



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **ICPSU311C Prepare ink and additives (advanced)**

**Revision Number: 1**

## ICPSU311C Prepare ink and additives (advanced)

### Modification History

Not applicable.

### Unit Descriptor

<b>Unit descriptor</b>	This unit describes the performance outcomes, skills and knowledge required to prepare inks and additives for special colour work or other special purpose inks.
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### Application of the Unit

<b>Application of the unit</b>	This unit requires the individual to prepare ink and additives for specialised purposes or new products.
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### Licensing/Regulatory Information

Not applicable.

### Pre-Requisites

<b>Prerequisite units</b>	ICPSU211C Prepare ink and additives.	

### Employability Skills Information

<b>Employability skills</b>	This unit contains employability skills.
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## Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	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.
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## Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Select ink for special colour work or other specialised purpose	1.1. <b><i>Inks</i></b> and additives are selected according to job specifications 1.2. <b><i>Quality</i></b> and suitability of inks or additives are checked and appropriate action is taken 1.3. Inks are selected according to end use of product, suitability of substrate, adhesion, physical and chemical resistance, and light fastness, drying method and print process
2. Maintain and calibrate equipment	2.1. <b><i>Equipment</i></b> is inspected to ensure it is functional and where necessary appropriate remedial action is taken prior to commencement 2.2. Equipment is calibrated, cleaned and adjusted according to manufacturer's/supplier's instructions
3. Prepare ink for special colour work or other specialised purpose	3.1. Inks and additives are prepared according to OHS requirements and manufacturer's/supplier's instructions with suitable precautions to minimise waste 3.2. Correct colour and weight/volume of ink are calculated, mixed and prepared to <b><i>match</i></b> the requirements of the job specification and the printing machine to be used 3.3. Formulation of the ink and the approved colour is appropriately recorded
4. Store and handle ink	4.1. Inks and additives are appropriately stored, handled and labelled according to manufacturer's/supplier's instructions to prevent damage and hazards to personnel

## 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
- communication of ideas and information by correctly labelling inks and additives
- collecting, analysing and organising information by accessing and using MSDSs and data on inks and substrates to ensure efficient production
- planning and organising activities by selecting inks and additives prior to preparation
- teamwork when maintaining the production process in association with other staff
- mathematical ideas and techniques by calculating volumes, weights and formulations
- problem-solving skills by identifying and correcting formulation problems
- use of technology by maintaining and calibrating equipment

#### Required knowledge

- safe working conditions that are in place and what health hazards are considered when using inks, solvents and additives
- pollution and environmental issues that need to be considered when working with inks and additives
- substrate characteristics and the end use of the substrate
- ink colour fastness that is required
- ink adhering to the substrate
- solvents, monomers and additives compatibility with the ink
- formula for calculating correct quantity of ink
- computer-based package that is used for calculation of ink quantity
- details that are required in order to calculate ink quantity
- effect of ink coverage on screen mesh, machine and squeegee
- software program and the required inputs
- ideal conditions for matching colours
- effect white mixed in colour have on finished colour light fastness
- methods that are there for checking and adjusting ink colour and consistency
- machine characteristics and other parameters that affect ink deposit and consequently colour
- effects of viscosity changes in the ink
- procedures that are there for recording the formulation by hand or by computer
- approvals for mixed colour prior to commencing production
- process for recording the recipe for the colour

**REQUIRED SKILLS AND KNOWLEDGE**

- labelling mixed inks systems
- environmental conditions that are in place for the storage of inks
- keeping manufacturer's specifications and MSDSs
- manuals, safety and other documentation that are relevant to this task and where are they kept and information that is included in these documents

## Evidence Guide

<b>EVIDENCE GUIDE</b>	
<p>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.</p>	
<b>Overview of assessment</b>	
<b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b>	<p>Evidence of the ability to:</p> <ul style="list-style-type: none"> <li>• should meet client requirements and enterprise and industry standards</li> <li>• demonstrate an ability to find and use information relevant to the task from a variety of information sources</li> <li>• prepare at least TWO different lots of ink and additives that require special colour matching and match colour sample by manual and electronic means to job specification, industry standards and listed performance criteria. Ideally each lot of ink should be a different type for use on a different substrate</li> <li>• evidence for assessment may be gathered from assessment of the unit of competency alone or through an integrated assessment activity.</li> </ul>
<b>Context of and specific resources for assessment</b>	<p>Assessment must ensure:</p> <ul style="list-style-type: none"> <li>• 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</li> <li>• inks and additives.</li> </ul>
<b>Method of assessment</b>	<p>A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:</p> <ul style="list-style-type: none"> <li>• direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate.</li> </ul>
<b>Guidance information for assessment</b>	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.</p>

## Range Statement

<b>RANGE STATEMENT</b>	
<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>	
<i>Type of ink, substrate</i> may include:	<ul style="list-style-type: none"> <li>ink and substrates used for special inks used in printing processes relative to industry sectors.</li> </ul>
<i>Quality standards</i> may include:	<ul style="list-style-type: none"> <li>should meet client requirements and enterprise and industry standards.</li> </ul>
<i>Type of equipment</i> may include:	<ul style="list-style-type: none"> <li>manual and electronic measuring equipment.</li> </ul>
<i>Colour matching systems</i> may include:	<ul style="list-style-type: none"> <li>colour matching systems commonly used in the industry.</li> </ul>
<i>Enterprise procedures</i> may include:	<ul style="list-style-type: none"> <li>range of enterprise procedures within defined work area.</li> </ul>

## Unit Sector(s)

<b>Unit sector</b>	
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## Competency field

<b>Competency field</b>	Support
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## Co-requisite units

<b>Co-requisite units</b>		

