

Estimation of the Lateral to Basal Surface Ratio of Talc by Inverse Gas Chromatography

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SUMMARY: Inverse Gas Chromatography at Infinite Dilution, i.e. IGC-ID, allows following the evolution of surface properties of talc impregnated with increasing concentrations of polyethyleneglycol of molecular weight 20,000. Coupling Inverse chromatography in infinite dilution conditions measurements with controlled surface modification, we have developed a new method to estimate the lateral to basal surface ratio of talc crystals.

Keywords: Talc, Polyethyleneglycol, Inverse gas chromatography, Surface heterogeneity.

Introduction

Talc ($\text{Mg}_3\text{Si}_4\text{O}_{10}(\text{OH})_2$) is a phyllosilicate with a lamellar structure. It consists of octahedral brucite sheets sandwiched between two tetrahedral silica sheets, to form talc layers superimposed indefinitely. The crystal is made up on one hand of basal nonfunctionalized hydrophobic surfaces