Flammable Liquids, Solvents and Adhesives

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

THIS RISK ASSESSMENT IS APPROVED BY THE PCBU OF 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:

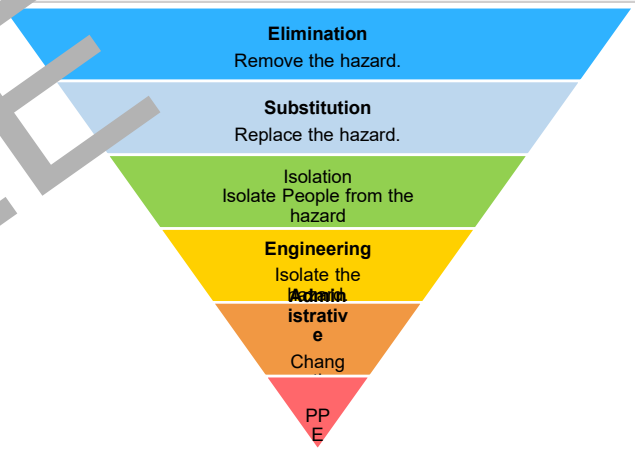
CLIENT OR PRINCIPAL CONTRACTOR DETAILS

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
ALMOST CERTAIN	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4 ACUTE		
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED
POSSIBLE	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	4 ACUTE	3H HIGH	Rev before work
UNLIKELY	1 LOW	1 LOW	2 MODERATE	3 HIGH	4 ACU	2M MO RATE	Ensure control measures in place.
RARE	1 LOW	1 LOW	2 MODERATE	3 HIGH	3 H	1L LOW	Monitor and keep records.

HIERARCHY OF CONTROLS



Risk Rating & Required Action:

4A	Stop work. The risk is intolerable. E inate the hazar redesign the activity before proceeding. A Safe Work Method Statement (SWMS) or hi er-level authorisati is required.
3H	Review and approve additional c rols b ask arts. Senior supervisor sign-off needed.
2M	Ensure all nominated controls are in ace and effe ive. Proceed with caution; monitor conditions.
1L	Proceed, following standard operating procedures Monitor and keep records.

Consequence Scale:

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

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. WHS Governance, Policies and Legislative Compliance	• Absence of a documented WHS policy for hazardous chemicals including flammable liquids, solvents and adhesives • Inadequate alignment of procedures with WHS Act 2011, WHS Regulations and relevant Australian Standards (e.g. AS/NZS 1940, AS 1940, AS/NZS ISO 45001) • Lack of clear allocation of PCBU, Officer and Worker duties regarding management of flammable and combustible substances • Inadequate process for identifying, assessing and reviewing risks associated with flammable liquids, solvents, sealants, hot-melt adhesives and combustible dusts • Failure to consult workers and Health and Safety Representatives (HSRs) on chemical safety arrangements and changes • Inadequate change management when new solvent-based materials, adhesives, fuels or vehicular fluids are introduced • Poor integration of chemical safety with other management systems (quality, environment, procurement, maintenance)	4A	• Develop and implement a written WHS Management System that explicitly addresses hazardous chemicals, including flammable liquids, combustible liquids, combustible dusts, VOCs, toxic adhesives, dyes, pigments and sealants • Ensure all policies and procedures for hazardous chemicals are reviewed against the WHS Act 2011, WHS Regulations and relevant Codes of Practice (e.g. Managing risks of hazardous chemicals in the workplace, Confined spaces, Welding and allied processes) • Define and document role responsibilities and accountabilities for PCBUs, Officers, managers, supervisors and workers regarding chemical procurement, storage, handling and disposal • Implement a formal risk management procedure requiring identification, risk assessment, control implementation and review for all activities involving solvents and adhesives, including hot melt, brake fluid, fuels, polymer solutions and volatile substances • Establish a consultation procedure with workers and HSRs for the development and review of procedures concerning flammable liquids, combustible dust extraction, ventilation controls and explosion risk management • Integrate a Management of Change (MoC) process for introducing new chemicals or changing processes, including review of SDSs, ventilation requirements, fire and explosion risks and required training • Schedule periodic audits of the chemical safety management system and track corrective actions through a central WHS action register	3H
2. Hazardous Chemical Inventory, Classification and SDS Management	• Incomplete or inaccurate inventory of flammable liquids, combustible liquids, solvents, adhesives, sealants, dyes, pigments and vehicular fluids • Failure to identify chemicals that present fire, explosion, toxic, corrosive or environmental hazards (e.g. VOCs, alcohol-based solvents, polymer solutions, bonding agents) • Lack of current Safety Data Sheets (SDS) accessible for all hazardous chemicals on site	4A	• Maintain a centralised hazardous chemicals register capturing identity, classification, storage location, maximum quantities and hazard categories for all flammable and combustible substances including adhesives and sealants • Ensure all chemicals are classified in accordance with the Globally Harmonised System (GHS) and Australian WHS Regulations, including identification of flammable, toxic, oxidising and environmentally hazardous properties • Implement a system to obtain, review and store up-to-date SDSs (less than 5 years old) for each hazardous chemical and ensure electronic and hard copies are readily available to workers in relevant work areas • Introduce a documented procedure for decanting and labelling, requiring GHS-compliant labels on all secondary containers for solvents, VOCs, fuel samples, brake fluids, dyes, pigments and adhesive products	2M

