Resistant Fibres

Module 3: FAQ

Q1. What are two main categories of resistant fibres?

Ans: The two categories are

1. **Thermally Resistant Fibres-** Thermally resistant polymeric fibres are those that resist the thermal degradation, for acceptable periods during their service lives. Due to their inert structure they may also be flame resistant.
2. **Chemically Resistant Fibres** - Fibres which are resistant to chemical attack for acceptable periods during their service lives at both ambient and elevated temperatures. Generally, these fibres are inert in nature and may also exhibit flame resistant properties.

Q2. What is meant by inherently thermally resistant fibres?

Ans: These fibres have a thermally stable chemical structure and do not require any treatment for imparting resistance to heat.

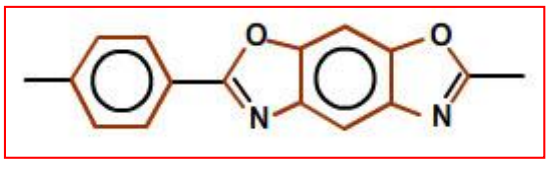
Q3. Name different categories of inherently thermally resistant fibres?

Ans:

1. Thermosets
2. Aromatic polyamides and polyarimids: Aramid, arimid,aramid-arimid
3. Oxidized acrylics or PANOX

Q4. Write the chemical structure of one heat resistant fibre

Ans:



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Q5. What are the key requirements for chemically resistant materials?

Ans Strong chemical bonds

Symmetrical structure

Absence of reactive side groups

Backbone free of hydrolysable groups

Q6. What are major applications where both thermal and chemical resistance are necessary?

Ans:

- Hot gas and liquid filtration fabrics
- Braiding materials in chemical plants
- Gaskets
- Protective textiles
- Conveyer belts
- High performance sewing threads

Q7. Name two chemically resistant fibres based on aromatic ring containing polymers.

Ans Some examples are: Poly (etheretherketones) (PEEK), poly (phenylene oxide) (PPO) and poly (phenylene sulphide) (PPS).