

## Product Description

Mobil SHC 600 Series lubricants are supreme performance gear and bearing oils designed to provide outstanding service in terms of equipment protection, oil life and problem-free operation. They are formulated from synthesised, wax-free hydrocarbon base fluids. The combination of a naturally high viscosity index and a unique, proprietary, additive system enables these products to provide outstanding performance in extreme service applications at high and low temperatures, well beyond the capabilities of mineral oils. These products are resistant to mechanical shear, even in heavily loaded gear and high shear bearing applications, so that there is virtually no loss of viscosity.

The Mobil SHC 600 Series products have low traction coefficients, which derive from the molecular structure of the base stocks used. This results in low fluid friction in the load zone of non-conforming surfaces such as gears and rolling contact bearings. Low fluid friction produces lower operating temperatures and improved gear efficiency, which translates into reduced power consumption. It also results in extended parts life and allows for more economical equipment design. The base oils used in the Mobil SHC 600 Series have outstanding response to antioxidant additives resulting in superior resistance to oxidation and sludging, especially at high temperatures. The additive combination used in these oils also provides exceptional resistance to rusting and corrosion, very good antiwear, demulsibility, foam control and air release properties, as well as multimetal compatibility. The Mobil SHC 600 Series oils are also compatible with the same seal and other construction materials used in equipment normally lubricated with mineral oils.

The leading edge technology on which Mobil SHC 600 Series lubricants have always been based has made these the products of choice for operators of a wide range of equipment, worldwide. While initially recognised as a high temperature problem solver, these products are now used in many industrial applications because of the range of benefits they offer.

## Features and Benefits

The Mobil SHC brand of lubricants are recognised and appreciated around the world for their innovation and outstanding performance. These molecular designed synthetic products, pioneered by our research scientists, symbolise the continuing commitment to using advanced technology to



equipment designs.

Our work with equipment builders has helped confirm the results from our own laboratory tests showing the exceptional performance of the Mobil SHC 600 Series lubricants. Not least among the benefits, shown in work with OEMs, is the potential for significant efficiency improvements in changing from mineral oil. These benefits are particularly evident in equipment which, by design, cannot avoid low overall efficiency, such as high ratio wormgears.

To combat high thermal exposure of the oil, our product formulation scientists chose proprietary base oils for Mobil SHC 600 Series oils because of their exceptional thermal/oxidative resistance potential. Our formulators chose specific additives which would maximize the benefits of the base oils to provide exceptional oil life and deposit control and resistance to thermal/oxidative and chemical degradation, as well as the balance of the performance features. The wax-free nature of the base oil also provides low temperature fluidity characteristics unmatched by mineral products and is a key benefit for remote, low ambient temperature applications. The Mobil SHC 600 Series oils offer the following features and potential benefits:

| Features   | Advantages and Potential Benefits   |
|--|---|
| Superb high temperature thermal/oxidation resistance | Extends equipment high temperature operating capability   |
|  | Long oil life, reduced need and costs for oil change outs   |
|  | Minimises sludges and deposits for trouble-free operation and long filter life  |
| High Viscosity Index and absence of wax              | Maintains viscosity and film thickness at high temperatures   |
|  | Exceptional low temperature performance, including start-up   |
| Low traction coefficient                             | Reduces overall friction and can increase efficiency in sliding mechanisms such as gearing, with potential for reduced power consumption and lower steady-state operating temperatures. |

|                               |  |
|-------------------------------|--|
|                               | Minimises effects of micro slip in rolling contact bearings for longer rolling-element life potential  |
| High load carrying capability | Protects equipment and extends life; minimises unexpected downtime and extends service periods   |
| Balanced additive combination | Provides excellent performance in terms of rust and corrosion prevention, water separability, foam control, air release performance ensuring problem-free operation in a wide range of industrial applications and reduced operating costs |

## Applications

While Mobil SHC 600 Series are compatible with mineral oil based products, admixture may detract from their performance. Consequently it is recommended that before changing a system to one of the Mobil SHC 600 Series, it should be thoroughly cleaned out and flushed to achieve the maximum performance benefits. The Mobil SHC 600 Series oils are compatible with the following seal materials: fluorocarbon, polyacrylate, polyurethane ether, some silicone, ethylene/acrylic, chlorinated polyethylene, polysulfide, and some nitrile rubbers. There is the potential for substantial variations in the elastomers being used today. For best results, consult your equipment supplier, seal manufacturer, or your local Mobil representative to verify compatibility.

