Formation of Polymeric Species in the Interlayer of Bentonite

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Abstract: Infrared spectroscopic, X-ray powder diffraction, diffuse reflectance, and electron-spin resonance examination of homoionic bentonite from Sardinia treated with diazomethane indicates that polymethylene was formed in the interlayer position. Polymerization can be attributed to the acidic properties of the residual water in the interlamellar space, depending on the nature of the exchanged ion. The presence of an interlayer polymer causes the clay to assume strong hydrophobic properties.

Key Words: Bentonite • Hydrophobic • Infrared spectroscopy • Interlayer • Polymerization

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