

Coimbatore – 641 021.

## SYLLABUS

Semester-V

**16CHU511B      CHEMISTRY OF COSMETICS & PERFUMES      3H 3C**

**Instruction Hours/week: L:3 T:0 P:0**

**Marks: Internal: 40 External: 60 Total:100**

### **Scope**

This skill enhancement lab course is about the preparation of various cosmetics and perfumes

### **Objectives**

This course enables the student to

1. Understand the preparation of talcum powder, shampoo, enamels, hair remover, face cream and nail polish

### **Methodology**

Preparations of cosmetics and perfumes

1. Preparation of talcum powder.
2. Preparation of shampoo.
3. Preparation of enamels.
4. Preparation of hair remover.
5. Preparation of face cream.
6. Preparation of nail polish and nail polish remover.

### **Suggested Books:**

1. E. Stocchi. *Industrial Chemistry*, Vol –I. UK: Ellis Horwood Ltd.
2. P.C. Jain, M. Jain: *Engineering Chemistry*. Delhi: Dhanpat Rai & Sons.
3. Sharma, B.K. & Gaur, H. (1996). *Industrial Chemistry*. Meerut: Goel Publishing House.
4. Kirpal Singh, 2008, “Chemistry in daily life”, 2<sup>nd</sup> Edition, PHI India Pvt., Ltd



**KARPAGAM ACADEMY OF HIGHER EDUCATION**  
(Deemed to be University)  
Established Under Section 3 of UGC Act 1956)

**Coimbatore-21**

**DEPARTMENT OF CHEMISTRY**

**LECTURE PLAN**

**Chemistry of Cosmetics and Perfumes-  
PRACTICAL**

Name of the Faculty: B. Prabha  
Semester V  
Course Code : 17CHU511B

Department : CHEMISTRY  
Year : III  
Section : A & B

**Total no. of hour's: 12 Hours**

S.NO	Lecture Hours	EXPERIMENT TOPICS
1	3	Introduction about cosmetics, writing the experimental Procedure
2	3	Preparation of talcum powder
3	3	Preparation of soap
4	3	Preparation of shampoo
5	3	Viva-voce
6	3	Preparation of hair remover
7	3	Preparation of face cream
8	3	Preparation of nail polish and nail polish remover
9	3	Preparation of phenyl
10	3	Viva-voce
11	3	Revision
12	3	Model Exam

**Support Materials:**

**Text books :**

R<sub>1</sub>: Jain & Jain, 2003, "Engineering Chemistry", 14<sup>th</sup> Edition, Dhanput Rai Publishing Company  
R<sub>2</sub>: Kirpal Singh, 2008, " Chemistry in daily life", 2<sup>nd</sup> Edition, PHI India Pvt., Ltd.,

**WEB PAGE**

W<sub>1</sub>:[https://cosmetics// preparation of talcum, neilpolish,shampoo....//](https://cosmetics//preparationoftalcum,nailpolish,shampoo....//)

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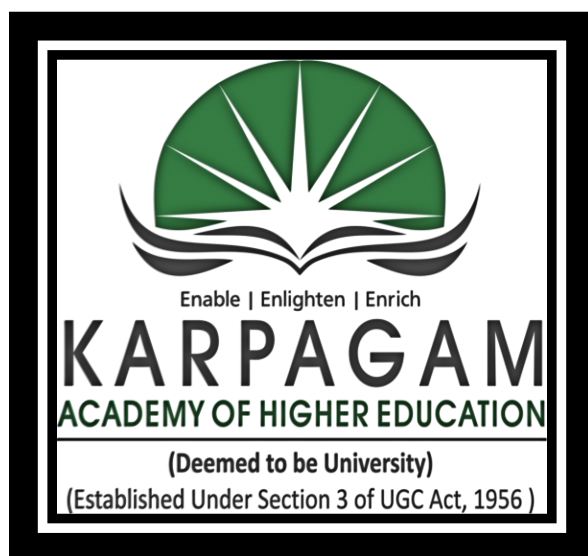
**Coimbatore-21**

**Department of Chemistry**

**Lab Manual**

**By**

**B. Prabha**



## PREPARATION OF TALCUM POWDER

### Aim

To prepare the face powder in laboratory.

