



Technical Data Sheet

SA-1083 Marine Thruster Gear Oil

SA-1083 is a high performance synthetic marine gear oil, specially designed for heavy duty marine thruster gear application. SA-1083 is engineered to meet challenges of today's marine thrusters operating under higher temperatures and stress, helping operators optimize equipment performance, reduce oil consumption, extend oil drain intervals and reduce maintenance costs. SA-1083 uses synthetic base oils and a proprietary additive system carefully balanced to minimize wear and enhance the performance of all critical gearbox components, including gears, bearings and seals.

The high viscosity index and low traction coefficient of this oil combine to provide a wide range operating temperature. Moreover, SA-1083 offers excellent rust and corrosion protection in the presence of both fresh and saltwater.

Features and Benefits:

Compatible with mineral-based gear oils	No special flushing procedure required.
High viscosity index synthetic base stocks reduce viscosity change with temperature	Wide range operating temperature, typical in marine applications
Outstanding protection against micro-pitting fatigue wear and scuffing wear	Extended gear and bearing life in marine enclosed gear drives operating under extreme conditions of load, speed and temperature
Excellent oxidation stability at continuously high temperatures	Extended oil life and drain intervals, reduced filter plugging and seals protection
Low traction coefficient of synthetic base stocks	Reduced energy consumption and lower operating temperatures
Superior rust and corrosion protection in the presence of both fresh and saltwater	Ensure proper lubrication of the gears while protecting from rust and corrosion in water-contaminate applications

The above information is true and precise to the best of our knowledge. All recommendations or suggestions are made without warranty since the circumstances and conditions are beyond our control.

For further information contact: **Lubri-Lab Inc.:** info@lubrilab.com
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www.lubrilab.com

C-TPAT certified and validated ISO 9001:2008



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Application:

SA-1083 is specially designed for heavy duty marine thruster gear application, however it may also be used in gear applications where extreme low and/or high temperatures are experienced and applications where corrosion may be an issue.

Although, SA-1083 is compatible with mineral-based gear oils, mixture may reduce its performances. Consequently it is recommended that before changing a system to SA-1083, it should be drained and flushed to to achieve the maximum performance benefits.

Specifications:

SA-1083 meets or exceeds the requirements of gear oil standards.

- GM LS-2 Specification LR for EP gear oils
- U.S. Steel 224
- American Gear Manufactures (AGMA) 9005

Performance Characteristics:

Characteristics

ISO Viscosity Grade	100
Viscosity, ASTM D 445	
cSt @ 40°C	101.1
cSt @ 100°C	15.5

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Viscosity Index (VI) D-2270, ASTM	163
Specific Gravity @ 15.6°C, ASTM D1298	0.841
Flash Point, °C, ASTM D D92	246
Pour Point, °C, ASTM D 97	-54
Antiwear Properties	
Four Ball Wear, ASTM D 4172 1800 rpm 20 kg, 54°C, 60 min Wear Scar Dia., mm	0.27
Demulsibility, ASTM D 1401	40/40/0 (10)
Water Separability, ASTM D 2711	
Total Free Water, mL	82
Water from Funnel, mL	86.5
Water in Oil %	0.5
Emulsion, mL	0.6
Extreme Pressure Properties	
Timken Test, ASTM D 2782 OK Load, lb	70
Four Ball, ASTM D 2783 LWI, kg	43
Weld Load, kg	315
FZG, ASTM D 5182	
Passing Stage A/8, 3/90	12
Passing Stage A/16, 6/90	12

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Foam D 892

First Sequence	0/0
Second Sequence	0/0
Third Sequence	0/0

Oxidation Stability, D 2893B Mod.

