
Infrared Study of the Orientation of Chlorobenzene Sorbed on Pyridinium-Montmorillonite

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Abstract: The pyridinium-montmorillonite complex has the ability to sorb additional aromatic molecules between the layers. The neutral molecules occupy the vacant space produced by the change in orientation of the pyridinium ion from a parallel to a perpendicular position and with the N-H group directed toward the negative unit layer surface.

In favorable cases the orientation of the additional neutral molecules can be ascertained by infrared spectroscopy. Examples of this analysis are presented in the complexes of pyridinium-montmorillonite with chlorobenzene. The molecules adopt a vertical orientation but with the halogen bond axes parallel to the layers.

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