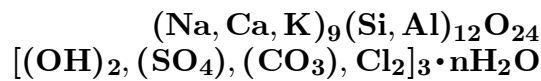


**Sacrofanite**

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**Crystal Data:** Hexagonal. *Point Group:*  $6mm$ ,  $\bar{6}m2$ , or  $6/m\ 2/m\ 2/m$ . As hexagonal prisms, flattened on {0001}, to 2 cm.

**Physical Properties:** *Cleavage:* Perfect on {0001}, {01 $\bar{1}$ 0}. *Hardness* = 5.5–6  
D(meas.) = 2.423(5) D(calc.) = 2.446

**Optical Properties:** *Transparent.* *Color:* Colorless. *Luster:* Pearly.  
*Optical Class:* Uniaxial (-).  $\omega = 1.505(1)$   $\epsilon = 1.486(1)$

**Cell Data:** *Space Group:*  $P6_3mc$ ,  $P\bar{6}2c$ , or  $P6_3/mmc$ .  $a = 12.865(4)$   $c = 74.240(10)$   
 $Z = 14$

**X-ray Powder Pattern:** Sabatini Mountains, Italy.  
3.73 (100), 3.483 (43), 2.648 (30), 3.685 (26), 3.74 (25), 2.149 (18), 11.12 (12)

**Chemistry:**

|                                | (1)      |
|--------------------------------|----------|
| SiO <sub>2</sub>               | 33.06    |
| Al <sub>2</sub> O <sub>3</sub> | 24.94    |
| Fe <sub>2</sub> O <sub>3</sub> | 0.35     |
| CaO                            | 8.76     |
| Na <sub>2</sub> O              | 16.50    |
| K <sub>2</sub> O               | 5.56     |
| Cl                             | 0.59     |
| H <sub>2</sub> O <sup>+</sup>  | 2.47     |
| SO <sub>3</sub>                | 7.77     |
| CO <sub>2</sub>                | 1.00     |
| -O = Cl <sub>2</sub>           | 0.13     |
| Total                          | [100.87] |

(1) Sabatini Mountains, Italy; by XRF, Na by AA, Ca and H by microanalyser, H<sub>2</sub>O by TGA, original total given as 99.87%; corresponds to (Na<sub>6.25</sub>Ca<sub>1.83</sub>K<sub>1.39</sub>)<sub>Σ=9.47</sub>(Si<sub>6.26</sub>Al<sub>5.74</sub>)<sub>Σ=12.00</sub>O<sub>24</sub> [(OH)<sub>2.69</sub>(SO<sub>4</sub>)<sub>1.14</sub>(CO<sub>3</sub>)<sub>0.27</sub>Cl<sub>0.20</sub>]<sub>Σ=4.30</sub> • 0.27H<sub>2</sub>O.

**Mineral Group:** Cancrinite group.

**Occurrence:** As crystals lining a cavity in an ejected block of volcanic rock.

**Association:** Sanidine, andradite, fassaite, leucite, haüyne.

**Distribution:** From Valle Biachella, 3.2 km north-northwest of Sacrofano, in the Sacrofano caldera, Lazio, Italy.

**Name:** For the type locality in the Sacrofano volcanic area, Italy.

**Type Material:** University of Rome, Rome, Italy, 24332; Natural History Museum, Paris, France.

**References:** (1) Burrigato, F., G.C. Parodi, and P.F. Zanazzi (1980) Sacrofanite – a new mineral of the cancrinite group. *Neues Jahrb. Mineral., Abh.*, 140, 102–110. (2) (1981) *Amer. Mineral.*, 66, 1100 (abs. ref. 1).