

DRUG RELEASE AND DISSOLUTION

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What are the mechanisms of drug release dissolution and diffusion? In the case of a polymer nanoparticle matrix, the drug is uniformly distributed/dissolved in the matrix and the release occurs by diffusion or erosion of the matrix. If the diffusion of the drug is faster than matrix degradation, the mechanism of drug release occurs mainly by diffusion.

How to calculate drug release kinetics? The fundamental principle for evaluation of the kinetics of drug release was offered by Noyes and Whitney in 1897 as the equation (10): $\frac{dM}{dt} = KS (C_s - C_t)$ (1) where M, is the mass transferred with respect to time, t, by dissolution from the solid particle of instantaneous surface, S, under the effect of the ...

What is the formula for drug release? - Drug release percentage = (Amount released / Total amount) x 100 - Calculation based on released amount compared to total amount. Kinetic modeling on drug release from controlled drug delivery systems.

What is a dissolution controlled drug release? In dissolution controlled release systems, the solubility of the polymeric carriers is a key factor in controlling drug release. These systems are advantageous in that they have the potential to release high-molecular-weight drugs and do not need to be surgically removed.

What is the difference between drug release and drug dissolution? Dissolution testing measures the extent and rate of solution formation from a dosage form, such as tablet, capsule, ointment, etc. The dissolution of a drug is important for its bioavailability and therapeutic effectiveness. Dissolution and drug release are terms

used interchangeably.

What are the 4 mechanisms to control the drug release? 4 - Main mechanisms to control the drug release There are many mechanisms by which the drug release can be controlled in a system: dissolution, diffusion, osmosis, partitioning, swelling, erosion, and targeting.

How do you calculate drug dissolution? Calculating the percentage of drug dissolved can be done either by classic method of using an extrapolatory line on the calibration curve or using the formula $Y = mx + c$. c-intercept (from equation).

What is the difference between drug release and cumulative drug release? SR maintains drug release over a sustained period but not at a constant rate. CR maintains drug release over a sustained period at a nearly constant rate.

What is the first order equation for drug release? First order model Equation (5) can be expressed as: $\log C = \log C_0 - \frac{kt}{2.303}$ (6) where C_0 is the initial concentration of drug, k is the first order rate constant, and t is the time (28).

How to calculate cumulative drug release in dissolution? For cumulative drug release, dilution factor is considered. if you are taking 0.5ml each time ,multiply the concentration with 0.5ml and add up this to the total concentration. for example: @ 30 min time point with 5min interval , total conc = amount release @ 30 min+dilution factor (@0min+ 5min+10min).

What are the steps of drug release? In this case, drug will be released in three phases. In the first phase, drug is released from the surface or holes on the surface. In the second phase, drug is released as the polymer degrades gradually. In the last phase, drug is rapidly released owing to the destruction of the polymer matrix.

What are the different types of drug release?

What are the three types of dissolution? Dissolutions fall into three categories: judicial, administrative, and voluntary. Judicial dissolution is issued by a court.

What is the drug dissolution method? The general procedure for a dissolution involves a liquid known as Dissolution Medium which is placed in the vessels of a dissolution unit. The medium can range from degassed or sonicated deionized water

to pH adjusted chemically-prepared solutions and mediums that are prepared with surfactants.

What is the process of dissolution? Dissolution is the process where a solute in a gaseous, liquid, or solid phase dissolves in a solvent to form a solution. [1][2][3] Solubility is the maximum concentration of a solute that can dissolve in a solvent at a given temperature. At the maximum solute concentration, the solution is said to be saturated.

What are the 7 types of dissolution? There are seven types of dissolution apparatus. We offer United States Pharmacopeia (USP) Apparatus 1 (baskets), 2 (paddles), 3 (reciprocating cylinder), 5 (paddle over disk), 6 (rotating cylinder), and 7 (reciprocating disk).

Why is drug dissolution important? Drug molecules are required to be present in a dissolved form in order for them to be transported across biological membranes. Therefore, low aqueous solubility can either delay or limit drug absorption.

What affects drug dissolution? Solubility depends on both physical and chemical properties of solvent and solute. It also depends upon various other factors such as; temperature, pressure, pH of solvent, particle size, molecular structure, and concentration of solute, complex formation, surfactants used, and common ion effect [63,64,70,73–77].

What is an example of a controlled release drug? Examples include Plendil ER (Felodipine), Agon SR (Felodipine), Kapanol (Morphine sulphate) and Slow-K (Potassium chloride). TIMERx is a CR product based on agglomerated hydrophilic matrix consisting of xanthum gum and locust bean gum.

What are the strategies for drug release?

What are the principles of drug release? The drug-release principles of sustained-release and controlled-release formulations are mainly based on controlling the rate at which the drug is released from the formulation in order to prolong the duration of the drug's action, reduce the frequency of administration, and maintain a more stable level of drug ...

What are the mechanisms of drug dissolution? The dissolution behavior of a drug substance is an important part of its bioavailability. Three solid dissolution mechanisms are recognized: transport control, interface control and mixed-kinetic control.

