

FAMILY OF PRODUCTS // **GST® OILS**



Provides enduring performance
to keep turbines up and running under
the hottest and hardest operating conditions



INDUSTRIAL
LUBRICANTS

Our focus helps drive your performance.

To compete in today's industrial world, you have to be more enterprising and more aggressive than ever. You have to use advanced equipment and push it faster and harder. To succeed at this pace, we know you must find innovative ways to boost reliability, minimize downtime and optimize performance across your operation. That's why we're here.

Caltex Industrial Lubricants delivers focused expertise, advanced products and tailored programs to create comprehensive lubrication solutions for today's industries. We work with you to take a holistic approach to improving productivity - an approach that helps you solve critical challenges, reach for your goals, and compete to win.



Keep the heart of your operation healthy.

We know what you're up against. Turbines are critical to keeping your operation running. Yet today's compact equipment designs and severe operating conditions mean higher temperatures and loads, more stress on components and lubricants, and more potential for costly failures. We developed the GST® family of turbine oils to help you fight back.

GST® turbine oils are formulated to handle the tighter equipment tolerances, extreme temperatures and dirty conditions your operation faces every day. They help you control heat, contaminants, varnish, entrained air and other deposits that attack valves, bearings and other components and cause poor performance and failures. GST® turbine oils deliver enduring performance under the hottest and harshest conditions, so you can achieve optimum uptime in your equipment and optimum productivity in your operation.



GST® Family Comparison Chart

	Products	Application	ISO Viscosity Grade	Claims and approvals*
Core Range	GST Advantage™ RO with VARTECH™ Technology	Non geared industrial steam, gas and combined cycle turbines including rotating machinery and turbo-compressors	32, 46	Meets requirement : Siemens TLV 901304 and TLV 901305 (Pending for OEM approval) MAN Diesel & Turbo 10000494596 rev 2 (Pending for OEM approval) Meets Mitsubishi Hitachi Power Systems MS04-MA-CL002/CL001 specification; General Electric GEK 32568k, GEK 28143b, GEK 46506e, GEK 27070, GEK 107395 including GE Frame 9HA.01 Gas turbines, GEK 121608 (for non-gearred turbines, ISO 32); Alstom Power HTGD 90117; Alsando Energia G-HTCT689029; Solar Turbines ES9-224 Class II; ISO 8068 L-TSA, L-TGA; DIN 51515-1, -2; GB1120-2011 L-TGA and L-TSA (Type A and Type B)
	GST® EP	Geared industrial steam, gas and combined cycle turbines including rotating machinery and turbo-compressors	32, 46, 68, 100	Approved against Alstom HTGD 90117W; Siemens TLV 9013 04, TLV 9013 05; MAN Diesel & Turbo 10000494596 rev 2; Ansaldo Energia Turbine Oil Specification TG02-0171-E00000/B Meets GEK 28143b; GEK 101941a, 27070, 32568j, 46506e; Siemens MAT 812101/02/06/08/09; Solar Turbines ES 9-224 Class II; Alstom HTGD 90117; GEC Alstom NBA P50001 A & P50003 A; DIN 51515-1, -2; ISO 8068 L-TGF & L-TGSE, L-TSE & L-TGE, L-TSA & L-TGA, AR, B; GB1120-2011 L-TSA, L-TGA, L-TSE, L-TGE, L-TGSB & L-TGSE
	GST® Oil	Non geared industrial steam, gas and combined cycle turbines including rotating machinery and turbo-compressors	32, 46, 68, 100	Approved against Alstom HTGD 90117W; Siemens TLV 9013 04, TLV 9013 05; MAN Diesel & Turbo 10000494596 rev 2; Ansaldo Energia Turbine Oil Specification TG02-0171-E00000/B Meets GEK 28143b; 27070, 32568j, 46506e; Siemens MAT 812101/02; Siemens-Westinghouse M 55125Z3; Solar Turbines ES 9-224 Class II; DIN 51515-1, -2; ISO 8068 L-TSA & L-TGA, L-TGB & L-TGSB; GB1120-2011 L-TSA, L-TGA, L-TGSB
Specialties	GST® Premium	Non geared industrial steam, gas and combined cycle turbines including rotating machinery and turbo-compressors	32	Meets Mitsubishi Hitachi Power Systems MS04-MA-CL002/CL001 specification
	GST® 2190 EP	Marine geared turbine system	80	Approved against MIL-PRF-17331K(SH) and MIL-PRF-17331J
	Regal® SGT 22	Aero-derivative type gas turbines modified for in non-aviation stationary applications	22	Approved against US Military Specification MIL-PRF-23699F Class STD; GE LM Series; Siemens (Allison) 501K; Siemens (Rolls Royce) Avon, Olympus, Tyne, Spey and RB 211 gas turbines. Meets Turbomeca Makila TL

