Relation between Swelling, Surface Area and *b* Dimension of Na-Montmorillonites[*]

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Abstract: From swelling and surface area measurements, it was found that the swelling of a montmorillonite depends linearly on the fraction of its layers that fully expand in water and that this fraction, in turn, depends linearly on the *b* dimension of the unit cell. Therefore, swelling is a linear function of the *b* dimension. However, the specific surface area of a montmorillonite is a linear function of its *b* dimension only if no partially expanded layers exist. It was also found that the distance between fully expanded layers at a given applied pressure is the same for all montmorillonites.

Key Words: Expansion • Interlayer • Montmorillonite • Surface • Swelling