

# Reactions of Nickel(II) Sulfate Hexahydrate with Methyl(2-pyridyl)ketone Oxime: Two Mononuclear Sulfato Complexes Containing the Neutral Ligand

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The reactions of methyl(2-pyridyl)ketone oxime, (py)C(Me)NOH, with nickel(II) sulfate hexahydrate, in the absence of an external base, have been investigated. The reaction between equimolar quantities of NiSO<sub>4</sub> · 6 H<sub>2</sub>O and (py)C(Me)NOH in H<sub>2</sub>O leads to the mononuclear complex [Ni(SO<sub>4</sub>){(py)C(Me)NOH}(H<sub>2</sub>O)<sub>3</sub>] · H<sub>2</sub>O (**1** · H<sub>2</sub>O), while an excess of the organic ligand affords the 1 : 2 compound [Ni(SO<sub>4</sub>){(py)C(Me)NOH}<sub>2</sub>(H<sub>2</sub>O)] · H<sub>2</sub>O (**2** · H<sub>2</sub>O). The structures of both compounds have been determined by single crystal X-ray diffraction. In both complexes the organic ligand chelates through its nitrogen atoms and the sulfate anion acts as a monodentate ligand. The thermal decomposition of complexes **1** · H<sub>2</sub>O and **2** · H<sub>2</sub>O has been studied. The IR data are discussed in terms of the nature of bonding and the structures of the two complexes.

*Key words:* Crystal Structures, Infrared Spectra, Methyl(2-pyridyl)ketone Oxime Complexes, Nickel(II) Complexes, Sulfate Ligand