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Cosmetic Science

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Abstract:*Cosmetics, also known ikeup or ake-up. ae care substances used to enhance the appearance or order of the human body. They are generally mixtures of chemical compound some bang derived from natural sources (such as coconut oil) and many being synthetics .In the U.S., the Food and Drug Administration (FDA), which enhance cosmetics, defines cosmetics as "intended to be applied to the human body for cleaning . Beautifying promoting attractiveness, or altering the appearance washout affecting the body's structure or functions. This material intended for use as component of a cosmetic product. The FDA specifically excludes soap from this category.*

Keywords: Cosmetics.

I. INTRODUCTION

Cosmetics:
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INDUSTRY
The manufacture of cosmetes is dominated by a smmlnunber of mulinational corporation’s thatoriginated in the early 20th century, but the distribution and sae of cosmetics is spread among awide range of businesses. The workd's largest cosmetieconpanies are LOreal Procter &Ganble, Uniever, Shiseido and Estée Lauder. In 2005, the market olme of the cosmeties industry in the US, Europe, and Japan was about EUR 70 By. In the Unted States, the cosmetic industry's sze was USS42.8 bilon n 2008.In Germuny, the cosmetic industry generated E12.6 billion of retail sales in 2008,which mkes the German cosme tie ndustry the third largest in the workd, after Japan and the Unted States. German exports of cosmetics reached €s.8 bilion in 2008, whereas inports of cosmetics totaed €3 bilion.Theworkdwdecosetics and perfume ndustrycurrenty generates an estimated anualturnover of Ussi70 bilon (acconding to Earostaf May 2007). Europe is the eadng market,

OVERVIEW OF DRUG AND COSMETIC ACT 1940 &1945

- POSITIN TILL 1930: India was largely dependent on import of modern medicines until after first word war.
- In August 1930 the government of India appointed a drug Enquiry Committee under the chairmanship of colonel R.N. Chopra, to go in to the question of adulterated & substandard drugs sold in country & to recommend step by which this menace could be control.
- The Drug Enquiry Committee submitted its report in 1931, the government of India could not give effect to its recommendation till 1937.
- After passing of the government of India Act, 1935, drug became provincial subject & therefore center could pass law in respect of only imports.
- The drug import Bill was prepared & placed for consideration before the assembly in 1939. This was not acceptable to the public & provinces for uniform & comprehensive legislation. This led to the introduction of the Indian Drug Bill in the Central Legislature. It was passed & received assent of Governor General in Council & became Drug Act in 1940

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CLASS OF DRUG PROHIBITED FROM IMPORT

- Misbranded drugs
- Drugs of substandard quality
- Drugs claiming to cure diseases specified in Sch-J
- Adulterated drugs
- Spurious drugs

CLASS OF COSMETIC PROHIBITED FROM MANUFACTURING

- Prohibition of manufacture
- Manufacture of other than in Sch-C/C
- Manufacture of those in Sch-C/C
- Manufacture of Sch-X drug

CLASS OF COSMETIC PROHIBITED FROM SALE

- Classes of drugs prohibited to be sold
- Wholesale of biological (C/C) drugs
- Wholesale of other than those specified in CIC, and X
- Wholesale of Sch-X drugs

CONDITION FOR OBTANING LISCENCE FOR IMPORTDOCUMENTATION

A. MASTER FORMULA RECORD (MFR)

A Master Formula Record is defined as an approved master document, with instructions of how the entire manufacturing process must be performed for each batch size of each product to be manufactured. This document ensures that there is uniformity across batches of the same product. The MFR must be prepared, signed and dated by one competent individual, and independently checked, signed and dated by another competent person in the quality department. All processing of a given batch must proceed as per its MFR.

B. BATCH FROMULA RECORD

Batch manufacturing record should be prepared from each intermediate and api formulation and should include complete information realeating to the manufacturing and control of each batch

C. QUALITY AUDITS

A quality audit is an independent evaluation performed to review if activities are performed in a manner to comply with set objectives defined in the company's quality system. In the pharmaceutical industry, audits are an effective means of verifying if the different departments comply with cGMP regulations. Purpose of the

D. Audit

Audits serve to verify if the production and control systems are operating as intended. They help to uncover problem areas and thus, allow the timely correction of issues. Regular audits help to provide confidence that the organization is functioning under effective control.

Audits performed in problem situations such as product recall or repeated market complaintsis useful to identify non-compliance with cGMP and to drive initiatives to take the necessary corrective actions.

E. Audit Types

Quality audits may be of three types – internal audits or self-inspections, external auditfor contract manufacturing/testing and regulatory audits performed by regulatory bodies. Internal audits are done by auditors within the company to assess cGMP compliance, identify problem areas and take corrective action, and to prepare for audits by regulatory bodies.

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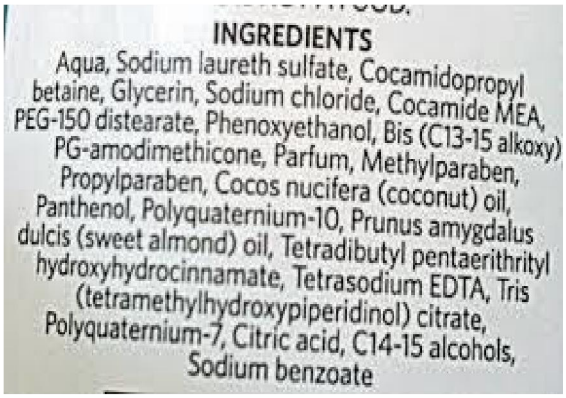
F. DISTRIBUTION RECORDS

Batches are released for distribution by the QC department only after thorough testing and approval. The warehousing department must maintain records of batches released for distribution in a systematic manner. For every batch of product, it is important to maintain distribution records in sufficient detail to be able to trace to which places the product has been sent. This is critical in the event of a problem with the product batch that necessitates a product recall from the market.

G. HANDLING RETURNED GOODS

Once a product recall has been initiated, the process must be monitored to ensure that the recall is completed within the stipulated timeframe. A check must be performed to evaluate the effectiveness of the recall. Following this, an investigation must be carried out to study the reason for the recall and remedial action must be worked out to ensure the defect does not recur.

II. REVIEW OF THE LIST OF INGREDIENTS ON THE LABELS OF COSMETIC



CURRENT GOOD MANUFACTURING PRACTICES (cGMP)

cGMP is the aspect of QA that ensures the consistent production and control of products to meet pre-determined quality standards. The primary aim of cGMP is to reduce two inherent risks involved in pharmaceutical production – mix-ups and cross-contamination. Mix-up refers to the confusion caused by interchange of materials, whereas cross-contamination is unexpected contamination of one batch of product by another product. cGMP guidelines are prescribed by every country's drug regulatory authority andaccording to WHO, cGMP requires that :

STUDY OF ICH GUIDELINES FOR STABILITY STUDIES.

- QiA(R2)- Stability Testing of New Drug Substances and Products
- QIB-Stability Testing: Photostability Testing of New Drug Substances and Products
- Q1C-Stability Testing for New Dosage Forms
- QID- Bracketing and Matrixing Designs for Stability Testing of New Drug Substances and Products
- QuE-Evaluation of Stability Data

KNOWLEDGE ABOUT SKIN, ORAL CAVITY, HAIR, NAIL AND BODY CAVITIES RELATED PROBLEMS.

A. SKIN REALETED PROBLEM

- Acne
- Atropicdermatatis
- Shigels
- Hives

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- Sunburn
- Contact dermatatis

B. ORAL CAVITY REALETED PROBLEM

- Cavities(tooth decay)
- Gum(peridontal) disease
- Oral cancer

C. HAIR REALETED PROBLEM

- Hair loss
- Hair infection
- Disorder causing itching and scaling

D. NAIL REALETED PROBLEM

- Brittle nails
- Oncholysis
- Paronychia
- Psoriasis
- Oncomycosis

CLEANING AND CARE NEED FOR FACE ,EYELID ,GUMS,DENTAL CAVITIES, HAIR, LIPS,HAND FEET,NAIL,SCALP,NECK,BODYAND UNDER ARM MAINTAIN HYGEINE

CLEANSING AND CARE NEED FOR FACE

- Cleanser's are facial care product that is used to remove make-up, dead skin cells, oil, dirt, and other types of pollutants from the skin of the face.
- Very dry skin may require a creamy lotion-type cleanse

CLEANSING AND CARE NEED FOR EYELID

- Remember to keep your body
- hydrated by drinking lots of water.
- Use creams that moisturize the eyelids to help soften expressionlines.
- Best time to moisturize is after you shower.

CLEANSING AND CARE NEED FOR GUMS

- brushing the teeth properly
- choosing the right toothpaste
- flossing daily
- mouth using mouthwash

CLEANSING AND CARE NEED FOR DENTAL CAVITIES

• Brush your teeth twice a day with
• fluoride toothpaste.
• Floss regularly.
• Visit your dentist routinely for a checkup and cleaning. Tell the dentist about any

CLEANSING AND CARE NEED FOR HAIRS

• Daily care by brushing and combing
• Shampooing the hair in order to maintain its clean liness.
• Treatment of hair for infestation such as live.

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CLEANSING AND CARE NEED FOR LIPS
• Do not touch or lick your lip .
• Follow healthy diet.
• Stay hydrated by drinking lot of water
• Remove make up .

CLEANSING AND CARE NEED FOR HAND
• Exfoliate the dead skin using a serub of salt mixed with olive oil/coconut oil.
• Massage your hand with oil.
• Dip in concentrated tea solution for 15-20 minutes.

CLEANSING AND CARE NEED FOR FEET
• Washing
• Keeping them dry
• Moisturizing
• Removing Jagged skin

CLEANSING AND CARE NEED FOR NAIL
• Manicure
• Nutrional steps in Healthy care
• Daily care

CLEANSING AND CARE NEED FOR SCALP
• Don't forget to
• Preserve moisture.
• Massage.
• Limit chemical treatments.

CLEANSING AND CARE NEED FOR NECK
Mositurizer
Cleanse your neck with a cleansing milk or gentle cleanser a few times a week to make sure there is no skin or dirt build up. Use a product formulated with antioxidants to cleanse to cleanse thoroughly, brighten and protect your skin from free radicals.

CLEANSING AND CARE NEED FOR BODY
• 1 bath every day
• 2.makeour body hydrated.
• 3. mosisturize

CLEANSING AND CARE NEED FOR UNDERARM
• The armpit has a high concentration of hair follicles and sweatglands, thus causing increased sweating in this area of the body.
• It is also packed with lymph nodes, an integral part of the lymphaticsystem that aids your body in fighting infection.
• Regular care can leave you with silky smooth skin and a body primed against everyday infections and bacteria.

FORMULATION CONSIDERATION FOR ETHNIC NEEDS OF COSMECEUTICALS LIKE MOISTURIZING CREAM.

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Light textures for Asian skin

• Asian skin ages less rapidly than Caucasian skin, but once aging begins, it is faster and associated with problems such as hyper pigmentation and an excess of sebum.

• The SEPPIC solution: ingredients and formulas which produce ultra-light, non-greasy textures containing littleor no fragrance. SEPPIC produces a complete range of anti-aging, anti-stress, soothing and brighteningproducts.

Moisturization for African skin

• African skin is thicker and ages less rapidly than white skin. But it is also prone to dehydration, acne and depigmentation issues. In addition, curly textured hair is often weakened by chemical treatments, relaxers andweaves.

• The SEPPIC solution: ingredients and formulas to unifythe complexion, moisturize and purify the skin, andrestore strength and beauty of hair fibers.

