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Short Report

Advances in Bioengineering & Biomedical Science Research

Drug Discoveries and Packaging Challenges

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Abstract

Presently Packaging plays, a significant role for drug discoveries. The process of selecting materials and the type of packaging also offers an opportunity for the Packaging scientist to look for biological delivery choices. Most injectable protein products were supplied in some sort of glass vial, prefilled syringe, cartridge. Those products having high Ph content there is a chance of "delamination "from inner surface of glass vial. With protein-based drugs, the biggest issue is the effect of packaging derivatives on the protein's three- dimensional and surface structure. These are any effects that relate to denaturation or aggregation of the protein due to oxidation or interactions from contaminants or impurities in the preparation. The potential for these effects needs to be carefully considered in choosing the container and the container closure system to avoid putting patients in jeopardy.

Introduction

Cause of Delamination

• Formulations with a high pH include phosphate and citrate buffers increase the risk of glass delamination.
• High alkali content in glass could accelerate erosion.
• High temperature during the vial-forming process increases the risk of glass delamination.
• Terminal sterilization (irradiated at 20-40 kGy for 150 min) also is a risk factor for specific products (veterinary parenteral administration), could cause delamination.
• High product-storage temperatures and long exposure times can increase the rate and severity of glass delamination.

How to Prevent Delamination

• Treating the surface of the glass vials with materials, such as ammonium sulfate or siliconization can reduce the rate of glass erosion.
• Consider alternative sterilization methods only in rare cases.
• The correct specification for the glass to ensure its suitability for the pH of the product.
• Use Cyclic olefin copolymer (COC)/Cyclic olefin Polymer (COP)

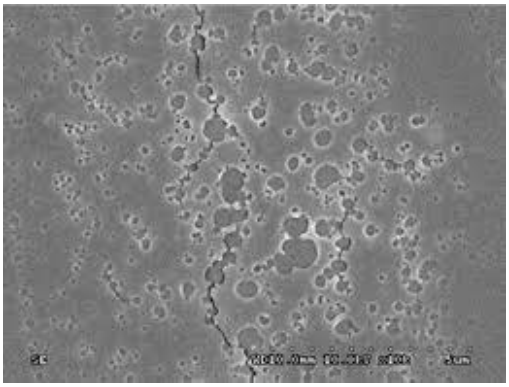
Adsorption of Protein and Solutions

Option#1 Coat with linear methoxylated polyglycerol and hyperbranchedmethoxylated polyglycerol.
Option#2 Thehyperbranched non-methoxylated coating performed best. Option#3 Coat with hyperbranched polyglycerol
Option#4 Right selection of Sterilization of glass vial/syringe

Anupam Chanda has his expertise in creating design in packaging materials and devices for Biologics, biosimilar, anti-Cancer and HIV products. He is having 30 years of experience in India and abroad. He is a renowned speaker, widely travel throughout the world. Gained and shared his thoughts with scientist from various institution and industry professionals. Author's Technical book **" Packaging Technology An advance Practical approach, Packaginh Innovation for Microgravity and Regulatory Audit observations and Style of Responses"Published from Germany and Amazon is distributing to 77 countries.**

References

www.amazon.de, www.amazon.com and www.morebooks.de.



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