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Research paper

Understanding the Basic Concept and Formulation of Body Lotion Using Bees Wax

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KEYWORDS

Bees wax
Coconut oil
Vitamin E oil
Cleansing milk

ABSTRACT

Mainly understanding the basic concepts by using machines in the pharmaceutical industry. The beauty and wellness industries are expanding rapidly in India, thanks to improving lifestyles, rising incomes and more awareness of preventative healthcare. Skin serves as a protective shield against several environmental factors, such as smog, sunlight, radiation, dangerous bacteria and chemicals. The purpose of skincare products is to protect degraded skin and generate therapeutic topical effects when applied to the skin's outermost layers. In addition to improving the skin's ability to protect itself, using good skincare techniques can also improve our appearance. The demand for skin care products has risen dramatically as a result of the world's aging population growth and strong marketing tactics by cosmetic corporations. Furthermore, it has been proposed that a key predictor of how well-off people perceive themselves is their skin's health and appearance. Our skin's afflicted area is typically only influenced locally by skincare products. Moisturizers are used to prepare dry skin and body lotion is used to moisturize the skin.

1. Introduction

Cosmetic science: It is the study of the effects that raw materials and mixtures can have on parts of the human body like hair, skin, lips and nails. Your job as a cosmetic scientist is to research and make new perfume, cosmetic, and hair care or toiletry product. The qualification as bachelor' degree in science is sufficient for cosmetic's.

Guidelines for technical SOP text: Technical sop and Technical and administrative SOPs need to involve the specific steps aimed at initiating, coordinating, and recording and/or reporting the results of the activity, and should be tailored only to that activity.

Quality assurance/Quality control: The preparation of appropriate QC procedure (self-checks, such as calibr-

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-ation recounting, reidentification) and QC material (such as blanks –rinsate, trip, field, or method; replicate; splits; spikes; and performance of the methods should be defined.

Quality Assurance: the systematic process of determining whether a product or service meets specified requirements.

Quality control: It is the procedure or set of procedure intended to ensure that a manufacturing product or performed service adheres to a defined set of quality criteria or meets the requirements of the clients or customer. QC is similar to, but not identical with, quality assurance (QA).

Aim: To preparation of Sop's of different equipment and knowing the different type of equipment and machineries, and on training on equipment and instrument depending on cosmetic product.

Objectives:

1. To maintain the quality control and quality assurance.
2. To serve as a training document for technique users about the process for which the SOP was written.
3. To facilitate consistent conformance to quality system requirement and to support data quality.
4. To provide guideline for accurate and timely data collection.
5. Uniformity of performance.

Hands on Instrument:

Powder mixer: Let's look first at some common definitions used in describing powder mixers. As the name suggests, powder mixers are various types of sanitary mixers used to either: Combine two flowable dry materials. Mix a powder into a liquid.

Colour blender: Blender uses values from 0 to 1 to express colours for RGB and HSV colours. Hexadecimal (Hex) values are expressed as RRGGBB. Shorthand hex colours are also supported as RGB, e.g. dark yellow FFCC00 can be written as FC0.

Sieves of suitable mesh size: Mesh is the number of openings in one linear inch of any sieve or screen. A 10mesh sieve will have 10 openings and a 400mesh sieve will have 400 openings in one linear inch. The fineness of any sieve or screen depends upon the width of the wire used.

Ball mill of suitable grinder: A ball mill is a type of grinder used to grind or blend materials for use in mineral dressing processes, paints, pyrotechnics, ceramics, and selective laser sintering. It works on the principle of impact and attrition: size reduction is done by impact as the balls drop from near the top of the shell.

Filling and sealing equipment: Filling and sealing machines are packaging equipment that uses flexible, heat-sealable, plastic film to form packages that can be filled with a product and then sealed, and cut. There are many types of filling and sealing machines.

Weighing and measuring machine: weighing devices are deli and frozen yogurt scales, shipping facility scales, railway scales, and vehicle scales. Measuring devices include gasoline dispensers, taxi meters, electric meters, retail water dispensers, vapor meters, water submeters, and fabric and cordage meters.

Storage tank: A storage tank is a large vessel for storing oil, gas, and other petrochemical products. From here, the oil is transported to a storage tank where it is kept until needed. The oil is first delivered to a 7500-gal.

