



Australian Government

PMAOPS550 Develop a colour formulation

Release: 1

PMAOPS550 Develop a colour formulation

Modification History

Release 1. Supersedes and is equivalent to PMAOPS550B Develop a colour formulation

Application

This unit of competency covers the skills and knowledge required to develop a new colour formulation from scratch to match a provided colour sample or description of customer requirements. It applies to new colour formulations for existing and/or new products and the use of computer and visual colour matching. The formulation would normally use colourants already available within the company (preferred colourants), but does not preclude the use of colourants which are novel/new to the company.

This unit of competency applies to any industry sector requiring the development of a new colour formulation for its products. Examples of products include:

- paint
- ink
- plastics
- rubber
- concrete products
- glass products
- clay/ceramic products.

This unit of competency applies to technologists or those in similar roles who are required to confirm design specifications, identify and resolve potential manufacturing problems, undertake and analyse production trials, and make modifications to achieve suitable formulation and production process.

This unit of competency applies to an individual who is part of a team for the total development of a new product, but may develop the colour formulation for a new colour for an existing product independently. The technologist would liaise with relevant production and other personnel for production trials.

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

Pre-requisite Unit

PMAOPS350 Match and adjust colour

PMAOPS450 Solve colour problems

Competency Field

Operations

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.

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

1	Confirm design brief of new colour	1.1	Communicate with customer and other key stakeholders and agree on design specifications
		1.2	Determine end use of product (e.g. interior, exterior, automotive, industrial or decorative)
		1.3	Develop and validate design brief to meet needs
2	Determine initial colour formulation	2.1	Analyse colour sample (where provided) using colour computer and/or eye and predict possible colour formulation
		2.2	Compare predicted formulation with company/customer preferred colourants
		2.3	Adjust predicted formulation to use preferred colourants
		2.4	Check that the adjusted formulation complies with design brief
3	Conduct small scale trials	3.1	Make/arrange for small batch to adjusted formulation
		3.2	Undertake trials to determine optimum processing conditions, where relevant
		3.3	Analyse colour of sample product, compare to design brief and determine variation to desired colour
		3.4	Modify formulation and processing, where relevant, to have simplicity of manufacture and to meet brief
4	Assess hazards	4.1	Identify hazards arising from colour formulation and

		processing
	4.2	Assess risks arising from those hazards
	4.3	Determine action to control risks in accordance with hierarchy of control and duty of care
	4.4	Take required action before proceeding to trial
5	Trial new colour formulation through the process	5.1 Design trial to procedure to deliver required information 5.2 Ensure work health and safety (WHS) and environmental requirements are stringently observed 5.3 Coordinate the trialling of the new product 5.4 Interpret colour trial results, determine variation to desired colour and guide colour trial process 5.5 Adjust formulation, and if appropriate tune process, to optimise production of new colour
6	Coordinate evaluation and testing	6.1 Determine colour testing and evaluation regime required to meet end use requirements, including regulatory/industry code requirements 6.2 Arrange for testing and evaluation of trial colour 6.3 Interpret colour trial results and determine variation to desired colour 6.4 Modify formulation and conduct new trials as required 6.5 Determine final formulation and processing specifications
7	Implement procedures for new colour	7.1 Monitor initial production and adjust process, conditions and formulation to make the process a smooth operation 7.2 Ensure process specifications reflect the optimised operation developed 7.3 Ensure quality standards and procedures meet requirements of design brief

- 7.4 Ensure procedures are correct for the new colour
- 7.5 Ensure project records are complete and all required reports have been completed and submitted
- 7.6 Archive records according to procedure

Foundation Skills

This section describes those language, literacy, numeracy and employment skills 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, and include one or more of the following:

- legislative requirements, including work health and safety (WHS)
- industry codes of practice and guidelines
- environmental regulations and guidelines
- Australian and other standards
- licence and certification requirements

All operations to which this unit applies are subject to stringent health, safety and environment (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 HSE requirements, the HSE requirements take precedence

Hazards

Hazards include one or more of the following:

- toxicity
- dust or vapours
- flammability and explosivity
- hazardous products and materials

- other hazards identified on safety data sheets (SDS)

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

Procedures are written, verbal, visual, computer-based or in some other form, include one or more of the following:

- 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

Design specifications Design specifications include the following:

- colour /colour specification
- surface finish/gloss
- viewing conditions (lighting)
- opacity
- requirements for metamerism/non-metamerism match
- other aesthetic requirements

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=9fc2cf53-e570-4e9f-ad6a-b228ffdb6875>