



Incorporation of antimicrobial agents in polymers.

★★★★★ (27) asistentes

In the last years the demands for incorporation of antimicrobial agents in polymers have increased tremendously. With the spread of COVID-19 epidemic this demand has grown even more. Antimicrobial material, such as intrinsically active polymers have a wide range of applications such as example solid surfaces, varnishes and paints but also active packaging and much more.

Due to the increasing awareness toward the menace presented by microorganisms, the market demand from customers for microbe-free materials is growing stronger. Plastics are also susceptible to colonisation by microorganisms such as bacteria and fungi, which can present hygiene problems and negatively influence the functional shelf life of a product. One of the applications where the importance of antimicrobials in plastic materials is best seen is in the food packaging sector. Therefore, the additivation of these plastic materials with antimicrobial agents is of great importance as they help to better preserve food and ensure higher food quality. The concept of active packaging is based on the incorporation of such additives (antimicrobial active substances) into the packaging itself in the form of a functional coating. Currently there are few standardised techniques to assess the biological risk and efficacy of antimicrobial materials, so it is of great interest to have a methodology that allows to know the toxicity of antimicrobial compounds currently used in the plastics sector. Given the importance of determining the antimicrobial properties of plastic surfaces, the course will deal with the available and certified tests to quantify the antimicrobial effects of plastics and will review the different kind of antimicrobial materials and their mechanism of action, as well as their advantages and disadvantages in order to give to the assistants the tools to better understand and select the antimicrobial substances and materials.

Objetivos

- Know why there is a strong demand towards antimicrobial activity and future trends
- Distinguish the different pathogens and which sector is more vulnerable to each of them

- Understand the differences between the multiple mechanisms of actions and their advantages
 - Identify the industrial sector that can have most advantages in the use of antimicrobials materials
 - Recognize the principal commercial antimicrobial substances, where and when to use them
 - Know the different tests to measure antibacterial activity on plastics and other non-porous surfaces and understand their methodology.
-

¿A quién va dirigido?

- Polymers and polymeric derivatives with intrinsic antimicrobial properties are of great interest for the development of clean surfaces and to fight the growing trend of antimicrobial resistant organisms. Not only medical oriented companies can be interested in this course, the application of antimicrobial compounds may be of interest also for companies involved in the development of the following products: Ceramic materials Solid surfaces, Varnishes and paints, Food industry (active packaging), Agriculture and aquaculture, Veterinary and Coating applications
-

Temario

Presentation of the risks related to the presence of pathogens as perceived by the public and from professional. Future trends in the different market aspects and impact expected.

Introduction to the different typologies of pathogens such as virus, bacterias, fungi, etc. Concepts of microbiology.

Introduction to the possible mechanisms of action of antimicrobial materials, their advantages and disadvantages.

Presentation to the different antimicrobial compounds, pro and contra. Possible materials and sectors of applications.

Introduction to the different certified test to evaluate the antibacterial activity of different materials, specifically antibacterial-treated plastics.

Metodología

- > The assistant can carry out this training action from the AIMPLAS facilities or by streaming.
-

Organiza:

