GST Advantage RO

Industrial Gas and Steam Turbine Oil

Product description

VARTECH™ Technology:
GST Advantage RO 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
- **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** 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 oil and pressures not exceeding 1000 psi
- **Air Compressor Lubricant** for systems requiring an ISO 32/46 viscosity, R&O oil

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 an advanced additive package to help minimize the formation of deposits in reservoirs, high temperature bearings and other hot areas of the turbine.

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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 approvals, performance and recommendations

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

GST ADVANTAGE RO	VG 32	VG 46
Ansaldo Energia TGO2-0171-E00000	-	Approved
Ansaldo Energia AD000020487	Approved	Approved
Doosan Skoda TP0010P	Approved	Approved
MAN Energy Solutions 10000494596	Approved	Approved
Siemens TLV 9013 04, 9013 05	Approved	Approved
Alstom NBA P50001 A	Meets the requirements	Meets the requirements
Alstom NBA P50003 A	Meets the requirements	-
ANSI/AGMA 9005-F16	Meets the requirements	Meets the requirements
ASTM D4034 Type I, III	Meets the requirements	Meets the requirements
British Standards 489	Meets the requirements	Meets the requirements
DIN 51515-1 TD, 51515-2 TG	Meets the requirements	Meets the requirements

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Product approvals, performance and recommendations *cont…*

GST ADVANTAGE RO	VG 32	VG 46
GE Oil and Gas ITN52220.02, ITN52220.03	Meets the requirements	Meets the requirements
General Electric GEK 28143a, b; GEK 107395A, 120498, 27070, 32568e-k	Meets the requirements	Meets the requirements
General Electric GEK 46506d, e	Meets the requirements	-
ISO 8068 AR, B, L-TSA, L-TGA	Meets the requirements	Meets the requirements
JIS K2213 Type 2	Meets the requirements	Meets the requirements
MAG Cincinnati, Cincinnati Machine P-38	Meets the requirements	-
MAG Cincinnati, Cincinnati Machine P-55	-	Meets the requirements
Mitsubishi Power MS04-MA-CL002 (Rev. 4)	Meets the requirements	Meets the requirements
Siemens MAT 821101	Meets the requirements	-
Siemens MAT 821102	-	Meets the requirements
Siemens-Westinghouse PD-55125Z3	Meets the requirements	-
Solar Turbines ES 9-224 Class II	Meets the requirements	Meets the requirements

Consult OEM representatives for independent verification, updates and recommendations.

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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 ensure 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.

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Typical test data

GST ADVANTAGE RO	TEST METHODS	RESULTS	
ISO Grade		**32**	**46**
Product Code		**520035**	**520036**
Air Release Time @ 50°C, mins	ASTM D3427	1.0	2.3
Flash Point, COC, °C	ASTM D92	222	236
Density, 15 kg/L	ASTM D4052	0.8604	0.8631
Oxidation Stability,			
TOST life, hrs to 2.0 Acid No.	ASTM D943	10,000	10,000
D2272, RPVOT, mins	ASTM D2272	1500	1600
Pour Point, °C	ASTM D97	-12	-13
Acid Number, mg/KOH/g	ASTM D974	0.03	0.03
Kinematic Viscosity,			
mm^2/s @ 40°C	ASTM D445	34.20	42.40
mm^2/s @ 100°C	ASTM D445	5.67	6.50
Viscosity Index	ASTM D2270	104	103
FZG Failure Load Stage, A/8.3/90	ASTM D5182	7	7

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.