



REPUBLIC OF KENYA

NATIONAL OCCUPATIONAL STANDARD

FOR

ANALYTICAL CHEMISTRY TECHNICIAN

KNQF LEVEL 6

OCCUPATION STANDARD ISCED CODE: 0531 554A

PREPARE CHEMICAL SAMPLES

ISCED UNIT CODE: 0531 551 11A

TVET CDACC UNIT CODE: ASC/OS/ACHEM/CR/01/6/MA

UNIT DESCRIPTION

This unit covers the competencies required in preparing chemical samples. It involves designing sampling plan, collecting and storing chemical samples.

ELEMENT AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
These describe the key outcomes which make up laboratory function	These are assessable statements which specify the required level of performance for each of the elements. <i>(Bold and italicized terms are elaborated in the Range)</i>
1. Design Sampling Plan	1.1 Sample type is identified as per chemistry laboratory procedures. 1.2 Sample frame is developed as per chemistry laboratory manual. 1.3 Sample size is identified as per chemistry laboratory manual. 1.4 Sampling tools and apparatus are selected as per chemistry laboratory manual. 1.5 Sampling procedures are developed as per chemistry laboratory manual.
2. Collect Chemical Samples	2.1 Sample points are identified as per chemistry laboratory manual. 2.2 Sampling is performed as per chemistry laboratory manual. 2.3 Samples are pre-treated as per chemistry laboratory manual.

	<p>2.4 Samples are packaged as per standard laboratory procedures.</p> <p>2.5 Samples are labelled as per chemistry laboratory manual.</p> <p>2.6 Sample is transported as per chemistry laboratory manual.</p>
3. Store Chemical Samples	<p>3.1 Sample processing is carried out as per chemistry laboratory manual.</p> <p>3.2 Sample preservation techniques are identified as per chemistry laboratory manual.</p> <p>3.3 Sample is labelled as per chemistry laboratory manual.</p> <p>3.4 Sample is kept in their designated places as per chemistry laboratory manual.</p>

RANGE

This section provides a work environment and conditions to which the performance criteria apply. It allows for a different work environment and situations that will affect performance.

Variable	Range
1. Sample type	<ul style="list-style-type: none"> • Solids, • liquids • gases
2. Pre-treated	<ul style="list-style-type: none"> • Size reduction, • Extraction • Digestion
3. Sample preservation techniques	<ul style="list-style-type: none"> • Refrigeration • Oven

	<ul style="list-style-type: none">• Chemical storage
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REQUIRED SKILLS AND KNOWLEDGE

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

Required Skills

The individual needs to demonstrate the following skills:

- Communication skills
- Taking measurements
- Computer skills

Required Knowledge

The individual needs to demonstrate knowledge of:

- Book keeping
- Sample constituents
- Safety precautions

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

<p>1. Critical aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <p>1.1 Designed sampling plan as per chemistry laboratory manual.</p> <p>1.2 Pretreated samples as per chemistry laboratory manual.</p> <p>1.3 Preserved samples as per chemistry laboratory manual.</p>
<p>2. Resource Implications</p>	<p>The following resources should be provided:</p> <p>2.1 Access to relevant workplace</p> <p>2.2 Appropriately simulated environment where assessment can take place</p> <p>2.3 Materials relevant to the proposed activity or tasks</p>
<p>3. Methods of Assessment</p>	<p>Competency in this unit may be assessed through:</p> <p>3.1 Written</p> <p>3.2 Third party report</p>
<p>4. Context of Assessment</p>	<p>Competency may be assessed:</p> <p>4.1 Workplace</p> <p>4.2 Simulated laboratory environment</p>
<p>5. Guidance information for assessment</p>	<p>5.1 Holistic assessment with other units relevant to the industry sector, laboratory and job role is recommended.</p>