

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

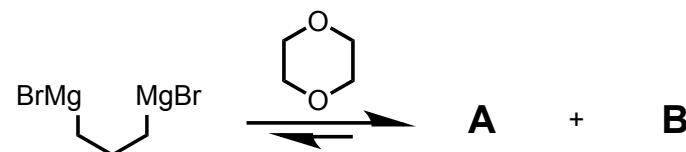
PROBLEMS OF THE DAY

#1 The activity of *n*-BuLi decreases in a few hours after it is dissolved in THF. **Explain why.**

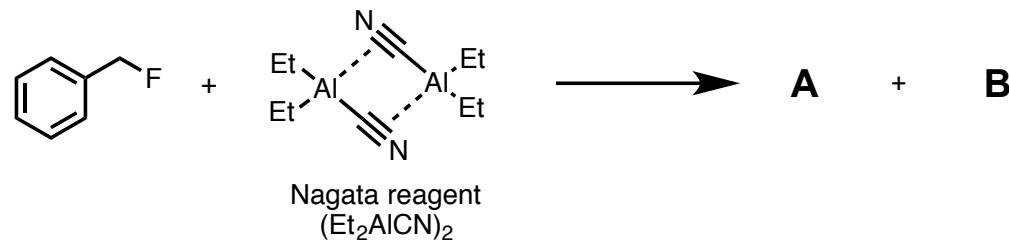
#2 Reagents of the type RMgCl•LiCl are called "Turbo" Grignards due to their increased reactivity in reactions such as metal/halogen exchange with aryl bromides. **Propose a structural rationale for this observation.**

#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.**