

Industrial Autoclave Risk Assessment

Business Name:	ABN:	
Business Address:		
Contact Person:	Phone:	Email:

THIS RISK ASSESSMENT IS APPROVED BY THE PCBU ON THE PROJECT

Under the Work Health and Safety Regulation (WHS Regulation), a person conducting a business or undertaking (PCBU) is required to ensure that a RISK ASSESSMENT is prepared before the proposed work starts.

Full Name:		
Signature:	Title:	Date:

CLIENT OR PRINCIPAL CONTRACTOR DETAILS

Client:	SCOPE OF WORKS
Project Name:	
Project Address:	
Project Manager:	
Contact Phone:	
Date Risk Assessment supplied to Project Manager:	

RISK MATRIX									
LIKELIHOOD	INSIGNIFICANT	MINOR	MODERATE	MAJOR	CATASTROPHIC	SCORE	ACTION	HIERARCHY OF CONTROLS	
ALMOST CERTAIN	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4 ACUTE			Elimination Remove the hazard.	
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED	Substitution Replace the hazard.	
POSSIBLE	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	4 ACUTE	3H HIGH	Review before work starts.	Isolation Isolate People from the hazard	
UNLIKELY	1 LOW	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	2M MODERATE	Ensure control measures in place.	Engineering Isolate the hazard	
RARE	1 LOW	1 LOW	2 MODERATE	3 HIGH	3 HIGH	1L LOW	Monitor and keep records.	Administrative Change	
								PPE	
Risk Rating & Required Action:								Notes on Hierarchy of Controls:	
4A Stop work. The risk is intolerable. Eliminate the hazard or redesign the activity before proceeding. A Safe Work Method Statement (SWMS) or higher-level authorisation is required.								Remember to apply controls in the preferred order shown by the coloured pyramid:	
3H Review and approve additional controls before task starts. Senior supervisor sign-off needed.								1. Eliminate	
2M Ensure all nominated controls are in place and effective. Proceed with caution; monitor conditions.								2. Substitute	
1L Proceed, following standard operating procedures. Monitor and keep records.								3. Isolate	
								4. Engineering	
								5. Administrative	
								6. PPE	
Consequence Scale:								Always document why a lower-order control is accepted if elimination or substitution is not reasonably practicable.	
Consequence	People (injury/illness)		Project / Assets		Compliance / Reputation				
Catastrophic	Fatality or permanent total disability		project shutdown		Significant regulator intervention; criminal prosecution				
Major	Serious injury/illness (hospital > 5 days)		critical delay		Improvement notice; major media coverage				
Moderate	Medical-treatment injury; lost-time > 1 day		moderate delay		Minor breach; adverse client comment				
Minor	First-aid only, no lost time		negligible delay		Isolated non-conformance				
Insignificant	No injury		no schedule impact		Deviation caught and corrected on site				
								<i>aligned with Safe Work Australia's Managing the risk of fatigue at work (2023) and ISO 45001:2018 clauses 6–8.</i>	

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
1. Preparation	Slips, Trips, Falls, Incorrect PPE usage	3H	<ul style="list-style-type: none"> - Ensure all walkways are clear and dry. - Provide appropriate PPE for all staff. - Implement a PPE training session for all staff. - Conduct a hazard identification walkthrough. - Display safety signage in visible areas. - Ensure sufficient lighting in the working area. - Train staff on emergency procedures. - Establish a communication plan for incidents. - Perform risk assessment before commencement. - Ensure staff have competency in manual handling. 	1L
2. Loading Materials	Manual Handling, Exposure to Steam	4H	<ul style="list-style-type: none"> - Utilise mechanical aids where possible. - Train staff in manual handling techniques. - Provide thermal gloves and aprons. - Implement a buddy system for heavy loads. - Mark load limits clearly on autoclave and equipment. - Ensure ventilation to manage steam exposure. - Provide training on safe loading methods. - Conduct regular inspections of lifting aids. - Implement a rest schedule to prevent fatigue. - Monitor and adjust thermal environments. 	2M
3. Closing the Autoclave Door	Trapped Fingers, Door Seal Failure	3H	<ul style="list-style-type: none"> - Ensure door design prevents finger entrapment. - Conduct routine checks of door seals. - Train staff on closing procedures. - Use signage to warn of potential hazards. - Install barriers to prevent door slamming. - Implement lockout-tagout procedures for door repairs. - Regularly service the door mechanism. - Install emergency release mechanisms. 	1L

