

L1-CHEMR



Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

Level 1 Chemistry 2023

RESOURCE BOOKLET

Refer to this booklet to answer the questions in your Question and Answer Booklets.

Check that this booklet has pages 2–4 in the correct order and that none of these pages is blank.

YOU MAY KEEP THIS BOOKLET AT THE END OF THE EXAMINATION.

Activity series

Ca Mg Al Zn Fe Pb (H) Cu Ag

Colours of selected ions and solids

Colourless ions	barium, calcium, carbonate, chloride, hydroxide, iodide, lead, magnesium, potassium, silver, sodium, sulfate, zinc
Blue ions	copper
Pale green ions	iron(II)
White solids	barium carbonate, barium hydroxide, barium sulfate, calcium carbonate, calcium hydroxide, calcium sulfate, lead carbonate, lead chloride, lead hydroxide, lead sulfate, magnesium carbonate, magnesium hydroxide, magnesium oxide, silver chloride, zinc carbonate
Green solid	copper carbonate, iron(II) hydroxide, iron(II) carbonate, iron(II) chloride
Blue solid	copper hydroxide
Yellow solid	lead iodide, silver carbonate
Cream solid	silver iodide
Brown solid	iron(III) chloride
Black solid	copper(II) oxide, iron(II) sulfide

Solubility rules

nitrates	All soluble
chlorides	All soluble except silver chloride, lead chloride
iodides	All soluble except silver iodide, lead iodide
sulfates	All soluble except barium sulfate, lead sulfate, calcium sulfate
hydroxides	All insoluble except potassium hydroxide, sodium hydroxide
carbonates	All insoluble except potassium carbonate, sodium carbonate

Table of ions

+1	+2	+3	-3	-2	-1
NH_4^+	Ca^{2+}	Al^{3+}		O^{2-}	OH^-
Na^+	Mg^{2+}	Fe^{3+}		S^{2-}	Cl^-
K^+	Cu^{2+}			CO_3^{2-}	I^-
Ag^+	Pb^{2+}			SO_4^{2-}	NO_3^-
H^+	Fe^{2+}				HCO_3^-
Li^+	Ba^{2+}				F^-
	Zn^{2+}				

PERIODIC TABLE OF THE ELEMENTS

Atomic number																	
1																	
H																	
1	2															18	
																2	He
3	4															17	
																10	Ne
11	12															16	
																18	Ar
19	20															36	
																36	Kr
37	38															54	
																54	Xe
55	56															86	
																86	Rn
87	88															118	
																118	Og

57	Lanthanum	58	Cerium	59	Praseodymium	60	Niobium	61	Prothactinium	62	Samarium	63	Europium	64	Gadolinium	65	Terbium	66	Dysprosium	67	Holmium	68	Erbium	69	Thulium	70	Ytterbium
89	Actinium	90	Thorium	91	Protactinium	92	Uranium	93	Neptunium	94	Plutonium	95	Americium	96	Curium	97	Berkelium	98	Californium	99	Einsteinium	100	Fermium	101	Mendelevium	102	Nobelium