Mobil SHC 600 Series lubricants are recommended for use in a wide variety of gear and bearing applications where high or low temperatures are encountered or where operating temperatures or bulk oil temperatures are such that conventional lubricants give unsatisfactory life, or where improved efficiency is needed. They are particularly effective in applications where the maintenance costs of component replacement, system cleaning and lubricant changes are high. Specific applications include:

- Filled for life gearboxes, especially high ratio/ low-efficiency worm gears
- Remotely located gearboxes, where oil change-out is difficult
- Low temperature applications, such as ski lifts where seasonal oil changes can be avoided
- Mixer roll bearings and roll neck bearings where high temperatures are encountered
- Plastic calendars
- Severe centrifuge applications, including marine centrifuges
- Railroad A/C Traction Drives
- Mobil SHC 625\*, 627, 629 and 630 are suitable for Oil Flooded Rotary Screw Compressors

compressing natural gas, field gas gathering, CO2 and other process gasses used in the natural gas industry

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### Specifications and Approvals

|   |     |         |     |     |     |
|---|-----|---------|-----|-----|-----|
| Mobil SHC 600 Series has the following builder approvals: | 624 | 625 (1) | 626 | 627 | 629 |
| Cone Drive (US)   |     |         |     |     |     |
| Boston Gear (US)  |     |         |     |     |     |
| (1) 625 is available only in the USA                      |     |         |     |     |     |
| Mobil SHC 600 Series has the following builder approvals: | 630 | 632     | 634 | 636 | 639 |
| Cone Drive (US)   |     |         | X   |     |     |
| Boston Gear (US)  |     |         | X   |     |     |
| (1) 625 is available only in the USA                      |     |         |     |     |     |

### Typical Properties

|                       |     |         |     |     |     |
|-----------------------|-----|---------|-----|-----|-----|
| Mobil SHC 600 Series  | 624 | 625 (1) | 626 | 627 | 629 |
| ISO Viscosity Grade   | 32  | 46      | 68  | 100 | 150 |
| Viscosity, ASTM D 445 |     |         |     |     |     |

|  |                |               |               |              |              |
|--|----------------|---------------|---------------|--------------|--------------|
| cSt @ 40° C  | 32.4           | 48.0          | 69.9          | 99.1         | 143          |
| cSt @ 100° C   | 6.3            | 7.9           | 10.9          | 13.9         | 18.3         |
| Viscosity Index, ASTM D 2270                                   | 148            | 135           | 146           | 143          | 144          |
| Pour Point, °C, ASTM D 97                                      | -54            | -48           | -48           | -42          | -45          |
| Flash Point, °C, ASTM D 92                                     | 240            | 252           | 236           | 248          | 228          |
| Specific Gravity, ASTM D 4052, 15° C/15° C                     | 0.85           | 0.85          | 0.86          | 0.86         | 0.86         |
| Appearance, visual   | Orange         | Orange        | Orange        | Orange       | Orange       |
| TOST, ASTM D 943, Hours to 2 NN                                | 10,000+        | 10,000+       | 10,000+       | 10,000+      | 10,000+      |
| RBOT, ASTM D 2272, min.  | 1750           | 1750          | 1750          | 1750         | 1750         |
| Rust protection, ASTM D665, Sea Water                          | Pass           | Pass          | Pass          | Pass         | Pass         |
| Water Seperability, ASTM D 1401,Min. to 3 ml emulsion @ 54° C  | 20             | 20            | 20            | -            | -            |
| Water Seperability, ASTM D 1401,Min. to 3 ml emulsion @ 82° C  | -              | -             | -             | 15           | 15           |
| Copper Corrosion, ASTM D130, 24 hrs @ 121° C                   | 1B             | 1B            | 1B            | 1B           | 1B           |
| Foam Test, ASTM D 892, Seq I,II,IIITendency / Stability, ml/ml | 0/0, 20/0, 0/0 | 0/0, 0/0, 0/0 | 0/0, 0/0, 0/0 | 0/0, 0/0,0/0 | 0/0, 0/0,0/0 |
| FZG scuffing test, DIN 51534 (mod), A/16.6/90, Failure Stage   | 10             | 11            | 11            | 13           | 13           |
| (1) 625 is available only in the                               |                |               |               |              |              |

