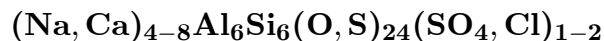


Hauyite

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Crystal Data: Cubic. *Point Group:* $\bar{4}3m$. Crystals dodecahedra or pseudo-octahedra, to 3 cm; in rounded grains. *Twinning:* On {111}, common, rarely as penetration twins; also as polysynthetic or contact twins.

Physical Properties: *Cleavage:* {110}, distinct. *Fracture:* Uneven to conchoidal. *Tenacity:* Brittle. Hardness = 5.5–6 D(meas.) = 2.44–2.50 D(calc.) = n.d. May show reddish orange to purplish pink fluorescence under LW UV.

Optical Properties: Transparent to translucent. *Color:* Bright blue to greenish blue; white or shades of black, gray, brown, green, yellow, red, may be patchy; colorless or pale blue in thin section. *Streak:* Slightly bluish to colorless. *Luster:* Vitreous to greasy.

Optical Class: Isotropic; weakly birefringent when included. $n = 1.494\text{--}1.509$

Cell Data: *Space Group:* $P\bar{4}3n$. $a = 9.08\text{--}9.13$ $Z = 1$

X-ray Powder Pattern: Niedermendig, Germany.

3.72 (100), 2.623 (25), 6.47 (16), 2.873 (14), 2.141 (14), 1.781 (10), 2.428 (8)

Chemistry:	(1)	(2)		(1)	(2)
SiO ₂	34.04	29.3	K ₂ O	5.44	3.71
Al ₂ O ₃	28.27	29.0	Cl	0.76	
Fe ₂ O ₃		0.07	H ₂ O	0.34	
FeO	0.69		CO ₂	0.4	
MgO	0.48	0.15	SO ₃	10.02	13.1
CaO	9.51	11.2	–O = Cl ₂	0.17	
Na ₂ O	10.39	13.0	Total	100.17	99.53

(1) Monte Vulture, Italy; corresponds to $(\text{Na}_{3.55}\text{Ca}_{1.80}\text{K}_{1.22}\text{Mg}_{0.13})_{\Sigma=6.70}\text{Al}_{5.89}\text{Fe}_{0.11}\text{Si}_{6.00}\text{O}_{24}[(\text{SO}_4)_{1.33}\text{Cl}_{0.22}]_{\Sigma=1.55}$. (2) Anguillara, Italy; by electron microprobe, corresponds to $(\text{Na}_{4.76}\text{Ca}_{2.26}\text{K}_{0.90}\text{Mg}_{0.45})_{\Sigma=8.37}\text{Al}_{6.46}\text{Fe}_{0.01}\text{Si}_{5.53}\text{O}_{24}(\text{SO}_4)_{1.86}$.

Mineral Group: Sodalite group.

Occurrence: In phonolites and related leucite- or nepheline-rich igneous rocks; less commonly in nepheline-free extrusives.

Association: Nepheline, leucite, titanian andradite, melilite, augite, sanidine, biotite, phlogopite, apatite.

Distribution: In Italy, in Lazio, at many localities in the Alban Hills, as at Ariccia, Marino, Sacrofano, and Campagnaro; on Monte Somma, and near Melfi, on Monte Vulture, Campania; in the Pitigliano quarry, near Grosseto, Tuscany. From Mendig, Mayen, and elsewhere in the Eifel district, Germany. In the USA, from Winnett, Petroleum Co., Montana, and in the Edwards mine, St. Lawrence Co., New York. In the Niangniang Shan complex, Nanjing, Jiangsu Province, China. On the smaller island of Tairarupu, Tahiti. A few other localities are known.

Name: To honor Abbé René Just Hauy (1743–1822), French crystallographer and mineralogist.

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