

Innelite**Na₂CaBa₄Ti₃O₄(Si₂O₇)₂(SO₄)₂**

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Crystal Data: Triclinic. *Point Group:* 1. As plates, to 1 cm, rarely with faces, with {001} and {010} the most common; in radiating groups. *Twinning:* Polysynthetic Manebach twinning.

Physical Properties: *Cleavage:* Perfect on {010}, {110}, {1̄10}, good on {001}.

Tenacity: Brittle. Hardness = 4.75 VHN = 435 D(meas.) = 3.96 D(calc.) = [3.81] Piezoelectric; slightly electromagnetic.

Optical Properties: Transparent to translucent. *Color:* Pale yellow to brown.

Luster: Vitreous on cleavages, slightly resinous on fractures.

Optical Class: Biaxial (+). *Pleochroism:* X = Y = light yellow; Z = pale brownish yellow.

Orientation: Z \simeq a. *Dispersion:* r > v, strong; sections cut \perp {001} show anomalous bluish interference color. $\alpha = 1.726(1)$ $\beta = 1.737(1)$ $\gamma = 1.766(1)$ 2V(meas.) = 82(2) $^{\circ}$

Cell Data: *Space Group:* P1. $a = 14.76$ $b = 7.14$ $c = 5.38$ $\alpha = 90^{\circ}$ $\beta = 95^{\circ}$ $\gamma = 99^{\circ}$ $Z = 1$

X-ray Powder Pattern: Inagli massif, Russia.

3.92 (10), 3.04 (6), 2.95 (6), 1.964 (6), 1.845 (6), 1.735 (6), 6.31 (5)

Chemistry:

	(1)		(1)
SiO ₂	18.78	BaO	44.16
TiO ₂	18.50	Na ₂ O	5.63
Al ₂ O ₃	0.23	K ₂ O	0.72
Fe ₂ O ₃	0.66	F	0.40
FeO	0.57	H ₂ O ⁺	0.88
MnO	1.04	H ₂ O ⁻	0.09
MgO	0.83	SO ₃	7.19
CaO	0.72	$-O = F_2$	0.17
		Total	100.23

(1) Inagli massif, Russia; corresponds to $(Na_{2.33}Mg_{0.27}Ca_{0.16}Fe_{0.11}^{2+}Fe_{0.10}^{3+})_{\Sigma=2.97}$
 $(Ba_{3.69}K_{0.20}Mn_{0.19})_{\Sigma=4.08} Ti_{2.96}(Si_2O_7)_2(S_{0.58}O_4)_2[O_{2.75}(OH)_{1.25}F_{0.27}]_{\Sigma=4.27}$.

Occurrence: In miarolitic cavities of aegirine-eckermannite-microcline pegmatites in dunites; in pulaskite and shonkinite.

Association: Natrolite, albite, lorenzenite, batisite.

Distribution: In the Inagli massif, 30 km west of Aldan, and the Yakokut massif, near Schelochnoy Spring, Yakutia, Russia.

Name: From the Yakut name, *Inneli*, for the Inagli River, Yakutia, Russia.

Type Material: Institute of Mineralogy and Geochemistry of Rare Elements, Moscow; Mining Institute, St. Petersburg, 846a/1–2; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia; National Museum of Natural History, Washington, D.C., USA, 143822.

References: (1) Kravchenko, S.M., E.V. Vlasova, M.E. Kazakova, V.V. Ilokhan, and K.K. Abrashev (1961) Innelite, a new barium silicate. Doklady Acad. Nauk SSSR, 141, 1198–1199 (in Russian). (2) (1962) Amer. Mineral., 47, 805–806 (abs. ref. 1). (3) Chernov, A.N., V.V. Ilyukhin, B.A. Maksimov, and N.V. Belov (1971) Crystal structure of innelite, Na₂Ba₃(Ba, K, Mn)(Ca, Na)Ti(TiO₂)₂[Si₂O₇]₂(SO₄)₂. Kristallografiya (Sov. Phys. Crystal.), 16, 87–92 (in Russian).