Viscosity Change	+1.1%
Sludge	None
Phosphorous Depletion	No change
Acid Number mg KOH/g	+0.21

Corrosion, ASTM D 665B

Synthetic Sea Water Pass

Copper Corrosion, ASTM D 130

1A

Vapor phase Steel corrosion (after 10 days)



Lubri-lab SA-1083 high performance
synthetic marine gear oil

Conventional gear oil

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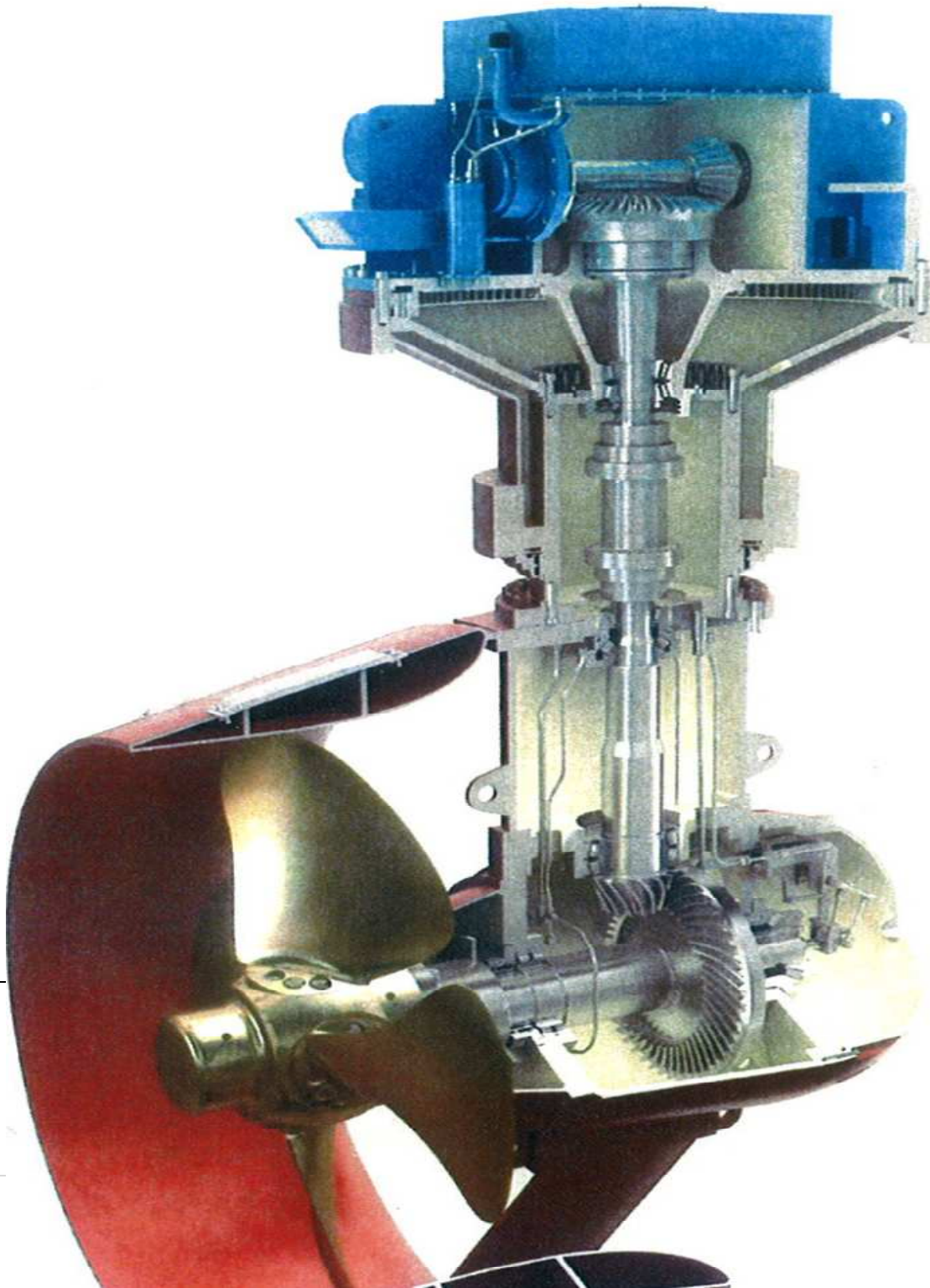
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circumstances



