Uvite \((\text{Ca}, \text{Na})(\text{Mg,Fe}^{2+})_3\text{Al}_5\text{Mg(BO}_3)_3\text{Si}_6\text{O}_{18}(\text{OH,F})_4\)

Crystal Data: Hexagonal. Point Group: \(3m\). Crystals prismatic to equant, may be tabular on [0001], pyramidal, in radiating groups, to 15 cm. Cross sections are typically triangular with curved, convex sides.


Optical Properties: Semitransparent. Color: Brown, light to dark green, red, black; may be zoned parallel to prism faces. Streak: White, light green, light brown. Luster: Vitreous to resinous. Optical Class: Uniaxial (-). Pleochroism: \(O = \) pale yellow; \(E = \) colorless. \(\omega = 1.637–1.668\) \(\epsilon = 1.619–1.639\)

Cell Data: Space Group: \(R\overline{3}m\). \(a = 15.96–15.99\) \(c = 7.18–7.22\) \(Z = 3\)

X-ray Powder Pattern: Hnůšťa, Slovakia. (ICDD 29-342). 2.965 (100), 2.577 (90), 2.043 (80), 4.23 (70), 3.99 (70), 3.49 (60), 1.921 (60), 1.921 (60)

Chemistry:

\[
\begin{array}{ccc}
\text{SiO}_2 & 35.96 & \text{Li}_2\text{O} & 0.00 \\
\text{TiO}_2 & 0.62 & \text{Na}_2\text{O} & 0.13 \\
\text{B}_2\text{O}_3 & 11.49 & \text{K}_2\text{O} & 0.00 \\
\text{Al}_2\text{O}_3 & 26.80 & \text{F}^- & 1.49 \\
\text{FeO} & 0.41 & \text{H}_2\text{O}^+ & 2.70 \\
\text{MgO} & 15.20 & \text{H}_2\text{O}^- & 0.04 \\
\text{CaO} & 5.50 & -\text{O} = \text{F}_2 & 0.63 \\
\text{Total} & 99.71 & & \\
\end{array}
\]

(1) Uva Province, Sri Lanka; corresponds to \((\text{Ca}_{0.96}\text{Na}_{0.04})\text{Mg}_{2.69}\text{Al}_{1.14}\text{Ti}_{0.08}\text{Fe}^{2+}_{0.06})\Sigma = 2.97\) \(\text{Al}_5\text{Mg}(\text{B}_{1.08}\text{O}_3)_3\text{Si}_5\text{O}_{18}(\text{OH}_2,\text{F}_{0.77}\text{O}_{0.30})\Sigma = 4.60\)

Mineral Group: Tourmaline group.

Occurrence: Typically in calcium-rich rocks subjected to contact metamorphism and metasomatic processes which added boron.

Association: Calcite, dolomite, tremolite, apatite, scapolite.

Distribution: In Uva Province, Sri Lanka. From the Sagaing district, Myanmar (Burma). In the USA, from Franklin and Hamburg, Sussex Co., New Jersey; in New York, at Gouverneur, Pierrepont, Dekalb and elsewhere in St. Lawrence Co., and at Horicon, Warren Co.; and from East Hampton, Middlesex Co., Connecticut. From Brumado, Bahia, Brazil. At Hnůšťa, Slovakia.

Name: For the occurrence in Uva Province, Sri Lanka.


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