



Australian Government

AURETU202 Recover vehicle refrigerants

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Modification History

Release	Comments
1	This unit of competency was first released in AUR Automotive Retail, Service and Repair Training Package Release 10.0.

Application

This unit describes the skills and knowledge required to recover vehicle air conditioner refrigerants into designated recovery cylinders for disposal in accordance with safety and environmental procedures, while observing critical precautions due to the potential flammability of the refrigerants being handled.

The unit applies to those who work as vehicle dismantlers, automotive parts recycling contractors, and vehicle body repairers in automotive service and repair workplaces who are required to recover automotive air conditioning refrigerants. Automotive air conditioners, including heating, ventilation and air conditioning (HVAC) systems, include those in agricultural machinery, heavy commercial vehicles, light vehicles or mobile plant machinery.

Licensing/Regulatory Information

Licensing requirements apply to this unit. Users are advised to check with the relevant regulatory authority.

An Australian Refrigeration Council (ARCTick) Automotive Refrigerant Handling Licence is required for those carrying out this work. An ARCTick trainee licence is required to undertake this training.

Pre-requisite unit(s)

No pre-requisite units

Competency field(s)

Electrical

Unit sector(s)

Electrical Technical - Air Conditioning and HVAC

Elements and Performance Criteria

Element	Performance criteria
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<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare to recover refrigerant	1.1 Identify job requirements from workplace instructions 1.2 Access and interpret refrigerant recovery information, including Australian automotive refrigerant handling code of practice 1.3 Identify hazards and environmental issues, assess potential risks and implement control measures in line with workplace policies and procedures 1.4 Identify vehicle air conditioning system, components and refrigerant service ports for refrigerant recovery 1.5 Identify equipment, personal protective equipment (PPE) and fire safety equipment for refrigerant recovery and establish serviceability according to workplace procedures
2. Operate recovery equipment	2.1 Identify vehicle refrigerant with a refrigerant identifier or analyser 2.2 Document refrigerant type, condition and any contamination indicators according to Australian automotive refrigerant handling code of practice, workplace procedures and regulatory requirements 2.3 Weigh recovery cylinder and record available capacity and tare weight of cylinder 2.4 Connect recovery equipment to vehicle according to manufacturer specifications, Australian automotive refrigerant handling code of practice, workplace procedures, workplace health and safety and environmental requirements 2.5 Recover refrigerant and transfer into designated recovery cylinder using recovery equipment appropriate for the identified refrigerant class according to manufacturer specifications, Australian automotive refrigerant handling code of practice, workplace procedures, and workplace health and safety and environmental requirements
3. Complete work processes	3.1 Record quantity and details of recovered refrigerant according to workplace procedures and regulatory requirements 3.2 Clear work area according to workplace procedures 3.3 Complete service label and workplace documentation according to workplace procedures, and apply a decommissioning label where required by licence or permit conditions

Foundation skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Learning	• Locates required sources of information efficiently
Reading	• Interprets text, symbols and diagrams in workplace and safe operating procedures and manufacturer specifications • Interpret information from safety data sheets (SDS)
Writing	• Legibly and accurately fill out workplace documentation, including the service label appropriate to the work performed and the licence conditions held • Completes numerical data in documentation and charts
Oral communication	• Asks questions to clarify job requirements
Numeracy	• Matches refrigerant classes and identification markings to workplace procedures • Interprets weight measurements, including tare and gross weights • Interprets readings on digital and analogue pressure gauges
Planning and organising	• Plans own work requirements • Prioritises actions to achieve required outcomes • Ensures tasks are completed within workplace timeframes
Technology	• Uses workplace technology and tools

Range of conditions

N/A

Assessment Requirements for AURETU202 Recover vehicle refrigerants

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- recover and identify automotive refrigerants from two different vehicles or machinery where each is fitted with a different refrigerant class, being:
 - Class A1 - lower toxicity, no flame propagation
 - Class A2L - lower toxicity, lower flammability.

In the course of the above work, the candidate must use the following equipment:

- refrigerant hose and coupler
- refrigerant recovery unit
- refrigerant scales
- refrigerant identifier or analyser
- refrigerant leak detector
- manifold and gauge set (either as a standalone item or integrated into a combined recovery, evacuation and charging unit)
- designated and appropriately labelled recovery cylinders.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- methods to locate and interpret information required to recover vehicle refrigerants, including:
 - Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995
 - Australian automotive refrigerant handling code of practice
 - manufacturer specifications
 - workplace procedures and instructions
- workplace procedures required to recover vehicle refrigerants, including:
 - establishing the serviceability of tools and equipment
 - documentation procedures
 - housekeeping procedures, including:
 - examination of tools and equipment

