



Australian Government

PMC555031 Choose materials for an application

Release: 1

PMC555031 Choose materials for an application

Modification History

Release 1. Supersedes and is equivalent to PMC555031B Choose materials for an application.

Application

This unit of competency covers the skills and knowledge required to choose materials for an application as may be required for a new product or advanced process/product problem solving.

This competency applies to senior technicians or those in similar roles who are required to apply in-depth knowledge of materials, process, equipment and problem solving in order to develop, test and finalise formulations and production methods to best meet the defined application.

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.

1	Determine possible product properties	1.1	Estimate product properties from different materials and processing conditions
		1.2	Predict the impact of different grades of materials/additives on product properties
		1.3	Predict the impact of different processing conditions on

product properties

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|---|---|-----|--|
| 2 | Choose materials/
material mix for
an application | 2.1 | Select appropriate base materials for an application based on the material properties |
| | | 2.2 | Determine reinforcements/additives required to meet product specification |
| | | 2.3 | Predict failure mechanism for selected mix and modify selection if appropriate |
| | | 2.4 | Identify any health, safety or environmental (HSE) issues with materials and modify selection if appropriate |
| | | 2.5 | Develop formulation and select appropriate production method |
| | | | |
| 3 | Organise testing
of product and
interpret test
results | 3.1 | Select appropriate tests for product based on test purpose and limitations, and material being tested |
| | | 3.2 | Test colour using colour coordinates as required |
| | | 3.3 | Interpret test results and modify formulation/production method as required to meet product specification |

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, materials and processes being used and products being made
- 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:

- test procedures
- technical specifications
- technical drawings
- 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.

Unit Mapping Information

Release 1. Supersedes and is equivalent to PMC555031B Choose materials for an application.

Links

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