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	• Use of decanted containers without proper labelling for solvent-based materials and chemical adhesives • Inability to verify compatibility of stored chemicals, leading to possible violent reactions or ignition • Uncontrolled introduction of new chemicals without prior hazard review		• Require pre-purchase chemical review to assess hazards, compatibility, storage requirements and whether lower-risk alternatives are available (e.g. water-based instead of solvent-based products) • Conduct periodic inventory verification to reconcile actual quantities and locations with the hazardous chemicals register and rectify discrepancies promptly	
3. Procurement, Substitution and Supplier Management	• Procurement of highly flammable or toxic solvents, sealants, bonding agents and adhesives where safer alternatives exist • Sourcing chemicals from suppliers who do not provide compliant SDSs or technical support • Bulk purchasing causing storage of quantities that exceed design limits for flammable and combustible liquids • Inadequate consideration of VOC emissions, indoor air quality and explosion risk in product selection • Lack of purchasing controls leading to unauthorised or incompatible products entering the workplace	3H	• Implement a formal chemical procurement procedure requiring WHS review and approval before purchasing adhesives, solvents, brake fluids, fuels, dyes, pigments or other hazardous substances • Include a hierarchy of control approach in procurement decisions, prioritising elimination or substitution of high-VOC, highly flammable, toxic or sensitising products with safer alternatives where practicable • Integrate supplier evaluation criteria that include provision of compliant SDSs, technical data, product stewardship information and support with safe handling recommendations Set purchasing limits aligned with storage design capacities and separation distances for flammable and combustible liquids as per AS/NZS 1940 and site-specific fire engineering assessments Specify in purchasing contracts that products must comply with Australian regulations and standards, and that any formulation changes trigger renewed SDS and risk review • Establish a controlled chemicals approval list and restrict ordering to authorised personnel trained in chemical hazard assessment	2M
4. Storage, Segregation and Inventory Control of Flammable and Combustible Liquids	• Improper storage of flammable substances including paints, alcohol-based solvents, volatile organic compounds and solvent-based adhesives • Overstocking of flammable liquids beyond cabinet or store room design capacity • Inadequate segregation of incompatible chemicals (e.g. oxidisers, corrosives) from flammables and combustible dust sources • Lack of spill containment and bunding leading to pool fires, vapour spread or environmental contamination • Defective or non-compliant flammable liquid cabinets and outdoor stores	4A	[redacted]	2M

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	• Poor housekeeping around storage areas leading to accumulation of combustible packaging, solvent-soaked rags and dust • Insufficient control of ignition sources in and near chemical storage areas		[redacted]	
5. Handling, Decanting and Transfer Systems for Flammable Liquids and Solvents	• Uncontrolled manual decanting of solvents, fuels, brake fluid and vehicular fluids leading to spills, vapour release and fire risk • Inadequate earthing and bonding creating potential for electrostatic discharge ignition during transfer of flammable liquids or polymer solutions • Use of non-conductive, damaged or incompatible hoses, funnels and containers • Insufficient procedures for handling solvent-based materials, sealants and bonding agents when mixing and applying • Lack of equipment such as closed transfer systems and dr[redacted]mps, increasing splash an[redacted]apour exposure	4A	[redacted]	2M
6. Ventilation, Indoor Air Quality and Control of VOC and Vapour Exposures	• Inadequate venti[redacted]ion when[redacted]g solvents, chemical [redacted], seala[redacted], dyes, pigments and paints leading to build-up of VOCs and flammable vapours • Failure to manage indoor air quality, particularly in enclosed or poorly ventilated areas, vehicle workshops and spray application zones • Potentially explosive atmospheres arising from accumulation of vapours from alcohol-based solvents and volatile substances • Relying solely on natural ventilation without assessment of adequacy for the volume and type of chemicals used	4A	[redacted]	2M

