



Australian Government

Department of Education, Employment and Workplace Relations

PRMPFES49A Recover, reclaim and fill operations for ozone depleting substances and synthetic greenhouse gases

Release: 1

PRMPFES49A Recover, reclaim and fill operations for ozone depleting substances and synthetic greenhouse gases

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit of competency specifies the outcomes required to complete recover, reclaim and fill operations for ozone depleting substances (ODS) and synthetic greenhouse gases (SGG) using appropriate processing lines and equipment. All work in this area must be completed in accordance with relevant legislative, industry, customer and organisational requirements; and ODS, SGG and occupational health and safety (OHS) policies and procedures.

Application of the Unit

Application of the unit

This unit of competency supports one or more extinguishing agent handling licences prescribed under the *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989*.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units

The following units of competency must be assessed prior to this unit:

- PRMPFES03C *Safely move materials and loads in the workplace*
- PRMPFES43A *Prevent ozone depleting substance and synthetic greenhouse gas emissions.*
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Employability Skills Information

Not Applicable

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Where ***bold italicised*** text is used, further information is detailed in the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Interpret and comply with legal and industry requirements related to recover, reclaim and fill operations for ODS and SGG materials.	1.1 Apply knowledge and understanding of legislative requirements to work procedures and clarify where necessary with relevant persons. 1.2 Apply knowledge and understanding of ODS and SGG extinguishing agent legislative and industry requirements to recover, reclaim and fill operations. 1.3 Identify potential and actual breaches of legislative and industry requirements and take action according to organisational requirements and ODS, SGG and OHS policies and procedures.
2 Prepare processing line for operation.	2.1 Set up processing line. 2.2 Pressurise processing line and check line holds pressure. 2.3 Perform leak detection test on processing line, equipment and connections. 2.4 Replace or recycle components as required before starting processing. 2.5 Check and confirm processing line equipment operates to required rate and rectify any setup defects.
3 Recover and reclaim ODS and SGG materials.	3.1 Check and confirm container type and label, and identify method of recovery. 3.2 Weigh and record mass of container before processing. 3.3 Check container connections to processing line. 3.4 Monitor processing equipment and complete recovery processing according to manufacturer and organisational operating instructions. 3.5 Take sample of recovered material for analysis. 3.6 Activate reclamation processing equipment if quality control analysis results are acceptable. 3.7 Monitor processing equipment and complete reclamation processing according to manufacturer and organisational operating instructions. 3.8 Weigh and record mass of container after processing. 3.9 Complete documentation according to work

ELEMENT	PERFORMANCE CRITERIA <i>procedures.</i>
4 Prepare container and assemble valve.	4.1 Select and gather correct container and valve components to suit ODS and SGG extinguishing agent . 4.2 Assemble valve components. 4.3 Connect assembled valve to container. 4.4 Check and confirm correct types of containers and labels are available for fill processing.
5 Fill containers.	5.1 Check container connections to processing line. 5.2 Monitor processing equipment and complete fill process according to manufacturer and organisational operating instructions. 5.3 Weigh container to verify fill processing and record container mass. 5.4 Pressurise container, where needed. 5.5 Clear fill material line and pressurising line, as needed. 5.6 Remove container from processing line and perform a leak detection test on container. 5.7 Prepare containers for service and pack filled containers according to work procedures . 5.8 Complete documentation according to work procedures .

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the essential skills and knowledge and their level, required for this unit.

Required skills:

- identify hazards in work area related to recovery, reclamation and fill processing
- perform leak detection testing of recovery, reclamation and fill containers, and processing lines
- replace and/or recycle processing line components
- rectify defects when preparing processing lines for operation
- weigh and determine mass of container contents
- take samples of recovered ODS and SGG materials
- interpret processing data and select appropriate action
- assemble new ODS and SGG containers and valves using appropriate components and labels, and prepare for service
- clear processing lines and pressurising lines

- interpret quality control analysis data
- interpret temperature and pressure graphs for different agents to determine pressure at a given temperature
- select and safely use relevant personal protective equipment (PPE)
- select and safely use tools, equipment and materials appropriate to a specific task
- apply correct manual handling techniques
- solve problems in practical and safe ways
- select and use relevant communications records when storing ODS and SGG containers
- use appropriate workplace housekeeping procedures
- plan and organise work in order to estimate time to complete activities and prioritise tasks
- report and record information neatly and legibly when completing documentation
- use effective customer service skills and relate to people from a range of social, cultural and ethnic backgrounds and with a range of physical and mental abilities
- apply language, literacy and numeracy skills to:
 - communicate with others in a clear and concise manner in verbal, non-verbal and written modes
 - read, understand and comply with work instructions and specifications
 - read, understand and record measurements.

