

# FORMULASI GEL EKSTRAK BAHAN ALAM SEBAGAI ANTIINFLAMASI

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**Bagaimana cara pembuatan gel?** Pembuatan gel dilakukan dengan cara aquades dipanaskan terlebih dahulu hingga suhu 70°C. Karbopol didispersikan dalam aquades tersebut menggunakan stirrer dengan kecepatan 70 rpm sampai homogen. Setelah busa hilang, ditambahkan trietanolamin sehingga terbentuk gel.

**Komponen gel apa saja?** Gel mengandung komponen utama yaitu bahan pembentuk gel / gelling agent / basis gel. Basis gel terdiri atas beberapa jenis yang meliputi golongan protein, polisakarida, polimer semi sintetis (derivat selulosa), polimer sintetis, bahan organik, dan surfaktan (Sulaiman dkk, 2008).

**Bagaimana mekanisme pembentukan sediaan gel?** Gel dapat terbentuk melalui penurunan temperatur, tapi dapat juga pembentukan gel terjadi setelah pemanasan hingga suhu tertentu. Contoh polimer seperti MC, HPMC dapat terlarut hanya pada air yang dingin yang akan membentuk larutan yang kental dan pada peningkatan suhu larutan tersebut akan membentuk gel.

**2 Hal hal apa yang perlu diperhatikan pada pembuatan sediaan gel?** Banyak hal yang perlu diperhatikan dalam pembuatan sediaan gel antara lain sifat fisika kimia komponen pembentuk gel, efek dari basis yang digunakan, proses pencampuran bahan dan lain sebagainya.

**Apakah bahan yang cocok untuk membuat gel?** Bahan berbasis polisakarida atau protein merupakan jenis bahan yang biasanya digunakan sebagai pembentuk gel. Beberapa contoh gelling agent yaitu CMC-Na, metil selulosa, asam alginat, sodium alginate, kalium alginat, kalsium alginate, agar, karagenan, locust bean gum, pektin serta gelatin (Raton, et al., 1993).

**Gliserin pada gel untuk apa?** Gliserin dalam sediaan gel sering digunakan sebagai humektan dan ditambahkan pada gel (Rowe et al, 2009). Humektan diperlukan untuk meningkatkan kelembutan dan daya sebar sediaan, melindungi sediaan dari kekeringan karena kandungan airnya tinggi (Voigt, 1994).

**Apa itu pembentuk gel?** Bahan pembentuk gel yang biasanya digunakan yaitu gelatin. Gel mempunyai mekanisme pembentukan sebagai berikut, apabila senyawa polimer atau mikromolekul (struktur kompleks) yang bersifat hidrofil (hidrokoloid) didispersikan kedalam air maka akan mengembang.

**Apa faktor yang paling penting untuk menghasilkan sediaan gel yang baik?** Faktor yang paling penting untuk menghasilkan sediaan gel yang baik adalah memilih gelling agent yang akan dipakai. Gelling agent merupakan bahan yang digunakan untuk menjaga konsistensi cairan padatan dalam suatu bentuk gel (Hariningsih, 2019).

**Kenapa metil paraben dilarutkan dalam propilen glikol?** Metilparaben yang dikombinasikan dengan propilen glikol menghasilkan efek yang sinergis, sehingga aktivitasnya sebagai antimicrobial akan lebih efektif. Selain sebagai antimicrobial, propilenglikol juga berfungsi sebagai humektan.

**Berapa pH yang baik untuk sediaan gel?** Uji pH dilakukan dengan cara mengukur pH gel menggunakan pH meter yang dicelupkan dalam sampel gel sebanyak 0,5 gram yang telah dilarutkan dalam 50 ml aquadest, kemudian diamati hasilnya (Mikhanian et al., 2019). Nilai pH yang baik untuk kulit yaitu 4,5-6,5 (Naibaho et al., 2013).

**Mengapa dalam sediaan gel perlu ditambahkan pengawet?** Tingginya kandungan air dalam sediaan gel dapat menyebabkan terjadinya kontaminasi mikrobial, yang secara efektif dapat diindari dengan penambahan bahan pengawet, stabilisasi dari segi mikrobial di samping penggunaan bahan- bahan pengawet seperti dalam balsam, khususnya untuk basis ini sangat cocok pemakaian metil dan ...