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	• Lack of monitoring for vapour concentrations where high-use solvents are present		[redacted]	
7. Combustible Dust, Hot Work and Explosion Risk Management	• Accumulation of combustible dust from dried paints, pigments, polymer powders and other fine combustible materials • Inadequate control of ignition sources in areas where combustible dust or vapours may be present, leading to potentially explosive atmospheres • Lack of effective extraction systems to remove combustible dust from mixing, sanding or cutting processes involving coatings and sealants • Poorly managed hot work (welding, grinding, cutting) near flammable liquids, combustible dust deposits or solvent vapours • No documented process for managing risk of explosion in areas where explosive atmospheres may form	4A	[redacted]	2M
8. Plant, Equipment and Maintenance for Chemical and Fuel Handling	• Use of non-compliant or poorly maintained plant for handling fuels, vehicular fluids, brake fluids and industrial solvents • Failure of pumps, valves, hoses and seals leading to leaks, atomisation and ignition risk • Inadequate inspection and maintenance of adhesive application equipment, hot melt systems and mixing vessels • Lack of preventive maintenance on extraction systems, fire protection systems and emergency shut-off devices • Use of inappropriate electrical equipment in areas where flammable vapours or explosive atmospheres are possible	3H	[redacted]	2M
9. Worker Competency, Training and	• Lack of competency in safe handling of flammable liquids, combustible liquids,	3H		2M

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Supervision for Chemical Safety	volatile organic compounds and chemical adhesives • Insufficient training on interpreting SDSs, labels and risk assessments for solvent-based materials and sealants • Inadequate understanding of explosion risks associated with combustible dust and potentially explosive atmospheres • Poor supervision of new or young workers when working with harmful substances, paints, hot melt adhesives and solvents • No verification of competency for persons performing high-risk tasks such as solvent mixing, polymer solution preparation or brake fluid handling		[redacted]	
10. Work Procedures, Permits and Administrative Controls	• Absence of documented procedures for applying solvents and chemical adhesives, including sealants and bonding agents • Inconsistent practices across shifts and contractors, increasing likelihood of unsafe handling of volatile substances and harmful paints • Lack of permits or controls for high-risk work such as hot work near flammable substances, confined space work involving solvents, or high-volume solvent extraction tasks • Poor integration of chemical safety considerations into job planning and scheduling, leading to concurrent incompatible activities	3H	[redacted]	2M
11. Personal Exposure Monitoring, Health Surveillance and Indoor Environment Management	• Chronic exposure to VOCs, toxic adhesives, solvents, dyes and pigments due to inadequate monitoring • Failure to identify health effects such as respiratory irritation, dermatitis or sensitisation from working near harmful substances and paints	3H	[redacted]	2M

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	• Insufficient control of indoor air quality where solvent and sealant use is frequent or prolonged • No mechanism to track exposure histories for workers regularly handling hazardous adhesives and polymer solutions		[redacted]	
12. Emergency Preparedness, Spill Response and Fire Protection	• Uncontrolled spills of flammable liquids, vehicular fluids, brake fluids, polymer solutions and solvent-based adhesives leading to fire or environmental incidents • Inadequate emergency response procedures for solvent vapour releases, indoor air contamination and explosions • Insufficient fire detection, fire protection systems and firefighting equipment for areas storing and using flammable liquids and combustible dusts • Lack of worker training in spill response, emergency [redacted] and evacuation for chemical-related emergencies	4A	[redacted]	2M
13. Waste Management, Solvent-Soaked Rags and Environmental Controls	• Improper storage and disposal of solvent-soaked rags leading to spontaneous combustion [redacted] • Inadequate segregation of chemical waste streams including adhesives, sealants, paints, dyes, pigments and fuel residues • Uncontrolled discharge of solvents, brake fluids and vehicular fluids to stormwater or sewer systems • Lack of documented procedures for managing contaminated absorbents, sludge and combustible dust waste	3H	[redacted]	2M

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14. Contractor and Visitor Management for Chemical-Related Activities	• Contractors undertaking works such as painting, sealing, fuel system maintenance or extraction system installation without alignment to site chemical safety procedures • Visitors entering areas where flammable liquids, solvents and adhesives are in use without awareness of the hazards • Subcontractor activities introducing additional ignition sources or incompatible chemicals	3H	[redacted]	2M
15. Incident Reporting, Investigation and Continuous Improvement	• Under-reporting of spills, near misses, minor fires and exposures involving flammable liquids, solvents and adhesives • Failure to investigate root causes suc as system deficiencies, training gaps or maintenance failures • Recurrent chemi incidents due to lack of learning an ineffecti tive actions	3H	[redacted]	1L
16. Consultation, Communication and Safety Culture for Chemical Risks	• Poor communication of chemical hazards, changes to products or procedures, and outcomes of risk assessments • Limited worker involvement in identifying issues with solvent, adhesive and fuel handling practices • Complacency or normalisation of deviance regarding shortcuts in chemical safety procedures	2M	[redacted]	1L

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			[redacted]	

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

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-of-codes-of-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/forms-and-resources/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

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.

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

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

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