

AQUA-QUENCH 140 FB

Polymer Quenchant for induction hardening applications (ISO 6743-14) UAB

DESCRIPTION

AQUA-QUENCH 140 FB is an amber, transparent fluid specifically designed for induction hardening applications to minimise residual sticky deposits on equipment and quenched parts, provide resistance to microbial contamination and to extend system life.

APPLICATIONS

Aqua-Quench 140 FB is diluted with water in use and provides extremely uniform quenching characteristics. Compared to simple water quenching, it eliminates steam pockets and high residual stress, and avoids the formation of soft spots and inconsistent mechanical properties. AQUA-QUENCH 140 FB can be used for a very wide range of induction and flame hardening applications, including the quenching of crankshafts, camshafts, transmission components, starter ring gears and bearings. The quenching speed of AQUA-QUENCH 140 FB solutions can be selected to suit the steel hardenability and component requirements by varying the concentration of the solution.

1% to 5% solutions of AQUA-QUENCH 140 FB improve the wettability on the component surface thereby imparting a more uniform quench and preventing soft spotting. These low concentrations are generally used for steels of low hardenability.

5% to 20% solutions of AQUA-QUENCH 140 FB provide a range of cooling rates similar to those of soluble oil emulsions and quenching oils and are used for steels of higher hardenability. The quenching speed of AQUA-QUENCH 140 FB depends upon the concentration and temperature of the solution.

TYPICAL PHYSICAL PROPERTIES

Concentrate Appearance	Translucent green	Visual
Specific Gravity @ 15.5°C	1.070	
Kinematic Viscosity @ 40°C in mm ² /s	44	ASTM D445
pH @ 10%	9.5	INTERNAL
Refractometer Factor	2.8	INTERNAL

BENEFITS

- o Economic - Develops optimum properties in components
- o Economic - Flexibility of quenching speed
- o Economic - Reduce cooling rate during the critical martensitic transformation temperature range than conventional PAG's
- o Economic - Eliminates need costly alkali cleaning or vapour degreasing prior to tempering
- o Economic - Quenching speed not significantly influenced by contamination with water
- o Operator friendly - Diethanolamine free
- o Operator friendly - Boron free
- o Operator friendly - Eliminates smoke and fume during quenching
- o Environmentally friendly - Nitrite free corrosion inhibitor system
- o Safety - Eliminates fire hazard
- o Safety - Eliminates oily floors around quench tanks

RECOMMENDATION FOR USE

Use diluted in water.

The concentration of the AQUA-QUENCH 140 FB solution influences the thickness of the polymer film which is formed on the surface of the component and hence controls the quenching speed. As the concentration increases, thicker films are produced thereby reducing the quenching speed and giving lower maximum cooling rates

RELATED PRODUCTS

Product is compatible with the full range of Houghton's portfolio. For more information, please contact your local Houghton representative.

STORAGE

Please refer to section 7 of Safety Data Sheets for handling and storage information, including product shelf life. Product should be stored under cover in clean, dry conditions and protected from frost. Recommended storage temperature is usually between 5°C and 40°C unless otherwise specified. Use stock in delivery rotation.

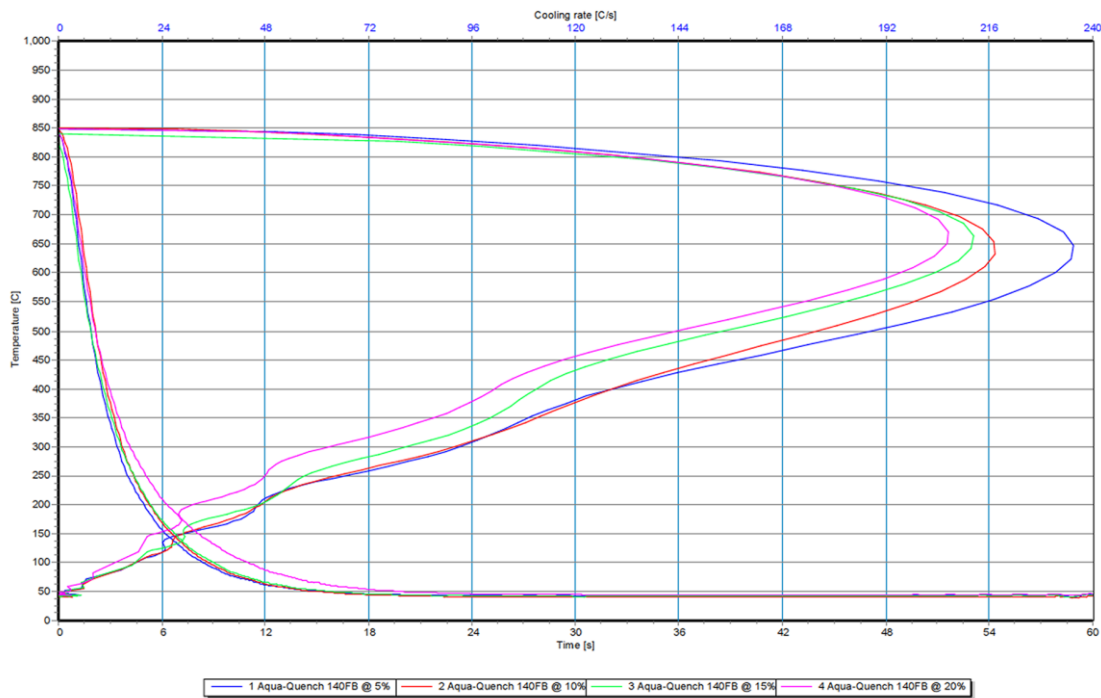
HEALTH AND SAFETY

Safety data sheets are available in accordance with Regulation (EC) No 1907/2006 Annex II where a substance or preparation meets the criteria in accordance with Directives 67/548/EEC or 1999/45/EC.

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COOLING CURVE



ADDITIONAL PRODUCT DATA

As AQUA-QUENCH 140 FB solutions are heated the polymer becomes insoluble at temperatures above 77°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 140 FB solutions.