

PRMPM11B Conduct fumigation

Unit descriptor

This unit of competency covers the skills and knowledge required to conduct fumigation to manage organisms. The unit applies to organisms and organism activity that impacts on the health, safety or amenity of persons, commodities or environments and can be applied to domestic, commercial, industrial or maritime situations. This unit is not intended for use in horticultural or agricultural situations involving the growing of crops.

The unit may require the ability to assess the nature and extent of the organism and organism activity. It requires a thorough understanding of client requirements and the application of company information in order to perform the task. The selection of appropriate equipment, fumigants and methods is essential for performing the task safely and efficiently. These work functions are often done in teams of at least two people and within company guidelines.

Persons wishing to demonstrate competency in management of complex fumigation procedures should submit for assessment in units PRMPM11B Conduct fumigation, PRMPM19B Organise and monitor pest management operations, PRMPM43A Prepare and present a pest management submission including quotation and BSBSM407A Manage a small team.

ELEMENT

1 Access and assess work site

PERFORMANCE CRITERIA

- 1.1 Access *work site* in accordance with *company requirements*
- 1.2 Review *work order* in accordance with *company requirements* and clarify any issues with *appropriate person(s)*
- 1.3 Confirm authority of *client* requesting the *fumigation* services in accordance with *company requirements*
- 1.4 Identify *hazards* and control risks in the *work site* in accordance with *legislative, occupational health and safety (OHS), public health and safety* and *company requirements*
- 1.5 Assess the *work site* and the *work site* application characteristics in accordance with *legislative* and *company requirements*
- 1.6 Determine the size and usage pattern of the *work site* to ensure safety of all *personnel* and efficient use of *equipment* and *fumigants*
- 1.7 Assess *work site* for access, security arrangements, *hazards* and *public health and safety* issues in accordance with *legislative, OHS* and *company requirements*

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2 Determine type and method of fumigation	2.1 Confirm the type of <i>organisms</i> and <i>commodities</i> in accordance with <i>company requirements</i>
	2.2 Select <i>fumigation method</i> to suit type of <i>organism</i> , <i>work site</i> and <i>commodities</i> in accordance with <i>manufacturers' specifications</i> and <i>environmental, legislative, OHS and company requirements</i>
	2.3 Select and access type of <i>fumigant</i> in accordance with <i>manufacturers' specifications</i> and <i>client, environmental, legislative, OHS and company requirements</i>
	2.4 Establish capacity to create fumigation conditions in accordance with <i>manufacturers' specifications</i> and <i>environmental, legislative, OHS and company requirements</i>
	2.5 Identify any factors affecting the completion of the <i>work order</i> and advise promptly the <i>appropriate person(s)</i>
3 Prepare work site for fumigation	3.1 Identify <i>hazards</i> and control risks using <i>fumigants</i> at the <i>work site</i> in accordance with <i>legislative, OHS and company requirements</i>
	3.2 Advise adjoining properties, regulatory and other relevant authorities of proposed fumigation in accordance with <i>legislative and company requirements</i>
	3.3 Install appropriate <i>signage and barriers</i> as required to maximise <i>public health and safety</i> during the <i>fumigation</i> in accordance with <i>legislative and company requirements</i>
	3.4 Implement security measures to control unauthorised access to the <i>work site</i> during the fumigation and prescribed non-re-entry periods in accordance with <i>manufacturers' specifications</i> and <i>legislative, OHS and company requirements</i>

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- 3.5 Create the conditions to ensure that the required concentration of *fumigant* is retained within the *fumigation enclosure* for the required period of time in accordance with *manufacturers' specifications* and *public health and safety* and *company requirements*
- 4 Prepare equipment and fumigants
- 4.1 Select and use suitable *personal protective equipment (PPE)* in accordance with *manufacturers' specifications* and *legislative, OHS* and *company requirements*
- 4.2 Select *equipment* appropriate for the fumigation in accordance with *manufacturers' specifications* and *company requirements*
- 4.3 Check calibration and operational effectiveness of *equipment* in accordance with *manufacturers' specifications* and *company requirements*
- 4.4 Set up *equipment* and adjust *equipment* to suit operator's requirements in accordance with *manufacturers' specifications* and *company requirements*
- 4.5 Select, transport, calculate dosage and prepare *fumigants* in order to control the risk of non-target contamination or exposure in accordance with *manufacturers' specifications* and *environmental, legislative, OHS* and *company requirements*
- 5 Conduct fumigation
- 5.1 Treat *fumigation enclosure* using appropriate *equipment, fumigants* and *fumigation methods* in accordance with *manufacturers' specifications* and *environmental, legislative, OHS* and *company requirements*
- 5.2 Check and adjust air-tight seal, where applicable, on *fumigation enclosure* in accordance with *manufacturers' specifications* and *environmental, legislative, OHS* and *company requirements*

