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**ADD ON COURSE : CHEMISTRY IN OILS AND FATS
SYLLABUS**

D

1. Introduction of oils and fats, their sources, structure and composition of oils and fats, glycerides and fatty acids, their nomenclature, classification.
2. Natural sources of oils and fats, Position in India in relation to the world production of oils and fats.

D

3. Introduction of soaps, synthetic detergents, raw materials for soaps and their selection, selection of other auxiliary raw materials.
4. General principles of soap making, chemistry of soap boiling and saponification reaction, manufacture of soap (cold, hot and semi boiled process), bleaching of soap, manufacture of toilet soap.

D

5. Various types of detergents, classification of detergents (anionic, cationic, nonionic, amphoteric), biodegradability.
6. Inorganic compounds of detergents (builder & other additives, phosphates, silicates, zeolites, etc)

D

Raw materials for detergents

- i. Organic raw materials for manufacturing of fatty acids, olefins, alkylbenzene, methyl esters, fatty amines, ethylene oxide, propylene oxide sources and manufacture.
- ii. Inorganic raw material for sulphonation viz; sulphuric acid, sulphonic acid, oleum, sulphur trioxide, chlorosulphonic acid.
- iii. Sulphonation of organic raw materials like fatty acids, fatty acids ethoxylates plants and processes.
- iv. Sulphonation of alkylbenzene, olefins & vegetable oils, plants and processes.

**ADD ON CE . CA E N OAP AND DE E EN
L . O BOO**

No.	Author	Title	Edition	Publisher
1.	K.S. Parasuram	Soaps & detergents		
2.	NIIR Board	Handbook on Soaps, Detergents & Acid Slurry		Asia Pacific Business Press
3.	J.G. Kane	Soaps: Their Chemistry & Technology	First	

**ADD ON CE , CA E CO E N OAP AND DE E EN
L . O EXPE MEN**

- 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.
- 3) Project Work: Industrial training for one month duration.

PAN AB N E . Y, C AND A
OAP AND DE E EN , A D PLOMA CO E

Outline of Tests, syllabi and courses of reading for an add-on Diploma course in Soaps and Detergents during B.A./B.Sc./B.Com.

O ne of e

P Lper Code	P Lper	P Lper N L e	Lec re and Pr.c i a ee	n ber y E g r
	Theory	Soaps & Detergents-2	4	150
	Practical	-do-	4	50

**DIPLOMA IN SOAP AND DETERGENTS
SYLLABUS**

Unit

Introduction of soaps and detergents, classification and chemistry of soaps, classification and chemistry of non soapy detergents, manufacture of soaps (cold, semi boiled, hot process).

Unit

Feedstocks for soaps

Oils for soap making, pretreatment and upgradation of oils & fats, technology of fat splitting and distillation, handling and storage of oils and fats.

Unit

Technology of soap manufacturing

Soap manufacture, glycerine recovery, manufacture of laundry and toilet soaps.

Unit

Technology of manufacturing of synthetic detergents

Manufacture of detergents powders (dry mixing, spray drying, agglomeration, combination of

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2.	NIIR Board	Handbook on Soaps, Detergents & Acid Slurry		Asia Pacific Business Press
3.	J.G. Kane	Soaps: Their Chemistry & Technology	First	Dr. R. Sarkarar
4.	Anthony M. Schwartz James W. Perry & Julian Berch	Surface Active Agents & Detergents	Vol II	Interscience Publishers
5.	Benjamin Levitt	Oils, Detergents & Maintenance		Chemical publishing company
6.	NIIR Board	The Complete Technology Book on Soaps		Asia Pacific Business Press

7.

ADD ON DIPLOMA COURSE IN SOAP AND DETERGENT

LIST OF EXPERIMENTS

- 1) Determination of total fatty matter, free caustic alkali, chloride & moisture and volatile matter in the soaps.
- 2) Manufacture of detergents.
- 3) Identification test and detection of adulteration of oils and fats.
- 4) An industrial tour will be arranged in autumn break. Short tours may be arranged at other times.

ADVANCED DIPLOMA IN SOAP AND DETERGENTS

COURSE SYLLABUS

I

1. General principles of soap making, chemistry of soap boiling, saponification reaction, raw materials and their selection, soap making by continuous process.

II

2. Glycerine recovery: Introduction, glycerine recovery process, refining of crude glycerine.
3. Manufacture of shaving soaps, liquid soaps, medicated soaps, laundry soaps.

III

4. Detergents classification, raw materials for synthetic detergents, manufacture of detergent powders, liquid detergents, detergent bars, fabric softeners, additives to detergents,

**ADD ON ADVANCED DIPLOMA COURSE IN SOAP AND DETERGENT
LITERATURE**

No.	Author	Title	Edition	Publisher
1.	K.S. Parsuram	Soaps & Detergents		
2.	NIIR Board	Handbook on Soaps, Detergents & Acid slurry		Asia Pacific Business Press
3.	J.G. Kane	Soaps: Their Chemistry & Technology	First	Dr. R. Sarkar
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6.	NIIR Board	The Complete Technology Book on Soaps		Asia Pacific Business Press
7.	NIIR Board	The Complete Technology Book on Detergents		Asia Pacific Business Press
8.	George T. Austin	Shreve's Chemical Process Industries	Fifth	McGraw-Hill

**ADD ON ADVANCED DIPLOMA COURSE IN OAP AND DEE EN
L . O EXPERIMENT**

1. Determination of active matter, moisture of detergent powders and cakes, pH of the solution.
- 2.