

Naming complexes: ligands

Before you answer the puzzles below fill in the table of ligands using:

hydride hydroxide cyanide aqua CO thio

Ligand	Formula	Name in complex	Ligand	Formula	Name in complex
water	H ₂ O			CN ⁻	cyano
chloride	Cl ⁻	chloro	fluoride	F ⁻	fluoro
bromide	Br ⁻	bromo		H ⁻	hydrido
iodide	I ⁻	iodo	carbon monoxide		carbonyl
	OH ⁻	hydroxy	oxide	O ²⁻	oxo
ammonia	NH ₃	ammino	sulfide	S ²⁻	

Gridlock 1

Each row, column and 2 x 2 box contains information about the first four ligands listed above. Use your problem solving skills and the answers in the table above to fill in the blank boxes.

ligand		name in complex	
chloride			
		iodo	
		H ₂ O	
	bromo		
name in complex		formula	

gridlocks – can you unlock the grid?

Gridlock 2

Each row, column and 2 x 2 box contains information about each of the ligands: hydroxide, fluoride, ammonia and cyanide.

ligand		name in complex	
	hydroxide		fluoro
			hydroxy
ammino			CN ⁻
name in complex		formula	

Gridlock 3

Each row, column and 2 x 2 box contains information about each of the ligands: carbon monoxide, hydride, sulfide and oxide.

ligand		name in complex	
carbon monoxide			hydrido
			S ²⁻
oxo			
name in complex		formula	

Naming complexes: ligands – answers

Ligand	Formula	Name in complex	Ligand	Formula	Name in complex
water	H ₂ O	aqua	cyanide	CN ⁻	cyano
chloride	Cl ⁻	chloro	fluoride	F ⁻	fluoro
bromide	Br ⁻	bromo	hydride	H ⁻	hydrido
iodide	I ⁻	iodo	carbon monoxide	CO	carbonyl
hydroxide	OH ⁻	hydroxy	oxide	O ²⁻	oxo
ammonia	NH ₃	ammino	sulfide	S ²⁻	thio

Gridlock 1 – answers

ligand		name in complex	
chloride	iodide	bromo	aqua
bromide	water	iodo	chloro
iodo	chloro	H ₂ O	Br ⁻
aqua	bromo	Cl ⁻	I ⁻
name in complex		formula	

gridlocks – can you unlock the grid?

Gridlock 2 – answers

ligand		name in complex	
cyanide	hydroxide	ammino	fluoro
fluoride	ammonia	cyano	hydroxy
hydroxy	cyano	F^-	NH_3
ammino	fluoro	OH^-	CN^-
name in complex		formula	

Gridlock 3 – answers

ligand		name in complex	
carbon monoxide	oxide	thio	hydrido
sulfide	hydride	carbonyl	oxo
hydrido	carbonyl	O^{2-}	S^{2-}
oxo	thio	H^-	CO
name in complex		formula	