### Ingredients

S.No.	Ingredients	Quantity in %
1.	Kaolin (Hydrated magnesium silicate)	8
2.	Calcium carbonate	15
3.	Zinc Oxide	5
4.	Zinc Stearate	5
5.	Magnesium Carbonate	5
6.	Talc (Hydrated Aluminium silicate)	60
7.	Perfume	Small quantity

### Procedure

The Ingredients of kaolin, calcium carbonate, zinc oxide, zinc stearate and talc are taken in the given proportions in the mortar and they are crushed into fine powder by using pestle. The perfume is added to magnesium carbonate in another mortar and mixed well. Finally the second mixture added to the first mixture well and transferred to the container for storage.

### Result

The amount of prepared face powder = ----- g

## PREPARATION OF SOAP

### Aim

To prepare the soap bar from coconut oil.

### Principle

The higher fatty acids of coconut oil are react with KOH to produce the potassium salt of higher fatty acids is formed is known as soap.



### Ingredients

S.No.	Ingredients	Quantity in ml
1.	Oil	25ml
2.	20% NaOH	20ml
3.	NaCl or brine	30-40ml

### Procedure

The 10 ml of coconut oil is taken in the clean 250ml beaker. The oil is gently heated and added 20ml of 20% NaOH. The oily layer of soap is obtained. The mixture is cooled and soap layer is separated from it.

After the appearance of white layer then add 30-40ml of saturated solution of NaCl or brine solution. The soap layer is converted into fine granules in this process. Finally, the soap filtered by using Buckner funnel and dried.

## PREPARATION OF SHAMPOO

### Aim

To prepare the shampoo from cocobetain.

### Principle

Oil + NaOH  $\longrightarrow$  Soap layer + H<sub>2</sub>O  $\longrightarrow$  Shampoo

### Ingredients

S.No.	Ingredients	Quantity in ml
1.	Cocobetain	25ml
2.	20% NaOH	20ml
3.	NaCl or brine	30-40ml
4.	Parafin	5g
5.	Water	Upto 100 ml

### Procedure

To the 250 ml beaker take a 25 ml of cocobetain (oil or milk from coconut). Add 20ml of 20% NaOH to the 25ml of cocobetain and stirred well and gently heated. The oily white layer is obtained. To filter the white layer and add 30-40 ml of brine solution to obtain the fine granules. Then add some water to dilute it. Finally the 5g of paraffin liquefied and add to the solution. It is transferred to a suitable container and shaken well. 4 to 5 drops of perfume is added to it for fine smell.

### Result

The amount of shampoo is = ----- g

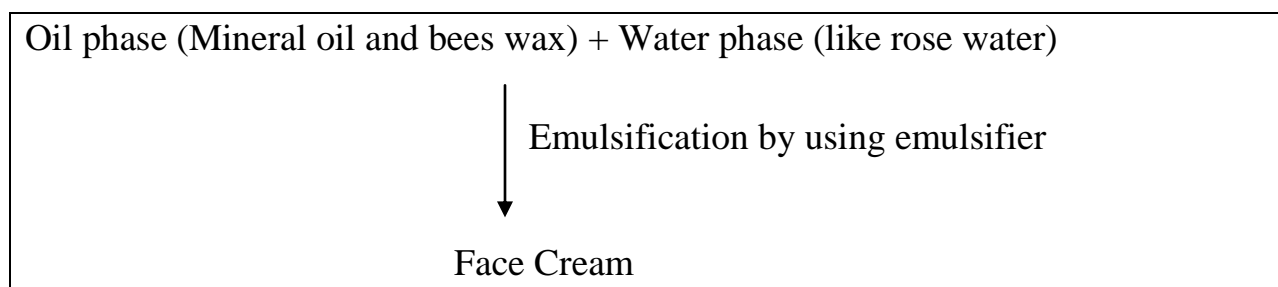
## PREPARATION OF FACE CREAM

### Aim

To prepare the face cream by using borax and bees-wax as main ingredients.

