Australian Government

Department of Education, Employment and Workplace Relations

RTC3704A Prepare and apply chemicals

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This competency standard covers the process of preparing and applying chemicals for the control of weeds, pests and diseases. It requires knowledge of the chemicals related to the workplace, the hazards and risks involved in their use, and the specific safety procedures prescribed for working unsupervised within organisational guidelines. It requires the ability to handle and apply chemicals ensuring minimum risk to self, others and environment and accurately record their use.

NB: This competency standard may be deemed to have a time limit when used as part of an accreditation or licence to purchase or use chemicals.

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Application of the Unit

Not applicable.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Not applicable.

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

Elements and Performance Criteria

Element	Performance Criteria
1 Determine the need for **chemical** use	1.1 Nature and level of the pest, weed infestation or disease is identified.
	1.2 Need for action is assessed.
	1.3 Assess the requirement for chemical use as an option within an integrated pest management strategy.
	1.4 Hazard and risk analysis of different chemical options is undertaken.
	1.5 Requirement for chemical application including coverage by appropriate insurance is identified and confirmed.
2 Prepare appropriate chemical	2.1 Chemical label and Material Safety Data Sheets (MSDS) are read and understood.
	2.2 Labels are checked to ensure chemicals meet user requirements and specifications.
	2.3 Chemicals are prepared from those registered for the intended purpose, and to suit the organisation's chemical use strategy.
	2.4 **Legislation and regulations** concerning chemical use are identified and followed.
	2.5 Occupational Health and Safety **(OHS) hazards and risks** and **risk control requirements** associated with use of the chemical are identified.
3 Prepare to use chemicals according to the label and MSDS	3.1 **Personal protective equipment** is selected and checked for use according to the product label and MSDS.
	3.2 Requirements for **pre and post-operative checks** on equipment are followed.

	3.3 Damage, wear or malfunctions of any equipment is identified and reported or repaired.
	3.4 Requirements for the selection, preparation and adjustment of **application equipment and tools** for the appropriate chemicals are followed.
	3.5 Mixing rates are defined and calculated.
	3.6 **Directions, standards** and legislative requirements for mixing chemicals are followed.
4 Apply chemicals	4.1 **Meteorological conditions** and forecasts are assessed prior to and during application.
	4.2 **Hazards** of particular chemicals are identified.
	4.3 **Risks** to others and the environment are assessed and controlled.
	4.4 Application equipment calibration procedures are followed.
	4.5 Procedures and precautions for the use of the chemicals are interpreted from labels and accreditation requirements.
	4.6 Requirements for chemical handling and application are determined from directions, standards and legislative requirements.
	4.7 Chemicals are applied safely and effectively according to directions.
	4.8 Chemical spills or accident procedures are followed.
	4.9 First aid equipment is made available on site.
5 Clean up following chemical application	5.1 **Tools or equipment** required to clean up chemicals are selected.
	5.2 Requirements for cleaning equipment and sites are defined and followed according to directions and standards.
	5.3 Requirements for disposing of unused chemicals, empty containers or spilled material are defined from directions and standards.

		5.4 Procedures for reporting chemical spills are followed.
6	Record application details	6.1 Application of chemicals is recorded according to **organisation procedures**, label directions and legislation.
		6.2 Details of the specific chemical concerned are recorded correctly in the chemical inventory according to regulations.
		6.3 Inventory of personal protective equipment and application equipment is recorded.
		6.4 Procedures and requirements for reporting application details to senior management or client are followed.
		6.5 Records of injury or poisoning associated with application of chemical are made and provided to the **appropriate person.**

Required Skills and Knowledge

Not applicable.

Evidence Guide

What evidence is required to demonstrate competence for this standard as a whole?

Competence in this preparing and applying chemicals requires evidence that a person can work unsupervised to prepare the correct chemical for the problem, apply the chemical according to safe work practice and legislation and ensure minimal effects on the environment and others.

The skills and knowledge required to prepare and apply chemicals must be **transferable** to a different work environment. For example, this could include different chemicals, application methods and workplaces

What specific knowledge is needed to achieve the performance criteria?

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

Chemical free options for pest control.

Use, maintenance and storage of equipment to prepare and apply chemicals.

OHS issues, legislative requirements and Codes of Practice relevant to chemical use and hazardous substances.

Use, maintenance and storage of personal protective equipment, including how, when and why it should be used.

Licensing requirements and relevant State authorities.

Modes of chemical absorption and paths of entry associated with risks to bystanders/public and applicators.

Environmental effects of chemicals.

Drift management.

Calibration and adjustments.

Integrated Pest Management and Integrated Resistance Management principles.

Cost effective use of chemicals.

Hazard identification, assessment and control, and emergency response.

	Correct wearing/fit of personal protective equipment.
What specific skills are needed to achieve the performance criteria?	To achieve the performance criteria, appropriate literacy and numeracy levels as well as some complementary skills are required. These include the ability to: Communicate orally and in writing. Read and interpret labels. Measure quantities, application rates and calibrate equipment. Report on and record activities. Use safe and environmentally responsible work practices.

What processes should be applied to this competency standard?

