



Phase transitions in the ferroelastic $[\text{C}_5\text{H}_{10}\text{NH}_2]\text{SbCl}_6$.

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A new piperidinium chloroantimonate-(V) analogue, $(\text{C}_5\text{H}_{10}\text{NH}_2)\text{SbCl}_6$ has been studied by means of single-crystal x-ray diffraction, differential scanning calorimetry, thermal expansion and dielectric techniques. It undergoes three solid-solid state phase transitions: at 363 K first order (from *Cmcm* (phase I) to *Cc* (phase II)), at 310 K second order (from *Cc* to *P1* (phase III)) and at 283 K first order (from *P1* to *P2₁/m* (phase IV)). The crystal structure of $(\text{C}_5\text{H}_{10}\text{NH}_2)\text{SbCl}_6$ has been solved at 293 K (phase III) and at 338 K (phase II). It consists of isolated SbCl_6^- anions and piperidinium cations. The ferroelastic domain structure appears below 363 K. Group theoretical analysis of phase transitions is presented.

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