

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.

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. Alphaquench 5300 can be used in 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

APPLICATION



TYPICAL PROPERTIES

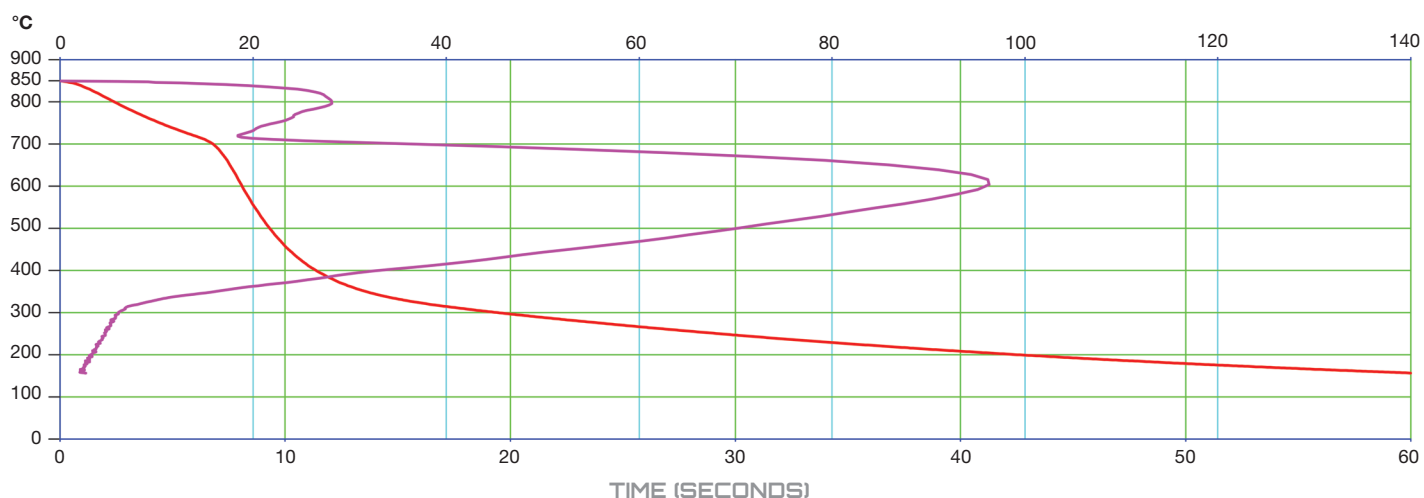
Fluid Type	Quench oil
Specific Gravity, 60°F (15.6°C)	0.85
Viscosity, 100°F (39°C)	100 SUS
Viscosity Index	115
Flash Point, COC	345°F (174°C)
Recommended Bath Temperature	<250

PRODUCT USE PRECAUTIONS

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.



COOLING RATE °C/SEC - TEST METHOD ASTM D 6200



SPECIFICATIONS

Agitation Flowrate	Static
Test Start Temp	1562°F (850°C)
Media Temp	104°F (40°C)

RESULTS

Maximum Cooling Rate	205.30°F (96.28°C) /sec
Temp at Maximum Cooling Rate	1114.30°F (601.28°C)
Temp at Start of Boiling Phase	1318.91°F (714.95°C)
Time at Start of Boiling Phase	6.125 secs
Temp at End of Boiling Phase	720.72°F (382.62°C)
Time at End of Boiling Phase	11.750 secs
Temp Difference between Start & End	630.17°F (332.32°C)
Cooling Rate at 1112°F (600°C)	205.30°F (96.28°C) /sec
Cooling Rate at 669°F (354°C)	67.15°F (19.53°C) /sec
Cooling Rate at 572°F (300°C)	43.56°F (6.42°C) /sec
Time to reach 1112°F (600°C)	8.000 secs
Time to reach 669°F (354°C)	12.875 secs

PRODUCT CODE

6819000000

HEALTH AND SAFETY

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