

CRYSTAL STRUCTURE AND PROPERTIES

OF $[M(NH_3)_5Cl](NO_3)_2$, ($M = Ir, Rh, Ru$)

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The crystal structures of compounds from the series $[M(NH_3)_5Cl](NO_3)_2$, ($M = Ir, Rh, Ru$) were described. The compounds crystallized in the tetragonal crystal system, space group $I4$, $Z = 2$. Crystal data for $[Ir(NH_3)_5Cl](NO_3)_2$ (**I**): $a = 7.6061(1) \text{ \AA}$, $b = 7.6061(1) \text{ \AA}$, $c = 10.4039(2) \text{ \AA}$, $V = 601.894(16) \text{ \AA}^3$, $\rho_{\text{calc}} = 2.410 \text{ g/cm}^3$, $R = 0.0087$; $[Rh(NH_3)_5Cl](NO_3)_2$ (**II**): $a = 7.5858(5) \text{ \AA}$, $b = 7.5858(5) \text{ \AA}$, $c = 10.41357(7) \text{ \AA}$, $V = 599.24(7) \text{ \AA}^3$, $\rho_{\text{calc}} = 1.926 \text{ g/cm}^3$, $R = 0.0255$; $[Ru(NH_3)_5Cl](NO_3)_2$ (**III**): $a = 7.5811(6) \text{ \AA}$, $b = 7.5811(6) \text{ \AA}$, $c = 10.5352(14) \text{ \AA}$, $V = 605.49(11) \text{ \AA}^3$, $\rho_{\text{calc}} = 1.896 \text{ g/cm}^3$, $R = 0.0266$. The compounds were defined by IR spectroscopy and XRPA and thermal analyses.

Keywords: iridium, rhodium, ruthenium, chloropentammines, nitrates, X-ray analysis, X-ray phase analysis.