

UCON™ QUENCHANT RL and RL-NN

POLYMERIC QUENCHANTS

▷ PRODUCT DESCRIPTION

UCON™ Quenchant RL and RL-NN are nonflammable polymeric quenchants manufactured by The Dow Chemical Company. They are an aqueous solution of a liquid organic polymer and a corrosion inhibitor. The organic polymer is soluble in water and produces a homogenous solution. At temperatures above 165°F (74°C), however, the polymer separates from water as an insoluble phase.

UCON Quenchant RL-NN is formulated with a proprietary non-nitrite corrosion inhibitor which is completely compatible with UCON Quenchant RL without nitrosamine formation. Analogous quenching performance is obtained with either UCON Quenchant RL or RL-NN.

When hot metal is quenched in a diluted solution of UCON Quenchant RL or RL-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 RL or RL-NN in the quench bath.

The cooling rate is controlled also by adjusting the quench bath temperature and/or the rate of agitation. The major difference between UCON Quenchant RL and RL-NN and the other UCON Quenchants is the polymer composition, which provides uniform heat transfer in a broad range of applications.

▷ FEATURED BENEFITS

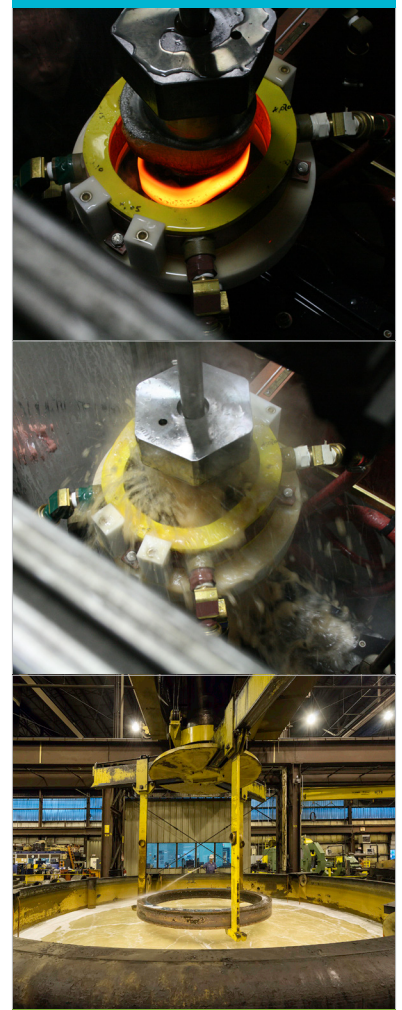
- Classified as “FM Approved” as tested against the latest testing criteria
- The optimum operating conditions for a specific metal or part may be determined by control of concentration, bath temperature, and/or agitation
- Minimize replacement control due to its low deterioration and/or oxidation rate. 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
- Fully soluble in water and resistant to bacterial growth
- Will not be affected in any way by freezing/thawing

▷ PRODUCT APPLICATION

UCON Quenchant RL and RL-NN are suitable for:

- Quenching medium- to high-carbon steel and alloy steels of most grades including 300 and 400 series stainless steels
- Induction hardening, camshafts, and other pieces of intricate geometry and different metallurgy
- May follow oxidizing, neutral, or protective atmosphere furnaces of shaker, rotary, batch or continuous design. The quenchant may be used for direct quenching from the forge, for continuous cast quenching, and for general hardening of forged and cast steels and cast irons

APPLICATION





▷ PRODUCT APPLICATION (continued)

- Large alloy parts from tilt-top, car-bottom and pit furnaces
- Forged parts that are quenched directly from the forge
- Sensitive alloys and shapes heated by induction
- Parts processed from continuous and batch-furnace operations employing gas-fired, neutral, and carburizing-carbonitriding atmospheres

TYPICAL PROPERTIES

	UCON Quenchant RL	UCON Quenchant RL-NN
Weight, 68°F (20°C)	8.97 lbs/gal.	8.77 lbs/gal.
Specific Gravity, 68°F (20°C)	1.077	1.073
Flash Point	None	None
Pour Point	32°F (0°C)	<32°F (<0°C)
Rust Inhibition, ASTM D 665A	Pass	Pass
Viscosity, 100°F	1000 – 1250 SUS	1060 – 1300 SUS
Refractometer Multiplier (IFT 40/ATAGO PAL-1)	2.7/2.5	2.7/2.5

PRODUCT CODE

UCON Quenchant RL	1422090000
UCON Quenchant RL-NN	1422800000

HEALTH AND SAFETY

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