

# Reaction of tris(1,10-phenanthroline) cobalt(III) perchlorate, nitromethane and an excess of base-I reaction with pyridine

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Kinetic studies of the  $[\text{Co}(\text{phen})_3] (\text{ClO}_4)_3 \cdot 2\text{H}_2\text{O}$  nitromethane pyridine reaction were made spectrophotometrically, by recording the appearance of a new absorption band at 474 nm. The reaction is first order with respect to all three reactants. Reaction products were isolated and attempts were made to purify them. A mechanism is proposed for the reaction involving the formation of  $\text{Co}(\text{phen})_3^{3+} + \text{CH}_2\text{NO}_2^- (\text{ClO}_4)_2$ . The rate determining step would be the rupture of a CH bond in the solvated nitromethane molecule. © 1978.