Moisturization and protection for Latin skin

Latin skin is thicker and ages very little, so it is less likelyto wrinkle. However, it is more prone to acne, even laterin life. CURRENT GOOD MANUFACTURING PRACTICES (cGMP)

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IV. UNDERSTANDING BASIC CONCEPT

HAND ON INSTRUMENT

1. TEXTURE ANALYZER

• To turn on the instrument flip the switch located in the left back corner to the on position Next turn on the computer and open the exponent software
• Close the help screen before you start testing you need to first calibrate the instrument
• Information on the features of different probes can be found in the texture analysis applications directory
• on the settings screen click on library and choose a TA sequence appropriate for your experiment
• Here we will use return to start, click ok, then adjust TA settings as you desire
• Also, make sure you use the right platform depending on the type of probe
• you're using based on your chosen test
• you can also refer to texture analysis applications directory for details on platform selection
• Now you're ready to run your tests, load your sample on the platform and click on the TA tab on the computer
• Select run a test
• Name your test and choose the folder you want to save your results to, click start test and the instrument will start running
• After your test is complete a results graph will appear on the screen
• From the list check off any calculations you want and click ok, the calculated results will automatically appear
• Create a folder with your course name and group number and save all your files turn off the instrument

2. BROOKFIELD VISCOMETER

• To turn on the viscometer, first turn the power switch to the ON (I) position.
• The display of the screen will then appear.
• The viscometer in the FNH teaching lab comes with a set of 5 spindles..
• Transfer adequate sample to a beaker.
• Make sure the temperature of your sample is consistent during every reading
• because the viscosity is affected by changes in temperature.
• Temperature of the sample should be measured before or during analysis.
• The beaker should be large enough for your selected spindle,and the amount of your sample should submerge the spindle to the etched mark.
• Once the spindle is submerged,
• turn on the motor and the spindle should be spinning.
• MakeMake sure your spindle is always at the centre of your beaker.
• Wait a few seconds, and record the reading that is most frequently displayed in mPas.
• Make sure the percentage value shown on the screen is within the range of 10% to 100%.
• After you finish, turn off the motor and raise the spindle.
• Replace the sample beaker with a waste beaker.
• Use dd water to wash off the sample residue on the spindle.
• WipeWipe the spindle with kim wipes
• Detach the spindle from the viscometer and put it back to into the box

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3. TABLET PUNCHING MACHINE

• Change the status of area & equipment and ensure that dully filled and signed
• status label is affixed on the equipment as per SOP for Status
• Labeling.
• Release the pressure before cleaning the machine.
• Switch ‘’OFF’’ electrical supply, remove all adhering
• powder on the machine
• with the help of vacuum dust extraction pipe.
• Use Compressed Air gun to remove dust from inner area.
• Remove the hopper, feed frame, Tablet chutes, extraction points, granule scraper,
• Studs and kept them in a SS trolley cover with polybag & take it to washing area
• through unclean equipment room.
• Clean the machine parts thoroughly with sufficient potable water by using with
• nylon scrubber & finally rinse with Purified water followed by drying with compressed air.
• Remove the upper punches, lower punches and dies carefully, clean them
• thoroughly with 70% IPA & store them in punches & dies cabinet as per SOP for
• Punches and Dies.
• Remove the following parts from the machine & clean them with 70 % IPA & dry
• with lint free cloth.
• Clean the upper cams with 70 % IPA & dry with lint free cloth.

4. CAPSULE PUNCHING MACHINE

1. Sorter-Cum-Elevator

Check that the sorter-cum-elevator is connected to the capsule hopper of the machine. Emptycapsules should be loaded to the hopper Remove any defective capsule and arrange them diametrically, ensuring that only the correct sized capsule goes to the hopper for easy continuous feed. Capsule Orientation and Loading. Fix the cams in the main shaft by tightening the keys. Adjust the Capsule Release Pin Block height so that capsule falls in the raceway slot properly. The capsules move into seven vertical tracks in an uneven manner but are rectified with the body facing downward to the bushes in the segments.capsules are separated via vacuum where the body moves in the lower segment while the cap remain in the upper segment.There are two loading stations, which load and separate four-ten capsules at a time. For proper filling, the dosing plate and bottom segment should be arranged in such a way that the hole in the dosing plate is aligned to the holes in the bottom segment. The punch guide plate should be adjusted so that it allows the punches to move freely into the holes in the dosing plate.

CheckCheck and set the penetration of the punches to achieve the required fill weight. To avoid downtime, choose the appropriate thickness of thedosing disc Set the air pressure so that it pushes the capsule to the rejection box.The powder filling is then placed in the drug-filling hopper where it would be transfer to the powder tub by the stirr

5. SPRAY DRIER

• Ensure the electric blower is connected to the cyclone collector with the appropriate ductwork and that an appropriate receptacle is placed below the product outlet.
• Start the electric blower.
• Open the main gas shut-off valve.
• Open the pilot gas valve and light the pilot burner.
• Adjust the Partlow temperature control to 200o F.
• Press the burner on button and check the flame through the burner observation port.
• When the drying chamber outlet temperature reaches approximately 180o F begin a small amount of feed. First open the air valve, and then the water feed valve (not the slurry).
• When steady state temperature is attained, switch from water feed to the slurry. Observe atomization and adjust feed air as necessary.

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• Vary burner temperature and liquid feed rate to obtain the desired product characteristics.
• Shut down the burner and close the main gas shut-off valve.