2. Guidlines for Technical Sop Text

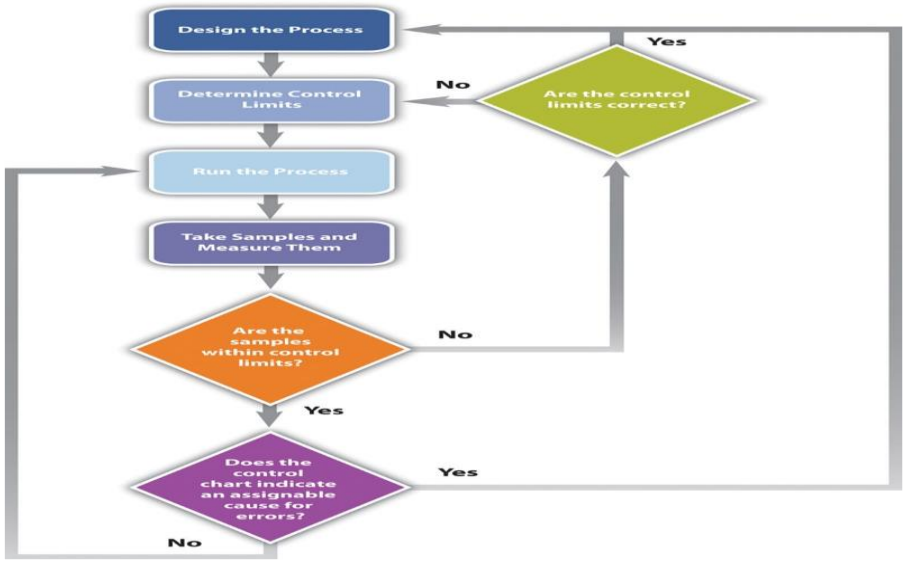
Technical SOP and Administrative SOP are typical structures of SOPs. Technical and Administrative SOP's need to involve the specific steps at initiating, coordinating, and recording and/or reporting the results of the activity, and should be tailored only to that activity.A technical SOP is a standard operating procedure which involves environmental data generation, manipulation, or accumulation, e.g., an analytical process. Technical SOPs can be written for a wide variety of activities.

Examples of SOPs instructing the user how to perform specific analytical method to have followed in the laboratory or field (such as field testing using an immunoassay kit), or how to collect an sample in order to preserve the sample integrity and representativeness (such as collection of samples for future analysis of volatile organic compounds or trace materials), or how to conduct a bioassessment of freshwater site.

Technical SOPs are also needed to cover activities such as data processing and evaluation (including verification and validation), modeling, risk assessment, and auditing of equipment operation.

Citing publish methods in SOPs is not always acceptable because cited published methods may not contain pertinent information for conducting the procedure-in-house.

Technical SOPs need to include the specific steps aiming at initiating, coordinating, and recording and/or reporting the results of the activity, and should be tailored only to that activity. Technical SOPs should fit within the framework presented here, but this format can be modified, reduced, or expanded as required.



3. The different types equipments and machineries required for manufacturing and quality control of different cosmetic products.

The manufacturing of cosmetic products requires a range of equipment and machinery to ensure that the products are of high quality and meet the required standards. The following is a list of some of the equipment and machinery required for manufacturing and quality control of different cosmetic products:

1. **Mixers**: Mixers are used to blend the ingredients of the cosmetic product together. There are different types of mixers available, such as paddle mixers, ribbon mixers, and planetary mixers, which are used depending on the type of cosmetic product being manufactured.
2. **Agitators**: Agitators are used to mix the ingredients of the cosmetic product together. They are used in conjunction with mixers to ensure that the ingredients are thoroughly mixed.
3. **Tanks**: Tanks are used to store the ingredients of the cosmetic product before they are mixed together. They are also used to store the finished product before it is packaged.
4. **Filling machines**: Filling machines are used to fill the cosmetic product into containers. There are different types of filling machines available, such as piston fillers, gravity fillers, and vacuum fillers, which are used depending on the type of cosmetic product being manufactured.
5. **Labeling machines**: Labeling machines are used to label the containers of the cosmetic product. They are used to apply labels to the containers, which contain information about the product, such as the ingredients, the expiry date, and the batch number.
6. **Quality control equipment**: Quality control equipment is used to ensure that the cosmetic product meets the required standards. There are different types of quality control equipment available, such as spectrophotometers, viscometers, and pH meters, which are used depending on the type of cosmetic product being manufactured.