**Berapa konsentrasi gelatin sebagai gelling agent?** Penggunaan gelling agent dengan konsentrasi 2% dan rasio gelatin–kappa karagenan sebesar 2:1

menghasilkan jeli dengan karakteristik fisik terbaik yang menyerupai produk jeli komersial.

**Apa saja yang termasuk kedalam uji kualitas fisik pada sediaan gel?** Uji mutu fisik sediaan gel yang dilakukan meliputi uji organoleptik, homogenitas, pH, daya sebar. Analisis data dilakukan secara manual dan disajikan dalam bentuk tabel.

**Gel terdiri dari apa saja?** Gel merupakan sistem semi padat terdiri dari suspensi yang dibuat dari partikel anorganik yang kecil atau molekul organik yang besar, terpenetrasi oleh suatu cairan. Gel membutuhkan basis yang bersifat polimer yaitu polimer alami, semi sintetik dan sintetik.

**Apa saja Evaluasi sediaan gel?** Evaluasi sediaan gel meliputi uji organoleptik, pH, viskositas, homogenitas dan uji kesukaan.

**Apa itu pembentuk gel?** Bahan pembentuk gel yang biasanya digunakan yaitu gelatin. Gel mempunyai mekanisme pembentukan sebagai berikut, apabila senyawa polimer atau mikromolekul (struktur kompleks) yang bersifat hidrofil (hidrokoloid) didispersikan kedalam air maka akan mengembang.

**Bagaimana gel dapat berbentuk?** Gel terbentuk pada pH asam dalam larutan air yang mengandung kalsium dan kemungkinan zat lain yang berfungsi menghidrasi gum. Selulosa murni tidak larut dalam air karena sifat kristalinitas yang tinggi.

**Mengapa dibuat sediaan gel?** Sediaan gel banyak diminati industri obat dan kosmetik karena memiliki keunggulan dibandingkan sediaan yang lain yaitu penyebaran yang baik di kulit, adanya efek dingin ketika diaplikasikan di kulit, pelepasan obat yang baik, serta mudah dicuci.

**Gel itu seperti apa?** Gel (dari bahasa Latin gelu — membeku, dingin, es atau gelatus — membeku) adalah campuran koloidal antara dua zat berbeda fase: padat dan cair. Penampilan gel seperti zat padat yang lunak dan kenyal (seperti jelly), tetapi pada rentang suhu tertentu dapat berperilaku seperti fluida (mengalir).

**Statistical Thermodynamics of Surfaces, Interfaces, and Membranes: Frontiers in Physics**

**Question 1: What is Statistical Thermodynamics?** Statistical thermodynamics applies the principles of statistical mechanics to macroscopic systems, such as surfaces, interfaces, and membranes. It provides a framework for understanding the behavior and properties of these systems by considering the collective motion and interactions of their constituent particles.

**Question 2: Why are Surfaces, Interfaces, and Membranes Important?** Surfaces, interfaces, and membranes play crucial roles in various physical, biological, and technological systems. They are present in diverse materials, including catalysts, semiconductors, liquid crystals, and biological membranes. Understanding their thermodynamic properties is essential for optimizing their performance and designing novel applications.

**Question 3: What are some Key Concepts in Statistical Thermodynamics of Surfaces, Interfaces, and Membranes?** Important concepts include:

- Surface and interfacial tension: Forces that arise at the boundaries of these systems.
- Wetting and phase transitions: The interactions between surfaces, interfaces, and fluids.
- Membrane elasticity and dynamics: The mechanical properties and fluctuations of membranes.

**Question 4: What are the Frontiers in Statistical Thermodynamics of Surfaces, Interfaces, and Membranes?** Current research focuses on:

- Exploring new materials and systems with unique surface and interfacial properties.
- Developing theoretical and computational methods for predicting and understanding behavior.
- Applications in energy, nanotechnology, and biomedical sciences.

**Question 5: What is the Significance of Statistical Thermodynamics in this Field?** Statistical thermodynamics provides a rigorous and powerful approach to studying the complex phenomena associated with surfaces, interfaces, and

membranes. It helps scientists understand their behavior at the molecular level and predict their macroscopic properties, paving the way for advancements in materials science, nanotechnology, and other fields.

**Where is the VIN number on a Honda FES 125?** Locate the 17-digit Vehicle Identification Number (VIN) printed on the frame of your Honda motorcycle. This is often stamped onto the right side of the steering head, where the front fork is mounted on the frame. The VIN is also imprinted on a metal tag located on the left side of the frame above the motor.

