TOOLBOX TALK AWARENESS PACKAGES

HAZ-REF · Refrigerant Gases Awareness

Product Overview

Audience: Workers and supervisors who work in or near plant rooms, cold rooms, freezers, air conditioning or refrigeration plant, including maintenance and cleaning staff · Duration: 20–30 minutes

Version 1.0 · 22 November 2026

For anyone who works in or near plant rooms, cold rooms and refrigeration or air conditioning plant: the types of refrigerant in plain terms, the hazards of a leak, the controls, and what to do when the alarm sounds.

Refrigeration and air conditioning plant holds refrigerant gases under pressure. Most workers never handle them, but a leak can still hurt anyone nearby. Leaked refrigerant can push the oxygen out of a plant room or cold room and cause collapse without warning, liquid refrigerant can freeze skin and eyes, flammable refrigerants can catch fire, and refrigerant that meets a flame or hot surface can break down into toxic gases. Ammonia, used in larger industrial plant, has toxic hazards of its own.

This talk covers the types of refrigerant in plain terms, the hazards of a leak, why only licensed technicians handle refrigerants where the law requires a licence, the controls such as leak detection and alarms, ventilation, isolation and keeping ignition sources away from flammable refrigerants, and what to do on a leak: get out, keep others out, raise the alarm and call for help. It is awareness, not refrigerant handling, ammonia plant or confined space training.

Learning outcomes

By the end of the session participants will be able to:

- Describe in plain terms the types of refrigerant gas used in refrigeration and air conditioning, including flammable refrigerants and ammonia
- Explain the hazards of a refrigerant leak: oxygen pushed out of the air, frostbite from liquid, fire, and toxic gases when refrigerant is heated
- Know that only licensed technicians handle refrigerants where the law requires a licence, and never open, vent or top up a system yourself
- Recognise the controls: leak detection and alarms, ventilation, isolation, signs and keeping ignition sources away from flammable refrigerants
- Act on a leak alarm or the signs of a leak in a plant room or cold room
- Respond to a leak: get out, keep others out, raise the alarm, call for help, and give first aid only when it is safe

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What it covers

Module	Covers
Why it matters	Refrigerants in plain terms; Oxygen, cold, fire and toxic gases; Plant rooms and cold rooms
Controls that work	Licensed technicians only; Leak detection, alarms and ventilation; No ignition sources near flammable refrigerants
Your part	Know the signs of a leak; Get out and raise the alarm; Report it

Activities

- Read the plant room: workers look at the signs, alarms and labels on refrigeration plant and say what each one tells them
- What would you do: workers decide what to do in four refrigerant situations, from a hissing pipe in a cold room to a leak alarm in a plant room

What is in the package

Item	File
Editable PowerPoint presentation with speaker notes, plus PDF	02_TRAINING_PRESENTATION/Training Presentation.pptx and .pdf
Facilitator guide with a running sheet, discussion prompts and model answers	03_FACILITATOR_GUIDE/Facilitator Guide.docx and .pdf
Participant handout with the key points to take away	04_PARTICIPANT_HANDOUT/Participant Handout.docx and .pdf
Attendance record form, to capture who attended, when, and who facilitated	06_RECORDS/Attendance Record.docx and .pdf
Excel attendance register	06_RECORDS/Attendance Register.xlsx
Multiple-choice theory assessment, to record understanding if your business wants to	05_ASSESSMENT/Theory Assessment.docx and .pdf
Answer key for the assessment	05_ASSESSMENT/Assessment Answer Key.docx and .pdf
Certificate template	06_RECORDS/Certificate Template.docx
Start here: Read Me First, Product Overview, Permitted Use Terms, Version Information	01_START_HERE/ (four PDFs)

What you need to deliver it

- A facilitator such as a supervisor, leading hand or WHS adviser who has read the facilitator guide and knows your site's arrangements for the topic
- A screen or projector, or printed slides or handouts: it works in a crib room, site office or on a video call
- Your own site procedures for the topic, to point to during the session

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Questions

Does this train workers to handle refrigerants? No. Handling refrigerants, including opening, charging, recovering or venting a system, needs the licence or certification the law requires where you are (in Australia, a refrigerant handling licence) and specific training, and ammonia plant needs its own. This talk is for the people who work near the plant: it tells them never to open, vent or top up a system, and what to do if it leaks.

