

Shell TIVELA® Oils S

Advanced synthetic industrial gear oils

Shell TIVELA® Oils S are advanced synthetic heavy duty industrial gear oils formulated using specially selected polyalkylene glycol base fluids and additives. They offer outstanding lubrication performance under severe operating conditions, including improved energy efficiency, long service life and high resistance to micro-pitting.

Performance Features and Benefits

- **Excellent load carrying capacity and micro-pitting performance**

Provides high levels of load carrying capacity even under shock loading conditions, along with high resistance to micro-pitting (grey staining). These features provide benefits over mineral oil-based products in terms of gear and bearing component life.

- **Superior lubricant performance improving gear efficiency**

Shell TIVELA® Oils S offer improved energy efficiency and lower operating temperatures in worm gear applications. Rig testing has shown efficiency improvements of up to 15% in comparison with mineral oil-based products and 11% over other synthetic hydrocarbon-based lubricants. These results have been confirmed by OEM testing and field experience.

- **Excellent oxidation and thermal stability extending lubricant life**

Resists the formation of harmful oxidation products at high operating temperatures, improving system cleanliness and therefore reliability of the equipment. Shell TIVELA® Oils S are formally approved by Flender AG as providing a lifetime of at least 20,000 hours or four years at bulk operating temperatures of up to 80°C.

- **Longer service intervals**

Extended component and lubricant life offers the opportunity to extend service intervals and to reduce maintenance and disposal costs.

- **Excellent rust and corrosion protection of all metal surfaces**

Main Applications

- Enclosed industrial reduction gear systems operating under severe operating conditions, such as high load, very low or elevated temperatures and wide temperature variations
- Worm gears
- Particularly recommended for certain 'lubricated-for-life' systems
- Bearing and circulation systems such as calendars, where high bulk oil temperatures are found
- Plain and rolling element bearings

Shell TIVELA® Oils S are not recommended for the lubrication of worm gears manufactured from aluminum containing bronze alloys.

Advice on applications not covered in this handbook may be obtained from your Shell representative.

Specifications, Approvals, and Recommendations

Meet the David Brown Type G specification. Fully approved by Flender AG.

Compatibility and Miscibility

High quality epoxy paints are recommended, as polyalkylene glycols will tend to attack certain conventional paints. Shell TIVELA® Oils S has been found to be satisfactory with nitrile and Viton seal materials, although Viton seals are preferred.

Handling and Safety Information

For information on the safe handling, storage, or use of this product, refer to its Material Safety Data Sheet at <http://www.epc.shell.com/>. If you are a Shell Distributor, please call 1+800-332-6457 for all of your service needs. All other customers please call 1+800-237-8645 for all of your service needs.

Protect the Environment

Do not discharge into drains, soil, or water.

Typical Physical Characteristics

Shell TIVELA® Oils S			150	220	320	460	680
Kinematic Viscosity	@ 40 °C	cSt	136	220	320	460	680
	@ 100 °C	cSt	22.5	34.4	52.7	73.2	107
Viscosity Index			188	203	230	239	259
Flash Point (COC)		°C	302	298	286	308	296
Pour Point		°C	-42	-39	-39	-36	-39
Specific Gravity		@ 60 °F	1.076	1.074	1.069	1.072	1.070
FZG		failure load stage	>12	>12	>12	>12	>12

These characteristics are typical of current production. While future production will conform to Shell specifications, variation in these characteristics may occur.