

## PEERLESS™ LLG & OG CALCIUM SULPHONATE GREASES

### Introduction

Petro-Canada PEERLESS™ greases are premium performance, multi-application greases formulated to reduce operating costs and provide extended protection in high temperature or wet operating conditions.

PEERLESS LLG combines three areas of high technology, namely:

- Petro-Canada ultra pure HT Severely Hydrocracked base oils
- Petro-Canada's proven antioxidant chemistry
- The latest in calcium sulphonate complex grease thickeners

The PEERLESS OG line of extreme pressure (EP), high temperature multi-application greases are specially formulated to be highly effective in wet and marine environments. Based on a special calcium sulfonate complex thickener, these greases can absorb moderate amounts of water without softening, changing consistency or losing corrosion prevention capability.



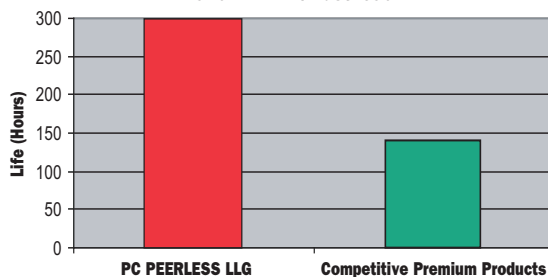
PEERLESS LLG, OG1, OG2 and OG2 Red all meet NLGI Automotive Service Classification GC-LB for wheel bearing and chassis lubrication.

### Features and Benefits for PEERLESS LLG

- **Long life under high temperature provides long-lasting equipment protection**
  - PEERLESS LLG lasts longer than competitive premium multi-application grease at high temperature
  - PEERLESS LLG's high operating temperature provides extended protection under severe conditions compared to leading competitive products
- **Excellent water resistance**
  - PEERLESS LLG superior water washout resistance reduces maintenance costs in wet environments
  - Stays in place in wet and marine applications
  - Maintains consistency after absorbing water
  - Strongly resists water wash-off and lengthens lubrication intervals

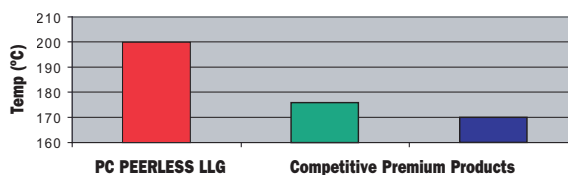
#### PC PEERLESS LLG's long life under high temperature provides long-lasting equipment protection

ASTM D3527 Bearing Life Performance Test at 160°C (320°F), 1000rpm speed and 111 N thrust load



\* This test differentiates among wheel bearing greases having distinctly different high temperature characteristics. The longer the life, the better the protection.

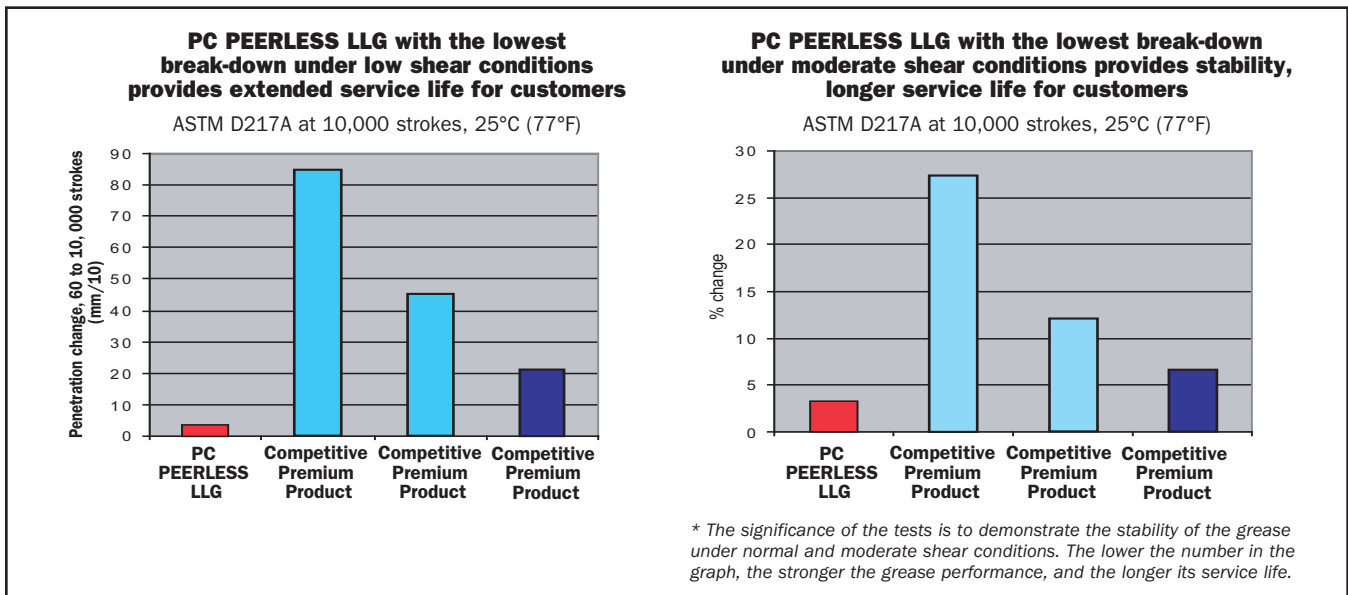
#### PC PEERLESS LLG's operating temperature provides extended service life for customers