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. The questions below highlight how these processes are applied in this competency standard. Following each question a number in brackets indicates the level to which the key competency needs to be demonstrated where 0 = not required, 1 = perform the process, 2 = perform and administer the process and 3 = perform, administer and design the process.

1. How can **communication of ideas and information** (**2**) be applied?	Reporting and recording information about chemical application.
2. How can **information be collected**, **analysed and organised** (**2**)?	Information in labels, directions, standards and accreditation conditions (in the case of 'prescribed chemicals), need to be interpreted and analysed.
3. How are **activities planned and organised** (**2**)?	Planning the application of chemicals in conjunction with other workplace activities.
4. How can **team work** (**2**) be applied?	A chemical strategy may be implemented in a team through health and safety meetings.
5. How can the use of **mathematical ideas and techniques** (**2**) be applied?	Calibration of equipment, mixing chemicals and calculations.
6. How can **problem-solving skills** (**2**) be applied?	Matching the correct chemical to the problem and ensuring the all accreditation conditions are met.
7. How can the **use of technology** (**1**) be applied?	Recording information may require the use of appropriate technology.

What are the special assessment conditions for this competency standard?

Where this competency standard is being used as part of an accreditation or licence for purchase or use of chemicals, the assessor must meet the requirements of the issuing body. This may include:

1. Accreditation with that issuing body.
2. Maintenance of current competency in this and the following standards:

RTC3705A -.Transport, handle and store chemicals

RTC4702A -.Minimise risks in the use of chemicals

RTC4703A -.Plan and implement a chemical use program.

3. Involvement in professional development programs comprising technical and legislative updates on an annual basis.

Are there other competency standards that could be assessed with this one?

This competency standard could be assessed on its own or in combination with other competencies relevant to the job function.

There is essential information about **assessing this competency standard for consistent performance** and **where and how it may be assessed**, in the Assessment Guidelines for this Training Package. All users of these competency standards must have **access** to both the **Assessment Guidelines** and the relevant **Sector Booklet**.

Range Statement

Range of Variables

The Range of Variables explains the contexts within which the performance and knowledge requirements of this standard may be assessed. The scope of variables chosen in training and assessment requirements may depend on the work situations available

What **chemicals** may be considered for use?	Chemicals may include insecticides, fungicides, herbicides, bactericides, algaecides, bio-agents, nematacides, rodenticides, antimicrobial agents, anthelmintics, hormone growth promotants or a range of veterinary chemicals used to treat animals for disease.
What **legislation and regulations** may be relevant to this standard?	Legislation may include Pesticides Acts, Occupational Health and Safety Acts and associated Hazardous Substances Regulations/ Codes of Practice, Dangerous Goods Acts, Poisons Act or Protection of the Environment Acts.
What **OHS hazards and risks** are relevant to this standard?	OHS hazards include exposure of the operators and others in the workplace to the absorption of chemicals through the skin and by inhalation and ingestion. Risks may include acute poisoning, chronic or long-term health effects, and lack of appropriate insurance coverage.
What **OHS risk control requirements** are relevant to this standard?	OHS risk control measures may include safe application techniques, use and maintenance of personal protective equipment, safe wash down procedures, safe procedures for container rinsing and management.
What **personal protective equipment** might be relevant to this standard?	Personal equipment may include boots, overalls, chemical resistant gloves, aprons, face shields, respirators or hats.
What **pre and post operational checks** might be relevant to this standard?	Checks may be made to weather conditions (e.g., wind), nozzles, hoses, regulators/gauges, respirator cartridges, drench and protective clothing and equipment.
What **application equipment** may be relevant to this standard?	Include knapsacks or hand held pneumatic sprayers, drench guns, spot on applicators, CDA and air assisted units, self-propelled

	sprayers, controllers or power operated equipment like boomsprays, pressure wands, jetting race, shower/plunge dips, hand jetting or air blast sprayer.
What **directions and standards** may be relevant to this standard?	May include the instructions on the chemicals label, in an operator's manual, on a MSDS, in an industry standard, or from Codes of Practice and advisory material explaining legislation relevant to chemical use.
What **hazards** may need to be addressed in this standard?	Hazards will be listed on labels and the MSDS for the chemical concerned and may include flammability, toxicity, health hazards, damage to non-target organisms, uneven surfaces, trip points, solar radiation, manual handling, faulty equipment, environmental damage or residues in foods.
What **risks** may need to be assessed in this standard?	Risks that may be assessed include spillage, contact of chemical with skin or eyes, accidental ingestion, incorrect concentrations in mixtures, faulty or inappropriate storage containers, incorrectly calibrated equipment, spray drift, contamination of waterways, incorrect disposal of unused chemicals or faulty equipment
What **meteorological conditions** might be assessed?	Rain, wind, temperature, relative humidity, inversion or stable air conditions.
What **tools and equipment** may be used for cleaning up after chemical application or spill?	Include washing soda, chlorine, containers for disposal of chemicals, non-flammable absorbent materials and shovels, booms, sausages and sandbags.
What **organisational procedures** may be in place for recording?	Written journal or computer record may be used for recording.
Who may be the **appropriate person** to receive reports about accidents and spills?	Include relevant authorities, supervisor, manager, business owner or colleague.

For more information on contexts, environment and variables for training and assessment refer to the Sector Booklet.

Unit Sector(s)

Not applicable.