

Problems:

(a) What is the systematic name of Na3[AlF6]?

(b) What is the systematic name of [CoCl2(en)2]NO3?

(c) What is the formula of tetraammine bromo chloroplatinum(IV) chloride?

(d) What is the formula of hexaamminecobalt(III) hexachloroferrate(III)?

(e) What is the systematic name of Li[AlH4]?

(f) What is the systematic name of Na3[Co(NO2)6]

1-Give the chemical formula for Hexaaquanickel(ll) aquapentabromochromate(lll).

2-Give the name for [Co(NH3)6][CoCl6].

3-Practice naming some complex compounds:

a-[PtCl2(NH3)2] b-K2[PtCl4] c-[Pt(NH3)4]2+

d-[Pt(NH3)3Cl]Cl e-[Ni(CN)4]2- f- [CoCl4(NH3)2]-.

Practice writing the complex compound formulas:

1-Hexaaquochromium(III) chloride.

2-Ammonium diaquatetrachloroaurate(III).

3-Potassium hexacyanoferrate(II).

4-Potassium hexacyanoferrate(III).

5-Lithium tetrahydrido aluminate(III).

6-Sodium hexanitrito Cobaltate(III).

. 7-Potassium tetracyanoaurate(II) ion

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the correct name for the complex Na2[Ni(CN)4]

1. Disodium tetranickelcyanide.
2. Sodium tetracyanidenickel(l).
3. Disodium tetracyanonickelo(lV).
4. Natrium tetranickel(Vl)cyanide.
5. Sodium tetracyanonickelate(ll).
6. [Ag(NH3)2]Cl or [Ag(NH3)2]NO3.
8. In these compounds,
9. silver is \_\_\_\_\_\_\_\_\_\_\_\_.
10. NH3 is \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
11. and Cl− or NO3− is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
12. C.N. is \_\_\_\_\_\_\_\_\_\_\_\_.
13. Ligands are attached by \_\_\_\_\_\_\_\_\_\_\_bonds.
14. Counterions are attached by \_\_\_\_\_\_\_ bonds.
15. 1-[Co2(CO)8] 2-[Fe2(CO)9] 3-[Cr(C6H6)2]
16. 4-[Fe(CO)2(NO)2] 5-[PdCl2(NH3)2] 6-[Fe(CN)6]4-
17. 7-[Cd(CN)4]2- 8-[Cu(CN)4]3- 9-K4[Fe(CN)6]
18. 10-K3[Fe(CN)6] 11-[Co(NH3)6]3+ 12-Na[Fe(CN)6]
19. 13-[CoCl(NH3)4(H2O)]Cl2 14-Li[AlH4] 15-Na3[Co(NO2)6]
20. 16-[Ag(NH3)2]NO3 17-K[Au(CN)4]- 18-[Ni(CN)4]2-

Q/ write Limitations of Sedgwick theory

Structure of complex compounds based on VBT

1. Structure of nickel tetracarbonyl [Ni(CO)4] .
2. Formation of [NiCl4] 2-
3. Structure of [Ni(CN)4]2- .
4. Structure of [CoF6]3- .
5. Structure of [Co(NH3)6]3+ .

Q/ Draw the electron box diagram, geometrical structure, hybridization and calculate magnetic moment for the following coordination compounds according VBT:  
  
1- [FeF6]3- 2-[CuCl5]3- 3-[Co(NH3)4(H2O)Cl]Cl2  
4-Li[AlH4] 5-Na3[Co(NO2)6] 6-[Ag(NH3)2]NO   
7-K[Au(CN)4]- 8-[Fe(CN)6] 4-  9-[Cd(CN)4]2-

10-[Cu(CN)4]3- 11-K4[Fe(CN)6] 12-K3[Fe(CN)6]