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Synthesis of Isomorphous Prototypic $[\text{CrFe}_2\text{O}(\text{AcO})_6(\text{TEP})_3]\text{Cl}$ and $[\text{CrFe}_2\text{O}(\text{AcO})_6(\text{TMP})_3]\text{Cl}$ As Oxo-Centered Hetero Tri-Nuclear Carboxylate Complexes

Massoud RAFIZADEH¹, Reza TAYEBEE², Vahid AMANI¹

¹Department of Chemistry, Tehran Teacher Training University,
Tehran-IRAN

e-mail: rafizadeh@saba.tmu.ac.ir

²Department of Chemistry, Sabzevar Teacher Training University,
Sabzevar-IRAN

Abstract: $[\text{CrFe}_2\text{O}(\text{AcO})_6(\text{TEP})_3]\text{Cl}$, (1), and $[\text{CrFe}_2\text{O}(\text{AcO})_6(\text{TMP})_3]\text{Cl}$, (2), were prepared by replacing 3 water molecules in the $[\text{CrFe}_2\text{O}(\text{AcO})_6(\text{H}_2\text{O})_3]\text{Cl}$ complex with triethyl- and trimethyl-phosphates, respectively. FT-IR spectroscopy confirmed an oxo-centered, carboxylate-bridged, heteronuclear triangular structure for the title compounds. M_3O and MO_4 units adopted D_{3h} and D_{4h} local symmetry, respectively, and are surrounded by 6 bridging acetates with C_{2v} local symmetry.

Key Words: Iron, chromium, infrared, synthesis, band assignment

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