Tacharanite

\[ \text{Ca}_{12}\text{Al}_2\text{Si}_{18}\text{O}_{51}\cdot18\text{H}_2\text{O} \]

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**Crystal Data:** Monoclinic.  *Point Group:* n.d.  As aggregates of fibers, to several \(\mu\)m, in bundles or spherulites; porcelaneous cryptocrystalline masses.

**Physical Properties:**  *Cleavage:* \{001\}, perfect.  *Fracture:* Conchoidal.  *Tenacity:* Tough.  

\[ \text{Hardness} = \text{n.d.} \quad \text{D(meas.)} = 2.33-2.36 \quad \text{D(calc.)} = [2.28] \]

**Optical Properties:**  *Semitransparent.*  *Color:* Milky white.  *Luster:* Vitreous to dull.  

**Cell Data:**  *Space Group:* A-centered monoclinic pseudocell.  

\[ a = 17.07 \quad b = 3.65 \quad c = 27.9 \]

\[ \beta = 114.1^\circ \quad Z = 1 \]

**X-ray Powder Pattern:** Bramburg, Germany.

\[ 12.7 \text{ (vvs)}, \quad 3.048 \text{ (vs)}, \quad 2.775 \text{ (s)}, \quad 1.822 \text{ (s)}, \quad 5.19 \text{ (ms)}, \quad 2.888 \text{ (ms)}, \quad 2.853 \text{ (ms)} \]

**Chemistry:**

\[
\begin{array}{lll}
\text{SiO}_2 & 41.8 & 48.3 \\
\text{Al}_2\text{O}_3 & 5.6 & 4.5 \\
\text{Fe}_2\text{O}_3 & 0.3 & 0.0 \\
\text{MgO} & 3.2 & 0.4 \\
\text{CaO} & 33.6 & 30.8 \\
\text{Na}_2\text{O} & 0.6 & 0.5 \\
\text{K}_2\text{O} & 0.1 & 0.6 \\
\text{H}_2\text{O} & 15.2 & 14.9 \\
\end{array}
\]

Total: 100.4 [100.0]

(1) Portree, Scotland.  (2) Bramburg, Germany; \(\text{H}_2\text{O}\) by TGA, recalculated to 100.0%; corresponds to \((\text{Ca}_{12.2}\text{Na}_{0.4}\text{Mg}_{0.4}\text{K}_{0.3})\Sigma=13.3\text{Al}_{2.0}\text{Si}_{17.9}\text{O}_{51}\cdot18.4\text{H}_2\text{O}\).

**Occurrence:** In amygdules and fractures in metabasalts and basaltic breccias; in hydrothermally altered quartzite inclusions in basalt (Bramburg, Germany).

**Association:** Tobermorite, gyrolite, mesolite, thomsonite, xonotlite, calcite, saponite (Portree, Scotland); scawtite (Huntley, Scotland).

**Distribution:** In Scotland, from north of Portree, Isle of Skye; on the Isle of Mull; and in the Binhill quarry, Cairnie, Huntley, Aberdeenshire. From Carneal, Co. Antrim, Ireland. At Bramburg, near Göttlingen, Lower Saxony, and at Arensberg, near Zilsdorf, Eifel district, Germany. At Espalion, Aveyron, France. Along the Olbirella, near Tiglieto, Liguria, Italy. From Australia, on Tasmania, in the Marrawah-Redpa area and Brittons Swamp; on Gads Hill, Mersey-Forth River valleys; and at Liawenee, Great Lake. From Nonki, near Yaizu, Shizuoka Prefecture, Japan.

**Name:** From the Gaelic *tacharan* for changeling, as the mineral converts to others on exposure to air.


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