

TENAXOL™ QUENCH ULTRA 1500

POLYMERIC QUENCHANTS

▷ PRODUCT DESCRIPTION

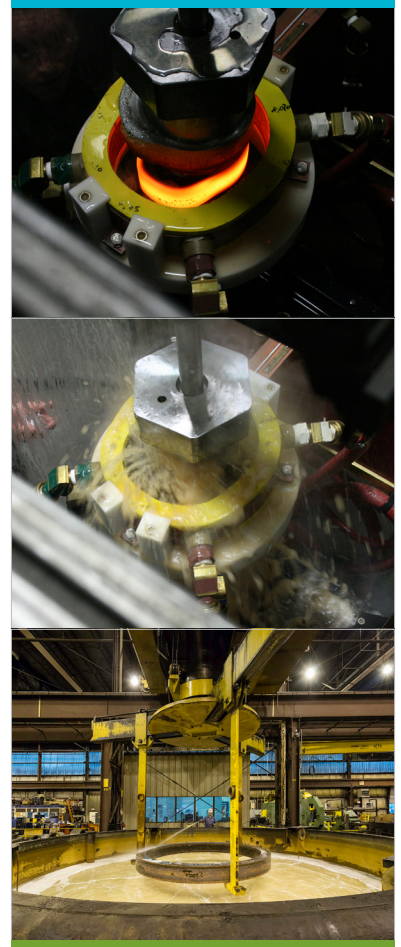
Tenaxol Quench Ultra 1500 is a nonflammable polymeric quenchant. It is an aqueous solution of a water soluble organic polymer that incorporates a corrosion inhibitor, antifoam, and biocide. This combination results in a homogeneous solution. Tenaxol Quench Ultra 1500 is formulated with a proprietary non-nitrite corrosion inhibitor that does not form nitrosamines.

When hot metal is quenched in a diluted solution of Tenaxol Quench Ultra 1500, a film of organic polymer is deposited on the surface. The rate at which this metal is cooled is governed by the thickness of this polymer rich film. The thickness of this film is controlled by the concentration of the Tenaxol Quench Ultra 1500 in the quench bath. This film is fully water soluble at room temperature and does not result in a tacky, residual film.

▷ FEATURED BENEFITS

- Minimizes replacement control because of its low deterioration and/or oxidation rate. The major make-up requirement is for water loss due to evaporation.
- Eliminates smoke, soot and residues common to oil based quenchant. Equipment maintenance and plant cleanliness are easier to achieve and maintain.
- Completely water soluble and has a built-in bactericide to resist microbial infestation.
- Can be frozen and then thawed without performance loss.
- Not tacky and is easily removed by washing with water.
- Can be operated within a wide temperature range since the polymer employed is soluble and will not precipitate like other quenching polymers.
- Reduces drag-out of components because it is uniquely water soluble over a wide temperature range.

APPLICATION



TYPICAL APPLICATIONS

The heat treatment of carbon and alloy steels by flame, induction and submerged induction heating.

In batch and continuous furnace operations employing gas fired and carburizing-carbon-nitriding atmospheres.

With wrought, cast and forged aluminum alloys.



TENAXOL QUENCH ULTRA 1500

TECHNICAL DATA

PRODUCT APPLICATION / PERFORMANCE

Tenaxol Quench Ultra 1500 is readily adaptable to induction and flame hardening, both spray quench and immersion, for items such as gears, crankshafts, camshafts and other intricate geometries and metallurgies.

Tenaxol Quench Ultra 1500 may follow either oxidative or protective atmosphere furnaces of shake, pit rotary or continuous design. They may be utilized for continuous case quenching and for general hardening of forged and cast steels and cast irons.

Tenaxol Quench Ultra 1500 is a proven quenching agent for wrought, cast, dip-brazed and forged aluminum alloys. Compared to water quenching Tenaxol Quench Ultra 1500 reduces residual stresses in aluminum alloys resulting in extensive straightening, potential cost savings and enhance uniformity of mechanical properties.