6. FREEZE DRYER

• Turn on Freeze Dryer, by pressing the power button to the ON position on the left side of the machine.
• Open the sample chamber cover tube, and put in the prepared sample and pack it in the appropriate container.
• Adjust the position of the sample container in the sample room so that it is efficient in the drying process.
• Close again the sample chamber cover tube.
• Set the time of each phase with the help of the easykeys button, and the navigation key.
• After the "Main Drying" phase time is finished, the alarm on the engine will beep, and
• turn off the drying process by pressing the "Yes" option on the warning that appears on the display.
• Allow the machine to adjust the air pressure in the sample chamber or slowly rotate the ventilation hole of the sample chamber.
• After there is no air flow into the sample chamber, open the sample chamber cover tube, and remove the sample container, and clean the ice in the condenser with a warm wet cloth.
• Close again the sample chamber cover tube.
• Turn off the machine by pressing the power button to the OFF position.

7. HOMOGENIZER

• Connect the plug into the sock
• Turn on the apparatus by the power button which is located in the back of the apparatus.
• Adjust the speed rate (RPM) by bottom and top arrows which is located in front of the apparatus.
• Enter the specific probe into the first hole on the beam of the probe into the liquid
• which requires to be homogenized. Note that the minimum mentioned item must be followed.Thorough cleaning is necessary after each use, rinse the probe at 5000 rpm (every one5minute) with chloroform, methanol, and ethanol (70 %), respectively.
• At the end don't forget to turn off the apparatus.

8. ULTRASONICATOR

• The sonicator should be filled with water up to the marked water level.
• Turn on the sonicator with the left-most button.
• Select the option to degas with the arrows. Press set display until it reads 5 m. Press I/O to start..
• Select the option to set sonics. Set this to 10 m and press start.
• Repeat with chloroform and then isopropanol.
• After this is finished, turn off the sonicator.
• Use the nitrogen gun to dry the substrates.

9. COLONY COUNTER

• Clean the instrument with dry clean cotton cloth
Switch 'ON' the main power supply. Switch'ON' the instrument. connect plug of the Auto Marker Pen to the probe socket provided on instrument.
• Keep the petri dish on the Wolffhuegel glass of instrument. Adjust the magnifier lens with the help of adjustable knob as convenient.
• Switch 'ON' the illumination. PressPress the 'RESET button. The display will show 00000 Press the 'AUDIO' button. Select the square of Wolffhuegel grid one done simultaneously which is shown on display. RecordRecord the total number of cfu count from
• display in respective annexure. Switch 'OFF the illuminG

V. EXPERIMENTAL / HAND ON ACTIVITIES

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1.preparation and evaluation of antiperspirant crea
PREPARATION
Procedure:
• Mix first five ingredients and heat to 60°C.
• Maintain the temperature at 60°C.
• Heat deionized water to 65°C and add to heated mixture with agitation to emulsify.
• Start cooling with continuous mixing EVALUATION
Both in vivo and in vitro methods are available. But In vitro techniques do not provide a reliable indicator of clinical effectiveness. TheThe two principal methods for the in vivo evaluation of deodorant efficacy are- Determination of the effect of treatment on the skinMicrofloraOifactory assessment of the effects on skin odours. In the other method, olfactory assessmentof the effect of deodorants on body odours may be performed by direct ampitsnifing or by indirect snuffing.

2. PREPARATION AND EVALUATION ANTIPERSPIRANT STICKS:
Take 0.5 g of zinc stearate, 7 g of talc, 0.25 g of zinc oxide, 0.5 g of calcium carbonate and a pinch of mixture containing kaolin, silica and starch in a grinder. Grindgrind all the ingredients taken in the grinder manually and properly. Addadd 1-2 drops of perfume.
Evaluation
• Safety testing:
• Evaluation of irmitation
• Evaluation of contact sensitization
• Evaluation of photodematitis
• Evaluation of toxicity
• Efficacy testing:
A product must reduce the amount of perspiration by at least 20%% to allow a product tobelabeled as an antiperspirant

3. PREPARATION AND EVALUATION OF SHAVING CREAM:
Heat water &water soluble ings. at 60-65C Add to the molten oil & fats heated to the same temperature with stirring Stirring is continued till emulsification is completeCream is cooled about 45C Add perfume & blend it Gently stir before filling in tube,

EVALUATION
• Determination of free caustic alkali
• Determination of total free acids
• Determination of total fatty materials
• Foam formation
• Skin sensitization test

Procedure:
• Melt half qty. of stearic acid with coconut oil & palm oil, in water bath
• Dissolve alkalies in water
• Add melted stearic acid into mixture of alkalies by stirring until complete saponification
• Add remaining portion of stearic acid &glycerin with stirring to form creamy paste• Heat remaining qty. of water to about 45 C add quickly into the cream with stirring
• Add required qty. of perfume & preservatives.
• Stir thoroughly to mix uniformly.30-50 % of soap,
• Stearic acid alone do not produce sufficient foam, but along withcoconut fatty acids are used.
• Generally stearic acid: coconut oil is 75:25 Sodium hydroxide & potassium hydroxide are used in combinatiosaponification of oils.

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• Ratio is 1:5 (NaOH used to increase stability) but NaOH not exceeds
• 15% as it forms thick & stingy product.

EVALUATION
• Determination of free caustic alkali
• Determination of total free acids
• Determination of total fatty materials
• Foam formation
• Skin sensitization test
• Stability of the cream

4. PREPARATION AND EVALUATION OF SUNSCREEN CREAM OR LOTION

Place a 150-mL beaker on a balance and weigh it. Weigh the quantities of cetyl alcohol, benzophenone3, ethylhexylmethoxycinnamate, stearic acid, glycerin, and stearyldimethicone silicate crosspolymer called for in your assigned formulation from Table 1 into the 150-mL beaker. Heat the beaker with the organic mixture in a water bath until all the ingredients have melted.because they may scorch or decompose if they are heated much above the boiling point of water. Measure 78 g of water into a 400mL beaker. Add 1.0 g of triethanolamine to the water. Stir. Heat the water solution to a temperature of 80° to 85°C. After the water solution has reached a temperature between 80° and 85°C, remove it from the heat and slowly pour the melted cetyl alcohol, benzophenone-3, ethylhexylmethoxycinnamate, stearic acid, glycerin, and stearyldimethicone silicate crosspolymer mixture into the water a little at a time, stirring constantly. It may be helpful to hold the 400-mL beaker using a pair of beaker tongs. (Note: If the "organic mixture" has solidified, heat briefly in the water bath to remelt it.) If you pour too fast or if you do not stir, your emulsion will be lumpy or the mixture may not fom an emulsion. Continue stirring until you have a smooth, uniform paste. Label the beaker and set the sunscreen cream aside to cool

EVALUATION OF CREAM

After the sunscreen mixture has cooled, rub a small amount onto you forearm. Describe the texture, and spreadability of the lotion. Does it dissolve into the skin in a reasonable amount of time? Does it leave the skin feeling oily or greasy?

