



Lubricants Report



Product Data Sheet from Shell Lubricants

PDS# 3.03.13

SHELL TURBO* T OILS

HIGH QUALITY INDUSTRIAL STEAM AND GAS TURBINE OILS

DESCRIPTION

Shell Turbo T Oils have long been regarded as the industry standard turbine oil. Building on this reputation, Shell Turbo T Oils have been developed to offer improved performance capable of meeting the demands of the most modern non-geared steam turbine systems and light duty gas turbines. Shell Turbo T Oils are formulated from high quality hydrotreated base oils and a combination of zinc-free additives that provide excellent oxidative stability, protection against rust & corrosion, low foaming and excellent demulsibility.

APPLICATION

Shell Turbo T Oils are available in ISO grades 32, 46, 68 & 100 suited for application in the following areas:

- Non-geared industrial steam turbines
- Non-geared light duty gas turbines
- Water turbine lubrication
- Compressor applications
- Numerous applications where strong control over rust and oxidation is required

FEATURES AND BENEFITS

- **Strong control of oxidation** - The use of inherently oxidatively stable base oils together with an effective inhibitor package provides high resistance to oxidative degradation. The result is extended oil life, minimizing the formation of aggressive corrosive acids, deposits and sludge, reducing your operating costs.
- **High resistance to foaming and rapid air release** – The oils are formulated with a non-silicone anti-foam additive, which generally controls foam formation. This feature coupled with fast air-release from the lubricant reduces the possibility of problems such as pump cavitation, excessive wear and premature oil oxidation, giving you increased system reliability.
- **Positive water-shedding properties** – Robust demulsibility control such that excess water, common-place in steam turbines, can be drained easily from the lubrication system, minimizing corrosion and premature wear, lowering the risk of unplanned maintenance.
- **Excellent rust & corrosion protection** – Prevents the formation of rust and guards against onset of corrosion ensuring protection for equipment following exposure to humidity or water during operation and during shut-downs, minimizing maintenance.

PERFORMANCE SPECIFICATIONS

The performance of Shell Turbo T Oils meets or exceeds a number of major steam and gas turbine manufacturer lubricant specifications including:

- General Electric GEK 28143A, 32568F, 46506D
- Siemens – Westinghouse 21T0591 & 55125Z3
- DIN 51515 part 1 & 2
- ISO 8068
- Solar ES 9-224U, Class II, Revision V
- GEC Alstom NBA P50001
- JIS K2213 Type 2
- BS 489-1999
- ASTM D4304, Type I
- Siemens/Mannesmann Demag 800037 98
- **Approved by OEM against:**
- Siemens TLV 9013 04
- Alstom HTGD 90117
- Man Turbo SP 079984 D0000 E99

TYPICAL PROPERTIES

	32	46	68	100	
PRODUCT CODE	407-952	407-953	407-954	407-956	ASTM METHOD
Pour Point °C	<-12	<-12	-9	-9	D 97
Flash Point °C – COC	>215	220	240	250	D 92
Total Acid Number – mg KOH/g	0.05	0.05	0.05	0.05	D 974
Viscosity, c St					
- @ 40° C	32	46	68	100	D 445
- @ 100° C	5.2	6.6	8.5	11.4	D 445
Foaming – ml/ml					
Sequence I	30/Nil	30/Nil	30/Nil	30/Nil	D 892
Sequence II	20/Nil	20/Nil	20/Nil	20/Nil	
Sequence III	30/Nil	30/Nil	30/Nil	30/Nil	
Air Release - min	3	4	6	10	D 3427
Water Demulsibility - min	15	15	20	20	D 1401
Steam Demulsibility - secs	140	170			DIN 51589
Oxidation Control Tests-					
TOST Life - hr	>10,000	>10,000	>10,000	>10,000	D943
TOST 1000hr Sludge - mg	20	20	20	20	D4310
RPVOT - min	>1,100	>1,100	>1,100	>1,100	D2272
ASTM Rust Test 48 hrs (Distilled and Synthetic Sea Water)	Pass	Pass	Pass	Pass	D 665 B
Copper Corrosion - 100°C/3hr	1a	1a	1a	1a	D130
FZG, Fail Load Stage	6	6	6	6	DIN 51354

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Need more product information? Please the [Shell Helms Centre Technical Desk](#) at 1-800-661-1600 or e-mail us at questions@shell.ca

MSDS requests? Please call 1(403)691-2615 or fax your request to 1(403)691-3321.

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