

COGPOLY31

Evaluate and modify processing parameters to meet process operations



Overview

This unit is about evaluating and modify processing parameters to improve process operations. It covers non-routine modifications carried out to improve quality or system effectiveness, or in response to processing problems. It is suitable for process industries personnel who work within an organisational context which requires them to achieve clearly defined specifications.

This unit deals with the following:

1. Monitor and evaluate processing output
2. Modify processing parameters to meet process operations

During this work you must take account of the relevant operational requirements and safe working practices AS THEY APPLY TO YOU.

Previous Version

Adapted from Unit D3 of Polymer Processing and Related Operations NOS – version November 2004.

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Performance criteria

You must be able to:

- P1 work safely at all times, complying with health and safety and other relevant regulations and guidelines
- P2 collect data from appropriate sources for each stage of the processing sequence
- P3 monitoring data to identify patterns and levels of variance
- P4 analyse data against specifications to clarify the nature of the problem
- P5 report any equipment malfunction or failure to the appropriate person
- P6 complete prescribed quality checks on materials and products to accurately assess deviations from specifications
- P7 identify the cause of deviations and possible corrective actions
- P8 obtain the assistance of others when you are uncertain about the cause of deviations or the appropriate corrective actions
- P9 record all test results and assessments in sufficient detail to enable decisions to be made by interested parties.
- P10 modify processing parameters, within safety limits, to achieve the specified output tolerances and targets for each stage of the processing sequence
- P11 make modifications in the correct sequence and at the appropriate stage in the process to achieve the required product and production specifications
- P12 record any changes made to the processing parameters and take appropriate action to amend the processing specification
- P13 record information about the nature and effects of deviations, and the remedial actions taken, by following organisational procedures
- P14 pass information to the appropriate people within the specified timescale in accordance with organisational procedures

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Knowledge and understanding

You need to know and understand:

- K1 the importance of monitoring output to identify variances and how and when this should be done
- K2 how to collect and collate data from different sources
- K3 the different stages involved in the processing sequence and how they interrelate
- K4 the importance of collecting data from each stage of the processing sequence
- K5 the importance of monitoring output over a period of time and the implications of reaching conclusions on data collected on a single occasion
- K6 what length of monitoring time is appropriate for the process
- K7 how to analyse data against specifications
- K8 how to differentiate between variances caused by equipment malfunction or failure and those caused by incorrect or inappropriate processing parameters
- K9 what quality checks should be carried out and what they will tell you about the processing operations
- K10 who to consult when you are uncertain of the cause and effects of deviations from specification
- K11 how to present test results and assessments to facilitate decision making about the appropriate corrective actions to take
- K12 what conditions and processing parameters are required to produce the product within specification
- K13 how the processing parameters affect material and product properties and the effects of changing different parameters
- K14 the importance of adjusting processing parameters to achieve the required specifications and how to do this
- K15 the safety limits that apply to different processing parameters and the risks associated with setting parameters outside of these limits
- K16 the importance of following the prescribed sequence for adjusting processing parameters and the implications of not doing this
- K17 the circumstances when processing specifications need to be amended to show revised or new processing parameters and the organisational procedures for doing this
- K18 what working practices and authorisations apply
- K19 what lines of communication and command should be followed in a given situation
- K20 why it is important to work within the 'rules' of the organisation
- K21 what sorts of records are kept and how to complete them
- K22 the purpose of different records and the implications of not maintaining them effectively
- K23 what agreed workplace health and safety procedures relate to controlling risks to Health and Safety in the process environment

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- K24 the specific organisational Health and Safety procedures for evaluating and modifying processing parameters
- K25 what safe working practices apply to your own job role in evaluating and modifying processing parameters
- K26 what safe operating procedures apply to different processing equipment

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Additional Information

Glossary

Regulations and guidelines

all relevant health, safety and environmental regulations, organisational procedures and guidelines, standard operating procedures

Sources

visual inspections of the output, VDus, chart recorders, sensors, test outcomes, measuring processing parameters directly

Monitored data

equipment performance, materials performance, quality of output, quantity of output Variance quality of output, production rates

Specifications

product, materials, processing, production

Problems

equipment malfunction or failure, non- conforming materials, process related, human error

Others

co-workers, supervisors, technical specialists

Processing parameters

temperature, pressure, rate, sequence, material additives

Actions

reporting changes to the person responsible for maintaining specifications, making changes to specifications within the limits of your authority

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