

Specification of Competency Standards
for the Testing, Inspection and Certification Industry
Unit of Competency

Functional Area - Testing Operations

Title	Perform basic chemical tests and procedures
Code	105791L3
Range	This unit of competency (UoC) covers the abilities to carry out chemical tests and measurements according to test methods to record data in testing laboratories.
Level	3
Credit	2 (For Reference Only)
Competency	<p>Performance Requirements</p> <p>1. Possess knowledge of metrology and chemical test methods</p> <ul style="list-style-type: none"> • Apply the concepts of metrology including repeatability, precision, accuracy, significant figures, sources of error, uncertainty and traceability. • Describe the purpose of performing laboratory testing and the requirements of test method. • Apply the principles of basic analytical techniques and describe the operation of the equipment involved, e.g.: <ul style="list-style-type: none"> ○ gravimetric analysis, ○ titrimetric analysis, ○ basic separation methods including precipitation, filtration, gravity separation, distillation, solvent extraction and chromatography, ○ drying and ashing, ○ electrical conductivity and pH, ○ dissolved oxygen, ○ visual/optical tests of appearance, colour, texture, turbidity, refractive index. • Describe test method calibration procedures and method precision. • Describe calculation methods, including appropriate units, uncertainties, balancing equations, and the concentration of the solution given the chemical reaction for the titration. • Identify potential safety hazards associated with test procedures, operating equipment and handling chemicals and glassware. <p>2. Perform tests and/or measurements on samples using appropriate equipment</p> <ul style="list-style-type: none"> • Apply the appropriate test method and equipment for performing the requested test. • Record sample description, ensure sample compliance with test method requirements, and handle discrepancies. • Set up and check the performance of equipment in accordance with test method requirements. • Check the calibration status of equipment and quarantine out of calibration equipment. • Carry out tests/procedures on all samples, calibration standards and quality control checks if appropriate, in accordance with specified or validated test methods. • Record, perform calculations and document test data in accordance with standard operating procedures. <p>3. Exhibit professionalism</p> <ul style="list-style-type: none"> • Complete all tests within the required timeline meeting quality, accuracy and safety requirements. • Maintain security, integrity and traceability of all samples, data and documentation.
Assessment Criteria	The integrated outcome requirements of this UoC are the abilities to:

Specification of Competency Standards
for the Testing, Inspection and Certification Industry
Unit of Competency

Functional Area - Testing Operations

	<ul style="list-style-type: none">• carry out chemical tests and procedures by using appropriate reagents and equipment according to the requirements of the test method and complete the tests within agreed time limit,• record and calculate test data accurately and legibly and document test data properly to maintain their security and traceability.
Remark	