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- 5.3 Assess *fumigant* escape to control impact on *public health and safety* in accordance with *manufacturers' specifications* and *environmental, legislative, OHS* and *company requirements*
- 5.4 Respond to emergency situations using *emergency response procedures* in accordance with *environmental, legislative, OHS* and *company requirements*
- 6 Monitor fumigation
- 6.1 Monitor fumigation *work site* continuously to prevent unauthorised access and to maintain safe conditions in accordance with *manufacturers' specifications* and *environmental, legislative, OHS* and *company requirements*
- 6.2 Monitor and maintain *fumigant* concentrations over active period in accordance with *manufacturers' specifications* and *environmental, legislative, OHS* and *company requirements*
- 6.3 Maintain integrity of air-tight seals, where applicable, throughout the active fumigation period in accordance with *manufacturers' specifications* and *environmental, legislative, OHS* and *company requirements*
- 6.4 Maintain ongoing assessment of *fumigant* escape to control impact on *public health and safety* in accordance with *manufacturers' specifications* and *environmental, legislative, OHS* and *company requirements*
- 7 Ventilate fumigation enclosure
- 7.1 Establish suitable conditions to ventilate to control risks to *public health and safety* in accordance with *manufacturers' specifications* and *environmental, legislative, OHS* and *company requirements*
- 7.2 Implement approved method of safe release of *fumigant* in accordance with *manufacturers' specifications* and *environmental, legislative, OHS* and *company requirements*

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- 7.3 Ventilate *fumigation enclosure* to remove *fumigant* in a safe and controlled manner in accordance with *manufacturers' specifications* and *environmental, legislative, OHS and company requirements*
- 7.4 Aerate *fumigation enclosure* and *commodities* in accordance with *manufacturers' specifications* and *company requirements*
- 7.5 Test *fumigation enclosure* and *commodities* for evidence of residual *fumigant* in accordance with *manufacturers' specifications* and *environmental, legislative, OHS and company requirements*
- 7.6 Notify *client* and other *appropriate person(s)* of any further risk control measures required in accordance with *manufacturers' specifications* and *legislative, OHS and company requirements*
- 8 Restore work site
- 8.1 Collect and remove all *equipment, fumigants* and *waste* in accordance with *environmental, legislative, OHS and company requirements*
- 8.2 Restore *work site* in accordance with *work order* and *client, environmental* and *company requirements*
- 8.3 Remove *signage and barriers* used when *work site* is available for re-use, in accordance with *environmental, legislative, OHS and company requirements*
- 9 Clean, safety-check and store equipment and fumigants
- 9.1 Clean and decontaminate *equipment* and *PPE* in accordance with *manufacturers' specifications* and *environmental, OHS and company requirements*
- 9.2 Safety-check *equipment* and *PPE* and record any maintenance required in accordance with *manufacturers' specifications* and *OHS and company requirements*
- 9.3 Store cleaned *equipment* and *PPE* to allow ready access and re-use in accordance with *company requirements*

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	9.4 Transport and store <i>fumigants</i> in accordance with <i>manufacturers' specifications</i> and <i>OHS</i> and <i>company requirements</i>
	9.5 Dispose of all collected <i>waste</i> in accordance with <i>work order, manufacturers' specifications</i> and <i>environmental, legislative, OHS</i> and <i>company requirements</i>
	9.6 Treat exposed skin to remove any contamination in accordance with <i>manufacturers' specifications</i> and <i>OHS</i> and <i>company requirements</i>
10 Update regulatory and company documentation	10.1 Complete and distribute <i>regulatory and company documentation</i> in accordance with <i>environmental, legislative</i> and <i>company requirements</i>
	10.2 Update <i>client records</i> in accordance with <i>company requirements</i>

RANGE STATEMENT

The range statement links the required knowledge and organisational and technical requirements to the workplace context. It describes any contextual variables that will be used or encountered when applying the competency in work situations. It allows for different work practices and work and knowledge requirements as well as for differences between organisations and workplaces. The following variables are listed alphabetically and may be present for this particular unit.

Appropriate person(s) may include:

- clients
- colleagues
- managers
- person(s) in control of work site(s)
- supervisors.

Clients may include:

- body corporate
- company/organisation
- customs agents
- environmental health officer
- owner
- owner's agent
- person in control of work processes
- quarantine officers.

