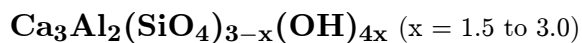


Katoite

©2001 Mineral Data Publishing, version 1.2

Crystal Data: Cubic. *Point Group:* $4/m\bar{3}2/m$. Octahedra crystals, typically rounded, to 0.3 mm, in thin crusts of columnar aggregates.

Physical Properties: Hardness = n.d. D(meas.) = n.d. D(calc.) = 2.76

Optical Properties: Transparent to translucent. *Color:* Milky white; in transmitted light, colorless.

Optical Class: Isotropic; may be weakly birefringent. $n = 1.632(1)$

Cell Data: *Space Group:* $Ia\bar{3}d$. $a = 12.358(2)$ $Z = 8$

X-ray Powder Pattern: Campomorto quarry, Italy.

2.763 (100), 2.257 (58), 2.004 (58), 3.089 (50), 5.046 (37), 1.6507 (37), 3.303 (32)

Chemistry:

	(1)
SiO ₂	10.58
Al ₂ O ₃	24.01
MgO	0.07
CaO	42.27
H ₂ O	20.8
SO ₃	2.27
Total	[100.00]

(1) Campomorto quarry, Italy; by electron microprobe, H₂O by TGA, recalculated slightly to 100.00%; corresponds to $\text{Ca}_{2.96}(\text{Al}_{1.85}\text{Mg}_{0.01})_{\Sigma=1.86}(\text{Si}_{0.69}\text{S}_{0.11})_{\Sigma=0.80}[(\text{OH})_{9.07}\text{O}_{2.93}]_{\Sigma=12.00}$.

Polymorphism & Series: Forms a series with grossular and hibschite.

Mineral Group: Garnet group.

Occurrence: A hydrothermal mineral in cavities in a phonolitic lava flow that erupted through an argillaceous marl.

Association: Tobermorite, awillite, gehlenite, hydrocalumite, "opal," portlandite, apophyllite, cordierite, jennite, strätlingite, chabazite, gismondine, phillipsite, vertumnite, ettringite, garnet, wollastonite, gypsum, calcite, quartz, hematite.

Distribution: In the Campomorto quarry, near Montalto di Castro, Lazio, Italy.

Name: In honor of Akira Kato, mineralogist of the National Science Museum, Tokyo, Japan.

Type Material: Municipal Museum of Natural History, Milan, Italy; National Museum of Natural History, Washington, D.C., USA, 163797.

References: (1) Passaglia, E. and R. Rinaldi (1984) Katoite, a new member of the $\text{Ca}_3\text{Al}_2(\text{SiO}_4)_3 - \text{Ca}_3\text{Al}_2(\text{OH})_{12}$ series and a new nomenclature for the hydrogrossular group of minerals. *Bull. Minéral.*, 107, 605–618. (2) (1985) *Amer. Mineral.*, 70, 873 (abs. ref. 1).