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**HEAT TREATMENT  
PRODUCT LINE**

# HEAT TREATMENT PRODUCT LINE

PRODUCT	VISCOSITY @ 40°C in mm <sup>2</sup> /s	FLASH POINT COC °C	AVERAGE INITIAL TEMPERATURE	CONTINUOUS	BATCH AND PUSHER	OPEN TANK -PIT	VACUUM SYSTEM	OXIDATION RESISTANCE	NOT ALLOYED STEEL	ALLOYED STEEL	HIGH ALLOYED STEEL	SYNTHETIC HIGH PERFORMANCE (SHP)	DESCRIPTION
				TYPE OF FURNACE				STEEL QUALITY					
COLD QUENCHING OILS													
HOUGHTO-QUENCH® C 1003	20	220	Ambient to 100°C	●	●	●	●	High	+	++	+++	YES	Long life, low flame for high alloy steel. Aerospace segment and tools quenching
HOUGHTO-QUENCH® C 105	20	200	Ambient to 80°C	●		●		Low	+	++	+++	NO	Fighting grade for high alloy steel
HOUGHTO-QUENCH® C 1203	22	228	Ambient to 100°C	●	●	●	●	High	++	+++	++	YES	Long life, very good HSE profile for medium alloy steel
HOUGHTO-QUENCH® C 125	24	200	Ambient to 80°C	●	●	●		Low	++	+++	++	NO	Fighting grade for medium alloy steel
HOUGHTO-QUENCH® C 140	28	200	Ambient to 80°C	●	●	●		Medium	+++	++	+	NO	Fast quenching oil, low distortions for sensitive parts
HOUGHTO-QUENCH® C 1643	26	228	Ambient to 100°C	●	●	●	●	High	+++	++	+	YES	Long life, low flame, high versatility until warm temperature in use
HOUGHTO-QUENCH® C 1804	12	200	Ambient to 90°C	●	●	●	●	High	+++	++	+	YES	Low viscosity for very low consumption, low evaporation and high HSE profile. Excellent for continuous line. Very fast cooling speed
BIO-QUENCH™ 700	40	>250	Ambient to 70°C	●		●		Low	+++	++	+	NO	Green technology for open tank, low flame and fumes
VACU-QUENCH® 430	33	240	Ambient to 120°C				●	High	++	++	++	YES	Vacuum furnaces oil with very low volatility, shiny parts
MARTEMPERING OILS													
MAR-TEMP® M 200	62	240	70°C up to 130°C	●	●	●		Low	+	++	+++	NO	Versatile warm quenching oil for medium alloy steel
MAR-TEMP® M 2303	64	265	70°C up to 150°C	●	●	●	●	High	++	++	++	YES	Long life, multipurpose, replacing hot quenching oil
MAR-TEMP® H 340	110	255	100°C up to 160°C	●	●	●		Medium	+++	+++	++	NO	Low and medium alloy steel – excellent for gears carburizing
MAR-TEMP® H 3533	111	270	100°C up to 180°C	●	●	●		High	+++	+++	++	YES	Long life, low distortions for very sensitive parts – excellent for gears carburizing
MAR-TEMP® VH 300	500	290	> 170°C	●	●	●		Medium	+++	+++	++	NO	Very High oil temperature for bearings or fine parts

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PRODUCT	CONCENTRATE VISCOSITY AT 40°C	POLYMER	COOLING SPEED	INDUCTION MASSIVE QUENCHING	ALUMINIUM	ADVANCED INHIBITOR SYSTEM	FORMALDEHYDE AND BORON FREE	DESCRIPTION
AQUEOUS QUENCHANTS				PROCESS				
AQUA-QUENCH® 140 ES	125	PAG	Fast	●			●	Fighting grade induction hardening products with high detergency
AQUA-QUENCH® 142	100	PAG	Fast	●		●	●	Long life and outstanding HSE profile for all induction hardening processes
AQUA-QUENCH® 222	300	PAG	Medium	●	●	●	●	Long life and excellent cooling profile, exhibiting distortions and cracks suppression versus conventional products
AQUA-QUENCH® 232	1400	PAG	Low		●	●	●	Long life, very low cooling profile for high hardenability steel
AQUA-QUENCH® 251	280	PAG	Medium		●		●	Aluminium quenching polymer, Aerospace approved AMS 3025 Type II, outstanding distortion reduction version hot water
AQUA-QUENCH® 260	520	PAG	Medium		●		●	Aluminium quenching polymer, Aerospace approved AMS 3025 Type I, outstanding distortion reduction version hot water
AQUA-QUENCH® 110	550	ACR	Low		●		●	Low cooling speed polymer exhibiting long vapour phase
AQUA-QUENCH® 300	325	PVP	Low		●		●	Low cooling speed polymer to replace quenching oil with several HSE benefits