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Client records may be a computer or manual file and include:

- contact details
- customer files and databases
- details of previous assessments
- details of previous quotations
- details of previous service provision
- government orders e.g. from AQIS
- logbooks
- reports
- specific details about the work site, nature of the organism problem, etc
- use of contractors.

Commodities may include:

- containers
- fabric
- furniture
- grains
- household items
- plant material
- soil
- structures
- timber.

Company requirements may include:

- access and equity policy, principles and practice
- business and performance plans
- client communication procedures
- client confidentiality procedures
- client service standards
- communication channels and reporting procedures
- company goals, objectives, plans, systems and processes
- company issued identification badge/card/pass
- company policy and procedures
- defined resource parameters
- dress and presentation requirements
- duty of care, code of conduct, code of ethics
- emergency response and evacuation procedures
- employer and employee rights and responsibilities
- establishing operator identity with client

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- maintenance procedures for equipment and PPE
- OHS control procedures (e.g. health and safety plans, job plans, job safety analysis, risk assessments, safe operating practices/procedures, safe work instructions, work method statements, safe system of work statements)
- OHS policies and procedures
- personnel practices and guidelines
- policies and procedures relating to own role, responsibility and delegation
- quality and continuous improvement processes and standards
- records and information systems and processes
- training (induction and refresher) materials
- work site access security clearance procedures.

Emergency response procedures include:

- clean-up
- containment
- decontamination
- documented emergency response procedures
- First Aid
- isolation
- notification of authorities
- use of appropriate fire fighting appliances
- use of appropriate personal protective equipment
- work site/workplace evacuation.

Environmental requirements may include:

- clean-up, containment and/or isolation
- company policies and guidelines
- emergency chemical spill control measures
- environmental protection agency and government departments (e.g. agriculture, emergency services and national parks and wildlife) regulations and guidelines
- hazardous materials handling
- local government regulations/bylaws.

Equipment may include:

- broom
- bunding material
- calibrated fumigant dispenser
- calibrated gas detection and monitoring equipment
- camera
- clips and other sealing devices
- detector tubes

*Extracted as a service to the Pest Management Industry, from
PRM04 Asset Maintenance Training Package developed by ANTA.*

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- dispersal fans
- drills
- dusters
- electrical extension cords
- elevated work platforms
- equipment decontamination materials
- finger manifold
- flexible light
- flushing agents
- fumigation sheets
- generators
- hoses
- injectors
- knives
- ladders
- magnifying glass
- measuring jug
- mirrors
- monitoring lines
- nozzles
- portable residual current devices
- pressure manometer
- probes
- pumps
- safety harness
- sand and other absorbers
- sandsnakes
- screwdrivers
- specimen bottles
- thermometer
- torches
- vaporiser
- waste disposal containers
- water flume
- weight scales.

Fumigants are chemicals which, at a particular temperature and pressure, can exist in a gaseous state in sufficient concentration and for sufficient time to be lethal to insects or other animals, weeds or other organisms.

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Fumigation enclosure is any space which has been or is intended to be made sufficiently gas tight to contain the fumigant.

Fumigation methods may include:

- aircraft fumigation
- building fumigation
- chamber fumigation
- sealed spaces fumigation
- sheet fumigation
- ship fumigation.

Hazards may include:

- accidental death
- allergic reactions to chemicals, pests and/or equipment, including latex allergies
- biological and animal waste
- bites and stings
- blood and blood-stained products
- confined/restricted spaces
- contaminated clothing, materials and/or equipment
- damaged or inappropriate equipment
- dust and fibres
- electrical hazards arising from cables, electrical fittings (switches and lights) and untested electrical equipment
- environmental impact
- fatigue
- fire
- gas
- heights
- inadequate lighting and ventilation
- infectious and zoonotic diseases e.g. scabies/Q fever
- manual handling techniques including awkward and repetitive postures
- mobile/vehicle hazards around plant and vehicles
- moving and/or unguarded parts
- noise
- occupational violence and bullying
- poor personal hygiene practices
- spill, splash and spray
- underfoot conditions e.g. slippery, uneven and rough surfaces
- work environment temperature extremes
- work in isolated/remote environments.

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Legislative requirements may include:

- Australian Standards, quality assurance and certification requirements
- award and enterprise agreements
- industry advisory standards and codes
- relevant Commonwealth/state/territory legislation and local government regulations which affect company operation:
 - anti-discrimination and diversity
 - building codes
 - chemical controls
 - chemical registers/manifests
 - consumer protection legislation
 - dangerous goods Acts and regulations
 - declared pest (plant and animal) reporting
 - environmental protection issues
 - equal employment opportunity
 - freedom of information
 - fumigator licence requirements
 - industrial relations
 - motor and commercial vehicle(s) transportation
 - motor licence and endorsement regulations
 - OHS Acts and regulations
 - privacy
 - public health
 - trade practices
 - workplace consultative arrangements.

