Wrightite $K_2Al_2O(AsO_4)_2$

Crystal Data: Orthorhombic. *Point Group*: 2/*m* 2/*m* 2/*m*. As aggregates of imperfect tabular crystals to 0.05 mm.

Physical Properties: *Cleavage*: None. *Fracture*: n.d. *Tenacity*: Brittle. Hardness = n.d. D(meas.) = n.d. D(calc.) = 3.50

Optical Properties: Transparent. *Color*: Colorless to light yellow. *Streak*: White. *Luster*: Vitreous.
Optical Class: Biaxial (-). $\alpha = 1.679(2)$ $\beta = 1.685(2)$ γ(calc.) = 1.687(2) 2V(meas.) = 62(10)°
Pleochroism: None. *Orientation*: *X* and *Y* ∥ tabular plane. Positive elongation.

Cell Data: Space Group: *Pnma*. $a = 8.2377(3)$ $b = 5.5731(6)$ $c = 17.683(1)$ $Z = 4$

X-ray Powder Pattern: Second cinder cone, Tolbachik volcano, Kamchatka Peninsula, Russia. 2.972 (100), 8.77 (36), 4.010 (19), 3.875 (19), 6.01 (18), 4.458 (17), 4.097 (16)

Chemistry:

	(1)	(2)
Na_2O	2.72	
K_2O	18.31	22.1
As_2O_5	51.89	54.0
Al_2O_3	21.14	23.9
Fe_2O_3	4.39	.
Total	98.45	100.0

(1) Second cinder cone, Tolbachik volcano, Kamchatka Peninsula, Russia; average of 11 EDS analyses; corresponds to $(K_{1.69}Na_{0.38})_{\Sigma=2.07}(Al_{1.80}Fe_{0.24})_{\Sigma=2.04}As_{1.96}O_9$. (2) $K_2Al_2O(AsO_4)_2$.

Occurrence: As sublimates on basaltic scoria near a volcanic fumarole vent (500-6000 °C.).

Association: Sylvite, ponomarevite, piypite, dolerophanite, euchlorine, lammerite, johillerite, urusovite, bradaczekite, filatovite, hatertite, hematite, ozerovaite, tenorite.

Distribution: From the Second scoria cone, Tolbachik volcano, Kamchatka Peninsula, Russia.

Name: Honors Adrian Carl Wright (b. 1944), Emeritus Professor, University of Reading, UK, a well-known expert in structural studies of glass-forming systems.

Type Material: Mineralogical Museum, St. Petersburg State University, St. Petersburg, Russia (1/19653).

References: (1) Shablinskii, A.P., S.K. Filatov, L.P. Vergasova, E.Yu. Avdontseva, and S.V. Moskaleva (2018) Wrightite, $K_2Al_2O(AsO_4)_2$, a new oxo-orthoarsenate from the Second scoria cone, Northern Breakthrough, Great Fissure eruption, Tolbachik volcano, Kamchatka peninsula, Russia. Mineral. Mag., 82(6), 1243-1251. (2) (2019) Amer. Mineral., 104(12), 1871 (abs. ref. 1).