



AEROSHELL TURBINE ENGINE OILS FOR AERO-DERIVATIVE GAS TURBINES



Shell Aviation

As with aircraft engines, aero-derivative gas turbines (ADGT) are fast-starting, compact and reliable. This makes them ideal for meeting surges in power demand and providing emergency power for critical facilities such as hospitals, and for use in remote areas and offshore applications.

ADGTs operate at high temperatures. Oils unable to cope with this heat can break down to form coke, which can lead to high maintenance costs and even blocked oil pipes and turbine fires. Some high thermal stability (HTS) oils formulated to resist coke formation have poor elastomer seal compatibility compared with standard (STD) oils, which leads to seal degradation and oil loss. So, your choice of oil has an impact on maintenance and oil consumption costs.

Similar to their airborne cousins, ADGTs require specialist aero-engine oils. **AeroShell Turbine Oil 560** combines high thermal stability for low coking propensity with good elastomer seal compatibility. AeroShell Ascender provides additional benefits for the latest engines.



PERFORMANCE AT A GLANCE

	Load-carrying capacity	Thermal stability	Low coking propensity	Elastomer seal compatibility
AeroShell Ascender Fourth-generation turbine engine oil (TEO) High-performance capability (HPC)	✓✓✓✓	✓✓✓✓✓	✓✓✓✓✓	✓✓✓✓✓
AeroShell Turbine Oil 560 Third-generation TEO High thermal stability (HTS)	✓✓✓✓	✓✓✓✓✓	✓✓✓✓	✓✓✓✓✓
AeroShell Turbine Oil 500 Second-generation TEO Standard class (STD)	✓✓✓✓	✓✓✓	✓✓✓	✓✓✓✓✓

LOW MAINTENANCE

Heavily coked components take longer to clean, thus extending planned downtime, and carbon deposits can even block oil pipes and lead to turbine fires and unplanned power outages.

AeroShell Turbine Oil 560 is an HTS oil. It keeps components cleaner than STD oils by better resisting thermal breakdown for lower levels of coke formation, as can clearly be seen in the images below.



AeroShell Turbine Oil 560



Competitor's standard oil

No. 5 bearing housings after more than 23,500 hours' operation



AeroShell Ascender is approved for use in industrial and marine versions of Rolls-Royce Trent (Siemens SGT-A65) engines and Allison 570-K engines.

AeroShell Turbine Oil 560 is approved for use in industrial and marine versions of the Rolls-Royce RB211-22 (Siemens SGT-A35), Avon, Spey, Olympus and Tyne engines, Pratt & Whitney (Mitsubishi and Hitachi Power Systems) GG3/FT3, GG4/FT4, GG8/FT8 (evaluation only) and GG12/FT12 engines, all General Electric LM Series units, Honeywell and Turbomeca industrial engines, and certain Solar gas engines.

AeroShell Turbine Oil 500 is approved for use in industrial and marine versions of the Rolls-Royce Trent, Avon and Allison 501-K and 570-K engines, Honeywell TF35 engine, Pratt & Whitney GG3/FT3, GG4/FT4 and GG12/FT12 engines, all General Electric LM Series units, Turbomeca industrial engines and certain Solar gas engines.

WHAT OUR CUSTOMERS SAY

"We have successfully used **AeroShell Turbine Oil 560** in our GE LMS100 ADGT since 2012. This application requires a product that meets MIL-PRF-23699. The specification has two options: standard and high thermal stability oil.

"We selected **AeroShell Turbine Oil 560** high thermal stability oil for our first fill based on its benefits of improved thermal stability, low coking propensity and good elastomer compatibility.

"**AeroShell Turbine Oil 560** has provided proper compatibility with all seal materials. We are pleased with the performance and confirm that there have been no oil-related problems. We continue to use **AeroShell Turbine Oil 560** and have a positive experience of working with Shell."

Jaime Viramontes,
Manager, Rio Grande power plant,
El Paso Electric



REDUCED OIL CONSUMPTION

Oil consumption depends on many factors, including an oil's evaporation rate and seal compatibility. Seals are designed to swell to create a tight fit by absorbing a small volume of oil. If too much oil is absorbed, seals may swell too much and slip out of place. If the seal material leaches into the oil, the seals may shrink and become brittle. Either way, oil will leak from the ADGT, thus increasing consumption.

Some HTS oils have a reputation for poor seal compatibility. **AeroShell Turbine Oil 560** has the low-coking propensity of an HTS oil, but also provides good seal compatibility for low oil consumption.

For example, one company reported a 10-15% reduction in oil consumption associated with switching to **AeroShell Turbine Oil 560** from an STD oil.

SPECIFICATIONS AND APPROVALS

AeroShell Turbine Oil 560 is fully approved to

- MIL-PRF-23699G HTS grade
- SAE AS 5780B SPC grade.

A COMPREHENSIVE RANGE

We can provide a full range of products and services for your ADGT, including

- **Shell Turbo T** for the generator and gearbox
- **Shell Tellus S2 MX** for the hydraulic starter
- the **Shell LubeAnalyst** oil condition monitoring service.



CONTACT US

If you want any further information, please contact your AeroShell representative or visit www.aeroshell.com.