and D.G. Swarthout (1968). On the composition of delafossite. *Mineral. Mag.*, 36, 643–650. (4) Hey, M.H. (1968) On the composition of natural delafossite. *Mineral. Mag.*, 36, 651–653. (5) Pabst, A. (1975) Der Strukturtyp F51 und verwandte Strukturen. *Neues Jahrb. Mineral., Abh.*, 123, 116–127 (in German with English abs.).

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