Iquiqueite \( \text{K}_3\text{Na}_4\text{Mg(CrO}_4\text{))B}_2\text{O}_{39}\text{(OH)}\cdot 12\text{H}_2\text{O} \)

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

**Physical Properties:** Cleavage: \{0001\}, perfect; \{10\overline{1}0\}, imperfect. Tenacity: Brittle. Hardness = 1.5–2 D(meas.) = 2.05(9) D(calc.) = 2.05 Slightly hygroscopic; slowly soluble in \text{H}_2\text{O}.

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

**Cell Data:** Space Group: \text{P}3\text{1}c. \( a = 11.6369(14) \) \( c = 30.158(7) \) \( Z = 3 \)

**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:**

\[
\begin{array}{ccc}
\text{Chemical} & \text{Formula} & \text{Amount} \\
\text{B}_2\text{O}_3 & 57.0 & 56.98 \\
\text{CrO}_3 & 6.8 & 6.82 \\
\text{MgO} & 2.9 & 2.75 \\
\text{Na}_2\text{O} & 8.2 & 8.45 \\
\text{K}_2\text{O} & 10.5 & 9.64 \\
\text{H}_2\text{O} & 14.6 & 15.36 \\
\text{Total} & 100.0 & 100.00 \\
\end{array}
\]

(1) Tarapacá Province, Chile; recalculated after removal of a variety of likely impurities, corresponds to \text{K}_3.2\text{Na}_3.8\text{Mg}_{1.1}\text{(CrO}_4\text{)}\text{B}_2\text{O}_{39.6}\cdot 11.9\text{H}_2\text{O}. (2) \text{K}_3\text{Na}_4\text{Mg(CrO}_4\text{))B}_2\text{O}_{39} \cdot 12\text{H}_2\text{O}.

**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, Autopagasta.

**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.