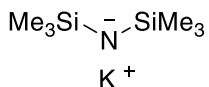


Catalog # 19-1090 CALLERY™ Potassium hexamethyldisilazane, 20% solution in tetrahydrofuran

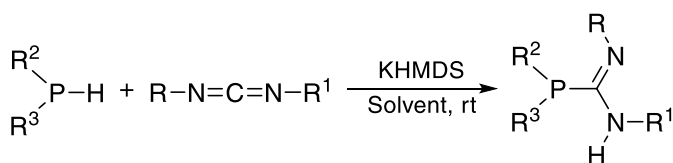


Technical Notes:

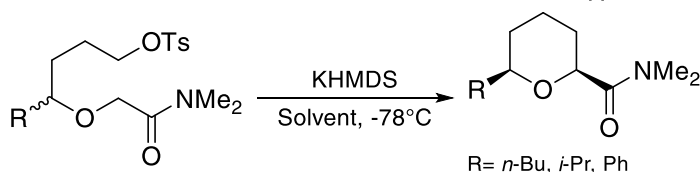
Lithium hexamethyldisilazane (KHMDS) is a strong non-nucleophilic, hindered amine base, with higher base strength than alkali metal alkoxides ($\text{p}K_{\text{a}}=26$). KHMDS is a useful reagent for wide variety of chemical reactions and transformations. Applications include alkylation, arylation, acylation, ring formation, isomerization, rearrangements, aldol condensations, Wittig and Horner-Emmons reactions and polymerization. In addition, KHMDS is able to catalyze transition metal-free reactions and to act as a ligand while reacting with a wide range of metal halides forming $\text{M}(\text{HMDS})_x$ catalysts

Transition metal-free application

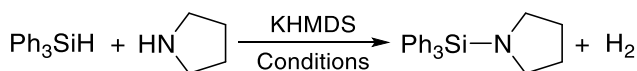
1. Catalyst for the addition of primary and secondary phosphines to carbodiimides to generate substituted phosphaguanidines.
2. **Total synthesis.** Catalyst used in the synthesis of 2,6-*cis*-disubstituted tetrahydropyran systems via intramolecular amide enolate alkylation.
3. **Cross-couplings.** Catalyst for the cross-dehydrogenative couplings of hydrosilanes with amines.
4. **1,4-Addition reactions.** Catalyst for the 18-crown-6 assisted direct-type 1,4-addition reactions of alkylazaarenes.
5. Catalyst for the selective benzylic C–H bond addition of alkylpyridines to styrenes.
6. Catalyst for the synthesis of aryl ethers by reacting alcohols/phenols (ROH) with aryl ammonium salts (ArNMe_3^+), which are readily prepared from anilines (ArNR'_2 , $\text{R}'=\text{H}$ or Me).
7. **Silylation of (poly)azines.** Catalyst for the mild and direct site-selective sp^2 C–H silylation of (poly)azines.
8. Used in the NHC-catalyzed enantioselective decarboxylative annulations to access dihydrobenzoxazinones and quinolones.
9. **Olefination.** Catalyst for the stereoselective synthesis of ribofuranoid exo-glycals by olefination using ribofuranosyl sulfones.
10. **Mannich Reactions.** Catalyst for the asymmetric Mannich reactions with simple amides.



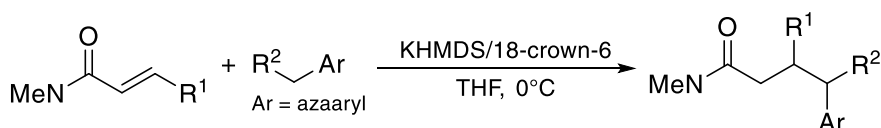
Tech Note (1)
Ref. (1)



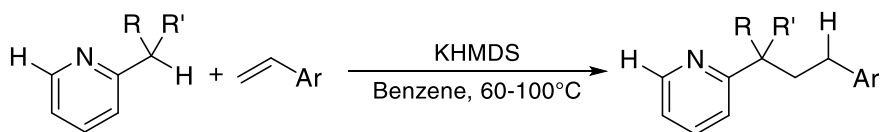
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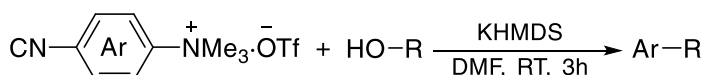
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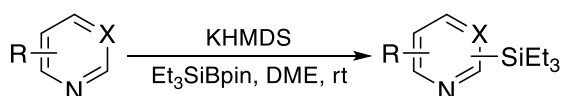
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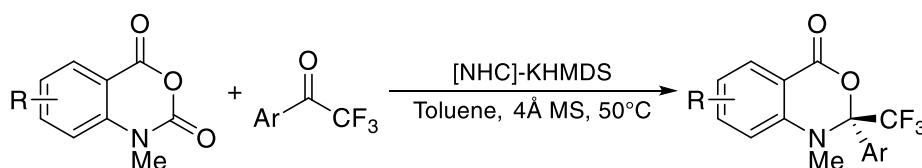
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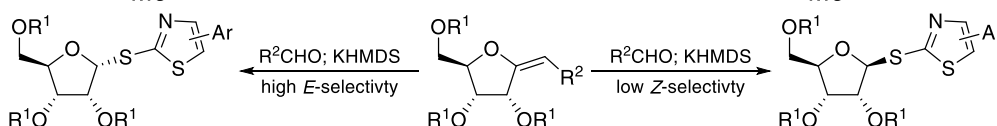
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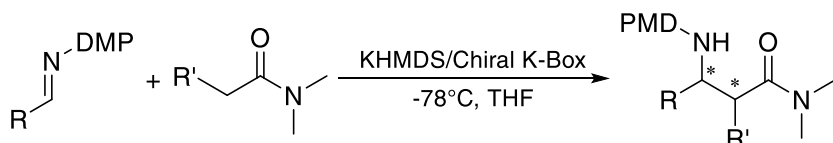
Tech Note (7)
Ref. (7)



