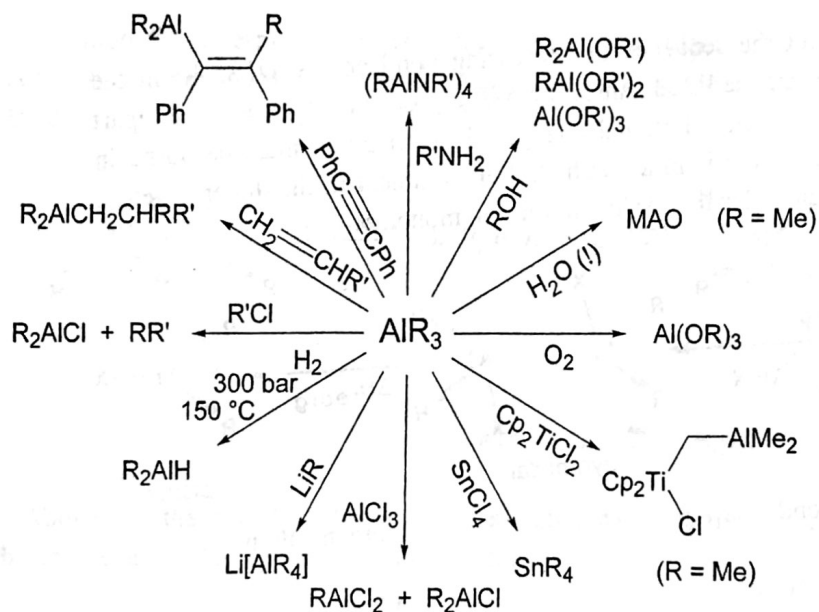


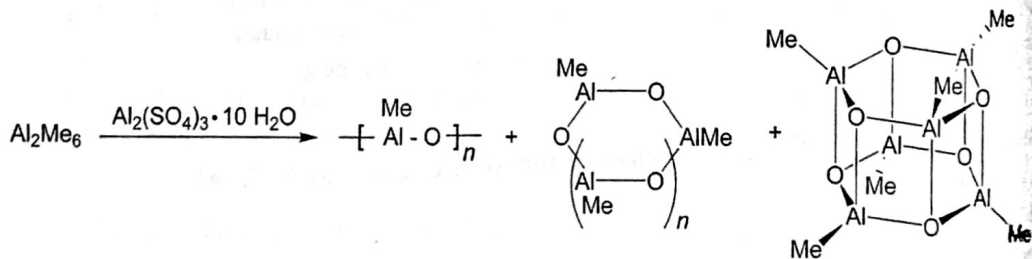
The conclusion is that hydride bridges appear to be so strong because the enthalpy of reorganization  $\Delta H_{\text{reorg}}$  is small for  $X = \text{H}$  ( $\text{R}_2\text{AlH}$ ). This must be related to the absence of a stabilizing  $\pi$ -bonding contribution in the trigonal planar form and to the minor decrease in interligand repulsion on going from pyramidal to trigonal-planar geometry.

### Reactions of Aluminum Organyls

The exceptional reactivity of organoaluminum compounds  $\text{AlR}_3$  has led to a multitude of synthetic applications that can only be treated in a cursory fashion here. As a limitation it must be noted that in many cases only one of the three Al-C bonds react. Hence  $\text{RAlX}_2$  ( $X = \text{Hal}, \text{OR}'$ , etc.) compounds are much less reactive than  $\text{AlR}_3$ . This could be a result of the association to form dimers and oligomers through X-bridges.



**Methylalumoxane (MAO)** is the highly reactive cocatalyst in olefin polymerization reactions catalyzed by group 4 metallocenyl halides such as  $\text{Cp}_2\text{ZrCl}_2$  (p. 702). MAO is produced in a proprietary process that involves **careful** hydrolysis of  $\text{AlMe}_3$ .



The structural units shown are only examples and are capable of further associations through Lewis acid/base interactions, which give rise to a very complex, non-uniform system. Furthermore, this system is metastable: