## Category

Polymer-Supported Synthesis

Key words

N-formylation

orthoformates

amines

molybdate sulfuric acid

## N-Formylation of Amines Using Molybdate Sulfuric Acid



**Significance:** Molybdate sulfuric acid (MSA) catalyzed the N-formylation of amines with orthoformates to give the corresponding formamide derivatives in up to 95% yield (19 examples). In the N-formylation of aniline with triethyl orthoformate, the catalyst was recovered by filtration and reused three times with a slight loss of catalytic activity (1<sup>st</sup> reuse: 87% yield, 3<sup>rd</sup> reuse: 80% yield).

**Comment:** The catalytic activity of MSA was superior to that of the other catalysts (ZnO,  $ZrOCI_2$ , MgBr<sub>2</sub>, ZnCI<sub>2</sub>, and H<sub>2</sub>SO<sub>4</sub>). The authors have reported previously the preparation of molybdate sulfuric acid and its application to the synthesis of phenazines and quinoxalines (*Polycycl. Aromat. Compd.* **2011**, *31*, 97).

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