26. CLEANSING MATERIAL

Water is required along with cleaninsing material to wash the dirty cloths. Dirt, dust, stains, grease and other impurities act adhered on the surface of clothes. We can get clean, white and spotless cloths to wear again with the help of suitable cleansing material along with water. The selection of cleansing material depends on the type of fabric and adhered dirt and dust on clothes. Besides cleaning clothes attention be given on the impact of cleaning material on fibre and to reduce the harmful effect on clothes.

These cleansing material are of different types like ritha, bran, sea foam, soap and detergent etc. In general, the use of soap, detergent and liquid soap is more.

In general terms, cleansing material are the substance that, together with water, removes the dirt of the cloth and makes them clear, bright, clean and shiny. Defining the cleansing material, Mrs. Sukhiya's statement. "Wash clothes only with water does not remove dirt, especially greasy and sweating stains." If soap is used in washing, then the clothes are completely cleaned. Using the detergent, the dirt starts floating on the water surface and it leaves the cloth in the form of emulsion and gets into the water. There are many types of purifier substances, similarly textiles are also made from different fibers.There is a difference in the cleansing related characteristics of all fibers and the fabrics made from them. For cleaning the clothes, the cleansing material should be such that:

(1) Cleaning of clothes can be done well.

(2) Do not harm clothes and fibers in any state.

(3) Eliminate the dirt of clothes in such a way that in squeezing and wringing of the clothes, they should go out with water.

Soap : The most popular substance for washing clothes is soap. It is able to remove dirt easily from the surface of the fabric. Soap is compound of fatty acids and alkalies. Salts of fatty acids are called soaps

In ancient times, the wood ash was dissolved in hot water and washed clothes. The presence of sodium, potassium hydroxide and nitrate in the ashes of the tree enables it make it alkaline and form a cleansing material. Thus, years ago, unknowingly cleansing material was manufactured by mixing wood ash and adibe oil.

Types of soap based on application :

(1) Washing soap

(2) Bath soap

(3) Disinfectant soap

(4) Shaving soap

(5) Transparent soap

Various fragrances and colors are used to make all the above soaps attractive.

Types of soap based on form :

(1) Soap bar : It comes in solid form in square and rectangular shape. This soap bar comes in a moulded fixed weight and size wrapped in a paper. The name of the company soap and cost is printed on soap.

(2) Soap jelly : The remaining soap pieces are dissolved in warm water and form a thick solution and filled in bottles. It can be used as

per the requirement.The remaining pieces of soap are not thrown as a waste pieces.

(3) **Soap flakes :** Thin film of low-alkalina soap is broken into small flakes and packed in a box. Famous companies manufacture them

(4) **Soap solution :** Many brands of soap are available in the market in liquid form. It is less alkaline.

(5) **Soap powder :** Various types of soap powder are available in the market. These are alkaline nature. Sodium carbonate, sodium perborate, such as alkali and soaps are mixed in it. Clothes are cleaned quickly but they damage the fibers and clothes.

Making of soap :

Following ingredients are used for making soap:

1. **Fat :** The major part of fat is fatty acid and glycerine. Two type of fat are used in making soap.
   - (a) **Animal fat :** It is called hard fat. It is used for making soap. It contains fatty acid and has similar structure. It gives less lather but clean clothes properly. Lard is an expensive fat which is used only in the manufacturing of bathing soap.
   - (b) **Vanaspati fat :** Coconut oil, flax seed oil, linseed oil, soybean, olive, mahua, ratanjot, and castor oil are used for making soap. Mixing animal and vegetable fat is less costly in making soap. Based on the quality and characteristics of the oil uesd, the cost of soap making is affected.
2. **Alkali :** Caustic soda or caustic potash is used in the soap manufacturing process. Caustic soda is used to make hard soap, whereas caustic potash is used for soft soap formation. It is more commonly used to make homemade soaps.
3. **Sodium Silicate :** It is an alkaline substance. It is bright granular substance. It available in solid and liquid form. Sodium silicate consists of excellent cleansing and purifying properties. But when making soap, it should be used only in the prescribed quantity.
4. **Starch powder :** Starch powder turns into sticky jelly form on addition with water. In soap making process, maida, cornflour or gram powder are used as starch.
5. **French chalk and soap stone :** French chalk soft marble powder is used to increase the quantity and weight of soap and the used quantity is 15 to 20%. They dont bear any purifying or cleansing properties.
6. **Salt :** In making soap the amount of salt used is 12.5 percent of oil used.
7. **Resin :** It has no cleaning property but used order to increase the weight of the soap. Excessive resin caused yellowness in the clothes.

