Technical Data Sheet

Formerly Known As: **Neptune® Gear N229**

Shell **Omala S3 W *220***

- Polyalkylene glycol (PAG) based
- Non-Sheening
- US EPA VGP Compliant
- Biodegradability Profile: See Specifications and Approvals

Environmentally Acceptable Polyalkylene glycol (PAG) based Gear Fluid

Shell Omala S3 W Gear lubricants are fully formulated, high performance gear lubricants for enclosed industrial gears including worm gears. Shell Omala S3 W Gear lubricant are formulated to provide excellent lubrication, stability and extended service life. These gear lubricants are designed for demanding industrial applications. Particularly suited for applications mandating compliance with US EPA 2013 VGP requirements for Environmentally Acceptable Lubricants (EALs).

DESIGNED TO MEET CHALLENGES

Performance, Features & Benefits

- **Reduced Wear Rates**

  Shell Omala S3 W Gear lubricants have exceptional load carrying anti-wear performance over a wide range of temperatures. They are rated as “anti-wear” (AW) fluids according to ASTM D7043 and FZG testing.

- **Hydrolytic Stability**

  Shell Omala S3 W Gear lubricants will not hydrolyze in the presence of water. This protects hydraulic systems from decreased equipment life and potential system failure due to the presence of harmful acids (increased Total Acid Number values).

- **All Weather Service**

  With high viscosity indices and low pour points, Shell Omala S3 W Gear lubricants may be used year-round, eliminating season changeovers. One Shell Omala S3 W gear lubricant may replace multiple viscosity grade oils.

- **Lower Environmental Impact**

  An ‘Environmentally Acceptable Lubricant’ as defined by the United States Environmental Protection Agency’s (EPA) 2013 Vessel General Permit (VGP)
  Offers reduced impact of leaks or accidental spillage into aquatic and marine environments compared to conventional mineral lubricants thanks to their higher biodegradability. (Publication EPA 800-R-11-002).

Biodegradability profile:

At least 98% by mass of Shell Omala S3 W 220 components are readily biodegradable, achieving a passing result of ≥60% according to OECD 301B.

Low ecotoxicity:

Meets US EPA 2013 VGP requirements for 'minimally toxic' and not-bioaccumulative.

- **Water Solubility**

  Shell Omala S3 W Gear lubricants are heavier than water and meets US EPA 2013 VGP requirements for not-bioaccumulative.

- **Non-Sheening**

  Shell Omala S3 W Gear lubricants do not cause a sheen and are in compliance with the US Clean Water Act Sheen Rule.

Main Applications



- Shell Omala S3 W fluids are ideal for use in applications such as dockside and marine mobile equipment, forestry, coal handling, amusement, cooling towers, wind turbines and industrial operations.

Specifications, Approvals & Recommendations

- Meets requirements of US EPA 2013 VGP
- ≥98% w/w of this lubricant’s components are readily biodegradable, achieving a passing result of ≥60% according to OECD 301B

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

Compatibility & Miscibility

- **Seal Compatibility**

  Shell Omala S3 W Gear lubricants are compatible with many common and high-performance elastomers. Contact your local Shell distributor for additional information.

- **Material Compatibility**

  Shell Omala S3 W Gear lubricants are typically not soluble with petroleum-based oils. The fluids are compatible with seals and hoses commonly found in gear systems. Contact Shell for more detailed compatibility information related to paints, plastics, and elastomers.

Typical Physical Characteristics

Properties			Method	Shell Omala S3 W 220
ISO Viscosity Grade				220
Kinematic Viscosity	@40°C	mm^2/s	ASTM D445	228
Kinematic Viscosity	@100°C	mm^2/s	ASTM D445	45.6
Viscosity Index			ISO 2909	257
Density	@15°C	kg/m^3	ASTM D4052	1 041
Flash Point		°C	ASTM D92	225
Fire Point (COC)		°C	ASTM D92	265
Pour Point		°C	ASTM D97	-39
FZG (A/8,3/90)		Fail Stage	ISO 14635-1	12

These characteristics are typical of current production, variations in these characteristics in future production may occur.

Health, Safety & Environment

- **Health and Safety**

  Shell Omala S3 W 220 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 on applications not covered here may be obtained from your Shell Representative.