Technical Data Sheet

- Long Oil Life
- Enhanced wear protection

Shell Turbo *S2 GX 32*

High performance industrial steam, gas and combined cycle lubricants for geared turbines.

Shell Turbo S2 GX 32 has been developed to meet the demands of modern steam turbine, gas turbine and combined cycle turbine applications while exceeding the requirements of major OEM specifications. Based on high quality base oil with selective additive technology, Shell Turbo S2 GX 32 delivers enhanced resistance to oxidation and degradation with extended oil life in addition to excellent wear protection, to protect turbo sets including those with gearbox.

DESIGNED TO MEET CHALLENGES

Performance, Features & Benefits

- **Extended oil life**

  Shell Turbo S2 GX 32 is formulated with high quality hydrotreated base oil and effective inhibitor package which provides exceptional resistance to oxidation and degradation even under challenging thermal conditions. These advanced properties coupled with enhanced sludge and varnish formation control enables reduced operating costs and extended oil life.

- **Enhanced Equipment protection**

  Shell Turbo S2 GX 32 offers enhanced protection for turbo sets with gearboxes protecting against scuffing wear. The use of selective additive technology results in high FZG failure load stage rating (ASTM D5182/ISO 14635-1) allowing the oil to meet the additional requirements of OEMs for use in gearboxes.

- **Excellent rust & corrosion protection**

  Prevents the formation of rust and guards against the onset of corrosion ensuring protection for equipment following exposure to water during operation thereby providing longer equipment life, reduced maintenance and downtime.

- **Enhanced Operation Efficiency**

  Demulsibility, air release, resistance to foaming are important in both geared and non-geared systems in the latest turbine designs (especially those with oil reservoirs having low residence times). Shell Turbo S2 GX 32 offers excellent performance in all four areas, ensuring that optimum operating conditions are maintained.

Main Applications






- Shell Turbo S2 GX is available in ISO VG 32 and VG 46 for application in the following areas:
  Industrial steam turbines and light duty gas turbines and combined cycle turbines including those with load gears centrifugal and axial and dynamic turbo-compressors and pumps where a R&O type oil or turbine oil is recommended

Specifications, Approvals & Recommendations

Shell Turbo S2 GX 32 meets & exceeds international specification and requirements of the major turbine manufacturers including:

- ASTM D4304 - 2017 version
- GB (China) 11120-2011, L-TSA L-TSE, L-TGA, L-TGE and L-TGSB, L-TGS
- DIN 51515 Part 1 L-TD & Part 2 L-TG, 51524
- JIS K 2213: 2015
- Siemens Power Generation TLV 9013 04 & TLV 9013 05
- Siemens Finspong: MAT812101, MAT812106, MAT812108
- Siemens Turbo Compressors (spec 800 037 98)
- Solar ES 9-224AA Class II
- General Electric Power GEK 32568Q, GEK 46506E, GEK 28143B, GEK 101941A, GEK 107395B, GEK 121608
- MAN Energy Solutions: TED 1000494596
- Baker Hughes: ITN52220.02, ITN 52220.03, ITN52220.04
- Indian Standard IS 1012:2002$$LF$$· ISO 8068:2006 L-TSA, L-TGA, L-TSE, L-TGE, L-TGB, L-TGSB, L-TGF, L-TGSE
- ANSALDO TGO2-0171-E00000/B

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk.

Typical Physical Characteristics

Properties			Method	Shell Turbo S2 GX 32
Kinematic Viscosity	@40°C	mm^2/s	ISO 3448	32
Kinematic Viscosity	@40°C	cSt	ASTM D445	32
Kinematic Viscosity	@100°C	cSt	ASTM D445	5.62
Density	@15°C	kg/l	IP 365	0.852
Flash Point		°C minimum	ASTM D92	215
Pour Point		°C maximum	ASTM D97	-33
Rust Preventing Properties			ASTM D665 A & B	No Rust
Water Separability	minutes to 3 mL emulsion	minutes	ASTM D1401	5
Steam Demulsibility		Seconds maximum	IP 19	195
Foaming Characteristics - Seq I Tendency Stability		ml/ml	ASTM D892	10/0
Foaming Characteristics - Seq II Tendency Stability		ml/ml	ASTM D892	20/0
Foaming Characteristics - Seq III Tendency Stability		ml/ml	ASTM D892	10/0
Load Carrying Capacity (FZG Gear Machine)		failure load stage minimum	ISO 14635-1 A/8.3/90	8
Oxidation Stability - RPVOT		minutes	ASTM D2272	1 770
Oxidation Stability - Modified RPVOT		% of RPVOT		95
Oxidation Stability - TOST Lifetime		hours minimum	ASTM D943	10 000
Oxidation Stability - TOST 1000hr sludge		mg/kg	ASTM D4310	5

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Health, Safety & Environment

- **Health and Safety**

  Shell Turbo S2 GX 32 is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.

  Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.

  Guidance on Health and Safety is available on the appropriate Safety Data Sheet, which can be obtained from https://www.epc.shell.com

- **Protect the Environment**

  Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

Additional Information

- **Advice**

  Advice on applications not covered here may be obtained from your Shell representative.