Steklite $KAl(SO_4)_2$

Crystal Data: Hexagonal. *Point Group*: 32. As hexagonal or irregularly shaped crystals, platy on (001), to 1 mm. Crystals often split and combined in open aggregates or thin crusts.

Physical Properties: *Cleavage:* Perfect on {001}. *Tenacity:* Brittle. *Fracture:* n.d.
Hardness = 2.5 D(meas.) = n.d. D(calc.) = 2.797

Optical Properties: Transparent. *Color:* Colorless, white to grayish-white in aggregates.
Streak: White. *Luster:* Vitreous.
Optical Class: Uniaxial (-). $\omega = 1.546(2)$ $\varepsilon = 1.533(3)$ *Pleochroism:* None.

Cell Data: Space Group: *P*321. $a = 4.7281(3)$ $c = 7.9936(5)$ $Z = 1$

X-ray Powder Pattern: Tolbachik volcano, Kamchatka, Russia.
3.649 (100), 2.861 (51), 8.02 (34), 2.364 (25), 2.660 (19), 2.267 (14), 1.822 (12), 4.085 (11)

Chemistry:

	(1)
Na_2O	0.09
K_2O	18.12
CaO	0.08
MnO	0.03
Fe_2O_3	2.02
Al_2O_3	18.18
SO_3	61.80
Total	100.37

(1) Tolbachik volcano, Kamchatka, Russia; average of 5 electron microprobe analyses, corresponds to $(K_{0.997}Na_{0.008}Ca_{0.004})_{\Sigma=1.009}(Al_{0.925}Fe^{3+}_{0.066}Mg_{0.003}Mn_{0.001})_{\Sigma=0.995}S_{2.001}O_8$.

Occurrence: A volcanic sublimate formed at 150-170 °C as part of sulfate crusts around an active fumarole. Also described as a sublimate near burning coal deposits.

Association: Alumoklyuchevskite, langbeinite, euchlorine, fedotovite, chalcocyanite, hematite, kamchatkite, atlasovite, melanothallite, tenorite, avdoninite, belloite, ziesite, Cu-lyonsite (Tolbackhik, Russia).

Distribution: From the Second scoria cone of the Northern Breakthrough of the Great Tolbachik Fissure Eruption (1975–1976), Tolbachik volcano, Kamchatka, and the dumps of coal mine N 47 near Kopeisk, South Urals, Russia. At Showashinzan volcano, Hokkaido, Japan. From Izalco volcano, El Salvador and Santiaguit volcano, Guatemala. From burning anthracite coal deposits Eastern Pennsylvania, USA.

Name: From the Russian word *стекло* (*steklo*) for *glass* as an allusion to the visual appearance of aggregates of the mineral formed around vents of a burning coal heap (coal mine N 47 near Kopeisk, South Urals, Russia).

Type Material: A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia; 4109/1.

References: (1) Murashko, M.N., I.V. Pekov, S.V. Krivovichev, A.P. Chern-yatyeva, V.O. Yapaskurt, A.E. Zadov, and M.E. Zelensky (2012) Steklite, $KAl(SO_4)_2$: the find at Tolbachik volcano (Kamchatka, Russia), validation as a mineral species and crystal structure. Zap. Ross. Mineral. Obshch., 141(4), 36-44 (in Russian, English abstract). (2) (2013) Amer. Mineral., 98, 2203-2204 (abs. ref. 1 and additional references).