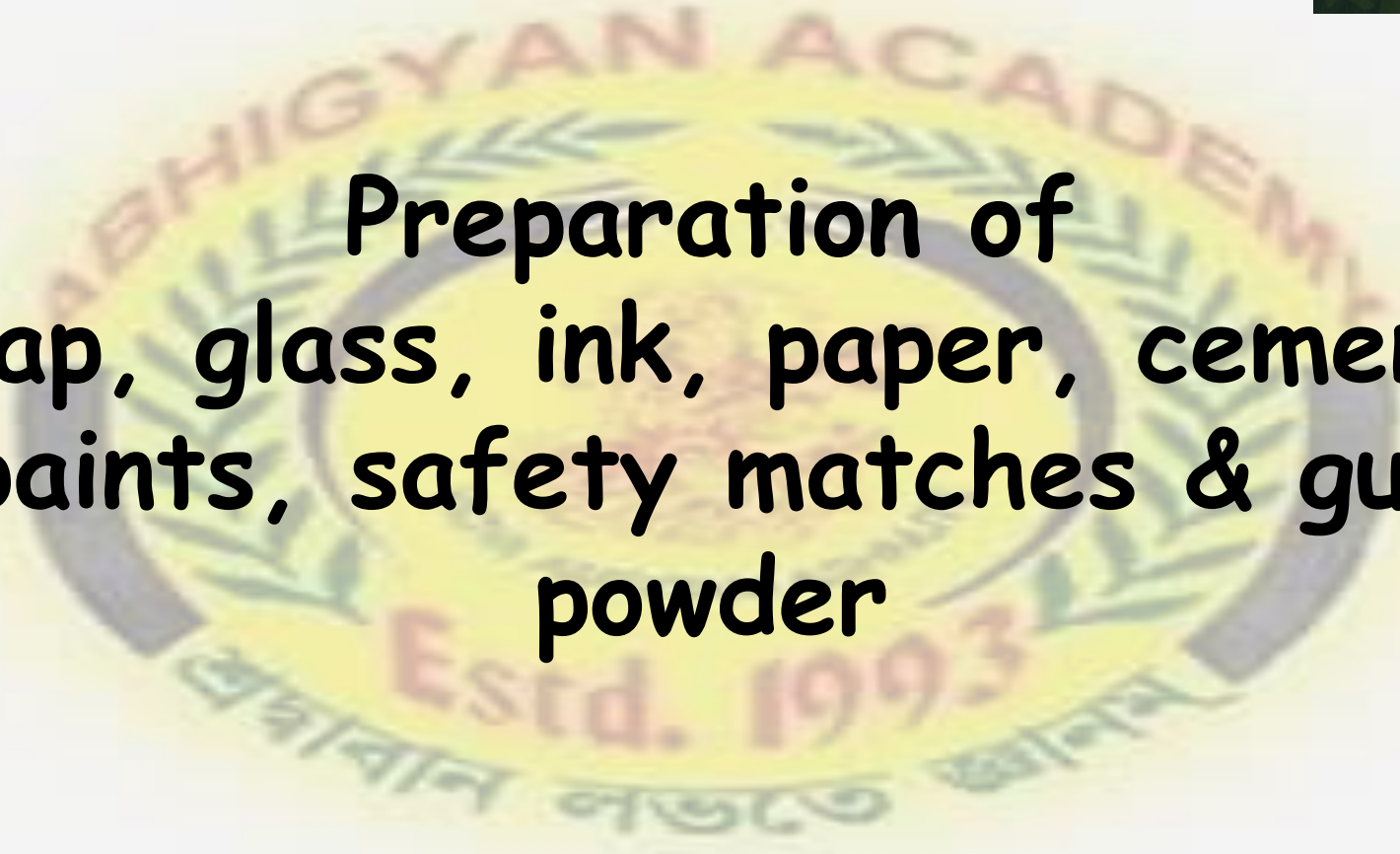


**Preparation of
soap, glass, ink, paper, cement,
paints, safety matches & gun
powder**



Q. What is SOAP ?

- Soap is a Sodium or Potassium salt of long chain fatty acids having cleaning action.
- The exact chemical formula is $C_{17}H_{35}COO^-$ plus a metal cation, either Na^+ or K^+ .

