



Australian Government

NWPGEN025 Apply principles of chemistry to water systems and processes

Release: 1

NWPGEN025 Apply principles of chemistry to water systems and processes

Modification History

Release 1. This is the first release of this unit of competency in the NWP National Water Training Package.

Application

This unit involves the skills and knowledge required to apply principles of chemistry to water systems and processes.

It includes identifying the principles and processes of chemistry to water systems and selecting the relevant and effective chemicals required for specific processes.

This unit applies to a range of operational roles within the water industry and is fundamental to all quality monitoring and treatment processes. Those undertaking this unit would work under appropriate supervision while performing complex tasks within a range of contexts.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Not applicable.

Competency Field

General

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Apply chemistry to water processes

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

1.1 Apply relevant chemistry principles to improve performance of specific water processes

	1.2	Identify and describe chemical reactions specific to water processes
2 Identify the use of chemicals in water industry processes	2.1	Assess the functions of the range of industry chemicals in relation to their use in water processes
	2.2	Identify and describe factors influencing the effectiveness of chemical use
	2.3	Store, handle and prepare chemicals according to workplace procedures
3 Select chemicals for specific water industry processes	3.1	Identify the range of chemicals available for specific water industry processes
	3.2	Evaluate the factors affecting the selection of chemicals for particular water industry applications
	3.3	Select suitable chemicals and calculate correct usage for a range of specific water industry processes

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to NWPGEN013 Apply principles of chemistry to water systems and processes.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=26336bc0-04e5-49d9-8c31-46c49b6a0037>

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Assessment Requirements for NWPGEN025 Apply principles of chemistry to water systems and processes

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Performance Evidence

- identifying risks and hazards interpreting a range of complex and technical documents including relevant:
 - codes and standards
 - organisational policies
 - regulatory, legislative, licensing and organisational requirements
 - specifications of chemicals
- performing various calculations to provide data for the analysis and development of options and solutions
- selecting appropriate chemicals for water industry processes

Knowledge Evidence

- chemical concepts relevant to water industry processes
- chemical reactions
- factors affecting the selection of chemicals
- factors influencing the effectiveness of chemicals
- functions of various chemicals in water industry processes
- range and characteristics of chemicals used in various water industry processes
- relevant legislation, regulations and workplace procedures
- standards and workplace policies and procedures determining the use and management of chemical processes including work health and safety (WHS)

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the

time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- relevant and appropriate materials, tools, equipment and personal protective equipment currently used in industry
- applicable documentation including legislation, regulations, codes of practice, workplace procedures and operation manuals.

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