

Unit ID: 1409

**Domain
Title:**

**HYDROMETALLURGICAL PROCESING
Handle reagents safely in a metallurgical
plant**

Level: 2

Credits: 6

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 handling reagents; demonstrate knowledge relating to the handling of reagents; handle reagents; and complete the duties pertaining to the reagent handling 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. Assessment evidence may be collected from a real workplace or a simulated workplace in which hydrometallurgy operations are carried out.
3. Safe working practices include day-to-day observation of safety policies and procedures and compliance with emergency procedures.
4. Specifications refer to any, or all of the following: manufacturer's specifications and recommendations, and workplace specific requirements.
5. Performance of all elements in this unit standard must comply with relevant regulatory, legislative, workplace requirements and/or manufacturers' specifications.
6. 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 handling reagents

Performance Criteria

- 1.1 Work instructions, including plans, specifications, quality requirements 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 Equipment, tools, 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.
- 1.4 Environmental protection requirements are identified from the project environmental management plan and applied to the allocated task.
- 1.5 Work area is inspected and prepared according to workplace procedures.

Element 2: Demonstrate knowledge relating to the handling of reagents

Range

The principal components of the reagent handling system may include but are not limited to mixing vessel; transfer pumps; storage tanks; fume extraction systems; auxiliary systems; safety devices; and interlock systems.

Emergency procedures may include but are not limited to basic first-aid treatment for acid exposure; entry into confined spaces; acid neutralisation; spillage disposal; and fume inhalation procedure.

Performance Criteria

- 2.1 The actions and conditions pertaining to a safe, healthy work environment when handling reagents are described.

- 2.2 Emergency procedures to be followed in the event of reagent spillage and burns are explained in terms of legal and operational requirements.
- 2.3 The importance of handling reagents is explained in terms of achieving specified production requirements.
- 2.4 The principal components of the reagent handling system are identified and their functions are explained in terms of design and operational requirements.
- 2.5 Hazards and associated risks pertaining to the handling of reagents are identified through relevant risk assessment procedures.
- 2.6 Corrective actions, in case of sub-standards conditions and problems encountered, are described.
- 2.7 The colour coding and symbolic signs pertaining to the reagent handling process are explained in terms of legal and operational requirements.

Element 3: Handle reagents

Performance Criteria

- 3.1 Workplace hazards and associated risks are identified, minimised or eliminated according to workplace procedures and legislative requirements.
- 3.2 The reagent handling system is started according to workplace procedures.
- 3.3 The reagent handling process is monitored and controlled according to workplace procedures.
- 3.4 If necessary, corrective and/or reporting actions are taken according to workplace procedures.
- 3.5 The handling of reagents is consistent with environmental policy and other specified requirements.

Element 4: Complete duties pertaining to the reagent handling 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 The reagent handling system is stopped according to workplace procedures.

- 4.2 Task-specific tools, personal protective and safety equipment, are cleaned, maintained and stored for further use according to workplace procedures.
- 4.3 Good housekeeping practices are maintained according to workplace procedures.
- 4.4 Reporting and recording requirements are met according to workplace procedures.
- 4.5 Work related documents are completed according to job requirements and workplace procedures.

Registration Data

Subfield:	Metallurgy
Date first registered:	28 September 2016
Date this version registered:	28 September 2016
Anticipated review:	2021
Body responsible for review:	Namibia Training Authority