Required knowledge:

- key features of legislation, regulations and codes applicable to recovery, reclamation and fill processing of ODS and SGG containers, including *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989*
- action to take when a breach of OHS, ODS, SGG and other policies occurs
- methods of selecting correct valve and components to suit container and agent requirements
- different types of containers used for ODS and SGG materials
- different types of transport caps, labels, numbers and codes used on containers containing ODS and SGG materials
- types of sealants suitable for different gaseous agents
- methods used to recover and reclaim ODS and SGG materials from containers
- fill density requirements for different agents per unit of volume of container
- maximum working pressure and water capacity of containers to determine container fill requirements
- methods of leak detection testing
- implications of ignoring safety precautions used with recovery, reclamation and fill processing
- reasons for preventing ODS and SGG emissions in the workplace
- methods used to prevent ODS and SGG emissions in the workplace
- types of materials found in ODS and SGG containers
- manual handling techniques and aids
- documentation used during recovery, reclamation and fill processing of ODS and SGG containers
- relevant federal, state or territory legislation that affects organisational operations, including:
 - anti-discrimination and diversity
 - equal employment opportunity
 - industrial relations.

KEY COMPETENCIES

The seven key competencies represent generic skills considered necessary for effective participation by an individual in the workplace.

Performance level 1 - at this level the candidate is required to undertake tasks effectively.

Performance level 2 - at this level the candidate is required to manage tasks.

Performance level 3 - at this level the candidate is required to use concepts for evaluating and reshaping tasks.

Key competency	Example of application	Performance level
How are ideas and information communicated?	Collect information regarding the work environment and analyse against relevant policies and procedures.	1
How can information be collected, analysed and organised?	Discuss and verify recovery, reclamation and fill processing issues with relevant persons.	2
How are activities planned and organised?	Organise work tasks according to safe work practices while mindful of regulatory framework.	2
How is teamwork used?	Contribute to a safe work environment.	1
How are mathematical ideas and techniques used?	Measure container weight and record mass using correct units of measurement.	1
How are problem-solving skills applied?	Identify and report hazards and display initiative to identify problems.	2
How is the use of technology applied?	Interpret processing line data and decide what actions to take.	2

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the Assessment Guidelines for this Training Package.

Overview of assessment

- Competency in this unit underpins competency in other aspects of the candidate's role in managing their work tasks.
- This unit could be assessed on its own or in

combination with other units of competency relevant to the job function.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- A person who demonstrates competency in this unit must be able to provide evidence of:
 - locating, interpreting and applying relevant information, standards and specifications
 - complying with OHS regulations, ODS and SGG regulations (where required), and state and territory legislation applicable to workplace operations
 - complying with organisational policies and procedures, including quality requirements
 - communicating and working effectively and safely with others
 - on a minimum of two different occasions:
 - identifying types of ODS and SGG containers, valves, labels and transport caps
 - using tools, equipment and materials effectively to complete recovery, reclamation and fill processing
 - preparing processing lines for operation
 - preparing and assembling correct container and valve components
 - recovering and reclaiming ODS and SGG materials from different types of containers
 - filling different types of containers with ODS and SGG materials
 - pressurising filled containers
 - clearing fill and pressurising lines
 - taking samples for analysis
 - interpreting quality control analysis data
 - performing leak detection tests on processing lines and connections, and on recovered, reclaimed and filled containers
 - verifying by weight the recovery and reclamation processing of ODS and SGG materials
 - verifying by weight the correct filling of containers
 - labelling and filling different types of containers with ODS and SGG materials
 - preparing containers for service, fitting transport caps and attaching labels, container numbers and codes to containers
 - packing filled containers according to work procedures
 - creating and modifying documentation according

to work procedures

- identifying risks and hazards at work site
- using appropriate safety techniques and PPE
- selecting and using appropriate workplace colloquial and technical language and communication technologies.

