



PolyNorbit - In Sight of Polymer Chemistry!!

PolyNorbit is a copolymer with multiple monomer units to provide different desirable functionalities. It contains several monomer units combined in a molecularly engineered fashion to achieve the needs of high efficiency membranes.

This polymer has very high affinity towards water and water transport compared to conventional Polyacrylonitrile, Polysulfone or Polyethersulphone & thus providing excellent transport properties. The polymer is inherently antimicrobial, the high dipole moment of the material interacts with the bacterial cell wall and deactivate the organisms with time. Though the material is hydrophilic (a property that defines the quality of a UF membrane) in nature, yet it does not dissolve in water. The membranes produced out of PolyNorbit are very strong and inert to many common chemicals such as acids and bases at ambient temperature.

General Comparison of Common Membrane Materials

PROPERTIES	PAN (Polyacrylonitrile)	PES (Polyethersulphone)	PVDF (Polyvinylidene fluoride)	PolyNorbit
Hydrophilicity	Excellent	Good	Medium	Excellent
Pore Size distribution	Good	Excellent	Medium	Excellent
Anti-Fouling Behavior	Excellent	Good	Medium	Excellent
Flux Performance (Clean Water)	Good	Excellent	Medium	Excellent
Mechanical Resistance (Elongation)	Good	Good	Excellent	Excellent
Mechanical Resistance (Tensile Strength)	Good	Good	Good	Good
Alkali Resistance	Medium	Good	Excellent	Excellent
Oxidative Resistance	Medium	Good	Excellent	Good
Temperature Resistance	Medium	Excellent	Good	Excellent
pH Tolerance	Medium	Good	Good	Good
Oil Tolerance	Excellent	Medium	Medium	Excellent
Membrane Costs	Low	Low	Low	Low

Thus, Technorbital's invention "PolyNorbit" is the dream material used in our GRAFiL™ Ultra-Filtration (UF) membranes.