



**Australian Government**

# **ICPINK331 Manufacture inks and coatings**

**Release: 1**

# ICPINK331 Manufacture inks and coatings

## Modification History

| Release   | Comments                                                                                     |
|-----------|----------------------------------------------------------------------------------------------|
| Release 1 | This version first released with ICP Printing and Graphic Arts Training Package Version 1.0. |

## Application

This unit describes the skills and knowledge required to manufacture inks and coatings.

It applies to individuals who generally work under limited supervision to identify process and job requirements, set up machinery or equipment and complete the manufacturing process according to defined procedures. They also have some accountability for monitoring output and preventing or addressing production problems.

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

## Unit Sector

Ink manufacture

## Elements and Performance Criteria

| ELEMENT                                                  | PERFORMANCE CRITERIA                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Elements describe the essential outcomes.</i>         | <i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>                                                                                                                                                                                                                                        |
| 1 Read and interpret job requirements from documentation | 1.1 Appropriate processes are identified and confirmed<br>1.2 Appropriate materials and/or equipment are selected according to job specifications                                                                                                                                                                                             |
| 2 Set up machines or equipment                           | 2.1 Pre-startup checks are completed and documented according to enterprise procedures<br>2.2 Raw materials or feed lines are checked to ensure availability<br>2.3 Stirrer, mixer, pots and vats are checked to ensure they are free from contamination<br>2.4 Machine or equipment operation is verified according to enterprise procedures |

| ELEMENT                                                    | PERFORMANCE CRITERIA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 Maintain blending process                                | <p>3.1 Mix is completed in association with fellow workers according to enterprise procedures and work health and safety (WHS) requirements</p> <p>3.2 Materials are added to the process according to job specifications</p> <p>3.3 Quality inspection and sampling is carried out according to enterprise procedures</p> <p>3.4 Adjustments to mix or equipment are made to correct identified quality problems</p>                                                                                                                                                                                                                                                |
| 4 Maintain ink or coating milling process                  | <p>4.1 Production process is operated in association with fellow workers and according to enterprise procedures and planned daily schedule</p> <p>4.2 Production is maintained according to WHS requirements and enterprise procedures</p> <p>4.3 Milling process and equipment are monitored during batch manufacture to ensure operation is maintained</p> <p>4.4 Machines or equipment are inspected and adjusted as required, and readouts are recorded and interpreted</p> <p>4.5 Quality inspections and sampling are undertaken according to enterprise procedures</p> <p>4.6 Records, log or checklists are completed according to enterprise procedures</p> |
| 5 Maintain operation of equipment or process conditions    | <p>5.1 Variations or irregularities of equipment operation or process conditions are identified and reported</p> <p>5.2 Production difficulties are anticipated and action is taken to prevent occurrence by timely intervention according to enterprise procedures</p> <p>5.3 Corrective action is documented and reported according to enterprise procedures</p>                                                                                                                                                                                                                                                                                                   |
| 6 Shut down liquid ink or coating blend or milling process | <p>6.1 Pre-shutdown checks are carried out and documented according to enterprise procedures</p> <p>6.2 Correct shutdown sequence is followed according to manufacturer's specifications and enterprise procedures</p> <p>6.3 Shutdown is conducted in association with fellow workers and in compliance with WHS requirements</p> <p>6.4 Product or materials used in manufacture are removed from operating area where appropriate</p> <p>6.5 Solid and liquid waste is removed from operating area and</p>                                                                                                                                                        |

| ELEMENT    | PERFORMANCE CRITERIA                                                                                                                                                                                                                         |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            | recycled or disposed of, where required, according to regulatory requirements and enterprise procedures                                                                                                                                      |
| 7 Clean up | <p>7.1 Equipment cleaning requirements are identified</p> <p>7.2 Correct equipment or materials for manual or mechanical cleaning are selected</p> <p>7.3 Cleaning is undertaken according to enterprise procedures and WHS requirements</p> |

