

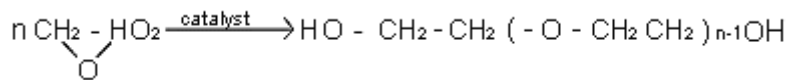
## HIGH-PERFORMANCE PLASTICS

# ALKOX<sup>®</sup>

## POLY (ETHYLENE OXIDE)

### What're ALKOX Resins?

ALKOX Resins are high molecular weight poly (ethylene oxide) with the following polyether structure, and they are produced from ethylene oxide by a ring-opening polymerization process, using our originally-prepared organometallic catalyst. Their molecular weights range from 100,000 to 8 million.



ALKOX Resins are supplied as white, granular powders with the melting point 65 - 67°C and can be molded to make a hard or elastic forms because of its thermoplastic property, just like polyethylene.

On the other hand, in marked contrast to polyethylene, they are soluble in water in all proportions, and because of the high viscosity of their aqueous solutions they have been used in a wide variety of applications.

Thus the co-existence of thermoplastic and water-soluble nature is a fundamental characteristic of ALKOX resins, where a wide variety of final uses different from other resins are expected to be developed.

### Characteristics and Versatility of ALKOX Resins

#### Aqueous ALKOX Solutions

- \* ALKOX Resins are miscible with water in any proportion.
- \* Traces of ALKOX Resins can remarkably reduce hydrodynamic drag.
- \* Show high viscosity and strong stringiness at even very low concentration.
- \* Coagulation and sediment suspension of clay, silica, fine fibers and others.
- \* ALKOX is non-toxic, non-irritating and has a very low biological oxygen demand.

#### ALKOX Resins

- \* ALKOX Resins are soluble in many kinds of polar organic solvents.
- \* Moisture absorption at usual relative humidity is less.
- \* ALKOX Resins compatible with many other resins and plastics.
- \* ALKOX Resins can be shaped by roll press, injection or molding.
- \* ALKOX Resins for producing useful polymer electrolytes, when mixed with many inorganic salts and organic acids.

**Commercial Applications - Aqueous ALKOX® Solutions -**

	<b>USAGE</b>	<b>APPLICATIONS</b>	<b>RECOMMENDED GRADES</b>
1	PAPER	Thickener for aqueous suspensions of pulp and paper-fibers.	E-130, E-160
2	TEXTILE	Textile warp sizing agent, moisture absorber for acrylic fibers, and binder/sizing agent for glass fiber.	E-30, R-1000
3	PAINT & PIGMENT	Thickener for waterbased paints, pigment dispersant, and dispersant of paint for fluorescent lamp.	E-30, E-160, R-150, R-400
4	CERAMICS	Effective flocculant for finely dispersed silica, clay and coal fines in water.	R-150, R-400
5	SOIL REFORMER	Soil reformer and retention aid.	E-75, E-160
6	AGRICULTURE	Spreading agents in agricultural sprays of seeds and chemicals.	R-E-70, E-160
7	ELECTRONICS	Cleaner of electric parts.	
8	PRINTING INK	Protective colloids for printing ink.	E-30, R-1000
9	COPY MACHINES	Additives in developing agents in copying machines.	ER-150
10	CEMENTS	Thickener for cement slurry.	E-160

**Commercial Applications - ALKOX® Resins -**

	<b>USAGE</b>	<b>APPLICATIONS</b>	<b>RECOMMENDED GRADES</b>
1	EXTERIOR COATING	Adhesion-promoting additive in asphaltic emulsions.	E-30, R-1000
2	FIBER	Antistatic agents for fibers and fabrics.	E-100
3	CERAMICS	Temporary binder in manufacture of ceramics.	E-30, E-160
4	PLASTICS	Humectant and plasticizer in plastic films.	R-1000
5	PLASTICS MOLDING	Welding rod binder, mold release agent.	R-400, R-1000
6	AGRICULTURAL CHEMICALS	Additive in fertilizers for soil reforming.	R-150
7	DENTAL	Dental adhesives. tablet	E-30, R-1000

		binders, and tooth-pastes.	
8	COMMODITIES	Detergent bars and powders.	E-30
9	TOILETRY	Components of creams, lotions, and shampoos.	E-30, E-100
10	SEEDING	Seeding tape containing regularly spaced plant seeds.	E-75