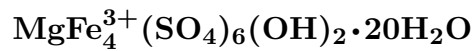


Magnesiocopiapite



©2001-2005 Mineral Data Publishing, version 1

Crystal Data: Triclinic. *Point Group:* $\bar{1}$. As scaly crystals, to several mm, commonly as efflorescences.

Physical Properties: *Cleavage:* [On {010}, perfect.] (by analogy to copiapite group members). Hardness = [2–3] D(meas.) = n.d. D(calc.) = 2.16

Optical Properties: Semitransparent. *Color:* Lemon-yellow, orange, greenish yellow. *Optical Class:* Biaxial (+). *Pleochroism:* Y = colorless; Z = greenish yellow. $\alpha = 1.507\text{--}1.510$ $\beta = 1.529\text{--}1.535$ $\gamma = 1.575\text{--}1.585$ $2V(\text{meas.}) = \text{Moderate}$. $2V(\text{calc.}) = 67^\circ$

Cell Data: *Space Group:* $P\bar{1}$. $a = 7.335\text{--}7.35$ $b = 18.782\text{--}18.84$ $c = 7.377\text{--}7.39$ $\alpha = 91.23^\circ\text{--}91.7^\circ$ $\beta = 102.17^\circ\text{--}102.6^\circ$ $\gamma = 98.79^\circ\text{--}99.0^\circ$ $Z = 1$

X-ray Powder Pattern: Knoxville, California, USA.
9.29 (100), 18.57 (90), 5.600 (80), 3.588 (50), 6.192 (45), 4.208 (40), 3.506 (40)

Chemistry:	(1)	(2)	(3)
SO ₃	39.47	39.90	39.43
Al ₂ O ₃		3.17	
Fe ₂ O ₃	27.44	23.58	26.21
FeO	0.52	0.17	
CoO		0.16	
CuO		0.15	
MgO	3.26	1.97	3.31
H ₂ O	27.84	30.90	31.05
insol.	1.16		
Total	99.69	[100.00]	100.00

(1) Near Blythe, California, USA. (2) Forty Mile River, Alaska, USA; recalculated to 100% from an original total of 99.68% after deduction of remnant 1.40%; corresponds to $(\text{Mg}_{0.59}\text{Al}_{0.30}\text{Fe}_{0.03}^{2+}\text{Co}_{0.03}\text{Cu}_{0.02})_{\Sigma=0.97}(\text{Fe}_{3.56}^{3+}\text{Al}_{0.44})_{\Sigma=4.00}(\text{SO}_4)_6(\text{OH})_2 \cdot 19.7\text{H}_2\text{O}$. (3) $\text{MgFe}_4(\text{SO}_4)_6(\text{OH})_2 \cdot 20\text{H}_2\text{O}$.

Mineral Group: Copiapite group.

Occurrence: An uncommon secondary mineral, typically formed by oxidation of pyrite.

Association: Pyrite, römerite, paracoquimbite, halotrichite, redingtonite.

Distribution: In the USA, from near Blythe, Riverside Co., and at the Redington mercury mine, Knoxville, Napa Co., California; from near Las Vegas, Tecolote district, San Miguel Co., New Mexico; at the Denver mine, Santa Cruz Co., and the United Verde mine, Jerome, Yavapai Co., Arizona; in Alaska, in a prospect pit along the Mosquito Fork, Forty Mile River, Eagle A-3 quadrangle. From the Prince mine, Cape Breton Island, Nova Scotia, Canada. At Falun, Kopparberg, Sweden. From the Ossling Berg, Lausitz, North Saxony, Germany.

Name: For its *magnesium* content and relation to *copiapite*.

Type Material: National Museum of Natural History, Washington, D.C., USA, 103543, 80696.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 623–627. (2) Bayliss, P. (1985) X-ray powder diffraction data and cell parameters for copiapite-group minerals. *Can. Mineral.*, 23, 53–56. (3) Jolly, J.H. and H.L. Foster (1967) X-ray diffraction data of aluminocopiapite [= magnesiocopiapite]. *Amer. Mineral.*, 52, 1220–1223. (4) Süsse, P. (1972) Crystal structure and hydrogen bonding of copiapite. *Zeits. Krist.*, 135, 34–55.

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.