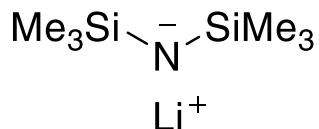


Catalog # 03-1275 CALLERY™ Lithium hexamethyldisilazane, 24% solution in tetrahydrofuran

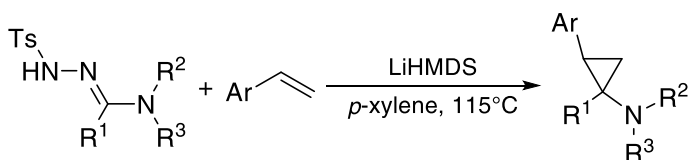
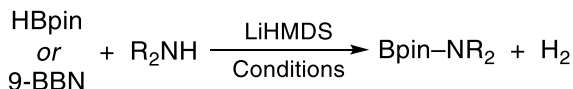
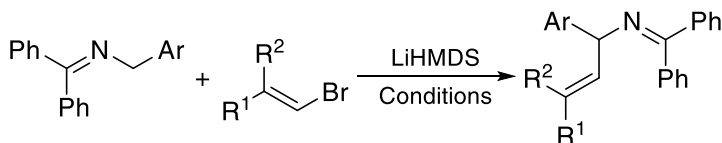
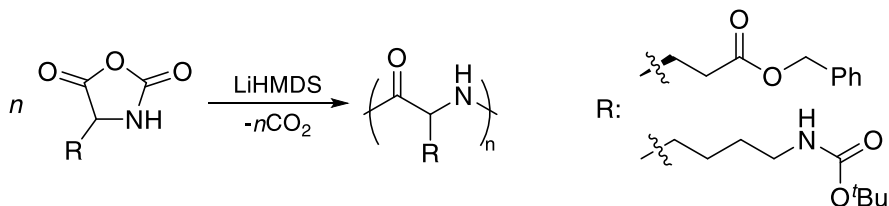


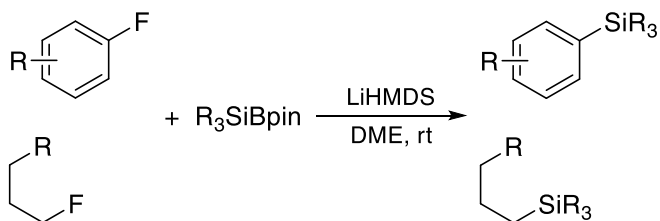
Technical Notes:

Lithium hexamethyldisilazane (LiHMDS) is a strong non-nucleophilic, hindered amine base, with higher base strength than alkali metal alkoxides ($pK_a=26$). LiHMDS 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, LiHMDS is able to catalyze transition metal-free reactions and to act as a ligand while reacting with a wide range of metal halides forming $M(\text{HMDS})_x$ catalysts.

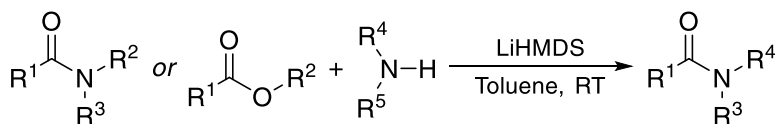
Transition metal-free application

1. Catalyst used for synthesis of tertiary aminocyclopropanes.
2. **Coupling reactions.** Catalyst for dehydro-coupling of boranes with amines leading to the formation of a *B-N* bond.
3. **Vinylation.** Catalyst for chemo- and regioselective vinylation of azaallyls.
4. **Ring opening/polymerization.** Catalyst used in the superfast ring opening polymerization of *alpha*-amino acid *N*-carboxyanhydrides.
5. **Defluorosilylation.** Catalyst for the defluorosilylation of $C(\text{sp}^2)\text{-F}$ and $C(\text{sp}^3)\text{-F}$ bonds.
6. **Direct amidation.** Catalyst for the highly chemoselective, transamidation of unactivated amides and direct amidation of alkyl esters by *N-C/O-C* cleavage.
7. Catalyst for the tandem synthesis of 2-azaaryl tetrahydroquinolines.
8. **Cross coupling.** Catalyst for the amide/ester cross-coupling via *C-N/C-H* bond cleavage to generate β -ketoesters.

Tech Note (1)
Ref. (1)Tech Note (2)
Ref. (2)Tech Note (3)
Ref. (3)Tech Note (4)
Ref. (4)

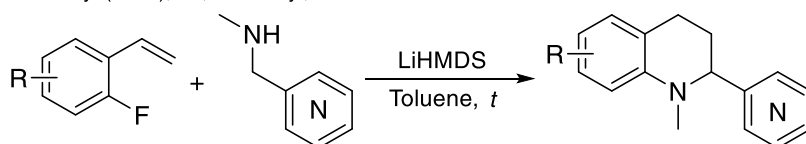


Tech Note (5)
Ref. (5)

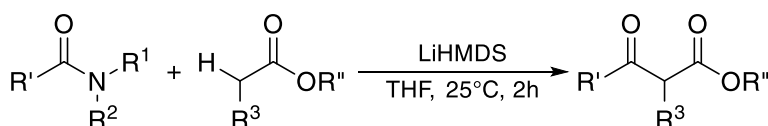


Tech Note (6)
Ref. (6)

$R^1 = \text{alkyl, Ar}; R^2, R^3 = \text{alkyl, Ar (amide)}$
 $R^2 = \text{alkyl (ester)}; R^4, R^5 = \text{alkyl, Ar}$



