

**Dollaseite-(Ce)****CaCeMg<sub>2</sub>Al(SiO<sub>4</sub>)(Si<sub>2</sub>O<sub>7</sub>)(OH, F)<sub>2</sub>**

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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(meas.) = 3.9 D(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(meas.) = n.d.

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

**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:**

	(1)
SiO <sub>2</sub>	32.4
Al <sub>2</sub> O <sub>3</sub>	8.9
La <sub>2</sub> O <sub>3</sub>	6.0
Ce <sub>2</sub> O <sub>3</sub>	13.2
Pr <sub>2</sub> O <sub>3</sub>	2.6
Nd <sub>2</sub> O <sub>3</sub>	6.0
Sm <sub>2</sub> O <sub>3</sub>	2.4
Gd <sub>2</sub> O <sub>3</sub>	2.1
FeO	3.3
MgO	13.1
CaO	9.2
F	3.0
H <sub>2</sub> O	2.02
-O = F <sub>2</sub>	1.3
Total	102.9

(1) Östanmossa mine, Sweden; by electron microprobe, H<sub>2</sub>O from Geijer (1927); corresponds to (Ca<sub>0.91</sub>Ce<sub>0.45</sub>La<sub>0.20</sub>Nd<sub>0.20</sub>Pr<sub>0.09</sub>Sm<sub>0.08</sub>Gd<sub>0.06</sub>) $\Sigma=1.99$ (Mg<sub>1.81</sub>Fe<sub>0.25</sub>) $\Sigma=2.06$ Al<sub>0.97</sub>Si<sub>3</sub>O<sub>10.99</sub>[(OH)<sub>1.25</sub>F<sub>0.88</sub>] $\Sigma=1.13$ .

**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.

**Type Material:** National Museum of Natural History, Washington, D.C., USA, R6505.

**References:** (1) Peacor, D.R. and P.J. Dunn (1988) Dollaseite-(Ce) (magnesium orthite redefined): structure refinement and implications for F + M<sup>2+</sup> substitutions in epidote-group minerals. *Amer. Mineral.*, 73, 838–842. (2) Geijer, P. (1927) Some mineral associations from the Norberg district. *Sveriges Geologiska Undersökning*, 20, 1–32.

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