S.No.	Soft soap	Hard soap
1	The soap made in cold process are soft	Soaps made in hot process are hard
2	It dissolves in water easily	It takes time to dissolve in water
3	It produces more lather	It gives less lather by excessive scrubbing
4	It is made with the inclusion of caustic potash, light alkali and oils (olive and linseed oils)	It includes caustic soda, hard fat, alkali (stearin, pomedin fat).
5	Saves time and energy using this type of soap.	More soap, time and energy wastage
6	It is best used to wash soft and special care clothes, silk and woollen fabric	It best for washing thick and rough clothes

Composition of soap :

Mainly, fat and alkali are main constituents of soap. However, sodium silicate, french chalk/ soap stone, starch, salt and resin etc. are also used to increase the weight and property of soap.

Soap in washing process :

When the soap is applied by wetting the cloth, the resistance power of the upper surface of the cloth reduces.Soap breaks down dirt and grease into small particles. These particles float on water in the form of emulsion, leaving the cloth. They then rinsed in clean water, thus, the clothes are cleaned.

Quality of good soap : The best quality of soap has the following properties:

1. The good quality soap easily dissolves in water and produces more lather.
2. Excessive use of alkali make the cloth turn yellowish.Therefore, good soap does not contain much alkaline and resins.
3. Good quality soap contains 30 percent water and 61 to 65 percent fatty acid.
4. Good quality soap should give soft and shiny result on using in cloth and skin.

Detergent

First of all, detergent was first created in 1907 by hydrocarbons obtained from raw petroleum. Detergent is synthetic carbon organic compounds, which are made of special type of chemical substances, in which special properties of humidity deflection and emulsification.

Detergent are divided into three categories based on the quality :

i) First class detergent are those in which cleansing and hygiene properties are presence, but they are expensive.

ii) In the second class, detergent are not adulterated but their cleansing property is good and they are cheaper than the this first class detergent.

iii) In the third grade, some chemical substances are added, which increases their purifying capacity, It is dark colored and cheap.

Constituents of detergents : Six main constituents of detergents are :

1. **Active product :** The appearance of some element in the detergent remains to form while other to remove dirt. It is powerful enough for simple light household washing, but not for heavy washing.
2. **Constructive elements :** There are some constructive elements which increase the extra refinement capacity for detergent. These constructive elements are both organic and inorganic. Constructors of inorganic class are mainly phosphates that do not produce foam. It only enhances the cleaning capacity. Organic constructor provide foam stability for active production
3. **Deposit reflective elements :** Detergents also contains deposition repulsive elements, which separated dirt from the garment and the dirt does not stick to clothes again, therefore they also remain in repetitive action. Dirt remain suspended in liquid and flows along with water only.
4. **Sodium silicate :** Machine parts are made of aluminum. Aluminum metal is used to make agitator fan and wash basin of washing machine. Sodium silicate is added to prevent any loss of work and other effect of detergent. Therefore sodium silicate is important constituent of detergent.
5. **Bright or optical bleaches :** There is a element in detergent which bring brightness in the clothes after washing. The use of any other bleach is not required separately after the use of detergent.
6. **Anti rust elements :** Non-corrosive or anti-rusting elements are mixed in detergent to protect the skin of hand and metal.
7. **Aroma:** Aroma is added to bring fragrance to detergents .