Can we add our own site procedures and photos? Yes. The slides, handout and guide are editable, and the facilitator guide marks the places to add your own procedures, contacts and photos of your workplace.

Do we have to use the assessment? No. It is there if your business wants a record that each worker understood the key points. The attendance record on its own shows who attended and when.

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TOOLBOX TALK

Refrigerant Gases Awareness

Leaks you may not see or smell: the hazards of refrigerant gases, and what to do

20–30 minutes · Workers and supervisors who work in or near plant rooms, cold rooms, freezers, air conditioning or refrigeration plant, including maintenance and cleaning staff

[Company name] · [Date] · [Facilitator name]

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What this talk is, and is not

This talk covers

- ✓ Refrigerants in plain terms
- ✓ The hazards of a leak
- ✓ The controls on our plant
- ✓ What to do on a leak or alarm

This talk is not

- ✗ Refrigerant handling training
- ✗ Ammonia plant training
- ✗ Confined space or hot work
- ✗ Our procedure: **[Our leak procedure]**

Awareness only. Handling refrigerants needs the licence or certification the law requires where you are, and specific training.

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Refrigerants in plain terms

Every refrigeration and air conditioning system holds a gas under pressure.

- Fluorocarbon refrigerants: most common, heavier than air
- Flammable refrigerants: hydrocarbons and some blends
- Carbon dioxide: very high pressure, displaces oxygen
- Ammonia: larger plant; toxic, and its own hazards
- The plant label and safety data sheet say which

A composite example

- A cleaner notices a hiss and a cold mist in a small plant room. It does not smell, so they finish mopping.
- They start to feel dizzy and confused, and only just make it to the door.

No smell does not mean no danger.

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Duties under health and safety laws

The business must

- Manage the risk of refrigerant leaks
- Use licensed technicians for refrigerant work
- Maintain plant, alarms and ventilation
- Have a leak and emergency plan

You must

- Never open, vent or top up a system
- Follow the plant room rules
- Act on alarms and the signs of a leak
- Report leaks, faults and near misses

Most health and safety laws give these duties. Check the law where you work (in Australia, WHS or OHS laws).

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The order of controls for refrigerant leaks

1 **Elimination** Well-designed, sealed plant with fewer joints that can leak

2 **Substitution** A refrigerant with lower hazards chosen for the system

3 **Isolation** Plant rooms locked to authorised people; valves to isolate

4 **Engineering** Leak detectors, alarms, ventilation that runs on alarm

5 **Administrative** Licensed technicians, servicing, signs, permits, training

6 **PPE** Gloves, eye protection and breathing apparatus for specialists

HIGHER ORDER

Higher order controls remove or control the hazard at the source, or put a barrier between people and the hazard.

LOWER ORDER

Lower order controls rely on people to do a thing or wear a thing, every time, tired, distracted or rushed.

Behaviours are not on the hierarchy, but behaviours and culture decide whether every control on it actually works.

A tested leak alarm is a control. 'Be careful in the plant room' is not.

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TOOLBOX TALK · HAZ-REF

Refrigerant Gases Awareness

Participant handout · keep this

A refrigerant leak can hurt people who never touch the plant. Keep this page.

The order of controls

1. Sealed plant with fewer joints
2. Lower-hazard refrigerant where chosen
3. Plant rooms locked; isolation valves
4. Leak alarms and ventilation
5. Licensed technicians, signs, permits
6. PPE and breathing apparatus for specialists

A leak can

- Push out oxygen, freeze skin and eyes
- Burn, or turn toxic when heated

Never

- Open, vent or top up a system
- Go back in after the alarm

Before you start

- ☐ Do I know which refrigerant our plant uses?
- ☐ Do I know what the leak alarm sounds and looks like?
- ☐ Is the plant room door, sign and alarm working?
- ☐ Is there any flame, spark or hot work near flammable refrigerant?
- ☐ Do I know who to call about a leak?

Leak or alarm

- Get out, keep others out, raise the alarm
- Call the technician; your local emergency number (000 in Australia) if anyone is unwell

Our plant

- **[Our refrigerant]; [Refrigeration contractor]**
- **[Leak procedure]; [Who to report to here]**

Leave refrigerant to the licensed technician. Leak or alarm? Get out and raise it.

This is awareness training. It is not a licence, a ticket, a permit or a competency. It is not refrigerant handling, ammonia plant or confined space training.

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