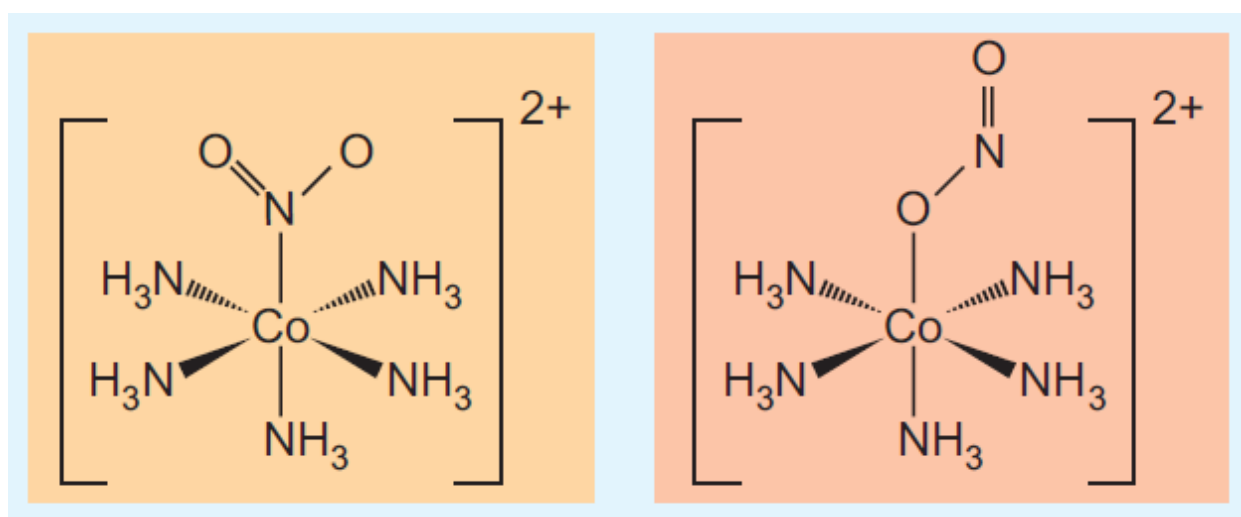


# Structural isomers

The coordination compounds with same formula, but have different connections among their constituent atoms are called structural isomers or constitutional isomers. Four common types of structural isomers are discussed below.

## Linkage isomers:



## Coordination isomers:

1.  $[\text{Cr}(\text{NH}_3)_5\text{CN}][\text{Co}(\text{NH}_3)(\text{CN})_5]$  and  $[\text{Co}(\text{NH}_3)_5\text{CN}][\text{Cr}(\text{NH}_3)(\text{CN})_5]$
2.  $[\text{Pt}(\text{NH}_3)_4][\text{Pd}(\text{Cl})_4]$  and  $[\text{Pd}(\text{NH}_3)_4][\text{Pt}(\text{Cl})_4]$

## Ionisation isomers:

1.  $[\text{Cr}(\text{NH}_3)_4\text{ClBr}]\text{NO}_2$  and  $[\text{Cr}(\text{NH}_3)_4\text{ClNO}_2]\text{Br}$
2.  $[\text{Co}(\text{NH}_3)_4\text{Br}_2]\text{Cl}$  and  $[\text{Co}(\text{NH}_3)_4\text{ClBr}]\text{Br}$

## Solvate isomers.

$[\text{Cr}(\text{H}_2\text{O})_6]\text{Cl}_3$	a violet colour compound and gives three chloride ions in solution,
$[\text{Cr}(\text{H}_2\text{O})_5\text{Cl}]\text{Cl}_2 \cdot \text{H}_2\text{O}$	a pale green colour compound and gives two chloride ions in solution and,
$[\text{Cr}(\text{H}_2\text{O})_4\text{Cl}_2]\text{Cl} \cdot 2\text{H}_2\text{O}$	dark green colour compound and gives one chloride ion in solution