

# ALPHAQUENCH 5300

## FAST QUENCH OIL

### ▷ PRODUCT DESCRIPTION

**Alphaquench 5300** is designed for quenching operations which require a high speed quenching oil, in order to develop maximum hardness and minimal distortion. The Alphaquench 5300 is formulated with a paraffinic base stock fortified with accelerating additives designed to meet the toughest industrial requirements. It provides a very short vapor stage with greatly increased cooling rate during the critical cooling stage to provide maximum transformation to the martensitic form. This oil was engineered for a reduced cooling rate through the martensite formation range while still providing high and deep hardness but without distortion and breakage.

The Alphaquench 5300 is used in all applications where the highest cooling rates must be applied in order to achieve maximum hardness of the quenched parts. This oil can be particularly effective when parts are tightly packed in baskets and optimal circulation is not possible. Batch and continuous furnace operations gas fired, carburizing, carbonitriding, or neutral atmosphere with internal or external quench tanks.

Alphaquench 5300 is very useful for batch internal quench, continuous, or other open tank quenching of gears, shafts, forgings, or other ferrous parts requiring fast cooling rates with controlled distortion. It allows for high hardness and depth with controlled residual stress after quench.

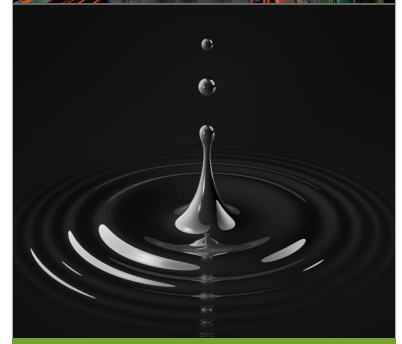
### ▷ FEATURED BENEFITS

- Fast oil for maximum hardness and minimum distortion
- Low drag out on parts and minimal evaporation loss
- Contains accelerator to break down vapor phase quickly
- High flash point and low smoke formation reduce health and safety concerns

### ▷ APPROVALS

- Super-compliant for California SCAQMD Rule 1144
- Caterpillar

### APPLICATION



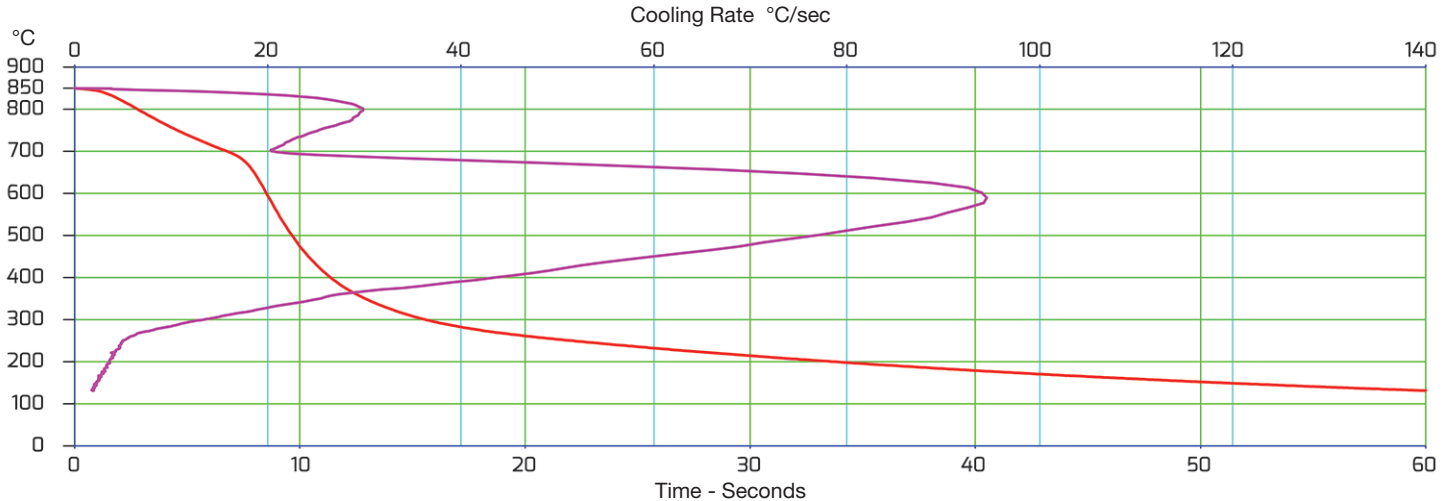
- Internal Quench Furnaces
- Wide Range of Alloy Steel

### TYPICAL PROPERTIES

Fluid Type	Quench oil
Specific Gravity, 60°F (15.6°C)	0.85
Flash Point (COC)	>350°F (>177°C)
Viscosity, 100°F	100 SUS
Viscosity Index	115
Recommended Bath Temperature	<250°F (<121°C)
VOC, ASTM 1868	0.50 grams/liter



## COOLING CURVES - TEST METHOD ASTM D 6200



## SPECIFICATIONS

Agitation Flowrate	Test Start Temp	Media Temp
Static	850°C	40°C

## RESULTS

Maximum Cooling Rate	94.50°C/sec	Cooling Rate at 600°C	94.02°C/sec
Temp at Maximum Cooling Rate	594.91°C	Cooling Rate at 400°C	41.55°C/sec
Temp at Start of Boiling Phase	703.93°C	Cooling Rate at 300°C	11.01°C/sec
Time at Start of Boiling Phase	6.750 secs	Time to reach 600°C	8.500 secs
Temp at End of Boiling Phase	366.14°C	Time to reach 400°C	11.500 secs
Time at End of Boiling Phase	12.625 secs	Time to reach 200°C	37.000 secs
Temp Diff between Start & End	337.79°C		

## PRODUCT APPLICATION / USAGE

This product is flammable with a flash point of 340°F (Cleveland open cup method). Use precaution to avoid placing flammable objects above or near the quench tank. Do not heat quench tank above <250°F to avoid auto-ignition of the oil. If fire starts, use dry chemicals, sand, dolomite, carbon dioxide, etc. to extinguish the fire.

## PRODUCT CODE

6819000000

## HEALTH AND SAFETY

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