

Bystrite**Na₇Ca(Al₆Si₆O₂₄)(S₅)(Cl)**

Crystal Data: Hexagonal. *Point Group:* 3*m*. As elongated platy crystals to 5 mm or as irregular grains to 3 mm.

Physical Properties: *Cleavage:* Good on {10 $\bar{1}$ 0}; poor parting on {0001}. *Tenacity:* Brittle. *Fracture:* n.d. *Hardness* = 5 *D*(meas.) = 2.43(1) *D*(calc.) = 2.45

Optical Properties: Translucent. *Color:* Deep yellow; in thin section, yellow. *Streak:* n.d. *Luster:* Vitreous. *Optical Class:* Uniaxial (+). $\omega = 1.660$ $\varepsilon = 1.584$ *Pleochroism:* Deep yellow to colorless. *Absorption:* *O* > *E*. *Orientation:* Negative elongation.

Cell Data: *Space Group:* P31*c*. *a* = 12.8257(6) *c* = 10.6907(6) *Z* = 2

X-ray Powder Pattern: Malaya Bystraya lazurite deposit, Eastern Siberian Region, Russia. 3.712 (100), 3.307 (50), 3.915 (38), 4.821 (32), 2.673 (30), 2.692 (22), 2.782 (18)

Chemistry:	(1)
SiO ₂	32.9
Al ₂ O ₃	27.2
CaO	5.1
Na ₂ O	19.5
K ₂ O	0.18
S	14.7
Cl	2.79
- O = S	1.38
- O = Cl	0.63
Total	99.46

(1) Malaya Bystraya lazurite deposit, Eastern Siberian Region, Russia; average of 12 electron microprobe analyses supplemented by FTIR spectroscopy; corresponds to Na_{7.03}K_{0.04}Ca_{1.01}[Al_{6.04}Si_{5.96}O₂₄](S₅)²⁻_{0.94}[Cl_{0.88}(SH)_{0.12}].

Mineral Group: Cancrinite group.

Occurrence: As metasomatic lenses in dolomitic marble.

Association: Lazurite, diopside, calcite, pyrite.

Distribution: Found at the Malaya Bystraya lazurite deposit, ~6 km above the confluence of Malaya Bystraya river and Lazurnyi creek, ~25 km from Sludyanka, near Lake Baikal, Eastern Siberian Region, Russia.

Name: Presumably for the occurrence in the Malaya Bystraya deposit, Russia.

Type Material: A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia.

References: (1) Ivanov, V.G. and A.N. Sapozhnikov (1985) Lazurites of the USSR. *Nauka*, Novosibirsk, 1-172 (in Russian). (2) Sapozhnikov, A.N., V.G. Ivanov, L.F. Piskunova, A.A. Kashaev, L.E. Terentieva, and E.A. Pobedimskaya (1991) Bystrite Ca(Na,K)₇(Si₆Al₆O₂₄)(S₃)_{1.5}•H₂O - a new cancrinite-like mineral. *Zap. Vses. Mineral. Obsch.*, 120(3), 97-100 (in Russian). (3) Pobedimskaya, E.A., L.E. Terentieva, A.N. Sapozhnikov, A.A. Kashaev, and G.I. Dorokhova (1991) Crystal structure of bystrite. *Doklady Acad. Nauk SSSR*, 319, 873-878 (in Russian). (4) (1993) *Amer. Mineral.*, 78, 450 (abs. refs. 1, 2 and 3). (5) Sapozhnikov, A.N., E.V. Kaneva, L.F. Suvorova, V.I. Levitsky, and L.A. Ivanova (2017) Sulfhydrylbystrite, Na₅K₂Ca(Al₆Si₆O₂₄)(S₅)(SH), a new mineral with the LOS framework, and re-interpretation of bystrite: cancrinite-group minerals with novel extra-framework anions. *Mineral. Mag.*, 81(2), 383-402. (6) (2017) *Amer. Mineral.*, 102, 2345-2346 (abs. ref. 5).