Chanabayaite $Cu_2(N_3C_2H_2)_2Cl(NH_3,Cl,H_2O,\square)_4$

Crystal Data: Orthorhombic. *Point Group*: 2/*m* 2/*m* 2/*m*. As imperfect prismatic crystals to 0.5 mm, flattened along [001], and in radial aggregates to 1 mm.

Physical Properties: *Cleavage*: Perfect on {001}, imperfect on {100} and {010}. *Fracture*: n.d. *Tenacity*: Brittle. Hardness = 2 D(meas.) = 1.48(2) D(calc.) = 1.464

Optical Properties: Translucent. *Color*: Deep blue. *Streak*: Blue. *Luster*: Vitreous. *Optical Class*: Biaxial (-). $\alpha = 1.561(2)$ $\beta = 1.615(3)$ $\gamma = 1.620(2)$ 2V(meas.) = 25(10)° 2V(calc.) = 33° *Pleochroism*: Strong; $Z \sim Y$ = deep blue, X = pale gray-blue. *Orientation*: $X = c$. *Dispersion*: Moderate, $r > v$. *Absorption*: $Z = Y >> X$.

Cell Data: *Space Group*: *Imma*. $a = 19.484(3)$ $b = 7.2136(10)$ $c = 11.999(4)$ Z = 4

X-ray Powder Pattern: Pabellón de Pica Mountain, Chanabaya village, Iquique Province, Chile. 10.19 (100), 5.216 (75), 6.189 (40), 2.611 (24), 5.729 (23), 4.964 (20), 2.830 (20)

Chemistry:

	(1)
Cu	32.23
Fe	1.14
Cl	16.13
H	3.1
N	29.9
C	12.2
O	3.4
Total	98.10

(1) Pabellón de Pica Mountain, Chanabaya village, Iquique Province, Chile; electron microprobe analysis supplemented by IR spectroscopy, H, N, C, and O by gas chromatography; corresponding to $Cu_{1.92}Fe_{0.08}Cl_{1.72}N_{8.09}C_{3.85}H_{11.66}O_{0.81}$.

Occurrence: In a guano deposit.

Association: Sal ammoniac, halite, joanneumite, nitratine.

Distribution: On the northern slope of Pabellón de Pica Mountain, near Chanabaya village, Iquique Province, Tarapacá region, Chile.

Name: For the village of *Chanabaya* near the locality that produced the first specimens.

Type Material: A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (94142).

References: (1) Chukanov, N.V., N.V. Zubkova, G. Möhn, I.V. Pekov, D.Yu. Pushcharovskiy and A.E. Zadov (2015) Chanabayaite, $Cu_2(N_3C_2H_2)_2Cl(NH_3,Cl,H_2O,\square)_4$, a new mineral containing triazolate anion. Zapiski RMO (Proceedings of the Russian Mineralogical Society), 144(2), 36-37 (in Russian). (2) (2016) Amer. Mineral., 101, 1015-1016 (abs. ref. 1).