- storage of equipment
- safe shut down and disconnecting recovery equipment
- safe storage of refrigerant
- identification, tagging and isolation of faulty equipment
- safe disposal of materials
- recycling procedures
- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to safety requirements for recovering vehicle refrigerants, including procedures for:
 - interpreting safety data sheets (SDS) for refrigerants and lubricants
 - managing risk of freeze burn and cold burns when handling refrigerants
 - working with system lubricants, including health and safety issues associated with handling refrigerant lubricants
 - handling flammable refrigerants
 - selecting and using personal protective equipment (PPE)
 - identifying and using fire safety equipment appropriate for refrigerant class
 - refrigerant safety classifications and characteristics of gases relevant to automotive air conditioning systems, including:
 - Class A1 – lower toxicity, no flame propagation, including R-134a
 - Class A2L – lower toxicity, lower flammability, including R-1234yf
 - Class A3 – lower toxicity, higher flammability, including R-600
 - flammability risks and control measures for Class A2L and A3 refrigerants
 - high pressure gas hazards and control measures
 - identifying refrigerant and oil type, including:
 - service label
 - testing refrigerant
 - types and location of service ports
 - handling, storing and transporting refrigerant cylinders and recovery cylinders, including:
 - pressure ratings
 - pressure relief devices
 - outlet connection type
 - regulatory transport requirements
 - storage temperature and security requirements
 - segregation requirements for different refrigerant classes

- environmental requirements associated with refrigerant recovery and refrigerant waste disposal, including procedures for:
 - preventing loss of refrigerant to the atmosphere
 - storing and transporting refrigerants
 - selecting appropriate recovery procedures based on refrigerant type and contamination status, including:
 - separate recovery procedures for contaminated refrigerants
 - environmental disposal requirements for different refrigerant types and contaminated refrigerants
 - safe disposal procedures for refrigerants that cannot be reclaimed
 - state and territory regulatory requirements applicable to refrigerant recovery
- key features of various types of refrigerants and oils found in automotive vehicle and equipment HVAC systems, including:
 - Class A1 – lower toxicity, no flame propagation
 - Class A2L – lower toxicity, lower flammability
 - Class A3 – lower toxicity, higher flammability
 - mineral and synthetic refrigerant lubricants
- key features of refrigerant recovery equipment, including:
 - manifold and gauge set, configured as either a standalone item or as an integrated component of a combined recovery, evacuation and charging unit
 - recovery unit
 - types of recovery cylinders
 - refrigerant analyser
 - recovery equipment and scales
- procedures for recovering automotive refrigerant, including:
 - testing refrigerant to determine its type
 - connecting manifold and gauge set and recovery unit, including types and location of service ports
 - identifying recovery cylinder suitable to the refrigerant
 - operating recovery unit, including weighing recovery cylinder before and after recovery
 - disconnecting and storing recovery unit and cylinder
- work completion procedures for recovering vehicle refrigerant, including:
 - cleaning and maintaining the work area completing required workplace and regulatory documentation
 - workplace regulatory documentation to be completed

- procedures for completing workplace documentation, including:
 - service label
 - decommissioning label, where required by licence or permit conditions.

Assessment Conditions

Assessment of skills must take place under the following conditions:

- competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting
- assessment must include direct observation of tasks
- where assessment of competency includes third-party evidence, individuals must provide evidence that links them to vehicle refrigerant that they have recovered from HVAC systems, e.g. repair orders
- assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application
- the following resources must be made available:
 - automotive workplace, parts recycling yard or simulated workplace
 - workplace instructions
 - PPE and fire safety equipment required when recovering vehicle refrigerants
 - Australian automotive refrigerant handling code of practice
 - two different vehicles or machinery with refrigerant to be recovered
 - recovery equipment appropriate for class A1, A2L refrigerants as relevant to assessment scenarios, including:
 - manifold and gauge set (either as a standalone item or integrated into a combined recovery, evacuation and charging unit)
 - hose and vehicle couplings
 - refrigerant scales
 - refrigerant identifier or analyser
 - refrigerant leak detector
 - vehicle refrigerant designated and labelled recovery cylinders
 - appropriate hand tools for refrigerant recovery

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards; and hold an Australian Refrigeration Council (ARCTick) Automotive Refrigerant Handling Licence.

Mandatory Workplace Requirements

Assessment of performance evidence may be in a workplace setting or an environment that accurately represents a real workplace.

Unit Mapping Information

Previous Code and Title	Equivalence	Comments
AURETU102 Recover vehicle refrigerants	Equivalent	Supersedes and is equivalent to AURETU102 Recover vehicle refrigerants

Links

Companion volumes, including implementation guides, are found on the national training register - <https://training.gov.au/training/details/AUR>.