

QUALITY PROTECTS.

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LANXESS
Energizing Chemistry

Naugalube® 438

Octylated diphenylamine antioxidant

Naugalube® 438 is a solid antioxidant for use in a broad range of lubricants including turbine oils, gear oils, hydraulic fluids, compressor oils and greases. It provides excellent protection against high temperature oxidation and lubricant degradation in mineral and synthetic based fluids. Typical treat levels may range between 0.05% and 1.0%.

Naugalube® 438 can also be used in combination with other alkylated diphenylamines, phenyl- α -naphthylamine, hindered phenolics and/or secondary peroxide decomposer antioxidants, as well as appropriate metal deactivators, for enhanced performance.

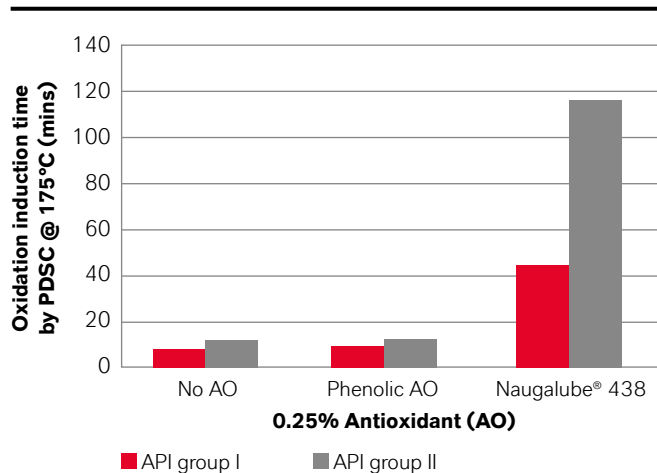
Applications

Industrial						Marine		Aviation		Automotive				Grease		
Gear oil	Turbine oil	Hydraulic oil	Heat transfer oil	Chain oil	Compressor oil	Trunk piston engine oil	System oil	Turbine oil	Hydraulic oil	Gasoline engine oil	Diesel engine oil	Auto transmission fluid (ATF)	Differential fluid	Automotive grease	Industrial grease	Aviation grease
■	■	■	■	■	■		■	■		■	■	■	■	■	■	■
■ Primary recommendation ■ Alternative recommendation																

X Naugalube® 438

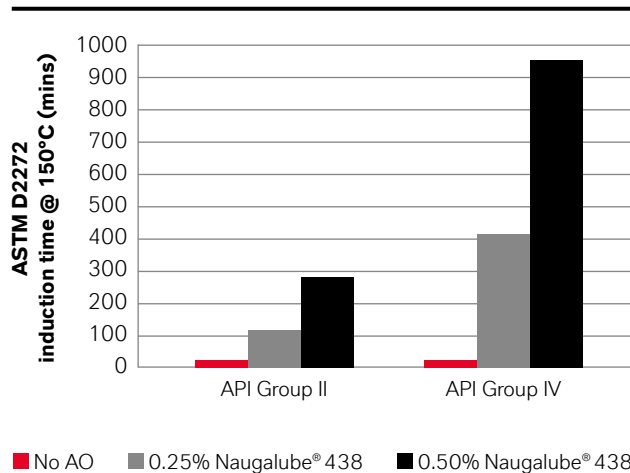
Features	Benefits
Ashless antioxidant	Compatibility with exhausts after treatment systems
US FDA 21CFR178.3750 approved and Kosher certified	NSF HX-1 approval for use in lubricants subject to incidental food contact at a maximum of 0.5%
High molecular weight antioxidant	Low antioxidant volatility yielding prolonged presence in finished formulations
Excellent high temperature performance providing effective control against viscosity increase	Reduced oil oxidation and prolonged lubricant life
High purity with low sludging characteristics	Decreased wear, plugging and mechanical seal damage

Oxidation stability by PDSC – SAE 10W-30 PCMO



PDSC (Pressure Differential Scanning Calorimeter) testing highlighting the relative antioxidant performance of Naugalube® 438 against phenolic antioxidant chemistry in fully formulated Passenger Car Motor Oil based on Group I and II base stocks. The results reveal a clear and significant boost in antioxidant properties by using Naugalube® 438.

Oxidation stability test by RPVOT – turbine oil



RPVOT (Rotating Pressure Vessel Oxidation Test) performance testing showing the antioxidant performance of Naugalube® 438 in Group II and IV based turbine oil formulations at varying treat rates. These are referenced against formulations containing no antioxidant.

Shipping information: 20 kg bags

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Unless specified to the contrary, the values given have been established on standardized test specimens. The figures should be regarded as guide values only and not as binding minimum values. Kindly note that the results refer exclusively to the specimens tested. Under certain conditions, the test results established can be affected to a considerable extent by the processing conditions and manufacturing process.

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