Inorganic Compounds in Aqueous Solution - Colours

	H_2O	NH_3	OH^-	Cl^-	CO_3^{2-}
(II) Co	$[Co(H_2O)_6]^{2+}(aq)$ pink solution	$[Co(NH_3)_6]^{2+}(aq)$ straw coloured solution	$[Co(H_2O)_4(OH)_2](s)$ blue precipitate	$[CoCl_4]^{2-}(aq)$ blue solution	$CoCO_3(s)$ pink precipitate
(II) Cu	$[Cu(H_2O)_6]^{2+}(aq)$ blue solution	$[Cu(NH_3)_4(H_2O)_2]^{2+}(aq)$ deep blue solution	$[Cu(H_2O)_4(OH)_2](s)$ blue precipitate	$[CuCl_4]^{2-}(aq)$ yellow-green solution	$CuCO_3(s)$ green-blue precipitate
(II) Fe	$[Fe(H_2O)_6]^{2+}(aq)$ green solution		$[Fe(H_2O)_4(OH)_2](s)$ green precipitate – turns brown due to oxidation		$FeCO_3(s)$ green precipitate
(III) Co		$[Co(NH_3)_6]^{3+}(aq)$ dark brown solution			
(III) Cr	$[Cr(H_2O)_6]^{3+}(aq)$ ruby solution	$[Cr(NH_3)_6]^{3+}(aq)$ purple solution	$[Cr(H_2O)_3(OH)_3](s)$ light green precipitate $[Cr(OH)_6]^{3-}(aq)$ green solution		
(III) Fe	$[Fe(H_2O)_6]^{3+}(aq)$ violet solution – but appears brown due to hydrolysis to form $[Fe(H_2O)_5(OH)]^{2+}(aq)$		$[Fe(H_2O)_3(OH)_3](s)$ brown precipitate		
(III) V	$[V(H_2O)_6]^{3+}(aq)$ blue solution				
(III) Al	$[Al(H_2O)_6]^{3+}(aq)$ colourless solution		$[Al(H_2O)_3(OH)_3](s)$ white precipitate $[Al(OH)_4]^-(s)$ colourless solution		

