

8.3: Crystal Field Theory and Magnetism

Learning objectives for this unit are to:

- Predict if or explain why Jahn-Teller distortions will occur in a metal complex
 - Predict the magnetic properties of a complex based on its d-electron configuration and predict d-electron configurations based on magnetic properties
 - Calculate the spin-only magnetic moment (μ_s) for a complex given the number of unpaired electrons
 - Determine the number of unpaired electrons in a complex from the calculated μ_{eff} and μ_s values and determine the spin state of the complex from this information
 - Compare and contrast diamagnetism, paramagnetism, ferromagnetism, antiferromagnetism, and ferrimagnetism
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