3. Quality Management

Cosmetic products must be manufactured in such a way as to ensure that they are fit for their intended use and do not place consumers at risk due to inadequate safety or quality. The attainment of this quality objective is

the responsibility of senior management and requires the participation and commitment by staff at all levels across all departments within the company, by the company's suppliers and by its distributors.

To effectively achieve this quality objective, there must be a comprehensively designed and correctly implemented quality management system (QMS) in place. Quality management ensures that the manufacture of a cosmetic product is consistent. Quality management for manufacture of cosmetic products consists of GMP and quality risk management (QRM) which are interdependent practices. GMPs fulfil the minimum requirements that a cosmetic manufacturer must meet to assure that their products are of high quality and do not pose any risk to the consumer or any other person using or coming into contact with such products.

This is done through the description of plant activities that are based on sound scientific judgement and risk assessments. QRM is the identification, assessment and prioritisation of risks to the quality of a cosmetic product followed by coordinated and economical application of resources to minimise, monitor, and control the probability and/or impact of compromised quality. ICH guideline Q9 on Quality Risk Management provides principles and examples of tools for quality risk management.

The QMS should be fully documented and its effectiveness monitored. All parts of the system should be adequately resourced with competent personnel, and suitable and sufficient premises, equipment and facilities. The inter-relation between quality management, GMP and QRM is fundamental to the production and control of cosmetic products. GMP cannot be performed effectively without the application of QRM and a QMS in place.

Quality management system:

A QMS appropriate for the manufacture of cosmetic products should ensure that:

(i) Product realisation is achieved by designing, planning, implementing, maintaining and continuously improving a system that allows the consistent delivery of products with appropriate quality standards.

(ii) Cosmetic products are designed and developed in a way that complies with the requirements of GMP.

(iii) Production and control operations are clearly specified and GMP adopted and implemented.

(iv) All roles and responsibilities are clearly specified and documented, including managerial staff. HPRA Guide to Good Manufacturing Practice of Cosmetic Products IA-G0048-2 5/12

(v) Procedures are in place for the manufacture, supply and use of the correct starting and packaging materials and the selection and monitoring of suppliers.

(vi) Processes are in place to assure the appropriate management of subcontracted activities (including comprehensive technical agreements).

(vii) A state of control is established and maintained by developing and using effective monitoring and control systems for process performance and product quality.

(viii) The results of product and processes monitoring are taken into account in batch release, in the investigation of deviations, and, with a view to taking preventive action to avoid potential deviations occurring in the future.

(ix) All necessary controls on intermediate products, and any other in-process controls and validations are carried out.

(x) Continual improvement is facilitated through the implementation of quality improvements appropriate to the current level of process and product knowledge.

(xi) Arrangements are in place for the prospective evaluation of planned changes and their approval prior to implementation taking into account updates to the product information file, where required.

(xii) After implementation of any change, an evaluation is undertaken to confirm that the quality objectives were achieved and there was no unintended deleterious impact on product quality.

(xiii) An appropriate level of root cause analysis should be applied during the investigation of deviations, suspected product defects and other problems.

(xiv) This can be determined using QRM principles. In cases where the true root cause(s) of the issue cannot be determined, consideration should be given to identifying the most likely root cause(s) and to addressing those. Where human error is suspected or identified as the cause, this should be justified having taken care to ensure that process, procedural or system-based errors or problems have not been overlooked, if present. Appropriate corrective actions and/or preventative actions (CAPAs) should be

identified and taken in response to investigations. The effectiveness of such actions should be monitored and assessed, in line with QRM principles.

(xv) Satisfactory arrangements exist to ensure, as far as possible, that the cosmetic products are stored, distributed and subsequently handled so that quality is maintained throughout their shelf life.

There is a process for internal audit, which regularly appraises the effectiveness and applicability of the quality system.

Senior management has the ultimate responsibility to ensure an effective QMS is in place, adequately resourced and that roles, responsibilities, and authorities are defined, communicated and implemented throughout the organisation.

