

L1–CHEMR



NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

QUALIFY FOR THE FUTURE WORLD
KIA NOHO TAKATŪ KI TŌ ĀMUA AO!

Level 1 Chemistry 2020

9.30 a.m. Friday 4 December 2020

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	chloride, iodide, sulfate, hydroxide, carbonate, calcium, magnesium, zinc, lead, barium, silver
Blue ions	copper
Pale green ions	iron(II)
White solids	calcium sulfate, calcium hydroxide, calcium carbonate, magnesium hydroxide, magnesium carbonate, zinc carbonate, lead chloride, lead sulfate, lead carbonate, barium sulfate, barium hydroxide, barium carbonate, silver chloride
Green solid	iron(II) hydroxide, iron(II) carbonate
Blue solid	copper hydroxide
Yellow solid	lead iodide
Cream solid	silver iodide

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																2	
		H																He	
1	2																	17	18
3	4	Li	Be															9	10
11	12	Na	Mg															8	Ne
19	20	K	Ca	3	4	5	6	7	8	9	10	11	12					16	17
														5	6	7	8	9	10
														B	C	N	O	F	
														13	14	15	16	17	18
														Al	Si	P	S	Cl	Ar
														31	32	33	34	35	36
														Ga	Ge	As	Se	Br	Kr
														49	50	51	52	53	54
														In	Sn	Sb	Te	I	Xe
														81	82	83	84	85	86
														Tl	Pb	Bi	Po	At	Rn
														113	114	115	116	117	118
														Nh	Fl	Mc	Lv	Ts	Og

57	58	59	60	61	62	63	64	65	66	67	68	69	70
La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb
89	90	91	92	93	94	95	96	97	98	99	100	101	102
Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No