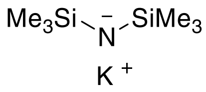
Catalog # 19-1045 CALLERY™ Potassium hexamethyldisilazane, 15% in toluene

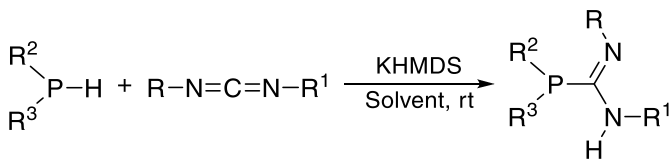


Technical Notes:

Lithium hexamethyldisilazane (KHMDS) is a strong non-nucleophilic, hindered amine base, with higher base strength than alkali metal alkoxides (pK_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 M(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 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 assested 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'$_2$, R'=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 inth 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



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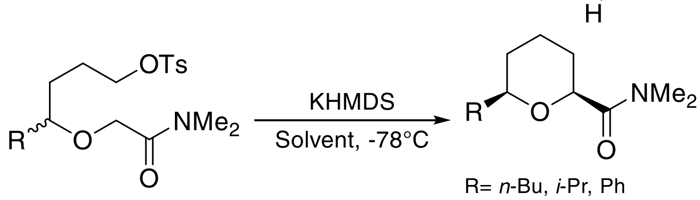

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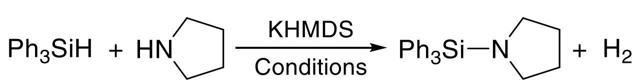

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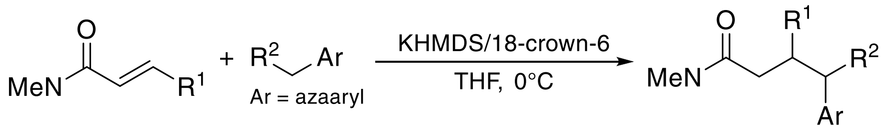

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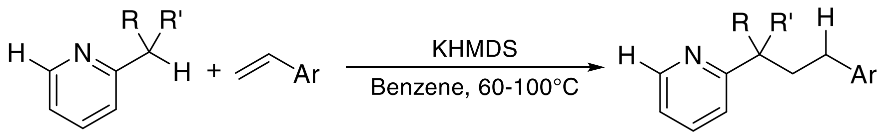

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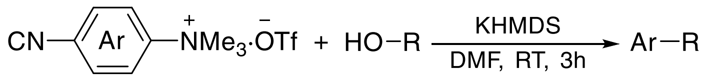

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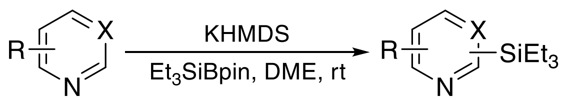

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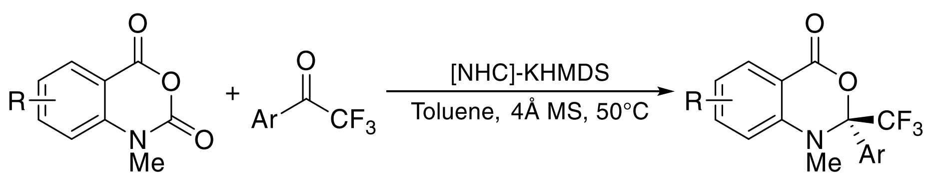

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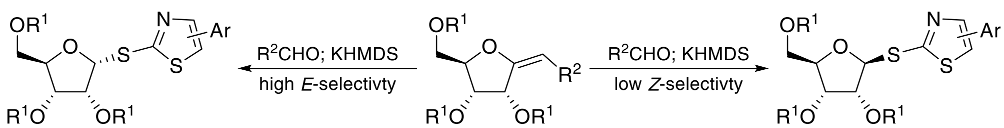

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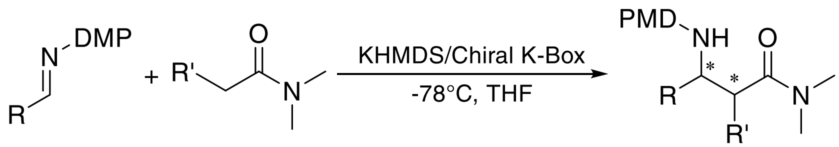

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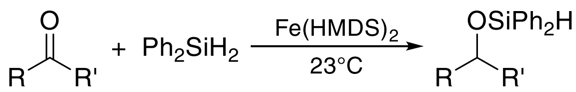
Application with transition metals

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

5. **Alkylation of alcohols**. Base additive Co-catalyzed alkylation of secondary alcohols with primary alcohols via borrowing hydrogen/hydrogen autotransfer
6. **Hydroboration.** Ligand for the REM catalyzed hydroboration of imines and nitriles (REM = Er, Y, Dy or Gd)
7. **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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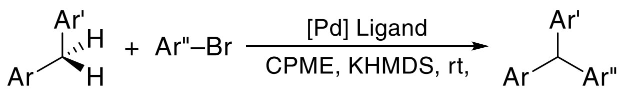

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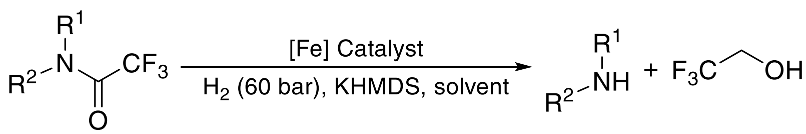

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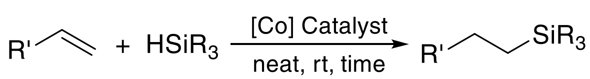

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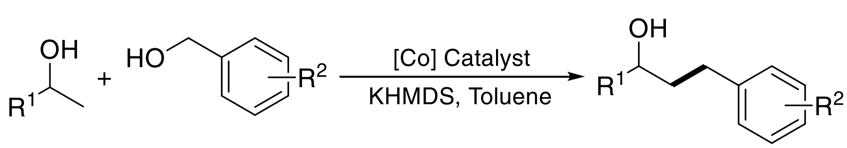

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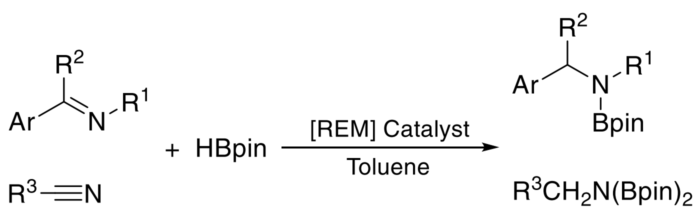

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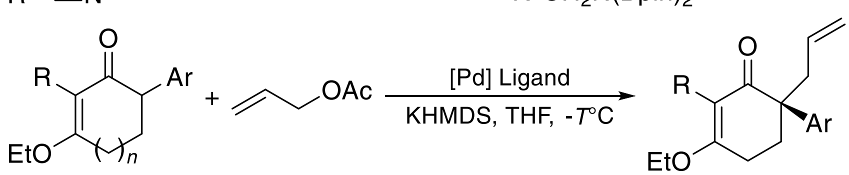

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