

## TODAY'S TOPICS

- strong inference
- main group organometallics
  - preparation
  - structure and bonding
  - reactivity

## CHEMIST OF THE DAY



name?  
known for?

## QUOTE OF THE DAY

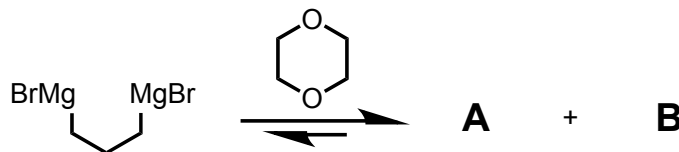
"When you have eliminated all which is impossible, then whatever remains, however improbable, must be the truth."

- Sir Arthur Conan Doyle

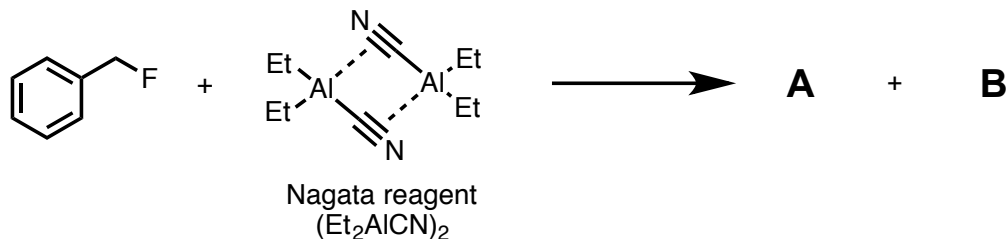
## PROBLEMS OF THE DAY

- #1** The activity of *n*-BuLi decreases in a few hours after it is dissolved in THF. **Explain why.**
- #2** Reagents of the type RMgCl•LiCl are called "Turbo" Grignards due to their increased reactivity in reactions such as metal/halogen exchange with aryl bromides. **Propose a structural rationale for this observation.**
- #3** **A.** The addition of 1,4-dioxane to a Grignard reagent is known to dramatically increase the rate of Grignard reactions (e.g., addition to a carbonyl group). **Explain this phenomena in terms of the Schlenk equilibrium.**

**B.** Based on this conceptual framework, **predict the products of the reaction shown below:**



- #4** **A.** Consider the reaction below between benzyl fluoride and the Nagata reagent, **and predict the products.**



**B.** Following a strong-inference workflow, **propose two or more possible mechanisms, and design experiments to rule out different hypotheses.**