

Experimental and Theoretical studies on the Mechanism of Grignard Reagent Formation

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May 2000 will mark the anniversary of Grignard's publication reporting the discovery of his reagent. (Grignard, V.C.R., Hebd Sceances Acad. Sci. (900, 130, 1322). Despite its pervasive practical importance in the everyday life of synthetic chemists, several aspects of the sequence of elementary steps leading to the corrosive dissolution of magnesium metal in the solution of RX to yield RMgX remain unclear.

The combined use of very active particules of Mg (metal vapors solubilized in THF), surface redox indicators, batteries of specifically designed free radical clocks, inhibition studies and de Moon theoretical calculations of Mg clusters has provided new insights on this mechanism for alkyl and aryl halides.

Several questions remain, however, which demand further experimental investigations. Both new aspects and these questions will be dealt with in this lecture.

References and Notes

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