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# Interlamellar and Multilayer Nitrogen Sorption by Homoionic Montmorillonites

M. I. Knudson Jr.\* and J. L. McAtee Jr.

Baylor University, Department of Chemistry, Waco, Texas 76703, U.S.A.

\* Present address: Baroid Division, NL Industries, Inc., P.O. Box 1675, Houston, Texas 77001, U.S.A.

**Abstract:** Nitrogen sorption by various homoionic montmorillonites was studied at 78° K. The adsorption isotherms in the relative pressure range  $P/P_0 = 0.05 - 0.25$  were found to be either Type I or Type II in the BET classification. The nitrogen sorption process was considered to be predominantly interlamellar when described by a Type I isotherm. With a Type II isotherm, the adsorption was assumed to be predominantly on those surfaces not in the interlamellar regions.

It was concluded that only cations within a certain size range promote significant interlamellar nitrogen penetration in montmorillonites. The role of the smaller cations in nitrogen sorption by montmorillonites seems to be their influence on the external aggregate structures. Very large cations tend to clog up the interlamellar pores as well as some of the external voids.

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