

MELT EXTRUSION MATERIALS TECHNOLOGY AND DRUG PRODUCT DESIGN AAPS ADVANCES IN

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What is hot melt extrusion process in pharmaceutical industry? The Hot Melt Extrusion process is optimised with an electronic control unit in a screw extruder, allowing it to set screw speed, process temperature, and pressure. Heat and shear force or stress causes the Screw extruder to generate a homogenous blend that impacts the final product characteristics.

What is Meltrex? Meltrex technology, an innovative drug formulation A common problem in drug research occurs when a medicine won't dissolve in water and, therefore, cannot be absorbed in the body.

What is extrusion process in pharmaceutical industry? Pharmaceutical extrudates are generally produced by heating and then softening a mixture of a drug and a thermoplastic polymer followed by extrusion of the molten mass through a die. This results in the production of cylinders or films depending on the shape of the die.

What is melt extrusion? The melt extrusion process consists of melting the polymer pellets through a combination of applied heat and friction. This molten polymer is then forced under high pressure through a small orifice or, more typically, a “shower head” of orifices called a spinneret.

What are the examples of hot extruded products? The hot extrusion process is widely used to manufacture products from Aluminium, Copper along with their alloys. Some of the products that are developed using this process are Electrical Wires, Bars and Tubes.

What are the advantages of hot melt extrusion? Hot melt extrusion can be used to improve the solubility of poorly soluble drugs by increasing the surface area. Increasing the surface area of the drug increases the amount of drug that is available for dissolution, which is achieved using Ascendia's nanotechnologies.

What is the difference between hot melt extrusion and spray drying? Unlike spray drying, which requires that the API and the polymer reagent are dissolved together in a solvent, Hot Melt Extrusion instead transforms a powder blend of the two components into an extruded ASD.

What products are made by extrusion process? Extrusion produces items such as pipe/tubing, weatherstripping, fencing, deck railings, window frames, plastic films and sheeting, thermoplastic coatings, and wire insulation. This process starts by feeding plastic material (pellets, granules, flakes or powders) from a hopper into the barrel of the extruder.

What are the four kinds of extrusion? There are various types of extrusion processes, each suited for different materials and end products. These processes include direct extrusion, indirect extrusion, cold extrusion, and hot extrusion.

What is extrusion in pharmacology? Pharmaceutical-class extruders have evolved and adapted to mix drugs with carriers for various solid dosage forms as well as for the production of wet granulations. The major differences between a plastics extruder and a pharmaceutical-class extruder are the contact parts, which must meet regulatory requirements.

What is the difference between sinter and melt? Key points to remember about sintering and melting include: Sintering combines materials by heat and pressure, without melting involved. Melting combines particles by heating them till they liquify and combine as one material. Sintering can occur at low temperatures if enough pressure is applied.

What is melt rheology? Melt rheology is a technique for obtaining relevant information about the processing conditions like operating temperature, shear stress, and polymer flow properties.

Why extrusion is better? Extrusion: Generally, extrusion is more energy-efficient compared to injection molding. Its continuous flow nature allows for steady energy usage, which can be lower per unit of product produced. This efficiency makes it a preferred choice for environmentally conscious manufacturing practices.

What is hot melt extrusion in pharmaceutical industry? Hot melt extrusion (HME) is the process of applying heat and pressure to melt a polymer and forcing it through an orifice in a continuous process.

What metal products are made by extrusion?

What food products are made using extrusion? Dry pasta and breakfast cereals have been produced by extrusion since the 1930s, and the method has been applied to tater tots (first extruded potato product: Ore-Ida in 1953) and pet food production since the 1950s (first extruded dog food: Purina Dog Chow in 1957, and first extruded cat food: Purina Friskies in 1962) ...

What is the process of extrusion in pharma? In the hot-melt extrusion process, the API and the excipients are fed into the extruder. All components are sheared, heated, plastified, mixed and dispersed, and finally shaped by pressing them through a die opening.

What are the disadvantages of extrusion?

What is the major problem in hot extrusion? The pressure obtained by a moving ram or piston forces the plastic metal through a die of specified shape. One of the major problems in hot extrusion is the effect of hot metal on the equipment. Various methods are used to protect the dies. The die may be changed and allowed to cool for each piece.

What is the difference between hot melt extrusion and spray drying? Unlike spray drying, which requires that the API and the polymer reagent are dissolved together in a solvent, Hot Melt Extrusion instead transforms a powder blend of the two components into an extruded ASD.

What is meant by hot extrusion process? If the extrusion process takes place above recrystallization temperature which is about 50-60% of its melting

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temperature, the process is known as hot extrusion. Advantages: Low force required compare to cold working. Easy to work in hot form.

What is the hot melt technique? What is Hot Melt Extrusion? Hot melt extrusion (HME) is the process of applying heat and pressure to melt a polymer and force it through an orifice in a continuous process. HME is a common processing technique for polymers that dates back to the 1930s. Today, over half of all plastic products are produced via HME.