What is the mechanism of diffusion of drugs? The most common mechanism of absorption for drugs is passive diffusion. This process can be explained through the Fick law of diffusion, in which the drug molecule moves according to the concentration gradient from a higher drug concentration to a lower concentration until equilibrium is reached.

What are 3 mechanisms of drug drug interactions? The pharmacodynamic interactions of drug-on-drug can be divided into three broad groups: interference with drug effects on receptor function, interference with a physiological control process, and additive or opposing physiological effects.

What are the mechanisms of diffusion? Diffusion mechanisms refer to the way an atom can move from one position in the lattice to another, generally through an activated process that sees the ion move over an energy barrier.

What was JC Leyendecker known for? Joseph Christian Leyendecker (March 23, 1874 – July 25, 1951) was one of the preeminent American illustrators of the early 20th century. He is best known for his poster, book and advertising illustrations, the trade character known as The Arrow Collar Man, and his numerous covers for The Saturday Evening Post.

Who was JC Leyendecker's lover? Leyendecker never married, and he lived with another man, model Charles A. Beach, for most of his adult life (1903–1951). Beach was Leyendecker's studio manager and frequent model, and many biographers describe Beach as Leyendecker's romantic, sexual, or life partner.

Did Rockwell copy Leyendecker? Rockwell virtually did everything possible to imitate Leyendecker. He analyzed how J.C. developed his image ideas. He studied that singular style and technique, using in his own work the same broad white background strokes and painted caricatures of characters he invented.

What medium did JC Leyendecker work in?

What type of paint did JC Leyendecker use? His secret painting medium, a mix of oils and turpentine, produced the rich, fluid brush strokes and luminous painting surfaces that are the hallmarks of his work.

Was Leyendecker Art Deco? Leyendecker's art is a pioneering manifestation of the Art Deco style that will dominate the aesthetics of art, photography and graphic design from 1925 to 1940. Then, such early works made in 1911, position Leyendecker as one of the great initiators of the style.

What did Leyendecker use? Leyendecker had a specialized medium, too, mixing oils with lots of turpentine to create a thinned paint that allowed him to create luminous and sweeping brush strokes.

What is the meaning of arrow shirt? Definition: A stiff, removable shirt collar, usually for men but feminine versions have existed since the Edwardian era. A shirt with an Arrow collar is referred to as an "Arrow shirt".

Who was JC Leyendecker's brother? Frank Xavier Leyendecker (January 19, 1876 – April 18, 1924), also known as Frank James Leyendecker, was a German-American commercial artist and illustrator. He worked with his brother Joseph Christian Leyendecker first in Chicago, then later in New York City and New Rochelle, New York.

Was J.C. Leyendecker rich? His success made him rich, and in 1910 he built himself a grand mansion surrounded by gardens in New Rochelle, not far from the home of his friend, admirer and fellow illustrator, Norman Rockwell. SECOND WIND Among the works by J. C. Leyendecker on view at the Hudson River Museum is "Queen of Spring."

Who did Leyendecker inspire? Leyendecker's approach to his career influenced the art of illustration and he became mentor to an entire generation of younger artists, most notably Norman Rockwell, who began his career by specifically emulating Leyendecker.

Who taught Norman Rockwell to paint? Rockwell transferred from high school to the Chase Art School at the age of 14. He then went on to the National Academy of Design and finally to the Art Students League. There, Rockwell was taught by

Thomas Fogarty, George Bridgman, and Frank Vincent DuMond; his early works were produced for St.

Who taught Leyendecker? Young Leyendecker was apprenticed at the age of 16 to the engraving house of J. Manz & Company. He advanced to a full-time staff artist and furthered his artistic training at the Chicago Art Institute.

Where did J.C. Leyendecker go to school? The man whose illustrations and style helped define America emigrated from Germany to Chicago at the age of 8. After his apprenticeship to an engraving firm and schooling at the Chicago Art Institute, Joseph Christian Leyendecker enrolled in Académie Julian in Paris.

Where can I see J.C. Leyendecker? Experience the Art of J.C. Leyendecker at the Haggin Museum in Stockton, California. Stockton's most treasured home of art and history celebrates the elegant art of a superb artist and pioneer of American advertising.

Who was the artist before Rockwell? Before Norman Rockwell, the American ideal was shaped by a different illustrator - Joseph Christian Leyendecker. He was the preeminent artist of the golden age of American Illustration during the first half of the 20th century and inspired an entire generation of illustrators who came after him.

Did Norman Rockwell use acrylic paint? Rockwell worked with slow drying oil paint on large canvases, but by the 1950s most illustrators had migrated to quick drying water colors or acrylic paint. They painted on smaller, lighter cardboard. Today, most work on a computer.

What did Norman Rockwell like to paint? More than any other element of his work, Norman Rockwell's amateur models—his friends, family, and neighbors—imbued his art with tangible naturalism. Today it is a revelation to discover that so many of his most memorable subjects were, in fact, real people.

What paints did Leyendecker use? With a secret recipe combining oil and turpentine, J.C. and his brother, Frank, perfected a crosshatch method of working in oil paint that gave the speed of pencil and the visual impact of color without the brush going dry.

