

## CH5D01.5: Chemistry in Everyday life

### Aim and objectives:

Chemistry is an integral part of everyday life. Whether it is the food we eat, the clothes we wear, the drugs we consume or the cosmetics we apply- there is chemistry in it. A general information of the chemistry behind these will create an awareness as to what is good and what is bad and to be discarded. For example, we come across a myriad of cosmetic products, which claim to increase our quality of life and well being. But in reality are they as advantageous as they claim to be? An insight into the processes involved in their production will give us ample information regarding these. Similarly we can also gather information as to what is the difference between the various types of soaps, their mode of action, why the disparity in their prices and why soaps are preferred over detergents. Likewise, a student can also become enlightened about the pros and cons of using processed food stuff, which is in vogue today. The above mentioned points are some of the benefits a student who opts to study this subject offered as a common course will receive.

### 1 Food additives and Flavours

(12 Hrs)

Functional food additives, adulteration, food laws. Food colours - permitted and non-permitted- Toxicology. Flavours – natural and synthetic- Toxicology. Other functional additives- Soft drinks- formulation Health drinks.

### 2 Soaps

( 7 Hrs)

Soaps – Introduction, detergent action of soap. Toilet soap, bathing bars, washing soaps, liquid soap manufacture- additives, fillers and flavours. Significance of acidity and alkalinity.

### 3 Synthetic Detergents

( 9 Hrs )

Detergents- Introduction, detergent action, types of detergents-cationic, anionic, amphiphilic detergents. Common detergent chemicals. Additives, excipients colours and flavours. Enzymes used in commercial detergents. Environmental hazards.

### 4 Cosmetics

( 12 Hrs)

Cosmetics- Introduction, classification – bathing oils, face creams, toilet powder, skin products, dental cosmetics, hair dyes, shaving cream, shampoo, general formulation of each type. Toxicology of cosmetics.

### 5 Plastics, Paper and Dyes

(14 Hrs)

Plastics in every day life. Brief idea of polymerization-Thermoplastic and thermosetting polymers. Use of PET, HDPE, PVC, LDPE, PP, ABS. Recycling of plastics. Biodegradable plastics. Environmental hazards of plastics. News print paper, writing

paper, paper boards, cardboards. Organic materials, wood, cotton, jute and coir. International recycling codes, and symbols for identification. Natural and synthetic dyes (basic idea only).

## **6 Drugs**

**( 6 Hrs)**

Chemotherapy- types of drugs- analgesics, antipyretics, antihistamines, antacids tranquilizers, sedatives, antibiotics, antifertility drugs.

## **7 Chemistry and Agriculture**

**( 12 Hrs)**

Fertilizers- natural, synthetic, mixed, NPK fertilizers. Excessive use of fertilizers and its impact on the environment. Bio fertilizers. Plant growth hormones. Pesticides- Classification-insecticides, herbicides, fungicides. Excessive use of pesticides –environmental hazards. Bio pesticides. Antiseptics and Disinfectants-Oils - vegetable oils, mineral oil, essential oil-Sugars, artificial sugars

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