## 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 $150-250^{\circ} \mathrm{C}$.
- By catalytic effect of traces of oxygen present, ethylene is polymerized in to polyethylene.
- $\mathrm{n}\left(\mathrm{CH}_{2}=\mathrm{CH}_{2}\right) \longrightarrow-\left(\mathrm{CH}_{2}-\mathrm{CH}_{2}\right)-\mathrm{n}$

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.


## 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

