

NAUGALUBE® PANA

Phenyl- α -Naphthylamine Antioxidant

NAUGALUBE® PANA is an excellent antioxidant for synthetic fluids and mineral oils. It is particularly effective in high temperature applications, such as aviation turbine engine oils, and in the formulation of high performance industrial oils and greases. NAUGALUBE® PANA is a solid antioxidant in flake form typically used at treat levels between 0.05% and 1.0%.

NAUGALUBE® PANA is used in the manufacture of aviation turbine engine oils meeting MIL-1-23699 and MIL-L-7808 specifications. These specifications use the FTMS 791C 5308.7 procedure as a measure of oxidation and corrosion protection.

For enhanced performance, NAUGALUBE® PANA can also be used in combination with other alkylated diphenylamines, hindered phenolics and/or secondary peroxide decomposer antioxidants, as well as appropriate metal deactivators.

Applications

Primary Recommendation		Alternative Recommendation														
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
●	●	●			●			●					●	●	●	



Features

Ashless antioxidant

Excellent high temperature performance providing effective control against viscosity increase

US FDA 21CFR178.3750 approved and Kosher certified

High active Nitrogen content

Benefits

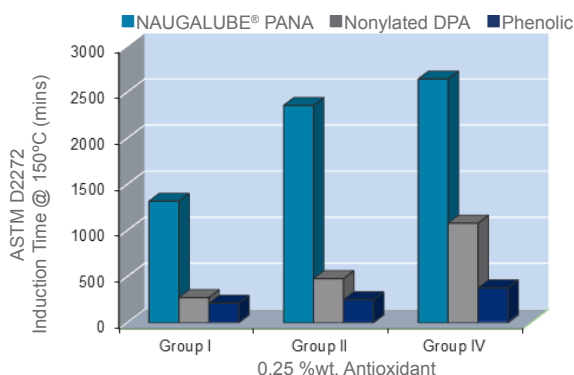
Can be used in a broad range of lubricant formulations

Reduced oil oxidation and prolonged lubricant life

NSF HX-1 approval for use in lubricants subject to incidental food contact at a maximum level of 0.5%

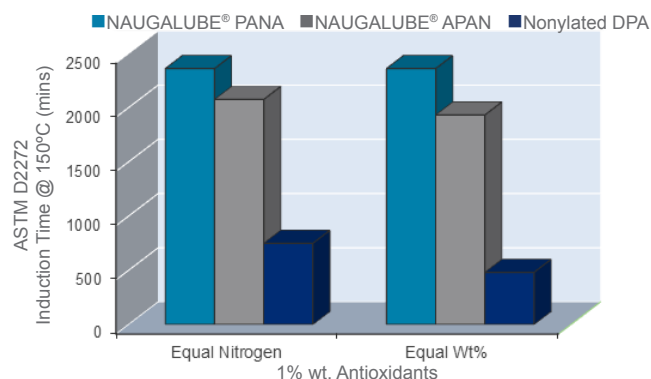
Maximizes antioxidant efficiency and provides added alkalinity

Turbine Oil Oxidation Stability by RPVOT



RPVOT (Rotating Pressure Vessel Oxidation Test) performance testing was run at 150°C in a series of fully formulated turbine oils additized with 0.25 %wt. antioxidant. Results of the testing demonstrate that NAUGALUBE® PANA provides superior antioxidant performance to Nonylated ADPA and hindered phenolics in API Group I, Group II and Group IV base oils.

Antioxidant Performance in a Group II Turbine Oil by RPVOT (Equal Nitrogen Content vs. Equal Weight %)



RPVOT (Rotating Pressure Vessel Oxidation Test) performance testing was run at 150°C in a Group II based turbine oil at both equal nitrogen content and at equal wt%. On an equal nitrogen basis, the data shows NAUGALUBE® PANA and APAN have superior performance over the nonylated DPA and thereby demonstrates the higher antioxidant activity of NAUGALUBE® PANA and APAN.

Shipping Information: 20kg bags

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Please visit our website

www.chemtura.com for

more information on this

product and to locate

the Product Data Sheet

(PDS) and Safety Data

Sheet (SDS).



Storage and Handling

Please read the Safety Data Sheet (SDS) and container label before using any product. The SDS contains important information regarding the safety, handling and storage of this product. The information contained herein is correct to the best of our knowledge. Your attention is directed to the pertinent Safety Data Sheets for the products mentioned herein. All sales are subject to Chemtura's standard terms and conditions of sale, copies of which are available upon request and which are part of Chemtura's invoices and/or order acknowledgments. Except as expressly provided in Chemtura's standard terms and conditions of sale, no warranty, express or implied, including warranty of merchantability or fitness for a particular purpose, is made with respect to the products described herein. Nothing contained herein shall constitute permission or recommendation to practice any invention covered by a patent without a license from the owner of the patent.

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