

# SHELL TURBO OIL GT

## HIGH PERFORMANCE INDUSTRIAL GAS TURBINE LUBRICANT



DESIGNED TO MEET CHALLENGES

Shell Turbo Oil GT has been developed for the most severe operating conditions imposed by modern, heavy-duty industrial gas turbines.

### PERFORMANCE FEATURES

#### OUTSTANDING OXIDATION STABILITY

- n 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 demonstrates Shell Turbo Oil GT potential for extended service life compared to conventional mineral oil technology.

#### EXCELLENT THERMAL STABILITY

- n 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 Oil GT is formulated to give greater protection against thermal degradation and hence may significantly contribute to lower operating and maintenance costs.

#### EXCELLENT AIR RELEASE CHARACTERISTICS

- n Effective air release with a minimum of foaming tendency as required by modern gas turbines.

### APPLICATIONS

#### POWER AND INDUSTRIAL HEAVY-DUTY GAS TURBINES

- n Shell Turbo Oil GT is used as lubricating oil for main shaft bearings and mechanical gears as well as governor oil in the turbine control valves in modern gas turbines.

#### FURTHER INDUSTRIAL APPLICATIONS

- n Shell Turbo Oil GT may also be used for other industrial applications requiring a high performance gas turbine oil, like lubrication of turbo compressors.

### SPECIFICATIONS, APPROVALS AND RECOMMENDATIONS

#### EXCEEDS SPECIFICATIONS OF:

- n DIN: 51515-1, 51515-2
- n SIEMENS: TLV 9013 04
- n GEK: 32568F, GEK 107395a, GEK 28143B – Type I (ISO 32), GEK 28143B – Type II (ISO 46)
- n ALSTOM: HTGD 90-117, ASTM 4304-06A Type III
- n ALSTOM/ABB: HTGD 90-117T
- n SOLAR: ES 9-224 W Class II.

### TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	32
Kinematic Viscosity (ASTM D 445) @ 40°C mm <sup>2</sup> /s	31.4
@ 100°C mm <sup>2</sup> /s	5.78
Viscosity Index (ASTM D 2270)	>125
Density @ 15°C kg/m <sup>3</sup> (IP 365)	844
Flash Point °C (COC) (ASTM D 92)	230
Pour Point °C (ASTM D 97)	-15
Neutralisation Value mg KOH/g (ASTM D 974)	0.10
Air Release Behaviour @ 50°C min. (ASTM D 3427)	2
Copper Corrosion (3h/100°C) (ASTM D 974)	1b
Rust-Preventing Properties (ASTM D 665 A&B)	No Rust
Oxidation Control Tests	
RPVOT minutes (ASTM D 2272)	>1,000
Modified RPVOT %	>95%
TOST lifetime hr (ASTM D 943)	>8,000
TOST 1,000 hrs sludge mg/kg (IP 157)	<40
Oxidation Test 175°C/72hrs (FTM-971b-5308-7)	
Sludge content mg	52
Viscosity change %	+5