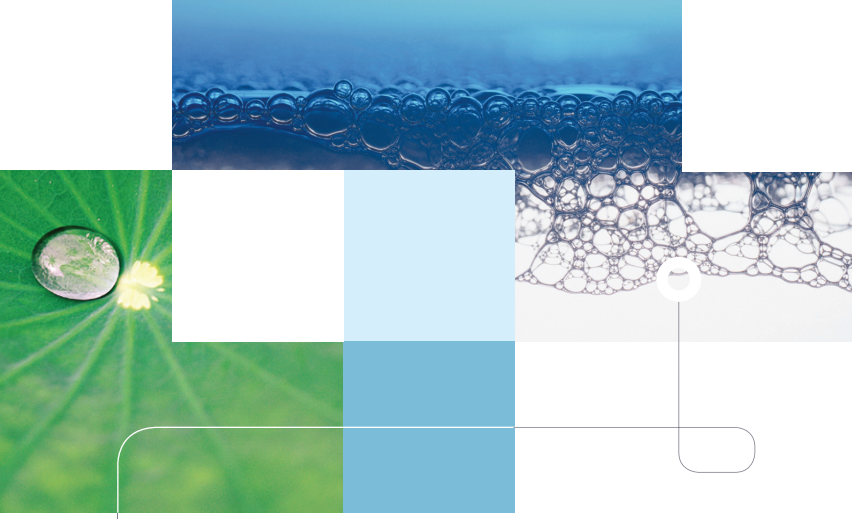


Polymer Chemistry Innovations, Inc.

5/50/200/500®

Aquazol

PRODUCT INFORMATION SHEET

PCI's Advanced Water-soluble Polymer

Aquazol is a high-performance water-soluble polymer – manufactured and distributed worldwide exclusively by Polymer Chemistry Innovations (PCI). It is an excellent alternative to PVP (polyvinyl pyrrolidone) or PVOH (polyvinyl alcohol) in almost all applications, with the added advantage of thermal stability.

Aquazol offers excellent water solubility and is soluble in most organic solvents. It is stable in weak acids and weak bases. Aquazol can also be thermally processed and is one of the few water-soluble polymers that can be extruded.

CHEMICAL SPECIFICATIONS

CHEMICAL NAME
Poly (2-ethyl-2-oxazoline)

FORMULA
$-(C_5H_9NO)_n-$

CAS#
25805-17-8

PHYSICAL PROPERTIES

GLASS TEMPERATURE
69°C – 71°C (amorphous)

REFRACTIVE INDEX
1.52

DEGRADATION ONSET
380°C (TGA in air)

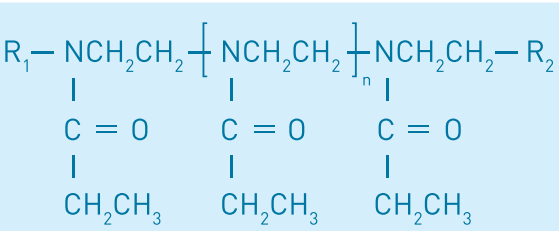
APPEARANCE
Light-Yellow Solid

SPECIFIC GRAVITY
1.14

SOLUBILITY IN WATER
Freely Soluble

pH IN AQUEOUS SOLUTION
Neutral

Chemistry and Technical Specifications



PRODUCT GRADE	TARGET MOLECULAR WEIGHT	POLY-DISPERSITY RANGE	KINEMATIC VISCOSITY RANGE
AQUAZOL 5	5,000	3 – 4	2 – 3 cSt
AQUAZOL 50	50,000	3 – 4	5 – 7 cSt
AQUAZOL 200	200,000	3 – 4	18 – 24 cSt
AQUAZOL 500	500,000	3 – 4	60 – 80 cSt

Performance Advantages

Aquazol® is competitively priced and offers a desirable alternative to PVP (polyvinyl pyrrolidone) or PVOH (polyvinyl alcohol) in virtually any application. Its thermal-processing capability makes it the preferred choice in high-temperature applications – for instance, steel quench in metalworking and hot-melt adhesive products. It is one of the few water-soluble polymers that can be extruded.

Aquazol also offers excellent performance as a greenware binder in ceramics, due to its clean burnout and non-ionic characteristics. It is Mil-Spec for highly-specialized ceramic bindings, such as those used in missiles' nose cones, and is FDA-approved for use as an indirect food additive (e.g. as packaging adhesive) under 21 CFR 175.105.

Applications

- Ceramic Binding
- Digital Imaging
- Water Treatment
- Metal Quench
- Coatings, Textiles and Fiberglass
- Adhesives
- Lubricants
- Agriculture
- Oil and Gas
- Personal Care
- Soap and Detergent

New Markets

PCI is continually pursuing new opportunities where Aquazol's performance capabilities and pricing can be appealing.

Personal Care
Aquazol brings performance benefits to soaps, detergents, body washes and shampoos. It also has excellent hair fixative qualities, with the added benefit of producing an extremely clear gel.

Oil and Gas
Aquazol's thermal stability makes it a preferred choice for high-temperature applications, and competitive pricing also provides an edge.

Agriculture
Aquazol is a valuable additive in crop-dusting, as an active ingredient that adds weight to prevent excess spreading.

REGULATORY

Listed on U.S. EPA Toxic Substances Control Act Inventory

Approved by FDA for use as an indirect food additive (adhesive) under 21 CFR 175.105

Mil-Spec for highly specialized ceramic binding

Not found to be in any hazard category defined by SARA Title III, Sections 311 and 312

More on Aquazol®

Contact our sales team for more information on Aquazol at

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info@polychemistry.com

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