



Australian Government

PMBTECH302 Modify existing compounds

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to PMBTECH302A Modify existing compounds

Application

This unit of competency covers the skills and knowledge required to modify the formulae for compounds. A compound is a mixture of materials which is undertaken to a set formula and in specified proportions. Modifications may be minor changes to an existing compound or developing a 'new' compound which is strongly based on an existing compound.

This unit of competency applies to experienced operators who are required to determine the starting formula, develop and trial the changed formula in a laboratory or using pilot equipment, and verify/amend the changes during initial factory trial/s.

This unit of competency applies to an experienced operator demonstrating theoretical and technical knowledge and well developed skills in situations that require some discretion and judgement. The operator may work alone or as a member of a team or group and will work 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

Technical

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.

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|---|---|-----|---|
| 1 | Confirm requirements of modified formula | 1.1 | Check that specifications for new compound are complete and unambiguous |
| | | 1.2 | Clarify items which are unclear or beyond the normal scope of work |
| | | 1.3 | Investigate the type of changes/materials which are likely to meet these requirements |
| | | 1.4 | Clarify any possible issues if different, unusual or exotic materials are likely to be required |
| | | 1.5 | Identify tests required on trial compound |
| | | | |
| 2 | Estimate starting formula | 2.1 | Identify existing compound(s) with similar specifications |
| | | 2.2 | Estimate required changes to existing compound |
| | | 2.3 | Check practicality of proposed changes |
| | | 2.4 | Check health, safety and environment (HSE) impacts of proposed changes |
| | | 2.5 | Modify proposed starting formulae as appropriate |
| | | | |
| 3 | Prepare trial compounds | 3.1 | Identify and control all hazards for pilot mixing |
| | | 3.2 | Identify and check all required plant and equipment |
| | | 3.3 | Obtain and prepare all required materials |
| | | 3.4 | Mix trial compound and obtain sample(s) |
| | | 3.5 | Interpret test results |
| | | 3.6 | Modify formula and repeat trials as required |

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|---|------------------------------------|-----|---|
| 4 | Check initial factory trial | 4.1 | Check availability of required resources and plant availability |
| | | 4.2 | Ensure all authorities and permissions have been obtained |
| | | 4.3 | Check all hazard controls have been implemented |
| | | 4.4 | Monitor factory trial mixing of compound |
| | | 4.5 | Obtain sample(s) and interpret test results |
| | | 4.6 | Modify formula and repeat factory trial as required |
| | | | |
| 5 | Complete trial | 5.1 | Complete all required records and reports |
| | | 5.2 | Check any changes to resources and procedures have been incorporated into standard procedures |
| | | 5.3 | Ensure any additional HSE or skill requirements have been included in future plans |

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:

- HSE legislation, regulations and codes of practice relevant to the workplace, manual handling 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:

- 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.

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

- hazardous products and materials
- vapours or other atmospheric hazards

- interaction of polymers, additives and other materials with process variables
- other hazards that might arise in developing/trialling the compound.

Unit Mapping Information

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Links

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