



## DESCRIPTION

AAA-DA QUENCH OIL is a fast quench oil, designed to provide maximum cooling rates for austenitized steels. Its formulation guarantees good stability due to its accelerator package which will not stratify out at any temperature nor can it be filtered out. It is widely used as quenching medium for carburized and carbonitrided work as well.

## APPLICATION

- AAA-DA QUENCH OIL is especially suitable for developing maximum oil-quenched hardness in medium and low alloy steels. It is particularly useful when quenching parts with very high surface area to mass ratios such as with fasteners
- AAA-DA QUENCH OIL achieves rapid cooling rates in the nucleate boiling stage immediately following a short vapor phase. It also provides a slower cooling rate through the martensitic transformation range (Ms-Mf) than competitor's fast quench oils. This ensures higher and deeper hardness levels are created without accompanying distortion of parts. Testing demonstrates AAA-DA QUENCH OIL's superior heat removal characteristics are the difference between partial and complete hardening in actual practice.
- Overall, distortion in oil quenched parts is proven to be caused by sluggish, non-uniform cooling rates. This is due to the thermal variations and mixed microstructures in the initial stages of the quench which slower quench oils produce. A fast uniform quench is especially important in batch-type carbonitriding furnaces to provide all portions of the load becoming evenly hardened. The quenching rate provided by AAA-DA QUENCH OIL was designed to satisfy this requirement.
- AAA-DA QUENCH OIL drains off parts quickly resulting in low drag-out and is characteristically easier to wash off after quenching. If left on, it provides a thin film of protection from rust.
- You can use AAA-DA QUENCH OIL with confidence. Your parts will achieve maximum oil quenched hardness with minimum distortion or cracking.
- AAA-DA QUENCH OIL will produce exceptionally clean, bright work when used within its recommended temperature range.
- OPEN TANK OPERATING TEMPERATURE RANGE: 20 - 85°C
- VACUUM OPERATING TEMPERATURE RANGE: 20 - 55°C
- OPERATING TIME: As required for appropriate metallurgical transformation

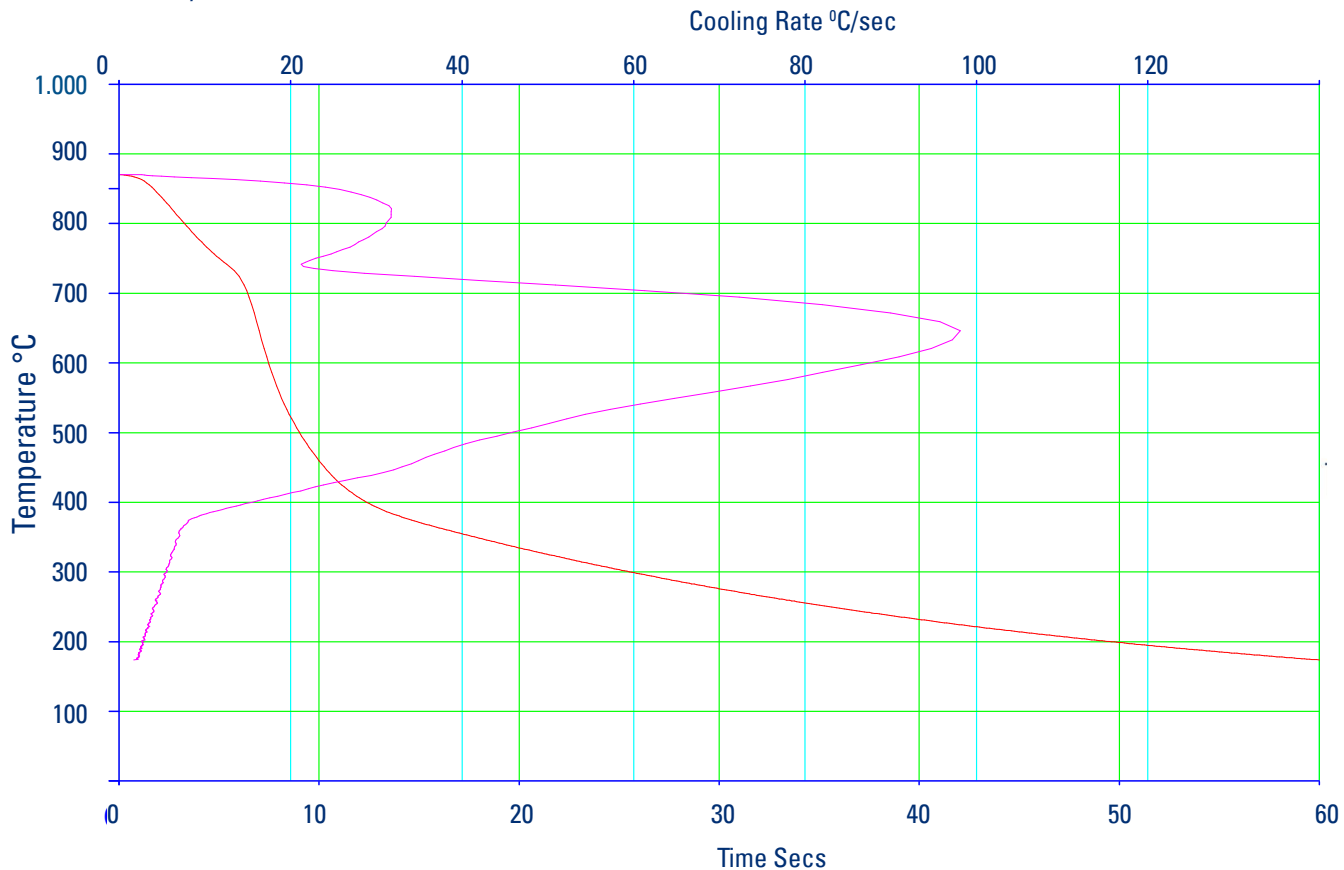
## TYPICAL CHARACTERISTICS:

Description	Method	Typical value	Unit
Density @20°C	DIN 51757/7 (2011)	856	kg/m <sup>3</sup>
Kinematic Viscosity @40°C	ASTM D445	25	mm <sup>2</sup> /s
Kinematic Viscosity @100°C	ASTM D445	5	mm <sup>2</sup> /s
Flash point COC	ASTM D92	190	°C
Maximum Cooling Rate	ASTM D6200	98	°C/sec
Cooling curve (60 °C)	ASTM D6200	See graph	
Acid Value	ASTM D974	0,1	mg KOH/g

*Above figures are typical of those obtained with normal production tolerance and do not constitute a specification.*

# AAA-DA QUENCH OIL | Quenching properties

ASTM D6200 / ISO 9950 at 60°C



## CONTROL

- AAA-DA QUENCH OIL may need centrifuging or filtering depending on sediment dragged into it during production. Sediment level should be maintained at < 0.5%.
- Absorption of furnace atmosphere can cause the flash point to lower resulting in poor quenching characteristics or create a possible fire hazard. Should this occur, de-gassing the oil between 120 - 135°C with agitation will remove the contamination.
- Electrical immersion heaters used to raise the temperature of the oil should not exceed 10.0 watts per square inch (15,5 Kw/M<sup>2</sup>), in a well agitated (>0,5 m/s) environment.
- All efforts should be made to avoid water contamination of AAA-DA QUENCH OIL, because it will cause very erratic quench characteristics as well as posing a serious fire hazard. Water contamination can be removed from the oil by slowly elevating its temperature to 120°C for two hours with agitation.

## SAFETY

The Safety Data Sheet should be consulted for specific information and information on Health, Safety and Environment when handling this product.

## HANDLING AND STORAGE

Protect from freezing, direct sun and store dry between 5 - 35°C in a well-ventilated area.

Packaging types: 20, 200 and 1000 litre.

## NON-WARRANTY

The information contained in this bulletin is believed by DuBois Chemicals to be accurate, genuine and complete. Recommended parameters are based on typical processes and may be altered to accommodate specific requirements. However, the final use of this product is beyond our control; therefore, no warranty of results is expressed or should be implied by this technical data sheet.



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