

Title	Slake lime and regenerate liquor for wood pulp manufacturing		
Level	3	Credits	10

Purpose	People credited with this unit standard are able to: describe a slaking and causticising system in wood pulp manufacturing; operate a slaking and causticising system; and monitor and control the performance of a slaking and causticising system.
----------------	--

Classification	Wood Fibre Manufacturing > Pulp and Paper - Chemical Plants
-----------------------	---

Available grade	Achieved
------------------------	----------

Guidance Information

1 Legislation and references

Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the:

- Hazardous Substances and New Organisms Act 1996;
- Health and Safety at Work Act 2015;
- Resource Management Act 1991;
- Health and Safety at Work (Major Hazard Facilities) Regulations 2016.

2 Definitions

Operating parameters refer to the boundary conditions in which the operations are carried out in a slaking and causticizing system.

Operating procedures refer to the process(es) that are worked through, e.g. standard operating procedure (SOP) in a slaking and causticizing system.

Worksite documentation refers to organisation policies and procedures that are documented in memo, electronic, or manual format and available in the workplace, and are consistent with manufacturer's requirements. They may include but are not limited to – standard operating procedures, site specific procedures, site safety procedures, equipment operating procedures, quality assurance procedures, product quality specifications, references, approved codes of practice, housekeeping standards, environmental considerations, sustainability, on-site briefings, supervisor's instructions, and procedures to comply with legislative and local body requirements relevant to the pulp and paper industry.

3 Range

Slaking and causticising system may include but is not limited to – slaker, causticisers, slurry tank, white liquor clarifier, white liquor storage tank, mud washer, mud washer storage tank and associated pipe lines, pumps, valves and instrumentation.

- 4 Assessment information
Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable service information, worksite documentation and legislative requirements. This includes the knowledge and use of suitable tools and equipment.
- 5 Recommended skills and knowledge
Unit 3637, *Demonstrate knowledge of the principles of causticising in wood pulp manufacturing*; or demonstrate equivalent knowledge and skills.

Outcomes and performance criteria

Outcome 1

Describe a slaking and causticising system in wood pulp manufacturing.

Performance criteria

- 1.1 Chemical and physical reactions involved in slaking and causticising are described.
- Range chemical and physical reactions may include but are not limited to – retention time, temperature, lime quantity and quality, green liquor quality.
- 1.2 Hazards associated with a slaking and causticising system are identified and actions to be taken to minimise, or eliminate the hazard are described.
- Range hazards may include but are not limited to – caustic burns, lime dust (skin contact and inhalation), steam.
- 1.3 The consequences of non-compliance with worksite operating procedures are described.

Outcome 2

Operate a slaking and causticising system.

Performance criteria

- 2.1 Safe work practices associated with operating a slaking and causticising system are identified and used.
- Range practices may include but are not limited to – isolation procedures, lock-outs or tag-outs, emergency stops, machine guarding, wearing appropriate safety equipment.
- 2.2 System is set up, started up, operated, and shut down.

2.3 Operating parameters are set and adjusted to enable production requirements to be achieved.

Range operating parameters may include but are not limited to – reaction temperature, green liquor flow, lime addition rate; production requirements may include but are not limited to – purity, chemical strength, production rate.

2.4 Essential care and housekeeping requirements are carried out.

Outcome 3

Monitor and control the performance of a slaking and causticising system.

Performance criteria

3.1 Slaking and causticising system is monitored and parameters are controlled in accordance with operating parameters.

Range control parameters may include but are not limited to – reaction temperature, green liquor flow, lime addition rate, causticising efficiency.

3.2 Operating and equipment faults and malfunctions are identified, and relevant corrective actions are taken.

3.3 Mud settling rate and output white liquor strength is monitored.

3.4 Production rate is regulated in accordance with process requirements.

3.5 Product and process testing is carried out.

3.6 Production, maintenance, and quality records are completed.

Planned review date	31 December 2028
----------------------------	------------------

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	22 February 1995	31 December 2024
Revision	2	27 January 1997	31 December 2024
Review	3	25 February 1999	31 December 2024
Review	4	18 December 2006	31 December 2024
Review	5	24 October 2014	31 December 2025
Review	6	30 November 2023	N/A

Consent and Moderation Requirements (CMR) reference	0173
--	------

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

Comments on this unit standard

Please contact Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council qualifications@hangaarorau.nz if you wish to suggest changes to the content of this unit standard.