\*ASTM D2265 Dropping Point Test indicates the temperature at which the grease thickener loses its capacity to retain oils and this temperature is also much higher for PEERLESS LLG versus the competitive products.

- **High mechanical stability in severe operating conditions**

- PEERLESS LLG also lowers maintenance costs as a result of reduced product breakdowns under low to moderately high shear conditions
- Reduces bearing wear and extends equipment life
- Protects bearings under heavy loading



## Features and Benefits of Peerless OG Greases

- **Excellent performance in the presence of water**

- Stays in place in wet and marine applications
- Maintains consistency after absorbing water
- Excellent resistance to washout

- **Wide temperature / pressure range**

- Special thickener enhances high temperature and pressure capabilities
- Low temperature hand-gun dispensing capability
- Performs well in low ambient temperature applications

- **Great rust and corrosion protection**

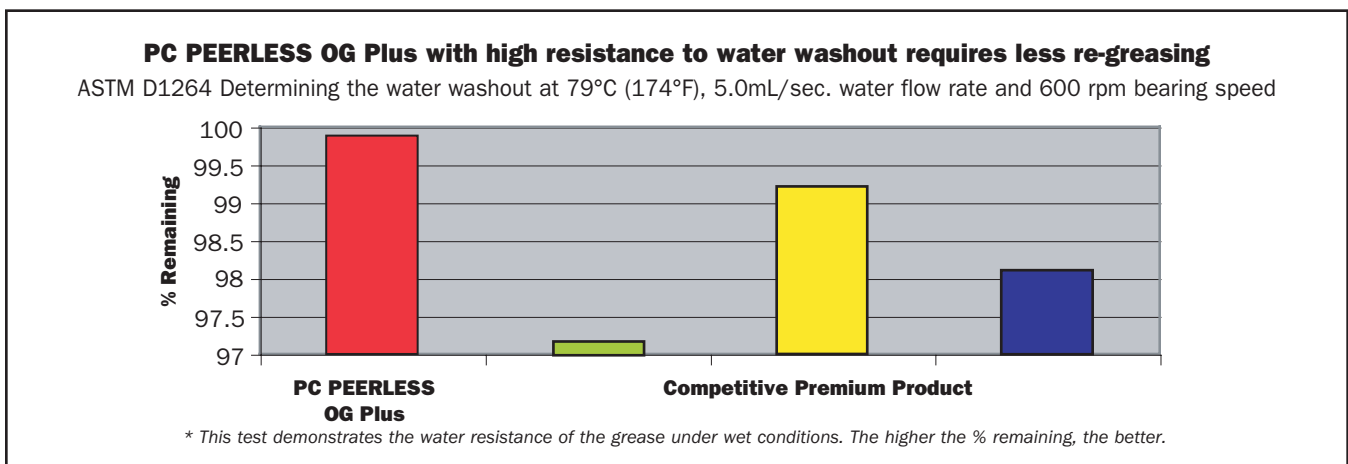
- Protects components in the presence of water
- Reduces maintenance costs