Senior management's leadership and active participation in the QMS is essential. This leadership should ensure the support and commitment of staff at all levels and sites within the organisation to the quality system. HPRA Guide to Good Manufacturing Practice of Cosmetic Products IA-G0048-2 6/12 There should be periodic management review, with the involvement of senior management, of the operation of the quality system to identify opportunities for continual improvement of products, processes and the system itself. The quality system should be defined and documented. A quality manual or equivalent documentation should contain a description of the QMS including management responsibilities.

Hands on Instrument

Powders:- Face-powder, cake make-up, compacts, face-packs, masks and rouges etc.

Equipments:

(a) Powder mixer of suitable type provided with a dust collector.
(b) Perfume and colour blender.
(c) Sifter with sieves of suitable mesh size.
(d) Ball mill of suitable grinder.
(e) Trays and scoops (stainless steel).
(f) Filling and sealing equipment provided with dust extractor.
(g) For compacts:-
  (i) a separate mixer
  (ii) Compact pressing machine.
(h) Weighing and measuring devices.
(i) Storage tanks.

Cosmetic powder pressing machine:-

For the medium and large-scale production of compressed powder cosmetics, a fully automatic pressing solution is a must. Traditional solution are energy-inefficient and inflexible. A modern, modular and low-energy pressing machine will reduce operation costs while maintaining maximum line efficiency and product quality.

Powder mixer of suitable type provided with dust collector

1. Considerations in Dust Collector Design for Bulk & Powder Applications

Bulk & powder dust collection requires a heavy-duty, high-CFM dust collector. But there are ways to cut down on space requirements, energy consumption and maintenance for your dust collector. These are some features you should look for when choosing a dust collector for bulk solids and powders.

Space Savings

Bulk & powder applications can generate large volumes of dust, requiring a high airflow (in cubic feet per minute, or CFM) for collection. If space is a concern, look for features that will help you cut down on the footprint of the industrial dust collector. Cartridge-style industrial dust collectors will have a smaller footprint than baghouse collectors with similar dust collection capacity, and they are suitable for the majority of bulk & powder applications. Look for these space-saving features in a cartridge-style industrial dust collector.

- **Advanced filter design:** The filters are the heart of a dust collection system. Advanced filters (with more usable square feet of media) can reduce the floorspace requirements for your dust collector by reducing the number of cartridges required per CFM, allowing for a smaller overall footprint.
- **Modular construction:** A modular dust collector can be sized more precisely for your application and designed to fit within your space constraints.
- **Indoor/outdoor suitability:** Placing the dust collector outside provides maximum space savings for your facility. If that's the plan, make sure the dust collector is built to withstand the elements. Look for heavy-duty steel construction with powder coating both inside and out.

Filter Protection

Heavy dust from moving and processing bulk solids and powders can load filters quickly. Choose the right filters for the job and look for filter-saving dust collector features.

- **Filter Media Selection:** It is important to select filter media that is appropriate for the type of dust you are collecting. Depending on your dust, you may require filter media that is anti-static, hydrophobic or fire retardant. A PTFE-coated cartridge filter provides superior particulate release and a high level of filtration efficiency.
- **Pulsing system:** High-quality filters should be paired with an advanced pulsing system to pulse more dust off of the filters. Look for engineered pulse nozzles that provide even pulsing down the entire length of the filter for efficient filter cleaning. Effective filter pulsing will extend filter life and cut down on maintenance. Automated pulsing systems that turn on in response to filter loading (as measured by pressure drop across the filters) cut down on energy use and maximize efficiency.
- **Vertical Filters:** Cartridge-style industrial dust collectors should have filters oriented vertically to allow dust to fall off the filter media and into the collection bin.
- **Intake Design:** If dust is heavy or abrasive, the intake can be designed to allow heavy dust to fall out of the airstream before hitting the filters. Baffles can also be used to protect filters from heavy dust.

2. Energy Savings

- **VFD motor:** A Variable Frequency Drive (VFD) motor can be a big energy saver for bulk & powder applications. VFD reduces energy use by ramping the blower speed up or down to compensate for filter loading. When filters are new and clean, the blower can run at a reduced speed, saving energy. As filters become loaded and pressure drop increases, the blower speed increases to compensate. Without VFD, the dust collector blower must run at maximum speed at all times. A VFD motor may reduce energy costs by up to 30%.

