

# SHELL OMALA S4 WE

ADVANCED SYNTHETIC INDUSTRIAL GEAR OIL

PREVIOUSLY SHELL TIVELA S

## DESIGNED TO MEET CHALLENGES

Shell Omala S4 WE is an advanced synthetic heavy-duty industrial worm drive gear oil formulated using specially selected polyalkylene glycol base fluids and additives. It offers outstanding lubrication performance under severe operating conditions, including improved energy efficiency, long service life and high resistance to micro-pitting.

## PERFORMANCE FEATURES

### LONG OIL LIFE – MAINTENANCE SAVING

- Shell Omala S4 WE is formulated to provide excellent oxidation and thermal stability, extending lubricant life and resisting the formation of harmful oxidation products at high operating temperatures. This helps maintain system cleanliness over extended maintenance intervals.
- This performance is recognised by Flender AG where a formal approval for 20,000 hours (four years) at 80°C (bulk oil temperature) usage has been granted.
- Shell Omala S4 WE offers the potential to extend service intervals significantly compared to conventional industrial gear oils.

### EXCELLENT WEAR PROTECTION

- Shell Omala S4 WE is formulated to have excellent load carrying capacity providing long component life even under shock loading conditions. It also has a high resistance to micro-pitting. These features provide benefits over mineral oil-based products in terms of gear and bearing component life.

### MAINTAINING SYSTEM EFFICIENCY

- Shell Omala S4 WE offers 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.

## APPLICATIONS

### ENCLOSED INDUSTRIAL WORM GEAR SYSTEMS

- Recommended for industrial worm gear reduction systems operating under severe operating conditions, such as high load, very low or elevated temperatures and wide temperature variations.

### EXTENDED LIFE SYSTEMS

- Shell Omala S4 WE is particularly recommended for certain systems where maintenance is infrequent or systems are inaccessible (e.g. yaw gears in wind turbine installations).

### OTHER APPLICATIONS

- Shell Omala S4 WE oils are suitable for lubrication of bearings and other components in circulating and splash-lubricated systems.
- Shell Omala S4 WE is not recommended for the lubrication of components manufactured from aluminium or aluminium alloys.
- For highly-loaded spur and helical gears the Shell Omala 'G' series oils are recommended.

- For automotive hypoid gears, the appropriate Shell Spirax Oil should be used.

## SEAL AND PAINT COMPATIBILITY

High quality epoxy paints are recommended, as polyalkylene glycols will tend to attack certain conventional paints. Shell Omala S4 WE has been found to be satisfactory with nitrile and Viton seal materials, although Viton seals are preferred.

## CHANGE-OVER PROCEDURE

Shell Omala S4 WE contains polyalkylene glycols and is not compatible with mineral oils or most other synthetic lubricant types. Care should be taken when changing from such products to Shell Omala S4 WE. The system should be flushed with the minimum quantity of Shell Omala S4 WE, operating under no load and draining while warm. Ideally, seals exposed to mineral oils should also be replaced. Inspect the lubricant after a few days use. Ensure that oil systems are clean and free from contamination.

Shell Omala S4 WE is also not miscible with some other polyalkylene glycols, so caution is needed when topping-up. Generally the preference is to avoid mixtures by draining and refilling.

## SPECIFICATIONS, APPROVALS AND RECOMMENDATIONS

### MEETS:

- David Brown: S1.53.105 G
- ISO: 12925-1 Type CKE
- ANSI/AGMA: 9005-E02 (EP).

### FULLY APPROVED BY:

- Flender: AG
- Bonfiglioli.

## TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	150	220	320
Kinematic Viscosity (ISO 3104) @ 40°C mm <sup>2</sup> /s	136	222	321
@ 100°C mm <sup>2</sup> /s	22.5	34.4	52.7
Viscosity Index (ISO 2909)	188	203	230
Density @ 15°C kg/m <sup>3</sup> (ISO 12185)	1076	1074	1069
Flash Point °C (PMCC) (ISO 2592)	268	278	270
Pour Point °C (ISO 3016)	-42	-39	-39
FZG Load Carrying Test (DIN 51354-2 A/8.3/90) – Failure load stage	>12	>12	>12