



Australian Government

MSTTX4004 Select dyes and develop dye specification and recipe for production

Release: 1

MSTTX4004 Select dyes and develop dye specification and recipe for production

Modification History

Release 1. Supersedes and is equivalent to LMTTX4004A Select dyes and develop dye specification and recipe for production

Application

This unit of competency covers the skills and knowledge associated with selecting, developing and testing dyes, chemicals and auxiliaries, and developing a dye specification and recipe for the production of textiles.

This unit of competency applies to textile material and products for which product specifications are developed in the textile sector, including fibres, fabrics, yarns and finished products.

Judgement may be required in planning and selecting appropriate processes or procedures for self and others.

Work may be conducted in small to large scale enterprises and may involve individual and team activities.

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

Pre-requisite Unit

Nil

Competency Field

Textile production

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 job requirements	1.1	Follow standard operating procedures (SOPs)
		1.2	Comply with work health and safety (WHS) requirements at all times

		1.3	Use appropriate personal protective equipment (PPE) in accordance with SOPs
		1.4	Identify job requirements from specifications, drawings, job sheets or work instructions
2	Prepare to develop dye specification and recipe	2.1	Confirm specifications and/or sample of textile material product with originator and client
		2.2	Clarify and determine the end use and performance standards expected of finished product with appropriate personnel
		2.3	Analyse sample to determine type and composition using appropriate techniques, as required
3	Perform preliminary and final tests of dyes	3.1	Select dyes and chemicals and auxiliaries with reference to specifications and or previous product dyeing references
		3.2	Identify expected textile production and reproduction processes based on preliminary dye selection, and advise appropriate personnel
		3.3	Determine preliminary dye selection for the sample of textile and trial the preliminary recipe and specifications
		3.4	Select sampling and testing techniques appropriate to evaluation of product during limited production run
		3.5	Perform final selection and evaluation of dyes
		3.6	Comply with environmental requirements and workplace procedures at all stages of the process
4	Confirm final dye specification and recipe	4.1	Seek approval of colour specifications by originator or client prior to production run
		4.2	Test samples from bulk production run using appropriate techniques
		4.3	Analyse results and review, modify and re-test dye, as required

- 4.4 Develop, check and file dye specification and recipe in accordance with workplace procedures and industry and quality standards
- 4.5 Prepare reports and documentation
- 4.6 Monitor dye specification and recipe to ensure continuity and repeatability of colour and test results

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.

Workplace procedures include one or more of the following:

- requirements prescribed by legislation, awards, agreements and conditions of employment
- SOPs
- work instructions
- PPE
- oral, written and visual communication
- quality practices, including responsibility for maintenance of own work quality and contribution to quality improvement of team or section output
- housekeeping
- tasks related to environmental protection, waste disposal, pollution control and recycling
- WHS practices

Australian Standards include:

- the relevant industry or Australian Standards that are current at the time this unit is being undertaken

Yarns include one or more of the following:

- spun
- open-ended spun
- air jet spun

- friction spun

Fibres include one or more of the following:

- polyester
- cotton
- wool
- viscose rayon

Finished products include one or more of the following:

- socks
- sweaters
- towels
- sheets
- blankets
- carpets
- rope and twine
- mops and industrial textiles

Tests include one or more of the following:

- colour fastness testing
- shrinkage testing

Test equipment includes one or more of the following:

- laboratory equipment
- pad mangles
- rota dryers
- mini jets
- pilot production plants

Dye specification and recipe include the following:

- dye formulas
- application properties
- fastness properties and reproducibility
- suitability for production and application methods
- environmental and safety factors

Unit Mapping Information

Release 1. Supersedes and is equivalent to LMTTX4004A Select dyes and develop dye specification and recipe for production

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a203ec5c-de7d-406b-b3e1-8f1a9b76e92e>

Assessment Requirements for MSTTX4004 Select dyes and develop dye specification and recipe for production

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria, and include:

- reading and following work instructions, standard operating procedures (SOPs), safe work practices
- applying relevant standards
- identifying textile characteristics
- establishing and confirming criteria for tests
- setting up and calibrating test equipment
- developing, planning and conducting preliminary trial testing
- conducting tests in limited production run against specified quality standards
- collating, analysing and interpreting tests
- developing and confirming final dye formula and specifications on at least two (2) occasions
- testing samples from bulk production run using appropriate techniques
- analysing results and reviewing, modifying and re-testing dye, as required
- developing, checking and filing dye specification and recipe in accordance with workplace procedures and industry and quality standards
- preparing reports and documentation
- monitoring dye specification and recipe to ensure continuity and repeatability of colour and test results
- complying with environmental requirements and workplace procedures at all stages of the process.

Knowledge Evidence

Evidence must be provided that demonstrates knowledge of:

- safe work practices and procedures and use of personal protective equipment (PPE)
- relevant Australian Standards
- fibres, yarns and end products and their properties
- dye stuffs and classes
- chemistry of dyes and relevance to processing and fastness properties
- dyeing processes and dyeing machinery
- relation between dye machinery and selection of dye stuffs and classes

- tests applicable to the dyeing of textiles
- international testing standards
- application of dyes in laboratory and production process
- work health and safety (WHS) and environmental aspects of relevant workplace activities, including handling of chemicals and dangerous substances
- quality criteria
- quality practices
- workplace procedures
- recording and reporting practices.

Assessment Conditions

- Assessors must:
 - satisfy the assessor competency requirements that are in place at the time of the assessment, as set by the VET regulator
 - have vocational competency in selecting dyes and developing dye specifications and recipe, at least to the level being assessed, with relevant industry knowledge and experience.
- Assessment should occur in operational workplace situations. Where this is not possible, or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment reflecting realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications associated with this unit.

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