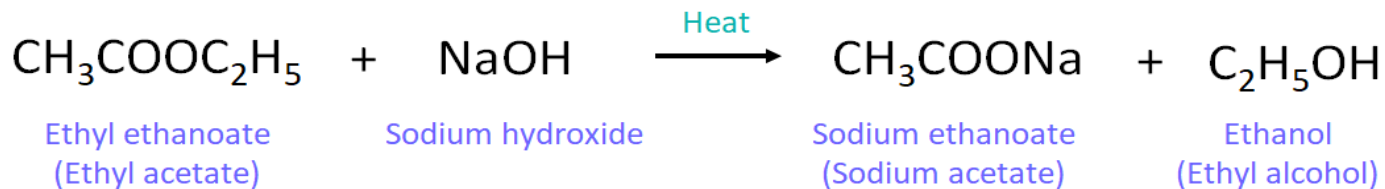


Preparation of Soap

Saponification Reaction

teachoo

Saponification reaction



Preparation of Glass

- Glass, an inorganic solid and non-crystalline material that is transparent in appearance . It is 100% recyclable. It is also known as semi liquid.
- Main composition of glass
 1. SiO_2
 2. Silica/ sand
 3. CaCO_3
 4. Soda ash (NaCO_3)



- Quartz Glass: Also known as silica glass because it is made by melting silica and emitting ultraviolet rays. As a result, it is used to make ultraviolet lamp bulbs, chemical reagent containers and laboratory equipment.
- Crown glass : spectacle lenses
- Soda glass: Also known as soft glass, it is the cheapest and most widely used type of glass. It is easily damaged and cracks can form in such mirrors as a result of temperature changes. WINDOW
- Lead oxide Crystal Glass: This is a unique glass that can be used to create a wide variety of beautiful objects using appropriate decorative, cutting and designing techniques. Making JEWELLERY.

- Sodium Borosilicate Glass: It is the most advanced type of glass, and is used to make chemical containers and scientific equipment.
- Flint glass: It is made of sodium, potassium and lead silicates, which are used to make culturally important statues, as well as expensive glassware and technologies.
- Crooks Glass: Cerium oxide is the main component of this glass, which effectively absorbs UV wavelengths from sunlight and is used to make spectacle lenses.

INK

- Ink is a liquid or semi-liquid liquid used for writing, painting or drawing, which is a friction system made up of fine pigment particles suspended in a liquid.
- The main two ingredients of ink are a solvent and a dye.
- The molecular formula of ink is $C_{14}H_{26}N_2O_4S$

Types of Inks:

- **Pigment ink**; This ink contains suspended pigment cells. When you write, the ink sits on top of the paper and the color adheres to it. Pigment ink is usually water-resistant.
- **Permanent Ink**: A component called resin is present in the ink and this is the chemical that causes the ink to stick after use. Permanent markers are waterproof and can be used on a variety of surfaces.

- **Oil-based ink:** Oil-based paint uses oil-based markers instead of water-based paint like acrylic. Oil-based ink markers dry out a little slower than acrylic markers, giving you a little more time to work with your work. They adhere well to a variety of surfaces, making them excellent for crafts and mixed-media painting.
- **Fountain Pen Ink:** Fountain Pen Ink should be free-flowing, non-sedimentary and non-corrosive. For durability, manufacturing efficiency and the use of some readily available dyes, these features can be compromised. Ink for fountain pens is a liquid that contains dyes, water and other components.

- **Translucent Ink:** Translucent ink is ink that allows you to see the other side of the paper. Most of the water-based inks are transparent. Opaque markers are useful for highlighting, coloring and sketching. Here are some of our favorites in the transparent marker category:
- **Marker ink:** This ink is water-resistant because it contains the primary carrier solvent, glyceride, pyrrolidone, resin and dye. It can write on many materials including paper, metal and stone. These markers, such as spray paint, contain volatile organic matter for drying ink. Since toluene and xylene are commonly found in permanent markers, they are more likely to be abused as entertainment material.

What are Safety Matches?

- A safety match is a type of match that can be lit even if it is wet.
- The match head is made up of a combustible material that, when lit, causes the stick to ignite.

The stick is made of a non-combustible material that will not ignite on its own but will light when in contact with the flame from the match head. The head of a safety match is protected by a coating of Oxidising agent such as Potassium Chlorate mixed with Sulphur. The side of the box contain red phosphorus and powdered glass. When you strike a safety match, the friction between the head and the striking surface causes some of the red phosphorus to rub off. This ignites and starts the flame.

The History of Safety Matches

- The history of safety matches is a long one. According to one legend, an American named Joshua P. White invented them in 1828 after he was inspired by a Hindu monk who had shown him how to create light by striking two pieces of sandpaper together. However, it wasn't until 1892 that Joseph Swan and John Walker succeeded in creating a workable and safe match.