Tech Note (8)
Ref. (8)



Tech Note (9)
Ref. (9)



Tech Note (10)
Ref. (10)

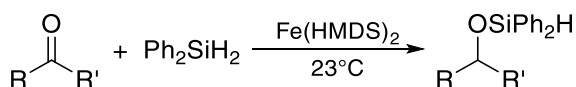
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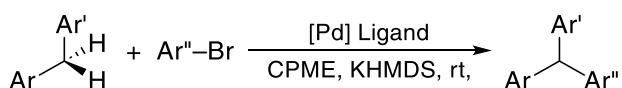
Application with transition metals

1. **Hydrosilylation of carbonyls.** Ligand for the Fe-catalyzed hydrosilylation of carbonyl compounds.
2. **Arylation.** Base additive used in Pd-Catalyzed C(sp³)-H arylation of diarylmethanes at room Temperature.
3. **Selective hydrogenation.** Base additive used in Fe-catalyzed selective hydrogenation of activated amides to amines and alcohols.
4. **Hydrosilylation of alkenes.** Ligand for the Co-catalyzed hydrosilylation of alkenes with tertiary silanes.

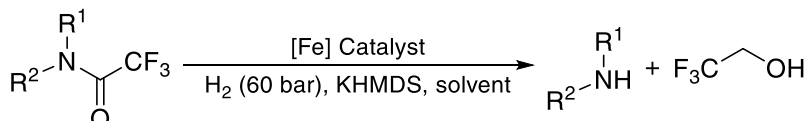
- Alkylation of alcohols.** Base additive Co-catalyzed alkylation of secondary alcohols with primary alcohols via borrowing hydrogen/hydrogen autotransfer.
- Hydroboration.** Ligand for the REM catalyzed hydroboration of imines and nitriles (REM = Er, Y, Dy or Gd).
- Asymmetric allylic alkylation.** Base additive in the direct intermolecular Pd-catalyzed asymmetric allylic alkylation of α -aryl cyclic vinylogous esters, enabling a straightforward enantioselective synthesis of 6-allyl-6-aryl-3-ethoxycyclohex-2-en-1-ones, common motifs embedded in numerous structurally diverse natural products.



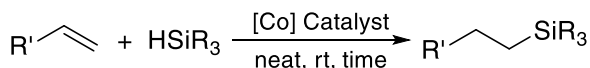
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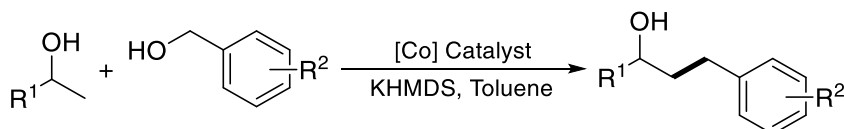
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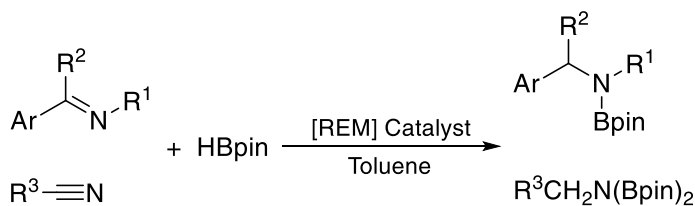
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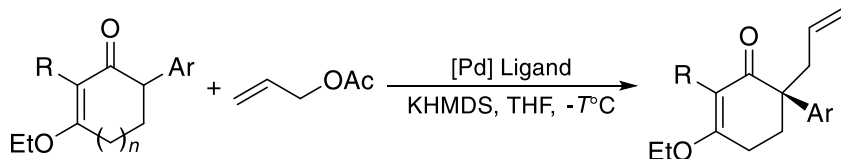
Tech Note (4)
Ref. (4)



Tech Note (5)
Ref. (5)



Tech Note (6)
Ref. (6)



Tech Note (7)
Ref. (7)

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