Process of detergent making: Detergent can be mixed in cold-hot and hard - soft in all kinds of water. Due to bearing the excessive wetting property, dissolve easily in water. It reduces the surface pressure of the water or the resistivity of the cloth, so that it

reaches the fabric fibers together with the water and cleanses the dirt completely and provides brightness.

Properties of best detergent :

1. High quality detergents are not alkaline.
2. It works equally in both cold-hot and hard-soft water.
3. They have wetting property.
4. Provide protection to machine parts and hand.
5. It does not harm the clothes
6. Reduce the surface tension of water and resistant capacity of the cloth and do it quickly.
7. These are excellent emulsifiers of fat.
8. Smoothly clean white and colored fabrics.
9. Saves energy, time and money.
10. Detergent does not allow the dirt to deposit again on the clothes. Dirt particles remain suspended in water.
11. Washing clothes from detergents is easy because it is easy to rinse the clothes.
12. It is used, according to the requirement, save it from wastage.
13. It destroys the micro organisms.

Table 26.2: Differences between soap and detergent

S.No.	Soap	Detergent
1	Soap is made from natural fat and alkali	Detergent is made from chemicals and petroleum products
2	It is less effective	It is more effective than soap
3	It is less active in hard water but gives more lather in soft water	It is active in both hard and soft water
4	The use of soap requires more energy	Its use saves time and energy
5	Soap does not include bleaching agent, so other elements are used to bring brightness in white clothes.	In detergents, bleaching agents are added, so for brightness no other elements are used.
6	Soap does not kill any micro organisms	Detergent kills micro organisms
7	By continuous scrubbing on the clothes, soap destroys the fibers of the garment	It does not damage clothes
8	Stains are not removed easily	The stains are removed easily and quickly
9	Soap brings harm to hands	Detergents does not
10	There is a chance of color fading while washing	There is less chance of color fading from the cloth during washing.

Detergent demand on the basis of all the above characteristics is increasing day by day and save time, energy, money. It completely destroys micro-organisms it promotes pollution because these are not degraded biologically. Therefore, excessive use of them increases pollution.

As per the above information, a conscious consumer needs to buy soap and detergent as per clothes. Some cleansing material in the market are more effective, some are in accordance with the nature of textiles and fibers, some are cheap while others are expensive. Selection of substances should be done without the influence of external advertisment.

Important points :

1. Cleansing Material are used for the laundry of textiles. Soap, reetha, detergent and seaweed are cleansing materials.
2. Soap is the salts of fatty acids.
3. The hard and soft - two types of soaps are based on the construction process.
4. Detergent is synthetic organic compound.

5. The composition of soap and detergent differs.

Questions :

1. Choose the correct answers for the following questions :

(i) This is used to wash dirty clothes:

(a) Fabric whitener (b) Starching agent

(c) Bleaches (d) Cleansing Material

(ii) It does not disolve in hard and soft water :

(a) Detergent (b) Soap

(c) Purifying substances (d) All of the above

(iii) Telo and lards are :

(a) Hydrogenated oils (b) Chemicals

(c) Animal fat (d) All of the above

2. Fill in the blanks :

(i) Detergents are equally active in …….. and …….. water

(ii) Fat and alkali are important elements of …… making.

(iii) Detergents ……. surface tension of water.

(iv) There are …….. components of detergent.

3. What are the Cleansing Material? Explain.

4. Differentiate between detergent and soap.

5. Describe the properties of the best soap and detergent.

6. Define the characteristics of soap and its classification.

7. Write the methodology of detergent and soap.

8. Write composition of soap.

Answer :

1. (i) d (ii) b (iii) c (iv) d

2. (i) hard and soft (ii) soap

(iii) reduce (iv) six