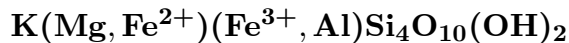


Celadonite



©2001 Mineral Data Publishing, version 1.2

Crystal Data: Monoclinic. *Point Group:* $2/m$ or 2 . As minute micaceous scales or earthy aggregates.

Physical Properties: *Cleavage:* $\{001\}$, perfect. *Tenacity:* Friable to unctuous. Hardness = ~ 2 $D(\text{meas.}) = 2.95\text{--}3.05$ $D(\text{calc.}) = 3.00$

Optical Properties: Semitransparent. *Color:* Blue-green, olive-green, apple-green. *Luster:* Dull.

Optical Class: Biaxial (-). *Pleochroism:* Yellow-green, blue-green. $\alpha = 1.606\text{--}1.625$. $\beta = \text{n.d.}$ $\gamma = 1.579\text{--}1.661$ $2V(\text{meas.}) = 5^\circ\text{--}8^\circ$

Cell Data: *Space Group:* $C2/m$ or $C2$. $a = 5.23(2)$ $b = 9.06(1)$ $c = 10.13(2)$ $\beta = 100^\circ 55(10)'$ $Z = 2$

X-ray Powder Pattern: Wind River area, Washington, USA.

2.580 (100), 4.53 (85), 3.635 (80), 3.087 (80), 2.678 (75), 2.402 (75), 3.318 (70)

Chemistry:

	(1)
SiO ₂	55.61
Al ₂ O ₃	0.79
Fe ₂ O ₃	17.19
FeO	4.02
MnO	0.09
MgO	7.26
CaO	0.21
Na ₂ O	0.19
K ₂ O	10.03
H ₂ O	4.88
Total	100.27

(1) 37 km east of Reno, Storey Co., Nevada, USA; corresponds to $(\text{K}_{0.92}\text{Na}_{0.03}\text{Ca}_{0.02})_{\Sigma=0.97}(\text{Mg}_{0.78}\text{Fe}_{0.24}^{2+})_{\Sigma=1.02}(\text{Fe}_{0.93}^{3+}\text{Al}_{0.07})_{\Sigma=1.00}\text{Si}_{4.00}\text{O}_{10}(\text{OH})_2$.

Polymorphism & Series: 1M polytype.

Mineral Group: Mica group.

Occurrence: Replaces primary ferromagnesian silicate minerals in altered intermediate to mafic volcanic rocks, developed under low-grade zeolite facies metamorphism; as amygdule fillings in basalts or andesites.

Association: Montmorillonite, clinoptilolite, heulandite, laumontite, prehnite, chlorite, quartz, calcite.

Distribution: Many localities; a few for well-characterized material include: on Mt. Baldo, near Verona, Vicenza, and at Val di Fassa, Trentino-Alto Adige, Italy. In the Zillertal, Tirol, Austria. In Scotland, at Scur Mohr. From Streymoy and Suduroy, Faeroe Islands. In the USA, in the John Day Formation, Grant Co., Oregon; in Mt. Rainier National Park, Pierce Co., Washington; and from Red Rock Canyon, Kern Co., California. On the Pearl Islands, off Nicaragua. In the Hosokura mine, Miyagi Prefecture; at Toyoura, Yamagata Prefecture; Nishikata, Tochigi Prefecture; Kamogawa, Chiba Prefecture; and many other places in Japan.

Name: From the French *celadon*, for *sea green*, its color.

References: (1) Dana, E.S. (1892) Dana's system of mineralogy, (6th edition), 683. (2) Wise, W.S. and H.P. Eugster (1964) Celadonite: synthesis, thermal stability and occurrence. *Amer. Mineral.*, 49, 1031–1083. (3) Buckley, H.A., J.C. Bevan, K.M. Brown, L.R. Johnson, and V.C. Farmer (1978) Glauconite and celadonite: two separate mineral species. *Mineral. Mag.*, 42, 373–382. (4) Cipurskii, S.I. and V.A. Dric (1986) Refining the crystallographic structure of celadonite. *Mineral. Zhurnal*, 8(3), 32–40 (in Russian with English abs.).

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise without the prior written permission of Mineral Data Publishing.