

## Handling Refrigerant Gases 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<br>HIGH     | 3<br>HIGH     | 4<br>ACUTE    | 4<br>ACUTE | 4<br>ACUTE   |                |                                   | <b>Elimination</b><br>Remove the hazard.           |
| LIKELY         | 2<br>MODERATE | 3<br>HIGH     | 3<br>HIGH     | 4<br>ACUTE | 4<br>ACUTE   | 4A<br>ACUTE    | DO NOT PROCEED                    | <b>Substitution</b><br>Replace the hazard.         |
| POSSIBLE       | 1<br>LOW      | 2<br>MODERATE | 3<br>HIGH     | 4<br>ACUTE | 4<br>ACUTE   | 3H<br>HIGH     | Review before work starts.        | <b>Isolation</b><br>Isolate People from the hazard |
| UNLIKELY       | 1<br>LOW      | 1<br>LOW      | 2<br>MODERATE | 3<br>HIGH  | 4<br>ACUTE   | 2M<br>MODERATE | Ensure control measures in place. | <b>Engineering</b><br>Isolate the hazard           |
| RARE           | 1<br>LOW      | 1<br>LOW      | 2<br>MODERATE | 3<br>HIGH  | 3<br>HIGH    | 1L<br>LOW      | Monitor and keep records.         | <b>Administrative</b><br>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:

- Eliminate**
- Substitute**
- Isolate**
- Engineering**
- Administrative**
- 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. Preparation              | Chemical exposure, Inhalation risk | 3H           | <ul style="list-style-type: none"> <li>- Ensure all equipment is calibrated and maintained.</li> <li>- Workers must have appropriate PPE including gloves and goggles.</li> <li>- Conduct safety briefing on refrigerant gas.</li> <li>- Ensure SDS are available on site.</li> <li>- Check and ensure ventilation systems are operational.</li> <li>- Examine all tools and hoses for faults.</li> <li>- Restrict unauthorised personnel from work area.</li> <li>- Confirm emergency procedures are in place.</li> <li>- Label areas with refrigerant gas warning.</li> <li>- Ensure communication devices are operational.</li> </ul>                     | 2M            |
| 2. Transport of Refrigerant | Spillage, Container rupture        | 4H           | <ul style="list-style-type: none"> <li>- Use appropriate transport containers designed for refrigerants.</li> <li>- Secure containers to prevent movement during transit.</li> <li>- Train employees in emergency spill procedures.</li> <li>- Inspect containers for damages before loading.</li> <li>- Use signage to indicate hazardous materials in transit.</li> <li>- Keep SDS on hand during transport.</li> <li>- Use vehicles with adequate ventilation.</li> <li>- Limit travel to essential routes and times.</li> <li>- Regular driver training on handling hazardous materials.</li> <li>- Conduct pre-transport safety inspections.</li> </ul> | 2M            |
| 3. Storage                  | Temperature fluctuations, Leakage  | 3H           | <ul style="list-style-type: none"> <li>- Store cylinders upright and secured to prevent falling.</li> <li>- Maintain storage area temperature within safe ranges.</li> <li>- Regular inspection of storage area for gas leaks.</li> <li>- Ensure area is well-ventilated and gas detection systems are active.</li> <li>- Follow legal requirements for refrigerant storage quantities.</li> <li>- Provide fire extinguishers and emergency equipment nearby.</li> <li>- Ensure storage areas are clearly marked and restricted to authorised personnel.</li> <li>- Implement routine checks of valve and seal integrity.</li> </ul>                         | 1L            |

| 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"> <li>- Conduct periodic reviews of storage protocols.</li> <li>- Train staff in refrigerant storage and spill containment procedures.</li> </ul>                                      |               |
| 4. Handling Cylinders         | Manual handling injury, Gas leakage                  | 3H           | <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> | 2M            |
| 5. Connection to HVAC Systems | Cross-threading fittings, Inadvertent release of gas | 4A           | <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> | 2M            |
| 6. Pressurizing Systems       | Over-pressurization, Equipment failure               | 4A           | <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>                                     | 2M            |

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|----------------------|--|--------------|--|---------------|
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|                      |  |              |  |               |
| 7. Leak Testing      | Environmental contamination, Toxic exposure        | 3H           |  | 1L            |
| 8. Repair Activities | Use of incorrect parts, Chemical burn              | 4A           |  | 2M            |
| 9. System Refill     | Pressurised gas release, Incorrect refrigerant mix | 4A           |  | 2M            |

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|--------------------------|--|--------------|--|---------------|
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|                          |  |              |  |               |
| 10. Emergency Situations | Gas release emergencies, Fire risk             | 4A           |  | 1L            |
| 11. Decommissioning      | Residual gas presence, Improper disposal       | 3H           |  | 1L            |
| 12. Training & Induction | Lack of awareness, Improper handling knowledge | 3H           |  | 1L            |

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|------------------------------------|---|--------------|--|---------------|
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|                                    |   |              |  |               |
| 13. Environmental Monitoring       | Regulatory non-compliance, Environmental damage | 3H           |  | 1L            |
| 14. Documentation & Record-Keeping | Inaccurate records, Data loss                   | 2M           |  | 1L            |
| 15. Maintenance Scheduling         | Missed maintenance, Equipment failure           | 3H           |  | 1L            |

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|---------------------|------------------------|--------------|---|---------------|
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|                     |                        |              | <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> |               |
|                     |                        |              |   |               |

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.