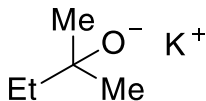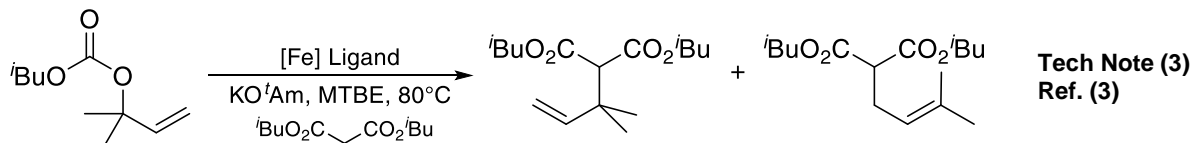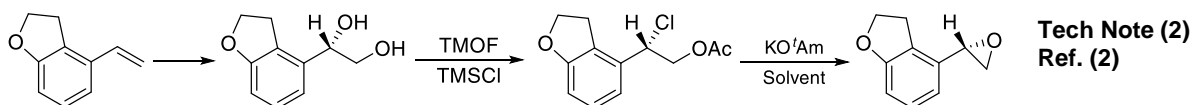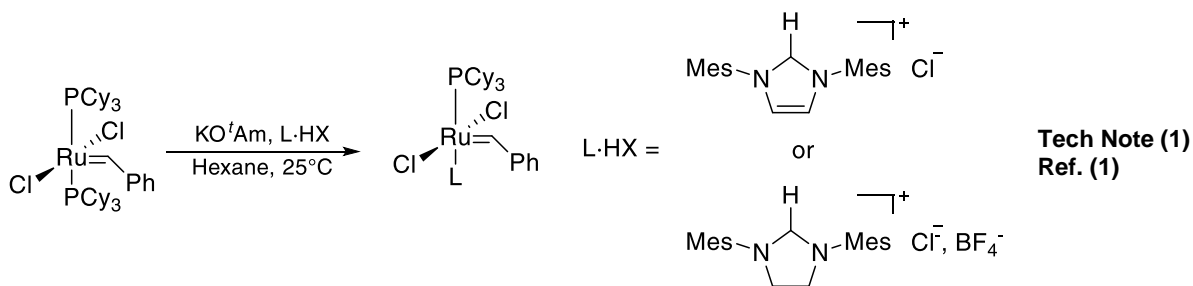Catalog # 19-1000 CALLERY™ Potassium tert-amylate, 25% solution in toluene
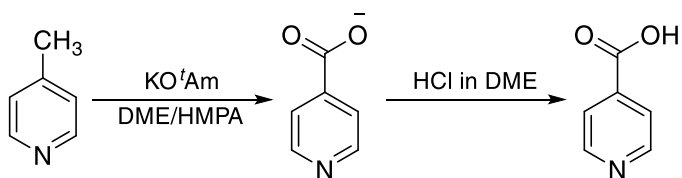

Potassium tertiary amylate (KTA) is also known as potassium t-pentoxide or potassium t-amyloxide. The high hydrocarbon solubility of potassium tert-amylate gives it an advantage over sodium and potassium alkoxides derived from tert-butanol or primary alcohols.
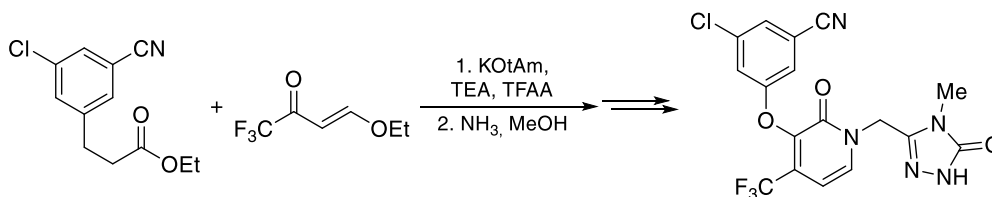
Technical Notes:
1. **Catalyst Preparation:** Used to convert imidazolium salts to free carbenes in the synthetic process of ruthenium olefin metathesis catalysts under mild reaction conditions.
2. **Asymmetric Epoxidation**: Base additive used in Jacobsen asymmetric epoxidation and the Sharpless asymmetric dihydroxylation/cyclization for the preparation of chiral epoxides.
3. **Allylic Substitutions**: Base additive used in iron-catalyzed allylic substitutions.
4. **Direct Oxidation**: Used in transition metal free, direct oxidation of 2-, 3-, and 4-picoline to the corresponding carboxylic acid using oxygen or air under continuous flow conditions.
5. **Aldol Reaction**: Used for the production process of HIV NNRTI doravirine via continuous flow aldol reaction.
6. **Synthesis of Tertiary Difluoroketones**: Catalyst for the direct and chemoselective synthesis of tertiary difluoroketones via Weinreb amide homologation with a CHF_2-carbene equivalent.
7. **Redox Cyclization**: Used in the redox cyclization of amides and sulfonamides with nitrous oxide (N_2O) for the direct synthesis of heterocycles.
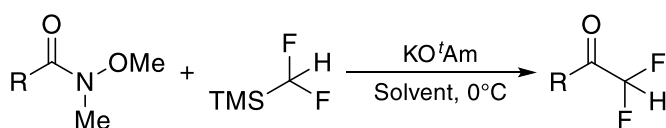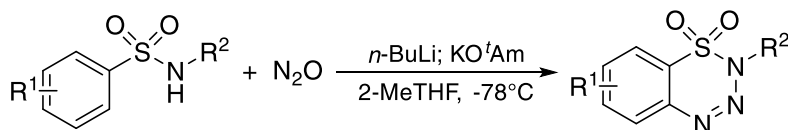

Tech Note (1)
Ref. (1)

Tech Note (2)
Ref. (2)

Tech Note (3)
Ref. (3)

CH₃ / KO^{t}Am, DME/HMPA → (carboxylate) / HCl in DME → (carboxylic acid)

Tech Note (4)
Ref. (4)

1. KOtAm, TEA, TFAA
2. NH₃, MeOH

Tech Note (5)
Ref. (5)

KO^{t}Am, Solvent, 0°C

Tech Note (6)
Ref. (6)

n-BuLi; KO^{t}Am, 2-MeTHF, -78°C

Tech Note (7)
Ref. (7)

References:
1. *Organometallics* **2002**, *21*, 442.
2. *Org. Proc. Res. Dev.* **2003**, *7*, 821.
3. *Angew. Chem. Int. Ed.* **2008**, *47*, 198.
4. *Chem. Commun.*, **2012**, *48*, 2086.
5. *Org. Lett.* **2015**, *17*, 1353.
6. *Org. Lett.* **2019**, *21*, 8261.
7. *Org. Lett.* **2020**, *22*, 2017.