|   |         |             |         |             |           |
|---|---------|-------------|---------|-------------|-----------|
| USA   |         |             |         |             |           |
| Mobil SHC 600 Series  | 630     | 632         | 634     | 636         | 639       |
| ISO Viscosity Grade   | 220     | 320         | 460     | 680         | 1000      |
| Viscosity, ASTM D 445   |         |             |         |             |           |
| cSt @ 40° C   | 216     | 326         | 430     | 664         | 933       |
| cSt @ 100° C  | 25.2    | 38.6        | 48.5    | 62.8        | 79.5      |
| Viscosity Index, ASTM D 2270                                  | 152     | 169         | 173     | 165         | 164       |
| Pour Point, °C, ASTM D 97                                     | -42     | -39         | -42     | -42         | -15       |
| Flash Point, °C, ASTM D 92                                    | 235     | 250         | 262     | 236         | 270       |
| Specific Gravity, ASTM D 4052, 15° C/15° C                    | 0.87    | 0.87        | 0.87    | 0.87        | 0.87      |
| Appearance, visual  | Orange  | Orange      | Orange  | Orange      | Orange    |
| TOST, ASTM D 943, Hours to 2 NN                               | 10,000+ | 10,000+     | 10,000+ | 10,000+     | 10,000+   |
| RBOT, ASTM D 2272, min.                                       | 1750    | 1750        | 1750    | 1750        | 1750      |
| Rust protection, ASTM D665, Sea Water                         | Pass    | Pass        | Pass    | Pass        | Pass      |
| Water Seperability, ASTM D 1401,Min. to 3 ml emulsion @ 54° C | -       | -           | -       | -           | -         |
| Water Seperability, ASTM D 1401,Min. to 3 ml emulsion @ 82° C | 15      | 25          | 25      | 30          | 40        |
| Copper Corrosion, ASTM D130, 24 hrs @ 121° C                  | 1B      | 1B          | 1B      | 1B          | 1B        |
| Foam Test, ASTM D 892,  | 0/0,    | 0/0,0/0,0/0 | 0/0,    | 0/0,0/0,0/0 | 0/0, 0/0, |

|  |         |     |          |     |     |
|--|---------|-----|----------|-----|-----|
| Seq I,II,III Tendency / Stability, ml/ml                     | 0/0,0/0 |     | 20/0,0/0 |     | 0/0 |
| FZG scuffing test, DIN 51534 (mod), A/16.6/90, Failure Stage | 13+     | 13+ | 13+      | 13+ | 13+ |
| (1) 625 is available only in the USA                         |         |     |          |     |     |

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### Health and Safety

Based on available information, this product is not expected to produce adverse effects on health when used for the intended application and the recommendations provided in the Material Safety Data Sheet (MSDS) are followed. MSDS's are available upon request through your sales contract office, or via the Internet. This product should not be used for purposes other than its intended use. If disposing of used product, take care to protect the environment.

All products may not be available locally.

Note for Canadian users: Mobil SHC 600 Series is not controlled under Canadian WHMIS legislation.

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