Maintenance Reduction

- **Segmentation:** For heavy powder applications, the dust collection system should allow segmentation so that one part of the unit can be shut down and maintained while other parts are still operating.

- **Bin design:** Bulk & powder applications can generate large quantities of dust, so make sure your collection bin design is appropriate for your application. Some applications may fill multiple bins or 55-gallon drums per day. To avoid disruptions to your operations, add a rotary valve between the bin and the dust collector hopper to allow for bin changes without shutting down the collector. For very heavy applications, a conveyor system can be used to collect dust in large bins or silos.
- **Bin sensors**: A sensor system can be added to the collection bin to monitor dust levels and provide an alert when the bin needs to be changed.

Combustion and Fire Safety

Many bulk solids and powders produce highly combustible dust, including grain dust, starches and sugars, plastic fines, and many pigments and chemicals. When collecting combustible dust, the dust collector must be equipped with explosion safety features that comply with OSHA and NFPA safety standards. A deflagration system limits damage if a combustion event occurs inside the dust collector. Dust collector explosion safety elements may include:

- Heavier doors and side panels.
- Explosion vent panels, which provide pressure relief by blowing out to safely direct the energy of an explosion when pressure inside the collector rises to an unsafe level. These panels must be carefully placed to direct explosive energy away from people.
- A rotary airlock between the collector and the collection bin or hopper. This prevents dust in the hopper from escaping back into the dust collector chamber and providing additional fuel for the explosion.
- An isolation valve to prevent a pressure wave from propagating back into the facility and triggering a dangerous secondary explosion.

3. Designing a Dust Collection System for Bulk Solids and Powders

Dust collection system design for bulk & powder applications includes not only the dust collector itself but also intakes, ductwork and hoods or enclosures for dust-producing processes. An industrial ventilation engineer must design the system holistically in accordance with ACGIH-recommended practices for bulk & powder dust control.

RoboVent Senturion is a tough, efficient dust collector designed with heavy bulk & powder applications in mind. With a modular design and advanced filters, Senturion delivers high performance with a footprint that is about 20% smaller per CFM than the competition. Senturion features:

- The smallest footprint per CFM in the industry
- Modular design for maximum flexibility and reduced project costs
- Heavy-duty 7- and 11-gauge steel construction with powder coating inside and out
- An advanced pulsing system for ultimate filter protection
- High efficiency and energy savings.

Shifter with sieves of suitable mesh of size.

Characteristics

Other characteristics:-

for grain, for powders

Diameter:-

Min.: 380 mm (15 in)

Max.: 1,430 mm (56 in)

DESCRIPTION:-

By shaking force to filter the request particle size, it can process the most 4 sizes of particle with 4 layers of screen. Quick replacement of the sieving screen.

• It's suitable for any powder, granular and liquid.

• Easy operation and powder won't fly out.

• Screen could be changed speedily. Material Properties Oily Non-Oily Fineness 3mm ~ 400mesh Capacity 30kg ~ 5000kg Production Methods Single Machine.

Ball mill of suitable grinder:-**Ball Mill (600-45μm)**

Ball mill has been used in many industries for a long time, the technology is quite mature already. But there are still some problems, such as, lots of investors expressed that the metal balls are easy to be worn out and the energy consumption is quite high. So we optimized it. We improve the structure design and adopt new material, which obviously reduced the cost of spare parts. And we produce various types of ball mill to meet different requirements, for example, dry ball mill is mainly for producing common powder, wet ball mill is widely used in mineral dressing.

Model	Feed size (mm)	Power (kw)	Ball load (t)
Φ900×1800	≤20	18.5	1.5
Φ900×3000	≤25	22	2.7
Φ1200×3000	≤25	37	3.5
Φ1200×4500	≤25	55	5
Φ1500×3000	≤25	75	7.5
Φ1500×5700	≤25	130	12
Φ1830×3000	≤25	130	11
Φ1830x6400	≤25	210	21
Φ1830×7000	≤25	245	23
Φ2100x3600	≤25	210	19
Φ2200x4500	≤25	280	27
Φ2200x6500	≤25	380	35
Φ2200x7000	≤25	380	35
Φ2200x7500	≤25	380	35
Φ2400x4500	≤25	320	30
Φ2400x8000	≤25	410	36
Φ2700x3600	≤25	400	39
Φ2700x4000	≤25	400	40
Φ2700x4500	≤25	430	48
Φ3200x4500	≤25	800	65
Φ3200x5400	≤25	800~1000	81.6
Φ3600x4500	≤25	1000	88
Φ3600x6000	≤25	1250~1500	117

