

L1-CHEMMR



NEW ZEALAND QUALIFICATIONS AUTHORITY  
MANA TOHU MĀTAURANGA O AOTEAROA

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

## Te Mātauranga Matū, Kaupae 1, 2018

2.00 i te ahiahi Rāpare 15 Whiringa-ā-rangi 2018

### PUKAPUKA RAUEMI

Tirohia tēnei pukapuka hei whakatutuki i ngā tūmahi o ō Pukapuka Tūmahi, Tuhinga hoki.

Tirohia mēnā e tika ana te raupapatanga o ngā whārangi 2–7 kei roto i tēnei pukapuka, ka mutu, kāore tētahi o aua whārangi i te takoto kau.

**KA TAEA TĒNEI PUKAPUKA TE PUPURI HEI TE MUTUNGA O TE WHAKAMĀTAUTAU.**

## Raupapatanga hohe

Ca Mg Al Zn Fe Pb (H) Cu Ag
-----------------------------

### Ngā tae o ētahi katote me ngā totoka

Ngā katote kanokore	pūhaumāota, kahautawa, pākawa pungatara, waihā, pākawa waro, konupūmā, konupora, konutea, konumatā, konu-okehu, hiriwa
Ngā katote kikorangi	konukura
Ngā katote kārerarera	rino(II)
Ngā totoka mā	konupūmā pākawa pungatara, konupūmā waihā, konupūmā pākawa waro, konupora waihā, konupora pākawa waro, konutea pākawa waro, konumatā pūhaumāota, konumatā pākawa pungatara, konumatā pākawa waro, konu-okehu pākawa pungatara, konu-okehu waihā, konu-okehu pākawa waro, hiriwa pūhaumāota
Totoka kākāriki	rino(II) waihā, rino(II) pākawa waro
Totoka kahurangi	konukura waihā
Totoka kōwhai	konumatā kahautawa
Totoka kahotea	hiriwa kahautawa

### Ngā ture mō te memehatanga

ngā pākawa ota	Ka <b>memeha</b> te katoa
ngā pūhaumāota	Ka <b>memeha</b> te katoa engari anō te hiriwa pūhaumāota me te konumatā pūhaumāota
ngā kahautawa	Ka <b>memeha</b> te katoa engari anō te hiriwa kahautawa me te konumatā kahautawa
ngā pākawa pungatara	Ka <b>memeha</b> te katoa engari anō te konu-okehu pākawa pungatara, konumatā pākawa pungatara me te konupūmā pākawa pungatara
ngā waihā	He <b>meha-kore</b> te katoa engari anō te konurehu waihā me te konutai waihā
ngā pākawa waro	He <b>meha-kore</b> te katoa engari anō te konurehu pākawa waro me te konutai pākawa waro

### 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 <b>soluble</b>
chlorides	All <b>soluble</b> except silver chloride, lead chloride
iodides	All <b>soluble</b> except silver iodide, lead iodide
sulfates	All <b>soluble</b> except barium sulfate, lead sulfate, calcium sulfate
hydroxides	All <b>insoluble</b> except potassium hydroxide, sodium hydroxide
carbonates	All <b>insoluble</b> except potassium carbonate, sodium carbonate

**Taka katote**

<b>+1</b>	<b>+2</b>	<b>+3</b>	<b>-3</b>	<b>-2</b>	<b>-1</b>
$\text{NH}_4^+$	$\text{Ca}^{2+}$	$\text{Al}^{3+}$		$\text{O}^{2-}$	$\text{OH}^-$
$\text{Na}^+$	$\text{Mg}^{2+}$	$\text{Fe}^{3+}$		$\text{S}^{2-}$	$\text{Cl}^-$
$\text{K}^+$	$\text{Cu}^{2+}$			$\text{CO}_3^{2-}$	$\text{I}^-$
$\text{Ag}^+$	$\text{Pb}^{2+}$			$\text{SO}_4^{2-}$	$\text{NO}_3^-$
$\text{H}^+$	$\text{Fe}^{2+}$				$\text{HCO}_3^-$
$\text{Li}^+$	$\text{Ba}^{2+}$				$\text{F}^-$
	$\text{Zn}^{2+}$				

**Table of ions**

<b>+1</b>	<b>+2</b>	<b>+3</b>	<b>-3</b>	<b>-2</b>	<b>-1</b>
$\text{NH}_4^+$	$\text{Ca}^{2+}$	$\text{Al}^{3+}$		$\text{O}^{2-}$	$\text{OH}^-$
$\text{Na}^+$	$\text{Mg}^{2+}$	$\text{Fe}^{3+}$		$\text{S}^{2-}$	$\text{Cl}^-$
$\text{K}^+$	$\text{Cu}^{2+}$			$\text{CO}_3^{2-}$	$\text{I}^-$
$\text{Ag}^+$	$\text{Pb}^{2+}$			$\text{SO}_4^{2-}$	$\text{NO}_3^-$
$\text{H}^+$	$\text{Fe}^{2+}$				$\text{HCO}_3^-$
$\text{Li}^+$	$\text{Ba}^{2+}$				$\text{F}^-$
	$\text{Zn}^{2+}$				

TE TAKA PŪMOTU

		Tau iraoho																	
		1																	
		H																	
1	2																		
3	4	Li	Be															5	6
11	12	Na	Mg															13	14
19	20	K	Ca	3	4	5	6	7	8	9	10	11	12	31	32	33	34	35	36
37	38	Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
55	56	Cs	Ba	Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
87	88	Fr	Ra	Lr	Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Cn	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

PERIODIC TABLE OF THE ELEMENTS

Atomic number																		18	
1																		17	
H																		16	
																		15	
																		14	
																		13	
																		12	
																		11	
																		10	
																		9	
																		8	
																		7	
																		6	
																		5	
																		4	
																		3	
																		2	
																		1	
3	Li	4	Be															2	He
11	Na	12	Mg															10	Ne
19	K	20	Ca	21	Sc	22	Ti	23	V	24	Cr	25	Mn	26	Fe	27	Co	28	Ni
37	Rb	38	Sr	39	Y	40	Zr	41	Nb	42	Mo	43	Tc	44	Ru	45	Rh	46	Pd
55	Cs	56	Ba	71	Lu	72	Hf	73	Ta	74	W	75	Re	76	Os	77	Ir	78	Pt
87	Fr	88	Ra	103	Lr	104	Rf	105	Db	106	Sg	107	Bh	108	Hs	109	Mt	110	Ds
																		111	Rg
																		112	Cn
																		113	Nh
																		114	Fl
																		115	Mc
																		116	Lv
																		117	Ts
																		118	Og

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

*English translation of the wording on the front cover*



NEW ZEALAND QUALIFICATIONS AUTHORITY  
MANA TOHU MĀTAURANGA O AOTEAROA

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

## Level 1 Chemistry, 2018

2.00 p.m. Thursday 15 November 2018

### RESOURCE BOOKLET

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

Check that this booklet has pages 2–7 in the correct order and that none of these pages is blank.

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