



# GST® Oil

## Premium Performance Industrial Gas & Steam Turbine Oil

Product Data Sheet

### Customer benefits

- **Excellent service life**  
Premium base oils and multi-component inhibitor system provide outstanding long-term oxidation stability to resist oil breakdown and varnish formation.
- **Potential maintenance and downtime savings**  
Premium base oils and oxidation inhibitor system resist the formation of harmful deposits in high temperature bearings and other hot areas of the turbine. The rust inhibitor protects system components against corrosion. Good water separability ensures rapid settling of water accumulated from steam condensate, or leakage from salt water cooling.
- **Reliable operation**  
Non-silicone foam inhibitor allows rapid release of entrained air while minimizing foam formation to enable reliable operation of sensitive hydraulic control devices. Long term reliability assisted by effective resistance to varnish formation.
- **Potential inventory savings**  
The multipurpose nature of the formulation allows it to be used in a wide range of industrial applications, potentially simplifying oil inventories and reducing the possibility of using the wrong lubricant.

### Applications

- Stationary industrial gas and steam turbines
- Industrial gas turbines in severe service
- Hydraulic turbines
- Rotating machinery in gas and steam combined-cycle cogeneration units
- Bath and circulating systems supplying moderately loaded gear sets, low pressure hydraulic systems, vacuum pumps, rolling element bearings, machine tools, conveyors, and electric motors
- Air compressors, turbo-blowers and centrifugal pumps requiring a rust and oxidation inhibited oil
- Marine reduction gears where R&O oils are specified

### Product features:

Premium performance, turbine oil formulated from premium base oils plus rust, oxidation and foam inhibitors. Designed primarily for use in industrial gas and steam turbines it is also suited to many other industrial applications including air compression where R&O type oils are recommended.

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## Performance Standards

### Approvals

- Alstom HTGD 90117 W (for non-gearred units) (ISO 32, 46)
- Siemens TLV 9013 04 for turbosets without gearboxes (ISO 32, 46)
- Siemens TLV 9013 05 for non-gearred turbines (ISO 32, 46)
- MAN Diesel & Turbo 10000494596 rev 2, for use in MAN Diesel & Turbo equipment without increased requirements regarding load-carrying capacity (ISO 32, 46, 68)
- Ansaldo Energia Turbine Oil Specification TGO2-0171-E00000/B (ISO 46)
- Registered by NSF and are acceptable as lubricants where there is no possibility of food contact (H2) in and around food processing areas.

### Meets Requirements of:

- British Standard BS 489
- ASTM D4304 Type I
- German Standard DIN 51515 Part 1
- German Standard DIN 51515 Part 2 (ISO 32, 46)
- JIS K2213 Type 2 (ISO 68)
- ISO 8068 L-TSA & L-TGA (ISO 32, 46, 68)
- ISO 8068 L-TGB & L-TGSB (ISO 32, 46, 68)
- Chinese Specification GB1120-2011 L-TSA (Typ A) and L-TGA (ISO 32, 46, 68)
- Chinese Specification GB1120-2011 L-TSA (Typ B) (ISO 32, 46, 68, 100)
- Chinese Specification GB1120-2011 L-TGSB (ISO 32, 46, 68)
- Alstom HTGD 90117 (ISO 68)
- General Electric GEK 28143B (ISO 32, 46)
- General Electric GEK 27070, 32568J, 46506D & E (ISO 32)
- Siemens MAT 812101, (ISO 32)
- Siemens MAT 812102 (ISO 46)
- Siemens-Westinghouse M 55125Z3 (ISO 32)
- Solar Turbines ES 9-224 Class II (ISO 32, 46)
- Cincinnati Machine (MAG) P-38 (ISO 32); P-55 (ISO 46); P54 (ISO 68)

continued

## Key Properties

GST OIL					
TEST	TEST METHOD (ASTM)	TYPICAL RESULTS			
<b>ISO Grade</b>		<b>32</b>	<b>46</b>	<b>68</b>	<b>100</b>
<b>Product Code</b>		<b>560808</b>	<b>560809</b>	<b>560841</b>	<b>560842</b>
<b>Air Release @ 50°C, mins</b>	D 3427	1	2	4	5
<b>Flash Point, COC, °C</b>	D 92	222	224	245	262
<b>Oxidation Stability</b>					
TOST Life, hrs to 2.0 Acid No.	D 943	10,000+	10,000+	10,000+	10,000+
RPVOT mins to 25 psi drop,	D 2272	1700	1400	1400	1400
<b>Pour Point, °C</b>		-36	-36	-33	-30
<b>Kinematic Viscosity @ 40°C, mm<sup>2</sup>/s</b>	D 445	32	43.7	68	100
<b>Kinematic Viscosity @ 100°C, mm<sup>2</sup>/s</b>	D 445	5.4	6.6	8.8	11.4
<b>Viscosity Index</b>	D 2270	102	102	102	100

The information given in the typical data does not constitute a specification but is an indication based on current production and can be affected by allowable production tolerances. The right to make modifications is reserved. This supersedes all previous editions and information contained in them.



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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 turbine equipment is normally used in key applications, the reliability of the 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-fold: firstly, to determine the condition 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 contaminants and/or appearance changes. Refer to ASTM D4378 for guidance on sampling and testing frequency. Samples should be taken from the discharge side of the oil pump while the 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 could reduce the performance characteristics of GST Oil. 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 turbine oil is required the use of GST EP should be considered.

The NSF Nonfood Compounds Registration Program is a continuation of the USDA product approval and listing program, which is based on meeting regulatory requirements of appropriate use, ingredient review and labeling verification.

GST Oil 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 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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