

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

<b>Purpose</b>	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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<b>Classification</b>	Wood Fibre Manufacturing > Pulp and Paper - Chemical Plants
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<b>Available grade</b>	Achieved
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### Guidance Information

#### 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 performance criteria

#### Outcome 1

Explain fundamentals of electrolyser operation.

#### Performance criteria

- 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.

### **Performance criteria**

- 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.

### **Performance criteria**

- 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.

**Performance criteria**

- 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.

**This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.**

**Status information and last date for assessment for superseded versions**

Process	Version	Date	Last Date for Assessment
Registration	1	25 February 1999	31 December 2025
Review	2	18 December 2006	31 December 2025
Review	3	24 October 2014	31 December 2025
Review	4	30 November 2023	31 December 2025

**Consent and Moderation Requirements (CMR) reference**

0173

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.