

## Reaction of Group 13 Compounds with Diimines

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### Abstract:

Reaction of Group 13 compounds with various substituted diazabutadiene ligands afforded both coordination and rearrangement products. Group 13 compounds react with various substituted diazabutadiene ligands giving a five-membered chelate ring, which undergo an intramolecular rearrangement.  $\text{Me}_2\text{GaCl}$ ,  $\text{GaMe}_3$  and  $\text{Me}_2\text{AlCl}$  react with 1,4-di-substituted aryl-1,4-diazabutadienes to give intramolecular rearrangement products. Coordination products are produced with the reaction of  $\text{MeGaCl}_2$  and  $\text{GaCl}_3$  with 1,4-di-substituted aryl-1,4-diazabutadienes. The reaction of  $\text{Me}_2\text{GaCl}$  with 1,4-di-alkyl-1,4-diazabutadienes afford cationic species. Several of the single crystal rearrangement products exhibit multichromic properties. EPR data has also been collected which indicates the presence of a ligand based radical. Further investigation of the optical and physical properties of these single crystals could lead to the production of new optical materials.

\*Sandia National Laboratories, Albuquerque, New Mexico 87185, is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.

To be Presented: 2006 Gordon Research Conference on Inorganic Chemistry,  
Newport, RI, July 16-20, 2006