

UCON™ QUENCHANT E and E-NN

POLYMERIC QUENCHANTS

▷ PRODUCT DESCRIPTION

UCON™ Quenchant E and E-NN (non-nitrite) are nonflammable polymeric quenchants and are aqueous solutions of a liquid organic polymer and a corrosion inhibitor. The organic polymer is soluble in water. At temperatures above 165°F (74°C), however, the polymer separates from water as an insoluble phase.

UCON Quenchant E-NN is formulated with a proprietary non-nitrite corrosion inhibitor which is completely compatible with UCON Quenchant E without nitrosamine formation. Analogous quenching performance is obtained with either UCON Quenchant E or E-NN. When hot metal is quenched in a diluted solution of UCON Quenchant E or E-NN, a film of the liquid organic polymer is deposited on the surface of the hot metal. The rate at which the metal is cooled is governed, in part, by the thickness of the polymer-rich film. The thickness of this film is controlled by the concentration of UCON Quenchant E or E-NN in the quench bath.

The cooling rate is controlled also by adjusting the quench bath temperature and/or the rate of agitation. The main difference between UCON Quenchant E and E-NN and other UCON Quenchants is the choice of the polymer composition, which provides uniform heat transfer in typical oil applications.

▷ FEATURED BENEFITS

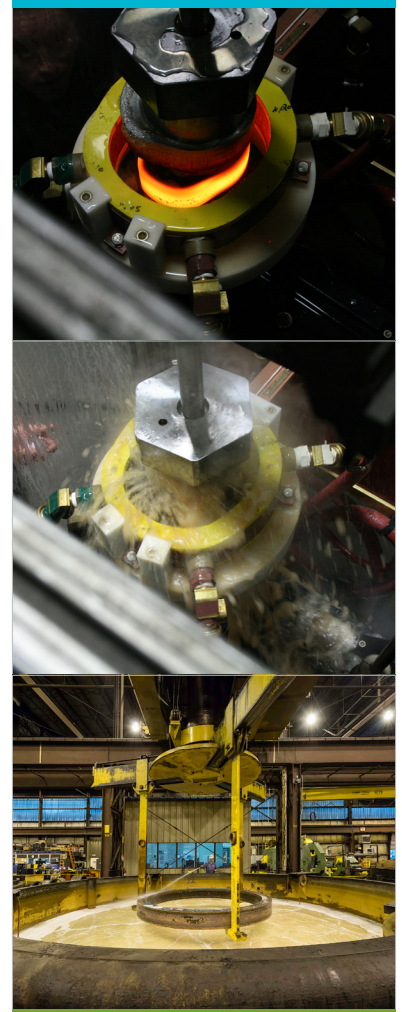
- Classified as “FM Approved” as tested against the latest testing criteria.
- The optimum operating conditions for a specific metal or part may be determined by control of concentration, bath temperature, and/or agitation.
- Minimize replacement control due to its low deterioration and/or oxidation rate. The major make-up requirement is for water lost by evaporation.
- Eliminates the smoke, soot and residues common to oil quenchants. Equipment maintenance and plant cleanliness are easier to achieve.
- Soluble in water and resistant to bacterial growth.
- Not affected in any way by freezing/thawing.

▷ PRODUCT APPLICATION

UCON Quenchant E and E-NN are suitable for:

- Quenching of high carbon and most alloy grades of steel associated with typical oil quenching
- Hardening of large alloy parts from tilt-top, car-bottom and pit furnaces
- Hardening of forged parts that are quenched directly from the forge
- Hardening of sensitive alloys and shapes heated by induction

APPLICATION





▷ PRODUCT APPLICATION (continued)

- Parts processed from continuous and batch-furnace operations employing gas-fired, neutral, and carburizing carbonitriding atmospheres requiring oil quenching rates
- Adaptable to induction and flame hardening, both spray quench and immersion, for a high alloy with an intricate geometry. This includes nodular, malleable, and cast irons.
- Follows oxidizing, neutral, and protective atmosphere furnaces of shaker, rotary batch or continuous design. It can be used for direct quenching from the forge, for continuous case quenching, and for general hardening of forged and cast steels, and cast irons.

TYPICAL PROPERTIES

	UCON Quenchant E	UCON Quenchant E-NN
Weight, 68°F (20°C)	8.94 lbs/gal.	8.88 lbs/gal.
Specific Gravity, 68°F (20°C)	1.074	1.067
Flash Point	None	None
Pour Point	-11°F (-12°C)	<32°F (<0°C)
Rust Inhibition, ASTM D 665A	Pass	Pass
Viscosity, 100°F	1120 – 1375 SUS	1110 1370 SUS
Refractometer Multiplier (IFT 40/ATAGO PAL-1)	2.7/2.5	2.7/2.5

PRODUCT CODE

UCON Quenchant E	1422060000
UCON Quenchant E-NN	1422500000

HEALTH AND SAFETY

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