Tech Note (7)
Ref. (7)



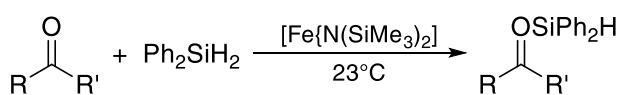
Tech Note (8)
Ref. (8)

References:

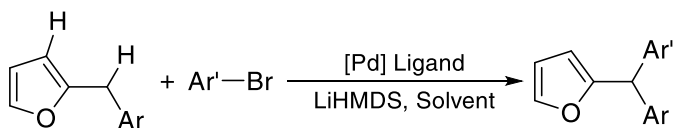
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2. [RSC Adv., 2016, 6, 35648.](#)
3. [Nat. Chem. 2017, 9, 997.](#)
4. [Nat. Commun. 2018, 9, 5297.](#)
5. [Angew. Chem. Int. Ed. 2019, 58, 2064.](#)
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8. [J. Org. Chem. 2021, 86, 5943.](#)

Application with transition metals

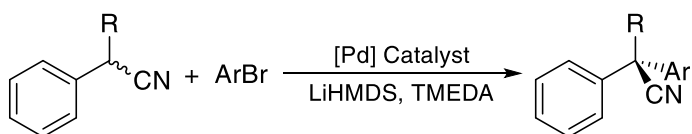
1. **Hydrosilylation.** Ligand for the Fe-catalyzed hydrosilylation of carbonyl compounds.
2. **Coupling.** Base additive used in Pd-catalyzed arylation of 2-benzylfurans.
3. **Asymmetric arylation.** Base additive used in Pd-catalyzed asymmetric α -arylation of alkylnitriles.
4. **Arylation.** Base additive used in Pd-catalyzed carbon-sulfur or carbon-phosphorus bond metathesis by reversible arylation.
5. **Allylic substitution.** Base additive for enantioselective Ir-catalyzed allylic substitution with 2-methylpyridines.
6. **Hydroboration.** Ligand for the Fe-catalyzed selective hydroboration of carbonyls with HBpin.
7. **Cross-coupling.** Base additive for the Pd-catalyzed cross-coupling of thiols with aromatic electrophiles.
8. **Polymerization.** Ligand for the Mg-catalyzed polymerization to prepare poly(propylene oxide) by employing Lewis pair polymerization via zwitterions based on nucleophilic *N*-heterocyclic olefins in cooperation with $Mg(HMDS)_2$ as an epoxide-activating Lewis acid.
9. **Alkylation.** Used in Co-catalyzed umpolung alkylation of imines to generate α -branched aliphatic amines.



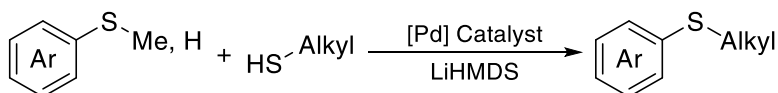
Tech Note (1)
Ref. (1)



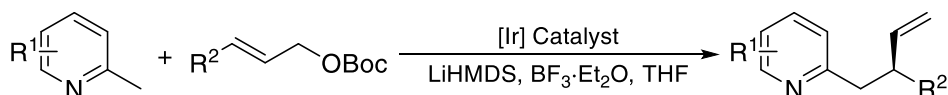
Tech Note (2)
Ref. (2)



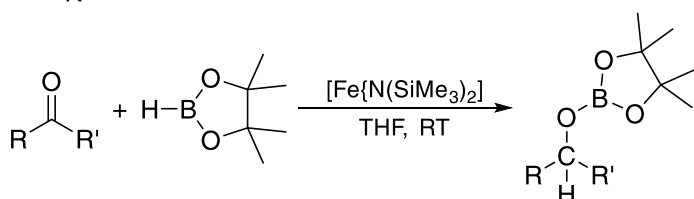
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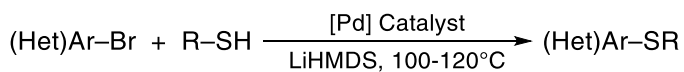
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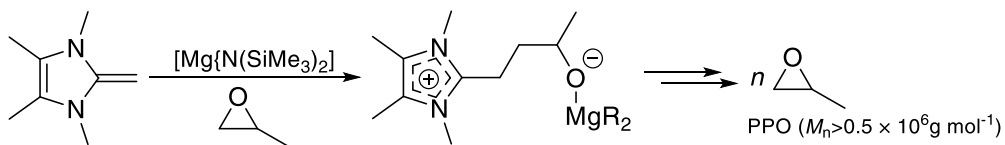
Tech Note (5)
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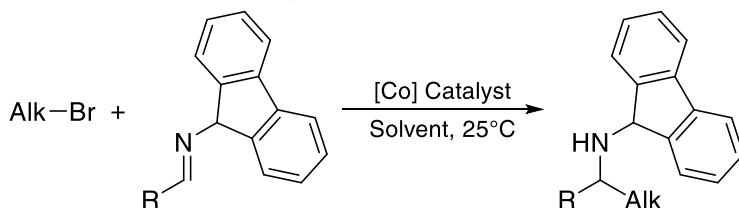
Tech Note (6)
Ref. (6)



Tech Note (7)
Ref. (7)



Tech Note (8)
Ref. (8)



Tech Note (9)
Ref. (9)

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1. [Angew. Chem. Int. Ed. 2010, 49, 10186.](#)
2. [J. Am. Chem. Soc. 2016, 138, 4260.](#)
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