

1. What are the possible geometries for a 4 coordinate compound?

- Pyramidal D_{3h} D_{4h} C_{2v}
 C_{4v} Tetrahedral Square pyramid T_d

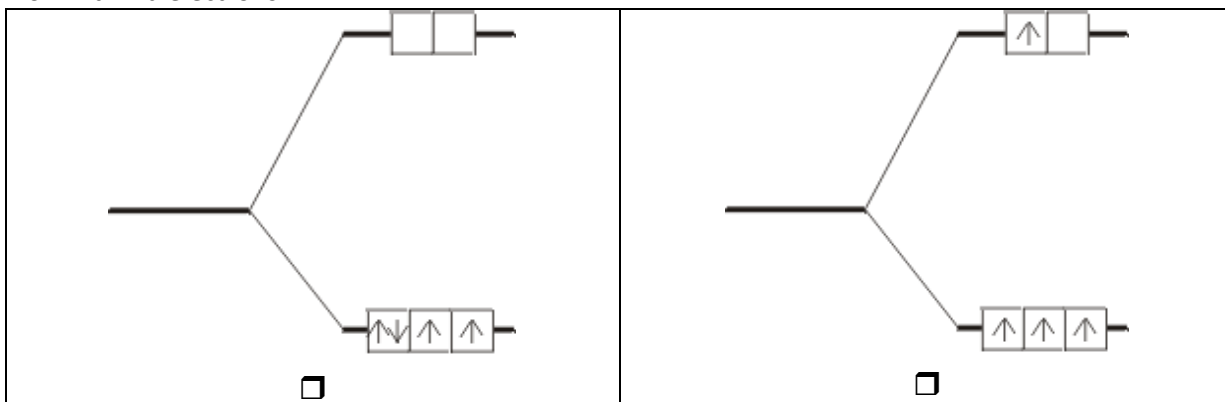
2. Actinides are hard metal ions

2.1. What are properties of hard metal ions

- Low Positive Charge Closed shells or half-filled electron configurations
 Large ionic radius Small radii High positive charges

2.2. Lanthanides and actinides can both be classified as hard metal ions. Which are considered to be harder, lanthanides or actinides? _____

3. Identify the d orbital splitting that is classified as high spin in crystal field theory. This is for a metal ion with 4 d electrons.



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