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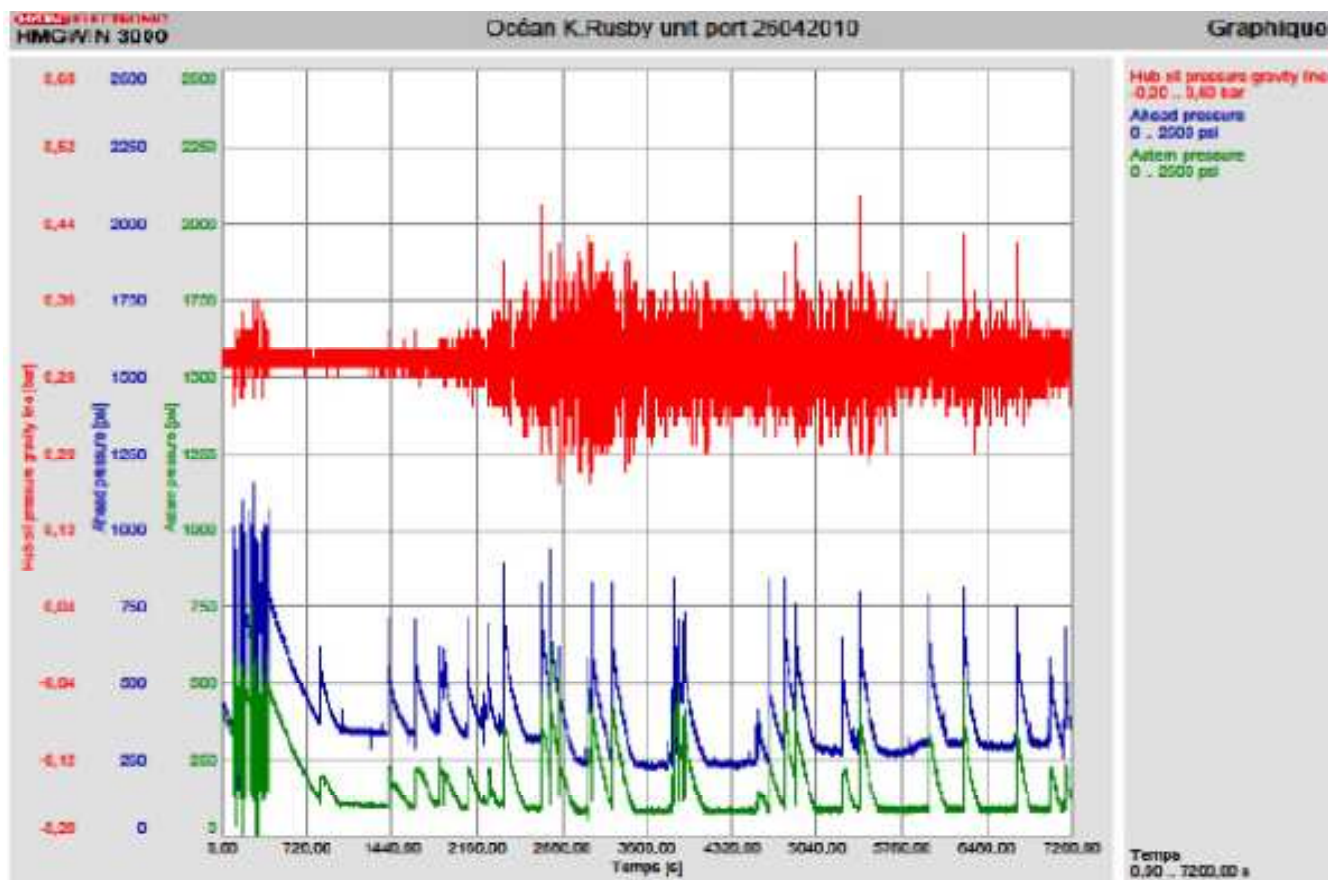


Figure 1 (red graph) : represents oil unstable pressure in an azimuth thruster Z-drive unit lubricated with conventional gear oil.

