

# Unit 9

# Coordination Compounds

- **Coordination compounds** are those compounds which retain their identities even when dissolved in water or any other solvent and their properties are completely different from those of the constituents.

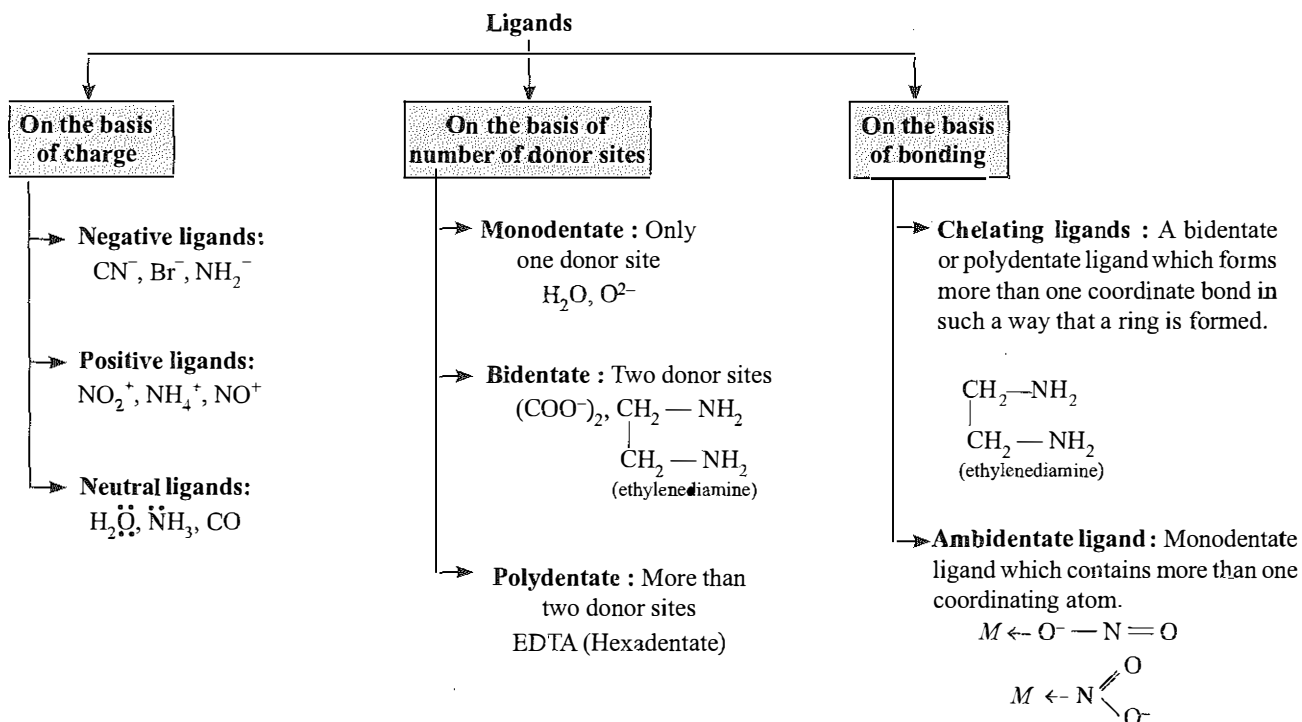
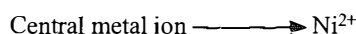
## IMPORTANT TERMS

### Central Metal Atom or Ion (Centre of coordination compound)

- Central metal atom or ion to which central molecules or ions are linked by coordinate bonds is known as centre of coordination.

### Ligand

- An atom, molecule or ion which is linked to central metal atom or ion through coordinate bond by donating lone pair of electron present on its donor atom is known as ligand.



### Coordination Number (C.N.)

- The total number of coordinate bonds through which the central metal atom ion is attached with ligands is known as coordination number.  
Examples :  $[\text{Ag}(\text{CN})_2]^-$  : C.N. = 2,  $[\text{Cu}(\text{NH}_3)_4]^{2+}$  : C.N. = 4,  $[\text{Cr}(\text{H}_2\text{O})_6]^{3+}$  : C.N. = 6

### Coordination Sphere

- The central atom and the ligands which are directly attached are collectively known as coordination sphere. It

is non-ionisable and written enclosed in square brackets. The ionisable groups are written outside the brackets.

Example :

