^{35}Cl NQR, ^{1}H NMR, and X-Ray Diffraction Studies in a Hydrogen Bonded Complex $Na_2PtCl_6 \cdot 6H_2O$ *

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The ^{35}Cl NQR frequencies, spin-lattice relaxation time and ^{1}H NMR relaxation time were measured on crystalline $Na_2PtCl_6 \cdot 6H_2O$ at 77–350 K. The presence of three nonequivalent chlorine sites found by X-ray diffraction measurement is in agreement with the observed three NQR lines, which have different temperature dependences attributable to differences in the direction of H-bonding with water molecules. The three NQR lines correspond to three kinds of chlorines with different Pt–Cl distances and H-bond directions.

Key words: Cl NQR; X-Ray Diffraction; Spin-Lattice Relaxation; Quadrupole Coupling Constant; Hydrogen Bond.

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