

**Backpack Sprayer**

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			<b>Elimination</b> Remove the hazard.	
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED	<b>Substitution</b> 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.	<b>Engineering</b> Isolate the hazard	
RARE	1 LOW	1 LOW	2 MODERATE	3 HIGH	3 HIGH	1L LOW	Monitor and keep records.	<b>Administrative</b> Change	
								<b>PPE</b>	

  

Risk Rating & Required Action:	
<b>4A</b>	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.
<b>3H</b>	Review and approve additional controls before task starts. Senior supervisor sign-off needed.
<b>2M</b>	Ensure all nominated controls are in place and effective. Proceed with caution; monitor conditions.
<b>1L</b>	Proceed, following standard operating procedures. Monitor and keep records.

  

Consequence Scale:			
Consequence	People (injury/illness)	Project / Assets	Compliance / Reputation
<b>Catastrophic</b>	Fatality or permanent total disability	project shutdown	Significant regulator intervention; criminal prosecution
<b>Major</b>	Serious injury/illness (hospital > 5 days)	critical delay	Improvement notice; major media coverage
<b>Moderate</b>	Medical-treatment injury; lost-time > 1 day	moderate delay	Minor breach; adverse client comment
<b>Minor</b>	First-aid only, no lost time	negligible delay	Isolated non-conformance
<b>Insignificant</b>	No injury	no schedule impact	Deviation caught and corrected on site

  

**Notes on Hierarchy of Controls:**  
Remember to apply controls in the preferred order shown by the coloured pyramid:

1. **Eliminate**
2. **Substitute**
3. **Isolate**
4. **Engineering**
5. **Administrative**
6. **PPE**

Always document **why** a lower-order control is accepted if elimination or substitution is not reasonably practicable.

*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. Procurement and Design Selection	<ul style="list-style-type: none"> <li>• Purchase of backpack sprayers that are not fit for purpose for the intended chemicals, application rates, or duration of use</li> <li>• Lack of ergonomic design features leading to excessive manual handling loads and poor postures (e.g. poor weight distribution, inadequate harness design)</li> <li>• Sprayers not compatible with Australian standards, safety data sheet (SDS) requirements, or supplier recommendations for specific substances</li> <li>• Inadequate consideration of maintenance, spare parts availability, and reliability at the time of purchase</li> <li>• Failure to specify safety features such as pressure relief valves, lockable triggers, clear volume markings, and chemical-resistant components</li> </ul>	High	<ul style="list-style-type: none"> <li>• Develop and implement a documented procurement policy for backpack sprayers that requires pre-purchase risk assessment in line with WHS Act 2014 and WHS Regulations</li> <li>• Specify minimum safety and ergonomic requirements in purchase specifications (e.g. adjustable padded harness, hip belt, low centre of gravity, under 20kg full weight where reasonably practicable)</li> <li>• Require confirmation from suppliers that sprayers are compatible with intended chemicals (checked against current SDSs) and are manufactured to relevant Australian or international standards</li> <li>• Include consultation with workers, SRs, and supervisors about comfort, usability, and health concerns (e.g. muscular/skeletal issues, height and build) before standardising on a model</li> <li>• Establish a preferred supplier list and standardised models to ensure consistency of training, spares, and maintenance systems</li> <li>• Require that operating manuals, safety information, replacement parts lists, and warranty conditions are supplied and stored in an accessible central location</li> <li>• Include lifecycle cost and WHS performance as evaluation criteria (not just purchase price), including durability, ease of decontamination, and service support</li> </ul>	Medium
2. Chemical and Task Risk Management	<ul style="list-style-type: none"> <li>• Inadequate alignment between backpack sprayer system and chemical hazard profile (e.g. corrosive, sensitiser, carcinogen, volatile organic compounds)</li> <li>• Lack of systematic review of SDSs leading to incompatible materials of construction or inappropriate seals and hoses</li> <li>• Inappropriate selection of spray pattern, pressure, or nozzle types increasing drift, off-target exposure, and environmental contamination</li> <li>• Failure to consider cumulative exposure where backpack spraying is combined with other chemical tasks during a shift</li> <li>• No formal system for authorising which chemicals can be used in backpack sprayers and under what conditions</li> </ul>	High	<ul style="list-style-type: none"> <li>• Implement a documented chemical approval process that includes assessment of suitability for use in backpack sprayers, referencing SDSs and supplier advice</li> <li>• Maintain a central register of hazardous chemicals that identifies which products are authorised for use with backpack sprayers and associated control requirements</li> <li>• Institute an engineering and WHS review when new chemicals or formulations are introduced, including compatibility checks with sprayer components</li> <li>• Develop standard application parameters (nozzle selection, pressure ranges, maximum walking speed, buffer distances) for each approved chemical and include them in procedures and training materials</li> <li>• Coordinate chemical scheduling and task planning to manage cumulative exposure, including limits on total backpack spraying hours per worker per shift</li> <li>• Establish clear written criteria for when backpack application is prohibited (e.g. wind speed thresholds, proximity to sensitive receptors, confined spaces) and ensure this is embedded in work instructions and supervision</li> </ul>	Medium

