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Commentary

Polymer Techniques and Their Use in Medicine

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DESCRIPTION

A polymer is a huge molecule or micro molecule that is mostly composed of a number of smaller molecules. Polymers are substances created from extended chains of molecules that repeat. Depending on the kind of molecules being bonded and how they are bonded, the materials have different properties. Polymers like rubber and polyester can stretch and bend. Others, like epoxies and glass, are robust and durable From the DNA strand, a biopolymer that occurs naturally, to polypropylene, a plastic that is used all over the world. Different polymers are used in daily life because of a variety of special physical and chemical characteristics. All plastics are polymer, but not all polymers are plastics [1].

Natural polymer

It is possible to extract natural polymers from the environment. They frequently consist of water. Silk, wool, DNA, cellulose, and proteins are a few examples of naturally occurring. The small molecules which are used in synthesizing a polymer are called monomers. These polymers are shaped both by means of the method of addition polymerization or condensation polymerization.

Homo polymer

A polymer this is formed of the same repeating monomer unit is referred to as a homo polymer. Homo polymer is encompassing chains with same bonding linkages to each monomer unit. This typically implies that the polymer is made from all identical monomer molecules [2].

Copolymer

A copolymer is a polymer that is made of two or greater monomer species. Many commercially critical polymers are copolymers. Examples encompass polyethylene-vinyl acetate, nitrile rubber, and acrylonitrile butadiene styrene [3]. The method in which a copolymer is shaped from multiple species of monomers is referred to as copolymerization. It is often used to improve or modify sure houses of plastics.

Thermoplastics

A thermoplastic is a category of polymer that can be softened *via* heating and then processed the use of techniques inclusive of extrusion, injection moulding, thermoforming and blow moulding. After being heated and cooled repeatedly, thermoplastics solidify immediately and no longer exhibit any changes in chemical properties.

Thermosets

Thermosets are specific in that in processing a chemical response transforms small molecules right into a massive cross-linked community as depicted inside the schematic on the left. Thermosets having the property of becoming completely tough and rigid while heated [4].

Long chain polymer

Long chain branched polymers commonly have better weight average molecular weights and broader molecular weight distributions in comparison with linear polymers synthesized at equivalent reaction situations.

Characteristics of good polymer

- Low density
- Good corrosion resistance
- Good mould ability
- Low mechanical properties
- Poor temperature resistance

Application of polymers in our daily life

- Bone regeneration
- Drug delivery
- Inflammatory bowel disease
- Biosensors
- Fixators

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CONCLUSION

Rarely are polymers used in their purest form. To enhance the polymer's characteristics, modifications are made. In order tosuit the requirements of the material, modifications are made based on the purpose. The medication delivery system has a lot of potential for polymer systems. Numerous polymer configurations have been thoroughly investigated for potential biomedical applications.

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