



Australian Government

Department of Education, Employment and Workplace Relations

RIIPGP205A Handle, store and use cyanide

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers the safe handling, storage and use of cyanide within the gold mining industry. It includes accessing and applying site cyanide safety procedures; applying personal safety measures; identifying and reporting incidents/hazards; protecting workers and the environment during cyanide handling and storage; managing cyanide process solutions and HCN gas emissions to protect human health and the environment; protecting workers' health and safety from exposure to cyanide solutions and HCN gas; and applying emergency procedures.

Application of the Unit

This unit is appropriate for those working in operational roles, at worksites within:

- Metalliferous mining

Licensing/Regulatory Information

Refer to Unit Descriptor.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Access and apply site Cyanide safety procedures	1.1. Access, interpret and apply compliance documentation relevant to the safe handling, storage and use of cyanide 1.2. Apply mine site safe operating procedures for managing potential hazards, risks and emergencies 1.3. Apply mine site safety reporting procedures
2. Apply personal safety measures	2.1. Maintain a clean and tidy workplace 2.2. Use appropriate personal protective equipment 2.3. Apply correct hazardous substance safety procedures 2.4. Obtain permits and clearance before specialised work is carried out, according to site procedures
3. Identify and report incidents/hazards	3.1. Identify, manage and report potential hazards, risks and emergencies 3.2. Report incidents to approved personnel 3.3. Record clearly and concisely the details of any incident, hazards and/or injury
4. Protect workers and the environment during cyanide handling and storage	4.1. Identify quality control and quality assurance procedures, spill prevention and spill containment measures 4.2. Maintain and control unloading, storage and mixing facilities using routine inspections, preventive maintenance and contingency plans to prevent or contain releases and control and respond to worker exposures
5. Manage cyanide process solutions and HCN gas emissions to protect human health and the environment	5.1. Identify and apply operating systems and procedures designed to protect human health and the environment 5.2. Identify and apply management and operating systems designed to monitor and minimise cyanide use 5.3. Identify and apply measures to protect birds, other wildlife and livestock from adverse effects of cyanide process solutions 5.4. Identify and apply measures designed to

	manage seepage from cyanide facilities to protect the beneficial uses of ground water 5.5. Identify and apply spill prevention or containment measures for process tanks and pipelines
6. Protect workers' health and safety from exposure to cyanide solutions and HCN gas	6.1. Identify potential cyanide exposure scenarios and measures necessary for their elimination, reduction and control 6.2. Operate and monitor cyanide facilities to protect worker health and safety and periodically evaluate the effectiveness of health and safety measures 6.3. Identify and apply emergency response plans or procedures regarding worker exposure to cyanide
7. Apply emergency procedures	7.1. Recognise and respond to alarms and warning devices according to mine site procedures 7.2. Identify and correctly use self rescue equipment in accordance with manufacturer's instructions and site procedures 7.3. Apply basic fire fighting techniques according to mine site procedures 7.4. Maintain familiarity with emergency escape route(s) according to mine site procedures 7.5. Apply mine site emergency response plans and procedures

Required Skills and Knowledge

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

Required skills

Specific skills are required to achieve the performance criteria in this unit, particularly for the application in the various circumstances in which this unit may be applied. This includes the ability to carry out the following as required to safely handle, store and use cyanide within the gold mining industry:

- apply legislative, organisation and site requirements and procedures
- apply hazards identification and control procedures
- apply incidents reporting requirements and procedures
- apply personal protective equipment requirements and procedures
- apply cyanide measurement systems (e.g. Titrations)
- apply personal and co-worker safety requirements and procedures
- apply cyanide materials safety data sheets (MSDS)

Required knowledge

Specific knowledge is required to achieve the Performance Criteria of this unit, particularly its application in a variety of circumstances in which the unit may be used. This includes knowledge of the following, as required to safely handle, store and use cyanide within the gold mining industry:

- emergency procedures
- equipment safety requirements
- hazardous substances procedures and handling techniques, including understanding of:
- material safety data sheets (MSDSs) and their use
- Dangerous Goods requirements and procedures
- isolation procedures
- mine site safety requirements
- occupational health and safety procedures
- site safety procedures
- participative procedures for workplace management of OHS (e.g. consultation, safety representatives, committees, dispute resolution)
- International Cyanide Management Code

