

Achievement Standard

Subject Reference Chemistry 2.4

Title Describe the nature of structure and bonding in different substances

Level 2 **Credits** 4 **Assessment** External

Subfield Science

Domain Chemistry

Status Expiring **Status date** 17 November 2011

This achievement standard is expiring. Assessment against the standard must take place before the expiry date set out below.

Expiry date 31 December 2011 **Date version published** 17 November 2011

This achievement standard involves describing the bonding in simple molecules and the nature of various types of solids.

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
<ul style="list-style-type: none"> Describe the bonding in simple molecules and the nature of types of solids. 	<ul style="list-style-type: none"> Link selected properties of simple molecules and different types of solids to their structure. 	<ul style="list-style-type: none"> Discuss properties of substances in terms of structure and bonding.

Explanatory Notes

- This achievement standard is derived from achievement objectives 7.1, 7.2 and 7.3 in *Chemistry in the New Zealand Curriculum*, Learning Media, Ministry of Education, 1994, p. 23.
- Simple molecules* have no more than four electron pairs about any atom (including multiple-bonded species). Students may be required to draw Lewis structures of simple molecules and determine shape and polarity.
- Types of solids* are restricted to molecular, ionic, metallic and covalent network. The *nature* of solids will be limited to the type of constituent particles (ions, atoms or molecules) and the attractive force between them (ionic, covalent or metallic bonds or weak intermolecular forces).

- 4 Properties of solids include:
- electrical conductivity
 - melting point
 - solubility in polar and non-polar solvents.
- 5 Structures and properties may be assessed in the context of trends across the periodic table.
- 6 Terms:
- *Describe* requires the student to identify, name, draw, give characteristics of or an account of.
 - *Discuss* requires the student to show understanding as to how or why something occurs by linking chemistry ideas/principles. It may involve students in justifying, relating, evaluating, comparing and contrasting, analysing.
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Replacement Information

This achievement standard and unit standard 8944 have been replaced by AS91164.

Quality Assurance

- 1 Providers and Industry Training Organisations must have been granted consent to assess by NZQA before they can register credits from assessment against achievement standards.
- 2 Organisations with consent to assess and Industry Training Organisations assessing against achievement standards must engage with the moderation system that applies to those achievement standards.

Consent and Moderation Requirements (CMR) reference

0226