

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, 2015

2.00 i te ahiahi Rāapa 11 Whiringa-ā-rangi 2015

PUKA RAUEMI
mō 91390M, 91391M, 91392M

Tirohia tēnei puka hei whakatutuki i ngā tūmahi o tō Pukapuka Tuhinga, Tūmahi 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 TAEA TĒNEI PUKA TE PUPURI HEI TE MUTUNGA O TE WHAKAMĀTAUTAU.

TE TAKA PŪMOTU

18

Tau Iraoho													1		2									
													H		He									
													1.0		4.0									
Papatipu Ngota													13		14		15		16		17		18	
													5		6		7		8		9		10	
													B		C		N		O		F		Ne	
													10.8		12.0		14.0		16.0		19.0		20.2	
													13		14		15		16		17		18	
													Al		Si		P		S		Cl		Ar	
													27.0		28.1		31.0		32.1		35.5		40.0	
													31		32		33		34		35		36	
													Ga		Ge		As		Se		Br		Kr	
													69.7		72.6		74.9		79.0		79.9		83.8	
													49		50		51		52		53		54	
													In		Sn		Sb		Te		I		Xe	
													115		119		122		128		127		131	
													81		82		83		84		85		86	
													Tl		Pb		Bi		Po		At		Rn	
													204		207		209		210		210		222	
													30		29		28		27		26		25	
													Zn		Cu		Ni		Co		Fe		Mn	
													65.4		63.5		58.7		58.9		55.9		54.9	
													48		47		46		45		44		43	
													Cd		Ag		Pd		Rh		Ru		Tc	
													112		108		106		103		101		98.9	
													80		79		78		77		76		75	
													Hg		Au		Pt		Ir		Os		Re	
													201		197		195		192		190		186	
													112		111		110		109		108		107	
													Cn		Rg		Ds		Mt		Hs		Bh	
													277		272		271		268		265		264	
													226		223		220		217		214		211	
													Ra		Fr		Rn		At		Po		Bi	
													226		223		220		217		214		211	

Raupapa Lanthanide		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
		139	140	141	144	147	150	152	157	159	163	165	167	169	173
Raupapa Actinide		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
		227	232	231	238	237	239	241	244	249	251	252	257	258	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	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
55	56	Cs 133	Ba 137	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
87	88	Fr 223	Ra 226	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104
				105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
				121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136
				137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152
				153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168
				169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184
				185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
				201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216
				217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232
				233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248
				249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264
				265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280
				281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296
				297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312

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, 2015

2.00 p.m. Wednesday 11 November 2015

RESOURCE SHEET
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 none of these pages is blank.

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