

## Synthesis of Charge-Separated Magnesium Trisamides and their Utility in Enolization Reactions

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Magnesium amide bases are of interest due to their utility in enolization reactions. Previously, our group has focused on neutral magnesium bisamides which have shown unique, solvent-dependant stereoselectivity. Here we have synthesized a number of anionic magnesium tris hexamethyldisilazide (hexamethyldisilazide = HMDS) compounds with various cations, and have begun to investigate their reactivity in the enolization of 2',4',6'-trimethylacetophenone (TMA). We have successfully developed two synthetic methods resulting in the trisamide anion. The first begins with the heterometallic  $\text{MgLi}(\text{HMDS})_3$  species and employs 12-crown-4 to induce the charge separation. Secondly,  $\text{KHMDS}$ ,  $\text{Mg}(\text{HMDS})_2$ , and  $\text{NR}_4\text{Br}$  (R = alkyl) are combined, leaving the desired anion and  $\text{NR}_4^+$ . Early in situ enolization studies confirm that enolization reactions are promoted in the presence of the magnesium trisamide anion.