**Where is Honda 125 engine number?** Finding the Engine Serial Number The engine serial number is stamped into the side of the engine. All Honda engine serial numbers have a 4 or 5 letter prefix followed by a 7 digit number.

**How do I find my Honda VIN number?** The easiest place to find the VIN is on a plate fastened to the top of the dashboard. You can see it by looking through the windshield on the driver's side. It is also on the certification label attached to the driver's doorjamb, and is stamped on the engine compartment bulkhead.

**How to check 125 chassis number?** The Chassis Number can be found near the bike's handle or motor. If you are finding it difficult to locate your bike's Chassis Number, you can seek the help of a mechanic. The bike's Chassis Number is often mentioned in the Owner's Manual and Registration Certificate.

**How do I decode my Honda engine number?** Finding the Engine Model To find the model number, look for a model number sticker on the engine. All Honda engines model numbers start with the letter "G," such as "G100", "GX610", or "GXV160." This is the base engine model. The engine model and serial number should be adequate for most of your needs.

**How to check engine number?** An engine number is a unique identification number assigned to each engine of a vehicle. You can generally find the engine number embossed on the engine block. You can also check your vehicle's registration certificate, insurance policy, or ownership manual provided by the car dealership for the engine number.

**How to check VIN number?** Look for your car's VIN at the front of the dashboard, on the driver's side of the vehicle. It's easiest to see your VIN from outside the car, looking in through the windshield, at the area where the hood ends and the windshield begins. Or, look for the VIN on the post of the driver's side door.

**Can I find VIN number online?** Finding a vehicle's VIN is quite simple. Online vehicle history services are your go-to solution for retrieving VINs from registration numbers.

**Where can I find Honda serial number?** For certain models, the dealer may have placed a label with the device serial number on a sticker inside the glove box. For year 2001 and later models, you may obtain the serial number from the device display. For models earlier than 2001, the serial number is located on the back of the device.

**Where is the VIN number on a Honda CG125?** Yeah, it its on the right hand side of the frame, near to the headstock. On my 1997 CG125, it was just stamped into the frame by Honda when it was new, and no such VIN 'plate' was attached.

**Where to find VIN number on Honda scooter?**

**Where is the VIN number on a Honda Forza 125?** You will find your motorcycle's VIN number stamped onto the right side of the headstock, where the steering stem is located.

**Where is the VIN number on a Honda sh125?** Hi, The Vehicle Identification Number (VIN) may be stamped on the registered number plate. The Vehicle Identification Number (VIN) is also stamped on the right side of the frame near the rear shock absorber. See attached image.

## **Structured Computer Organization, 6th Edition: Comprehensive Solutions**

**1. Explain the concept of a central processing unit (CPU) and its primary components.**

**Answer:** The CPU is the central component of a computer that executes instructions and controls the overall operation of the system. It consists of the control unit, which

manages program execution, and the arithmetic logic unit (ALU), which performs arithmetic and logical operations on data.

## **2. Describe the role of the memory hierarchy in a computer system.**

**Answer:** The memory hierarchy is a layered organization of memory that provides varying levels of speed and capacity. Registers, cache memory, main memory, and secondary storage (e.g., hard drives) form this hierarchy, with each level offering a faster access time and smaller capacity than the next.

## **3. Explain the concepts of sequential and parallel processing.**

**Answer:** Sequential processing involves the execution of instructions in a linear order, one after the other. In contrast, parallel processing involves the simultaneous execution of multiple instructions, allowing for faster computation. Multi-threading, pipelining, and multiprocessing are techniques used to achieve parallelism.

## **4. Describe the different types of computer buses.**

**Answer:** Computer buses are communication channels that connect various components within a computer system. Some common types include the expansion bus (PCI Express), memory bus (DRAM), and front-side bus (FSB). Each bus has a specific role in transferring data between the CPU, memory, and peripheral devices.

## **5. Explain the concept of virtual memory and how it benefits computer systems.**

**Answer:** Virtual memory is a technique that allows a computer to operate with more memory than it physically has. It creates a virtual memory address space much larger than the physical memory available. When a program needs to access data that is not in physical memory, the operating system swaps it with content from physical memory to a secondary storage device (e.g., a hard drive).

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