

Unit ID: 1438

Domain **HYDROMETALLURGICAL PROCESSING**
Title: **Generate sulphur trioxide gas by means**
 of a catalytic converting process

Level: 3

Credits: 8

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 generating sulphur trioxide gas; demonstrate knowledge relating to the generation of sulphur trioxide gas; generate sulphur trioxide gas; monitor and control the sulphur trioxide gas generating process; and complete duties pertaining to sulphur trioxide gas generating 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. Glossary of terms:

- The formula SO_3 refers to the chemical compound sulphur trioxide
- The formula SO_2 refers to the chemical compound sulphur dioxide

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 generating sulphur trioxide gas

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, lubricants, 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.
- 1.4 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 generation of sulphur trioxide gas

Performance Criteria

- 2.1 The legal and specified requirements pertaining to a safe, healthy work environment with regard to the SO₃ gas generation process are explained.
- 2.2 Hazards and risks associated with SO₃ gas generation process are identified through relevant risk assessment procedures.
- 2.3 The operational characteristics, performance, and components of the SO₃ gas generation system are described.
- 2.4 The importance of SO₃ gas generation is described in terms of achieving specified production requirements and up-and down stream operational requirements.

- 2.5 The specified elementary principles of the sulphur dioxide (SO₂) gas converting process including associated colour coding and symbolic signs are explained.
- 2.6 The communication requirements pertaining to the SO₃ gas generation process are described.
- 2.7 Corrective actions, in case of sub-standard conditions and problems be encountered, are described.

Element 3: Generate sulphur trioxide gas

Performance Criteria

- 3.1 Workplace hazards and associated risks are identified, minimised or eliminated according to workplace procedures and legislative requirements
- 3.2 The start-up of the SO₃ gas generating process is carried out according to workplace procedures and manufacturer's specifications.
- 3.3 Problems encountered are dealt with according to workplace procedures.

Element 4: Monitor and control the sulphur trioxide gas generating process

Performance Criteria

- 4.1 Workplace hazards and associated risks are identified, minimised or eliminated according to workplace procedures and legislative requirements.
- 4.2 The checks, adjustments, control and monitoring procedures are demonstrated according to workplace procedures and environmental protection requirements.
- 4.3 SO₃ gas generating system is operated according to workplace and operational procedures to ensure a safe and optimum production.
- 4.4 If necessary, corrective and/or reporting actions are taken according to workplace procedures.

Element 5: Complete duties pertaining to sulphur trioxide gas generating 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

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

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

Registration Data

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