

**Domain METALLURGICAL PROCESSING - CORE
Title: Conduct sampling in a metallurgical
process****Level: 2****Credits: 4****Purpose**

This unit standard is intended for those who carry out metallurgical processing operations. People holding credit for this unit standard are able to: Plan and prepare for sampling; demonstrate knowledge relating to sampling in a metallurgical process; conduct sampling; and complete duties pertaining to the sampling process.

Special Notes**1. Entry information:**

Prerequisite

- 1449 - *Comply with health, safety and environmental rules and regulations pertaining to processing operations*; or demonstrated equivalent knowledge and skills.

2. 'Sampling' refers to manual and automated sampling procedures and includes solid, liquid, and slurry samples.**3. Assessment evidence may be collected from a real workplace or a simulated workplace in which processing operations are carried out. To demonstrate competence, at a minimum, evidence of collecting two (2) samples is required depending on the following site-specific operations:**

- Mineral processing operations: Slurry and, liquid or solid sample
- Hydrometallurgy operations: Liquid and, solid or slurry sample
- Pyrometallurgy operations: Solid and, liquid or slurry sample

4. Safe working practices include day-to-day observation of safety policies and procedures and compliance with emergency procedures.**5. Specifications refer to any, or all of the following: manufacturer's specifications and recommendations, and workplace specific requirements.****6. Performance of all elements in this unit standard must comply with relevant regulatory, legislative, workplace requirements and/or manufacturers' specifications.****7. Regulations and legislation, including subsequent amendments, relevant to this unit standard may include but are not limited to the following:**

- Labour Act, No. 11, 2007
- Mineral Act, No. 33, 1992
- Mine Health and Safety Regulations, 1999
- Regulations relating to the Health and Safety of employees at work, 1997 and all industry specific regulations, legislations, code of practice, or code of conduct.

Quality Assurance Requirements

This unit standard and others within this subfield may be awarded by institutions which meet the accreditation requirements set by the Namibia Qualifications Authority and the Namibia Training Authority and which comply with the national assessment and moderation requirements. Details of specific accreditation requirements and the national assessment arrangements are available from the Namibia Qualifications Authority and the Namibia Training Authority. All approved unit standards, qualifications and national assessment arrangements are available on the Namibia Training Authority website www.nta.com.na.

Elements and Performance Criteria

Element 1: Plan and prepare for sampling

Performance Criteria

- 1.1 Work instructions, including plans, quality requirements, handling procedures and operational details are obtained, explained, clarified and applied to the allocated task.
- 1.2 Safety and security requirements, including personal protective clothing and equipment are obtained from the site safety plan, workplace policies and procedures, explained, and applied to the allocated task.
- 1.3 Specifications for sampling and specified equipment are identified and their functions explained.
- 1.4 Equipment, tools, and accessories selected to carry out tasks are checked for consistency with the requirements of the job, their usability and any faults rectified or reported prior to commencement of work.
- 1.5 Environmental protection requirements are identified from the project environmental management plan and applied to the allocated task.
- 1.6 Work area is inspected and prepared according to workplace procedures.

Element 2: Demonstrate knowledge relating to sampling in a metallurgical process

Range

Key terminology and concepts may include but is not limited to sample; contamination; traceability; integrity; size of increment; frequency of increment; location of sampling point; and chain of custody.

Sub-standard conditions and problems may include but are not limited to contamination; sample identification; blockage of sampling equipment; power failures; incorrect calibration; lack of maintenance; incorrect sampling method; spillage or loss of samples; and transport of samples.

Performance Criteria

- 2.1 The key terminology and concepts of sampling are described.

- 2.2 The purpose for which samples have been collected is explained.
- 2.3 The function of sampling equipment and principles of operation is described.
- 2.4 Hazards and associated risks are identified through relevant risk assessment procedures.
- 2.5 The communication requirements pertaining to sampling procedures are described.
- 2.6 Corrective actions, in case of sub-standard conditions and problems be encountered, are described.

Element 3: Conduct sampling

Performance Criteria

- 3.1 Workplace hazards and associated risks are identified, minimised or eliminated according to workplace procedures and legislative requirements.
- 3.2 The operating procedures required for sampling equipment are demonstrated according to workplace procedures and environmental protection requirements.
- 3.3 The checks, adjustments, control and monitoring procedures are demonstrated according to workplace procedures and environmental protection requirements.
- 3.4 Confirmation to continue with the sampling process is obtained according to workplace procedures.
- 3.5 Samples are collected according to workplace procedures.
- 3.6 Where applicable, samples are labelled, stored, or transported to maintain the integrity of samples according to workplace procedures.

Element 4: Complete duties pertaining to the sampling process

Range

Housekeeping may include but is not limited to ensure the work area is ready for next user; remove work materials to designated locations; correctly identify waste and re-usable material; and remove waste and re-usable materials to designated locations.

Performance Criteria

- 4.1 Task-specific tools, personal protective and safety equipment, are cleaned, maintained and stored for further use according to workplace procedures.
- 4.2 Good housekeeping practices are maintained according to workplace procedures.

- 4.3 Reporting and recording requirements are met according to workplace procedures.
- 4.4 Work related documents are completed according to job requirements and workplace procedures.

Registration Data

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