*Refer to product data sheet for the most updated approvals and claims

GST Advantage™ RO with VARTECH™ Technology

Customer Benefits :

- Low varnish potential
- High viscosity index
- Minimum foaming
- Fast air release
- Rapid water separation

Performance Standards* :

Meets the requirements :

- Siemens TLV 901304 and TLV 901305 (non-geared turbine) (Pending for OEM approval)
- MAN Diesel & Turbo 10000494596 rev 2, for use in MAN Diesel & Turbo equipment without increased requirements regarding load-carrying capacity (Pending for OEM approval)
- Meet and Exceeds Mitsubishi Hitachi Power Systems (erstwhile Mitsubishi Heavy Industries) MS04-MA-CL002/MS04-MA-CL001 specifications
- Meets the stringent DRY TOST Test (at 120 °C) for oxidation stability, varnish & sludge control and mixture stability as per ASTM D7873 (ISO 4362/JIS K 2514)
- General Electric GEK 32568k, GEK 28143b, GEK 46506e, GEK 27070, GEK 107395 including GE Frame 9HA.01 Gas turbines, GEK 121608 (for non-geared turbines, ISO 32)
- Alstom Power HTGD 90117 (non-geared turbine)
- Ansaldo Energia G-HTCT689029
- Solar Turbine ES9-224 Class II
- Suitable for use in Peter Brotherhood Steam Turbines
- ANSI/AGMA 9005-E02-R&O
- ASTM D4304-Type I/Type III (for non-geared turbines)
- British Standard BS 489:1999
- DIN 51515-1 and 51515-2
- ISO 8068-L-TSA and L-TGA
- Chinese Specification GB1120-2011 L-TGA and L-TSA (Type A and Type B)

*Refer to product data sheet for the most updated approvals and claims

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.

Formulated to resist and disrupt the formation of varnish while maintaining outstanding thermal and oxidative stability.



GST® EP

High performance, anti-wear type turbine oil formulated from premium base oils, an ashless anti-wear additive system, rust and oxidation and foam inhibitors.

GST® EP is designed primarily for use in industrial gas and steam turbines including those with reduction gear sets.

Deliver excellent sludge control and equipment protection for turbines with/without gearboxes.

Customer Benefits :

- Protects reduction gear sets
- Excellent service life
- Potential maintenance and downtime savings

Performance Standards* :

- Alstom HTGD 90117W
- Siemens TLV 9013 04, TLV 9013 05
- MAN Diesel & Turbo 10000494596 rev 2
- Ansaldo Energia Turbine Oil Specification TGO2-0171-E00000/B

Meets Requirements of:

- British Standard BS 489
- ASTM D4304 Type II
- German Standard DIN 51515 Part 1;
German Standard DIN 51515 Part 2
- ISO 8068 L-TGF & L-TGSE, L-TSE & L-TGE,
L-TSA & L-TGA, AR, B

GST® OIL

Premium performance inhibited turbine oil formulated from premium base oil technology and rust, oxidation and foam inhibitors.

GST® Oil is designed primarily for use in industrial gas and steam turbines, it is also suited to many other industrial applications including air compressors where R&O type oils are recommended.