What was Art Deco originally called? Art Deco was an international decorative style that ran from 1919 to 1939. Known initially as "le style moderne" or "Jazz Moderne," the style received its current name in 1968, during a period of scholarly reappraisal.

Who is the father of Art Deco style? Erté has been called the "Father of Art Deco" for the illustrations and design he created throughout the 20th century.

What was JC Leyendecker's style? His figures were highly stylized, exaggerated in proportion and form to great effect. The often smaller heads and larger hands of his men gave them a larger than life, heroic aura, while the rounded curves and elongated necks of his women were the embodiment of elegance.

What artist was inspired by Leyendecker? His approach to his own career influenced an entire generation of younger artists, most notably Norman Rockwell, who specifically emulated Leyendecker.

What was Leyendecker's medium?

Are arrow shirts still made? Through the 1960s, 1970s and 1980s, as times and fashions changed, so did the shirt offerings from Arrow. They are still in business today, and are still making men's shirts.

What do arrow tattoos mean on a woman? Whether it symbolizes strength, direction, self-defence, focus, or independence, an arrow tattoo suggests that you are always ready and willing to fight anything that gets in your way of life, even if it is a battle with your own inner demons.

Where did Van Heusen come from? The Van Heusen story began in 1881 in Pottsville, Pennsylvania. Moses Phillips & son Isaac began selling shirts which were hand-sewn by Moses' wife Endel and their daughters, to the local coal miners. Quickly successful, Phillips expanded the operation to New York City.

The USSR Olympiad Problem Book: A Treasure Trove of Mathematical Challenges

The "USSR Olympiad Problem Book: Selected Problems and Theorems of Elementary Mathematics" is a definitive collection of challenging and thought-provoking mathematical problems that have been used in the Soviet Olympiads. This book is considered a staple in the world of mathematics and a valuable resource for students, teachers, and enthusiasts alike.

Question: What is the main purpose of the USSR Olympiad Problem Book?

Answer: The book serves as a comprehensive source of challenging mathematical problems that stimulate creativity, critical thinking, and problem-solving skills. It is designed to foster a passion for mathematics and equip readers with the necessary tools to tackle complex problems.

Question: Who is the intended audience for this book?

Answer: The book is primarily intended for students preparing for mathematical Olympiads and other competitions. However, it is also a valuable resource for advanced high school students, university students, and mathematics enthusiasts of all levels.

Question: What are the key features of the USSR Olympiad Problem Book?

Answer: The book features:

- Over 300 carefully selected problems from Soviet Olympiads
- Detailed solutions and insights into the thought processes behind each problem
- Theorems and lemmas essential for solving the problems
- Comprehensive indices for easy navigation and cross-referencing

Question: How can students benefit from using this book?

Answer: By working through the problems in the book, students can:

- Develop their mathematical intuition and problem-solving abilities
- Learn advanced mathematical techniques and concepts

- Prepare for mathematical Olympiads and other competitions
- Enhance their understanding of elementary mathematics and its applications

Question: Where can I find the USSR Olympiad Problem Book?

Answer: The book is available in bookstores and online retailers that specialize in mathematics books. It is published by Dover Publications as part of their "Dover Books on Mathematics" series.

Torque Settings for Volkswagen Engines: A Comprehensive Guide

Q: What is the recommended torque setting for spark plugs in a Volkswagen engine? A: The torque setting for spark plugs in a Volkswagen engine typically varies depending on the specific engine type and year. For most Volkswagen models, the recommended torque setting for spark plugs ranges from 18-25 ft-lbs. Always refer to your vehicle's owner's manual or a reliable source for the specific torque setting for your engine.

Q: How tight should I torque the crankshaft pulley bolt on a Volkswagen engine? A: The torque setting for the crankshaft pulley bolt is critical for proper engine operation. For most Volkswagen engines, the recommended torque setting for the crankshaft pulley bolt ranges from 90-130 ft-lbs. Use a torque wrench and follow the specified torque range to ensure proper tightening and prevent potential damage.

Q: What is the torque setting for the oil drain plug on a Volkswagen engine? A: The torque setting for the oil drain plug on a Volkswagen engine is typically around 25-30 ft-lbs. Tightening the oil drain plug to the proper torque is essential to prevent leaks and ensure a secure seal. Use a torque wrench to achieve the specified torque range.

Q: How much torque should I apply when tightening the camshaft sprocket bolts? A: The torque setting for the camshaft sprocket bolts is crucial for the proper timing and operation of the engine. For most Volkswagen engines, the recommended torque setting for the camshaft sprocket bolts ranges from 20-26 ft-lbs. Tighten the bolts in a specific pattern and sequence as specified in your vehicle's repair manual.

Q: Where can I find reliable torque settings for my Volkswagen engine? A: The most reliable source for torque settings for your Volkswagen engine is the vehicle's owner's manual. You can also refer to official Volkswagen repair manuals or consult with a certified Volkswagen mechanic for specific torque specifications. Following the recommended torque settings is essential for maintaining the integrity and performance of your Volkswagen engine.

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