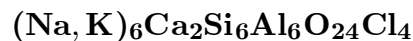


# Quadridavyne



©2001 Mineral Data Publishing, version 1.2

**Crystal Data:** Hexagonal. *Point Group:*  $6/m$ . Crystals hexagonal, prismatic, elongated along  $[0001]$ , to 2 mm, showing dominant  $\{10\bar{1}0\}$  and  $\{0001\}$ . *Twinning:* On  $\{10\bar{1}0\}$ , commonly observed.

**Physical Properties:** *Cleavage:*  $\{0001\}$ , perfect;  $\{11\bar{2}0\}$ , distinct. *Tenacity:* Brittle. Hardness =  $\sim 5$  D(meas.) = 2.335(5) D(calc.) = 2.354

**Optical Properties:** Transparent. *Color:* Colorless. *Streak:* White. *Luster:* Vitreous. *Optical Class:* Uniaxial (+).  $\omega = 1.529(1)$   $\epsilon = 1.532(1)$

**Cell Data:** *Space Group:*  $P6_3/m$ .  $a = 25.771(6)$   $c = 5.371(1)$   $Z = 4$

**X-ray Powder Pattern:** Ottaviano, Italy; can be distinguished from davyne only by single-crystal diffraction.

3.71 (vs), 3.31 (vs), 4.80 (s), 2.788 (s), 2.677 (m), 2.474 (m), 2.147 (m)

## Chemistry:

	(1)
SiO <sub>2</sub>	33.09
Al <sub>2</sub> O <sub>3</sub>	27.62
CaO	11.35
Na <sub>2</sub> O	11.21
K <sub>2</sub> O	5.93
Cl	12.13
SO <sub>3</sub>	1.08
-O = Cl <sub>2</sub>	2.74
Total	99.67

(1) Ottaviano, Italy; by electron microprobe, average of five analyses; corresponding to  $(\text{Na}_{3.97}\text{K}_{1.38})_{\Sigma=5.35}\text{Ca}_{2.22}(\text{Si}_{6.05}\text{Al}_{5.95})_{\Sigma=12.00}\text{O}_{23.90}[\text{Cl}_{3.76}(\text{SO}_4)_{0.15}]_{\Sigma=3.91}$ .

**Mineral Group:** Cancrinite group.

**Occurrence:** In volcanic ash containing metasomatized and hydrothermally altered lavas and scoriae, from the 1906 eruption of Vesuvius.

**Association:** n.d.

**Distribution:** From Ottaviano, near Naples, Campania, Italy.

**Name:** From the Latin *quad*, for *four*, as the mineral has four times the unit cell volume of the related mineral species *davyne*.

**Type Material:** University of Pisa, Pisa, Italy, 10014.

**References:** (1) Bonaccorsi, E., S. Merlino, P. Orlandi, M. Pasero, and G. Vezzalini (1994) Quadridavyne,  $[(\text{Na, K})_6\text{Cl}_2][\text{Ca}_2\text{Cl}_2][\text{Si}_6\text{Al}_6\text{O}_{24}]$ , a new feldspathoid mineral from Vesuvius area. Eur. J. Mineral., 6, 481–487.