Ericlaxmanite $Cu_4O(AsO_4)_2$

Crystal Data: Triclinic. *Point Group*: $\bar{1}$. As tabular, lamellar, equant or short prismatic crystals to 0.1 mm and as pseudomorphs after urusovite crusts to 2 cm.

Physical Properties: *Cleavage*: Distinct, one direction (observed under the microscope). *Fracture*: Uneven. *Tenacity*: Brittle. Hardness = ~ 3.5 D(meas.) = n.d. D(calc.) = 5.036

Optical Properties: Transparent. *Color*: Green to dark green. *Streak*: Light green. *Luster*: Vitreous.
Optical Class: Biaxial (-). α = 1.870(10) β = 1.900(10) γ = 1.915(10) 2V(meas.) = 60(15)° 2V(calc.) = 70° *Pleochroism*: Strong; *Z* = bright green, *Y* = green, *X* = very pale green.
Absorption: *Z* > *Y* > *X*. *Dispersion*: Weak, *r* > *v*.

Cell Data: *Space Group*: $P\bar{1}$. a = 6.4271(4) b = 7.6585(4) c = 8.2249(3) α = 98.396(4)° β = 112.420(5)° γ = 98.397(5)° Z = 2

X-ray Powder Pattern: Arsenatnaya fumarole, Tolbachik volcano, Kamchatka, Russia.
3.685 (100), 2.777 (98), 3.063 (71), 2.957 (58), 2.201 (51), 3.868 (46), 2.698 (46)

Chemistry:	(1)	(2)
CuO	57.55	58.06
ZnO	0.90	
Fe_2O_3	0.26	
P_2O_5	0.23	
V_2O_5	0.14	
As_2O_5	40.57	41.94
SO_3	0.17	.
Total	99.82	100.00

(1) Arsenatnaya fumarole, Tolbachik volcano, Kamchatka, Russia; average of 6 electron microprobe analyses supplemented by Raman spectroscopy; corresponding to $(Cu_{3.97}Zn_{0.06}Fe_{0.02})_{\Sigma=4.05}(As_{1.94}P_{0.02}V_{0.01}S_{0.01})_{\Sigma=1.98}O_9$. (2) $Cu_4O(AsO_4)_2$.

Occurrence: As complex incrustations on the surface of basalt scoria or in open pockets. Deposited directly from volcanic gas or as the result of gas-rock interactions at temperatures > 380 °C.

Association: Kozyrevskite, urusovite, lammerite, lammerite-β, popovite, alarsite.

Distribution: From Arsenatnaya fumarole, Second scoria cone of the Northern Breakthrough of the Great Tolbachik Fissure Eruption, Tolbachik volcano, Kamchatka, Russia.

Name: Honors the Russian mineralogist, geologist, geographer, biologist and chemist Eric Laxman (1737-1796) for his contributions to the study of the natural history of Eastern Siberia.

Type Material: A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (94132).

References: (1) Pekov, I.V., N.V. Zubkova, V.O. Yapaskurt, D.I. Belakovskiy, M.F. Vigasina, E.G. Sidorov, and D.Yu. Pushcharovsky (2014) New arsenate minerals from the Arsenatnaya fumarole, Tolbachik volcano, Kamchatka, Russia. II. Ericlaxmanite and kozyrevskite, two natural modifications of $Cu_4O(AsO_4)_2$. Mineral. Mag., 78(7), 1553-1569. (2) (2016) Amer. Mineral., 101, 1242-1243 (abs. ref. 1).