POLYETHYLENE

- Polyethylene is obtained by the polymerization of ethylene.
- The gas is first liquefied under high pressures (upto 1500 atmospheres) and then pumped into a heated pressure vessel, maintained at 150-250^{o}C.
- By catalytic effect of traces of oxygen present, ethylene is polymerized in to polyethylene.
- $n(CH_2 = CH_2) \longrightarrow -(CH_2 - CH_2)-_n$

  Ethylene Polyethylene
- By using free radical initiator, low density polyethylene (LDPE) is obtained.
- By using organic catalyst high density polyethylene (HDPE) is obtained.

Properties:

- Rigid, white, translucent material
- Good insulator of electricity.

Types:

1. Low density polyethylene
2. Medium density polyethylene
3. High density polyethylene.(Linear, better chemical resistance, low impact strength, brittle)

Uses:

- For making high frequency insulator parts, bottle caps,flexible bottles, kitchen and domestic appliances, toys, bags for packing etc.

POLYVINYL CHLORIDE

- It is obtained by heating a water emulision of vinyl chloride in presence of a small amount of benzyl peroxide or hydrogen peroxide in an autoclave under pressure.

$$n(CH_2 = \underset{Cl}{CH}) \longrightarrow -(CH_2 - \underset{Cl}{CH})-_n$$

Vinyl chloride Polyvinyl chloride (PVC)

Properties:

- PVC is colourless, odourless, non-inflammable.
- Chemically inert powder.
- Resistant to light, inorganic acid

Uses:

- It is used for making continuous sheets

- It is employed for packing rain coats, table cloths and curtains