

# PRODUCT DATA

## AQUA-QUENCH® 3600

**Aqua-Quench 3600** is a concentrated solution of polyethyloxazoline. **Aqua-Quench 3600** is inversely soluble in water and is inhibited against ferrous and limited nonferrous corrosion. **Aqua-Quench 3600** has quenching characteristics which provide a very slow cooling rate in the convection phase of time-temperature cooling curves.

### APPLICATION

**Aqua-Quench 3600** solutions cover a wide range of quenching effects depending on solution concentrations and temperatures. The quenching characteristics of **Aqua-Quench 3600**, as demonstrated by time-temperature cooling curves, have a slower rate of cooling during the convection phase. This slower cooling rate in the third stage of the quenching mechanism will eliminate the tendency for quench cracking or distortion problems in many alloys and work pieces.

**Aqua-Quench 3600** is formulated to quench ferrous alloys and is recommended as a quenchant in the following processes:

#### Surface Hardening

Gears, spindles, camshafts, bearing journals, drill pipe etc. that are induction or flame heated are traditionally quenched in oil. **Aqua-Quench 3600** can replace the quenching oil and eliminate the fire hazard and reduce smoking.

#### Forgings

Steel forgings of high and low hardenable material can be hardened in solutions of **Aqua-Quench 3600** at 8-25% concentration.



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**Castings**

**Aqua-Quench 3600** is recommended for quenching of steel castings at concentrations depending on alloy from 8-25%.

Nodular and ductile iron castings can be quenched in solutions of **Aqua-Quench 3600** at 10-30% concentration.

The above applications are examples. The actual solution concentration of **Aqua-Quench 3600** will vary depending on the workpiece, chemistries, dimensions, equipment being used, and so on.

**TYPICAL PHYSICAL & CHEMICAL PROPERTIES**

Appearance	Clear, reddish-brown liquid
Viscosity @ 100°F (37.8°C)	71.5 ± 4.0 cSt
Specific Gravity @ 60°F (15.6°C)	1.03
Pounds per Gallon @ 60°F (15.6°C)	8.5
pH Value	9.0 + 0.5
Corrosion Protection	Excellent, even in 5% aqueous solution
Solubility in Water	At temperatures of 145°F or higher
the product	will be
insoluble in water	

**SHELF LIFE**

Under normal conditions, the recommended shelf life for **Aqua-Quench 3600** is twelve months.

**SHIPPING INFORMATION**

**Aqua-Quench 3600** is shipped in 55 (U.S.) gallon (208 liter) steel drums and in bulk.

**SHIPPING CLASSIFICATION**

Compound, Metal Annealing or Tempering, N.O.S.

**STORAGE/HANDLING/DISPOSABILITY**

No health or safety hazards exist when **Aqua-Quench 3600** is stored, used and disposed of in accordance with instructions given on the Material Safety Data Sheet for this product.

Avoid freezing: If **Aqua-Quench 3600** is inadvertently frozen, the product can stratify. This will not affect the quenching characteristics of the product, but it must be thoroughly mixed prior to using.

**WARRANTY**

The information given here is considered to be correct and is offered for your consideration, investigation and verification. No warranties are expressed or implied since the use of our products is beyond our control. Statements concerning the use of Houghton products are not to be construed as recommending the infringement of any patent.

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