- **Superior adhesive properties**

- Protects rotating parts to reduce equipment costs
- Excellent resistance to washout for better protection

- **State of the art formulations**

- Excellent protection against rust and corrosion especially in marine applications
- Excellent adhesive properties to protect rotating parts and reduce equipment cost
- Built-in, non-sacrificial anti-oxidant chemistry for long life



## Applications

Petro-Canada PEERLESS LLG and OG Greases are formulated to provide excellent lubrication in a wide range of applications especially under high temperature and extremely wet operating conditions. PEERLESS greases are recommended for a full range of industrial and automotive applications including:

- General Manufacturing
- Pulp & Paper
- Fleet
- Forestry
- Power Generating

### PEERLESS LLG

A premium multi-application calcium sulphonate complex grease, Peerless LLG provides outstanding oxidation stability, excellent water resistance, outstanding rust protection and excellent load carrying ability under high operating temperatures. It is particularly recommended for high temperature and long life applications which include:

- Equipment running continuously at temperatures up to 200°C/392°F and extremely wet conditions
- Wheel bearings and automotive chassis
- Sealed-for-life bearings
- Constant velocity joints
- Small appliance
- Ovens and Kilns

### PEERLESS OGO

A premium multi-application calcium sulphonate complex grease, Peerless OGO has excellent performance in the presence of water, wide operating temperature range, great rust and corrosion protection and superior adhesive properties. Applications include:

- Central lubricating systems
- Applications with low ambient temperatures
- Applications with the requirement for a softer grade product

### PEERLESS OG1

A premium multi-application calcium sulphonate complex grease, Peerless OG1 has excellent performance in the presence of water, wide operating temperature range, great rust and corrosion protection and superior adhesive properties. Applications include:

- Wheel bearings
- Automotive chassis
- Central lubricating systems

### PEERLESS OG2 and OG2 Red

A premium multi-application calcium sulphonate complex grease, Peerless OG2 and OG2 Red have excellent performance in the presence of water, wide operating temperature range, great rust and corrosion protection and superior adhesive properties. Applications include:

- Wheel bearings
- Forklift mast slides
- Mining scoop trams
- Farming Equipment
- Automotive chassis
- Power shovel bucket pins
- Rock crushers
- Pulp press roller bearings

### PEERLESS OG PLUS

A premium multi-application calcium sulphonate complex grease, Peerless OG Plus is polymer enhanced and has excellent performance in the presence of water, wide operating temperature range, great rust and corrosion protection and superior adhesive properties. Applications include:

- Wet end bearings of paper mills
- Pulp press roller bearings
- Applications where superior adhesion is a key requirement

### PEERLESS SVG 102

A premium multi-application calcium sulphonate complex grease, Peerless SVG 102 has excellent performance in protecting valves against corrosion and deleterious effects of hydrogen sulphide present in the gas streams in the oil and gas industry. Applications include:

- Internal parts of valves used in production and distribution of sour gas
- Valves used in LPG and water injection systems in oil and gas industry

### PEERLESS XCG-FLEX

A premium multi-application calcium sulphonate complex coupling grease, Peerless XCG-Flex is a grease with outstanding mechanical stability and resistance to oil separation. It has a high-load carrying ability, high dropping point and excellent resistance to corrosion and water washout. It prevents oxidative fretting corrosion and protects against wear under potentially high gear tooth loadings and vibration. PEERLESS XCG-Flex meets AGMA coupling grease specifications CG-1 and CG-2. Applications include:

- High-speed flexible couplings where severe centrifugal forces are generated
- Industrial couplings of the gear and flexible steel type

## Operational Considerations

PEERLESS line of products provides long wear protection under normal operating conditions. However, actual grease life is dependent upon system design and operating practices. No Nonsense Lubricants Warranty applies.