5. PREPARATION AND EVALUATION OF ANTI SUNBURN PREPARATION

The formulation trials were done as per formula given in Table No: 12. The mixture of Miconazole nitrate and Nitrocellulose was dissolved in Ethyl alcohol in therequired quantity using a magnetic stirrer at a constant speed. To above clear solution required quantity of 2HP- β- CD , Salicylic acid, and propylene glycol were mixed thoroughly and made up to the volume to 100ml. The prepared nail lacquer was transferred to a narrow mouthed, plastic screw capped glass bottle.

EVALUATION
• Color
• Odour
• Appearance
• Ph
• viscositY

6. PREPARATION AND EVALUATION OF NAIL LAQUERS
NAIL LACQUER

Add 75% of the solvent and whole of the dilute in aps: mixer. Mix well. NitrcelluloseNitrcellulose is then added with stirrer on Solvent is added +Plasticizer is added Resin is added Mixing is continued for several hours until solution of

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all ingredients is complete Clear lacquer is formed Passed through filter press or centrifuged Pigmented chips or concentrated tinters are addedand mixing is continued Nail lacquer product is formed

EVALUATION

• Before nail lacquer is packed, the following testsshould be
• carried out as a measure of quality control:
• Colour matching
• Drying rate
• Non-volatile content

7. PREPARATION AND EVALUATION OF HAIR TONIC PREPARATION

For the formulation of herbal hair tonic Jojoba oil and Tulsi oil used as active constituents and coconut oil is used as base of formulation. Jojoba oil is easy to mix with Tulsi oil hence firstly boththe oils are mixed together in a separate beaker, in another beaker coconut oil is added then mixture of jojoba and tulsi is added in beaker containing coconut oil. Coloring and perfume added for increasing attractiveness of formulation. Finally it is stirred on mechanical shaker for proper mixing and consistency of formulation

EVALUATION

• pH of formulation

1ml of the oil was weighed in a test tube. 9 ml of water was added. pH of the mixture was determined with the help of a pH meter.

• Viscosity

Viscosity was measured with Brookfield digital viscometer at 100 rpm.

• Appearance

The appearance of the formulation was judged by its colour, odour and consistency.

• Removal

The ease of removal of the formulation applied was examined by washing the applied part with tap water.

8. PREPARATION AND EVALUATION OF BRILLIANT

• Isopropyl myristate
• Cetyl alcohol
• Toilet spirit
• Perfume
• Preservative

Mix isopropyl myristate, cetyl alcohol and toilet spirit together. Addperfume, colour and preservative.

EVALUATION

• Foaming ability and foam stability: Cylinder shake method was used for determining foaming ability. 50 ml of the 1% shampoo solution was put into a 250 ml graduated cylinder and covered the cylinder with hand and shaken for 10 times.
• . Viscosity: This is also an important character and can be measured by viscometer

9. PREPARATION AND EVALUATION OF HERBAL TOOTH PASTE

Gauva leaves were taken and washed in order to take out impurities from them. They were shade dried for about 4 days, after proper drying, they were grounded to a fine powder which was passed throughsieve no -6. The powder was packed in soxhlet apparatus and continuously extraction process was done for about 6hours at 50 degrees C with ethanol. After the extraction process, the product was collected and shade dried for 10 days and the extract was powdered. The standard toothpaste base was formulated. Extracts of Guava leaves and papain powders were incorporated in the base in various Concentron. All the formulations were Filled in regular metal tubes used in

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toothpastes. The storage in was done to correct the problem of Crusting and drying of extruded toothpaste during evaluation and stability studie

EVALUATION

• Tube inertness,
• pH determination
• Determination of arsenic
• Foaming power

10. PRAPARATION AND EVALUATION OF HERBAL TOOTH PASTE

Weigh 5 g of toothpaste in a 100 ml glass beaker. Add 10 ml of water, cover the glass beaker with a watch glass and stand for 30 minutes. Heat the suspension gently to dissolve the detergent if present in it. Stir the suspension with glass rods and transfer it to 250 ml measuring cylinder. Examine if no foam is produced (more than 2 ml). Transfer the residue retained in the beaker to measuring cylinder by adding of 5-6 ml of water. Then make up the cylinder with 50ml of water. Stir the contents with up-down movements to get uniform suspension at 300C. after shaking, keep the cylinder stand for 5 minutes. And final note thevolume obtained with foam + water.

11. PREPARATION AND EVALUATION OF HERBAL MOUTH WASH

Take prepared mouthwash as per the requirement take distilled water 100 ml and add 2-3 drops of clove oil and peppermint oil and then add sodium lauryl sulfate and add coloring agent patent v. All ingredients were mixed beaker.

EVALUATION

• Physical evaluation -Physical parameter such as color, odour taste and consistency was examined by visual examination.
• pH -The pH of prepared herbal mouthwash was measured by using digital pH meter.
• Viscosity- Viscosity is measured with the help of digital viscometer.
• Taste – The taste is strong and remain almost same over the week except for the ambient temperature sample

12. PREPARATION AND EVALUATION OF LIP STICK

• Pigment premilling

The first step involved in the formulation of herbal lipstick is pigment premilling where the agglomerates in the powder are broken down to give the lipstick a homogeneous smoothness and even colony

• Melting and mixing

The next step involved is the melting and mixing stage, since waxes are solid at room temperature and can not be combined with other ingredients to make the waxes melted simple to make this process. Typically it can be combined with oil, and the pigment and other additives are added and blended to form a homogeneous substance to the melted foundation.

