

L3-CHEMR



NEW ZEALAND QUALIFICATIONS AUTHORITY  
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## Level 3 Chemistry

### 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 91390: *Demonstrate understanding of thermochemical principles and the properties of particles and substances***

$$n = cV$$

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

$$q = mc\Delta T$$

$$\Delta_r H^\circ = \sum \Delta_f H^\circ(\text{products}) - \sum \Delta_f H^\circ(\text{reactants})$$

**Formulae for 91392: *Demonstrate understanding of equilibrium principles in aqueous systems***

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

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

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

$$\text{p}K_a = -\log K_a$$

$$K_a = 10^{-\text{p}K_a}$$

$$K_a = \frac{[\text{H}_3\text{O}^+][\text{A}^-]}{[\text{HA}]}$$

$$K_s = s^2$$

$$K_s = 4s^3$$

$$n = cV$$

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

# PERIODIC TABLE OF THE ELEMENTS

Atomic number																	1	Relative atomic mass																	18
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Lanthanide Series																										
57	<b>La</b>	139	<b>Ce</b>	140	<b>Pr</b>	141	<b>Nd</b>	144	<b>Pm</b>	147	<b>Sm</b>	150	<b>Gd</b>	157	<b>Tb</b>	159	<b>Dy</b>	163	<b>Ho</b>	165	<b>Er</b>	167	<b>Tm</b>	169	<b>Yb</b>	173
Actinide Series																										
89	<b>Ac</b>	227	<b>Th</b>	232	<b>Pa</b>	231	<b>U</b>	238	<b>Np</b>	237	<b>Pu</b>	239	<b>Cm</b>	244	<b>Bk</b>	249	<b>Cf</b>	251	<b>Es</b>	252	<b>Fm</b>	257	<b>Md</b>	258	<b>No</b>	259