## Typical Performance Data

| PROPERTY  | TEST METHOD  | PEERLESS           |                  |                  |                  |                  |                  |                   |                      |
|---|--------------|--------------------|------------------|------------------|------------------|------------------|------------------|-------------------|----------------------|
|   |              | LLG                | OG0              | OG1              | OG2              | OG2 RED          | OG PLUS          | SVG 102           | XCG-FLEX             |
| NLGI Grade  | D217         | 2                  | 0                | 1                | 2                | 2                | 2.5              | 1                 | 1                    |
| NLGI Standard   |              | GC-LB              | -                | GC-LB            | GC-LB            | GC-LB            | -                | -                 | -                    |
| Colour  | PCM 264      | Burgundy           | Tan              | Tan              | Tan              | Red              | Tan              | Green-Grey        | Brown                |
| Texture / Appearance  | PCM 264      | Buttery/Smooth     | Buttery/Smooth   | Buttery/Smooth   | Buttery/Smooth   | Buttery/Smooth   | Stringy/Smooth   | Buttery/Smooth    | Buttery Smooth       |
| Dropping Point, °C/°F   | D2265        | 314/597            | 284/543          | 310/590          | 304/579          | 300/572          | 309/588          | 262/504           | 290/554              |
| Worked Penetration, 60 strokes  | D217A        | 284                | 366              | 329              | 276              | 270              | 249              | 324               | 335                  |
| Oxidation Stability 100 hrs, psi drop                                 | D942         | 2.2                | 2                | 2                | 2                | 2                | 2                | 3                 | -                    |
| Base Oil Viscosity, cSt @ 40°C/SUS @ 100°F<br>cSt @ 100°C/SUS @ 210°F | D445<br>D445 | 100/523<br>10.8/63 | 38/193<br>7.3/50 | 53/270<br>8.9/56 | 73/378<br>9.4/58 | 73/378<br>9.4/58 | 78/406<br>9.4/58 | 80/412<br>11.2/64 | 329/1764<br>22.5/112 |
| Viscosity with Polymer <sup>1</sup><br>cSt @ 40°C<br>cSt @ 100°C      |              | 214<br>22          | 80.6<br>11.5     | 127<br>16.1      | 117<br>14.5      | 906<br>86.5      | 1358<br>128.6    | 159<br>17.6       | 4732<br>278          |
| Timken OK Load, Kg/lb   | D2509        | 27/60              | 22.7/50          | 27/60            | 27/60            | 27/60            | 27/60            | 27/60             | 29.5/65              |
| Four Ball Weld Point, kg  | D2596        | 500                | 315              | 400              | 400              | 500              | 500              | 620               | 500                  |
| Four Ball Wear scar diam mm   | D2266        | 0.45               | 0.42             | 0.38             | 0.52             | 0.42             | 0.39             | 0.51              | 0.41                 |
| Copper Corrosion  | D4048        | 1b                 | 1b               | 1b               | 1b               | 1b               | 1b               | 1a                | 1b                   |
| Water Washout % @ 79°C /174°F   | D1264        | 1.5                | -                | 2.8              | 2.2              | 2.8              | 0.1              | 1.5               | 1.5                  |
| Temperature Range, °C   |              | -20 to 200         | -35 to 163       | -30 to 163       | -25 to 163       | -25 to 163       | -20 to 163       | -35 to 163        | -20 to 163           |
| Temperature Range, °F   |              | -4 to 392          | -31 to 325       | -22 to 325       | -13 to 325       | -13 to 325       | -4 to 325        | -31 to 325        | -4 to 325            |

The values quoted above are typical of normal production. They do not constitute a specification.

<sup>1</sup> This grease contains a polymer additive which increases the active base oil viscosity providing enhanced performance, protection and load carrying capabilities. Petro-Canada Lubricants' specification only covers the base oil viscosity and not the viscosity with polymer.

To order product or to learn more about how Petro-Canada Lubricants can help your business visit: [lubricants.petro-canada.com](http://lubricants.petro-canada.com) or contact us at: [lubecsr@petrocanadalsp.com](mailto:lubecsr@petrocanadalsp.com)



IM-8021E (2015.03)

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