Manufacturers' specifications may include:

- emergency response resources
- equipment operational manuals
- government publications
- instructional guides
- material safety data sheets (MSDS)
- other resources supplied by the manufacturer (such as laminated cards, notices and wall posters) in work sites or vehicles
- product labels
- safety instructions pre-printed on equipment.

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Occupational health and safety* (OHS) requirements may relate to:

- allergic reactions (contact dermatitis, etc)
- animal management/control procedures
- communication devices for remote and isolated locations e.g. mobile phone, two-way radio, etc
- dermatotoxicological control and prevention measures
- emergency procedures for eye and skin contact, inhalation and ingestion of toxic substances
- hazard identification and risk assessment mechanisms
- health surveillance and monitoring (e.g. regular blood testing)
- hierarchy of hazard control procedures
- industry advisory standards
- information provided by national registration authority for chemical approval and state government authorities e.g. agriculture, environment protection, health and primary industry
- injury and dangerous occurrence reporting
- national and industry codes of practice
- OHS control procedures (e.g. health and safety plans, job plans, job safety analysis, risk assessments, safe operating practices/procedures, safe work instructions, work method statements, safe system of work statements)
- routes of entry and potential symptoms of exposure from chemicals
- safe work practices for equipment, PPE and chemical storage including interpretation of MSDS and hazardous substance information e.g. long latency periods
- safety training, induction and refresher training
- selection and use of PPE and clothing appropriate to the hazard
- up-to-date electrical test and tag compliance.

* Also known as workplace health and safety

Organisms may be living animal or plant including:

- bacteria
- insects
- mites
- molluscs
- rodents
- seeds.

Personal protective equipment (PPE) may include:

- contaminated clothing bag
- cradles
- dust mask

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- face shield
- full-face mask
- hair nets
- hard hats
- impervious gloves
- overalls
- respirator
- safety boots
- safety harness
- soap and towel
- sunscreen
- washable hat.

Personnel may include:

- client's staff
- fellow workers (colleagues)
- general public including bystanders
- venue/facility/building/shopping centre staff/management.

Public health and safety may affect:

- animals
- client staff
- company staff
- customers (present and future)
- distributors
- facility users
- general public
- inspectors
- neighbours
- onlookers
- retailers
- suppliers
- trade and service providers.

Regulatory and company documentation may include:

- accident and incident reports
- certificates and notices
- customer files and databases
- invoices
- job sheets

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- logbooks
- receipts.

Signage and barriers may include:

- physical barriers and restraints erected to restrict access to the work site
- signs complying with legislative requirements and/or Australian Standards warning of danger and/or adverse conditions.

Waste may be solid or liquid and include:

- contaminated/hazardous biological waste
- used containers
- used/contaminated personal protective equipment e.g. disposable gloves.

Work order information may include:

- access to work site including timing of access and access and egress points
- budget allocations
- completion times/dates
- job requirements and tasks
- legislative and local government requirements
- OHS requirements and emergency response procedures
- resource requirements – equipment and materials
- specific client requirements e.g. noise control, sensitivity of occupants to pests and/or management, relationships with other customer activities, dress and presentation requirements
- use of signage and barriers
- work schedules
- work site contact person(s)
- working in isolated and remote locations.

Work sites for fumigation may include:

- airports
- bond stores
- commercial premises
- customs and immigration centres
- docks
- domestic premises
- glasshouses
- grain
- marine craft
- planes
- plant nurseries

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- produce storage facilities
- public buildings and structures
- quarantine centres
- rail yards and rolling stock
- ships
- specialised company fumigation facilities
- sporting fields
- transport containers and depots.

EVIDENCE GUIDE

The evidence guide identifies the requirements to be demonstrated to confirm competence for this unit. Assessment must confirm sufficient ability to use appropriate skills and knowledge to conduct fumigation safely and efficiently. Assessment of performance should be over a period of time covering all categories within the range statement that are applicable in the working environment.

Critical aspects of competency

- Accurate confirmation of the type of organism.
- Accurate identification of the hazards and risks associated with pest management fumigation.
- Compliance with company and legislative/regulatory requirements.
- Knowledge of emergency response procedures.
- Knowledge of hierarchy of hazard control.
- Outcomes achieved in relation to work order.
- Safe fumigant application methods.
- Selection of appropriate equipment and fumigants.

