

Infrared investigation of the order-disorder phase transitions in $(C_5H_5NH)_6Bi_4Cl_{18}$.Autorzy

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2000

CzasopismoJournal of Molecular
StructureNumer woluminu

555

Strony

273-279

DOI10.1016/S0022-
2860(00)00610-4Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

Infrared spectra ($4000\text{--}500\text{ cm}^{-1}$) of polycrystalline samples of $(C_5H_5NH)_6Bi_4Cl_{18}$ were investigated in the temperature range 23–309 K. An assignment of the observed bands at 23 and 309 K is proposed. A temperature dependence study of the frequencies, ν , half-widths, $\Delta\nu_{1/2}$ and intensities of some internal bands of organic cations confirm the presence of phase transitions at 122 and 154 K. In the low-temperature phases numerous internal modes show splitting that indicates a distinct change in the motional state of the pyridinium cations. The spectroscopic results are consistent with earlier 1H NMR studies showing that the phase transitions are governed by the in-plane complex motion of the $C_5H_5NH^+$ cations.

Adres publiczny[https://doi.org/10.1016/S0022-2860\(00\)00610-4](https://doi.org/10.1016/S0022-2860(00)00610-4)Strona internetowa wydawcy<http://www.elsevier.com>