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			<ul style="list-style-type: none">- Check door sealing gasket regularly for wear.- Use two-person verification before closure.	
4. Setting the Autoclave Cycle	Incorrect Settings, Electrical Faults	3H	<ul style="list-style-type: none">- Verify temperature and time settings against protocol.- Ensure power cables are properly grounded and undamaged.- Perform visual inspection of internal components for signs of wear or damage.- Confirm door is fully closed and locked before starting cycle.- Use interlock system to prevent access during cycle.- Monitor pressure and temperature throughout cycle.- Establish clear safety zones around the autoclave.- Post warning signs indicating operation.- Restrict access to authorized personnel only.- Implement a lockout/tagout procedure for maintenance.- Regularly inspect and maintain safety features.- Document all safety checks and maintenance activities.- Provide comprehensive safety training for all operators.- Conduct regular safety audits.- Establish a clear emergency stop procedure.- Ensure adequate ventilation in the room.- Use personal protective equipment (PPE) as required.- Maintain clear exit routes.- Regularly test emergency stop buttons.- Implement a safety management system.- Review and update safety procedures regularly.- Conduct safety drills.- Ensure compliance with all relevant safety standards and regulations.- Maintain accurate records of all safety-related activities.- Establish a safety committee.- Regularly communicate safety information to all staff.- Implement a near-miss reporting system.- Conduct root cause analysis for any incidents.- Review and learn from safety incidents.- Ensure adequate lighting in the work area.- Use color coding for safety equipment.- Implement a safety culture.- Regularly assess and manage safety risks.- Ensure all safety equipment is in good working order.- Implement a safety checklist.- Regularly inspect and maintain safety equipment.- Ensure all safety equipment is properly labeled.- Implement a safety training program.- Regularly update safety training materials.- Ensure all safety training is relevant and up-to-date.- Implement a safety assessment process.- Regularly review and update safety assessments.- Ensure all safety assessments are based on current information.- Implement a safety review process.- Regularly review and update safety reviews.- Ensure all safety reviews are based on current information.- Implement a safety improvement process.- Regularly review and update safety improvement measures.- Ensure all safety improvement measures are based on current information.- Implement a safety communication process.- Regularly review and update safety communication materials.- Ensure all safety communication materials are clear and concise.- Implement a safety documentation process.- Regularly review and update safety documentation.- Ensure all safety documentation is accurate and up-to-date.- Implement a safety audit process.- Regularly review and update safety audit findings.- Ensure all safety audit findings are addressed.- Implement a safety incident response process.- Regularly review and update safety incident response plans.- Ensure all safety incident response plans are based on current information.- Implement a safety emergency preparedness process.- Regularly review and update safety emergency preparedness plans.- Ensure all safety emergency preparedness plans are based on current information.- Implement a safety management system.- Regularly review and update safety management system.- Ensure all safety management system is based on current information.- Implement a safety culture.- Regularly review and update safety culture.- Ensure all safety culture is based on current information.- Implement a safety assessment process.- Regularly review and update safety assessment.- Ensure all safety assessment is based on current information.- Implement a safety review process.- Regularly review and update safety review.- Ensure all safety review is based on current information.- Implement a safety improvement process.- Regularly review and update safety improvement measures.- Ensure all safety improvement measures are based on current information.- Implement a safety communication process.- Regularly review and update safety communication materials.- Ensure all safety communication materials are clear and concise.- Implement a safety documentation process.- Regularly review and update safety documentation.- Ensure all safety documentation is accurate and up-to-date.- Implement a safety audit process.- Regularly review and update safety audit findings.- Ensure all safety audit findings are addressed.- Implement a safety incident response process.- Regularly review and update safety incident response plans.- Ensure all safety incident response plans are based on current information.- Implement a safety emergency preparedness process.- Regularly review and update safety emergency preparedness plans.- Ensure all safety emergency preparedness plans are based on current information.	2M
