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## Dinuclear Molybdenum Tetracarbonyl Complexes of Tetradentate Nitrogen Ligands and Intermolecular Hydrogen Bonding in the Crystal Structure of N,N'-bis-[1-(pyridin-2-yl)ethylidene]ethane-1,2-diamine

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 [Keywords](#)  
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**Abstract:** Multidentate N-ligands (Schiff bases) were prepared by the condensation of 2-acetylpyridine or 2-benzoylpyridine, and 1,2-diaminoethane or 1,6-diaminohexane (2:1 ratio) in ethanol. These ligands were reacted with Mo(CO)<sub>6</sub> to obtain dinuclear metal tetracarbonyl compounds. Both terminal amine groups were seen to form imines from the reaction of mono-ketones with diamines in 2:1 or 1:1 ratios. The structures of these ligands and metal complexes were characterized by elemental analysis, and FT-IR, <sup>1</sup>H-NMR, <sup>13</sup>C-NMR, and LC-MS spectral techniques. N,N'-bis[1-(pyridin-2-yl)ethylidene]ethane-1, 2-diamine, which was obtained by the reaction of 2-acetylpyridine and 1,2-diaminoethane, was also characterized by single crystal X-ray structure analysis. The crystal packing is stabilized by intermolecular H-bonding and  $\pi$ - $\pi$  interactions.

**Key Words:** Dinuclear, intermolecular H-bonding, molybdenum, polyimines, Schiff base, tetracarbonyl

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