Cahnite

\[ \text{Ca}_2\text{B(AsO}_4\text{)(OH)}_4 \]

Crystal Data: Tetragonal. Point Group: \( \overline{4} \). Crystals, sphenoidal pseudotetrahedral or pseudo-octahedral, characteristically twinned and etched, to 18 mm, showing \{100\}, \{110\}, \{111\}, \{11\}, \{31\}. Twinning: Common on \{110\}, interpenetrant, characteristically crosslike with a square cross-section.


Optical Properties: Transparent to translucent. Color: Colorless to white, may be pale yellow or pale green; colorless in transmitted light. Luster: Vitreous. Optical Class: Uniaxial (+). Dispersion: Strong; exhibits anomalous interference colors. \( \omega = 1.655–1.662 \) \( \epsilon = 1.656–1.663 \)

Cell Data: Space Group: \( \overline{4} \). a = 7.0952 \( \quad \) c = 6.104 \( \quad \) Z = 2

X-ray Powder Pattern: Franklin, New Jersey, USA. 3.56 (100), 1.818 (52), 2.640 (48), 5.02 (20), 4.67 (20), 2.833 (19), 2.336 (17)

Chemistry:

\[ \begin{array}{ccc}
\text{As}_2\text{O}_5 & 38.05 & 38.58 \\
\text{B}_2\text{O}_3 & 11.86 & 11.68 \\
\text{CaO} & 37.62 & 37.65 \\
\text{H}_2\text{O} & 12.42 & 12.09 \\
\hline
\text{Total} & 99.95 & 100.00 \\
\end{array} \]

(1) Franklin, New Jersey, USA. (2) \( \text{Ca}_2\text{B(AsO}_4\text{)(OH)}_4 \).

Occurrence: A late-stage mineral in pegmatites cutting a metamorphosed stratiform zinc orebody (Franklin, New Jersey, USA); with zeolites in leucitic lava (Capo di Bove, Italy).

Association: Hedyphane, friedelite, pyrochroite, franklinite, willemite, rhodonite, datolite, axinite, jarosewichite, samfowlerite, finkite, hodgkinsonite, hetaerolite, hausmannite, groutite, kentrolite, garnet, barite (Franklin, New Jersey, USA); phillipsite, chabazite, calcite (Capo di Bove, Italy); natronambulite, gypsum, barite, calcite (Kombat mine, Namibia); svabite, magnetite, sphalerite, garnet, calcite (Siberia, Russia).

Distribution: From Franklin, Sussex Co., New Jersey, USA. In the Klodeborg mine, Arendal, Norway. At Capo di Bove, and Valierano, Strada Laurentina, near Rome, Lazio, Italy. In the Kombat Cu–Ph–Ag mine, 49 km south of Tsumeb, Namibia. In the Killik, Hisar, and Espey borate mines, near Emet, Kütahya Province, Turkey. In Russia, from the Solongo boron deposit, Buryatia. At Fuka, near Fucshu, Okayama Prefecture, Japan.

Name: To honor Lazard Cahn (1865–1940), mineral collector and dealer, Colorado Springs, Colorado, USA, who first noted the species.

Type Material: Harvard University, Cambridge, Massachusetts, 90010, 90015, 90016, 90019; National Museum of Natural History, Washington, D.C., USA, 95568.


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