• Molding

Molding is the actual phase in which the molten lipstick is poured into metal or plastic mold, the mixture is poured when it is hot so it is helpful to harden and then removed with a slight pressure from the mole.

EVALUATION

• PH test:
• Surface anomalies:
• Solubility test:
• Skin irritation test

13. PREPARATION AND EVALUATION OF LIP BALM

All the above materials were weighed accurately on a digital balance nearest accuracy to 0.1 gm. Preparation method opted for the preparation of herbal lip balm stick was of heating solid raw ingredients at consistent temperature with indirect flame bees wax was crude and grinded into small uniform size and was melted in 50 ml beaker in indirect

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flame with an highest temperature of 90°C and all other ingredientlike vitamin e beetroot juice rose essence almond oil were mixed vigorously and add to the mixture and mixture was stirred continuously till homogenous mixture was obtained and was poured into balm stick moulds just before pouringglycerine was applied over the mould with cotton and the moulds were kept in ice bath aside for about an hour in cool and dry place indirect to sunlight till it solidifies and was used after 48 hours after keeping at room temperature for stability and analytical testin

Evaluation

• Preliminary stability study

The formulation developed was evaluated on Preliminary Stability Tests which included organoleptic characteristics (color, odor and appearance) and spreadability, over at least three days at room temperature and oven temperature As this type of cosmetic form undergoes softening and deformation at temperatures over 50 ºC, the oven condition was chosen as the highest temperature of the stability studyAs this formulation exhibited no organoleptic or spreadability changes, it was submitted to Normal Stability Study.

• Melting point

To determine the melting point, the material was made molten to fill capillaries.The capillaries were coupled to a system with a thermometer and immersed in a vial with water at a controlled temperature. The temperature at which melting of the lip balm sample was observed was considered the melting point

• Organoleptic characteristics

Color and appearance were characterized visually with a loupe of 10x magnification while the odor was compared by the evaluator. The criteria described below were established by the evaluator to determine organoleptic characteristics, with samples analyzed in duplicate during the predetermined time for each condition,

15.PREPARATION AND EVALUATION OF LOTION FRAGRENCE

TRITURATION:

Used for finely divided insoluble powder particles or liquids insoluble powder are added by geometric dilutionLiquids are added by making well in centre. AirAir pocket formation avoided.Involved the use of glass slab when small quantities are used Mortar and pestle used when we have large quantities.

LEVIGATION:

Incorporation of insoluble coarse particles. AlsoAlso known as "Wet grinding". Insolublecoarse powder is rubbed with molten base or liquid or a semi solid base. AA considerable shearing force is applied to avoid grittiness.

EVALUATION

• Sensitivity Test

A portion of lotion was applied on the forearms of 6 volunteers and left for 20 minutes. After 20 minutes any kind of irritation if occurred was noted.

• Washability Test

A portion of lotion was applied over the skin of hand and allowed to flow under the force of flowing tap water for 10 minutes. The time when the lotion completely removed was noted.

• Type of emulsion test

Dye solubility and dilution test was conducted to determine the type of emulsion formed.

14. PREPARATION AND EVALUATION OF CREAM FREGRANCE

As thesq preparations areernulsion type, the total ingredients can be classified into oil phase andaqueous phase. Ingredients of oil phase should be taken in increasing meltiqg point. The materials of least melting point should be taken and melt it. Add the other oil or wax gradually in increasing melting point and melt them with continuous stirring. Take separately the ingredients of aqueous phase and mix them and heat to same temperature as oil phase. Emulsifoing

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agents should be added to specific phase. Mix the two phases with continuous stirring until a,smooth cream is formed. FinallyFinally the product can be milled by triple roller mill. Preservative should be dissolved in the water before making cream. Perfume should be added after the primary cream is formed and cooled but before final milling

EVALUATION

- Determination of pH
- Primary skin irritation test:
- Visual appearance
- Viscosity in cps v/s shear rate in sec-1.
- Spreadability

16. PREPARATION AND EVALUATION OF STICK FRAGRANCE

All the plant powders and cow dung were taken in a clean, dry mortar and pestle and macerated finely. Cow's milk was boiled, and clarified butter was added in it and again digestedon a hot plate for few minutes. This mixture was then added to the powder mix and again macerated finely to obtain a fine paste. A plastic syringe was cut from the apical side so as to open the mouth of the syringe completely. Dhoop sticks were made using the opened syringe and a plunger. These dhoop sticks were dried for 4 days in an oven at 40 0C and then stored in an air tight container. After storage for a month, the sticks were used for evaluation of cleansing activity

EVALUATION

- Organoleptic Test
- Stick perfume preparations were observed for several parameters such as color, consistency, and aroma
- Homogeneity Test

17. PREPPARATION AND EVALUATION OF SIMPLE FLORAL FRAGRENCE

Before manufacturing process begins the sources of suitable fragrances are collected in the manufacturing centre. I.Extraction:

Oils are extracted from plants and other substances by several methods like:

a. Steam distillation: steam is passed through plant materials held in a still, whereby the essential oil turns to gas. ThisThis gas is then passed through tubes, cooled, liquefied and collected. b. Solvent extraction:

The flower parts are dissolved in benzene or petrolatum that

retains the fragrance of the flower. AlcoholAlcohol is used to dissolve the fragrance and heated to obtain it after evaporation of alcohol.

c. Enfleurage:

Flowers are kept in glass sheet with grease that absorb the fragrance of flowers. d.