Knowledge needed to achieve the performance criteria

Knowledge and understanding are essential to apply this unit in the workplace, to transfer the skills to other contexts, and to deal with unplanned events. The knowledge requirements for this unit are listed below.

- Fumigants including types, application method, safety requirements, environmental conditions (such as withholding periods) and preparation.
- Commodity absorption and desorption rates.
- Fumigation work site requirements.
- Fumigant application equipment.
- Fumigation regulations.
- Relevant Australian and international standards.
- Organisms eradicated through fumigation.
- Relevant fumigation licence requirements.
- Test methods and readings.
- Dangerous goods use.

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- Hazardous substances in the workplace.
- Quarantine provisions in accordance with Customs Act.
- Product knowledge including manufacturers' specifications for equipment and products being used.
- OHS legislation and procedures.
- Applicable regulations, codes of practice and industry advisory standards.
- Routes of entry and potential symptoms of exposure from chemicals.
- Injury, dangerous occurrence and incident reporting requirements.
- Work order specifications.
- Company management structure and reporting procedures.

Specific skills needed to achieve the performance criteria

To achieve the performance criteria, some complementary skills are required. These are:

- correct use of fumigation equipment
- performing advanced calculations for volumes, quantities and application rates
- safe fumigant application techniques
- applying knowledge of structures to planning fumigation
- handling, management and disposing of chemicals safely
- applying correct handling techniques
- hazard identification and risk control
- reading, interpreting and comprehending directions and safety instructions in equipment manuals and on chemical labels and MSDS
- written communication for certification and fumigant logs
- attention to detail in observing work site conditions
- working with breathing and associated protective equipment
- performing the mathematical calculations required for measuring volumes and dosage rates based on volume and required concentrations at various stages during the fumigation period
- working safely at heights and in confined spaces
- communicating clearly and concisely using written and verbal modes
- requesting advice or further information
- seeking and receiving feedback
- working on an individual basis and within a team
- planning and organising work
- sourcing, organising and recording information
- customer service.

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Other units of competency that could be assessed with this unit

Competence in this unit may be assessed in conjunction with:

- PRMPM02B Assess pest management options
- PRMPM06B Apply pesticide to manage pests
- PRMPM43A Prepare and present a pest management submission including quotation.

Resources required to assess this unit

The following resources should be available:

- access to a suitable work site or venue
- access to suitable equipment and fumigants
- access to safety equipment including PPE
- access to equipment operating manuals, MSDS, company procedures and manufacturers' specifications
- access to plain English version of relevant statutes and procedures
- access to relevant databases and information
- assessment instruments, including personal planner and assessment record book.

Gaining evidence to assess this unit

For valid and reliable assessment of this unit the competency should be demonstrated in the field by reviewing the outcome of at least one complete fumigation role under normal industry operating conditions or if this is not practicable, observations in a realistic simulated work environment.

The competency should be demonstrated over a period of time and observed by the assessor.

The competency is to be demonstrated in a range of situations, which may include customer/workplace interruptions and involvement in related activities normally experienced in the workplace.

Supplementary evidence may be obtained from relevant written correspondence with existing and potential clients. This information must be relevant by showing evidence of the candidate's work performance.

Evidence may be available in the candidate's fumigation logbook(s) or similar record of performance.

Other forms of gaining evidence such as through oral questioning and hypothetical situations (scenarios) may be used to supplement (but not substitute for) the practical demonstration of competence.

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Key competency levels

There are a number of processes that are learnt throughout work and life which are required in all jobs. They are fundamental processes and generally transferable to other work functions. Some of these are covered by the key competencies, although others may be added.

Information below highlights how these processes are applied in this competency standard.

- | | | |
|------------------------------|---|---|
| 1 Perform the process | 2 Perform and administer the process | 3 Perform, administer and design the process |
|------------------------------|---|---|

How can communication of ideas and information be applied?	2	Communicate with management and client to ensure all information gathered is appropriate to work order outcomes.
How can information be collected, analysed and organised ?	2	Gather and analyse all information to ensure activities to be conducted meet all legislation and work order requirements.
How are activities planned and organised ?	2	Plan and organise all work tasks in accordance with regulatory, legislative and company policy.
How can teamwork be applied?	2	Communicate with team members and appropriate authorities all requirements of work order.
How can the use of mathematical ideas and techniques be applied?	2	Calculate work site area and equipment and fumigation volumes required to meet work order outcomes.
How can problem-solving skills be applied?	2	Communicate with management and client to identify and control potential risks or problems which may arise.
How can the use of technology be applied?	2	Record data, such as incident/hazard reports or assessment documentation of client, for future use.