

Tacharanite

Ca₁₂Al₂Si₁₈O₅₁•18H₂O

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

Physical Properties: *Cleavage:* {001}, perfect. *Fracture:* Conchoidal. *Tenacity:* Tough. Hardness = n.d. $D(\text{meas.}) = 2.33\text{--}2.36$ $D(\text{calc.}) = [2.28]$

Optical Properties: Semitransparent. *Color:* Milky white. *Luster:* Vitreous to dull. *Optical Class:* [Biaxial.] $n = 1.518\text{--}1.537$ $2V(\text{meas.}) = \text{n.d.}$

Cell Data: *Space Group:* A-centered monoclinic pseudocell. $a = 17.07$ $b = 3.65$ $c = 27.9$
 $\beta = 114.1^\circ$ $Z = 1$

X-ray Powder Pattern: Bramburg, Germany.

12.7 (vvs), 3.048 (vs), 2.775 (s), 1.822 (s), 5.19 (ms), 2.888 (ms), 2.853 (ms)

Chemistry:

	(1)	(2)
SiO ₂	41.8	48.3
Al ₂ O ₃	5.6	4.5
Fe ₂ O ₃	0.3	0.0
MgO	3.2	0.4
CaO	33.6	30.8
Na ₂ O	0.6	0.5
K ₂ O	0.1	0.6
H ₂ O	15.2	14.9
Total	100.4	[100.0]

(1) Portree, Scotland. (2) Bramburg, Germany; H₂O by TGA, recalculated to 100.0%; corresponds to (Ca_{12.2}Na_{0.4}Mg_{0.4}K_{0.3})_{Σ=13.3}Al_{2.0}Si_{17.9}O₅₁•18.4H₂O.

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 Binbill quarry, Cairnie, Huntley, Aberdeenshire. From Carneal, Co. Antrim, Ireland. At Bramburg, near Göttingen, Lower Saxony, and at Arensburg, 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 Noaki, near Yaizu, Shizuoka Prefecture, Japan.

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

Type Material: The Natural History Museum, London, England, 1961,163; National School of Mines, Paris, France.

References: (1) Sweet, J.M., D.I. Bothwell, and D.L. Williams (1961) Tacharanite and other hydrated calcium silicates from Portree, Isle of Skye. *Mineral. Mag.*, 32, 745–753. (2) (1962) *Amer. Mineral.*, 47, 173 (abs. ref. 1). (3) Cliff, G., J.A. Gard, G.W. Lorimer, and H.W.F. Taylor (1975) Tacharanite. *Mineral. Mag.*, 40, 113–126.