Filling and sealing equipment provided with dust extractor:

Dust Extractor or dust collector is the equipment uses to gather unwanted powders sticked onto a particular machine. Its major application is in pharmaceutical solid dosage form section where bulk dosing preparations done. In tablet section it is uses to gather extra powder from tablet press machine and tablet counting machine. In capsule section it is uses in capsule filling machines and capsule polishing machines for gathering excess powder.

Dust Collector is an auxiliary equipment which is attached to any other equipment to gather excess powder during a particular process. Equipment made from Stainless Steel 316 grade materials with mirror polish from inside and outside. Structure made from 304 grade of stainless steel. There is filtration cloth provided inside the equipment, so any particles which is available in the air does not affect the powder and one can reuse the powder collected into the equipment.

Filling and sealing:- A pouch filling and sealing machine is a type of packaging machinery that fills and seals pre-made pouches with products such as powders, liquids, and granules 123. The machine is designed to work with different types of pouches, including spouted, stand-up, and flat pouches.

The machine works by gripping a pre-formed pouch, filling it with the product, and sealing it at speeds of up to 200 bags per minute 4. The process involves moving the bag in an intermittent rotary fashion to different stations positioned in a circular layout. Each station performs a different packaging task.

There are different types of pouch filling and sealing machines available in the market, including rotary and inline machines.

The filling process is accomplished by connecting the bagging machine to a multi-head weigher or other filling machine such as a screw or volumetric filler. The two machines are electronically synchronized so that once the bag is ready, the product is automatically inserted.

Weighing and measuring devices

Automated powder dispensing is an approach that can save time and deliver highly reproducible results, giving you freedom to focus on other critical elements of your analysis.

The weighing of powders always presents a challenge, due to their variable nature and wide range of physical properties. Powders can vary greatly in density and particle size, leading to vastly different characteristics. For instance, they may be light and fluffy with a tendency to be electrostatically charged, heavy and free-flowing, crystalline with varying particle shapes, or sticky with a tendency to absorb moisture (hygroscopic). Some of these traits not only make these substances physically difficult to handle, but can also lead to weighing errors and incorrect measurements.

The weighing of powders is traditionally a manual operation and can be tedious and time consuming to perform. It can quickly become a bottleneck in a workflow, especially when weighing out multiple powders. The use of an automated powder scale, or balance, can help resolve this issue

The Challenges of Dispensing and Weighing Powders

Accuracy and Ease of Handling

Manually weighing out powders with a spatula can be a difficult, slow and repetitive task, particularly when many samples have to be weighed. It also takes a lot of skill and experience to weigh accurately in the low milligram range as the physical properties of different powders vary considerably; statically charged or hygroscopic samples can make that task even more difficult.

Safety

Hazardous and toxic substances, including active pharmaceutical ingredients, can pose a risk to health, even at the nanogram level. It is very easy for particles to become airborne, especially when dealing with light, low density and fluffy compounds, which need to be handled with extreme care.

Data Management and Traceability

All measurement and process data must be fully traceable and securely stored, and readily accessible for audit purposes.

Storage tanks:-

1. Storage Tank ST Series: This is an optimal storage container for temporary storage of powder, liquid, etc. It has a capacity ranging from 4 litters to 1,000 litters and comes with a standard round stainless tank with lid .
2. Cosmetic Product Tank: This is a vessel designed for cosmetic products. It is manufactured by several companies and comes in different sizes and shapes.

