

Title	Empty and restart a kraft bleach plant in pulp manufacturing		
Level	5	Credits	30

Purpose	People credited with this unit standard are able to: demonstrate knowledge of kraft bleach plant procedures; empty kraft bleach plant; and fill bleach plant towers and produce bleached pulp.
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Classification	Wood Fibre Manufacturing > Pulp Making
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Available grade	Achieved
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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 Definition

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 making industry.

3 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.

4 Recommended skills and knowledge

Unit 3547, *Bleach kraft pulp in wood pulp manufacturing*; or demonstrate equivalent knowledge and skills.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of kraft bleach plant procedures.

Performance criteria

- 1.1 Procedures for emptying out the kraft bleach plant are explained.
- 1.2 Isolation procedures for bleach plant maintenance are described.
- Range isolations may include but are not limited to – bleaching towers, liquid chemical lines, gas lines, hydraulic lines, steam lines, condensate system, agitator systems, wash water and filtrate systems.
- 1.3 Hazards associated with emptying out, isolation, and refilling the kraft bleach plant are identified and actions to be taken to minimise, or eliminate the hazards are described.
- Range hazards may include but are not limited to – environmental, personal safety, explosions, chemical reactions, blockages.
- 1.4 Consequences of non-compliance with worksite operating procedures are described.

Outcome 2

Empty kraft bleach plant.

Performance criteria

- 2.1 Safe work practices associated with emptying the kraft bleach plant are demonstrated.
- Range practices may include but are not limited to – plant access procedures, isolation procedures, lock-outs or tag-outs, interlock systems, emergency stops, machine guarding, wearing appropriate safety equipment.
- 2.2 Upstream and downstream processing stages are checked in preparation for the empty out process to commence.
- 2.3 Empty-out procedures are completed.
- 2.4 Environmental considerations are managed and met.
- 2.5 Washing of bleach plant equipment is completed to meet engineering requirements.

2.6 Isolation of the bleach plant equipment is completed and checked.

Outcome 3

Fill bleach plant towers and produce bleached pulp.

Performance criteria

3.1 De-isolation procedures are completed.

3.2 Pulp and chemicals are selected and introduced into the bleach plant.

3.3 Pressures, temperatures, kappa number, brightness, chemical residuals, and flows are monitored to determine the endpoint of the filling process.

3.4 Continuous bleaching operations are established.

3.5 Equipment faults and malfunctions are identified, and corrective action is taken.

Range equipment faults and malfunctions may include but are not limited to – electrical, mechanical, hydraulic, pneumatic, instrumentation, distributed control system.

3.6 Production, maintenance, and quality records are completed.

Planned review date	31 December 2028
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	18 December 2006	31 December 2024
Review	2	24 October 2014	31 December 2025
Review	3	30 November 2023	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>.

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.