What is the difference between hot extrusion process and hot drawing process? In drawing, the cross section of a long rod or wire is reduced or changed by pulling (hence the term drawing) it through a die called a draw die (Fig. 7.1). Thus, the difference between drawing and extrusion is that in extrusion the material is pushed through a die, whereas in drawing it is pulled through it.

"Two Old Women: An Alaska Legend of Betrayal, Courage, and Survival" by Velma Wallis: A Summary

Summary:

"Two Old Women" is a powerful short story that recounts the extraordinary journey of two elderly Athabascan women, Susie and Edna, who face unimaginable hardships in the unforgiving Alaskan wilderness. After being abandoned by their tribe during a time of famine, they embark on a perilous journey for survival, relying on their wits, resilience, and the wisdom of their ancestors.

Key Points:

- The story explores themes of betrayal, courage, survival, and the bonds of friendship.
- Susie and Edna's journey symbolizes the strength and resilience of the human spirit in the face of adversity.
- The story sheds light on the harsh realities of life in the Alaskan wilderness and the significance of community in such environments.

Study Guide Questions:

1. What factors led to Susie and Edna's abandonment by their tribe?

- Famine and a shortage of resources.

2. How does their journey test their limits and reveal their strengths?

- They face hunger, cold, injury, and the psychological toll of isolation. Their resilience, determination, and love for each other help them overcome these challenges.

3. What survival strategies do they employ, and how do these reflect their cultural heritage?

- They gather berries, hunt, and fish. They also use their knowledge of the land and traditional remedies to survive.

4. How does the story portray the relationship between humans and the environment?

- The Alaskan wilderness is both a harsh and unforgiving force, but it also provides resources for survival. Susie and Edna's journey shows the delicate balance between humans and nature.

5. What broader themes does the story explore?

- The strength of the human spirit, the importance of community, the consequences of betrayal, and the enduring power of friendship.

The Definitive Business Plan: The Fast Track to Intelligent Planning for Executives and Entrepreneurs (3rd Edition)

Unlocking the Power of Business Planning

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The Definitive Business Plan is the essential guidebook for savvy executives and entrepreneurs who seek to develop intelligent and effective business plans. This third edition offers a comprehensive framework that empowers businesses to navigate complex markets and achieve long-term success.

Question 1: What sets The Definitive Business Plan apart from other planning resources?

Answer: The Definitive Business Plan is renowned for its practical and research-based approach. It provides a step-by-step methodology, real-world case studies, and customizable templates that make the planning process accessible and efficient.

Question 2: What are the key features of this updated edition?

Answer: The third edition incorporates the latest advancements in business planning theory and best practices. It includes new sections on artificial intelligence, data analytics, and emerging trends that shape the future of business.

Question 3: How can The Definitive Business Plan benefit executives?

Answer: Executives gain strategic insights, enhance decision-making, and improve overall business performance. By systematically planning for growth, innovation, and financial stability, executives can foster organizational alignment and drive competitive advantage.

Question 4: What value does this resource offer to entrepreneurs?

Answer: Entrepreneurs benefit from a structured approach to launching and scaling their businesses. The Definitive Business Plan guides them through market research, financial forecasting, and operational planning, equipping them with a roadmap for success.

Question 5: What makes The Definitive Business Plan a valuable tool for all stakeholders?

Answer: Investors, creditors, and business partners rely on business plans to assess risk and potential returns. By providing a comprehensive and well-presented plan, businesses can attract funding, strengthen relationships, and build trust.

The Invention of Land Israel: From Holy to Homeland

By Shlomo Sand

Introduction

In his groundbreaking book, "The Invention of Land Israel," Shlomo Sand argues that the concept of a Jewish homeland in Palestine is a relatively recent invention, dating from the late 19th century. Prior to this, the idea of a Jewish state in the Holy Land was not widely held.

Question 1: Why did the idea of a Jewish homeland emerge in the late 19th century?

Answer: The rise of nationalism and the increasing anti-Semitism in Europe played a significant role. Many Jews began to feel that they needed a safe haven where they could live without fear of persecution.

Question 2: What were the historical foundations for the invention of Land Israel?

Answer: Sand argues that the biblical narrative of the Exodus and the conquest of Canaan was crucial in shaping the Jewish collective memory. However, archaeological evidence suggests that the Israelites were not a separate ethnic group but rather a fusion of local Canaanite and other populations.

Question 3: How did the concept of a Jewish homeland become widely accepted?

Answer: The Zionist movement, founded by Theodor Herzl in 1897, played a pivotal role in promoting the idea of a Jewish state in Palestine. The movement gained momentum through propaganda and the purchase of land in the region.

Question 4: What were the consequences of the invention of Land Israel?

Answer: The creation of the State of Israel in 1948 led to the displacement of hundreds of thousands of Palestinians and the ongoing conflict between Israelis and

Palestinians. Sand argues that the idea of a Jewish homeland has had both positive

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and negative consequences, but that it is important to acknowledge its historical contingency.

Conclusion

Shlomo Sand's "The Invention of Land Israel" provides a challenging and thought-provoking perspective on the history of the Jewish homeland. By questioning the traditional narrative of a biblical right to the land, Sand argues that the concept of a Jewish state in Palestine is a product of modern nationalism and historical circumstances.

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