Unit 4 - Week 3

Assessment 3  Transition Metal Organometallic Chemistry: Principles To Applications

The due date for submitting this assignment has passed. Due on 2018-02-14, 23:59 IST.

Submitted assignment

1) The primary mode of possible decomposition pathway(s) in S-alkyl organometallic compounds is(are)
   - oligomerization reaction
   - insertion reaction
   - α-elimination
   - β-elimination

No, the answer is incorrect.
Score: 0
Accepted Answers:
β-elimination

2) The way(s) to suppress the β-elimination pathway in S-alkyl organometallic compounds is(are)
   - central metal atom should be coordinatively unsaturated
   - choosing a very bulky S-alkyl ligand without a-hydrogen
   - choosing the S-alkyl ligand without b-hydrogen
   - by making the leaving olefin favorable

No, the answer is incorrect.
Score: 0
Accepted Answers:
choosing the S-alkyl ligand without b-hydrogen

3) Identify the ligand with β−hydrogen atom

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4) Between Ti\([\text{CH}_2\text{C(CH}_3)_3\text{]}_4\) and Ti(\text{CH}_3)_4,

- Ti\([\text{CH}_2\text{C(CH}_3)_3\text{]}_4\) is more stable than Ti(\text{CH}_3)_4
- Ti\([\text{CH}_2\text{C(CH}_3)_3\text{]}_4\) is less stable than Ti(\text{CH}_3)_4
- both are stable at room temperature
- Ti\([\text{CH}_2\text{C(CH}_3)_3\text{]}_4\) has β−hydrogen atom

No, the answer is incorrect.
Score: 0
Accepted Answers:

5) Between Zr\([\text{CH}_2\text{Ph}]_4\) and Zr(\text{CH}_3)_4,

- Zr\([\text{CH}_2\text{Ph}]_4\) is more stable than Zr(\text{CH}_3)_4
- Zr\([\text{CH}_2\text{Ph}]_4\) is less stable than Zr(\text{CH}_3)_4
- both are stable at room temperature
- Zr\([\text{CH}_2\text{Ph}]_4\) has β−hydrogen atom

No, the answer is incorrect.
Score: 0
Accepted Answers:

6) Between Ti(\text{CH}_3)_4 and Pb(\text{CH}_3)_4,

- Ti(\text{CH}_3)_4 is more stable than Pb(\text{CH}_3)_4
- Ti(\text{CH}_3)_4 is less stable than Pb(\text{CH}_3)_4
- both are stable at room temperature
- Ti(\text{CH}_3)_4 has β−hydrogen atom

No, the answer is incorrect.
Score: 0
Accepted Answers:

7) The decomposition of Ti(\text{CH}_3)_4 proceeds via,
8) A bimolecular decomposition pathway is not possible in [(bipy)Ti(CH₃)₄], because of the Ti center being,

- coordinatively saturated
- coordinatively unsaturated
- electronically saturated
- electronically unsaturated

No, the answer is incorrect.
Score: 0
Accepted Answers:
coordinatively saturated

9) Between Ti(CH₃)₄ and W(CH₃)₆,

- Ti(CH₃)₄ is more stable than W(CH₃)₆
- Ti(CH₃)₄ is less stable than W(CH₃)₆
- both are stable at room temperature
- Ti(CH₃)₄ has β–hydrogen atom

No, the answer is incorrect.
Score: 0
Accepted Answers:
Ti(CH₃)₄ is less stable than W(CH₃)₆

10) The reason for W(CH₃)₆ being more stable than Ti(CH₃)₄ is due to the W center being,

- electronically unsaturated
- coordinatively saturated
- electronically saturated
- coordinatively unsaturated

No, the answer is incorrect.
Score: 0
Accepted Answers:
electronically unsaturated coordinatively saturated