

TWENTY FIRST CENTURY SCIENCE DATA SHEET

QUALITATIVE ANALYSIS

TESTS FOR IONS WITH A POSITIVE CHARGE

Ion	Test	Observation
calcium Ca²⁺	add dilute sodium hydroxide	a white precipitate forms; the precipitate does not dissolve in excess sodium hydroxide
copper Cu²⁺	add dilute sodium hydroxide	a light blue precipitate forms; the precipitate does not dissolve in excess sodium hydroxide
iron(II) Fe²⁺	add dilute sodium hydroxide	a green precipitate forms; the precipitate does not dissolve in excess sodium hydroxide
iron(III) Fe³⁺	add dilute sodium hydroxide	a red-brown precipitate forms; the precipitate does not dissolve in excess sodium hydroxide
zinc Zn²⁺	add dilute sodium hydroxide	a white precipitate forms; the precipitate dissolves in excess sodium hydroxide

TESTS FOR IONS WITH A NEGATIVE CHARGE

Ion	Test	Observation
carbonate CO_3^{2-}	add dilute acid	the solution effervesces; carbon dioxide gas is produced (the gas turns lime water from colourless to milky)
chloride Cl^-	add dilute nitric acid, then add silver nitrate	a white precipitate forms
bromide Br^-	add dilute nitric acid, then add silver nitrate	a cream precipitate forms
iodide I^-	add dilute nitric acid, then add silver nitrate	a yellow precipitate forms
sulfate SO_4^{2-}	add dilute acid, then add barium chloride or barium nitrate	a white precipitate forms