Expression:

The citrus fruits or plants are manually or mechanically pressed until all the oil is squeezed out.

EVALUATION

Safety testing:

- Evaluation of irmitation
- Evaluation of contact sensitization
- Evaluation of photodematitis
- Evaluation of toxicity

18.PREPARATION AND EVALUATION OF TOILET WATERS

- Take 60% Water in the mixing vessel. (7% water should be kept for dissolving Citric Acid separately)• Run the motor to turn on the agitator for mixing.
- Slowly add Acid Thickener in the swirling water. And wait for complete dissolution.

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• After coagulates dissolves, add 2% of LABSA in the water and wait till homogeneous mixture forms.
• Then add citric acid solution made from the 7% kept water in step 1.
• Add mentioned amount of HCl very carefully without splashes and contacting. (Take Precautions)• Similarly Pour Phosphoric Acid with care.
• Finally, add Color depending on your choice.

EVALUATION

• Temperature Test

Melting temperature test was carried out by placing the preparation in an oven with initial temperature of 50°C for 15 minutes. Then it was observed whether the preparations melted or not. After theinitialobservation, every 15 minutes' temperature was raised 1°C until the preparation began to melt.

• Strength Test

Stick perfume was placed horizontally and about 1.5 cm from the edge of the stick, a load was hung to give pressure. Every 30 seconds the load was added (10 grams) until the preparation was broken.Preparation of fragrence

19. PREPARATION AND EVALUATION OF PERFUMING OF POWDERS/ COLORED POWDER

Take 0.5 g of zinc stearate, 7 g of talc, 0.25 g of zinc oxide, 0.5 g of calcium carbonate and a pinch of mixture containing kaolin, silica and starch in a grinder. GrindGrind all the ingredients taken in the grinder manually and properly. AddAdd 1-2 drops of perfume.

EVALUATION

1.Shade Test:

In this test, the variations of colour shade is determined and controlled. It is carried out by spreading the powdersample on a white paper and appearance is observed which is compared with the standard one. Another method involves, applying powder sample and standard one with the help of puff on the skin and then comparing it. The puff used to perform this test is also used for the final product. Evaluation of colour is carried out by using artificial light.

2. Colour Dispersion Test:

In this test, a sample of powder is spread on a white paper and with the help of magnifying glass., segregation or bleeding of the colour is observed. the colour should be properly distributed in the powder base of the formulation.

3. Pressure Test:

For compaction purpose in compact powders, pressure required. Uniform pressure should be applied to avoid formation of air pockets, which will lead to either breaking or cracking of compact powders. This is because low pressure will make the compact powder soft, whereas high pressure will lead to formation of hard cake.

4. Breakage Test:

In this test, compact powders are allowed to fall on a wooden surface from a height of about 8-10 inches. This is carried out several times and then checking is done to see whether any breakage has occurred on compact powder. If the compact powder remains unbroken, then it shows the resistance to travel and normal handling by the users.

20. PREPARATION AND EVALUATION OF HERBAL TABLET AND CAPSULE

Preparation of 1% acacia solution

Preparation of 1% HPMC-10 solution Take 100 ml distilled water in a beaker. Take 1 gm of HPMC-10 powder and mix in 100 ml distilled water. Stir continuously to form a jelly-like appearance.

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Preparation of 1% sodium alginate solution
Take 100 ml alcohol in a beaker. Add 1 gm of Sodium alginate wder in 100 ml alcohol. Stir properly to mix well.

Formulation of herbal tablets
In this formulation, the dried leaves powder of Nyctanthesarbortristis was used to form a tablet dosage form. The formulation was done byfollowing the wet granulation process and further compression by ing tablet punching machine.

Wet granulation method
Weigh all ingredients accurately, mix well and triturate by using mortar and pestle. The prepared 1% binding agent was added slowly to form a damp mass. Damp mass was transfer through sieve no. 22. Prepared granules are dried at room temperature. The well dried granules are ready for compression.

EVALUATION
• General appearance
The general appearance and color of tablets were found by visual determination.
• Weight variation test:
The weight variation test was performed by following procedure. Weigh 20 tablets individually andconsider as X1, X2,X3,…. .X20. Determine the average weight of 20 tablets X= (X1+X2+X3+….+X20)/20.
• Hardness and thickness test
For each formulation, the hardness and thickness of 20 tablets were determined. Hardness testwas determined by Monsanto hardness tester and the thickness of tablets was determined by Vernier Calipers.
• Friability test
Friability of a tablets can determine in a laboratory by Roche friabilator. The friabilator consists of plastic chamber that rotates at 25rpm, dropping the tablets through a distance of six inches in the friabilator, which is then operated for 100 revolutions. The tablets are reweighed. Compress tablets loss less than 0.5% to 1.0% of the tablet weight are considered acceptable.
• Disintegration time
This test was a time required for the tablet to separate into particles, the disintegration test measure only of the time required under a given set of aconditions for a group of tablets to disintegrate into particles.

21. PREPRATION OF CERTAIN AROMATHIC PREPARATION
CARBONDIOXIDE EXTRACTION
A relatively new method of extraction that is being employed is called carbon dioxide extraction, or CO2. ThisThis process utilizes the "supercritical" s tate of CO2, when it acts both as a gas and a liquid.The required equipment used for this method is quite expensive but yields a higher volume of essential oil, making more expensive oils such as frankincense widely available.

COLD PRESS EXTRACTION
Most high quality citrus essential oils are obtained from a cold pressing of the rind or peel. This process is oftencalled scarification Many citrus essential oils on the market are bulk essential oils of inferior quality made by steam distillation of the peels rather than scarification.

