



Australian Government

NWPGEN013 Apply principles of chemistry to water systems and processes

Release: 1

NWPGEN013 Apply principles of chemistry to water systems and processes

Modification History

Release	Comments
1	This unit was released in NWP Water Training Package release 1.0 and meets the Standards for Training Packages. This unit supersedes and is equivalent to NWP404A Apply principles of chemistry to water systems and processes. • Unit code updated • Content and formatting updated to comply with the new standards • All PC transitioned from passive to active voice

Application

This unit describes the skills required to identify and apply to water systems and processes the principles of chemistry, and to select 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.

The skills and knowledge described in this unit must be applied within the legislative, regulatory and policy environment in which they are carried out. Organisational policies and procedures must be consulted and adhered to.

Those undertaking this unit would work independently while performing complex tasks within a range of contexts.

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

Competency Field

General

Elements and Performance Criteria

ELEMENTS	PERFORMANCE CRITERIA
Elements describe the	Performance criteria describe the performance needed to demonstrate

essential outcomes	achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section.
1. Apply chemistry to water processes	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.
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

The foundation skills demands of this unit have been mapped for alignment with the Australian Core Skills Framework (ACSF). The following tables outline the performance levels indicated for successful attainment of the unit.

ACSF levels indicative of performance :

1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Learning					Reading					Writing					Oral communication					Numeracy				

Performance variables

1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Support					Context					Text complexity					Task complexity				

Further information on ACSF and the foundation skills underpinning this unit can be found in the Foundation Skills Guide on the GSA website.

Unit Mapping Information

This unit supersedes and is equivalent to NWP404A 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 NWPGEN013 Apply principles of chemistry to water systems and processes

Modification History

Release	Comments
1	These Assessment Requirements were released in NWP Water Training Package release 1.0 and meet the Standards for Training Packages. • Assessment Requirements created drawing upon specified assessment information from superseded unit

Performance Evidence

Evidence required to demonstrate competence must satisfy all of the requirements of the elements and performance criteria. If not otherwise specified the candidate must demonstrate evidence of performance of the following on at least one occasion.

- interpreting a range of complex and technical documents including relevant:
 - regulatory, legislative, licensing and organisational requirements
 - codes and standards
 - specifications
 - organisational policies
- analysing and evaluating reports and reference materials
- performing various calculations to provide data for the analysis and development of options and solutions
- identifying risks and hazards

Knowledge Evidence

Evidence required to demonstrate competence must satisfy all of the requirements of the elements and performance criteria. If not otherwise specified the depth of knowledge demonstrated must be appropriate to the job context of the candidate.

- standards and workplace policies and procedures determining the use and management of chemical processes
- chemical concepts relevant to water industry processes
- chemical reactions
- range and characteristics of chemicals used in various water industry processes
- functions of various chemicals in water industry processes
- factors influencing the effectiveness of chemicals

- factors affecting the selection of chemicals

Assessment Conditions

Competency should be assessed in an actual workplace or in a simulated environment, with access to equipment and infrastructure appropriate to the outcome. Competency should be demonstrated over time to ensure the candidate is assessed across a variety of situations.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

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