Kobyashevite $Cu_5(SO_4)_2(OH)_6 \cdot 4H_2O$

Crystal Data: Triclinic. *Point Group*: $\bar{1}$. As prismatic crystals, typically curved or split, to 0.2 mm, in crusts to 2 mm.

Physical Properties: *Cleavage*: Distinct on {010}. *Fracture*: Stepped. *Tenacity*: Brittle. Hardness = 2.5 D(meas.) = n.d. D(calc.) = 3.16

Optical Properties: Transparent. *Color*: Bluish-green to turquoise-blue. *Streak*: Bluish green. *Luster*: Vitreous.
Optical Class: Biaxial (–). α = 1.602(4) β = 1.666(5) γ = 1.679(5) 2V(meas.) = 50(10)° 2V(calc.) = 47° *Dispersion*: $r < v$, strong. *Orientation*: $Z \approx$ elongation. *Pleochroism*: Medium, in bluish-green. *Absorption: $Z > Y > X$.*

Cell Data: *Space Group*: $P\bar{1}$. a = 6.0731(6) b = 11.0597(13) c = 5.5094(6) α = 102.883(9)° β = 92.348(8)° γ = 92.597(9)° Z = 1

X-ray Powder Pattern: Kapital'naya mine, Vishnevye Mountains, South Urals, Russia. 10.84 (100), 5.399 (40), 3.590 (16), 2.691 (16), 5.178 (12), 2.653 (12), 2.583 (12)

Chemistry:	(1)
CuO	57.72
ZnO	0.09
FeO	0.28
SO_3	23.52
H_2O	[18.39]
Total	100.00

(1) Kapital'naya mine, Vishnevye Mountains, South Urals, Russia; average of 4 electron microprobe analyses supplemented by IR spectroscopy, H_2O by difference; corresponding to $Cu_{4.96}Fe_{0.03}Zn_{0.01}S_{2.01}O_{8.04}(OH)_{5.96} \cdot 4H_2O$.

Mineral Group: Devilline group.

Occurrence: As a secondary mineral in pyrite-chalcopyrite veins cutting fenites in an alkaline igneous complex.

Association: Calcite, quartz.

Distribution: At the Kapital'naya mine, Vishnevye Mountains, Chelyabinsk Oblast', South Urals, Russia.

Name: Honors Russian mineralogist Yuriy Stepanovich Kobyashev (1935-2009), a specialist on the mineralogy of the Urals.

Type Material: A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (4152/1).

References: (1) Pekov, I.V., N.V. Zubkova, V.O. Yapaskurt, D.I. Belakovskiy, N.V. Chukanov, A.V. Kasatkin, A.M. Kuznetsov, and D.Yu. Pushcharovsky (2013) Kobyashevite, $Cu_5(SO_4)_2(OH)_6 \cdot 4H_2O$, a new devilline-group mineral from the Vishnevye Mountains, South Urals, Russia. Mineralogy and Petrology, 107(2), 201-210. (2) (2016) Amer. Mineral., 101, 488-489 (abs. ref. 1).