

Achievement Standard

Subject Reference	Chemistry 1.5		
Title	Demonstrate understanding of aspects of chemical reactions		
Level	1	Credits	4
		Assessment	External
Subfield	Science		
Domain	Chemistry		
Status	Registered	Status date	30 November 2010
Planned review date	31 December 2014	Date version published	17 December 2010

This achievement standard involves demonstrating understanding of aspects of chemical reactions.

Mutual exclusion exists between this standard and AS90947.

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
<ul style="list-style-type: none"> Demonstrate understanding of aspects of chemical reactions. 	<ul style="list-style-type: none"> Demonstrate in-depth understanding of aspects of chemical reactions. 	<ul style="list-style-type: none"> Demonstrate comprehensive understanding of aspects of chemical reactions.

Explanatory Notes

Version 1 of this achievement standard was republished to correct an error in the exchange/precipitation reactions in explanatory note 5.

- This achievement standard is derived from *The New Zealand Curriculum*, Learning Media, Ministry of Education, 2007, Level 6. It is aligned with the Material World strand, and is related to the material in the *Teaching and Learning Guide for Chemistry*, Ministry of Education, 2010 at <http://seniorsecondary.tki.org.nz>.
- Demonstrate understanding* typically involves describing, identifying, naming, drawing, giving an account of, and classifying chemical reactions. This typically requires the use of chemistry vocabulary, symbols and conventions (including names and formulae), and completing word equations.

- 3 *Demonstrate in-depth understanding* typically involves explaining the classification of chemical reaction based on experimental observations and/or equations. This typically requires the use of chemistry vocabulary, symbols and conventions (including names and formulae), and writing word equations or completing given symbol equations.
- 4 *Demonstrate comprehensive understanding* typically involves linking aspects of chemical reactions when explaining, elaborating, justifying, relating, evaluating, comparing and contrasting, or analysing the classification of reactions. This typically requires the use of chemistry vocabulary, symbols and conventions (including names and formulae), and writing balanced symbol equations.
- 5 *Aspects of chemical reactions* will be selected from the following types of reactions:
- Combination reactions. These are limited to reactions of elements with other elements.
 - Exchange/precipitation reactions. These are limited to the formation of:
 - chlorides and iodides of silver and lead
 - sulfates of calcium, barium and lead
 - hydroxides of copper, iron(II), iron(III), calcium, barium and magnesium
 - carbonates of copper, iron(II), calcium, barium, magnesium, zinc, and lead ions.
 - Decomposition reactions. These are limited to thermal decomposition of hydroxides, carbonates and hydrogen carbonates, and catalytic decomposition of hydrogen peroxide.
 - Displacement reactions. These are limited to the displacement of metal ions in solution by other metals.
- 6 Assessment Specifications for this achievement standard can be accessed through the Chemistry Resources page found at www.nzqa.govt.nz/ncea/resources.
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Quality Assurance

- 1 Providers and Industry Training Organisations must be accredited by NZQA before they can register credits from assessment against achievement standards.
- 2 Accredited providers and Industry Training Organisations assessing against achievement standards must engage with the moderation system that applies to those achievement standards.

Accreditation and Moderation Action Plan (AMAP) reference

0233