

Title	Prepare, test, and wash electrolysers for pulp and paper chemical plant production		
Level	4	Credits	10

Purpose	People credited with this unit standard are able to: explain fundamentals of electrolyser operation; prepare electrolyser for production; carry out voltage tests; and drain and wash the electrolyser.
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Classification	Wood Fibre Manufacturing > Pulp and Paper - Chemical Plants
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Available grade	Achieved
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Explanatory notes

1 Definition

Worksite documentation refers to instructions to staff on policy and procedures (including the application of legislation to worksite situations) which are formally documented, and are available for reference at the worksite. Examples are standard operating procedures, specifications, manuals, and manufacturer's information.

2 The following apply to the performance of all outcomes of this unit standard:

- a All work practices must meet recognised codes of practice and documented worksite health and safety and environmental procedures (where these exceed code) for personal, product, and worksite health and safety, and must meet the obligations required under current legislation, including the Health and Safety in Employment Act 1992, the Resource Management Act 1991, the Hazardous Substances and New Organisms Act 1996, and their subsequent amendments.
- b All work practices must meet documented worksite operating procedures. This includes the recording (by electronic or non-electronic means) of activities, events, and decisions.
- c All communications made in relation to this unit standard must be made in accordance with worksite procedures for content, recipient, timing, and method.

Outcomes and evidence requirements

Outcome 1

Explain fundamentals of electrolyser operation.

Evidence requirements

- 1.1 Purpose of electrolysis is explained in accordance with worksite documentation.
- 1.2 Operating principles of electrolysers are explained in accordance with worksite documentation.
- Range electrolysis, product flows, membrane integrity.
- 1.3 Operating components and process controls of electrolysers are identified, and their purpose and operation are explained, in accordance with worksite documentation.
- Range gauges, differential pressure control, flows, electrical differential indicator alarm.
- 1.4 Hazards associated with electrolysers are identified and actions to be taken to isolate, minimise, or eliminate the hazard are described in accordance with worksite documentation.
- Range hazards may include but are not limited to – electrical, chemical, blockages, gas leakage.
- 1.5 Consequences of loss of membrane integrity are described in accordance with worksite documentation.

Outcome 2

Prepare electrolyser for production.

Evidence requirements

- 2.1 Pressure and leakage tests are carried out in accordance with worksite documentation.
- 2.2 Chemical fills and flows are established in accordance with worksite documentation.
- Range demineralised water, anolyte, catholyte.
- 2.3 Membrane integrity is maintained in accordance with worksite documentation.

Outcome 3

Carry out voltage tests.

Evidence requirements

- 3.1 Personal protective equipment is used in accordance with worksite documentation.
- 3.2 Voltmeters are used in accordance with worksite documentation.
- 3.3 Results are recorded in accordance with worksite documentation.

Outcome 4

Drain and wash the electrolyser.

Evidence requirements

- 4.1 Membrane integrity is maintained in accordance with worksite documentation.
- 4.2 Hydrogen system is purged in accordance with worksite documentation.
- 4.3 Drained chemical is routed in accordance with worksite documentation.
- 4.4 Electrolyser is washed in accordance with worksite documentation.

Planned review date	31 December 2019
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	25 February 1999	N/A
Review	2	18 December 2006	N/A
Review	3	24 October 2014	N/A

Consent and Moderation Requirements (CMR) reference	0173
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Please note

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

Comments on this unit standard

Please contact Competenz qualifications@competenz.org.nz if you wish to suggest changes to the content of this unit standard.