

Crystal Data: Orthorhombic, pseudotetragonal. *Point Group:* 2/m 2/m 2/m. Crystals platy on {010}; granular, less than 0.1 mm, in aggregates.

Physical Properties: *Cleavage:* {h0l}, distinct. Hardness = 5.5 D(meas.) = 4.04(1) D(calc.) = 4.03 Weakly magnetic.

Optical Properties: Opaque, transparent in thin slivers. *Color:* Black; red-brown in transmitted light. *Streak:* Grayish brown. *Luster:* Adamantine, metallic in aggregates. *Optical Class:* Biaxial (-) (?). *Pleochroism:* Weak; in brownish reds. *Orientation:* X = [010]. $\alpha = \sim 2.24$ $\beta = \sim 2.25$ $\gamma = \sim 2.27$ 2V(meas.) = n.d. 2V(calc.) = 71° (synthetic).

Cell Data: *Space Group:* Pnma. a = 5.420(3) b = 14.752(3) c = 5.594(3) Z = 4

X-ray Powder Pattern: Kopeysk, Russia.

7.381 (10), 3.690 (10), 2.676 (10), 1.844 (10), 1.946 (7), 2.797 (6), 2.710 (6)

Chemistry:

	(1)	(2)
Al ₂ O ₃	0.00	
Fe ₂ O ₃	56.50	58.74
MnO	0.90	
MgO	1.19	
CaO	41.69	41.26
Total	100.28	100.00

(1) Kopeysk, Russia; corresponds to Ca_{2.01}(Fe_{1.91}³⁺Mg_{0.08}Mn_{0.03})_{Σ=2.02}O₅. (2) Ca₂Fe₂³⁺O₅.

Occurrence: Formed from calcined ankerite in petrified wood baked by burning coal heaps (Kopeysk, Russia); in leucite tephrite lava at contacts between lava and calcium-rich xenoliths (Bellerberg volcano, Germany).

Association: Portlandite, fluorellestadite, lime, periclase, spurrite, larnite, magnesioferrite, hematite, anhydrite (Kopeysk, Russia); sanidine, clinopyroxene, pyrrhotite, thompsonite, ettringite, willhendersonite, gismondine, jasmundite, mayenite, bellbergite, calcic olivine, portlandite (Bellerberg volcano, Germany).

Distribution: From mines around Kopeysk, Chelyabinsk coal basin, Southern Ural Mountains, Russia. At the Bellerberg volcano, two km north of Mayen, Eifel district, Germany.

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Type Material: Mining Institute, St. Petersburg, 1943/1; Il'menskii Preserve Museum, Miass; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 84277, vis6221.

References: (1) Chesnokov, B.V. and L.F. Bazhenova (1985) Srebrodolskite Ca₂Fe₂O₅ – a new mineral. Zap. Vses. Mineral. Obshch., 114, 195–199 (in Russian). (2) (1986) Amer. Mineral., 71, 1279–1280 (abs. ref. 1). (3) (1986) Mineral. Abs., 37, 531 (abs. ref. 1). (4) Smith, D.K. (1962) Crystallographic changes with the substitution of aluminum for iron in dicalcium ferrite. Acta Cryst., 15, 1146–1152.