Title:	Water-Soluble Resins - An Industrial Guide (2nd Edition)
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Author/Editor:	By: Flick, E.W.
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Description:	The second edition of this popular industrial guide contains descriptions of more than 1100 currently available water-soluble resins, supplied by 47 manufacturers or distributors of these products. Both natural and synthetic resins are described, including cellulose ethers; collagens, gelatins; natural gums; and synthetic resins, their dispersions, emulsions, and solutions. Only the most recent information has been included.

UNION CARBIDE CORP.: POLYOX Water-Soluble Resins:

POLYOX Water-Soluble Resins, CAS Registry No. 25322-68-3, are nonionic water-soluble poly(ethylene oxide) polymers supplied in a variety of viscosity grades. The degree of polymerization, n, varies from about 2,000 to about 180,000, depending on the viscosity grade of resin.

Special Features:

High Molecular Weight:
The molecular weights of POLYOX Water-Soluble Resins range from about one hundred thousand to eight million and above.
Completely Water Soluble:
POLYOX Water-Soluble Resins, being polyethers, hydrogen bond with water and are completely soluble to just below the boiling point of water.
Thickening Ability:
POLYOX Water-Soluble Resins are extremely effective thickening agents in water.
Friction Reduction:
Very small (0.003 percent) concentrations of the higher molecular weight POLYOX Water-Soluble Resins can reduce the turbulent frictional drag of the water in which they are dissolved by as much as 80 percent.
Lubricity:
POLYOX Water-Soluble Resins impart a high degree of lubricity to water.
Aesthetics:
When solutions are applied to the skin, they produce a soft and "silky" feel.
Nonionic:
Being nonionic, POLYOX Water-Soluble Resins are more tolerant of salts than are polyelectrolytes.
Form Novel Complexes:
The strong hydrogen bonding affinity of POLYOX Water-Soluble Resins accounts for the association of these polyethers with various polar compounds.
High Binding Efficiency:
POLYOX Water-Soluble Resins have high binding efficiency for pigments, fillers, metal powders, and ceramics.
Thermoplastic:
As thermoplastics, POLYOX Water-Soluble Resins are readily calendered, extruded, molded, or cast.
Soluble in Many Organic Solvents:
POLYOX Water-Soluble Resins are readily soluble in and will thicken certain chlorinated solvents.
Viscoelastic Behavior:
The flexibility of ether linkages combined with the extremely high molecular weight of POLYOX Water-Soluble Resins produces elastic behavior in solution.
Wet Tack:
Solutions exhibit a high degree of wet tack.
Flocculant Activity:
Low Toxicity:

UNION CARBIDE CORP.: POLYOX Water-Soluble Resins(Continued):

Function/Effect:
- Adhesive
- Binder
- Coating/Sizing
- Dispersant
- Drift Control
- Flocculation
- Hydrodynamic-Drag Reduction
- Lubricant/Emollient
- Rheology Modifier
- Thermoplastic
- Water Retention

Industry:
- Agriculture
- Ceramics and Glass
- Chemical
- Construction Products
- Electrical
- Industrial Supply
- Metals and Mining
- Municipal Services
- Paint
- Paper
- Personal Care Products
- Petroleum
- Pharmaceutical
- Printing
- Soap and Detergents
- Textile

UNION CARBIDE CORP.: POLYOX Water-Soluble Resins(Continued):

POLYOX Grade:

WSR N-10:
Approximate Molecular Weight: 100,000
Viscosity Range, cP: Aqueous Solution at 25C: 5%: 12-50

WSR N-80:
Approximate Molecular Weight: 200,000
Viscosity Range, cP: Aqueous Solution at 25C: 5%: 65-115

WSR N-750:
Approximate Molecular Weight: 300,000
Viscosity Range, cP: Aqueous Solution at 25C: 5%: 600-1100

WSR N-3000:
Approximate Molecular Weight: 400,000
Viscosity Range, cP: Aqueous Solution at 25C: 5%: 2250-4500

WSR-3333:
Approximate Molecular Weight: 400,000
Viscosity Range, cP: Aqueous Solution at 25C: 5%: 2250-3350

WSR-205:
Approximate Molecular Weight: 600,000
Viscosity Range, cP: Aqueous Solution at 25C: 5%: 4500-8800

WSR-1105:
Approximate Molecular Weight: 900,000
Viscosity Range, cP: Aqueous Solution at 25C: 5%: 8800-17,600

WSR-N-12K:
Approximate Molecular Weight: 1,000,000
Viscosity Range, cP: Aqueous Solution at 25C: 2%: 400-800

WSR-N-60K:
Approximate Molecular Weight: 2,000,000
Viscosity Range, cP: Aqueous Solution at 25C: 2%: 2000-4000

WSR-301:
Approximate Molecular Weight: 4,000,000
Viscosity Range, cP: Aqueous Solution at 25C: 1%: 1650-5500

WSR Coagulant:
Approximate Molecular Weight: 5,000,000
Viscosity Range, cP: Aqueous Solution at 25C: 1%: 5500-7500

WSR-303:
Approximate Molecular Weight: 7,000,000
Viscosity Range, cP: Aqueous Solution at 25C: 1%: 7500-10,000

UCARFLOC Polymer 309:
Approximate Molecular Weight: 8,000,000
Viscosity Range, cP: Aqueous Solution at 25C: 1%: 10,000-15,000