



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **FDFLAB2001A Perform basic analytical tests**

**Release: 2**

## FDFLAB2001A Perform basic analytical tests

### Modification History

This unit supersedes but is not equivalent to FDFLABBATA Perform basic analytical tests.  
April 2012: Minor typographical corrections.

### Unit Descriptor

|                        |   |
|------------------------|---|
| <b>Unit descriptor</b> | This unit covers the skills and knowledge required to perform a range of analytical tests and measurements in a winery laboratory using standard methods. Work is usually done under routine supervision. |
|------------------------|---|

### Application of the Unit

|                                |  |
|--------------------------------|--|
| <b>Application of the unit</b> | This unit has application in a wine operations laboratory environment. It typically targets the worker responsible for applying basic laboratory principles when performing basic tests. |
|--------------------------------|--|

### Licensing/Regulatory Information

Not applicable.

### Pre-Requisites

|                           |                 |                                |
|---------------------------|-----------------|--------------------------------|
| <b>Prerequisite units</b> |                 |                                |
|                           | FDFLAB2011<br>A | Use basic laboratory equipment |

## Employability Skills Information

|                             |  |
|-----------------------------|--|
| <b>Employability skills</b> | This unit contains employability skills. |
|-----------------------------|--|

## Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

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

## Elements and Performance Criteria

| <b>ELEMENT</b>         | <b>PERFORMANCE CRITERIA</b>   |
|------------------------|---|
| 1. Prepare for testing | <ul style="list-style-type: none"><li>1.1 Samples are registered and prepared for testing</li><li>1.2 Materials are prepared to meet requirements</li><li>1.3 Services are confirmed as available and ready for use</li><li>1.4 Equipment is selected, prepared and checked to confirm readiness for use</li><li>1.5 Defects in samples, test materials and equipment are identified, rectified and/or reported</li></ul> |
| 2. Perform testing     | <ul style="list-style-type: none"><li>2.1 Test method is carried out according to workplace procedures</li><li>2.2 Equipment and materials are used according to workplace procedures</li><li>2.3 Results are read and interpreted</li><li>2.4 Out-of-standard results are identified and appropriate action taken</li></ul>  |
| 3. Complete testing    | <ul style="list-style-type: none"><li>3.1 Waste generated by the testing is monitored and cleared according to workplace procedures</li><li>3.2 Equipment is prepared for cleaning</li><li>3.3 Work is conducted in accordance with workplace environmental guidelines</li></ul>  |
| 4. Record information  | <ul style="list-style-type: none"><li>4.1 Workplace information is recorded in the appropriate format</li></ul>   |

## Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

### Required skills include:

---

Note: The following required skills should be applied as appropriate to the equipment and processes that are used in the particular winery or workplace.

#### Ability to:

- access workplace information to identify testing requirements
- select, fit and use appropriate personal protective clothing and/or equipment
- liaise with other work areas. This may include other laboratory personnel, cellar, winemaker and production personnel
- confirm supply of necessary materials, equipment and services
- prepare samples for testing
- prepare materials as required
- confirm equipment status and condition. This may include:
  - confirmation that test equipment is operating accurately
  - recognising and rejecting contaminated or faulty glassware and/or equipment
  - safety checks
  - replacing consumables
  - instrument setting and calibration
- monitor the process and test equipment to identify out-of-standard results or non-compliance
- report and/or record corrective action according to workplace procedures
- follow procedures to repeat or validate results
- sort, collect, treat, recycle or dispose of waste
- shut down equipment in response to an emergency situation
- shut down equipment in response to routine shutdown requirements
- maintain work area to meet housekeeping standards
- prepare equipment for cleaning. This may include dismantling equipment or rinsing in preparation for sanitation
- identify, rectify or report environmental non-compliance
- use oral communication skills/language to fulfil the job role as specified by the organisation, including questioning, active listening, asking for clarification and seeking advice from supervisor
- work cooperatively within a culturally diverse workforce.

### Required knowledge includes:

---

Note: The following required knowledge should be applied as appropriate to the equipment and processes that are used in the particular winery or workplace.

#### Knowledge of:

- principles of the test method

- purpose of the test
- relevant standards and specifications and basic legislative requirements (e.g. quality, health, safety, labelling and equipment) and their implications
- procedures and operating parameters
- affect of process stages on results
- start-up and set-up procedures as required
- common causes and knock-on effects of inaccuracies or contamination, and preventive or corrective action required
- normal range of results for products tested
- recording requirements and procedures
- Occupational health and safety (OHS) hazards and controls
- lock-out and tag-out procedures as required
- procedures and responsibility for reporting problems
- shutdown sequence as required
- environmental issues and controls
- recording requirements and procedures
- routine maintenance procedures.

