Monohydrocalcite

\( \text{CaCO}_3 \cdot \text{H}_2\text{O} \)

©2001-2005 Mineral Data Publishing, version 1

Crystal Data: Hexagonal. Point Group: 32. Rare as aggregates of rhombohedral crystals, to 2 mm; most commonly as spheroids and crusts.


Optical Properties: Transparent to opaque. Color: Colorless to white.
Optical Class: Uniaxial (−). \( \omega = 1.590–1.591 \) \( \epsilon = 1.545–1.546 \)

Cell Data: Space Group: \( P\overline{3}_121 \) or \( P\overline{3}_21 \). \( a = 6.084(4) \) \( c = 7.542(7) \) \( Z = 3 \)

X-ray Powder Pattern: Lake Issyk-Kol, Kyrgyzstan. 2.17 (10), 1.926 (10), 4.49 (9), 3.15 (9), 2.90 (8), 1.770 (7), 1.746 (7)

Chemistry:

\[
\begin{array}{ccc}
\text{CO}_2 & \text{FeO} & \text{MgO} \\
38.96 & 0.13 & 2.49 \\
33.6 & 42.5 & 47.48 \\
37.27 & & \\
\text{K}_2\text{O} & \text{H}_2\text{O}^- & \text{H}_2\text{O}^+ \\
0.07 & 2.1 & 11.61 \\
\text{CaO} & \text{SrO} & \text{Na}_2\text{O} \\
49.30 & 0.40 & 0.69 \\
42.5 & & \\
3.0 & & \\
\text{insol.} & \text{Total} & \\
& 100.00 & \\
\text{(1)} & \text{(2)} & \text{(3)}
\end{array}
\]

(1) Lake Issyk-Kol, Kyrgyzstan; corresponds to \( \text{CaCO}_3 \cdot 0.65\text{H}_2\text{O} \). (2) Lake Fellmongery, Australia; corresponds to \( (\text{Ca}_{0.91}\text{Mg}_{0.07})_{\Sigma=0.98}\text{CO}_3 \cdot 1.15\text{H}_2\text{O} \). (3) \( \text{CaCO}_3 \cdot \text{H}_2\text{O} \).

Occurrence: In lake-bed sediments and as tuffaceous deposits on lake margins, formed by precipitation at pH > 8.0 and high Mg:Ca or by biological activity; in caves, in speleothems, crusts, and “moonmilk,” probably formed from an aerosol, possibly in the presence of organic matter; rarely in hydrothermal mineral deposits.

Association: Calcite, aragonite, hydromagnesite, nesquehonite.


Name: For having the composition of calcite and the Greek for one, as with an additional \( \text{H}_2\text{O} \).

Type Material: A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 72027.


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.