



# LUBRICANTS™

POWER TO PERFORM™

## TURBINOL TURBINE OILS

### SPECIAL FEATURES

TURBINOL grades are premium quality lubricating oils designed to provide efficient and trouble-free service in precision industrial machinery having most exacting lubrication requirements. The excellence of TURBINOL grades is the combined result of selected stable base oils, efficient refining methods and effective additives.

### APPROVALS

Approved by BHEL, APE BELLIES INDIA LTD., DLF Energy Systems, SIEMENS AG, GERMANY, GEC ALSTHOM, UK, and TRIVENI ENGINEERING for their various turbines.

### APPLICATION AREA

Recommended for lubrication of steam, gas & hydraulic turbines & can be used in hydraulic systems requiring very long life lubricant of outstanding properties.

### PHYSICO-CHEMICAL PROPERTIES

	Unit	HPCL TURBINOL		
		32	46	68
Kin. Viscosity @ 40°C, cSt	mm <sup>2</sup> /s or cSt	31.26	45.63	65.3
Viscosity Index	-	107	107	114
Flash Point, COC °C	°C	220	220	228
Pour Point, °C	°C	(-)15	(-)15	(-)15
Neutralization No.(TAN)	mgKOH/g	0.1	0.09	0.09
Rust preventive Characteristics	-	Passes	Passes	Passes
Oxidation Stability, TOST life	hours	>7500	>7500	>7500
Oxidation Stability, TAN after 1000 hrs TOST	mgKOH/g	0.1	0.13	0.28
Oxidation Stability, RPVOT	minutes	1000	1000	1000
Demulsibility @ 54°C 40-37-3	minutes	40-40-0(5)	40-40-0(5)	40-40-0(10)
Foaming Tendency / Stability				
Sec I @ 24°C	ml/ml	0/0	0/0	0/0
Sec II @ 93.5°C	ml/ml	0/0	0/0	0/0
Sec III @ 24°C	ml/ml	0/0	0/0	0/0



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Air release Value @ 50°C time in minutes sulphur content	Minutes	3.5	3.5	4.7
FZG Load Bearing characteristics (only for turbines with gears), Fail load stage, min, DIN 51354		10th	10th	10th
Cleanliness, NAS 1638 HDPE Barrels		6	6	6

Note : Product can be supplied at Cleanliness levels meeting NAS 6 in HDPE Barrels

HPCL TURBINOL Meets SIEMENS TLV 9013/04-01, ALSTOM HTGD 90117, GEK 107395, GEK 101941A, GEK 32568F, GEK 28143A, Russian 11120 & ISO-8068 L-TSA/L-TGB /L-TGB /L-TGSB /L-TSE /L-TGB /L-TGF /LTGSE; MITSUBISHI MS04-MA-CL001; BHEL Haridwar Specifications

TURBINOL Grades are also available in non ISO VG viscosity grades like 57 and 77. While TURBINOL 57 is used in some steam and hydraulic turbines; TURBINOL 77 is used as suspension bearing oil in diesel electric locomotives. TURBINOL 77 oil is fed to the suspension bearing (journal bearing) by wick mechanism.

### PHYSICO-CHEMICAL PROPERTIES

	TURBINOL	
	57	77
Viscosity, Kinematic, cSt, (@40°C)	57	77
Viscosity Index, Min	95	95
Flash Point (COC), °C, Min	215	215
Pour Point, °C, Max.	(-)6	(-)6
Copper Strip Corrosion @100°C, 3Hrs.	1	1
Rust Test, A & B	Passes	
Emulsion Characteristic, At 54°C, ml In 25 Minutes	40-40-0	

### PERFORMANCE BENEFITS

- Excellent oxidation and chemical stability
- Properly balanced combination of oxidation & rust inhibitors and antifoam agents
- Excellent demulsibility and quick release of entrained air gives prolonged service life