

Metal Chemical Etching Machine Risk Assessment

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

THIS RISK ASSESSMENT IS APPROVED BY THE PCBU ON THIS 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			
						aligned with Safe Work Australia's Managing the risk of fatigue at work (2023) and ISO 45001:2018 clauses 6–8.		

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	Chemical exposure, Slip hazard	3H	<ul style="list-style-type: none"> - Review safety data sheets for all chemicals involved - Conduct a pre-operational inspection of the work area - Ensure floor surfaces are clean and dry - Provide spill containment procedures - Use appropriate signage to indicate wet floors - Ensure all team members wear slip-resistant footwear - Conduct regular training on chemical handling - Install proper ventilation systems - Use floor mats on wet areas - Keep chemicals stored in secure, labelled containers 	2M
2. Machine Setup	Electrical shock, Entanglement	3H	<ul style="list-style-type: none"> - Ensure machine isolation procedures are followed - Train staff in safe machine operation - Verify power sources are off before setup - Use insulated tools for electrical work - Provide personal protective equipment including gloves - Keep loose clothing secured - Conduct electrical tagging and testing - Rotate staff to prevent fatigue - Implement lockout/tagout procedures - Display emergency contact information 	1L
3. Loading Materials	Manual handling, Chemical spills	3H	<ul style="list-style-type: none"> - Use mechanical aids for lifting where possible - Train employees on proper lifting techniques - Provide spill kits at workstations - Inspect containers for damage before use - Limit load weights to safe levels - Design work areas to minimise lifting hazards - Ensure proper PPE including gloves and eye protection - Promptly clean any spills using appropriate materials 	2M

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
			<ul style="list-style-type: none"> - Encourage a buddy system for heavy lifting - Regularly review manual handling procedures 	
4. Machine Operation	Inhalation of fumes, Burns from chemical heat	4A	<ul style="list-style-type: none"> - Use appropriate PPE (respirator, heat-resistant gloves) - Ensure adequate ventilation - Follow safe work practices for handling chemicals - Regularly inspect equipment for leaks or malfunctions - Establish a clear emergency response plan - Provide training on chemical safety - Use barriers to prevent access to hot areas - Implement a permit-to-work system for high-risk tasks - Conduct regular safety audits - Ensure all personnel are aware of the hazards - Use color-coded labeling for chemicals - Implement a lockout/tagout procedure - Provide first aid kits and eyewash stations - Establish a no-smoking policy - Use fire extinguishers appropriately - Implement a hot work permit system - Ensure all personnel are trained in fire safety - Use flame-retardant clothing - Implement a hot surface warning system - Establish a safe distance from hot areas - Use heat shields or barriers - Implement a hot work permit system - Ensure all personnel are trained in fire safety - Use flame-retardant clothing - Implement a hot surface warning system - Establish a safe distance from hot areas - Use heat shields or barriers 	2M
5. Quality Inspection	Chemical residue exposure, Eye strain	2M	<ul style="list-style-type: none"> - Use appropriate PPE (goggles, gloves) - Implement a cleaning schedule for inspection areas - Use ergonomic tools and equipment - Take regular breaks to reduce eye strain - Implement a lighting audit and improvement plan - Use barriers to prevent access to inspection areas - Establish a clear emergency response plan - Provide training on chemical safety - Use color-coded labeling for chemicals - Implement a lockout/tagout procedure - Provide first aid kits and eyewash stations - Establish a no-smoking policy - Use fire extinguishers appropriately - Implement a hot work permit system - Ensure all personnel are trained in fire safety - Use flame-retardant clothing - Implement a hot surface warning system - Establish a safe distance from hot areas - Use heat shields or barriers 	1L
6. Machine Shutdown	Incorrect shutdown procedure, Pinch points	3H	<ul style="list-style-type: none"> - Follow the correct shutdown procedure - Implement a lockout/tagout procedure - Use barriers to prevent access to pinch points - Establish a clear emergency response plan - Provide training on machine safety - Use color-coded labeling for pinch points - Implement a lockout/tagout procedure - Provide first aid kits and eyewash stations - Establish a no-smoking policy - Use fire extinguishers appropriately - Implement a hot work permit system - Ensure all personnel are trained in fire safety - Use flame-retardant clothing - Implement a hot surface warning system - Establish a safe distance from hot areas - Use heat shields or barriers 	1L

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7. Waste Disposal	Chemical exposure, Environmental harm	3H		2M
8. Maintenance	Mechanical failure, Chemical exposure	3H		1L
9. Emergency Procedures	Fire hazard, Chemical leak	4A		2M

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10. Training and Supervision	Lack of awareness, Complacency during repetitive tasks	2M		1L
11. Chemical Handling	Improper use of PPE, Spills during transfer	3H		2M
12. Personal Protective Equipment Monitoring	Equipment failure, Allergic reactions	3H		1L

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13. Ventilation Inspection	Fume build-up, Noise pollution	3H		1L
14. Record Keeping	Data inaccuracy, Non-compliance	2M		1L
15. End of Shift Procedures	Unauthorized access, Transition errors	2M		1L

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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.