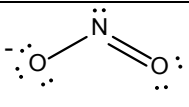
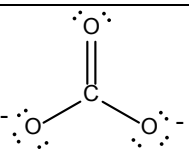
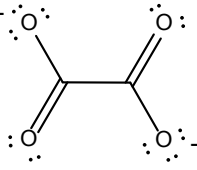
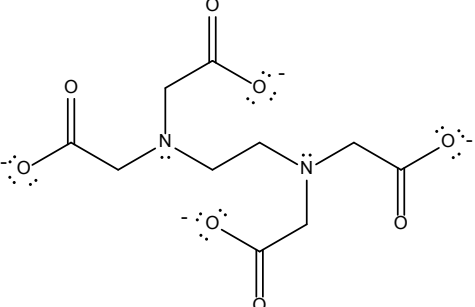


LIGAND NAMES IN COORDINATION COMPOUNDS

Neutral Ligands:

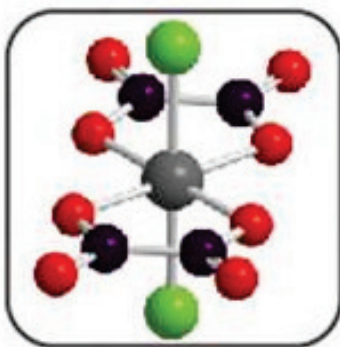
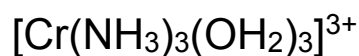
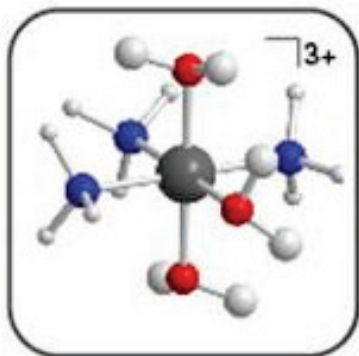
FORMULA	NAME*	New IUPAC Name Convention
H ₂ O	aqua	aqua
NH ₃	ammine	ammine
NO	nitrosyl	nitrosyl
CO	carbonyl	carbonyl
NH ₂ CH ₂ CH ₂ NH ₂	ethylenediamine (en)	ethylenediamine (en)
NH ₂ CH ₂ CH ₂ NHCH ₂ CH ₂ NH ₂	diethylenetriamine (dien)	diethylenetriamine (dien)

Anionic Ligands: (The underlined atom is bound to the transition metal.)

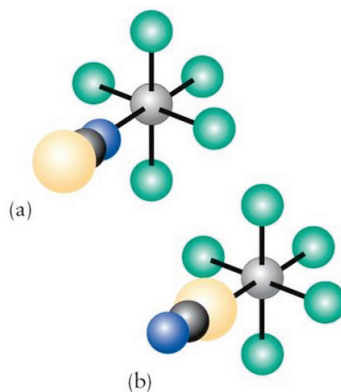
FORMULA	NAME*	New IUPAC Name Convention
F ⁻	fluoro	fluorido
Cl ⁻	chloro	chlorido
Br ⁻	bromo	bromido
I ⁻	iodo	iodido
OH ⁻	hydroxo	hydroxido
O ²⁻	oxo	oxido
<u>C</u> N ⁻	cyano	cyanido-κC
<u>N</u> C ⁻	isocyano	cyanido-κN
<u>S</u> CN ⁻	thiocyanato	thiocyanato-κS
<u>N</u> CS ⁻	isothiocyanato	thiocyanato-κN
<u>N</u> O ₂ ⁻ 	nitro	nitrito-κN
NO ₂ ⁻ as <u>O</u> NO ⁻	nitrito	nitrito-κO
CO ₃ ²⁻ 	carbonato	carbonato-κO
C ₂ O ₄ ²⁻ 	oxalato (ox)	oxalato (ox)
SO ₄ ²⁻ as <u>O</u> SO ₃ ²⁻	sulfato	sulfato
	ethylenediaminetetraacetato (edta)	ethylenediaminetetraacetato (edta)

We use *. We will accept both.

Examples:



(a) NCS bound through the N



(b) SCN bound through the S

In the first example the name is written as
tetraamminechloronitrocobalt(III)chloride

$[\text{Co}(\text{NH}_3)_4(\text{NO}_2)\text{Cl}]\text{Cl}$ tetra-ammine-chloro-nitro-cobalt(III)-chloride
tetra-ammine-chlorido-nitrito- κN -cobalt(III)-chloride

$[\text{Co}(\text{NH}_3)_4\text{ONOCI}]\text{Cl}$ tetra-ammine-chloro-nitrito-cobalt(III)-chloride
tetra-ammine-chlorido-nitrito- κO -cobalt(III)-chloride

$[\text{Cr}(\text{NH}_3)_4(\text{OH})_2]\text{Br}$ tetra-ammine-di-hydroxo-chromium(III)-bromide
tetra-ammine-di-hydroxido-chromium(III)-bromide

$\text{K}_3[\text{CoF}_6]$ potassium-hexa-fluoro-cobaltate(III)
potassium-hexa-fluorido-cobaltate(III)