



Australian Government

Department of Education, Employment and Workplace Relations

MEM08008B Operate and control surface finishing waste treatment process

Release: 1

MEM08008B Operate and control surface finishing waste treatment process

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers treating metal finishing effluent waters
------------------------	---

Application of the Unit

Application of the unit	<p>This unit applies to the purification of metal finishing effluent waters which typically contain cyanides, hexavalent chromium, heavy metal cations, certain anions, greases, etc.</p> <p>Methods used may include chemical treatments, grease entrapment, metals precipitation and separation, ion exchange, reverse osmosis and gas scrubbing; and involve full or partial recovery of waste waters and chemicals.</p> <p>Band: A Unit Weight: 3</p>
--------------------------------	---

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM13003B	Work safely with industrial chemicals and materials

Employability Skills Information

Employability skills	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.
---	--

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Load waste product	1.1. Waste from production process is obtained via established procedures. 1.2. Waste is loaded in accordance with standard operating procedures for waste/effluent.
2. Monitor plant for waste by-products	2.1. All process parameters are accurately monitored and recorded to identify waste/effluent. 2.2. Recording devices are checked for correct/continuous operation.
3. Adjust process	3.1. Knowledge of waste treatment processes is applied in determining appropriate adjustments. 3.2. Process parameters are checked to ensure they remain within specified limits. 3.3. All adjustments are made to accord with authority requirements with regard to waste. 3.4. In the event of mechanical failure, appropriate corrective action is undertaken.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

Look for evidence that confirms skills in:

- performing safe loading of waste
- monitoring process parameters
- recording process parameters
- checking recording devices for correct/continuous operation
- making adjustments to the waste treatment process
- checking process parameters for conformance to specification
- maintaining the condition of the waste in accordance with the requirements of the relevant authority
- taking corrective action in response to a mechanical failure
- reading and interpreting routine information on written job instructions, specifications and standard operating procedures. May include drawings
- following oral instructions
- performing calculations using formulae

REQUIRED SKILLS AND KNOWLEDGE**Required knowledge**

Look for evidence that confirms knowledge of:

- the hazards and control measures associated with handling waste products
- the safety precautions to be taken when handling/loading the waste/effluent
- the process parameters to be monitored
- the procedures for monitoring process parameters and identifying waste/effluent
- the procedures for recording process parameters
- the procedures for checking process parameter recording devices
- the adjustments that can be made to the waste treatment process and their effect on the condition of the waste
- the procedures for adjusting process parameters
- the specified limits for each process parameter
- the legislative and regulatory requirements relating to waste management
- the corrective actions that can be taken and the reasons for taking proposed corrective actions
- the possible effects of surface finishing waste on the environment

Evidence Guide

EVIDENCE GUIDE	
<p>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.</p>	
<p>Overview of assessment</p>	<p>A person who demonstrates competency in this unit must be able to treat metal finishing effluent waters. Competency in this unit cannot be claimed until all prerequisites have been satisfied.</p>
<p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p>	<p>Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.</p>
<p>Context of and specific resources for assessment</p>	<p>This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate.</p> <p>This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with metal finishing waste effluent treatment or other units requiring the exercise of the skills and knowledge covered by this unit.</p>
<p>Method of assessment</p>	<p>Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.</p>

EVIDENCE GUIDE

Guidance information for assessment	
--	--

Range Statement**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.

Waste/effluent	Rinse waters, spent solutions, spills, leaks
Recording devices	pH meter, oxidising/reduction/potential probes (redox), flow rate
Waste treatment processes	Neutralisation, metal precipitation, solid separation (gravity, centrifuging), oxidation, reduction, grease entrapment, ion exchange
Process parameters	Solution flow, pH, redox (oxidising/reduction/potential) which typically contain cyanides, hexavalent chromium, heavy metal cations, certain anions, greases, etc.

Unit Sector(s)

Unit sector	
--------------------	--

Co-requisite units

Co-requisite units	

Co-requisite units		

Competency field

Competency field	Surface finishing
-------------------------	-------------------