### Principle

Face cream is oil in water emulsion product. It is prepared by emulsification process between oil phase and water phase.



### Ingredients

Phase	Ingredients	Quantity
Oil Phase	i) Bees Wax	0.2g
	ii) Almond oil	5.0g
	iii) Lanolin	0.05g
Water Phase	i) Borax	0.2g
	ii) Rose Water	3.55g
	iii) Preservative	Small quantity
Additional	i) perfume	Small quantity

### Procedure

The oil phase materials which are given in the table are taken in the 100 ml beaker in increasing melting point. The least melting point materials are taken in the beaker and melt it. The oil phase materials are heated to about 75°C. The least melting point material phase also heated to same temperature. When the bees wax in mineral oil is completely dissolved then turns off the heat. After that the second water phase mixture is mixed with oil phase mixture slowly with continuous vigorous stirring until the thick stable emulsion is formed. Add the perfume in the

mixtures when the temperature has fallen to about 35°C. Stir again and stored in suitable container.

### **Result**

The amount of face cream is = ----- g.



## PREPARATION OF HAIR REMOVER

### Aim

To prepare the hair remover

### Ingredients

Ingredients	Quantity
Strontium sulphide	2g
Talc or calcium carbonate	2g
Starch	0.3g
Glycerine	1.5g
Water	4.2 ml
Preservative	Small Quantity
Perfume	Small Quantity

### Procedure

Dissolve the small quantity of preservative in the glycerine. To that portion of the glycerine add sufficient water to make mucilage. The 0.3g of starch with 2 g of calcium carbonate are mixed with remaining glycerin. Add strontium sulphide and perfume in the second portion of mixture. Finally add the mucilage slowly to the second portion and dilute with water for proper consistency to form a film.

Ingredients used as

Strontium sulphide - Depilatory agent (to maintain the  $P^H$  of the solution). Cetyl alcohol is used to obtain the cream like product.

Talc (or) Calcium Carbonate (inert powders) – Used to get proper consistency and preventing quick drying on the skin and to make visible film.

Starch – Used as a thickening agent (Methyl cellulose, mucins are also used as thickeners)

Preservative and perfume – the water soluble preservatives and perfumes are used.

## Result

The amount of prepared hair remover = ----- g

## PREPARATION OF NEIL POLISH

### Aim

To prepare nail lacquers from nitro cellulose

### Ingredients

S.No.	Ingredient	Quantity
1.	Nitro cellulose	16 g
2.	Resin	9 g
3.	Plasticizer	4.8 g
4.	Solvent	60.5 g
5.	Colour	0.5 g
6.	Perfume	Small quantity

### Procedure

The base is prepared separately from the mother lacquer available in market. Nitrocellulose or film former is dissolved in the solvent. The Resin and Plasticizer also dissolved in small amount of solvent and then it mixed with nitro cellulose solution. The coloured ships obtain from mill dispersion is dissolved in the lacquer base and blended to prepare suitable shades. Finally the concentrated odour is suitably diluted and blended with base.

## Result

The amount of Neil lacquer obtained is = ----- g

## **PREPARATION OF NAIL POLISH REMOVER**

### **Aim**

To prepare Neil polish remover or Lacquer remover.

### **Ingredients**

<b>S.No.</b>	<b>Ingredient</b>	<b>Quantity</b>
1.	Ethyl acetate	20 ml
2.	Acetone	80 ml
3.	Perfume	Small amount

### **Procedure**

To the air tight container, taken 20 ml of ethyl acetate and mixed with 80 ml of acetone. Shaken well the solvents are mixed together. Solvent dissolve perfume is added to it for pleasant smell. After that this mixture wed with cotton or tissue and use it.

### **Result**

The Neil Polish remover or lacquer remover is prepared.