Braitschite-(Ce)  
\((\text{Ca, Na})_6(\text{Ce, La, Nd})_2\text{B}_{24}\text{O}_{42}(\text{OH})_6 \cdot 3\text{H}_2\text{O}(?)\)

\(^{(2)}2001-2005\) Mineral Data Publishing, version 1

Crystal Data:  Hexagonal.  Point Group:  n.d.  As hexagonal plates, to 70 \(\mu\)m; in spherical aggregates.

Physical Properties:  Hardness = n.d.  \(D(\text{meas.}) = 2.903(2)\)  \(D(\text{calc.}) = 2.837\)

Optical Properties:  Semitransparent.  Color: Colorless to white, may be pink to red from admixed hematite.  Luster: Vitreous.  Optical Class: Uniaxial (+).  \(\omega = 1.646(2)\)  \(\epsilon = 1.647(2)\)

Cell Data:  \(\text{Space Group: n.d.}\)  \(a = 12.256(1)\)  \(c = 7.377(5)\)  \(Z = 1\)

X-ray Powder Pattern:  Cane Creek mine, Utah, USA.  \(4.283 \,(100),\, 3.021 \,(92),\, 10.52 \,(54),\, 2.8090 \,(53),\, 3.168 \,(45),\, 3.155 \,(38),\, 1.8805 \,(35)\)

Chemistry:

\begin{align*}
\text{B}_2\text{O}_3 & \quad 48.2 \\
\text{Y}_2\text{O}_3 & \quad 1.50 \\
\text{La}_2\text{O}_3 & \quad 4.57 \\
\text{Ce}_2\text{O}_3 & \quad 7.64 \\
\text{Pr}_2\text{O}_3 & \quad 1.00 \\
\text{Nd}_2\text{O}_3 & \quad 3.67 \\
\text{Sm}_2\text{O}_3 & \quad 0.94 \\
\text{Eu}_2\text{O}_3 & \quad 0.39 \\
\text{Gd}_2\text{O}_3 & \quad 0.32 \\
\text{Tb}_2\text{O}_3 & \quad 0.10 \\
\text{Dy}_2\text{O}_3 & \quad 0.25 \\
\text{Ho}_2\text{O}_3 & \quad 0.05 \\
\text{Er}_2\text{O}_3 & \quad 0.08 \\
\text{Tm}_2\text{O}_3 & \quad 0.02 \\
\text{Lu}_2\text{O}_3 & \quad 0.01 \\
\text{CaO} & \quad 21.8 \\
\text{Na}_2\text{O} & \quad 1.68 \\
\text{H}_2\text{O}^+ & \quad 7.75 \\
\text{Total} & \quad 100.0 \\
\end{align*}

(1) Cane Creek mine, Utah, USA; by a wide variety of analytical methods, recalculated to 100% from an original total of 99.91%; after deduction of about 35% admixed quartz, dolomite, hematite, and a chloritelike mineral, corresponds to \((\text{Ca}_{6.74}\text{Na}_{0.94})\Sigma = 7.68(\text{Ce}_{0.81}\text{La}_{0.49}\text{Nd}_{0.38}\text{Y}_{0.23}\text{Pr}_{0.11}\text{Sm}_{0.09}\text{Eu}_{0.04}\text{Gd}_{0.03}\text{Dy}_{0.02}\text{Er}_{0.01}\Sigma = 2.22\text{B}_{24.00}\text{O}_{42}(\text{OH})_{4.54} \cdot 5.19\text{H}_2\text{O}\).

Occurrence:  In anhydrite at the contact with sylvite in a thick sequence of marine evaporites, at a depth of about 1 km.

Association:  Anhydrite, dolomite, halite, hematite, chalcopyrite.

Distribution:  From the Cane Creek potash mine, about 13 km southwest of Moab, and in the CC-1 well, about 1.8 km south of that mine, Grand Co., Utah, USA.

Name:  Honors Dr. Otto Braitsch (1921–1966), University of Freiburg, Freiburg, Germany, for his contributions to evaporate mineralogy and geochemistry.