## Evidence Guide

| <b>EVIDENCE GUIDE</b>  |  |
|--|--|
| The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package. |  |
| Overview of assessment   | Assessment must be carried out in a manner that recognises the cultural and literacy requirements of the assessee and is appropriate to the work performed. Competence in this unit must be achieved in accordance with food safety standards and regulations.   |
| Critical aspects for assessment and evidence required to demonstrate competency in this unit   | Evidence of ability to: <ul style="list-style-type: none"> <li>• prepare equipment and materials for conducting tests</li> <li>• conduct basic tests according to workplace requirements</li> <li>• identify out-of-standard results</li> <li>• conduct housekeeping and dispose of waste according to workplace standards</li> <li>• complete documentation.</li> </ul>   |
| Context of and specific resources for assessment   | Assessment must occur in a real or simulated workplace where the assessee has access to: <ul style="list-style-type: none"> <li>• personal protective clothing and equipment as required</li> <li>• work procedures, including advice on company practices, safe work practices, food safety, quality and environmental requirements</li> <li>• instructions, information, specifications and schedules as required</li> <li>• equipment, services and corresponding information as required</li> <li>• products and materials as required</li> <li>• internal and external customers and suppliers as required</li> <li>• cleaning procedures, materials and equipment as required</li> <li>• documentation and recording requirements and procedures.</li> </ul> |
| Method of assessment   | This unit should be assessed together with other units of competency relevant to the function or work role.  |
| Guidance information for assessment  | To ensure consistency in one's performance, competence should be demonstrated on more than one occasion over   |

|                       |  |
|-----------------------|--|
| <b>EVIDENCE GUIDE</b> |  |
|                       | a period of time in order to cover a variety of circumstances, cases and responsibilities, and where possible, over a number of assessment activities. |

## Range Statement

|  |  |
|--|--|
| <b>RANGE STATEMENT</b>   |  |
| <p>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, if used in the performance criteria, is detailed below. 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) may also be included.</p> |  |
| <b>Policies and procedures</b>   | Work is carried out in accordance with workplace procedures, licensing requirements and legislative requirements   |
| <b>Workplace information</b>   | <p>Workplace information may include:</p> <ul style="list-style-type: none"> <li>• Standard Operating Procedures (SOPs)</li> <li>• specifications</li> <li>• production schedules</li> <li>• instructions</li> <li>• work notes</li> <li>• Material Safety Data Sheets (MSDS)</li> <li>• manufacturer instructions</li> <li>• verbal direction from laboratory manager, supervisor or senior operator</li> </ul> |
| <b>Sample preparation</b>  | <p>Sample preparation may include:</p> <ul style="list-style-type: none"> <li>• fining</li> <li>• filtration</li> <li>• centrifugation</li> <li>• dissolving</li> <li>• degassing</li> </ul>   |
| <b>Tests</b>   | <p>The range of tests performed may include the following techniques:</p> <ul style="list-style-type: none"> <li>• volumetric analysis, titration (acid base/redox), pipetting, densities, refractive indices, filtration, distillation/reflux, gravimetric tests, potentiometry</li> </ul>  |



| <b>RANGE STATEMENT</b>     |  |
|----------------------------|--|
|                            | <p>and turbimetric analysis</p> <p>Typical tests performed at this level should include:</p> <ul style="list-style-type: none"> <li>sugar by hydrometry and refractometry, pH, baumé/brix, titratable acid, alcohol, sulphur dioxide, protein stability, tartrate stability and may include reducing sugars, volatile acid, ascorbic acid, malic acid by chromatography, YAN by titration, turbidity, specific gravity/density, simple colourimetric analysis, carbon dioxide, dissolved oxygen, and other tests as required by the workplace</li> </ul> |
| <b>Equipment</b>           | Equipment may vary and should include that listed in SOPs  |
| <b>Materials</b>           | Materials may vary and should include those listed in SOPs   |
| <b>Equipment status</b>    | <p>Confirming equipment status involves:</p> <ul style="list-style-type: none"> <li>checking that hygiene and sanitation standards, safety standards and pre-start requirements are met and that equipment is operational</li> <li>checking the operation and/or calibration of measuring instrumentation</li> </ul>   |
| <b>Services</b>            | <p>Services may include:</p> <ul style="list-style-type: none"> <li>water</li> <li>gas</li> <li>power</li> </ul>   |
| <b>Information systems</b> | <p>Information systems may be:</p> <ul style="list-style-type: none"> <li>print or screen based</li> </ul>   |

## Unit Sector(s)

|                    |                 |
|--------------------|-----------------|
| <b>Unit sector</b> | Wine operations |
|--------------------|-----------------|