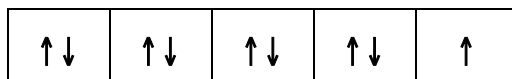


2

- Compounds of *d*-block elements are frequently paramagnetic. Using the box notation to represent atomic orbitals, account for this property in compounds of Cu^{2+} .

 Cu^{2+} is d^9 

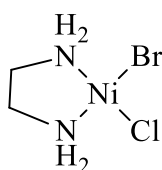
is paramagnetic

4

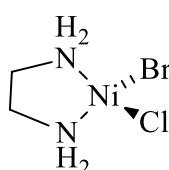
- Provide a systematic name for the complex $[\text{NiBrCl}(\text{en})]$ and draw both of its possible structures. (en = $\text{NH}_2\text{CH}_2\text{CH}_2\text{NH}_2$ = ethylenediamine = ethane-1,2-diamine)

Both of the following names are acceptable:

- bromidochlorido(ethylenediamine)nickel(II)
- bromidochlorido(ethane-1,2-diamine)nickel(II)



square planar



tetrahedral

Is either complex chiral? Explain your reasoning.

No. Both structures are superimposable on (*i.e.* identical to) their mirror images.