Technical Data Sheet

- *EXTRA PROTECTION*
- *Against oxidation*
- *Against wear & micropitting*
- *Against corrosion & foaming*

Shell Omala *S2 GX 220*

Industrial Gear Oils

Shell Omala S2 GX oils are high quality extreme-pressure (EP) oils designed primarily for the lubrication of heavy duty industrial gearboxes. Their high load carrying capacity, protection against micropitting and compatibility with seals and paints, combine to offer excellent performance in enclosed gear applications.

DESIGNED TO MEET CHALLENGES

Performance, Features & Benefits

- **Long oil life through oxidation stability and resistance to thermal stress – leading to reduced total cost of ownership**
  Shell Omala S2 GX oils are formulated to reduce the risk of thermal and chemical breakdown throughout the maintenance interval. They withstand high thermal loading and resist the formation of sludge to provide extended oil life capability, even with bulk oil temperatures of up to 100°C.
- **Excellent wear and micropitting protection**
  Shell Omala S2 GX is formulated to have excellent load carrying capacity and micropitting performance, providing long component life.
- **Gear system efficiency is maintained by optimized water separation performance, corrosion and foam control**
  Shell Omala S2 GX oils display a combination of excellent water shedding capability, corrosion protection and low foam forming tendency.
  Water can greatly accelerate surface fatigue of gears and bearings as well as promoting ferrous corrosion on internal surfaces. Excellent corrosion protection is provided, even in the presence of contamination by seawater and solids.
  The oils are designed to minimize the potential for foaming, often experienced in applications where oil reservoir residence times are marginal.
  Excellent shear stability, maintains viscosity stability throughout the service interval.
  Further system efficiencies are gained through compatibility with popular seals, sealants, and engineering adhesives, to help avoid leakage. Shell Omala S2 GX is compatible with prevalent paint finishes.

Main Applications

- **Enclosed industrial gear systems**
  Shell Omala S2 GX technology provides an effective extreme pressure (EP) formulation designed specifically for enclosed industrial gearboxes using steel-on-steel, spur, helical, or planetary gear drives, including highly loaded systems with splash or forced circulation systems.
  Shell Omala S2 GX oils are also suitable for the lubrication of non-geared applications, that include bearings and other steel-on-steel components with splash or forced circulation systems.
- **Other applications**
  Shell offers a wide range of products for other gear applications that have their own specific requirements
- Shell Omala S4 GXV is recommended for gear systems where a synthetic lubricant is specified, when the longest lifespan is required, or when operating in environments that experience large temperature variations.
- Shell Omala S5 Wind 320 is recommended for wind turbine main gear drives.
- Shell Omala S4 WE, Shell Morlina S4 B and Shell Omala S1 W are recommended for worm-wheel drives.
- For automotive gear applications, the appropriate Shell Spirax Oil should be used.
- For geared systems, or other applications that employ a filtration unit finer than 5 microns, please consult your Shell Local Technical Advisor and Product Application Specialist before using Shell Omala S2 GX.

Specifications, Approvals & Recommendations

Meets requirements of:

- ISO 12925-1 Type CKD (ISO 220)
- ISO 12925-1 Type CKC (ISO 220)
- DIN 51517- Part 3 CLP (ISO 220)
- AGMA EP 9005- F16 (ISO 220)
- AIST (US Steel) 224 (ISO 220)
- Fives Cincinnati: P-74 (ISO 220)

Approved or Recommended by:

- Siemens AG

  Shell Omala S2 GX 220 is approved by Siemens AG for use in Flender, helical, bevel, planetary and marine gear units.

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

Typical Physical Characteristics

Properties			Method	Shell Omala S2 GX 220
Kinematic Viscosity	@ 40°C	mm^2/s	ISO 3104	220
Kinematic Viscosity	@ 100°C	mm^2/s	ISO 3104	19.0
Viscosity Index			ISO 2909	98
Flash Point COC		°C	ISO 2592	>240
Pour Point		°C	ISO 3016	-18
Density	@ 15°C	Kg/m^3	ISO 12185	899

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

Health, Safety & Environment

- **Health and Safety**

  This product 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 Material Safety Data Sheet (MSDS), which can be obtained from http://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

Black Pearl® Grease EP

Industrial & Automotive Grease

Product Data Sheet

Customer benefits

Chevron Black Pearl Grease EP delivers value through:

- **Excellent pumpability** – Viscosity measurements at grease pump shear rates show this grease will pump easily.
- **High load capacity** – As a result of high film strength and overall EP performance, shock load protection and low wear are ensured. Especially suited for roller bearings
- **Corrosion protection** – Pass the modified ASTM D 1743 Bearing Rust Test.
- **Water resistance** – Product provides exceptional water wash out results. Performs well in applications where cascading water or actual bearing submergence can occur.
- **Excellent adhesion** – This grease stay in place and continue lubricating under most operating conditions.
- **Enhanced lubricant life** in storage and in use due to an effective antioxidant additive.

Applications

Chevron Black Pearl Grease EP is recommended for general lubrication service in both automotive and industrial applications. Other uses are in Construction and Agricultural equipment

Typical industrial applications can include:

- Antifriction bearings, low & high speed journal bearings, roller & needle bearings
- Shaker or classifier screen bearings
- General machinery lubrication
- Conveyors and run out rolls
- Electric motor bearings (cylindrical roller bearings)
- Exhaust fan bearings
- Crusher bearings
- Pump bearings
- Presses

Product features:

Chevron Black Pearl Grease EP is a multipurpose, extreme pressure, water-resistant grease. It is formulated with highly refined base stock, a polyurea thickener, and rust and oxidation inhibitors. It is black in color and smooth and buttery in texture. Does not contain solid lubricants such as molybdenum disulfide or graphite.

A **Chevron** company product

Our Family of Brands

Typical automotive applications can include:

- All chassis points including ball joints and universal joints
- Wheel bearings
- Water pumps
- Fifth wheels
- Steering system bearings
- King pins

Usable temperature range in continuous service is:

- **NLGI 2:** -40 to 177°C

Performance Standards

- Registered with NSF International (H2)
- NLGI Certification Mark GC-LB.

Typical Key Properties

BLACK PEARL GREASE EP	RESULTS
NLGI Grade	2
Product Code	540909
Dropping Point, °C	270
Oil Viscosity,	
mm^2/s @ 40°C	145
mm^2/s @ 100°C	14.4
Penetration, Worked @ 25°C	280
Thickener (polyurea complex), m %	13.5
Timken OK Load, kg	31.7
Four ball Weld-Point, kg	500

This bulletin was prepared in good faith from the best information available at the time of issue. While the values and characteristics are considered representative, some variation, not affecting performance, can be expected. It is the responsibility of the user to ensure that the products are used in the applications for which they are intended.

Produced by Chevron Lubricants; Africa, Middle East and Pakistan.

Environment, Health and Safety Information is available on this product in the Material Safety Data Sheet (MSDS) and Customer Safety Guide. Customers are encouraged to review this information, follow precautions and comply with laws and regulations concerning product use and disposal. To obtain a MSDS for this product, visit www.caltexoils.com.

For more information, go to www.chevronlubricants.com