Formulated with zinc-free and ashless technology provides exceptional thermal and oxidation stability.

Customer Benefits :

- Resists degradation
- Potential maintenance and downtime savings
- Smooth operation
- Potential inventory savings

Performance Standards* :

- Alstom HTGD 90117W
- Siemens TLV 9013 04 & 05
- MAN Diesel & Turbo 10000494596 rev 2
- Ansaldo Energia Turbine Oil Specification TGO2-0171-E00000/B
- Registered by NSF and are acceptable as lubricants

Meets Requirements of:

- British Standard BS 489
- ASTM D4304 Type I
- German Standard DIN 51515 Part 1, Part 2
- ISO 8068 L-TSA & L-TGA, L-TGB & L-TGSB
- Chinese Specification GB1120-2011 L-TSA (Type A) and L-TGA, (Type B), L-TGSB
- Alstom HTGD 90117

*Refer to product data sheet for the most updated approvals and claims

Regal® SGT 22

Customer Benefits :

- Extended service life compared to mineral oils
- Minimum deposit formation
- Good wide temperature range performance

Performance Standards* :

- Approved against U.S. Military Specification MIL-PRF-23699F STD
- Holds formal approvals for use in the following gas turbines:
 - Rolls-Royce RB 211
 - Rolls-Royce Industrial Avon
 - Rolls-Royce (Allison) Industrial 501-K
 - GE Energy Industrial Aeroderivative units

Not to be used in Solar Turbines requiring oils meeting Solar Specification ES 9-224 W – Class III OR MIL-PRF-23699F C/I specification.

Premium performance, synthetic polyol ester based turbine lubricant for use in aeroderivative gas turbines in stationary and marine service.

Contains additives to protect against oxidation, corrosion and wear, providing excellent high temperature thermal and oxidation stability.

Designed for aeroderivative gas turbines exposed to severe operating environments in non-aviation application.

*Refer to product data sheet for the most updated approvals and claims



GST® Premium

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® Premium 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.

Deliver exceptional high temperature stability and low varnish potential to meet MHPS MS04-MA-CLO02 specification.

Customer Benefits :

- High viscosity index
- Minimum foaming
- Fast air release
- Rapid water separation

Performance Standards* :

- Siemens TLV 901304 and TLV 901305 (non-geared turbine)
- Alstom HTGD 90117 (non-geared turbine)
- MAN Diesel & Turbo 10000494596 rev 2, for use in MAN Diesel & Turbo equipment without increased requirements regarding load-carrying capacity

Meets the requirements :

- Mitsubishi Hitachi Power Systems MS04-MA-CLO01/CLO02 specifications
- Dry-TOST Method ASTM D7873 (ISO 4263) (JIS K 2514)
- Mixture Stability ASTM D7873
- ANSI/AGMA 9005-E02-R&O
- ASTM D4304-Type I/Type III (for non-geared turbines)
- British Standard BS 489:1999
- DIN 51515-1 and 51515-2
- General Electric GEK 32568j, GEK 28143b, GEK 46506e and GEK 27070
- ISO 8068-L-TSA and L-TGA
- Chinese Specification GB1120-2011 L-TGA and L-TSA (Typ A and Typ B)
- Solar Turbine ES9-224 Class II

GST® 2190 EP

Formulated for use in circulating oil systems for marine gear turbine sets and provides mild extreme pressure protection as well as resistance to rust, oxidation, corrosion, and foaming.

Outstanding thermal and oxidation stability which allows it to withstand the high temperatures found in turbine bearing and gear lubrication. The foam inhibition helps prevent the buildup of foam in the sump tank with possible vent pipe overflow.

Provides outstanding thermal and oxidation stability and mild extreme pressure protection to turbines and gears sets to meet MIL-PRF performance.