## Foundation Skills

*This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.*

| Skill                      | Performance Criteria                                           | Description                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reading                    | 1.1, 1.2, 2.1, 3.2, 6.2                                        | <ul style="list-style-type: none"> <li>Identifies and interprets information from job and manufacturer's specifications and enterprise procedures</li> </ul>                                                                                                                                                                                                |
| Writing                    | 1.1, 2.1, 4.6, 5.1, 5.3, 6.1                                   | <ul style="list-style-type: none"> <li>Documents actions and outcomes in accordance with enterprise procedures</li> </ul>                                                                                                                                                                                                                                   |
| Oral communication         | 5.1, 5.3                                                       | <ul style="list-style-type: none"> <li>Provides information regarding issues encountered and actions undertaken</li> </ul>                                                                                                                                                                                                                                  |
| Numeracy                   | 3.2, 4.4                                                       | <ul style="list-style-type: none"> <li>Measures and records quantities of materials</li> <li>Checks machine readouts and measuring devices for accuracy and resets as required</li> </ul>                                                                                                                                                                   |
| Navigate the world of work | 2.1, 2.4, 3.1, 3.3, 4.1, 4.2, 4.5, 4.6, 5.2, 5.3, 6.1-6.5, 7.3 | <ul style="list-style-type: none"> <li>Complies with legislative requirements and organisational policies and procedures relevant to own role</li> </ul>                                                                                                                                                                                                    |
| Interact with others       | 3.1, 4.1, 6.3                                                  | <ul style="list-style-type: none"> <li>Cooperates with others as part of familiar routine activities and contributes to specific activities requiring joint responsibility</li> </ul>                                                                                                                                                                       |
| Get the work done          | 1.1, 1.2, 2.1-2.3, 3.4, 4.1, 4.3, 4.4, 5.2, 7.1, 7.2           | <ul style="list-style-type: none"> <li>Follows clearly defined instructions and monitors own progress on tasks</li> <li>Implements standard procedures when required to make routine decisions relevant to immediate tasks</li> <li>Initiates standard procedures when responding to anticipated or actual problems directly related to own role</li> </ul> |

## Unit Mapping Information

| Code and title<br>current version             | Code and title<br>previous version            | Comments                                              | Equivalence status |
|-----------------------------------------------|-----------------------------------------------|-------------------------------------------------------|--------------------|
| ICPINK331<br>Manufacture inks and<br>coatings | ICPIM331C<br>Manufacture inks and<br>coatings | Updated to meet<br>Standards for<br>Training Packages | Equivalent unit    |

## Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a74b7a0f-a253-47e3-8be0-5d426e24131d>

# Assessment Requirements for ICPINK331 Manufacture inks and coatings

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## Performance Evidence

Evidence of the ability to:

- find, interpret and use information from various sources to carry out tasks according to requirements
- use a mixer disperser and EITHER a bead mill OR a three-roll mill to manufacture TWO batches of ink or coating according to manufacturer's and job specifications, health and safety requirements and enterprise procedures including:
  - selecting, checking and setting up chemicals, ink, materials and equipment
  - carrying out quality checks during blending and making required adjustments to process or equipment
  - completing required records
  - shutting down equipment
  - cleaning and removal of waste.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

## Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- identify and briefly describe the enterprise procedures for:
  - using the batch coding system in the work area
  - potting off the mill
  - labelling ink containers
- identify health and safety requirements and environmental issues in relation to:
  - adding powders during the mixing stage of ink manufacture
  - cleaning bowls, vats and pots
  - the manufacture of ink or coating
  - the fitting and use of safety equipment

- specify the checks, tests and/or monitoring required during the process including:
  - when preparing containers and equipment for ink or coating manufacture
  - when measuring raw materials for ink production
  - at each stage of the ink or coating manufacture process
  - how the grind of the ink is determined
  - the ink texture and viscosity during the milling process
- explain the technical aspects of the ink or coating manufacturing process including:
  - the purpose of using low speed early in the mixing process
  - the function of antioxidants in the mixing process
  - the factors that determine the position of the mixing head
  - the action taken when the mixture has a skin on it
  - the particular requirements for coating manufacture
  - the characteristics of the end product of the mixing phase of ink manufacture
  - the purpose of and ideal conditions for milling ink
  - the adjustment of the mill for low or high grind values.

## Assessment Conditions

Gather evidence to demonstrate consistent performance in conditions that are safe and replicate the workplace. Noise levels, production flow, interruptions and time variances must be typical of those experienced in the ink manufacture field of work and include access to:

- enterprise documents and procedures
- raw materials and consumables
- machines and equipment
- cleaning chemicals.

Assessors must satisfy NVR/AQTF assessor requirements.

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