
A Sepiolite-Rich Playa Deposit in Southern Nevada*

Keith G. Papke

Nevada Bureau of Mines and Geology, University of Nevada, Reno, Nevada 89507, U.S.A.

* Publication authorized by the Director, Nevada Bureau of Mines and Geology.

Abstract: Sepiolite is seldom reported in playa deposits, even though it is generally believed to form in a highly saline, alkaline environment. Its rareness suggests that unusual conditions are necessary for formation of sepiolite. Sepiolite is a major constituent of a near-surface playa bed 4 ft thick in the Amargosa Desert, southern Nye County, Nevada. Associated materials include dolomite and small to trace amounts of quartz, feldspar, montmorillonite, illite, and volcanic glass. The dolomite, averaging about 2 μ in size, makes up about 40% of the bed. The overlying beds and the underlying ones down to a sampled depth of 13½ ft are montmorillonitic (saponite) clays with moderate to trace amounts of sepiolite; dolomite is abundant in all these clays except in the uppermost several feet, where calcite is a major constituent. Ground water in this area contains abundant magnesium compared with that in the rest of the Amargosa Desert. An initial high concentration of magnesium in the playa lake water probably promoted the development of sepiolite and dolomite. Concentration of dissolved salts through evaporation of water is believed to have started chemical precipitation of dolomite, and this precipitation and the continued evaporation later caused deposition of sepiolite.

Clays and Clay Minerals; August 1972 v. 20; no. 4; p. 211-215; DOI: [10.1346/CCMN.1972.0200405](https://doi.org/10.1346/CCMN.1972.0200405)
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