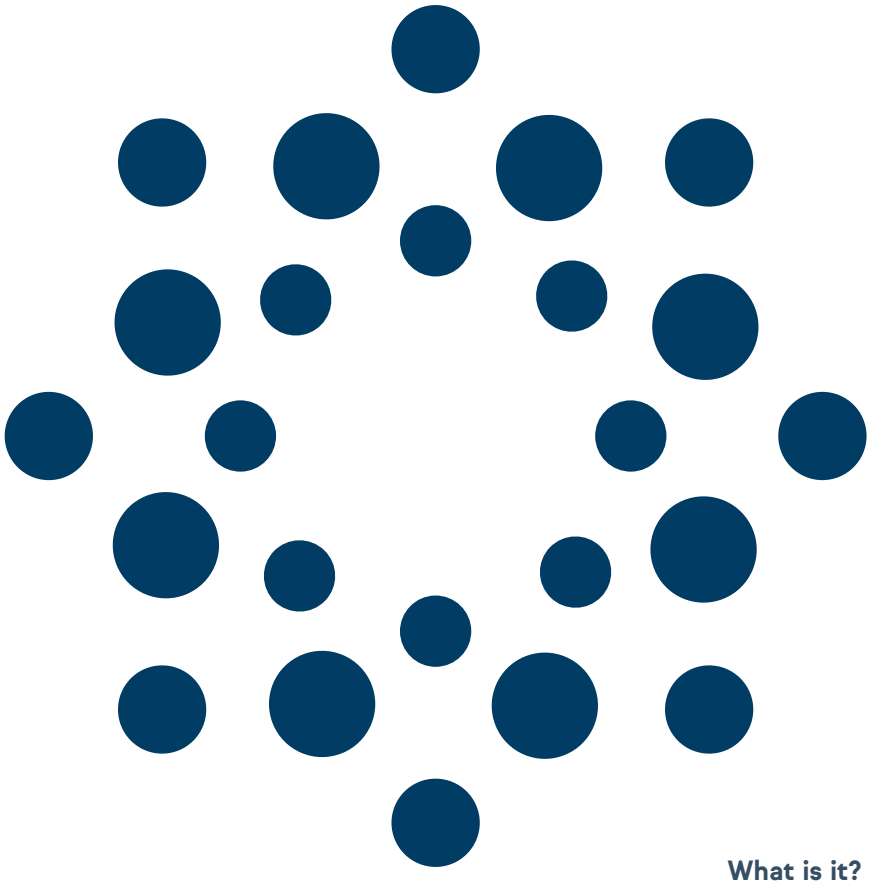
Pharma Solutions

POLYOX™

Resins that allow distinctive drug delivery solutions



What is it?

POLYOX™ resins are nonionic poly (ethylene oxide) polymers. They are white to off-white, free-flowing hydrophilic powders supplied in a wide variety of viscosity grades corresponding to molecular weight, ranging from approximate 100,000 to 7,000,000 daltons. POLYOX™ polymers possess thermoplastic properties, are fast-hydrating and very quickly form hydrogels. They are essentially tasteless, colorless, nonionic and non-caloric. Their unusual combination of properties makes them useful in a surprisingly broad array of pharmaceutical formulations such as controlled release formulations, tablet binding and mucosal bioadhesives.

What is it used for?
Examples:

Application	Recommended POLYOX™ Grades	Benefits & Features
Osmotic Pump Technology	N10, N80, WSR Coagulant, WSR- 301, WSR-303	Zero-order release, clinical robustness and little to no food effect
CR Matrix Tablets	WSR Coagulant, WSR-303	Rapid hydrogel formation, excellent tablet binding and lubrication properties
Abuse Deterrence	WSR N12K, N60K, WSR-301, WSR Coagulant, WSR-303	Thermoplasticity and gelling behavior help harden tablets and increase the viscosity of liquid to prevent drug injection
Mucoadhesive Delivery Systems	WSR-301, WSR Coagulant, WSR-303	Adheres well to mucosal membranes
Hot-Melt Extrusion	WSR-N750, WSR-N12K, WSR-301	Highly thermoplastic in nature, POLYOX™ polymers extrude very well

Key Benefits

- High solubility in water and polar solvents
- Very fast hydration, rapid swelling and hydrogel formation
- Molecular weights ranging from 100,000 to 7,000,000 daltons
- Hydrogen bonding functionality and good biocompatibility
- Thermoplastic polymer with low melting point of ~ 65°C
- Does not show a strong pH response due to their nonionic nature
- Tasteless, colorless, nonionic and non-caloric

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