



Australian Government

**PMAOPS753 Develop a non-decorative
coating or ink**

Release: 1

PMAOPS753 Develop a non-decorative coating or ink

Modification History

Release 1. Supersedes and is equivalent to PMAOPS753A Develop a non-decorative coating or ink

Application

This unit of competency covers the skills and knowledge required to develop a new non-decorative coating product. A surface coating is any liquid (e.g. solvent or emulsion-based) material applied to a solid surface for decorative and/or protective reasons. A non-decorative coating may also have a decorative function, but its main function is protective.

This unit of competency applies to senior technicians, laboratory supervisors, research and development personnel, or those in similar roles who are required to apply in-depth physiochemical knowledge in order to develop non-decorative coating formulations to meet formulation parameters/specifications, specify quality control and performance tests, solve problems, and recommend manufacturing and application methods.

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

Pre-requisite Unit

Nil

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	Formulate a non-decorative coating	1.1	Confirm the specification/performance requirements of the non-decorative coating
		1.2	Determine the effect on performance characteristics of formulation parameters
		1.3	Specify required quality control and performance tests

- 1.4 Recommend appropriate raw materials
 - 1.5 Recommend appropriate raw material suppliers
 - 1.6 Formulate an industrial coating/ink to specified parameters
 - 1.7 Ensure laboratory formulations are converted to production scale
- 2 **Specify the relationship of pigment/binder for a coating**
 - 2.1 Define pigment/binder relationships and their impact on coating properties
 - 2.2 Calculate pigment/binder ratio, and pigment volume concentration (PVC)
 - 2.3 Specify pigment/binder relationships appropriate for a coating
- 3 **Recommend a method of manufacture**
 - 3.1 Identify critical formulation parameters and the effect on manufacturing characteristics for industrial coatings/inks
 - 3.2 Determine dispersion, let down and mixing required
 - 3.3 Select the types of equipment required for coating manufacture
 - 3.4 Recommend a method of manufacture
- 4 **Identify and control hazards**
 - 4.1 Identify material hazards
 - 4.2 Identify regulatory requirements
 - 4.3 Identify other hazards from the manufacture of non-decorative coatings/inks
 - 4.4 Recommend appropriate hazard control
- 5 **Recommend a coating application method**
 - 5.1 Distinguish between common non-decorative coating/ink application methods
 - 5.2 Recommend an application method for non-decorative

coatings/ink

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:

- equipment failures
- industrial (machinery, equipment and product)
- noise, rotational equipment or vibration
- plant services (steam, condensate and cooling water)
- flammability and explosivity
- hazardous products and materials
- slippery surfaces, spills or leaks
- other hazards that might arise

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

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>