

Identification of Ions and Gases

Mark Scheme 1

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 1

Time Allowed: 57 minutes

Score: /47

Percentage: /100

Question	Answer	Marks
1(a)	sodium; bromide;	2 1 1
1(b)	gre	1
1(c)(i)	green; precipitate; with excess, green solution / clear / dissolves;	3 1 1 1
1(c)(ii)	grey-green; precipitate;	2 1 1
1(c)(iii)	precipitate;	1
1(d)	f cupboard / protective clothing, e.g. gloves or goggles;	1

Question	Answer	Marks
2(a)	/ green (solid / crystals);	1
2(b)(i)	(pale) blue; precipitate; royal / deep blue; dissolves / solution;	4
2(b)(ii)	(pale) blue precipitate;	1
2(b)(iii)	precipitate;	1
2(b)(iv)	reaction / change / precipitate;	1
2(c)	ammoni iodide;	2

Question	Answer	Marks
3	any 6 from: chromatography; (pencil) baseline / origin; apply orange colour to paper; and samples of both E110 and E129; solvent / named solvent; check heights of spots of E colours against orange drink; conclusion / allow comparison to known R_f values;	6

- 4 (d) white (1)
precipitate (1) [2]
- (e) no reaction / no change / no precipitate (1) [1]
allow: colourless solution
- (f) not a chloride / halide (1) [1]
- (g) oxygen / O₂ (1) [1]
not O
- (h) transition metal / manganese (1)
hydrated salt (1)
ignore: sulfate
allow: catalyst (1) max [2]

- 5 (a) (i) chromatography (1) [1]
- (ii) to prevent loss / evaporation of solvent (1) [1]
- (b) when the solvent is near the top of the paper / before the solvent reaches the top of the paper (1) [1]
- (c) (i) 4 (1) [1]
- (ii) yes, one artificial dye (1)
at same height / matches (1) [2]
- 6 (c) no reaction / no change / no precipitate (1) [1]
- (d) white (1)
precipitate (1) [2]
- (e) transition metal present (1)
allow: iron
water / hydrated (1) [2]
- (f) hydrated (1) iron (1) (II) (1) (sulfate) [3]