

# UCON™ QUENCHANT A and A-NN

## POLYMERIC QUENCHANTS

### ▷ PRODUCT DESCRIPTION

**UCON™ Quenchant A and A-NN (non-nitrite)** are nonflammable polymeric quenchants manufactured by The Dow Chemical Company. They are aqueous solutions 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 A-NN is formulated with a proprietary non-nitrite corrosion inhibitor that is completely compatible with UCON Quenchant A without nitrosamine formation. Analogous quenching performance is obtained with either UCON Quenchant A or A-NN.

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

The cooling rate is also controlled by adjusting the quench bath temperature and/or the rate of agitation. These parameters, along with product orientation, allow UCON Quenchant A and A-NN to function uniformly in the heat transfer range from water to medium-speed oils.

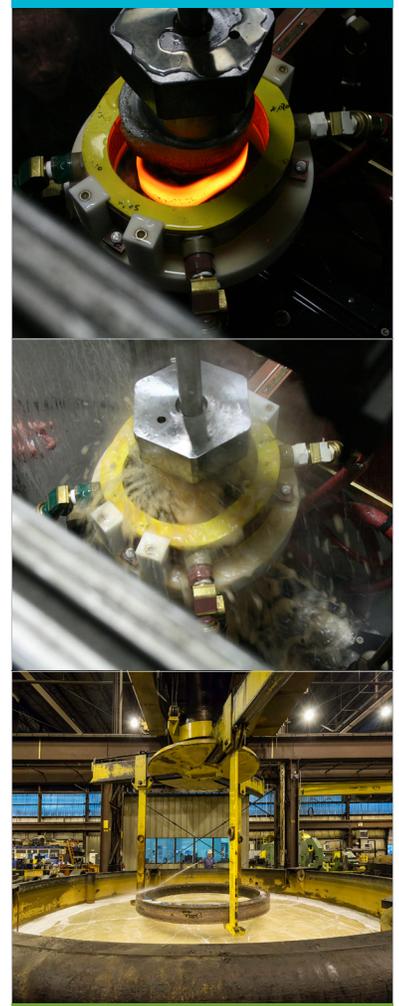
### ▷ FEATURED BENEFITS

- Minimize replacement control because of low deterioration and/or oxidation rate. The major make-up requirement is for water lost by evaporation.
- Eliminate the smoke, soot and residues common to oil quenchants. Equipment maintenance and plant cleanliness are easier to maintain.
- Soluble in water and resistant to bacterial growth
- Not affected by freezing/thawing in any way

### ▷ PRODUCT APPLICATION

- UCON Quenchant A and A-NN are readily adapted to induction and flame hardening, both spray quench and immersion, for such items as gears, crankshafts, camshafts, and other pieces of intricate geometry and different metallurgy.
- UCON Quenchant A and A-NN may follow either oxidizing or protective atmosphere furnaces of shake, pit, rotary or continuous design. They may be used for continuous case quenching and for general hardening of forged and cast steels, and cast irons.
- UCON Quenchant A and A-NN are a proven quenching agent for wrought, cast, dipbrazed, and forged aluminum alloys. Compared to water-quenching, UCON Quenchant A and A-NN reduce residual stresses in aluminum alloys, resulting in extensive straightening, potential cost savings and improved uniformity of mechanical results.

### APPLICATION





## ▷ APPROVALS

- Classified as “FM Approved” as tested against the latest testing criteria
- UCON Quenchant A product meets AMS 3025B specifications
- Certified Aerospace SAE AMS 3025C Type 1 Polymer Quenchant
- Boeing BAC 5602 AF Approved
- Honda

## TYPICAL PROPERTIES

	UCON Quenchant A	UCON Quenchant A-NN
Weight, 68°F (20°C)	9.13 lbs/gal.	9.13 lbs/gal.
Specific Gravity, 68°F (20°C)	1.092	1.095
Flash Point (COC)	None	None
Pour Point	3°F (-16°C)	-1°F (-19°C)
Rust Inhibition, ASTM D 665A	Pass	Pass
Viscosity, 100°F	2200 – 2800 SUS	2375 – 2900 SUS
Refractometer Multiplier (IFT 40/ATAGO PAL-1)	2.0/1.78	2.0/1.78

## PRODUCT CODE

UCON Quenchant A	1422070000
UCON Quenchant A-NN	1422080000

## HEALTH AND SAFETY

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