Australian Government

PMBTECH508E Develop a new compound

Release: 1

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Modification History

Release 1. Unit code changed. Application changed. Elements and Performance Criteria changed. Range of Conditions removed. Assessment Requirements changed. Supersedes and is equivalent to PMBTECH508 Develop a new compound.

Application

This unit covers the skills and knowledge required to develop a new compound or formulation or make a major modification to an existing compound, where an examination of all components of the compound is required.

Where modification is being made, the aims of the modification may be broad (e.g. reduce cost, improve performance, improve manufacturing) or specific (e.g. meet a particular specification).

This unit applies to an experienced technician in a lead role. The development project may contribute to a larger or more complex project being undertaken by a more senior technician.

The unit principally refers to the development or modification of a compound using the technician's application of in-depth knowledge of materials, process, equipment and problem-solving in order to develop a new, or modify an existing, compound that is acceptable in the place of manufacture

No licensing or certification requirements apply to this unit of competency at the time of publication. Relevant legislation, industry standards and codes of practice within Australia must be applied.

Pre-requisite Unit

Nil.

Competency Field

Technical

Elements and Performance Criteria

Elements Elements describe the essential outcomes.	**Performance Criteria** Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Confirm required properties of compound	1.1 Communicate clearly with stakeholders regarding technical and aesthetic specifications 1.2 Identify project constraints, such as timelines and cost, from

Elements Elements describe the essential outcomes.	**Performance Criteria** Performance criteria describe the performance needed to demonstrate achievement of the element.
	workplace procedures and specifications 1.3 Draft compound specification and project plan to meet specifications 1.4 Develop tests that verify if compound meets specification 1.5 Communicate plan and output with stakeholders and consider any feedback received
2. Develop base formulation	2.1 Identify appropriate base polymer or polymer blend from compound specification and project plan 2.2 Select appropriate fillers or reinforcers and estimate required proportions to meet compound specifications 2.3 Select appropriate plasticisers and related materials and estimate required proportions to meet compound specifications 2.4 Select other materials and estimate required proportions to meet compound specifications 2.5 Draft initial formulation to meet compound specifications 2.6 Draft trial mixing procedure and order of addition to meet compound specifications 2.7 Identify any work health and safety issues and modify project plan to accommodate these as required
3. Mix, test and modify formulation	3.1 Identify and control all hazards for laboratory development program according to workplace procedures 3.2 Obtain all required materials and tools or equipment from compound specification and project plan 3.3 Produce trial compound following draft procedures 3.4 Evaluate compliance of trial compound with compound specification 3.5 Modify formulation and procedure as required to reach required specifications 3.6 Draft factory trial formula and procedure based on laboratory trial method and learnings
4. Monitor factory trials	4.1 Identify and control all work health and safety issues for factory trials according to workplace procedures 4.2 Ensure all required materials and tools or equipment are available in factory setting

Elements Elements describe the essential outcomes.	Performance Criteria Performance criteria describe the performance needed to demonstrate achievement of the element.
	4.3 Coordinate with factory to organise trials 4.4 Provide instruction to factory trial personnel to ensure suitable monitoring and data collection 4.5 Evaluate success of factory trial compound and procedure against plans and specifications 4.6 Modify formulation and procedure as required to meet specifications and standards
5. Complete compound development	5.1 Ensure final formulation and procedures are recorded in workplace procedures 5.2 Ensure all required materials and tools and equipment will be routinely available for production 5.3 Ensure work health and safety controls are standardised according to workplace procedures 5.4 Ensure skill needs of operators have been addressed by workplace 5.5 Accurately complete all required reports and records 5.6 Advise stakeholders of outcome of project

Foundation Skills

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

- Numeracy skills to develop and communicate technical specifications including formulae, and record and analyse trial data.
- Reading skills to interpret required properties of compound and workplace procedures.
- Writing and oral communication skills to work with stakeholders on project development, and record and report on trial results and finalise compound product and associated procedures.

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

Unit Mapping Information

Supersedes and is equivalent to PMBTECH508 Develop a new compound.

Links

Companion Volume implementation guides are found in VETNet – - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=932aacef-7947-4c80-acc6-593719fe4090