

Identification of Ions and Gases

Mark Scheme 2

Level	IGCSE
Subject	Chemistry
Exam Board	CIE
Topic	Acids, Bases and Salts
Sub-Topic	Identification of Ions and Gases
Paper Type	Alternative to Practical
Booklet	Mark Scheme 2

Time Allowed: 57 minutes

Score: /47

Percentage: /100

- 1 (a) both lose mass (1) [1]
not: change mass
- (b) mass loss increases constantly in graph **A** (1)
becomes constant in graph **B** (after about 7–9 hours) (1)
mass loss or change is greater in acid/less in alkali (1) [3]
- (c) goggles / lab coat / tongs / fume cupboard / well ventilated area any two [2]
ignore: reference to hair
- 2 tests on liquid L
- (a) colourless (liquid) [1]
allow: (pale) yellow
- (c) no reaction / change (1) [1]
- (d) yellow (1) precipitate (1) [2]
- (e) iodine dissolves / owtte (1) [1]
- (f) organic (1) solvent (1) liquids do not mix (1) max [2]

- 3 (a) (i) white (1) precipitate (1) dissolves (1) [3]
- (ii) white precipitate (1) dissolves (1) [2]
- (b) no reaction/change (1) [1]
- (c) white (1) precipitate (1) [2]
- (g) chlorine (1) **not:** chloride [1]
- (h) oxygen (1) [1]
- (i) transition metal present (1) catalyst (1) **allow:** copper oxide for one mark [2]
manganese (1) oxide (1) max 2

- 4 (a) (ii) colourless (1) **allow** yellow no smell (1) [2]
- (b) (ii) extinguished/owtte (1) [1]
- (d) yellow (1) precipitate (1) [2]
- (e) organic (1) **allow** hydrocarbon
fuel/alcohol/named alcohol (1) **allow** flammable [2]
- 5 (a) (i) **P** colourless, no smell (1) [1]
- (ii) **P** pH 1–3 (1) [1]
- (b) **P** fizzes/effervescence/bubbles (1)
lighted splint pops (1) **not** hydrogen [2]
- (c) white (1) precipitate (1) [2]
- (e) weak acid (1) ethanoic acid (2) [2]
- (f) water (1) [1]

6 wrong reagent, correct result = 0

aqueous sodium iodide

(nitric acid)/silver/lead nitrate (1)

yellow precipitate (1)

hexene

bromine (water) (1)

accept lit splint

goes colourless (1) not clear
burns

nitric acid

named indicator (1)

or

magnesium

or

(named) carbonate

correct colour change/pH (1)

forms hydrogen/fizzes

forms carbon dioxide/fizzes

[6]