

Kalistrontite

K₂Sr(SO₄)₂

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Crystal Data: Hexagonal. *Point Group:* $\bar{3}m$. Platy crystals, showing {10 $\bar{1}$ 0} and {0001}, to 2.2 cm.

Physical Properties: *Cleavage:* On {0001}, perfect. *Tenacity:* Brittle. Hardness = 2–2.5 D(meas.) = 3.30 D(calc.) = 3.32 Soluble in H₂O.

Optical Properties: Transparent. *Color:* Colorless. *Luster:* Vitreous. *Optical Class:* Uniaxial (-). $\omega = 1.569(2)$ $\epsilon = 1.549(2)$

Cell Data: *Space Group:* $R\bar{3}m$ (synthetic). $a = 5.45(3)$ $c = 20.7(1)$ $Z = 3$

X-ray Powder Pattern: Alshtan, Russia.

3.14 (100), 1.904 (9), 2.73 (8), 1.236 (8), 1.041 (7), 6.7 (6), 2.06 (6)

Chemistry:

	(1)	(2)	(3)	(4)
SO ₃	45.45	47.73	43.72	44.73
R ₂ O ₃	0.02			
MgO	0.13	0.14	0.34	
CaO	5.15	5.41	3.99	
SrO	23.20	24.35	25.08	28.95
Na ₂ O	4.15	2.18	1.50	
K ₂ O	19.22	20.19	22.22	26.32
Cl	1.56		1.72	
H ₂ O	0.90		0.28	
insol.	0.07		0.63	
–O = Cl ₂	0.35		0.14	
Total	99.50	[100.00]	99.34	100.00

(1) Alshtan, Russia. (2) Analysis (1) recalculated after deduction of included halite and anhydrite; corresponds to (K_{0.85}Na_{0.14})_{Σ=0.99}(Sr_{0.94}Mg_{0.01})_{Σ=0.95}(SO₄)₂. (3) Pleismar, Germany. (4) K₂Sr(SO₄)₂.

Occurrence: In a drillhole into anhydrite beds, probably formed by the reaction of sylvite with strontium-bearing solutions (Alshtan, Russia); an alteration product of celestine (Pleismar, Germany); in a lake-bed evaporite (Omongwa Pan, Namibia).

Association: Halite, anhydrite, dolomite, sylvite, clay (Alshtan, Russia); halite, sylvite, anhydrite (Pleismar, Germany); gypsum (Omongwa Pan, Namibia).

Distribution: From near Alshtan, Sterlitamak district, southwestern Ural Mountains, Russia. In Germany, at Bohrung, near Pleismar, Saxony-Anhalt, and from Kalkberg, near Lüneburg, Lower Saxony. From Stebnyk, Ukraine. In the Cesano geothermal field, Latium, Italy. At the Omongwa Pan, southwestern Kalahari, Namibia.

Name: For potassium, KAlIum, and STRONTium in the composition.

Type Material: Mining Institute, St. Petersburg, 1397/1; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 69943.

References: (1) Voronova, M.L. (1962) Kalistrontite – a new potassium strontium sulfate. Zap. Vses. Mineral. Obshch., 91, 712–717 (in Russian). (2) (1963) Amer. Mineral., 48, 708–709 (abs. ref. 1). (3) Bader, E. and G. Böhm (1966) Kalistrontit, im Flöz Stassfurt des Rossleben-Unstrut-Reviers. Chem. Erde, 25, 253–257 (in German). (4) (1977) NBS Mono 25, 14.