22.INCORPORATION OF COLORS IN POWDER, LIPSTICKS, EYE SHADOW, ROUGE, COMPACTS, MASKARA, NAIL
LACQUERS, SHAMPOO, HAIR OILS/GELS, AFTER SHAVE LOTION, TOOTHPASTE ETC.
Cosmetic colorants are classified as
• ORGANIC

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• INORGANIC
• ORGANIC COLORS

would be the safest, they wereactually originally called "coal tar" because they were derived from coal sources.However, nowadays almost all organic colorants aresynthetic and are available as either water soluble, oilsoluble or insoluble (Lakes) agents in all kinds ofshades. Organic colors (lakes and dyes) are synthetic, chemically very complex molecules and are dividedinto various groups including indigoids, xanthenes, azos, nitros and others.

INORGANIC COLORS

• inorganic colorants are composed of insolublemetallic compounds derived from natural sources (e.g. china clay, carbon deposits), or are synthesized.Inorganiccolors aren't thought to pose the same kinds of health risks as organic colors, so don'trequire certification
• In addition to inorganic colors, natural materials usedtocolor cosmetics, like carrot oil, beet extract and henna, are also considered 'safe and are exemptfrom classification.
• Annatto
• beta-Carotene
• Caramel
• Carmine

23. PERFORM TOXICITY STUDY AS PER DRUG AND COSMETIC ACT COSMETIC PRODUCT

• Cytotoxicity

This is the simplest form of drug toxicity,where the drug or an active metabolite causesserious damage to the cells.TheThe cells of a specifie organ are affected,causing a potentially fatal loss of function ofthe liver or kidney, damage to the eyes or ears,or abnormal clotting of the blood.

• Carcinogenicity

A carcinogen is any substance, radionuclide,or radiation that is an agent directly involvedin causing cancer.SeveralSeveral radioactive substances are consideredcarcinogens.Examples: inhaled asbestosand tobacco smoke.

• Mutagenicity

Some drugs can cause permanent changes tothe DNA of germ cells egg cells and spermcells - leading to mutations which are inheritedby a patient's children.Example nitrogen mustard

• Teratogenicity

Some drugs can cause defects in the development of the fetus, leading to gross abnormalities of the baby Depends on the different stages of organs develop at different times during pregnancy. ExampleExample: Thialidomide

24. PERFORM QUALITY CONTROL TEST FOR CONTAINERS, CLOSURES AND SECONDARY PACKING MATERIALS USED IN COSMETIC

• Test For Cartons

This method is used to access the strength oferectedpackage.Compression

• Carton opening force

The method is used to hold the flat carton asdelivered,by its creases between thumb andTirst finger press.

• Coefficient of friction

Both static and kinetic coefficients of frictioare determined by sliding the specimen overitself under specific test conditions.

• Crease Stiffness

This involves testing a carton board piece andfolding it through 90, It wll then try to recoverits position when bending force is removed.JointJoint shear strengthThis is a method of testing glued lap scam onthe side ofa carton for strength of the adhesive causing a tensile testing machine.

Quality Control Test For Glass Containers

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• Powdered glass test:

Done to estimate amount of alkali leached from the powdered glass, whichusually happens at elevated temperatures. Sample containers are rinsed with purified water and dried.TheThe container are grinded in a mortar to a fine powder and pass through sieve no.20 & 5010gm of sample is washed with acetone and dried.50 ml of purified water is added to the dried sample and autoclaved at 121°C for 30min andcooled and decanted.TheThe decanted liquid is titrated with 0.02N H,SO, using methyl red as indicator.

• . Hydrolytic resistance of glas containers:

Each container is rinse at least three times with co, freewater and flled with same to their filing volume. Vials and bottles are covered and autoclaved at 100°C for 10mins.blumeblumeef 00IM

The temperature is risen from 100 C to 121°C over

20mins.TheThe temp. is maintained at 121°C to 122°C for 60 e an 1 but e than 2 Mins.Menetham 5 btnoe me than 10 The containers are cooled and the liquids are

• .Arsenic test

The test is for glass containers intended for aqueous parenterals.TheThe inner and outer surface of container is washed with fresh

Distilled water for Smin.ThenThen similar steps are followed as performed in the hydrolytic test, Previousilydescrnbed . Til obtaining tinal combined solutions.20ml from the final combined volume is pipetted out an to it 10ml

of HNO, is added and dried in an oven at 130 C.10ml of hydrogen molybdate is added and refluxed for 25 mins. It is cooled and absorbance is measured at 840nm.

QUALITY CORITROL TEST FOR CLOSURES

• Residue on evaporation

Soml of solution A is evaporated to dryness on a water bath and dried at 1059C.TheThe residue weighs not more than 4mg

• Sterilization test:

The closures used tor the preparation of the sample solution shall notsoften or become tacky and there shall be no visual change in the closure.

• .pH of aqueous extract:

To 20ml of solution A,0.1ml of bromothymol blue solution is addedNMT 0.3ml of 0.01M NaOH or 0.8ml of 0.01M HCI is rqd, to change the colorof the solution to blue or yellow respectively.

• Self Stability Test

Pierced ten times with hypodermic needle.ImmersedImmersed in 0.1% methylene blue solution and subjected to a pressure of about 27 KpaRestored to ATM pressure and made to stand for 30mins.TracesTraces of colored solution should not be found.

VI. REPORT WRITING OF COSMETIC SCIENCE

1. In the topic of cosmetic science we see various uses of cosmetic and various product of cosmetic
2. Cosmetic is the product that enchance the external beauty of body.ex: powder ,fragrance,hair oil etc
3. In the frist module we see the what is the history of cosmetic industry then we see the import and export drugs permission and penalties
4. Then anather we see all industry realeted document and cgmp
5. The various problem realetd to the body how to take care of body parts
6. In module 2 we see the various instrumrnt that used in the cometic manufacturing and their sop
7. Then the third and last part is preparation of cosmetic product and evaluation of cosmetic product
8. And the what is the toxicity study ,types of toxicity study
9. The storage condition n for container and bottle we see in this 10}That all we see in the cosmetic science

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