COGFORM02

Design a Formulation Experimental Programme

Overview

This standard covers the competences you need to design an experimental programme for the development of new formulations, in accordance with approved procedures and practices.

You will be required to design a series of experiments to develop new formulations that meet the business objectives. Your underpinning knowledge will provide a good understanding of the principles used to design a series of experiments and provide an informed approach to the techniques and procedures used.

You will develop a sampling plan for the experimental programme to enable sample testing to reach sound conclusions on the performance of the formulations.

You will need to understand the business objectives and the critical success factors of the work and will be able to support the preparation of a business case for the formulation development programme.

The activity is likely to be undertaken by someone in a science related work setting in any formulation sector such as pharmaceuticals, personal care, food and drink, paints or lubricants.

In these sectors a knowledge of the principles of separation technologies and the processing of solids and liquids maybe applicable. These principles are supported by the underlying scientific principles that may include the science of: colloids, interfaces, particles, materials, modelling, simulation and data management and analysis.

Performance criteria

You must be able to:

P1 identify and prioritise the aims and business objectives of the work
P2 confirm the stakeholder's critical success factors
P3 use collated background information to support the design of the experimental programme
P4 determine the scope and parameters of the experimental programme to develop a new formulation
P5 identify tools, techniques and approaches for designing an experimental programme to develop a new formulation
P6 select the best approach to designing the experimental programme in order to deliver the defined aims and business objectives
P7 design an experimental programme to deliver the required defined aims and business objectives
P8 identify a suitable sampling plan for analysis of the developed formulations
P9 agree measurable success criteria for the experimental programme
P10 estimate the resources and expected benefits for the experimental design programme
P11 support the preparation of a business case in a format suitable for submission to the next stage of action for approval or implementation
P12 present the results of your work to the appropriate people, in accordance with departmental and organisational procedures

Knowledge and understanding

You need to know and understand:

K1 the business objectives of the work
K2 the critical success factors for the work as agreed with the stakeholders and customers
K3 the relevant legislative, regulatory and organisational requirements relating to the project
K4 the relationship between project objectives, the project critical success factors and the approach to the project
K5 how to prioritise and agree project objectives and critical success factors
K6 the background information relevant to the proposed formulation experimental programme
K7 the benefits of using an experimental design approach in formulation development
K8 how to determine the scope of a formulation experimental design programme
K9 the tools, techniques and approaches used to design an experimental programme
K10 when to use modelling or simulation techniques
K11 when to utilise an automated process
K12 the relative advantages and disadvantages of each tool, technique and approach taking into account both statistical and practical considerations.
K13 how to use statistical techniques, digital tools and software in the design of an experimental programme
K14 how to review and assess risks to the project
K15 methods for evaluating the success of the project
K16 the health, safety and quality guidelines relating to the activities
K17 the practical, time and financial constraints affecting the project
K18 the document control and reporting procedures that should be used
K19 the general principles and processes for developing a business case
K20 the role of the experimental design programme in the business case and the necessary supporting information
K21 how to present the business case to relevant stakeholders to support decision making
K22 the reasons why effective communication is important, and the methods used for communicating effectively
K23 the limits of your own authority and to whom you should report if you have problems that you cannot resolve

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