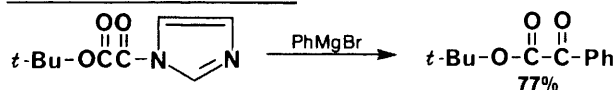




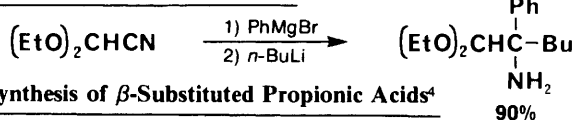
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Grignard reagents are undoubtedly the most widely used organometallic reagents in organic chemistry. An examination of the Fieser and Fieser "Reagents" series¹ reveals the diversity of synthetic reactions known for organomagnesium compounds. One might think that the study of Grignard reagents is old-fashioned and that little remains to be discovered. It is satisfying to find that such time-honored reagents are still enjoying significant usage, as evidenced by these applications reported in 1980 and 1981.

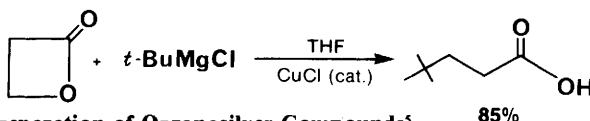
Synthesis of α -Keto Esters²



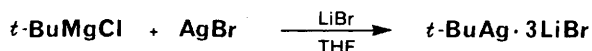
Synthesis of α -Amino Acetals³



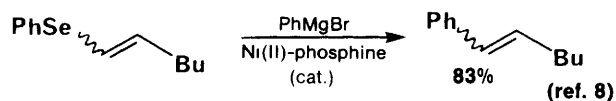
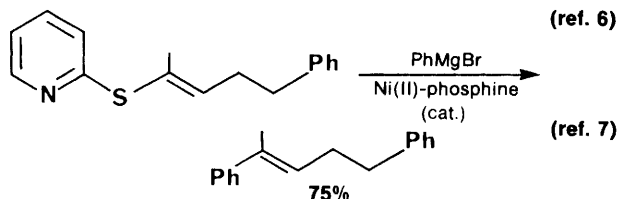
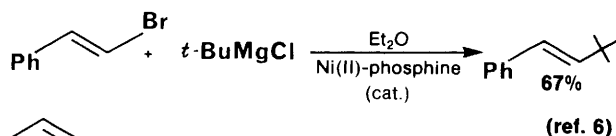
Synthesis of β -Substituted Propionic Acids⁴



Preparation of Organosilver Compounds⁵



Coupling Reaction with Substituted Alkenes



In addition to the coupling reactions shown above, a number of other transition metal-catalyzed reactions were recently reported. For example, the Cp_2TiCl_2 -catalyzed reac-

tion of Grignard reagents with ketones⁹ and esters¹⁰ results in reduction of the carbonyl group to give secondary and primary alcohols, respectively. With the same catalyst, reaction of alkylmagnesium compounds with alkynes provides a convenient route to *E*-alkenylmagnesium reagents.¹¹

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References:

- 1) Fieser, M.; Fieser, L.F. *Reagents for Organic Synthesis* 1, 415; 2, 205; 5, 321; 6, 269; 7, 163; 8, 235.
- 2) Nimitz, J.S.; Mosher, H.S. *J. Org. Chem.* **1981**, *46*, 211.
- 3) Chastrette, M.; Axiotis, G.P. *Synthesis* **1980**, 889.
- 4) Sato, T.; Kawara, T.; Kawashima, M.; Fujisawa, T. *Chem. Lett.* **1980**, 571.
- 5) Kleijn, H.; Westmijze, H.; Meijer, J.; Vermeer, P. *J. Organometal. Chem.* **1980**, *192*, 275.
- 6) Hayashi, T.; Konishi, M.; Yokota, K.; Kumada, M. *Chem. Lett.* **1980**, 767.
- 7) Takei, H.; Sugimura, H.; Miura, M.; Okamura, H. *ibid.* **1980**, 1209.
- 8) Okamura, H.; Miura, M.; Kosugi, K.; Takei, H. *Tetrahedron Lett.* **1980**, 21, 87.
- 9) Sato, F.; Jinbo, T.; Sato, M. *ibid.* **1980**, 21, 2171.
- 10) Sato, F.; Jinbo, T.; Sato, M. *ibid.* **1980**, 21, 2175.
- 11) Sato, F.; Ishikawa, H.; Sato, M. *ibid.* **1981**, 22, 85.
- 12) Lane, C.F.; Kramer, G.W. *Aldrichimica Acta* **1977**, 10, 11.

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