Customer Benefits :

- Long lubricant life
- Extreme pressure characteristics
- High viscosity index

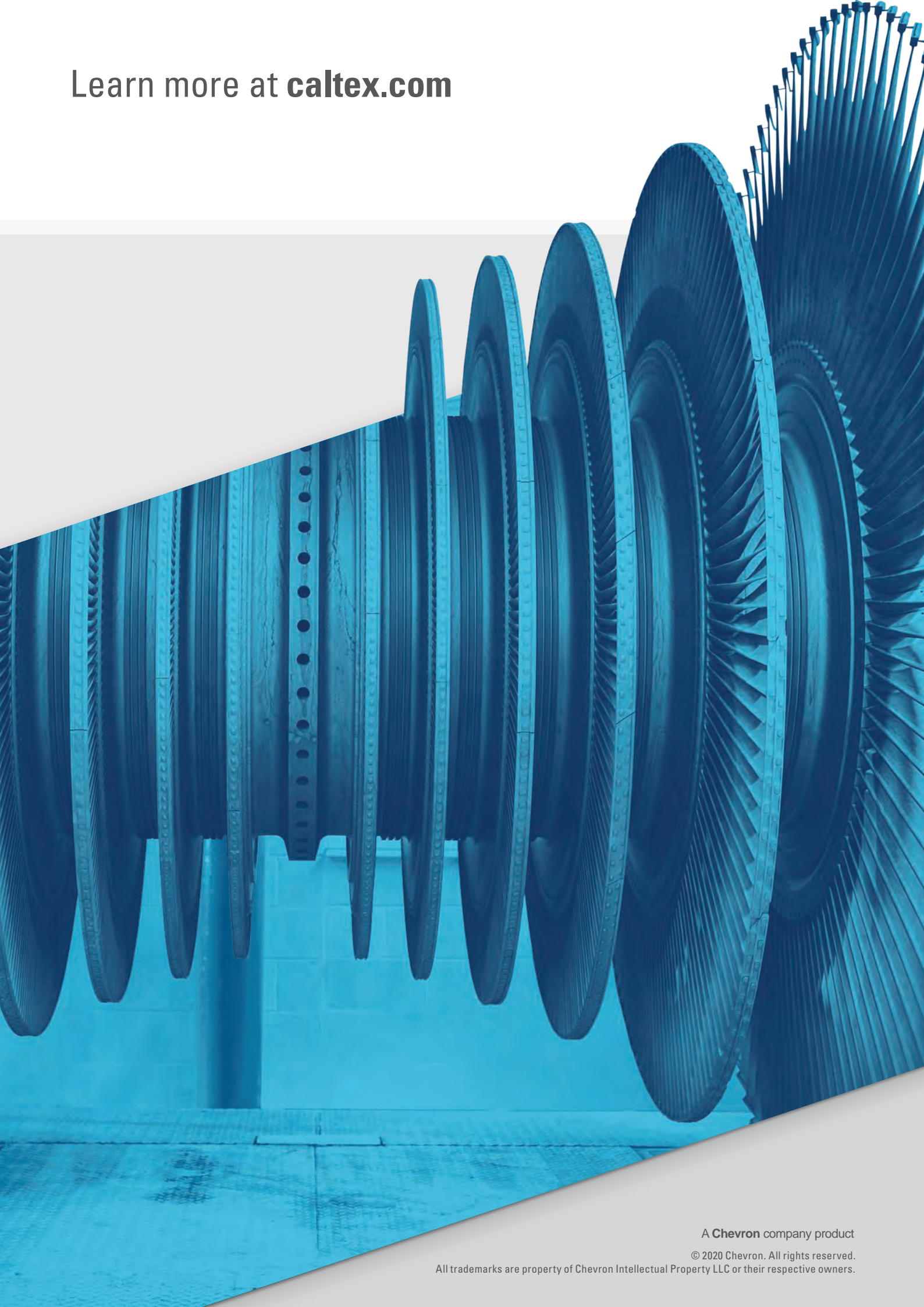
Performance Standards* :

Meets the requirements :

MIL-PRF-17331K(SH) and MIL-PRF-17331J approved

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