

L2-CHEMR



NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

QUALIFY FOR THE FUTURE WORLD
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Level 2 Chemistry 2021

RESOURCE BOOKLET

Refer to this booklet 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 BOOKLET AT THE END OF THE EXAMINATION.

Formulae for 91164: *Demonstrate understanding of bonding, structure, properties and energy changes*

$$n = cV \quad \Delta_r H = \Sigma \text{ bond energies (bonds broken)} - \Sigma \text{ bond energies (bonds formed)}$$

$$n = \frac{m}{M}$$

Formulae for 91166: *Demonstrate understanding of chemical reactivity*

$$K_w = [\text{H}_3\text{O}^+][\text{OH}^-] = 1 \times 10^{-14} \text{ at } 25^\circ\text{C}$$

$$\text{pH} = -\log[\text{H}_3\text{O}^+] \quad [\text{H}_3\text{O}^+] = 10^{-\text{pH}}$$

PERIODIC TABLE OF THE ELEMENTS

Atomic number																		Molar mass/g mol ⁻¹																		<i>I</i> 8																																									
1																		2																		2																																									
H 1.0																																				He 4.0																																									
<i>I</i>				<i>2</i>				<i>3</i>				<i>4</i>				<i>5</i>				<i>6</i>				<i>7</i>				<i>8</i>				<i>9</i>				<i>10</i>				<i>11</i>				<i>12</i>				<i>13</i>				<i>14</i>				<i>15</i>				<i>16</i>				<i>17</i>													
3	Li 6.9	4	Be 9.0															5	B 10.8	6	C 12.0	7	N 14.0	8	O 16.0	9	F 19.0															10	Ne 20.2																																		
11	Na 23.0	12	Mg 24.3															13	Al 27.0	14	Si 28.1	15	P 31.0	16	S 32.1	17	Cl 35.5															18	Ar 40.0																																		
19	K 39.1	20	Ca 40.1	21	Sc 45.0	22	Ti 47.9	23	V 50.9	24	Cr 52.0	25	Mn 54.9	26	Fe 55.9	27	Co 58.9	28	Ni 58.7	29	Cu 63.6	30	Zn 65.4	31	Ga 69.7	32	Ge 72.6	33	As 74.9	34	Se 79.0	35	Br 79.9															36	Kr 83.8																												
37	Rb 85.5	38	Sr 87.6	39	Y 88.9	40	Zr 91.2	41	Nb 92.9	42	Mo 95.9	43	Tc 98.9	44	Ru 101	45	Rh 103	46	Pd 106	47	Ag 108	48	Cd 112	49	In 115	50	Sn 119	51	Sb 122	52	Te 128	53	I 127															54	Xe 131																												
55	Cs 133	56	Ba 137	57	La 138.9	58	Ce 140.1	59	Pr 140.9	60	Nd 144.2	61	Pm 144.9	62	Sm 150.4	63	Eu 151.9	64	Gd 157.3	65	Tb 158.9	66	Dy 162.5	67	Ho 164.9	68	Er 167.3	69	Tm 168.9	70	Yb 173.0	71	Lu 174.9	72	Hf 178.5	73	Ta 180.9	74	W 183.8	75	Re 186.2	76	Os 190.2	77	Ir 192.2	78	Pt 195.1	79	Au 197.0	80	Hg 200.6	81	Tl 204.4	82	Pb 207.2	83	Bi 208.98	84	Po 209	85	At 210															86	Rn 222
87	Fr 223	88	Ra 226	89	Ac 227	90	Th 232.04	91	Pa 231.04	92	U 238.03	93	Np 237.05	94	Pu 244.06	95	Am 243.06	96	Cm 247.07	97	Bk 247.07	98	Cf 251.08	99	Es 252.08	100	Fm 257.10	101	Mn 258.10	102	Sg 266.10	103	Lr 260.11	104	Rf 261.10	105	Db 262.11	106	Sg 266.12	107	Bh 264.12	108	Hs 265.12	109	Mt 268.12	110	Ds 271.12	111	Rg 272.12	112	Cn 277.12	113	Nh 278.12	114	Fl 289.12	115	Mc 290.12	116	Lv 293.12	117	Ts 294.12															118	Og 294.12

Lanthanide Series	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
Actinide Series	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