PRODUCT USE PRECAUTIONS

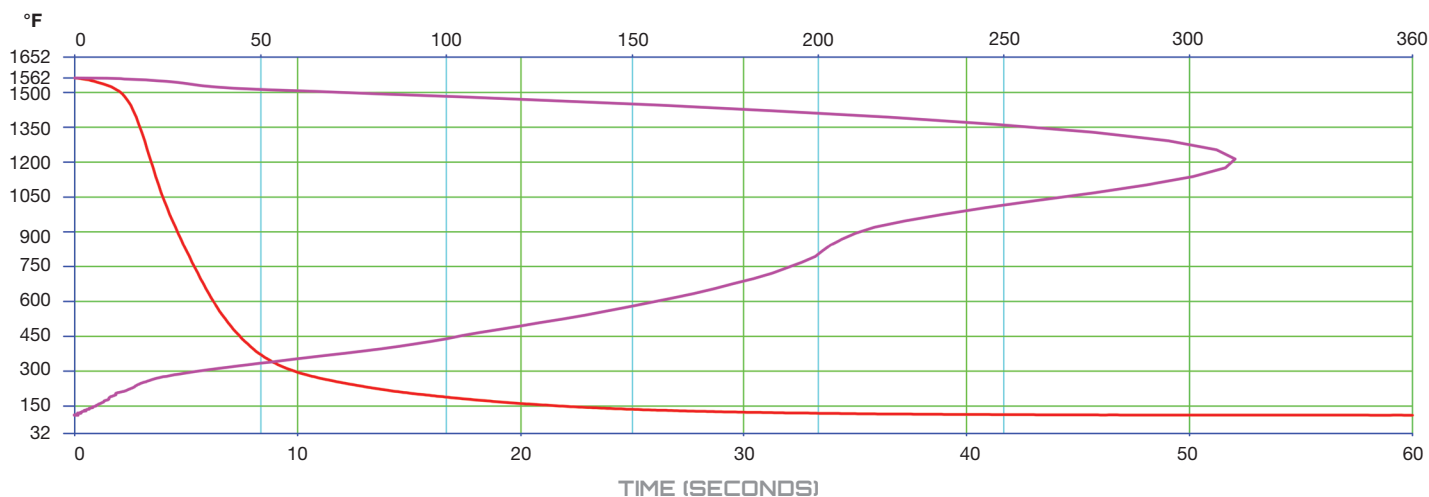
Vapor inhalation under ambient conditions is normally not a problem. Small amounts of organic vapors can be evolved during quenching. Use adequate workplace ventilation to avoid accumulation of vapors and prevent irritation.

IMPORTANT!: Immediately rinse with water for at least 15 minutes. Contact physician if irritations persists. Remove contaminated clothing. Wash skin thoroughly with soap and water. Contact physician if irritation persists. **DO NOT** induce vomiting! Remove victim immediately from source of exposure. Get medical attention. Administer large amounts of water. Never give anything by mouth to an unconscious person.

TYPICAL PROPERTIES

Fluid Type	Quench oil
Weight per gallon, 68°F (20°C)	8.8 – 9.2
Specific Gravity, 68°F (20°C)	1.056 – 1.100
Viscosity, 100°F (39°C)	220 – 250 cSt
Rust Inhibition	Pass
pH (Concentrate)	9 – 11
Refractometer Multiplier	3.35

COOLING RATE °F/SEC - 10% STANDARD CURVE



TENAXOL QUENCH ULTRA 1500

TECHNICAL DATA

SPECIFICATIONS

Agitation Flowrate	15 Ltr/min
Test Start Temp	1562°F (850°C)
Media Temp	100°F (38°C)

RESULTS

Maximum Cooling Rate	312.29°F (155.72°C) /sec
Temp at Maximum Cooling Rate	1214.03°F (656.68°C)
Temp at Start of Boiling Phase	1561.82°F (849.90°C)
Time at Start of Boiling Phase	.000 secs
Temp at End of Boiling Phase	479.35°F (248.53°C)
Time at End of Boiling Phase	7.125 secs
Temp Difference between Start & End	1082.47°F (583.59°C)
Cooling Rate at 1112°F (600°C)	300.92°F (149.40°C) /sec
Cooling Rate at 752°F (400°C)	195.64°F (90.91°C) /sec
Cooling Rate at 572°F (300°C)	148.61°F (64.78°C) /sec
Time to reach 1112°F (600°C)	3.625 secs
Time to reach 752°F (400°C)	5.250 secs
Time to reach 392°F (200°C)	8.000 secs
Time from 1112°F to 392°F (600°C to 200°C)	4.380 secs

Cooling curve developed using Drayton Quenchalyzer

PRODUCT CODE

681100000

HEALTH AND SAFETY

For health and safety guidance, please refer to the Chemtool SDS (Safety Data Sheets).