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POLYMERS

2 MARKS

Q.1.What is elastomer?

Ans:- An elastomer is a polymeric that may experience large and reversible elastic deformations. Elastomers referred to as rubbers. They are essentially non-crystalline in structure.

Q.2.Give example of thermosetting and thermos-plastic resins?

Ans: Example of thermosetting resin are epoxies, melamine.

Example of thermoplastic resins is ABS plastic, acetyls, acrylics.

5 MARKS

Q.1. Explain the properties and application of thermoplastic?

Properties:-

1.They can be repeatedly soften by heat and hardened by cooling.

2.They are comparatively soften and less strong

3.Objects made by thermoplastic resin cannot be used at comparatively higher temperature

as they will tend to soften under heat.

4.They are usually supplied as granular material.

Application: Toys, combs, toilet, goods, photographic films, insulating tapes, hoses, electric insulation

etc.

Q.2.what is the different between thermoplastic polymers and thermosetting polymers?

Ans:

Thermoplastic	Thermosetting
1.They can be repeatedly soften by heat and hardened by cooling.	1. Once hardened and set, they do not Soften application of heat.
2.They are softer and less strong.	2. They are more strongest and harden than Thermoplastic polymer.

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7 MARKS

Q.1.What is the difference between thermoplastics and thermosetting plastic?

Ans: Thermoplastic

- They can be repeatedly softened by heat and hardened by cooling.
- They are comparatively soften and less strong.
- Object made by thermoplastic resin cannot be used at comparatively higher temperature as they will tend to soften under heat.
- They are usually supplied as granular material.

Application:

Toy, combs, toilet goods, photographic films, insulating tapes, hoses, electric insulation etc.

Thermosetting

- The thermosetting resins one hardened and set, they do not soften with the application of heat.
- They are stronger and harder.
- Objects made by thermosetting resins can be used at comparatively higher temperature without damage
- The thermosetting reasons are usually supplied in monomeric or partially polymerized form in which they are either liquids or partially thermoplastic solids.

Application: Thermosetting reasons are used in telephone receiver, electric plugs, radio and TV Cabinets, camera bodies. Automobiles parts, circuit s breaker switch panels.

Q.2.Write the properties of elastomers?

Ans: An elastomer is a polymeric material which at room temperature can be stretched to at least twice its original length and upon immediate release of the stress will return quickly to approximately to its original length.

The main types of artificial rubber or elastomers which are given below.

1.properties of styrene rubber

- It possesses high abrasive resistance, high load bearing capacity and resilience.
- It swells in oils and solvents.

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2.Properties of nitrite rubber.

- Extremely good oil resistance.
- Low swelling
- Excellent adhesion to metal.

Good tensile strength and abrasive resistance.

3.Butyl rubber

- A low density rubber of low strength and high elongation
- Outstanding permeability to gases
- Excellent dielectric properties,
- Excellent resistance to wear, abrasion, cutting and chipping damage.
- Excellent resistance to weather, ozone, sunlight, animal and vegetable oil.

4.Potychloroprone(Neoprene) rubber

- Resistance to oil, paraffin's, ozone and abrasion.
- Swivels in oil and solvents.
- Will not support combustion.

5. Fluorine rubber

- Very good heat resistance
- Good insulation properties.
- Low strength
- High in cost.

6. Polysulphide rubber

- Excellent resistance to oil, solvents and water
- Extremely low permeability to gases.
- Good electrical resistivity.
- Excellent adhesion to metal.