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3. Organisational Governance and WHS Management System	<ul style="list-style-type: none"> <li>Absence of a formalised WHS management system addressing backpack sprayer use under the WHS Act 2011 and WHS Regulations</li> <li>Lack of defined roles, responsibilities, and accountabilities for managing chemical application and equipment</li> <li>Insufficient consultation with workers and health and safety representatives (HSRs) regarding hazards and controls related to backpack spraying</li> <li>Inadequate integration of backpack sprayer risks into the organisation's overall risk register and continuous improvement processes</li> <li>No systematic review of incidents, near misses, or health monitoring data related to chemical exposure or musculoskeletal disorders</li> </ul>	High	<ul style="list-style-type: none"> <li>Embed backpack sprayer risk management within the organisation's WHS management system, including documented procedures, risk registers, and audit processes consistent with WHS Act 2011 duties</li> <li>Define and document responsibilities for PCBs, officers, supervisors, and workers relating to procurement, training, maintenance, health monitoring, and incident reporting for backpack sprayers</li> <li>Establish structured consultation mechanisms with workers and HSRs (e.g. WHS committee agenda item) specific to chemical handling and backpack spraying issues</li> <li>Include backpack sprayer related hazards and controls in formal WHS planning, annual objectives, and management review meetings</li> <li>Implement a regular WHS audit and inspection program that specifically verifies compliance with backpack spraying procedures, PPE policies, and training requirements</li> <li>Create a process for analysing incidents, near misses, and corrective actions related to backpack sprayer use, with trends reported to senior management and acted upon</li> </ul>	Medium
4. Competency, Training and Supervision	<ul style="list-style-type: none"> <li>Workers using backpack sprayers without formal competency assessment or adequate understanding of chemical hazards, SDSs, and safe systems of work</li> <li>Supervisors lacking specific knowledge to monitor safe chemical use, compliance, and early signs of overexposure or strain</li> <li>Inconsistent induction of new workers, labour hire, or contractors leading to varying standards of practice</li> <li>No refresher training resulting in skill fade, unsafe shortcuts, and reduced awareness of updated procedures or products</li> <li>Lack of literacy-appropriate and language-appropriate training materials, increasing misunderstanding of critical safety information</li> </ul>	High	<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	Medium
5. Health and Exposure Management	<ul style="list-style-type: none"> <li>Chronic or acute exposure to hazardous chemicals via inhalation, skin absorption, or ingestion due to inadequate systemic controls</li> </ul>	High	<p>[REDACTED]</p> <p>[REDACTED]</p>	Medium

