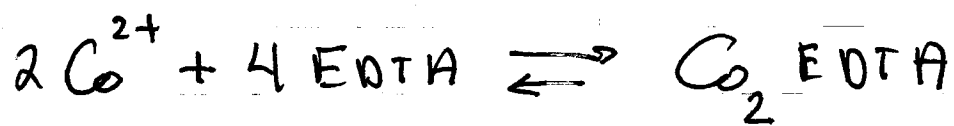
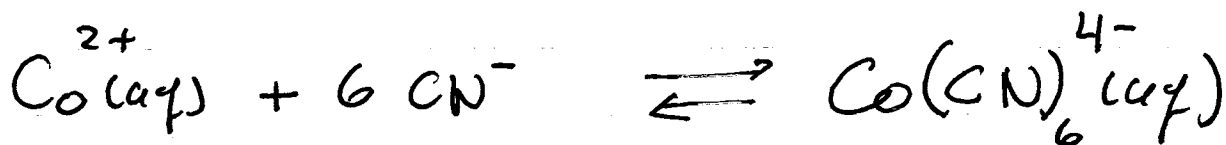


Cyanide Poisoning



$$K_f = 2.0 \times 10^{16}$$



Cyano
ligands

$$K_f = 1.2 \times 10^{19}$$

THEREFORE WE NEED TO
UNDERSTAND

Ligand exchange reactions
Complex-ion formation!

IF WE DISSOLVE 0.100 mole of Co^{2+}
IN ONE LITER OF 1.00 M NH_3 WE
FIND

$$[\text{Co}^{2+}] = 0.003\%$$

$$[\text{Co}(\text{NH}_3)^{2+}] = 0.199\%$$

$$[\text{Co}(\text{NH}_3)_2^{2+}] = 3.6\%$$

$$[\text{Co}(\text{NH}_3)_3^{2+}] = 17.6\%$$

$$[\text{Co}(\text{NH}_3)_4^{2+}] = 45\%$$

$$[\text{Co}(\text{NH}_3)_5^{2+}] = 30.4\%$$

$$[\text{Co}(\text{NH}_3)_6^{2+}] = 3.2\%$$