# Shell **Omala** ***S4 GXV Plus 460***

Technical Data Sheet

- Full Synthetic Industrial Gear Oil
- SEW and Flender approved
- Excellent protection
- Extended long life

***Advanced Synthetic Industrial Gear Oil***

Shell Omala S4 GXV Plus is an advanced full synthetic heavy duty industrial gear oil, approved by both SEW and Flender, offering outstanding lubrication performance under severe operating conditions, including reduced friction, enhanced energy efficiency, long service life, high resistance to micro-pitting for optimal gear protection and superb compatibility with seals under extreme dynamic conditions.

## DESIGNED TO MEET CHALLENGES

### Performance, Features & Benefits

- **Long oil life - maintenance saving**

  Shell Omala S4 GXV Plus is formulated using an advanced additive system in combination with specially selected synthetic base fluids (mPAO) to provide outstanding resistance to breakdown over long duration and help to reduce deposit formation, sustain film thickness even at higher operating temperatures.

- **Shell Omala S4 GXV Plus can operate successfully at bulk temperatures up to 120°C**

  Shell Omala S4 GXV Plus offers the potential to significantly extend service intervals due to its excellent thermal and oxidative stability compared to other synthetic oils and esp. mineral industrial gear oils.

- **Excellent wear and corrosion protection**

  Shell Omala S4 GXV Plus is formulated to have high load carrying capacity to resist against scuffing wear and high mircopitting resistance providing long component life even under shock loading conditions. These features provide benefits over mineral oil-based products in terms of gear and bearing component life.

- **Shell Omala S4 GXV Plus also has excellent rust and corrosion protection, even in the presence of contamination by water and solids.**

  Shell Omala S4 GXV Plus has passed the severe bearing tests and showed no occurrence of WEC damages. So Shell Omala S4 GXV Plus does not promote WEC bearing failures acc. to the FVA 707 workgroup test protocol.

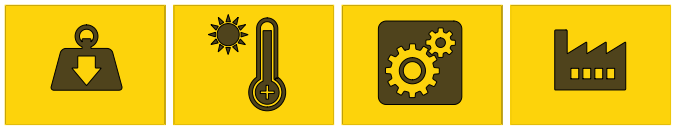
  Shell Omala S4 GXV Plus can help maintain or enhance the efficiency of industrial gear systems through improved low temperature performance and lower friction in comparison to mineral oil-based products. This provides better lubrication at low start-up temperatures.

  Shell Omala S4 GXV Plus can operate in high flow rate systems with filtration as low as 3 micron mesh size per validation with extended OEM filterability tests.

- **Excellent compatibility with seals, paints and sealants**

  Shell Omala S4 GXV Plus is recommended for industrial reduction gear systems using a wide range of seals, including nitrile rubber and fluoro-elastomers. Shell Omala S4 GXV Plus meets the demanding requirements of both Flender and SEW for their gearboxes and gear motors.

### Main Applications



- **Gear motor systems and other inaccessible installations**

  Shell Omala S4 GXV Plus is particularly recommended for certain systems where extra long life is required, maintenance is infrequent or systems are inaccessible. Additionally Shell Omala S4 GXV Plus is recommended for systems where seal leakages are critical for the operation.

- **Enclosed industrial gear systems**

  Shell Omala S4 GXV Plus is recommended for industrial reduction gear systems operating under severe operating conditions, such as high load, very low or elevated temperatures and wide temperature variations.

- **Other applications**

  Shell Omala S4 GXV Plus is suitable for lubrication of bearings and other components in circulating and splash-lubricated systems.

  For highly loaded worm drives the Shell Omala “W” series oils are recommended. For automotive hypoid gears, the appropriate Shell Spirax Oil should be used.

## Specifications, Approvals & Recommendations

**Meets or exceeds the following industry standards:**

- ISO 12925-1 Type CKD
- ISO 12925-1 Type CKSMP
- DIN 51517-3 (CLP)
- DIN 51517-4 (CLPX)
- AIST (US Steel) Req. No. 224
- ANSI/AGMA 9005-F16
- China National Standard GB 5903-2011 CKD

**Omala S4 GXV Plus has been approved by:**

- Flender – approved according to Flender T 7300 Omala S4 GXV Plus ISO 150 – 680 are approved by Flender for use in Flender gear units.
- SEW – approved according to SEW approval process Rev. 070040513, Omala S4 GXV Plus ISO 150 – 680 are approved by SEW for use in standard gear and industrial gear units
- FLSmidth MAAG Gear – according to approval process, Omala S4 GXV Plus ISO 150 – 460 are approved for use in MAAG gearboxes.
- Rossi S.p.A – according to approval process, Omala S4 GXV Plus ISO 150 – 460 are approved for use in Rossi gear units.
- SHI – approved according to SHI approval process, Omala S4 GXV Plus ISO 150 – 680 are approved by SHI for use in Hansen industrial gear units and Sumitomo Paramax gear units.
- Comer Industries – according to approval process, Omala S4 GXV Plus ISO 150 – 320 are approved for use in Comer Industries gearboxes.

**Designed to meet or exceed the OEM requirements of**

- Liebherr Mining – Omala S4 GXV Plus ISO 220 – 680

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk

## Typical Physical Characteristics

| Properties | | | Method | Shell Omala S4 GXV Plus 460 |
|---|---|---|---|---|
| Kinematic Viscosity | @40°C | $mm^2/s$ | ASTM D445 | 460 |
| Kinematic Viscosity | @100°C | $mm^2/s$ | ASTM D445 | 54 |
| Flash Point | | °C | ASTM D92 | 240 |
| Pour Point | | °C | ASTM D97 | -48 |
| Density | @15°C | $kg/m^3$ | ASTM D4052 | 862 |
| Four Ball EP Weld load | | kg | ASTM D2783 | 250 |
| FZG Load Carrying Test A/8.3/90 | | failure load stage minimum | ISO 14635-1 | 12 |
| FZG Load Carrying Test A/8.3/90 Modified | | failure load stage minimum | ISO 14635-1 Modified | 14 |
| Viscosity Index | | | IP 226 | 183 |

The characteristics are typical of current production. Whilst future production will conform to Shell specification, variations in these characteristics may occur.

## Health, Safety & Environment

- **Health and Safety**

  Omala S4 GXV Plus is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.

  Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.

  Guidance on Health and Safety is available on the appropriate Safety Data Sheet, which can be obtained from https://www.epc.shell.com

- **Protect the Environment**

  Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

## Additional Information

- **Advice**

  Advice on applications not covered here may be obtained from your Shell Representative

- **Change over procedure**

  Shell Omala S4 GXV Plus is based on synthesized hydrocarbon fluids and is compatible with petroleum mineral oil-based industrial gear lubricants - no special change-over procedure is necessary. However, to achieve the complete benefit of Shell Omala S4 GXV Plus, it should not be mixed with other oils.

  It is also advisable to ensure that oil systems are clean and free from contamination.