

Skill Enhancement Course in Chemistry
Soap and Detergent Making
(Credits: 3)

Course Learning Outcomes:

After successful completion of the course, students will be able to:

- Skill development for detergent cake and liquid soap, shampoo, handwash making.
- Knowledge of basic concepts and techniques of soap and detergent industry.
- Understanding of oil, fat and their sources in India.

Theory

Unit-1: Introduction to oil and fats:

1.1 Classification, structure and sources of oil and fats

1.2 Natural sources of oils and fats in India

Unit-2: Soaps:

2.1 introduction to soaps, synthetic detergents, raw materials and its selection

2.2 principles of soap making and chemistry of soap

2.3 Boiling, saponification process

Unit-3: Detergents:

3.1 Types of detergents, classification of detergents (anionic, cationic, nonionic, amphoteric), biodegradability.

3.2 Inorganic compounds of detergents (builder & other additives, phosphates, silicates, zeolites, etc)

Practicals:

1. Determination of physico-chemical characteristics of oil and fats

a). Moisture content b). Acid value c). Iodine value d). Saponification reaction and Saponification value

2. Manufacture of liquid soap (shampoo) and laundry soap.

References and Textbooks:

- Ajay Kr. Gupta, Handbook on Soaps, Detergents & Acid Slurry , 3rd revised edition; NIIR Board publication. ISBN: 9789381039472

● P. K. Chattopadhyay, Modern Technology of Soaps, Detergents & Toiletries (with Formulae & Project Profiles) 4th Revised Edition, NIIR Board publication; ISBN: 9789381039700

● H. Panda, Herbal Soaps & Detergents Handbook, NIIR Board publication; ISBN: 9789381039007