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**SOUTH AFRICAN QUALIFICATIONS AUTHORITY
REGISTERED QUALIFICATION:**

Occupational Certificate: Chemist (Surface Coatings Technologist)

SAQA QUAL ID	QUALIFICATION TITLE			
96367	Occupational Certificate: Chemist (Surface Coatings Technologist)			
ORIGINATOR				
Development Quality Partner - CHIETA				
QUALITY ASSURING BODY			NQF SUB-FRAMEWORK	
-			OQSF - Occupational Qualifications Sub-framework	
QUALIFICATION TYPE	FIELD	SUBFIELD		
Occupational Certificate	Field 06 - Manufacturing, Engineering and Technology	Manufacturing and Assembly		
ABET BAND	MINIMUM CREDITS	PRE-2009 NQF LEVEL	NQF LEVEL	QUAL CLASS
Undefined	191	Not Applicable	NQF Level 05	Regular-ELOAC
REGISTRATION STATUS		SAQA DECISION NUMBER	REGISTRATION START DATE	REGISTRATION END DATE
Reregistered		SAQA 10105/14	2015-07-01	2018-06-30
LAST DATE FOR ENROLMENT		LAST DATE FOR ACHIEVEMENT		
2019-06-30		2022-06-30		

In all of the tables in this document, both the pre-2009 NQF Level and the NQF Level is shown. In the text (purpose statements, qualification rules, etc), any references to NQF Levels are to the pre-2009 levels unless specifically stated otherwise.

This qualification does not replace any other qualification and is not replaced by any other qualification.

PURPOSE AND RATIONALE OF THE QUALIFICATION

Purpose:

The purpose of this qualification is to prepare a learner to operate as a Surface Coatings Technologist. A Surface Coatings Technologist develops surface coatings formulations, optimises existing surface coatings formulations and provides technical support services to surface coatings manufacturers and customers.

A qualified learner will be able to:

- Design and develop surface coating design parameters for surface coatings products.
- Optimise formulations for surface coatings products.
- Provide technical support on surface coatings to internal and external customers.

Rationale:

South African Paint Manufacturing Association (SAPMA) has been in existence for over 70 years and represents the paint manufacturing industry as well as companies supplying goods and services to the paint industry. With the advent of new and imminent legislation being introduced pertaining to the coatings industry, a strategic decision was made to expand the membership of the association by way of the inclusion of the industry's all important distribution channels, namely the paint retailers and the painting contractors.

The qualification is ideal for sales personnel, customer service staff, receptionists, and managers at all levels and laboratory staff who are following a technical career. Furthermore it is ideal for those who want to further their career in the paint manufacturing industry in directions such as: quality control, research and development, technical service, sales, buying, personnel and training, raw materials sales, coatings application, specification and inspection and specifically for those who are following a technical career path and in particular those in a laboratory environment.

LEARNING ASSUMED TO BE IN PLACE AND RECOGNITION OF PRIOR LEARNING

Recognition of Prior Learning (RPL):

RPL for access to the external integrated summative assessment: Accredited providers and approved workplaces must apply the internal assessment criteria specified in the related curriculum document to establish and confirm prior learning. Accredited providers and workplaces must confirm prior learning by issuing a statement of result or certifying a work experience record.

RPL for access to the qualification: Accredited providers and approved workplaces may recognise prior learning against the relevant access requirements.

Entry Requirements:

NQF Level 4 with English, Mathematics and Science.

RECOGNISE PREVIOUS LEARNING?

Y

QUALIFICATION RULES

This qualification consists of the following compulsory Theory/Knowledge and Practical Skills Modules:

Theory/Knowledge Modules:

- 211301001-KM-01, Basic Surface Coatings Technology, NQF Level 4, 9 Credits.
- 211301001-KM-02, Surface Coatings Application, NQF Level 4, 9 Credits.
- 211301001-KM-03, Solvents and binders, NQF Level 5, 10 Credits.
- 211301001-KM-04, Pigmentation and Dispersion, NQF Level 5, 12 Credits.
- 211301001-KM-05, Modifiers, NQF Level 5, 7 Credits.
- 211301001-KM-06, Testing of surface coatings, NQF Level 5, 6 Credits.
- 211301001-KM-07, Convertible binders, NQF Level 5, 12 Credits.
- 211301001-KM-08, Formulating Principles, NQF Level 5, 6 Credits.
- 211301001-KM-09, Basic Project Management and Information Management, NQF Level 4, 6 Credits.
- 211301001-KM-10, Managing interpersonal relationships in the Surface Coatings Industry, NQF Level 4, 6 Credits.

Total number of credits for Knowledge Modules: 83.

Practical Skills Modules:

- 211301001-PM-01, Develop design parameters of surface coatings formulations, NQF Level 6, 16 Credits.
- 211301001-PM-02, Optimise the field performance of finished surface coatings products, NQF Level 6, 16 Credits.
- 211301001-PM-03, Provide technical specifications, advice and information leading to satisfaction of internal and external customers, NQF Level 6, 16 Credits.

Total number of credits for Practical Skills Modules: 48.

This qualification also requires the following Work Experience Modules:

- 211301001-WM-01, Surface coatings design processes, NQF Level 5, 20 Credits.

- 211301001-WM-02, Surface coatings formulation processes, NQF Level 5, 20 Credits.
 - 211301001-WM-03, Technical support processes on surface coatings, NQF Level 5, 20 Credits.
- Total number of credits for Work Experience Modules: 60.

EXIT LEVEL OUTCOMES

1. Apply the general principles of various coatings systems.
2. Apply formulation principles to design specific surface coatings product for a variety of applications and substrates.
3. Evaluate the performance of a surface coatings formulation and adjust to meet specification criteria.
4. Identify typical underlying causes of problems in surface coatings applications and recommend corrective action.
5. Interaction with clients in relation to surface coatings.
6. Develop a project plan for a product design and generate a comprehensive report.