Specific resources for assessment

- Resource implications for assessment include access to:
 - actual or simulated work environment
 - range of containers to be used to recover and reclaim different ODS and SGG materials
 - range of containers and valve components to be filled with different ODS and SGG materials
 - assessment documentation, including training and assessment record books
 - all necessary tools, equipment and materials
 - relevant procedure manuals and receiving documentation
 - all necessary safety equipment and PPE.
- Where applicable, physical resources should include equipment modified for people with disabilities.
- Access must be provided to appropriate learning and/or assessment support when required.
- Assessment processes and techniques must be culturally appropriate, and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Context of assessment

- For valid and reliable assessment of this unit, competency should be demonstrated over a period of time and be observed by the assessor (or assessment team working together to conduct the assessment).
- Competency is to be demonstrated in a range of situations, reflecting the practical requirements of the workplace which may include customer and workplace interruptions and involvement in related activities normally experienced in the workplace.
- Assessment of competency over the full range of performance criteria may be made through practical demonstrations in the workshop environment. Consideration should be given to assessing consistency of outcome over an appropriate period of time.
- Candidates should also be given the opportunity to practise and undertake self-assessment of performance before requesting formal assessment.
- All safety requirements must be adhered to during all practical activities.
- Oral questioning or a written assessment may be used to assess underpinning knowledge. (In assessment situations, where the candidate is offered a preference between oral questioning and written assessment,

questions are to be identical.)

- Assessment of evidence should establish the candidate's ability to perform the job to the standard required in the workplace.
- Supplementary evidence may be obtained from relevant authenticated correspondence or reports from supervisors or team leaders that demonstrate an understanding of the requirements for recovery, reclamation and fill processing of ODS and SGG materials.
- Candidate should be encouraged to compile a portfolio of examples of completed documentation relevant to the candidate's organisation. One accurate example of each completed document is suggested as sufficient to infer competency and ability to transfer appropriate skills to each document type when required in the workplace. (Oral questioning may contribute as evidence of this ability.)
- Information derived from enterprise policies and practices must be treated as commercial-in-confidence.
- In all cases where practical assessment is used it will be combined with targeted questioning to assess the underpinning knowledge.
- Questioning will be undertaken in such a manner as is appropriate to the oracy, language and literacy levels of the candidate and any cultural issues that may affect responses to the questions. It will reflect requirements of the unit of competency and the work being performed.
- Where assessment is for the purpose of recognition (RCC or RPL), the evidence provided will need to be authenticated and show that it represents current competency demonstrated over a period of time.
- Performance and assessment of this unit must be carried out within the relevant requirements of the following legislative and industry framework:
 - Acts, regulations and codes
 - Australian and international standards identified as relevant to the required recover, reclaim and fill operations
 - regulations and codes of practice for the handling and transport of dangerous goods and hazardous substances
 - relevant codes and regulations for the receiving of goods

- licensing arrangements
- environmental regulations, including ODS and SGG legislation, codes and regulations
- organisational requirements, including policies and procedures relating to ODS, SGG and OHS
- OHS legislation, codes and regulations
- manufacturer and organisational specifications.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. ***Bold italicised*** wording in the performance criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Legislative requirements may include:

- relevant current Australian standards, including AS 1210, AS 2030, AS 3873 and AS 4077
- relevant federal, state and territory building Acts, regulations and codes
- fire protection industry codes of practice
- OHS legislation, codes and regulations
- regulations and codes of practice for the handling and transport of dangerous goods and hazardous substances
- licensing arrangements
- environmental regulations, including ODS and SGG legislation, codes and regulations, such as *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989*
- other relevant legislation relating to fire protection equipment, including international, shipping and marine codes.

Work procedures may include:

- instructions from colleagues, supervisors and managers
- specific customer requirements
- assignment instructions
- equipment manufacturer requirements
- reporting and documentation requirements
- ODS, SGG and OHS requirements
- manual handling techniques

- PPE requirements.

Relevant persons may include:

- team leaders
- supervisors
- managers
- colleagues
- customers.

ODS and SGG materials are listed using the format: Product name (other names); use. Check the latest amendments to the *Ozone Protection and Synthetic Greenhouse Gas Management Act* for the current list of *ODS and SGG extinguishing agents* which may include:

- **Blitz III** (HCFC Blend D); used in flooding systems
- **CFC 11** (trichlorofluoromethane, CCl₃F); may be found as a propellant in some powder fire extinguishers (this product is banned in Australia)
- **FC-2-1-8** (CEA-308, CF₃CF₂CF₃); used in flooding systems
- **FC-3-1-10** (CEA-410, C₄F₁₀); used in flooding systems
- **FC-5-1-14** (CEA-614, C₆F₁₄); used as a streaming agent
- **FE-227** (heptafluoropropane, HFC-227ea); used as a total flooding extinguishing agent - is a replacement for Halon 1301
- **FE-25** (pentafluoroethane, HFC-125); used in inerting and explosion suppression applications and retro-fit to existing Halon 1301 systems
- **FE-36** (hexafluoropropane, HFC-236fa); used in portable fire extinguishers - is a replacement for Halon 1211 and Halon 1301
- **FE-13** (trifluoromethane, HFC-23); used as a total flooding agent
- **FE-241** (chlorotetrafluoroethane, HCFC-124); used as a total flooding agent for non-occupied spaces and as a streaming agent
- **FM100®** (HBFC-22B1); used in portable fire extinguishers
- **FM200®** (heptafluoropropane, HFC-227ea); used in chemical storage areas, clean rooms, communications facilities, laboratories, museums, robotics and emergency power facilities
- **Halotron** (HCFC Blend B); used as a total flooding agent and streaming agent
- **Halon 1211** (BCF); used as a streaming agent - requires a special permit in Australia
- **Halon 1301** (BTM); used as a total flooding agent - requires a special permit in Australia
- **Halon 2402 (dibromotetrafluoroethane, C₂Br₂F₄)**; limited use in military systems - requires a special permit in Australia
- **HCFC 22 (chlorodifluoromethane, CHClF₂)**; used as a propellant in some powder fire extinguishers (this product is banned in Australia)
- **HFC 134a** (unsymmetric tetrafluoroethane, CH₂FCF₃); used as a propellant in some powder

fire extinguishers

- **NAF-S-III** (HCFC Blend A); used as a total flooding agent - is a replacement for Halon 1301
- **NAF-P-III** (HCFC Blend C); used as a streaming agent - is a replacement for Halon 1211
- **NAF-P-IV** (HCFC Blend E); used as a streaming agent
- **SF6** (sulfurhexafluoride, SF₆); used as an inerting agent for sealed high voltage switchgear.

Potential and actual breaches
could be identified by:

- direct observation
- workplace quality assurance teams.

Organisational requirements
may include:

- legal and organisational policies and guidelines
- personnel practices and guidelines outlining work roles, responsibilities and delegations
- legislation relevant to recover, reclaim and fill operations
- OHS policies, procedures and programs
- procedures and work instructions to prevent the emission of ODS and SGG in the workplace
- documentation and information systems and processes
- use of electronic job scheduling and communication devices.

OHS policies and procedures
may include:

- employer and employee rights and responsibilities
- the OHS hierarchy of control
- assessing the work site for hazards and risks prior to preparing it for the work procedure
- displaying signs and using barriers in work area
- hazard and risk identification and reporting
- risk assessment and control measures
- incident and accident investigation
- OHS audits and safety inspections
- safe operating procedures and instructions, including:
 - working safely around electrical wiring, cables and overhead powerlines
 - working safely around tools and equipment
 - working safely on ladders and raised platforms
 - recognising risks and hazards
 - emergency procedures
 - awareness of electrical hazards
 - following confined spaces procedures
 - using PPE, including:
 - safety glasses or goggles
 - safety boots or shoes
 - hard hats
 - earmuffs or plugs
 - appropriate gloves and overalls

- sunhats
- dust masks
- equipment maintenance and use
- use and storage of hazardous substances
- first aid.

- Pressurise*** may include use of:
- nitrogen
 - compressed air.
- Leak detection tests:***
- must be performed in accordance with relevant, current Australian standards, organisational requirements and environmental regulations, such as those relating to ODS and SGG
 - may be performed using:
 - hand-held devices
 - leak test solutions
 - pressure valves (to determine if container can hold pressure)
 - ultrasonic liquid level indicator devices
 - may be performed on:
 - container connections, valves and gauges
 - recovery and reclamation processing line pipework, connections and valves
 - fill processing line pipework, connections and valves.
- Components*** may include:
- filters
 - hoses
 - connections.
- Defects*** may include:
- leaking seals
 - leaking gaskets
 - leaking seams
 - faulty gauges
 - rust or corrosion
 - physical damage.
- Method of recovery*** may include:
- recovery via container head
 - recovery via container piercing.
- Analysis*** may include:
- full analysis required if recovered material is for an end user
 - no analysis required if recovered material is for destruction.
- Documentation*** may include:
- receiving documentation
 - goods identification numbers and codes
 - codes of practice and regulations relevant to the receiving of goods
 - Australian and international regulations and codes of practice for the handling and transport of dangerous goods and hazardous substances
 - dangerous goods declarations

- material safety data sheets (MSDS)
 - quality assurance procedures
 - emergency procedures
 - equipment manufacturer specifications
 - workplace procedures and policies
 - job cards
 - customer and supplier instructions
 - service agreements
 - corrective action reports
 - container classification reports
 - condemned container reports
 - record management system.
- Prepare containers for service*** may include:
- apply container numbers and codes to containers
 - attach labels to containers
 - fit transport caps.

Unit Sector(s)

Sector

Fire Protection Equipment

Competency field

Competency field

Asset Maintenance