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	<ul style="list-style-type: none"> <li>Development of occupational asthma, dermatitis, or other sensitisation from repeated low-level exposure not identified early</li> <li>Thermal stress and fatigue from carrying backpack sprayers and PPE in hot Australian conditions without structured controls</li> <li>Gradual onset of musculoskeletal disorders from cumulative loading, poor fit of harnesses, or excessive duration of spraying tasks</li> <li>No formal health monitoring or exposure surveillance where required by WHS Regulations and SDS guidance</li> </ul>		[REDACTED]	
6. Personal Protective Equipment (PPE) Management	<ul style="list-style-type: none"> <li>Reliance on PPE without first implementing higher order controls (substitution, isolation, engineering and administrative controls)</li> <li>Inadequate specification of PPE type and performance standard for the chemicals used and method of application</li> <li>Poor PPE management system leading to incorrect fit, expired or degraded equipment, and inconsistent</li> <li>Lack of fit testing and training for respiratory protection devices where required</li> <li>Insufficient cleaning, storage, and replacement processes resulting in cross-contamination or reduced effectiveness</li> </ul>	High	[REDACTED]	Medium
7. Equipment Maintenance, Inspection and Decontamination	<ul style="list-style-type: none"> <li>Lack of a planned maintenance system for backpack sprayers leading to leaks, pressure failures, or inconsistent application rates</li> <li>Blocked, worn, or incorrect nozzles increasing drift, exposure risk, and poor spray quality</li> </ul>	High	[REDACTED]	Low

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	<ul style="list-style-type: none"> <li>Inadequate decontamination procedures creating chemical residue on equipment, in vehicles, or storage areas</li> <li>Use of damaged harnesses, straps, or seals contributing to ergonomic strain or chemical contact with the body</li> <li>No documented inspection criteria, leading to subjective and inconsistent assessments of equipment fitness for use</li> </ul>		[REDACTED]	
8. Storage, Handling and Transport Systems	<ul style="list-style-type: none"> <li>Improper storage of backpack sprayers with residual chemicals leading to leaks, vapour build-up, or unintended contact</li> <li>Co-storage of incompatible chemicals or equipment in vehicles or sheds without segregation or bunding</li> <li>Transport of charged (filled) backpack sprayers in vehicles without appropriate restraints or spill containment</li> <li>Lack of designated wash-down and mixing areas, increasing contamination of general workspace and public areas</li> <li>Inadequate labeling or signage in storage areas, leading to confusion and unsafe handling</li> </ul>	High	[REDACTED]	Medium
9. Environmental and Site Planning Controls	<ul style="list-style-type: none"> <li>Uncontrolled spray drift impacting members of the public, nearby workers, sensitive crops, or water bodies</li> <li>Application in unsuitable weather conditions due to lack of planning controls or pressure to complete work</li> <li>Inadequate site assessment and zoning leading to spraying in proximity to ignition sources, confined spaces, or poorly ventilated areas</li> <li>No coordination with other site activities, resulting in overlapping work and increased exposure or trip hazards</li> <li>Failure to consider local environmental and community sensitivities (schools,</li> </ul>	High	[REDACTED]	Medium

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	playgrounds, waterways, protected areas)		[REDACTED]	
10. Emergency Preparedness and Incident Management	<ul style="list-style-type: none"> <li>Lack of clear procedures for responding to chemical spills, accidental exposure, or equipment failure involving backpack sprayers</li> <li>Inadequate availability or maintenance of emergency equipment (eyewash, first aid kits, spill kits, emergency showers where required)</li> <li>Workers and supervisors unsure about notification and escalation requirements under WHS legislation for notifiable incidents</li> <li>No structured debrief or corrective action process following incidents or near misses</li> <li>Poor record keeping of incidents, exposures, and emergency drills limiting organisational learning</li> </ul>	High	[REDACTED]	Low
11. Documentation, Records and Continuous Improvement	<ul style="list-style-type: none"> <li>Fragmented or missing documentation of risk assessment, procedures, training, health monitoring, and maintenance records for backpack sprayers</li> <li>Outdated documents remaining in circulation, leading to inconsistent practices and non-compliance with current legislation or SDSs</li> <li>Inability to demonstrate due diligence by officers and PCBUs under the WHS Act 2011 due to poor record keeping</li> <li>No structured review cycle for the backpack sprayer risk assessment and related documents</li> <li>Lack of feedback mechanisms for workers to suggest improvements or report emerging issues</li> </ul>	Medium	[REDACTED]	Low

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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 FOR 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 2025  
 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) Regulation 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>

**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>

**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

**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.