Expandable Sepiolite from Ninetyeast Ridge, Indian Ocean

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Abstract: The structure of sepiolite from a piston core obtained on Ninetyeast Ridge in the Indian Ocean was modified by exposure to ethylene glycol vapor. With ethylene glycol, the sepiolite 011 X-ray powder diffraction peak expanded from 12.4 to 12.8 Å, and the 130 peak contracted from 4.53 to about 4.45 Å. The cell modification is consistent with concomitant expansion along the *c*-axis and contraction along the *b*-axis. This structural distortion is not permanent, however, inasmuch as the sepiolite returned to its original state 6 to 12 hr after it was removed from the ethylene glycol-saturated atmosphere.

Key Words: Chemical composition • Ethylene glycol • Expansion • Sepiolite • X-ray powder diffraction

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