Day 7: Reactions of Carbenes and Olefin Metathesis

TODAY’S TOPICS
- carbenes
  • Fischer carbene
  • Schrock carbene
  • borderline cases
- other M–X multiple bonds
- olefin metathesis
  • history
  • mechanistic debate
  • catalyst chronology

QUOTE OF THE DAY
"Most scientific method stuff is oversold. Real scientists are just curious as hell." (K. Barry Sharpless)

PROBLEMS OF THE DAY

#1

![Reaction Diagram]

Ru(H)(H₂)Cl(PCy₃)₂

coordination number?
oxidation state?
d-electron count?
overall electron count?
geometry?

**Product?**


#2

![Reaction Diagram]

**Product?**
**Mechanism?**


#3

![Reaction Diagram]

**Product?**
**Mechanism?**
**Alternative synthesis?**


Catalysts:

#4

![Reaction Diagram]

**Product?**
**Mechanism?**


RRCM:

CHEMIST OF THE DAY

**Wolfgang A. Herrmann**
(1948–present)
Born: Kelheim, Germany
TU Munich

Known for:
• NHC ligands in TM catalysis

name? known for?