Formulation and Evaluation of Body Lotion from Beeswax

Introduction:

Cosmetics are important in today's lifestyle. Natural foods, herbal remedies and natural healing methods are the best options for a healthy lifestyle. Organic vegetable products are also in high demand. The use of herbal cosmetics in the personal careindustry has grown Worldwide cultivation of herbal extracts has made them a household brand in the horticulture industry. Because of their dependability, cosmetics using botanical extracts for skin and hair care are quite popular

Herbal cosmetics come in a variety of formulations. In contrast to synthetic goods, which can have a number of negative impacts on human health, the term "herbal" denotes safety. The skin of people is immediately exposed to cosmetic items, which are frequently utilized. Although the skin acts as a barrier for protection, some substances can pass through the skin and become available to the body's systems Since the skin covers the whole human body and serves as the body's first line of define against the environment, it must be preserved and kept in good condition. The purpose of a skin lotion is to protect the skin from various environmental factors, including weather and to provide calming effects

Types of skin

1. Normal skin: Normal skin appears matte, feels soft and silky and has a healthy, perfect appearance. It is less prevalent than other varieties and has the fewest skin issues

2. Dry skin: Dryness is perceived as a result of changes in the skin that are visual, tactile and sensory in nature. Redness, a dull surface, dry white spots, flakes, cracks and even fissures are a few examples of visual alterations. Touching the skin can also cause it to feel uneven and harsh. Additionally, there is less frictional resistance

3. Mixed skin: Oily skin (large pores, shine, blackheads) on the forehead, jaw, nose and dry skin (flakiness, dullness, fine lines and wrinkles) on the cheeks, jawline and hairline are typical characteristics of mixed skin

4. Oily skin: One of the most frequent dermatological issues that individuals experience is oily skin. On the cheeks, forehead, nose and chin, increased pores may also be present, giving oily skin a shiny, greasy appearance. A greasy surface plugged pores and acne can all result from glands producing too much sebum, which causes oily skin

5. Sensitive skin: The sensitive skin responds, observes redness, skin is dry, frequently gets rashes, frequently breaks out and sunburns quickly. Skin hypersensitivity to external stimuli is a condition known as sensitive skin

Benefits of Body Lotion: The biggest advantage of utilizing body lotion is its ability to moisturize body. It helps to stop chapped, cracked and chafed skin. Our skin is smoothed, moisturized, softened and scented with body creams. Oily skin is perfectly moisturized by body lotion. Compared to body butter and cream, it is lighter. On the arms, neck and legs, lotions are often administered.

Experimental Section: Body lotion is formulated by using cleansing milk, bees wax, vitamin E capsule, and coconut oil.

Table 1: Composition of cleansing milk

Ingredient	Uses
Milk	Nourishing the skin
Glycerine	It is the moisturizing agent
Turmeric powder	Anti-inflammatory and antioxidant agent

Formulation of cleansing milk: 6 mL of milk was added in 10 mL of glycerine with constant stirring by double boiling method. 1 gm of turmeric powder was added in a mixture. The mixture was cool down at room temperature.

Additionally, cleansing milk purifies the skin by eliminating dirt, makeup and pollutants. In comparison to a face wash, it may feel more moisturizing and relaxing, which helps you and your skin feel cleaner and more refreshed. The first natural products based on substances like essential oils, which served to cleanse the skin as well as hydrate and nourish it, appeared after the first makeup remover milk. Products with a range of packaging and textures, like makeup removal wipes and biphasic lotions made of both water and oil, started to develop at the beginning of the twenty-first century

Table 2: Composition of body lotion

Ingredient	Uses
Cleansing milk	Nourishing and moisturizing agent
Beeswax	A protective barrier on the skin surface
Coconut oil	Emulsifier
Vitamin E	Antioxidant

Synthesis of body lotion: Body lotion formulated by melting 2 gm of Beeswax with 25 gm of Cocoa butter. 15 mL of Coconut oil and 3 capsules of Vitamin E added. 2gm of cleansing milk and 1 mL Tea tree essential oil added for fragrance. The mixture was moulded at room temperature. 40 gm body lotion obtained.

(a) Determination of melting point: By adding the product to a glass capillary and monitoring the temperature as the item is malted. Melting point 59 ˚C found.

(b) Determination of pH: A pH meter was used to determine the pH of the body lotion. The pH of the sample, which was made up of 1 gram of sample and 100 ml of water, was measured and found 6.96.

(c) Determination of stability: 2 gm of formulated body lotion kept at 5-10 ˚C and25-35 ˚C (RT) for 3 months and check weight.

(d) Organoleptic characteristics: The color, odor and appearance of the body lotion were examined.

