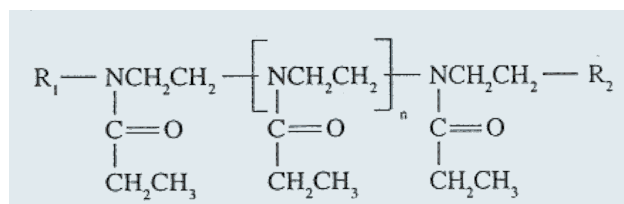


63901 - 63905 Aquazol®

General Characteristics

Poly(2-ethyl-2-oxazoline) AQUAZOL®

CAS Number: 25805-17-8



Product Grade	Target Molecular Weight	Poly-Dispersity Range	Kinematic Viscosity Range
63901 Aquazol® 50	50,000	3 – 4	5 – 7 cSt
63902 Aquazol® 200	200,000	3 – 4	18 – 24 cSt
63905 Aquazol® 500	500,000	3 – 4	60 – 80 cSt

Physical Data

Appearance:	Light yellow solid
Specific gravity:	1.14
pH of aqueous solutions:	neutral
Solubility:	freely soluble in water
Glass temperature, TG:	69 – 71°C (amorphous)
Melt viscosity at 200°C:	130 Sec-1 shear rate, 400,000 CPS (mPa.S)
Refractive Index:	1.52
Degradation Onset:	> 380°C (TGA in air)

Solubility of Aquazol® in Various Solvents

Aquazol® has unusually broad solubility in water and polar organic solvents. A few solvents and their solubility parameter are listed below.

Solubility Parameter (cal/cm ³) ^{1/2}	Solvent	Solubility* of Aquazol®
7.0	n-Pentane	P
8.9	Toluene	P
9.3	Methyl ethyl ketone	S
9.7	Methylene chloride	S
9.9	Acetone	S
12.0	Propylene chloride	S
12.7	Ethanol	S
14.5	Methanol	S
23.4	Water	S

*P < 2% by wt S > 25% by wt



Properties

Water soluble:	Recyclability: Reduced need for organic solvents.
Polymer compatibility:	Broad ability to promote adhesion and lamination.
Low viscosity:	Fewer deformities in ceramics.
Thermoplastic:	Forms a good film.
Thermal & Shear Stability:	Retains good performance and aesthetic characteristics at typical processing temperatures.
Plasticization:	Softening temperature can be readily controlled.
Low Hazard:	U.S. FDA approval for Indirect Food Additives: Adhesives under 21. CFR 175.105. Also, not found to be in any hazard category defined by SARA Title III, Sections 311 and 312.

Applications

Aquazol's excellent water solubility and thermal stability makes it a preferred substitute for PVOH and PVP in high temperature applications. Currently, it is used in a variety of hot-melt and pressure-sensitive adhesive products. In addition, it is gaining acceptance in the ceramics industry as a greenware binder because of the clean burn-out and non-ionic nature of this polymer.

Other applications include, but are not limited to: coatings, textile and fibreglass sizing, lubricants, plasticizers, compatibilizers and films.