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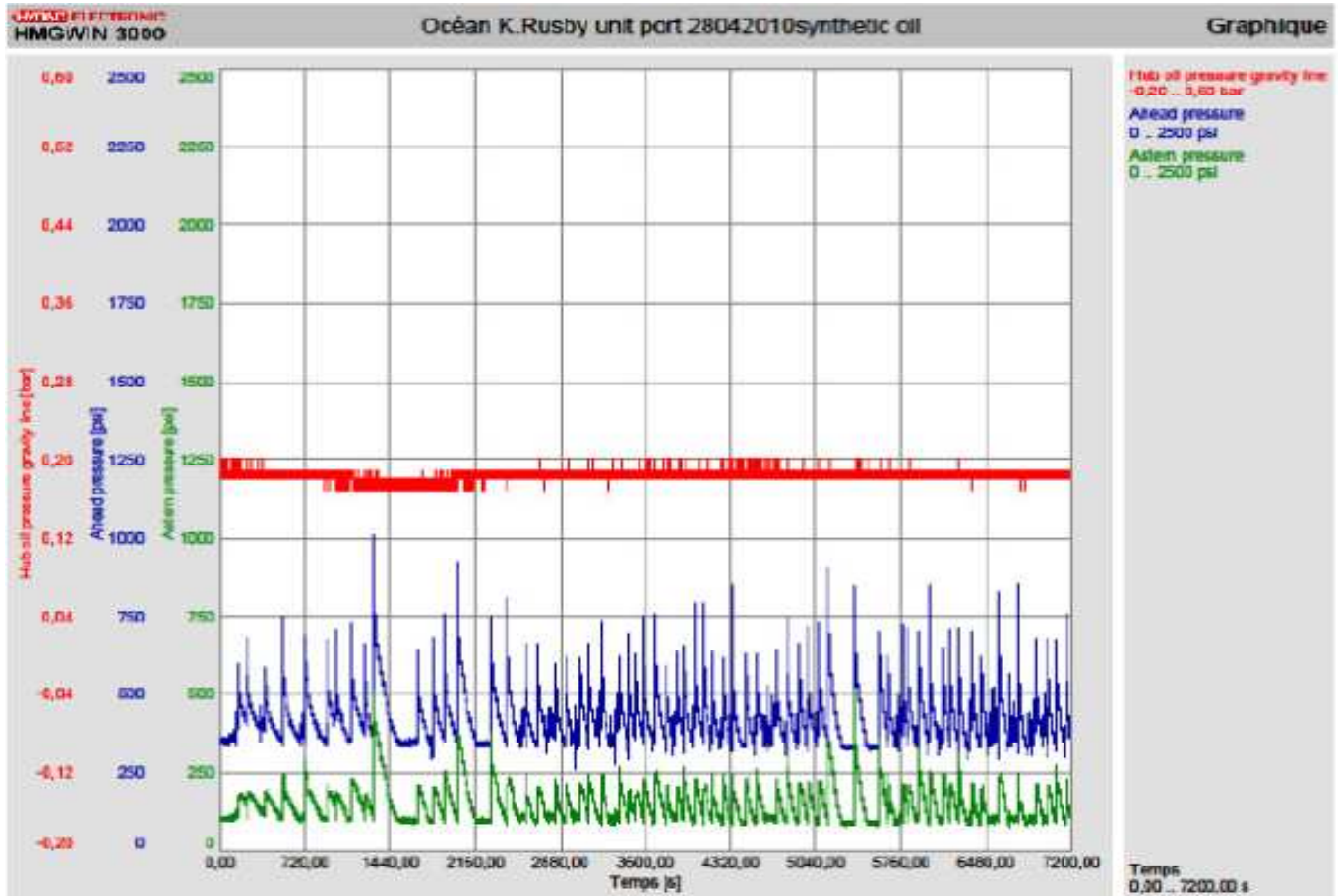


Figure 2 (red graph) : represents oil stable pressure in the same azimuth thruster Z-drive unit lubricated with SA-1083 high performance synthetic marine gear oil.

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