

L3-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 3, 2016

2.00 i te ahiahi Rāhina 21 Whiringa-ā-rangi 2016

PUKA RAUEMI
mō 91390M, 91391M, 91392M

Tirohia tēnei puka hei whakatutuki i ngā tūmahi o ō Pukapuka Tūmahi, Tuhiinga hoki.

Tirohia mēnā e tika ana te raupapatanga o ngā whārangi 2–3 kei roto i tēnei pukapuka, ka mutu, kāore tētahi o aua whārangi i te takoto kau.

KA TĀEA TĒNEI PUKA TE PUPURI HEI TE MUTUNGA O TE WHAKAMĀTAUTAU.

TE TAKA PŪMOTU

18

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57	58	59	60	61	62	63	64	65	66	67	68	69	70	
Raupapa Lanthanide	La 139	Ce 140	Pr 141	Nd 144	Pm 147	Sm 150	Eu 152	Gd 157	Tb 159	Dy 163	Ho 165	Er 167	Tm 169	Yb 173
Raupapa Actinide	89	90	91	92	93	94	95	96	97	98	99	100	101	102
	Ac 227	Th 232	Pa 231	U 238	Np 237	Pu 239	Am 241	Cm 244	Bk 249	Cf 251	Es 252	Fm 257	Md 258	No 259

PERIODIC TABLE OF THE ELEMENTS

18

Atomic number		Relative atomic mass																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
		H 1.0																	He 4.0
3	4	Li 6.9	Be 9.0											5	6	7	8	9	10
11	12	Na 23.0	Mg 24.3											13	14	15	16	17	18
19	20	K 39.1	Ca 40.1	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
37	38	Rb 85.5	Sr 87.6	Y 88.9	Zr 91.2	Nb 92.9	Mo 95.9	Tc 98.9	Ru 101	Rh 103	Pd 106	Ag 108	Cd 112	49	50	51	52	53	54
55	56	Cs 133	Ba 137	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86
87	88	Fr 223	Ra 226	Lu 175	Hf 179	Ta 181	W 184	Re 186	Os 190	Ir 192	Pt 195	Au 197	Hg 201	204	207	209	210	210	222
				103	104	105	106	107	108	109	110	111	112		114		116		
				Lr 262	Rf 261	Db 262	Sg 263	Bh 264	Hs 265	Mt 268	Ds 271	Rg 272	Cn 277		289		292		

Lanthanide Series	57	La 139	Ce 140	Pr 141	Nd 144	Pm 147	Sm 150	Eu 152	Gd 157	Tb 159	Dy 163	Ho 165	Er 167	Tm 169	Yb 173
Actinide Series	89	Ac 227	Th 232	Pa 231	U 238	Np 237	Pu 239	Am 241	Cm 244	Bk 249	Cf 251	Es 252	Fm 257	Md 258	No 259

English translation of the wording on the front cover

L3-CHEMMR

Level 3 Chemistry, 2016

2.00 p.m. Monday 21 November 2016

**RESOURCE BOOKLET
for 91390, 91391, 91392**

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

Check that this booklet has pages 2–3 in the correct order and that neither of these pages is blank.

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