Dollaseite-(Ce)  
\[ \text{CaCeMg}_2\text{Al(SiO}_4\text{)(Si}_2\text{O}_7\text{)(OH, F)}_2 \]

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Crystal Data:  
Monoclinic.  
Point Group:  \(2/m\).  
As subhedral crystals, to 0.3 mm; as fibrous and felted radiating aggregates of thin laths; as irregularly rounded grains, massive.  
Twinning: Simple twins common, “similar to a type exhibited by allanite.”

Physical Properties:  
Hardness = n.d.  
\(D(\text{meas.}) = 3.9\)  \(D(\text{calc.}) = 3.86\)

Optical Properties:  
Translucent.  
Color: Brown; very light brown with a pinkish tinge in thin section.  
Luster: Vitreous.  
Optical Class: Biaxial (+).  
\(\alpha = 1.715\)  \(\beta = 1.718\)  \(\gamma = 1.733\)  \(2V(\text{meas.}) = \text{n.d.}\)

Cell Data:  
Space Group:  \(P2_1/m\).  
\(a = 8.934(18)\)  \(b = 5.721(7)\)  \(c = 10.176(22)\)  
\(\beta = 114.31(12)°\)  \(Z = 2\)

X-ray Powder Pattern:  
Östanmossa mine, Sweden.  
2.915 (100), 2.709 (70), 2.852 (30), 9.29 (20), 3.52 (20), 2.150 (20), 3.26 (15)

Chemistry:  
\[
\begin{array}{cc}
\text{SiO}_2 & 32.4 \\
\text{Al}_2\text{O}_3 & 8.9 \\
\text{La}_2\text{O}_3 & 6.0 \\
\text{Ce}_2\text{O}_3 & 13.2 \\
\text{Pr}_2\text{O}_3 & 2.6 \\
\text{Nd}_2\text{O}_3 & 6.0 \\
\text{Sm}_2\text{O}_3 & 2.4 \\
\text{Gd}_2\text{O}_3 & 2.1 \\
\text{FeO} & 3.3 \\
\text{MgO} & 13.1 \\
\text{CaO} & 9.2 \\
\text{F} & 3.0 \\
\text{H}_2\text{O} & 2.02 \\
\text{O}=\text{F}_2 & 1.3 \\
\text{Total} & 102.9 \\
\end{array}
\]

(1) Östanmossa mine, Sweden; by electron microprobe, \(\text{H}_2\text{O}\) from Geijer (1927); corresponds to \((\text{Ca}_{0.91}\text{Ce}_{0.45}\text{La}_{0.20}\text{Nd}_{0.20}\text{Pr}_{0.09}\text{Sm}_{0.08}\text{Gd}_{0.06})\Sigma=1.99(\text{Mg}_{1.81}\text{Fe}_{0.25})\Sigma=2.06\text{Al}_{0.97}\text{Si}_3\text{O}_{10.99}[(\text{OH})_{1.25}\text{F}_{0.88}]\Sigma=1.13°\)

Mineral Group: Epidote group.

Occurrence: In tactite replacement deposits developed during metamorphism of dolomitic limestone.

Association: Tremolite, norbergite, magnetite, dolomite, calcite.

Distribution: In the Östanmossa mine, Norberg, Västmanland, Sweden.

Name: Honors Professor Wayne A. Dollase, University of California, Los Angeles, California, USA, for his crystal chemical research on minerals of the epidote group, and its cerium content.


References:  

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