

**E.M.G. YADAVA WOMENS COLLEGE, MADURAI-14.****(An Autonomous Institution – Affiliated to Madurai Kamaraj University)****Re –accredited (3<sup>rd</sup> cycle) with Grade A<sup>+</sup> and CGPA 3.51 by NAAC****CBCS****DEPARTMENT OF CHEMISTRY – UG****CERTIFICATE COURSE****SMALL SCALE INDUSTRIAL CHEMICALS****Course Structure***(w.e.f. 2022 – 2023 Batch onwards)*

This Course is open to all U.G second year

Period of study: III &amp; IV Semester

**Duration: 90 hrs****Credits: 2**

S.NO .	SUBJECT CODE	TITLE OF THE PAPER	EXAM DURATION (Hrs)	Marks allotted		
				CIA	S.E	Total
1.	23KC1	THEORY: Small Scale Industrial Chemicals	3	25	75	100
2.	23KCP	PRACTICAL: Lab in Small Scale Industrial Chemicals	3	40	60	100

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## CBCS

## DEPARTMENT OF CHEMISTRY

(w.e.f. 2022 – 2023 Batch onwards)

## CERTIFICATE COURSE

**Title of the paper:** Small Scale Industrial Chemicals

**Contact Hours :** 45

**Semester :** III & IV

**Sub Code :** 23KC1

### Objectives:

1. To describe the various types of Detergents and surfactants
2. To recognize the importance of Soap
3. To acquire knowledge about shampoo
4. To gain knowledge about the skin products
5. To gain basic knowledge about marketing the products.

**UNIT –I Detergents and Surfactants:** Introduction; Different terms used in detergents; Raw materials for detergents; Washing action of detergents; Types of detergents; Introduction of surfactants; Types of surfactants

**UNIT –II Technology of Soap:** Chemistry of soap; Raw material for soap industry and their selection; hard fats yielding and oil yielding soaps; Chemical reactions of soaps; Hard and Soft soaps; Plant and process employed in soap manufacture; Liquid hand wash and liquid dish wash

**Unit: III Shampoo:** Manufacture of SLS and SLES ingredients- functions - Different kinds of shampoos - Antidandruff- Antilice - Herbal and baby shampoos - Hair dye - Manufacture of conditioners - Coco betaines or Coco diethanolamides- ISI specification - Testing procedures/ limits.

**Unit: IV Skin Products Preparation:** Face and skin powders -Ingredients - Functions - Different types - Snows and face creams - Chemical ingredients used - Anti perspirants - Sun screen preparations - UV absorbers - Skin bleaching agents -Depilatories - Turmeric and Neem preparations - Vitamin oil - Nail polishes: Nail polish preparation - Nail polish removers - Article removers- Lipsticks - Roughts - Eyebrow pencils - Ingredients and Functions - Hazards-ISI specification.

**Unit: V Marketing:** Leading firms, brand names, choosing the right product - Packing regulations - Marketing - Licensing - Drug license - Legal aspects - ISO 9000/12000 - Consumer education - Evaluation of the product - Advertisements.

### **Text Books:**

1. Kirpal Singh.,(2012), "*Chemistry in daily life,*" 3<sup>rd</sup> Edition, PHI Learning private limited, New Delhi.
2. Chakravarthy B.N., (1998), "*Industrial Chemistry*" Oxford & IBH Publishing & Co. Pvt Ltd., New Delhi.
3. Sharma B.K., (1999), "*Industrial Chemistry*" 10<sup>th</sup> Edition, Krishna Prakashan Media (P) Ltd., Meerut,

### **Reference Books:**

1. GobalaRao S., (1998), "*Outlines of Chemical Technology,*" Affiliated East West Press.
2. Mahapatra G., (2001), "*Elements of Industrial Chemistry,*" Kalyani Publishers, New Delhi.
3. Sawyer W., (2000), "*Experimental cosmetics,*" Dover publishes, New York.

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## CBCS

### DEPARTMENT OF CHEMISTRY

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### CERTIFICATE COURSE – PRACTICAL

**Title of the Paper:** Lab in Small Scale Industrial Chemicals

**Contact Hours :** 45

**Semester :** III & IV

**Sub Code :** 23KCP

#### Objective:

In this course, students will be given training in the laboratory preparation of the consumer products.

#### Training in the laboratory preparation of the following products:

1. Hand sanitizer
2. Detergent powder and washing powder
3. Face powder
4. Shampoo
5. Sambirani
6. white phenyl
7. Soap
8. Tooth paste

#### Text Books:

1. Mohan Malhotra, (1980) "*Lastet Cottage Industries*," 20<sup>th</sup> Edition Edu, Vishal publishers, Meerut.
2. Barel A.O., Paye M., Maibach H.I., (2014), "*Handbook of Cosmetic Science and Technology*," CRC Press.
3. Sharma B.K., (1999), "*Industrial Chemistry*" 10<sup>th</sup> Edition, Krishna Prakashan Media (P) Ltd., Meerut.