



Australian Government

Department of Education, Employment and Workplace Relations

ICPIM221C Blend chemicals

Revision Number: 1

ICPIM221C Blend chemicals

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to blend chemicals for ink and varnish manufacture.
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Application of the Unit

Application of the unit	This unit requires the individual to blend chemicals for ink and varnish manufacture.
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains Employability Skills
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Elements and Performance Criteria Pre-Content

<p>Elements describe the essential outcomes of a unit of competency.</p>	<p>Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.</p>
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Read and interpret job requirements and locate materials	1.1. Appropriate processes are identified and confirmed The original is assessed to determine scanner settings 1.2. Appropriate chemicals, inks, <i>materials</i> and/or equipment are selected according to job specifications
2. Set up machines/equipment	2.1. Pre-startup checks are completed and documented according to <i>enterprise procedures</i> 2.2. Raw materials/feed lines are checked to ensure availability 2.3. <i>Machine/equipment</i> operation is verified according to enterprise procedures
3. Maintain blending/homogenising process	3.1. Mix is completed according to enterprise procedures and <i>OHS</i> requirements 3.2. Materials are added to the process according to job specifications 3.3. Quality inspection/sampling is carried out according to enterprise procedures 3.4. <i>Adjustments</i> to mix/equipment are made to correct identified quality problems 3.5. Records/log/checklists are completed according to enterprise procedures
4. Shut down	4.1. Correct <i>shutdown</i> sequence is followed according to manufacturer's specifications and enterprise procedures 4.2. Product/materials used in manufacture are removed from operating area where appropriate 4.3. Solid and liquid waste is removed from operating area and recycled or disposed of, where required, according to regulatory requirements and enterprise procedures
5. Clean up	5.1. Equipment cleaning requirements are identified 5.2. Correct equipment/materials for manual or mechanical cleaning are selected 5.3. Cleaning is undertaken according to enterprise procedures and <i>OHS</i> requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- OHS in relation to operating machinery such as safely switching off machinery before cleaning is started
- communications ideas and information by completing logs and checklists according to enterprise procedures
- collecting, analysing and organising information by reading and interpreting job requirements from documentation
- planning and organising activities by completing startup checks prior to the blending process
- teamwork when contributing to the production process in association with others
- mathematical ideas and techniques by mixing batches according to job specifications
- problem-solving skills by making adjustments to the mix to maintain quality standards
- use of technology by using blending machines and equipment

Required knowledge

- OHS considerations when cleaning bowls, vats, and pots
- other OHS issues that arise in the blending of chemicals and use of an automated ink dispensing system
- safety equipment that is required and what do you need to check when fitting and using it
- batch coding system used in the work area and the recording procedures used
- procedures for preparing containers and equipment for blending/tinting
- checks to be made when measuring chemicals for blending
- procedures that apply to adding chemicals according to formulae
- purpose and process of homogenisation
- purpose of de-ionising water when it is to be used in the blending process
- procedures that apply to constructing a correct colour according to a formula
- factors that determine the position of the mixing head when blending
- procedures for testing conductivity, viscosity and pH, where in-process testing is conducted
- sampling and testing process
- problems that may occur in the tinting process and how these may be overcome
- recording and labelling procedures that apply
- environmental issues that need to be considered when working with the range of materials used in chemical blending/tinting
- manuals, safety and other documentation that are relevant to this task and where

REQUIRED SKILLS AND KNOWLEDGE

they are kept and information that is included in these documents

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Evidence of the following is essential:

- correctly blend chemicals for ink and varnish manufacture according to job specifications
- demonstrate an ability to find and use information relevant to the task from a variety of information sources
- use either a mixer/disperser OR a bead mill OR an automatic ink dispensing system to blend TWO batches of chemicals OR tint TWO batches of ink intermediates/concentrates according to manufacturer's and job specifications, OHS requirements, enterprise procedures and the listed Performance Criteria.

Context of and specific resources for assessment

Assessment must ensure:

- assessment may take place on the job, off the job or a combination of these. Off the job assessment must be undertaken in a closely simulated workplace environment.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate.

Guidance information for assessment

Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

Range Statement

RANGE STATEMENT	
<p>The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.</p>	
Materials may include:	<ul style="list-style-type: none"> range of raw materials/consumables, and chemicals used in cleaning.
Enterprise procedures may include:	<ul style="list-style-type: none"> range of enterprise procedures within defined work area as documented in enterprise procedures (SOPs).
Machines/equipment may include:	<ul style="list-style-type: none"> machines/equipment may include high and low speed dispersers, pan washer/scrubbers, pumps, valves, automatic ink dispensing system, homogeniser, de-ioniser, other vessels.
OHS may include:	<ul style="list-style-type: none"> relevant legislation regulations enterprise policies/guidelines.
Adjustments/corrections may include:	<ul style="list-style-type: none"> in the range from normal operating to emergency response.
Shutdown may include:	<ul style="list-style-type: none"> in the range from planned shutdown to emergency response.
Application may include:	<ul style="list-style-type: none"> chemical blending/tinting and associated tasks are typically performed by operators working under supervision to ensure production requirements are met.
Documentation may include:	<ul style="list-style-type: none"> range of work instructions including: <ul style="list-style-type: none"> formulae job docketts work sheets specifications labels material safety data sheets.
Degree of autonomy may include:	<ul style="list-style-type: none"> working under supervision to defined procedures.

Unit Sector(s)

Unit sector	
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Competency field

Competency field	Ink Manufacture
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Co-requisite units

Co-requisite units		