Iquiqueite $K_3Na_4Mg(CrO_4)B_{24}O_{39}(OH)\cdot 12H_2O$

Crystal Data: Hexagonal. *Point Group:* $3m$. As hexagonal platelets, composed of $\{10\bar{1}0\}$ and {0001}, to 100 μm; typically stacked in compound groups or columnar to vermiform aggregates.

Physical Properties: *Cleavage:* {0001}, perfect; $\{10\bar{1}0\}$, imperfect. *Tenacity:* Brittle. Hardness = 1.5–2 D(meas.) = 2.05(9) D(calc.) = 2.05 Slightly hygroscopic; slowly soluble in H_2O.

Optical Properties: Translucent. *Color:* Bright yellow. *Streak:* Yellow. *Luster:* Vitreous. *Optical Class:* Uniaxial (–); may be anomalously biaxial, thought due to misaligned stacking. ω = 1.496–1.502 ϵ = 1.447–1.448

Cell Data: *Space Group:* $P31c$. $a = 11.6369(14)$ $c = 30.158(7)$ Z = 3

X-ray Powder Pattern: Tarapacá Province, Chile.
3.02 (100), 2.856 (100), 10.11 (85), 6.04 (85), 3.28 (85), 3.22 (85), 2.910 (80)

Chemistry:

	(1)	(2)
B_2O_3	57.0	56.98
CrO_3	6.8	6.82
MgO	2.9	2.75
Na_2O	8.2	8.45
K_2O	10.5	9.64
H_2O	14.6	15.36
Total	100.0	100.00

(1) Tarapacá Province, Chile; recalculated after removal of a variety of likely impurities, corresponds to $K_{3.2}Na_{3.8}Mg_{1.1}(CrO_4)B_{24}O_{39.6}\cdot 11.9H_2O$. (2) $K_3Na_4Mg(CrO_4)B_{24}O_{39}(OH)\cdot 12H_2O$.

Occurrence: A widespread but very minor constituent of nitrate deposits in saline cemented alluvium and fractured bedrock.

Association: Nitratine, halite, niter, darapskite, blödite, glauberite, dietzeite, brüggenite, lopezite, ulexite, gypsum (Tarapacá Province, Chile); nitratine, halite, sylvite, darapskite, lopezite, tarapacáite (Salar del Miraje, Chile).

Distribution: In Chile, the first samples appear to have originated from the vicinity of Zapiga, Tarapacá; later found at Salar del Miraje, Maria Elena, Tamarugal Pampa, Antofagasta.

Name: For Iquique, a major historic port for nitrate exports from Tarapacá, Chile.

Type Material: National Museum of Natural History, Washington, D.C., USA, 163774.

References: (1) Ericksen, G.E., M.R. Mrose, J.W. Marinenko, and J.J. McGee (1986) Mineralogical studies of the nitrate deposits of Chile. V. Iquiqueite, $Na_4K_3Mg(CrO_4)B_{24}O_{39}(OH)\cdot 12H_2O$, a new saline mineral. Amer. Mineral., 71, 830–836. (2) Färber, G., T. Witzke, G. Neumeier, and S. Weiss (1998) Iquiqueit aus der Atacama-Wüste in Chile. LAPIS, 23(10), 51 (in German).