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Nanolayered Cobalt–Molybdenum Sulphides (Co-Mo-S) Catalyse Borrowing Hydrogen C–S Bond Formation Reactions of Thiols or H_2S with Alcohols
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Category

Polymer-Supported Synthesis

Key words

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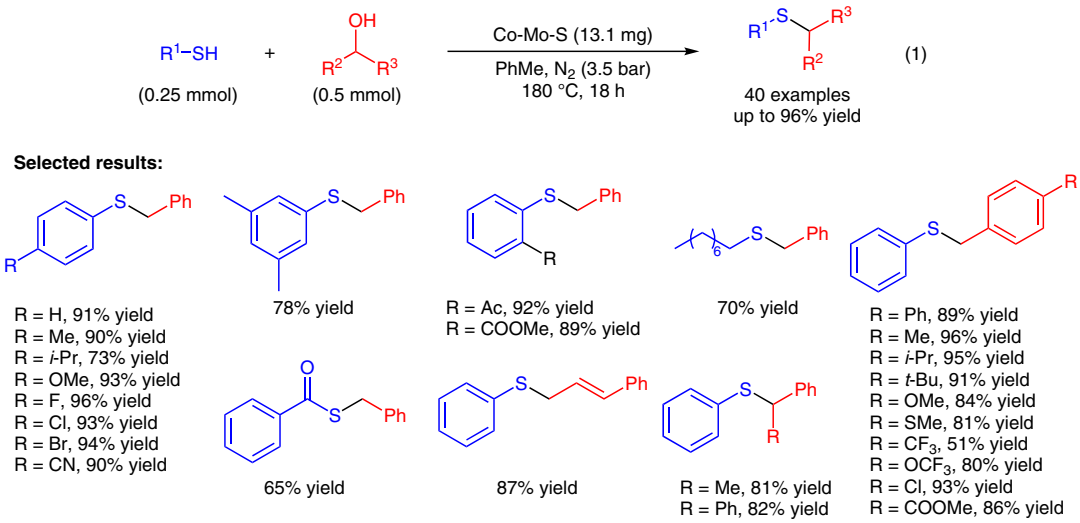
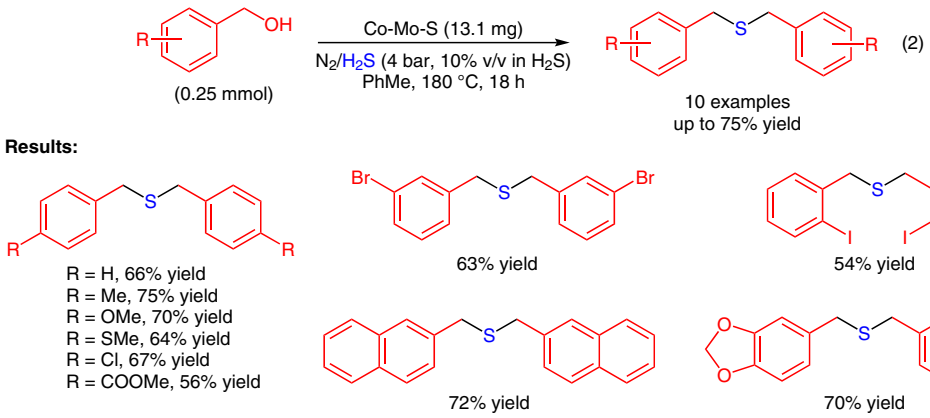
molybdenum catalysis
alkylation
thiols
alcohols
thioethers

Cobalt Molybdenum Sulfide-Catalyzed S-Alkylation of Thiols or H_2S with Alcohols





Significance: Nanolayered cobalt–molybdenum sulfide (Co–Mo–S) catalyzed the alkylation of thiols with alcohols to give the corresponding thioethers in ≤96% yield (eq. 1). Co–Mo–S also catalyzed the reaction of benzyl alcohols with hydrogen sulfide to give symmetrical thioethers (eq. 2).

Comment: The authors previously reported the preparation of Co–Mo–S and its applications in the hydrogenation of nitroarenes and quinolines (*ACS Catal.* **2017**, *7*, 2698; *ACS Catal.* **2018**, *8*, 4545). In the alkylation of benzenethiol with benzyl alcohol, the catalyst was recovered and reused five times with a gradual loss of its catalytic activity.

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