

# TECHNICAL DATA SHEET

## AQUA-QUENCH® 251 C

### POLYMER QUENCHANT FOR THE HARDENING OF FERROUS AND NON-FERROUS ALLOYS

AUQA-QUENCH® 251 C is an oil free, non-flammable, water soluble synthetic quenchant for the hardening of ferrous alloys and solution treatment of aluminum alloys. As AQUA- QUENCH® 251 C solutions are heated the organic polymer becomes insoluble in the water at temperatures above 74°C. When the solution is cooled the polymer goes back into solution and is fully miscible. It is this property known as "inverse solubility" which imparts the unique cooling mechanism to AQUA- QUENCH® 251 C.

#### Applications

AQUA-QUENCH® 251 C is a versatile water soluble polymer quenchant for use in both ferrous and aluminum alloys. It can be used in open quench tanks, continuous furnaces, and selective surface hardening equipment. The flexibility of quenching speed and uniform heat transfer characteristics of the product eliminates many of the disadvantages of water or mineral oil based quenchants.

AQUA-QUENCH® 251 C complies with Aerospace Material Specification (AMS) 3025(C) as a Type II multiple polymer quenchant. It can be used for processing a wide range of aluminum alloys such as 2024, 6061 and 7075 and is suitable for cast and forged components, extruded sections, brazed fabrications and assemblies manufactured from thin gauge sheet.

#### Health, Safety and Handling

Please consult the Safety Data Sheet (SDS) for information on storage, safe handling and disposal. The conditions or methods of handling, storage, use and disposal of the product are beyond our reasonable control - we assume no liability for any ineffectiveness of the product or any injury or damage, arising out of or in connection with these conditions.

#### The Benefits

- Uniform quenching eliminates steam pockets and formation of soft spots associated with water quenching.
- Flexibility of quenching speed helps to minimize distortion and provide excellent dimensional control.
- Water based quenchant to eliminate fire hazard and smoke associated with quenching oils along with cleaner parts

#### Recommendation for Use

The quenching speed of AQUA-QUENCH® 251 C solutions can be selected to suit the steel hardenability and components requirements by varying the concentration of the solution.

For the hardening of ferrous alloys: 10%--20%

For the solution treatment of aluminum alloys: 5%--30%

Recommended use temperature for general use: 20 --40°C



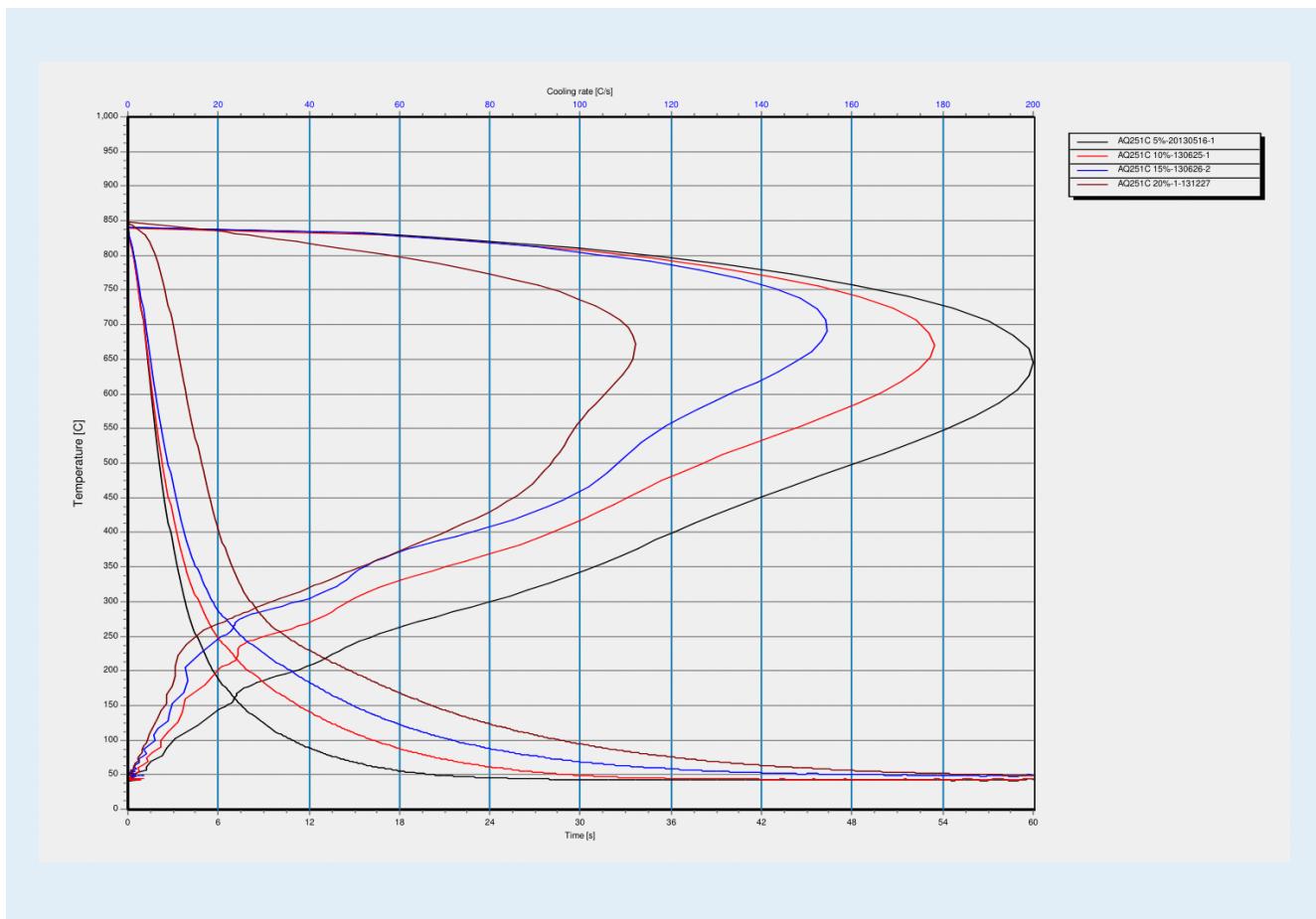
# AQUA-QUENCH® 251 C

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### Properties

PROPERTY	TYPICAL VALUE	UNIT
Appearance	Light Yellow Translucent Liquid	
Kinematic Viscosity @40°C	300	mm <sup>2</sup> /s
pH	9.5	
Specific Gravity @ 15.6°C	1.08	g/cm <sup>3</sup>

### Cooling Property



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