GST Advantage EP

Industrial Gas and Steam Turbine Oil

Product description

VARTECH™ Technology:

GST Advantage EP is formulated with VARTECH Technology which is advanced chemistry that helps:

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

VARTECH Technology inhibits varnish formation to help maintain peak performance, reliability and productivity.

Customer benefits and product features

Customer benefits

- **Exceptional Oxidation and Thermal Stability** assists with long service life at severe temperatures with **Minimal Deposit Formation**
- **Low Varnish Potential** ensure varnish formation are minimized to protect the equipment
- **Enhance gear protection** with anti-wear additives system to help protect loaded gear tooth
- **Outstanding Rust and Corrosion Protection**
- **High Viscosity Index** helps ensure minimum viscosity change when variations in temperature occur
- **Minimal Foaming** helps prevent sump overflow or erratic governor operation
- **Fast Air Release** helps minimize possibility of pump cavitation in systems with high circulation rates and lesser resonance time
- **Rapid Water Separation** facilitates water removal
- **Air Compressor Lubricant** for systems requiring an ISO 32/46 viscosity, R&O oil and anti-wear performance

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Customer benefits and product features *cont…*

Product features

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

Applications

- Geared and 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.

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Product approvals, performance and recommendations

Developed independently by Chevron to comply with the following performance standards and specifications:

GST ADVANTAGE EP	VG 32	VG 46	VG 68	VG 100
Ansaldo Energia AD00020487	A	A	-	-
Ansaldo Energia TGO2-0171-E00000	A	A	-	-
Doosan Skoda Power TP0010P	A	A	-	-
MAN Energy Solutions 10000494596	A	A	S	-
Siemens TLV 9013 04, TLV 9013 05	A	A	-	-
Avio TS 5001	M	-	-	-
Alstom NBA P50001A	M	M	-	-
Alstom NBA P50003A	M	-	-	-
Ansaldo Energia G-HTCT 689029	-	-	M	-
ANSI/AGMA 9005-E02-EP, 9005-F16 Antiscuff	M	M	-	-
ANSI/AGMA 9005-F16, 9005-E02 R&O	M	M	M	M
ASTM D4304 Type I, II	M	M	M	M
ASTM D4304 Type III	M	M	-	-
ASTM D6158-HL	M	M	M	-
British Standard 489	M	M	M	M
DIN 51515/1	M	M	M	M
DIN 51515/2	-	M	M	-
DIN 51515-1 TD, 51515-2 TG	M	M		

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Product approvals, performance and recommendations *cont…*

GST ADVANTAGE EP	VG 32	VG 46	VG 68	VG 100
DIN 51524/1 HL	M	M	-	-
DIN Turbine Oil DIN 51515-TD 32	M	-	-	-
DIN Turbine Oil DIN 51515-TD 46	-	M	-	-
GE Oil & Gas ITN 52220.02	M	M	M	M
GE Oil & Gas ITN 52220.03	M	M	-	-
General Electric (Alstom) HTGD 90117	M	M	M	-
General Electric GEK 101941A, 107395a, 107395c, 120498, 27070, 32568C-K, 32568M-P, 46506D, E	M	-	-	-
General Electric GEK 28143a	M	M	-	-
General Electric GEK 28143b	M	M	M	-
General Electric HTGD 90117 V0001 AC	-	-	M	-
ISO 8068 AR, B, L-TSA, L-TGA, L-TSE, L-TGE	M	M	M	-
ISO 8068 L-THA, L-THE	-	-	M	M
JIS K-2213 Type 2	M	M	M	-
MAG Cincinnati, Cincinnati Machine P-38	M	-	-	-
MAG Cincinnati, Cincinnati Machine P-54	-	M	-	-
Siemens MAT 812101, 812106, 812108	M	-	-	-
Siemens MAT 812102, 812107, 812109	-	M	-	-
Siemens Westinghouse M Spec-55125Z3	M	-	-	-
Solar Turbine ES 9-224 Class II	M	M	-	-
Standardization Admin of PRC GB 11120-2011 L-TGE, L-TSA Type A, L-TSE Type A	M	M	M	-

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Product approvals, performance and recommendations *cont…*

GST ADVANTAGE EP	VG 32	VG 46	VG 68	VG 100
Standardization Admin of PRC GB 11120-2011 L-TSA Type B	M	M	M	M
Toshiba LST-GMH-XUTW2-0005 Rev. 2	M	-	-	-

A: Approved

M: Meets the requirements

S: Suitable for use

Consult OEM representatives for independent verification, updates and recommendations.

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 EP. Carefully observe recommended flushing procedures on start-up of new equipment to avoid contamination with temporary corrosion protection materials.

GST Advantage EP is not intended for use in aero-derivative gas turbines.
Must not be used in breathing air compressors.

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Typical test Data

GST ADVANTAGE EP	TEST METHODS	RESULTS			
ISO Grade		**32**	**46**	**68**	**100**
Product Code		**520034**	**520039**	**520095**	**520096**
Acid Number, mg KOH/g	ASTM D974	0.03	0.03	0.03	0.03
Air Release @ 50°C, mins	ASTM D3427	1.0	2.0	3.0	4.0
Flash Point, COC, °C	ASTM D92	226	234	248	262
Density, 15kg/L	ASTM D4052	0.859	0.865	0.87	0.875
TOST life, hrs to 2.0 Acid Num	ASTM D943	10,000	10,000	10,000	10,000
Oxidation Stability RPVOT, mins	ASTM D2272	2200	2100	1800	1700
Pour Point, °C	ASTM D97	-36	-34	-32	-32
Kinematic Viscosity,					
mm^2/s @ 40°C	ASTM D445	34.2	42.4	68	100
mm^2/s @ 100°C	ASTM D445	5.81	6.55	8.9	11.6
Viscosity Index	ASTM D2270	112	105	104	104
FZG, Fail Load Stage A/8.3/90	ASTM D5182	10	10	10	10

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 the Product Information Center.

This Product Data Sheet (PDS) was produced for the Asia-Pacific region in good faith from the best information available at the time of issue. The specific information included may not directly reflect the local market or conditions. While the values and characteristics are considered representative, some variation, not affecting performance, can be expected. For the most up-to-date, country-specific information, please contact your local customer service center.