BAL BHARATI PUBLIC SCHOOL, PITAMPURA, DELHI – 110034

CLASS:- VIII SUBJECT:- CHEMISTRY

CHAPTER:- SYNTHETIC FIBRES AND PLASTICS

GUIDELINES

Dear students,

- Refer to the following content related to the chapter and draw the flowchart given in this e-lesson in your chemistry notebook. (The notebook must be a ruled notebook like your English and Hindi notebook.)
- This e-lesson will help you understand the concept of the lesson and you will be able to complete the assignment /activity that follows.

SUB-TOPICS

- Comparison of natural and synthetic fibre
- Polymerisation and polymers
- Types of synthetic fibre
  *Rayon
  *Nylon
  *Acrylic
  *Blended fibre
- Properties and uses of each fibre
- Advantages and disadvantages of synthetic fibre

1.1 COMPARISON OF NATURAL AND SYNTHETIC FIBRE

Difference between Natural and Synthetic fibre	
NATURAL FIBRE	**SYNTHETIC FIBRE**
Comes from nature	Man- made
It has natural colour	Colour, as per requirement, is added in colour bath
Spinneret is not necessary during the spinning process.	Spinneret is necessary for the production of filament.
There are chances of dust or impurities in the fibre	No chance of any dust or impurities

Less durable than synthetic fibre	More durable than natural fibre

1.2 POLYMERISATION AND POLYMERS

A synthetic fibre, **as well as plastic,** is made of a chain of small units (called **Monomers**) which combine to form polymers.

Monomer: A monomer is a single molecule that can bond with other identical molecules to form polymers through a process called **Polymerization**.

Polymers: Polymer is a Greek word in which 'poly' means 'many' and 'mer' means units. Hence, polymers are large molecules made up of several molecules (or monomers) linked together.

Examples of Polymers:

- All synthetic fibres, such as Rayon and Nylon, are polymers.
- Polymers are also found in Nature. 'Cotton' is a polymer called '**Cellulose**'. 'Cellulose' is made up of a number of single units (or monomers) called '**Glucose**'.

1.3 TYPES OF SYNTHETIC FIBRES

PROPERTIES AND USES OF EACH SYNTHETIC FIBRE ARE TABLED ON THE NEXT PAGE

Types of Synthetic Fibres

BLENDED FIBRES

Blended fibres are formed by mixing natural and synthetic fibres. Polyester is often used in blended fibres. **For example**,

- Polywool is made by mixing polyester and wool.
- Polycot is made by mixing polyester and cotton.
- Terrycot is made by mixing terylene and cotton.

DRAW THE ABOVE COMPARATIVE TABLE IN YOUR CHEMISTRY NOTEBOOK.

USES OF SYNTHETIC FIBRES

Go through the video link given below to understand the uses of synthetic fibres.
https://youtu.be/xmrdtDurPXQ

1.3 ADVANTAGES AND DISADVANTAGES OF SYNTHETIC FIBRES

All the synthetic fibres are manufactured by processing raw materials of petroleum origin in a number of ways. **The raw materials of petroleum origin are called Petrochemicals**.

Advantages of Using Synthetic Fibres

- Color-resistant
- Do not bleed color when washed
- Do not shrink when washed
- Easily available
- Easy to maintain
- Easy to wash and dry
- Less Expensive
- More Elastic
- Resistant to moth attacks
- Stronger
- Tough and Durable

Disadvantages of Synthetic Fibres

- Cannot absorb Moisture (hence, not good for summers when we sweat more)
- Catch fire easily (and hence, should not be worn when we are near fire)
- Difficult to iron (as they can melt because of heat)

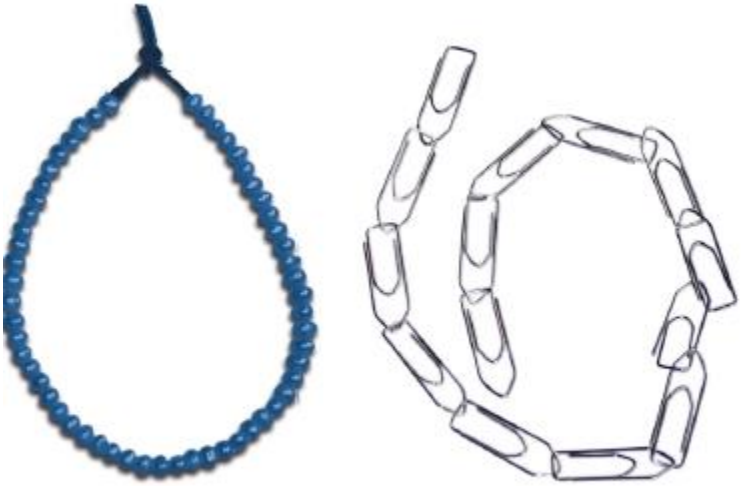
Go through the video link given below to know more about synthetic fibres.

https://youtu.be/bhqFE3k1WQk

- **<u>Based on your understanding, do the following activities:</u>**

  #Make a Power point presentation on the topic **Synthetic Fibres** (maximum 10 slides).

#Use beads and paper clips to make the following figure explaining the concept of polymerization, where clips and beads are monomer units.



(a) (b)

- **ATTEMPT THE GIVEN ASSIGNMENT IN YOUR CHEMISTRY NOTEBOOK.**

Q1 Fill in the blanks.

1. _____ is made from both synthetic and natural fibres.

.2. _____ is also called *artificial silk.*

3.The process of combining monomers to form a polymer is called _____.

4.Rayon is a fiber regenerated from _____.

5._____ is often used as substitute for wool.

6._____ (a synthetic fiber) is commonly used to make strong ropes.

7._____ are long- chain polymers made by linking several ester units.

8._____ is the most common source for synthetic fibers.

Q2.MULTIPLE CHOICE QUESTIONS

1.Rayon fibre is prepared from wood pulp. Still it is considered as a synthetic fibre because

a. Plastic is mixed with wood pulp to make rayon
b. Jute is mixed with it
c. It is prepared by chemical treatment of wood pulp
d. The pulp is prepared from artificial wood

2. Synthetic fibre is accepted as the most popular dress material. The properties supporting this statement are

a. They soak less water than natural material.
. b. They are more durable and less expensive.
c. They are easy to wash, dry and maintain.
d. All of the above

3.The first fully synthetic fibre prepared by man is_____.

a. Nylon b. Polyester c. Rayon d. Acrylic

Q3. Name any two blended fibres.

Q4. Why is nylon considered to be good for making fishing net?

Q5. Why do people prefer wearing cotton clothes over synthetic during summer?

Q6.Polyester clothes should be avoided in kitchen. Why?

Q7. What are blended fibres? Are they better than synthetic fibres? Explain with an example.

LINK OF TEXTBOOK:- http://ncertbooks.prashanthellina.com/8_Science.html

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