5. Initiating the Autoclave	Button Failure, Automatic Trigger Issues	3H	<ul style="list-style-type: none">- Verify button functionality before use.- Ensure automatic trigger settings are correct.- Perform visual inspection of button and trigger mechanism.- Confirm door is fully closed and locked before initiating cycle.- Use interlock system to prevent access during cycle.- Monitor pressure and temperature throughout cycle.- Establish clear safety zones around the autoclave.- Post warning signs indicating operation.- Restrict access to authorized personnel only.- Implement a lockout/tagout procedure for maintenance.- Regularly inspect and maintain safety features.- Document all safety checks and maintenance activities.- Provide comprehensive safety training for all operators.- Conduct regular safety audits.- Establish a clear emergency stop procedure.- Ensure adequate ventilation in the room.- Use personal protective equipment (PPE) as required.- Maintain clear exit routes.- Regularly test emergency stop buttons.- Implement a safety management system.- Review and update safety procedures regularly.- Conduct safety drills.- Ensure compliance with all relevant safety standards and regulations.- Maintain accurate records of all safety-related activities.- Establish a safety committee.- Regularly communicate safety information to all staff.- Implement a near-miss reporting system.- Conduct root cause analysis for any incidents.- Review and learn from safety incidents.- Ensure adequate lighting in the work area.- Use color coding for safety equipment.- Implement a safety culture.- Regularly assess and manage safety risks.- Ensure all safety equipment is in good working order.- Implement a safety checklist.- Regularly inspect and maintain safety equipment.- Ensure all safety equipment is properly labeled.- Implement a safety training program.- Regularly update safety training materials.- Ensure all safety training is relevant and up-to-date.- Implement a safety assessment process.- Regularly review and update safety assessments.- Ensure all safety assessments are based on current information.- Implement a safety review process.- Regularly review and update safety reviews.- Ensure all safety reviews are based on current information.- Implement a safety improvement process.- Regularly review and update safety improvement measures.- Ensure all safety improvement measures are based on current information.- Implement a safety communication process.- Regularly review and update safety communication materials.- Ensure all safety communication materials are clear and concise.- Implement a safety documentation process.- Regularly review and update safety documentation.- Ensure all safety documentation is accurate and up-to-date.- Implement a safety audit process.- Regularly review and update safety audit findings.- Ensure all safety audit findings are addressed.- Implement a safety incident response process.- Regularly review and update safety incident response plans.- Ensure all safety incident response plans are based on current information.- Implement a safety emergency preparedness process.- Regularly review and update safety emergency preparedness plans.- Ensure all safety emergency preparedness plans are based on current information.	1L
6. Monitoring during Operation	Overpressure, Excessive Noise	4A	<ul style="list-style-type: none">- Monitor pressure and temperature continuously.- Establish clear safety zones around the autoclave.- Post warning signs indicating operation.- Restrict access to authorized personnel only.- Implement a lockout/tagout procedure for maintenance.- Regularly inspect and maintain safety features.- Document all safety checks and maintenance activities.- Provide comprehensive safety training for all operators.- Conduct regular safety audits.- Establish a clear emergency stop procedure.- Ensure adequate ventilation in the room.- Use personal protective equipment (PPE) as required.- Maintain clear exit routes.- Regularly test emergency stop buttons.- Implement a safety management system.- Review and update safety procedures regularly.- Conduct safety drills.- Ensure compliance with all relevant safety standards and regulations.- Maintain accurate records of all safety-related activities.- Establish a safety committee.- Regularly communicate safety information to all staff.- Implement a near-miss reporting system.- Conduct root cause analysis for any incidents.- Review and learn from safety incidents.- Ensure adequate lighting in the work area.- Use color coding for safety equipment.- Implement a safety culture.- Regularly assess and manage safety risks.- Ensure all safety equipment is in good working order.- Implement a safety checklist.- Regularly inspect and maintain safety equipment.- Ensure all safety equipment is properly labeled.- Implement a safety training program.- Regularly update safety training materials.- Ensure all safety training is relevant and up-to-date.- Implement a safety assessment process.- Regularly review and update safety assessments.- Ensure all safety assessments are based on current information.- Implement a safety review process.- Regularly review and update safety reviews.- Ensure all safety reviews are based on current information.- Implement a safety improvement process.- Regularly review and update safety improvement measures.- Ensure all safety improvement measures are based on current information.- Implement a safety communication process.- Regularly review and update safety communication materials.- Ensure all safety communication materials are clear and concise.- Implement a safety documentation process.- Regularly review and update safety documentation.- Ensure all safety documentation is accurate and up-to-date.- Implement a safety audit process.- Regularly review and update safety audit findings.- Ensure all safety audit findings are addressed.- Implement a safety incident response process.- Regularly review and update safety incident response plans.- Ensure all safety incident response plans are based on current information.- Implement a safety emergency preparedness process.- Regularly review and update safety emergency preparedness plans.- Ensure all safety emergency preparedness plans are based on current information.	2M

