A phase transition in $[\text{Cr(NH}_3\text{)_6}]\text{(ClO}_4\text{)}_3$ at $T_{\text{hc}}^h = 293.5 \text{ K}$ (on heating) and $T_{\text{cc}}^c = 293.0 \text{ K}$ (on cooling) was determined by differential scanning calorimetry. The temperature dependences of the full width at half maximum of the bands connected with $\rho_1(\text{NH}_3)\text{F}_{1u}$ and $\delta_{1u}(\text{ClO}_4)\text{E}$ modes suggest that the discovered phase transition is not connected with drastic changes in the speed of reorientational motions of the NH$_3$ ligands nor the ClO$_4^-$ anions. Temperature dependence of the FT-FIR spectra and the diffraction patterns show that the discovered phase transition is caused by a change in the crystal structure.

Key words: Hexaamminechromium(III) chlorate(VII); Phase Transition; Structural Change; DSC; FT-IR.