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A hydrous Ca-bearing magnesium carbonate from playa lake sediments, Salines Lake, Spain

IGNASI QUERALT,[1] RAMON JULIÁ,[1] FELICIANO PLANA,[1] AND JAMES L. BISCHOFF [2]

[1]Institute of Earth Sciences ''Jaume Almera'' (CSIC), Solé Sabarís s/n, 08028, Barcelona, Spain
[2]U.S. Geological Survey MS 999, 345 Middlefield Road, Menlo Park, California 94025 U.S.A.

ABSTRACT

Sediments of playa Lake Salines, SE, Spain, contain a carbonate mineral characterized by X-ray diffraction peaks very similar to, but systematically shifted from those of pure magnesite. Analyses (SEM, IR and Raman spectroscopy, DTA, TGA, and ICP) indicate the mineral is a hydrous Ca-bearing magnesium carbonate with the chemical formula $(Mg_{0.92},Ca_{0.08})CO_3 \cdot 3H_2O$. Thermal characteristics of the mineral are similar to those of other known hydrated magnesium carbonates. X-ray and electron diffraction data suggests a monoclinic system (*P*21/*n* space group) with unit-cell parameters of $a = 6.063(6)$, $b = 10.668(5)$, and $c = 6.014(4)$ Å and $\beta = 107.28°$.