



# GST Advantage RO

## Industrial Gas and Steam Turbine Oil

Product Data Sheet

### Customer benefits

- **Exceptional Oxidation and Thermal Stability** for long service life at severe temperatures with **Minimal Deposit Formation**
- **Low Varnish Potential** ensure varnish formation are minimized to protect the equipment
- **Outstanding Rust and Corrosion Protection**
- **High Viscosity Index** helps ensure minimum viscosity change when variations in temperature occur
- **Minimum Foaming** helps prevent sump overflow or erratic governor operation
- **Fast Air Release** minimizes possibility of pump cavitation in systems with high circulation rates and lesser resonance time
- **Rapid Water Separation** facilitates water removal
- **Hydraulic Fluid Service** for systems requiring an ISO 32/46 viscosity and pressures not exceeding 1000 psi
- **Air Compressor Lubricant** for systems requiring an ISO 32/46 viscosity, R&O oil

### Applications

- Non-geared gas, steam and hydroelectric turbines
- Rotating machinery in gas and steam combined-cycle cogeneration units
- Air compressors, turbo-blowers and centrifugal pumps requiring a rust and oxidation inhibited oil
- Marine reduction gears where R&O oils are specified
- Industrial applications requiring R&O type circulating oils with extended service capability

*Do not use in high pressure systems in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.*

### Product features:

- **GST Advantage RO** turbine oil has exceptional thermal and oxidative stability. It is suitable for use in gas and steam turbines where extreme temperatures are experienced and require circulation systems with exceptional high temperature stability
- **GST Advantage RO** turbine oil combines highly refined group II base stocks and unique additive package minimizing the formation of deposits in reservoirs, high temperature bearings and other hot areas of the turbine

### Product benefits:

- Improve oxidation stability
- Reduce oil degradation
- Extend oil life by limiting harmful precursors that can lead to varnish formation

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## Performance standards

### **GST Advantage RO approval of the following specifications:**

- Ansaldo Energia TG02-0171-E0000 (ISO 46)
- Ansaldo Energia AD000020487
- Doosan Skoda TPO010P
- MAN Energy Solution 10000494596
- Siemens TL 9013 04, TLV 9013 05

### **GST Advantage RO meets requirements of the following specifications:**

- Alstom NBA P50001A
- Alstom NBA P50003A (ISO 32)
- General Electric (Alstom) HTGD 90117
- GE Oil & Gas ITN52220.02, ITN 52220.03
- General Electric GEK 28143a,b
- General Electric GEK 107395A, 120498, 27070, 32568e-k, 46506d,e (ISO 32)
- MAG Cincinnati Cincinnati Machine P-38 (ISO 32)
- MAG Cincinnati Cincinnati Machine P-55 (ISO 46)
- Siemens MAT 821101 (ISO 32)
- Siemens MAT 821102 (ISO46)
- Siemens Westinghouse PD-55125Z3 (ISO 32)
- Solar Turbine ES 9-224 Class II
- ASTM D4304 Type I,III
- ANSI/AGMA 9005-F16
- British Standard 489
- DIN 51515-1 TD, 51515-2 TG
- ISO 8068 AR, B, L-TSA, L-TGA
- JIS K-2213 Type 2

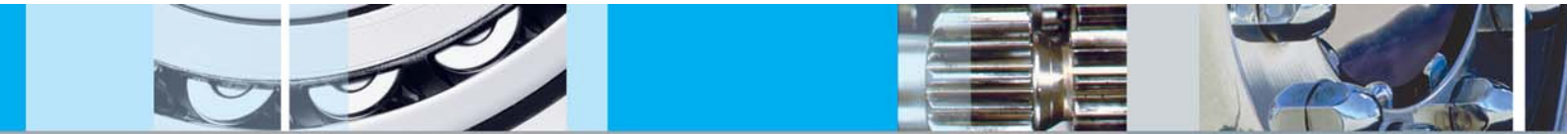
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## Typical test data

GST ADVANTAGE RO	TEST METHOD	RESULTS	
		32	46
<b>ISO Grade</b>		<b>32</b>	<b>46</b>
<b>Product Code</b>		<b>520035</b>	<b>520036</b>
<b>Air Release @ 50°C, mins</b>	D 3427	1.0	2.3
<b>Flash Point, COC, °C</b>	D 92	222	236
<b>Oxidation Stability,</b>			
TOST life, hrs to 2.0 Acid No.	D 943	10,000	10,000
D2272, RPVOT, mins	D 2272	1500	1600
<b>Pour Point, °C</b>	D 97	-12	-13
<b>Viscosity,</b>			
mm <sup>2</sup> /s @ 40°C	D 445	34.20	42.40
mm <sup>2</sup> /s @ 100°C	D 445	5.67	6.50
<b>Viscosity Index</b>	D 2270	104	103

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## Service Considerations

Premium quality turbine oils must be capable of lubricating and cooling bearings while protecting the system against rust, corrosion and harmful deposits. Since the turbine equipment is normally used in key applications, the reliability of rotating machinery and its lubricant is critical.

Periodic monitoring of the oil in service is recommended to assure satisfactory performance of the turbine. The principal reasons for monitoring are two folds: firstly, to determine the conditions of the used oil and secondly, to disclose environmental or operational problems within the equipment. The oil should be visually inspected by the operator at frequent intervals for contamination and/or appearance changes. Refer to ASTM D4378 for guidance on sampling and testing frequency. Samples should be taken from discharge side of the oil pump while system is circulating.

During service, effective purification of the lubricating oil is recommended for the removal of contaminants such as water and solids.

Care should be taken to ensure against top-up and/or contamination from other products, as this can reduce the performance characteristics of GST Advantage RO. Carefully observe recommended flushing procedures on start-up of new equipment to avoid contamination with temporary corrosion protection materials.

Where geared industrial turbines are to be lubricated and an anti-wear or extreme pressure type of turbine oil is required, the use of GST EP should be considered.

GST Advantage RO is not intended for use in aero-derivative gas turbines.

Must not be used in breathing air compressors.

This bulletin was prepared in good faith from the best information available at the time of issue. While the values and characteristics are considered representative, some variation, not affecting performance, can be expected. It is the responsibility of the user to ensure that the products are used in the applications for which they are intended.

Produced by Chevron Global Lubricants: Africa, Middle East and Pakistan

Environment, Health and Safety Information is available on this product in the Material Safety Data Sheet (MSDS) and Customer Safety Guide. Customers are encouraged to review this information, follow precautions and comply with laws and regulations concerning product use and disposal. To obtain a MSDS for this product, visit [www.caltexoils.com](http://www.caltexoils.com).

**For more information, go to [www.chevronlubricants.com](http://www.chevronlubricants.com)**

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