

# COGPPRO30

## Unit 30: Optimise Standard Operations Which are Under Process Control within Polymer Processing and Related Operations



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### Overview

This unit is for those with responsibility for optimising standard operations which are under process control. It is suitable for process industries personnel who work within an organisational context which requires them to achieve clearly defined specifications. The work is such that the individual would be expected to solve problems which may arise both directly and/or by calling for specialist assistance. Standard process operations are routine, self-contained operations which have only a limited number of parameters to be taken into account and which are run on equipment and systems which are pre-determined.

This unit deals with the following:

1. Set up the conditions needed for standard process operations to proceed
2. Optimise standard processing operations
3. Conclude standard processing operations

During this work you must take account of the relevant worksite operational requirements, procedures and safe working practices as they apply to you.

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### Performance criteria

*You must be able to:*

- P1 Work safely at all times, complying with health and safety, environmental and other relevant **regulations, legislations and guidelines**
- P2 Obtain accurate and complete details on the specification to be achieved
- P3 Check that everyone who will be involved in the operation is ready and knows what to
- P4 Check and confirm that any services needed are operational
- P5 Check and confirm that materials of the specified quality and amount are available
- P6 Confirm that equipment controls are to the settings needed for the operation to run to specification
- P7 Check that the equipment has no obvious visual defects
- P8 Take prompt and effective action to deal with any **problems** with the equipment, services and materials
- P9 Interpret **data** correctly to judge if the process and product are in specification and the operation is running optimally
- P10 Identify promptly when a process is not meeting optimum conditions and take appropriate action
- P11 Respond promptly to **variances**, taking whatever action is needed to maximise the use of **resources**, optimise the process and keep the product within specification
- P12 Give clear instructions and information to others on what they need to do to optimise the operation
- P13 Keep operational data up to date, accurate and complete
- P14 Maintain product schedules
- P15 Follow the safety, health and environmental procedures for the operation
- P16 Check that the process control system is operating properly and, if it isn't, make suitable adjustments to make sure that specifications are met
- P17 Segregate out any products which do not meet the specification
- P18 Confirm with others that all aspects of the operation have been **concluded**
- P19 Shut down and isolate equipment under your control in the sequence and timings needed to maintain the safety of the entire system
- P20 Remove residual and waste **materials** into suitable storage, handling them safely to avoid loss and contamination
- P21 Clear and clean equipment where this is needed before it can be used again
- P22 Ensure the process equipment and work area is ready for the next operation
- P23 Complete the relevant records accurately
- P24 Check visually whether the equipment and system have any faults and defects

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- P25 Use the correct procedures to call for any maintenance needed
- P26 Follow the safety, health and environmental procedures for shut down of the operation

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### Knowledge and understanding

*You need to know and understand:*

- K1 The specific organisational health, safety and environmental policies and other **regulations, legislation and guidelines** for your work area and why they are important
- K2 The different types potential **hazards**, how they can be minimised and the action to take in the event of a work area hazard
- K3 What the workplace procedures are for reporting potential **hazards** you are unable to deal with
- K4 When, which and how personal protective equipment should be used
- K5 The importance of checking equipment, how to do this and to whom you should report defects
- K6 What risks are associated with the working environment
- K7 What risk control measures are in place and how to comply with them
- K8 Where to find **work procedures** and production requirements and how to interpret these
- K9 What sort of documents are kept and how to complete them and the implications of not maintaining them accurately and legible
- K10 The importance of disposing of waste **materials** safely and how to do this
- K11 The sorts of **problems** that might occur and who you should report these to
- K12 The purpose and importance of **quality assurance** checks, and when and how these should be carried out
- K13 How to recognise possible spillages, leaks and emissions from appearance and smell
- K14 What environmental monitoring records are kept
- K15 What routine checks and inspections are carried out
- K16 What reporting procedures must be followed with regard to checks and inspections
- K17 What the main functions of process equipment and systems are
- K18 Which equipment and system adjustments and maintenance can be carried out by the operator and which need specialist attention
- K19 How to recognise possible faults and defects in equipment and systems using your senses
- K20 Which symptoms indicate a problem that needs maintenance attention
- K21 What materials are used in different processes
- K22 What hazards to people and the environment arise from mishandling and misprocessing materials
- K23 What precautions and procedures should be applied when handling materials at each stage of the process and in storage
- K24 Why processed, part-processed materials, excess materials and recoverable by- products should be separated out as they are produced

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- K25 What sorts of containment and storage are used for processed, part-processed materials, excess materials and recoverable by-products
- K26 Why we need a specification for a process
- K27 What information is normally given in a process specification
- K28 Where to get the specification for a given job
- K29 How to read and interpret a process specification
- K30 How equipment and systems are set up to meet a given specification
- K31 What should be done to check that the services needed by the equipment and system are operational
- K32 What start-up checks should be carried out to make sure that the equipment and system is fit for use and has no faults or defects
- K33 What procedures to follow to shut down a process and why it is important that the correct procedure is followed
- K34 What parts of a system and its services may require to be isolated
- K35 Why equipment and a system may need to be dismantled and cleaned if they are to be used for a different product or specification at a subsequent operation
- K36 What level of monitoring is required by your process
- K37 What information to gather and when
- K38 How to compare data with expected values
- K39 Why it is important to follow specified monitoring procedures
- K40 What safety standards apply to the process environment
- K41 What sorts of risks are present in a process environment
- K42 What risk control measures are in place and why it is important to comply with them
- K43 How to read and analyse relevant data in tables, printouts and schematics
- K44 What conventions are used in the process
- K45 What units of measurement are used and what they mean
- K46 The different types of documentation that is required

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### Additional Information

#### Glossary

1. **Documentation:** Records, analysis sheets, report sheets, log book
2. **Regulations/Legislation/Guidelines:** organisational procedures and guidelines, Work place Policies, Health, safety and environmental requirements and regulations relevant to the work and work area being carried out
3. **Problems** to be dealt with: those which you can deal with directly, those which you need to report and seek the assistance of a specialist
4. **Hazards** and control measures: waste, spillage, obstructions use of tools, hazardous materials. personal protective equipment, equipment, lifting and moving items
5. **Materials:** raw materials, part-processed materials, re-processed materials, finished products, process related materials, e.g. packaging, processing equipment, residual materials for recycling, waste materials for disposal
6. **Operating Procedures/Work Procedures:** Work instructions, Method Statements, Standard Operating Procedures
7. **Data** to be gathered: visual checks on products, readings from instruments, analysing sample test results, readings from process control logs, measuring process parameters directly, output rate
8. **Variations:** minor variations which take the product or process to the edges of acceptability, deviations which take the product or process out of specification but can be dealt with by adjustments at the time, deviations which require production to be halted until the specification can be restored
9. **Conclude** process operations: end of a production run, for routine maintenance purposes, for urgent shut down
10. **Quality assurance** that will be determined by: The nature of the equipment being maintained, company policy, company national or international standards

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