Table 3

S.No	After	Weight of bod lotion	
		At 5-10c	At 25-35c
1.	1 month	2.02	2.02
2.	2 month	2.01	1.99
3.	3 month	2.02	1.99

Table 4

Sr. no	Product name	Colour	Odour	Appearance
1.	Body lotion	Yellow	Pleasant	Soft, Smooth

(e) Saponification process: 2 gm of body lotion was placed in a 250 ml flask then added 25 mL of 0.5 N Alcoholic KOH solution was then a mixture is refluxed using a water condenser on a water bath for half an hour. the resulting solution is cooled and titrated against 0.5 N HCl solution adding 2- 3 drops of phenolphthalein indicator used. the x ml of acid required is noted. An exactly identical blank experiment is performed. y ml of HCl required is noted.

Formula:

$$\text{Saponification value} = (\boldsymbol{yRBF - xRBF}) \times \boldsymbol{molecular\ Wt.\ of\ KOH} = 129 \text{ mg}$$

(f) Determination of Acid value: 2 gm body lotion was placed in a 250 ml flask and heated in 25 ml ethanol until dissolved. the mixture was cooled and 2-3 drops of phenolphthalein indicator solution were added. The hot solution was titrated with 0.1 N methanolic potassium hydroxide and a permanent, faint red-white color was obtained.

Formula:

Acid value= $\boldsymbol{x\ ml\ of\ 0.1N\ KOH \times Equivalent\ weight\ of\ KOH}$ = 89.6 mg

(g) Antimicrobial Activity: Using cultures of the organisms that were 24 hours old, the antibacterial activity of the organisms was evaluated. The nutrient agar medium plates were created using 15 to 20 ml of nutrient agar media and 90 cm sterile Petri dishes. The plates were contaminated with 0.1 percent inoculums after they had solidified for five to ten minutes. For the agar disc diffusion process, agar discs with a diameter of 5 mm were created using No. 1 Whatman filter paper or newspaper and sterilized in an autoclave. The discs were then filled with varied sample concentrations. The plates were then kept at 37°C for an additional 24 hours of incubation. The plates were left to stand for 30 minutes before being incubated at 37°C for 24 hours. The inhibitory zone's mm-diameter was used to measure the antibacterial activity against Bacillus subtilis (gm +Ve) and Escherichia Coli (gm -Ve) strains. By assessing the zone of inhibition against the test pathogens, antimicrobial activity was assessed

Table 5: Antimicrobial activity

Sample	Zone of inhibition in (mm)	
	Bacillus subtilis	Escherichia coli
Formulated Body lotion	15	12
Standard-Ampicillin	8	6

Table 6.1: Costing of body lotion

Sr. no	Ingredient	Amount	Price/100gm	Quantity	Price
1	Beeswax	100gm	150rs	2gm	3rs
2	Coconut oil	100ml	42rs	15ml	6.3rs
3	Vitamin E	10 capsules	33rs	3 capsules	9.9rs
4	Cleansing milk	57ml	38rs	2ml	1.33rs
5	Rose oil	57ml	290rs	2ml	5.34rs
		Total			**26 approx**

Table 6.2: Costing of body lotion

Sr. no	Ingredient	Amount	Price/ 100gm	Quantity	Price
1	Beeswax	100gm	150rs	3gm	4.5rs
2	Coconut oil	100ml	42rs	16ml	6.6rs
3	Vitamin E	10 capsules	33rs	4 capsules	13.2rs
4	Cleansing milk	57ml	38rs	3ml	1.99rs
5	Rose oil	57ml	290rs	3ml	8.01rs
		Total			**34 approx**

Table 6.3: Costing of body lotion

Sr. no	Ingredient	Amount	Price/100gm	Quantity	Price
1	Beeswax	100gm	150rs	4gm	6rs
2	Coconut oil	100ml	42rs	17ml	7rs
3	Vitamin E	10 capsules	33rs	5capsules	16.5rs
4	Cleansing milk	57ml	38rs	4ml	2.66rs
5	Rose oil	57ml	290rs	4ml	10.68rs
		Total			**43 approx**

Table 7: Comparison of body lotion with market price

Name of body lotion	Price	Gm
Body lotion	21rs	20gm
Vaseline body lotion	78rs	20gm
Lakme body lotion	275rs	20gm
Maybelline body lotion	230rs	20gm
Dove body lotion	130rs	20gm
Himalaya body lotion	70rs	20gm

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