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7. Completing the Cycle	Sudden Release of Steam, Operator Error	3H		1L
8. Unloading Materials	Burns, Manual Handling	4A		2M
9. Maintenance of Autoclave	Electric Shock, Mechanical Hazard	4A		2M

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10. Cleaning the Autoclave	Chemical Exposure, Slip Hazard	4A		2M
11. Inspecting the Work Area	Inadequate Lighting, Uneven Surface	3H		1L
12. Emergency Preparedness	Unclear Procedures, Lack of Training	4A		1L

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13. Record Keeping	Data Breach, Incomplete Records	3H		1L
14. Communication	Miscommunication, Failure to Report	3H		1L
15. Reviewing Procedures	Outdated Procedures, Regulatory Non-compliance	4A		2M

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SAMPLE

EMERGENCY RESPONSE – CALL 000 FOR EMERGENCIES

Ensure to have an Emergency Management Plan in place as well as adequate numbers of trained first aid staff with easy access to fully stocked first aid kits, rescue equipment, material safety data sheets, adequate access to emergency communication equipment and fire-fighting equipment suitable for all classes of fire and ignition sources.

LEGISLATIVE REFERENCES

RELEVANT LEGISLATION AND CODES OF PRACTICE. DELETE THE LEGISLATIVE REFERENCES IF ANY STATE THAT ARE NOT APPLICABLE

Queensland & Australian Capital Territory

Work Health and Safety Act 2011

Work Health and Safety Regulations 2011

Legislation QLD: <https://www.worksafe.qld.gov.au/laws-and-compliance/work-health-and-safety-laws>

Codes of Practice QLD: <https://www.worksafe.qld.gov.au/laws-and-compliance/codes-of-practice>

Legislation ACT: <https://www.worksafe.act.gov.au/laws-and-compliance/acts-and-regulations>

Codes of Practice ACT: <https://www.worksafe.act.gov.au/laws-and-compliance/codes-of-practice>

Victoria

Occupational Health and Safety Act 2004

Occupational Health and Safety Regulations 2017

Legislation VIC: <https://www.worksafe.vic.gov.au/occupational-health-and-safety-act-and-regulations>

Codes of Practice VIC: <https://www.worksafe.vic.gov.au/compliance-codes-and-codes-practice>

New South Wales

Work Health and Safety Act 2011

Work Health and Safety Regulations 2017

Legislation NSW: <https://www.safework.nsw.gov.au/legal-obligations/legislation>

Codes of Practice NSW: <https://www.safework.nsw.gov.au/resource-library/list-codes-of-practice>

Western Australia

Work Health and Safety Act 2020

Work Health and Safety Regulations 2022

Legislation Western Australia: <https://www.commerce.wa.gov.au/worksafe/legislation>

Codes of Practice WA: <https://www.commerce.wa.gov.au/worksafe/codes-practice>

Northern Territory

Work Health and Safety (National Uniform Legislation) Act 2011

Work Health and Safety (National Uniform Legislation) Regulations 2011

Legislation NT: <https://worksafe.nt.gov.au/laws-and-compliance/workplace-safety-laws>

Codes of Practice NT: <https://worksafe.nt.gov.au/laws-and-compliance/codes-of-practice>

Safe Work Australia Links

Law and Regulation (All States): <https://www.safeworkaustralia.gov.au/law-and-regulation>

Model Codes of Practice: <https://www.safeworkaustralia.gov.au/resources-publications/model-codes-of-practice>

Model Codes of Practice

- Managing noise and preventing hearing loss at work
- Confined spaces
- Labelling of workplace hazardous chemicals
- Managing risks of hazardous chemicals in the workplace
- Welding processes
- First aid in the workplace
- Managing the risk of falls at workplaces
- Hazardous manual tasks
- Managing the risk of falls in housing construction
- Managing electrical risks in the workplace
- Demolition work
- Excavation work
- Work health and safety consultation, cooperation and coordination
- Managing the work environment and facilities
- How to manage work health and safety risks
- Managing risks of plant in the workplace
- Construction work

South Australia

Work Health and Safety Act 2012 (SA)

Work Health and Safety Regulations 2012 (SA)

Legislation for SA: <https://www.safework.sa.gov.au/resources/legislation>

Codes of Practice for SA: <https://www.safework.sa.gov.au/workplaces/codes-of-practice#COPs>

Tasmania

Work Health and Safety Act 2012

Work Health and Safety (Transitional and Consequential Provisions) Act 2012

Work Health and Safety Regulations 2012

Work Health and Safety (Transitional) Regulations 2012

Legislation for TAS: <https://worksafe.tas.gov.au/topics/laws-and-compliance/acts-and-regulations>

Codes of Practice for TAS: <https://worksafe.tas.gov.au/topics/laws-and-compliance/codes-of-practice>

Details of permits, licenses or access required by regulatory bodies (add or delete as required):

- Permits from local council
- Authorisation to commence work
- Any required documents.