Australian Government

Department of Education, Employment and Workplace Relations

PMBPROD259C Operate granulating equipment

Revision Number: 1

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Modification History

Not applicable.

Unit Descriptor

Unit descriptor
This competency covers the operation of granulation equipment. It applies to a range of plastics and rubber sections where virgin or recycled material is processed into granules for further production.

Application of the Unit

Application of this unit
This competency applies to operators who are required to apply knowledge of materials, product purpose and processes to the operation of granulation equipment. This competency is typically performed by operators working either independently or as part of a work team.
The operator:

- takes materials off machine
- checking materials for quality and conformity to specifications
- checks raw material feed
- notices any problems and takes required action (eg reporting)
- deal with non-conforming materials, waste and scrap
- complete logs and reports.
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisites
This unit has **no** prerequisites.

Employability Skills Information

Employability Skills
The required outcomes described in this unit contain applicable Employability Skills. The Employability Skills Summary of the qualification(s) in which this unit is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

ELEMENT	PERFORMANCE CRITERIA
Elements describe the essential outcomes of a unit of competency	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
ELEMENT	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.
1. Check work requirements.	1.1 Identify work requirements from production plan or request. 1.2 Check product, materials and equipment meet requirements for job(s). 1.3 Recognise requirements which may not be in accordance with usual practice. 1.4 Ask questions of appropriate person to confirm unusual practice. 1.5 Identify hazards associated with the job and take appropriate action. 1.6 Perform other pre-operational checks in accordance with procedures.
2. Start up granulator to procedures.	2.1 Conduct pre-start checks. 2.2 Start up granulator.
3. Operate equipment to procedures.	3.1 Check process is operating within required limits. 3.2 Check materials are in specification and to required quality standard. 3.3 Ensure materials are consistently ready for next operation. 3.4 Maintain supply of material(s) as required. 3.5 Complete logs and records as required. 3.6 Collect and segregate scrap, trim and other materials as required. 3.7 Keep equipment and work area clean. 3.8 Pause machine cycle and perform emergency stop, as required.
4. Respond to routine problems in accordance with procedures.	4.1 Recognise known faults that occur during the operation. 4.2 Identify and take action on causes of routine faults. 4.3 Log problems as required. 4.4 Identify non-routine process and quality problems and take appropriate action.

Required Skills and Knowledge

This describes the essential skills and knowledge and their level required for this unit.
Application of an operational knowledge of the materials, equipment and process sufficient to recognise out of specification products, process problems and materials faults. For example, blade maintenance is crucial to material quality. The gap distance between rotor blades may change during normal operation. Therefore it is important to monitor the quality of granulated material and excessive amounts of fines, or plastic dust, to judge when to change rotor blades.
Knowledge of the enterprise's standard procedures and work instructions and relevant regulatory requirements, along with the ability to implement them within appropriate time constraints and in a manner relevant to the job.
Application of the knowledge of managing risks using the hierarchy of controls applied to the operation of granulating equipment. Application of approved hazard control and safety procedures and the use of PPE in relation to handling materials, equipment operation and cleanup.
Knowledge of and skills in the operation of granulating equipment and main components sufficient for consistent production of quality products including:

- production workflow sequences and materials demand
- the reasons for checking process control panels and reporting readings which are outside of normal range of process variability
- accurately monitoring equipment operation and product quality
- the potential effects of variations in raw materials and equipment operation in relation to quality of product
- processing behaviour of polymers and the role of additives
- waste management and knowing the importance of reusing non-conforming products wherever possible
- explain the effect of unauthorised or emergency shutdown in relation to safety and production requirements
- identify factors which may affect product quality or production output and appropriate remedies.

Competence includes the ability to:

- plan own work including predicting consequences and identifying improvements
- identify when the operator is able to rectify faults, when assistance is required and who is the appropriate source for assistance
- identify and describe own role and role of others involved directly in operating mixing equipment.

Language, **literacy and numeracy requirements**
This unit requires the ability to read and interpret typical product specifications, job sheets, procedures and material labels as provided to operators.
Writing is required to the level of completing workplace forms.
Basic numeracy is also required, eg to determine required kilograms of materials.

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, required skills and knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

A holistic approach should be taken to the assessment.

Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge.

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

It is essential that competence is demonstrated in the knowledge and skills defined in this unit. These may include the ability to:

- apply the required skills and knowledge to operate a granulating machine
- apply approved procedures.

Consistent performance should be demonstrated. For example, look to see that:

- granulating production standards are met consistently
- all safety procedures are followed.

Assessment method and context

Assessment will occur on industrial granulator equipment and will be undertaken in a work-like environment.

Competence in this unit may be assessed:

- by use of an appropriate, industrial granulating machine requiring demonstration of operation and emergency stop procedures
- in a situation allowing the generation of evidence of the ability to respond to problems
- by use of a suitable simulation and/or a range of case studies/scenarios
- by a combination of these techniques.

In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment. Assessors need to be aware of any cultural issues that may affect responses to questions.

Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Specific resources for assessment

This section should be read in conjunction with the Range Statement for this unit of competency. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions will also be required to the extent that they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required.

Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.

Range Statement

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any 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. Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.

Context

This competency applies to all work environments and sectors within the plastics, rubber and cablemaking industry. It includes the operation of all relevant additional equipment where that equipment is integral to the granulating process.

Procedures

All operations are performed in accordance with procedures.

Procedures include all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards.

Tools and equipment

This unit of competency includes use of equipment and tools such as:

- granulator equipment
- auxiliary equipment (such as regrind evacuation systems, conveyors, hoppers, de-humidifiers)
- magnets
- screens
- dust collection systems tools (such as verniers and gauges)
- relevant personal protective equipment.

Hazards

Typical hazards include:

- spills
- slip and fall (such as from spilt granules)
- dusts/vapours
- temperature
- rotor speed, blades
- noise
- material hazards (such as additives used)
- manual handling hazards.

Problems

'Respond to routine problems' means 'apply known solutions to a limited range of predictable problems'. Typical process problems may include:

- equipment malfunction
- variations in cycle time, temperature, pressure, speed
- variations in materials or contamination of materials
- poor maintenance of blades, screens
- inconsistency in granulation

Typical product problems may include:

- incorrect product size
- incorrect weight

- poor mixing off additive and raw material
- surface moisture.
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Unit Sector(s)

Not applicable.