Technical Data Sheet

Shell Turbo *GT 32*

High Performance Industrial Gas Turbine Lubricant

Shell Turbo Oil GT has been developed for the most severe operating conditions imposed by modern, heavy duty industrial gas turbines. Blended with Group III base oils some of Shell Turbo Oils GT's physical properties differ significantly from those of conventional turbine oils.

DESIGNED TO MEET CHALLENGES

Performance, Features & Benefits

- **Outstanding oxidation stability**
  The lubricant's service life depends, to a great extent, on its oxidative stability. Excellent results in both the 'hot oxidation test' (FTM5308) and the 'TOST' life test (ASTM-D943) clearly demonstrate Turbo GT's potential for extended service life compared to conventional mineral oil technology.
- **Excellent thermal stability**
  Higher bearing temperatures which are particularly severe during stop/start cycling conditions, may lead to bearing deposits and the formation of harmful sludge in the system which subsequently may result in expensive "downtime" and reduce service life of system components. Shell Turbo GT gives greater protection against thermal degradation and may hence significantly contribute to lower operating and maintenance costs.
- **Excellent air release characteristics**
  Effective air release with a minimum of foaming tendency as required by modern gas turbines.

Main Applications

- **Power and industrial heavy duty gas turbines**
  Shell Turbo GT is used as the lubricating oil for main shaft bearings and mechanical gears as well as the governor oil in the turbine control valves in modern gas turbines.
- **Further industrial applications**
  Shell Turbo GT may also be used for other industrial applications requiring a high performance gas turbine oil, such as the lubrication of turbo compressors.

Specifications, Approvals & Recommendations

- Siemens Power Generation TLV 9013 04, TLV 9013 05
- Alstom HTGD 90117 V 0001 AA
- General Electric – GEK 32568j, GEK 107395a, GEK 28143b
- Solar ES 9-224Y Class II
- DIN 51515-1 L-TD, 51515-2 L-TG
- ASTM 4304-06a Type III
- Shell Turbo GT32 meets the specification of Elliott Turbo-machinery X-18-0004

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

Typical Physical Characteristics

Properties			Method	Shell Turbo Oil GT 32
ISO Viscosity Grade			ISO 3448	32
Kinematic Viscosity	@40°C	mm^2/s	ASTM D445	31.4
Kinematic Viscosity	@100°C	mm^2/s	ASTM D445	5.78
Viscosity Index		minimum	ASTM D2270	125
Density	@15°C	kg/m^3	IP 365	844
Flash Point (COC)		°C	ASTM D92	230
Pour Point		°C max	ASTM D97	-15
Neutralisation Number		mg KOH/g	ASTM D974	0.1
Air Release, Minutes	@50°C	minutes	ASTM D3427	2

Properties			Method	Shell Turbo Oil GT 32
Copper Corrosion (3 hrs)	@100°C		ASTM D130	1b
Rust Preventing Properties			ASTM D665 A&B	No Rust
Oxidation Stability - RPVOT		minutes minimum	ASTM D2272	1000
Oxidation Stability - Modified RPVOT		% of RPVOT minimum		95%
Oxidation Stability - TOST Lifetime		hours minimum	ASTM D943	8000
Oxidation Stability - TOST 1000hr sludge		mg/kg maximum	IP 157	40
Oxidation Test - Sludge Content / 72 hrs	@175°C	mg	FTM-791b-5308-7	52
Oxidation Test - Viscosity Change / 72 hrs	@175°C	%	FTM-791b-5308-7	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

- Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from http://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.