



Australian Government

PMC552006 Operate an autoclave

Release: 1

PMC552006 Operate an autoclave

Modification History

Release 1. Supersedes and is equivalent to PMC552006C Operate an autoclave.

Application

This unit of competency covers the skills and knowledge required to operate an autoclave and ancillary equipment that is integral to the process. An autoclave is typically used in the production of glass, cement, clay, ceramic, fibre-cement and similar products.

This unit of competency applies to operators who are required to prepare the equipment, load and discharge products, monitor and adjust the equipment and rectify routine problems.

This unit of competency applies to an individual working alone or as part of a team or group and working in liaison with other shift team members, team leader and supervisor, as appropriate.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Competency Field

Operations

Unit Sector

Not applicable

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1	Prepare the equipment for production	1.1	Conduct equipment pre-start procedures and visual checks according to enterprise procedure
		1.2	Set up and configure equipment start-up function in accordance with procedures/work instructions

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| | | 1.3 | Load raw materials onto autoclave cars in accordance with procedures/work instructions |
| | | 1.4 | Charge materials into autoclave and close and secure the vessel in accordance with procedures/work instructions |
| 2 | Operate equipment | 2.1 | Start up equipment in accordance with procedures/work instructions |
| | | 2.2 | Ensure equipment is operated in accordance with established enterprise procedures |
| 3 | Monitor and record operation | 3.1 | Monitor equipment performance in accordance with work instructions and manufacturer specifications |
| | | 3.2 | Monitor operating pressures and temperatures |
| | | 3.3 | Adjust and control equipment to ensure correct product quality |
| | | 3.4 | Complete appropriate records and logs |
| 4 | Rectify routine problems | 4.1 | Identify the range of faults that can occur during the operation |
| | | 4.2 | Determine and rectify fault causes by procedures/work instructions |
| | | 4.3 | Identify and rectify equipment failure causes in accordance with procedures/work instructions |
| | | 4.4 | Ensure appropriate records and log books of equipment operations are maintained to meet procedures/work instructions |
| | | 4.5 | Identify non-routine problems and report to designated person |
| 5 | Shut down equipment | 5.1 | Shut down equipment and depressurise vessel in accordance with work instructions |
| | | 5.2 | Open the vessel and discharge cured product |

- 5.3 Complete appropriate records and logs
 - 5.4 Ensure autoclave cars are clear of all product and left ready for reuse
 - 5.5 Shut down equipment in an emergency situation
- 6 **Prepare equipment for maintenance**
 - 6.1 Isolate equipment in accordance with work instructions
 - 6.2 Remove any broken materials safely
 - 6.3 Make sure area is clear and safe for maintenance
- 7 **Control hazards**
 - 7.1 Identify hazards from the autoclave
 - 7.2 Identify other hazards in autoclave area
 - 7.3 Assess the risks arising from those hazards
 - 7.4 Implement measures to control those risks in line with procedures

Foundation Skills

This section describes those required skills (language, literacy and numeracy) that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Regulatory framework The latest version of all legislation, regulations, industry codes of practice and Australian/international standards, or the version specified by the local regulatory authority, must be used.

Applicable legislation, regulations, standards and codes of practice include:

- health, safety and environmental (HSE) legislation, regulations and codes of practice relevant to the workplace, equipment and production processes and hazardous materials
- Australian/international standards relevant to the materials being used and products being made
- any relevant licence and certification requirements.

All operations to which this unit applies are subject to stringent HSE requirements, which may be imposed through state/territory or federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and such requirements the legislative requirements take precedence.

Procedures All operations must be performed in accordance with relevant procedures.

Procedures are written, verbal, visual, computer-based or in some other form, and include one or any combination of:

- job cards
- emergency procedures
- work instructions
- standard operating procedures (SOPs)
- safe work method statements (SWMS)
- formulas/recipes
- batch sheets
- temporary instructions
- any similar instructions provided for the smooth running of the plant.

Tools and equipment Tools and equipment include:

- autoclave

- programmable logic controllers (PLC), if fitted
- ancillary equipment that is integral to the process.

Problems Routine problems must be resolved by applying known solutions.

Routine problems are predictable and include one or more of:

- equipment malfunctions
- temperature or pressure fluctuations
- product quality variations
- material/feed variations
- vessel pressure losses.

Known solutions are drawn from one or more of:

- procedures
- training
- remembered experience.

Non-routine problems must be reported according to according to relevant procedures.

Hazards Hazards must be identified and controlled. Identifying hazards requires consideration of:

- heat, smoke, dust, vapours or other atmospheric hazards
- weight, shape, volume of materials to be handled
- hazardous products and materials
- sharp edges, protrusions or obstructions
- slippery surfaces, spills or leaks
- electricity
- gas
- gases and liquids under pressure
- noise
- rotational equipment or vibration
- plant services (steam, condensate, cooling water, etc)
- structural hazards
- equipment failures
- machinery, equipment and product mass
- limited head spaces or overhangs
- working at heights

- working in restricted or confined spaces
- other hazards that might arise.

Records and reports Records include one or more of:

- log books/sheets
- electronic records
- job/work sheets
- other records used for the smooth running of the plant.

Reports include one or more of:

- paper or electronic-based logs and reports
- verbal/radio reports
- reporting items found which require action.

Unit Mapping Information

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Links

MSA Training Package Implementation Guides - <http://mskills.org.au/training-packages/info/>