ASSOCIATED ASSESSMENT CRITERIA

Associated Assessment Criteria for Exit Level Outcome 1:

- The relative merits and applications of the principal classes of media systems are reviewed and compared.
- The principal physical and chemical resistance properties required of a paint system are discussed in relation to the environmental requirements.
- The general influence of pigmentation on coatings properties is discussed.
- The function of and requirements for a variety of system components (such as primer, filler, etc.) are assessed and explained in relation to the substrate, inter-coat requirements and final appearance of the system.
- Basic differences in the composition of the system components (such as primer, filler, etc.) are discussed.

Associated Assessment Criteria for Exit Level Outcome 2:

- Basic formulation requirements of coatings for use on a variety of substrates or contexts (such as woodwork, high performance, etc.) are discussed.
- Preferred application methods related to a variety of substrates or contexts (such as woodwork, high performance, etc.) are justified.
- The performance properties required from coatings related to a variety of substrates and contexts (such as woodwork, high performance, etc.) are stated.
- Health and safety aspects relevant to the manufacturing, application and usage of surface coatings are discussed.

Associated Assessment Criteria for Exit Level Outcome 3:

- The optimised field performance of the finished surface coatings product is evaluated.
- Results are interpreted and the formulation is adjusted.
- Steps to transfer optimised surface coatings formulations to production in the factory are discussed and the documentation is compiled.

Associated Assessment Criteria for Exit Level Outcome 4:

- Possible underlying causes of problems in surface coatings applications are investigated and identified.
- Corrective actions which include the correct technical specifications, advice and taking the cost factor into account are suggested.
- Correct technical specifications, advice and information leading to satisfaction of internal and external customers are provided.

Associated Assessment Criteria for Exit Level Outcome 5:

- The principles of effective interactive skills are described.
- Effective communication skills which will enhance communication with clients are described.

Associated Assessment Criteria for Exit Level Outcome 6:

- The basic principles of project management in the context of formulating environment are described.
- Research principles are identified and applied.
- Report writing principles are outlined and utilised.

Integrated Assessment:

Integrated Formative Assessment:

The skills development provider will use the curriculum to guide them on the stipulated internal assessment criteria and weighting. They will also apply the scope of practical skills and applied knowledge as stipulated by the internal assessment criteria. This formative assessment leads to entrance into the integrated external summative assessment.

External Integrated Summative assessment:

An external integrated summative assessment, conducted through the relevant QCTO Assessment Quality Partner is required for the issuing of this qualification. The external integrated summative assessment will focus on the exit level outcomes and associated assessment criteria.

INTERNATIONAL COMPARABILITY

The British Coatings Federation (BCF) has acknowledged this qualification with an international award and the qualification offered by this federation has been used for comparability. The purpose of this qualification is to develop an understanding of surface coatings technology and includes: formulation for those working in a laboratory; manufacture and application of decorative and industrial coatings; ink formulation, manufacture and application; and powder coatings formulation, manufacture and application. It consists of a wide range of modules covering all aspects of coatings technology.

This qualification is divided into various levels, namely foundation, intermediate and advanced and covers aspects such as:

- Pigments Colour and Dispersion.
- Evaluation and Specifications.
- Formulation - Determining Factors.
- System Components - Decorative Applications.
- Formulation Requirements of Ind Systems Wood.
- Formulation Requirements of Ind Systems - Auto and Can.
- Liquid Coatings, Modifiers and Drying.
- Application and Special Properties.
- Appearance and Properties.
- Urethane and Amino Resins.
- Epoxy, Acrylic and Water Reducible Resins.
- Water Borne Coatings.
- Thermosetting Coating Powders.
- Coatings Powder - Manufacture.
- Thin film Intumescent Fire Protect Steel.

Conclusion:

The Occupational Certificate: Surface Coatings Technologist is similar to the BCF qualification as it covers all of the above aspects and the presentation methodology also includes the theoretical and practical skills aspects. However, it differs from the BCF qualification in terms of the inclusion of recognised work experience and the fact that it is presented in a modular manner and not according to the various levels of learning.

ARTICULATION OPTIONS

This qualification enables both horizontal and vertical articulation possibilities.

Horizontally:

- Higher Certificate in Design Techniques at NQF Level 5.

Vertically:

- Diploma in Surface Design at NQF Level 6.

MODERATION OPTIONS

N/A

CRITERIA FOR THE REGISTRATION OF ASSESSORS

N/A

NOTES

Qualifying for external assessment:

In order to qualify for an external assessment, learners must provide proof of completion of all required modules by means of statements of results and work experience.

Criteria for the accreditation of providers:

Accreditation of providers will be done against the criteria as reflected in the relevant curriculum on the QCTO website.

The curriculum title and code is: Surface Coatings Technologist: 211301001

Additional legal or physical entry requirements:

Colour blindness (testing required).

UNIT STANDARDS:

This qualification is not based on Unit Standards.

LEARNING PROGRAMMES RECORDED AGAINST THIS QUALIFICATION:

NONE

PROVIDERS CURRENTLY ACCREDITED TO OFFER THIS QUALIFICATION:

This information shows the current accreditations (i.e. those not past their accreditation end dates), and is the most complete record available to SAQA as of today. Some Quality Assuring Bodies have a lag in their recording systems for provider accreditation, in turn leading to a lag in notifying SAQA of all the providers that they have accredited to offer qualifications and unit standards, as well as any extensions to accreditation end dates. The relevant Quality Assuring Body should be notified if a record appears to be missing from here.

NONE

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