Hanksite

\[ \text{KNa}_{22}(\text{SO}_4)_9(\text{CO}_3)_2\text{Cl} \]

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Crystal Data: Hexagonal. Point Group: 6/m. As short prismatic to tabular hexagonal crystals, to 20 cm, dominated by combinations of \{10\overline{1}0\}, \{10\overline{1}2\}, \{10\overline{1}1\}, and \{0001\}; \{10\overline{1}0\} striated \perp [0001].


Optical Properties: Transparent to translucent. Color: Colorless to pale yellow, may be grayish green due to clay inclusions; colorless in transmitted light. Streak: White. Luster: Vitreous to dull. Optical Class: Uniaxial (−). \(\omega = 1.481\) \(\epsilon = 1.461\)

Cell Data: Space Group: P6\(_3\)/m. \(a = 10.465(21)\) \(c = 21.191(43)\) \(Z = 2\)

X-ray Powder Pattern: Searles Lake, California, USA. 3.812 (100), 3.531 (75), 2.787 (72), 3.425 (60), 2.618 (47), 2.930 (31), 1.907 (22)

Chemistry:

\[
\begin{array}{c|c|c}
\text{Chemical} & (1) & (2) \\
\hline
\text{SO}_3 & 45.78 & 46.05 \\
\text{CO}_2 & 5.63 & 5.62 \\
\text{Na}_2\text{O} & 43.61 & 43.56 \\
\text{K} & 2.39 & 2.50 \\
\text{Cl} & 2.28 & 2.27 \\
\text{insol.} & 0.12 & \\
\hline
\text{Total} & 99.81 & 100.00 \\
\end{array}
\]

(1) Searles Lake, California, USA. (2) \text{KNa}_{22}(\text{SO}_4)_9(\text{CO}_3)_2\text{Cl}.

Occurrence: In lacustrine evaporite deposits.

Association: Halite, borax, trona, aphthitalite (Searles Lake, California, USA).

Distribution: In the USA, in California, large crystals from Searles Lake, San Bernardino Co.; at Soda Lake, San Luis Obispo Co.; from Mono Lake, Mono Co.; and in Death Valley, Inyo Co.

Name: Honors Henry Garber Hanks (1826–1907), for his service as first State Mineralogist of California, USA.


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