

RTC3704A**Unit Descriptor****Unit Sector****Prepare and apply chemicals**

Prepare and apply chemicals

No sector assigned

ELEMENT	PERFORMANCE CRITERIA
1. Determine the need for chemical use	1.1 Nature and level of the pest, weed infestation or disease as 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 chemicals 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 Material Safety Data Sheets 3.2 Requirements for <i>pre and post-operative checks</i> 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 <i>application equipment and tools</i> 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 organisational procedures
 - 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**

KEY COMPETENCIES

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.

Key Competency	Example of Application	Performance Level
Communicating ideas and information	Reporting and recording information about chemical application	2
Collecting analysing and organising information	In labels, directions, standards and accreditation conditions (in the case of prescribed chemicals), need to be interpreted and analysed	2
Planning and organising activities	Planning the application of chemicals in conjunction with other workplace activities	2
Working with others and in teams	A chemical strategy may be implemented in a team through health and safety meetings	2
Using mathematical ideas and techniques	Calibration of equipment, mixing chemicals and calculations	2
Solving problems	Matching the correct chemical to the problem and ensuring that all accreditation conditions are met	2
Using technology	Recording information may require the use of appropriate technology	1

RANGE STATEMENT

Chemicals

may include

- insecticides
- fungicides
- herbicides
- bactericides
- algaecides
- bio-agents
- nematocides
- rodenticides
- antimicrobial agents
- anthelmintics
- hormone growth promotants or a range of veterinary chemicals used to treat animals for disease

Legislation and regulations	may include <ul style="list-style-type: none">• 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
Occupational Health and Safety risks	may include <ul style="list-style-type: none">• exposure of the operators and others in the workplace to the absorption of chemicals through the skin and by inhalation and ingestion• risk include<ul style="list-style-type: none">• acute poisoning• chronic or long-term health effects• lack of appropriate insurance coverage
Occupational Health and Safety risk control requirements	may include <ul style="list-style-type: none">• safe application techniques• use and maintenance of personal protective equipment• safe wash down procedures• safe procedures for container rinsing and management
Personal Protective Equipment	may include <ul style="list-style-type: none">• boots• overalls• chemical resistant gloves• aprons• face shields• respirators or hats
Pre and post operational checks	may be made to <ul style="list-style-type: none">• weather conditions, eg, wind• nozzles• hoses• regulators/gauges• respirator cartridges• drench and protective clothing and equipment

Application equipment	may include <ul style="list-style-type: none">• knapsacks or hand held pneumatic sprayers• drench guns• spot on applicators• Controlled Droplet Application (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
Directions and standards	may include <ul style="list-style-type: none">• the instructions on the chemicals label• in an operator's manual• on a Material Safety Data Sheets• in an industry standard• from Codes of Practice and advisory material explaining legislation relevant to chemical use
Hazards	will be listed on <ul style="list-style-type: none">• labels and the Material Safety Data Sheets for the chemical concerned and may include flammability• toxicity, health standards• damage to non-target organisms• uneven surfaces• trip points• solar radiation• manual handling• faulty equipment• environmental damage or residues in foods
Risks	that may be assessed <ul style="list-style-type: none">• 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

Meteorological conditions	that may be assessed will include <ul style="list-style-type: none">• rain• wind• temperature• relative humidity• inversion or stable air conditions
Tools and equipment	include <ul style="list-style-type: none">• washing soda• chlorine• containers for disposal of chemicals• non-flammable absorbent materials and shovels• booms• sausages and sandbags
Organisational procedures for recording	may include <ul style="list-style-type: none">• written journal or computer records
Appropriate persons for receiving accident and spill reports	include <ul style="list-style-type: none">• relevant authorities• supervisor• manager• business owner or colleague
The sport and recreation industry	covers <ul style="list-style-type: none">• industry sectors of community recreation, fitness, outdoor recreation and sport• significant roles played by activity organisations, industry peak bodies, professional organisations• large volunteer base• high turnover of volunteers• high levels of part time and casual employment• irregular working hours• relatively few professional positions• workforce employed mostly in operational positions• mainly small business or self-employed personnel• slow to take up technology• over 2/3 of the sport and recreation industry have no formal/recognised qualifications• significant reliance upon industry credentials and involvement in the activity itself

EVIDENCE GUIDE

Critical aspects of evidence to be considered

- Assessment must confirm sufficient knowledge in preparing and applying chemicals
- Assessment of performance should be over a period of time covering all categories from the Range Statements applicable to the learner's work environment
- In particular, assessment must confirm the ability to
 - work unsupervised to prepare and correct chemical for the problems
 - apply the chemical according to safe work practice and legislation and ensure minimal effects on the environment and others
 - transfer the skills and knowledge required to prepare and apply chemicals to a different work environment, eg, this could include different chemicals, application methods and workplaces

Interdependent assessment of units

- This unit must be assessed after attainment of competency in the following unit(s)
 - Nil
- This unit must be assessed in conjunction with the following unit(s)
 - Nil
- For the purpose of integrated assessment, this unit may be assessed in conjunction with the following unit(s)
 - Nil

Required knowledge and skills

- Required knowledge
 - Chemical free options for pest control
 - Occupational Health and Safety issues, legislative requirements and Codes of Practice relevant to chemical use and hazardous substances
 - Use, maintenance and storage of equipment to prepare and apply chemicals
 - 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
- Required skills
 - 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

Resource implications

- Physical resources - assessment of this competency requires access to
 - application equipment
 - tools and equipment
 - personal protective equipment
 - appropriate documentation and resources normally used in the workplace
- Human resources - assessment of this competency will require
 - human resources consistent with those outlined in the Assessment Guidelines. That is, assessors (or persons within the assessment team) should
 - be competent in this unit
 - be current in their knowledge and understanding of the industry through provision of evidence of professional activity in the relevant area
 - have attained the National Competency Standards for Assessment: BSZ401A, BSZ402A and BSZ403A
 - 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
 - accreditation with that issuing body
 - 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
 - involvement in professional development programs comprising technical and legislative updates on an annual basis

Consistency in performance

- Competence in this unit must be assessed over a period of time in order to ensure consistency of performance over the Range Statements and contexts applicable in the work environment

Context for assessment

- This unit of competency must be assessed in the context of a sport or recreation activity. For valid and reliable assessment the sport or recreation activity should closely replicate the work environment. The environment should be safe with the hazards, circumstances and equipment likely to be encountered in a real workplace
- Assessment of this unit of competency will usually include observation of processes and procedures, oral and/or written questioning on required knowledge and skills and consideration of required attitudes
- Where performance is not directly observed and/or is required to be demonstrated over a "period of time" and/or in a "number of locations", any evidence should be authenticated by colleagues, supervisors, clients or other appropriate persons

Essential Assessment Information

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 the **Assessment Guidelines** . Further advice may also be sought from the relevant **sector booklet** .