# Structure and properties of $[2\text{-}NH_2C_5H_4NH][SbCl_4]$ and $[2\text{-}NH_2C_5H_4NH][SbBr_4]$.

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## Streszczenie

The crystal structures of $[2\text{-}NH_2C_5H_4NH][SbCl_4]$ (2-APyHSbCl$_4$) and $[2\text{-}NH_2C_5H_4NH][SbBr_4]$ (2-APyHSbBr$_4$) are determined at 100 K. Both compounds crystallize in the monoclinic space group: $P\ 2_1/c$. The structure is composed of $SbX_4^-$ (X = Cl,Br) ions which form infinite chains through the crystal via halogen linkages. The structural phase transformations are detected by the differential scanning calorimetry and dilatometric techniques: at 402 K, close to continuous, and at 412 K, clearly discontinuous, in 2-APyHSbCl$_4$ and 2-APyHSbBr$_4$, respectively. Dielectric relaxation studies in the frequency range between 1 kHz and 25 MHz indicate reorientations of the 2-aminopyridinium (2-APyH) cations in both compounds in the low temperature phases. The proton NMR second moment, $M_2$, and spin–lattice relaxation time, $T_1$, for 2-APyHSbCl$_4$ and 2-APyHSbBr$_4$ measured between 78 and 430 K reveal the in-plane reorientation of the 2-APyH cations. The possible mechanism of the phase transitions in the title crystals is discussed on the basis of the results presented.

Adres publiczny

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