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The evidence required to demonstrate competency in this unit must be relevant to worksite operations and satisfy all of the requirements of the performance criteria, required skills and knowledge and the range statement of this unit and include evidence of the following: • knowledge of the requirements, procedures and instructions for the safe handling, storage and use of cyanide within the gold mining industry • implementation of requirements, procedures and techniques for the safe, effective and efficient completion of the handling, storage and use of cyanide within the gold mining industry • working with others to undertake and complete the safe handling, storing and using of cyanide within the gold mining industry that meets all of the required outcomes • consistent timely completion of the safe handling, storage and use of cyanide in the gold mining industry that safely, effectively and efficiently meets the required outcomes
Context of and specific resources for assessment	• This unit must be assessed in the context of the work environment. Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of workplace performance, including task skills, task management skills, contingency management skills and job role environment skills. • Assessment of this competency requires typical resources normally used in a resources and infrastructure sector environment. Selection and use of resources for particular worksites may differ due to the site circumstances. • The assessment environment should not disadvantage the participant. For example,

	language, literacy and numeracy demands of assessment should not be greater than those required on the job. • Customisation of assessment and delivery environment to sensitively accommodate cultural diversity. • Aboriginal people and other people from a non English speaking background may have second language issues. • Where applicable, physical resources should include equipment modified for people with disabilities. Access must be provided to appropriate learning and/or assessment support when required.
Method of assessment	This unit may be assessed in a holistic way with other units of competency. The assessment strategy for this unit must verify required knowledge and skill and practical application using more than one of the following assessment methods: • written and/or oral assessment of the candidate's required knowledge • observed, documented and/or first hand testimonial evidence of the candidate's: • implementation of appropriate requirement, procedures and techniques for the safe, effective and efficient achievement of required outcomes • consistently achieving the required outcomes • first hand testimonial evidence of the candidate's: • working with others to undertake and complete the safe handling, storing and using of cyanide in the gold mining industry
Guidance information for assessment	Consult the SkillsDMC User Guide for further information on assessment including access and equity issues.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Relevant compliance documentation may include:	• legislative, organisational and site requirements and procedures • OHS legislation • manufacturer's guidelines and specifications • Australian Standards, including AS/NZS 4360 • industry guidelines and codes of practice • International Cyanide Management Code • safety and health management system • hazardous substances management, including material safety data sheets (MSDS)
Cyanide may include:	• sodium cyanide briquettes • flake calcium cyanide • liquid sodium cyanide • cyanide slurry solution
Mine site safe operating procedures may include:	• awareness and access to emergency exits • carrying out safety checks (e.g. checking HCN levels) • emergency procedures (e.g. Cyanide spills) • First Aid procedures • hazard identification and recognition procedures • work access permit • housekeeping standards • decontamination procedures • cyanide destruction procedures • cyanide disposal procedures • change management procedures • observing smoking restrictions at certain locations or times or during specific activities • observing site speed limits • occupational health, safety and environment procedures around equipment, vehicles and personnel • isolation and tagging procedures (e.g. out-of-service tags, danger tags, restrictive

	operations tags) • use of barricades and guards • use of fire extinguishers • hazardous substances safety procedures, including use of material safety data sheets (MSDS) • use of two-way radios and site telephones • wearing personal protective equipment • control of and working in confined spaces • ensuring ventilation is operating • ensuring safety showers are operating • awareness of and access to escape ways • sign and barricade erection (including cleaning of signs)
Potential hazards, risks and emergencies may include:	• personal safety including cyanide or HCN exposure • plant emergency shut down in the event of a cyanide spill • environment (e.g. seepage, emissions, chemical spills, pollution, anything detrimental to fauna and flora) • changes, which may include: • delivery of unknown materials • broken down vehicles or equipment • changes by suppliers • changes of personnel
Personal protective equipment may include:	• eye protection (e.g. glasses) • protective clothing (e.g. gloves, safety boots, helmet, long sleeved shirt, trousers and disposable clothing) • chemical/gas detectors HCN • respiratory devices
Self rescue equipment may include:	• respiratory devices / breathing apparatus • oxygen therapy units

Unit Sector(s)

Processing

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.