

## PRODUCT INFORMATION

### NAVIGO MCL

#### Description

NAVIGO MCL is a range of alkaline marine cylinder lubricants for all low-speed marine two-stroke diesel engines, including low sulphur applications, highly rated large bore engines and engines running at optimized feed rates.

#### Application

NAVIGO MCL is a range of high-quality cylinder lubricants for low speed marine diesel crosshead engines running on residual fuel. The total alkaline content of the cylinder lubricant has to match the sulphur content in the fuel and it might be necessary to adjust feed rate accordingly. When running at low feed rate or in ultra low steaming mode, it is essential that the actual liner and piston ring conditions are inspected on a regular basis. Please refer to the latest OEM recommendations on feed rates, which might vary depending on lubricator technology. However, NAVIGO 40 MCL is optimized for low sulphur fuel with sulphur content up to 1.5% weight but can be used up to 3.5% fuel sulphur content. NAVIGO 50 MCL and NAVIGO 70 MCL/NAVIGO 70 MCL AW are suitable for fuels with sulphur contents in excess of 0.5% weight. NAVIGO 100 MCL can help to optimize wear rate and operational cost depending on fuel quality and engine design.

#### Features/Advantages and Benefits

- Outstanding thermal- and oxidation stability and excellent detergency
  - Excellent deposit control
  - Leads to clean engine parts
  - Allows operation at optimized feed rates
- Excellent anti-wear properties
  - Prevent for scuffing
  - Leads to reduced liner- and ring wear
  - Allows extended time between overhauls
- Approved by major engine manufacturers

#### Typical Characteristics

Grade Name	Pour point , °C	Flash point (CoC), °C min	Viscosity at 100°C, mm <sup>2</sup> /s	SAE	Base number, mg KOH/g
NAVIGO 40 MCL	-6	240	20	50	40
NAVIGO 50 MCL	-6	240	20	50	55
NAVIGO 70 MCL	-6	240	20	50	70
NAVIGO 70 MCL AW	-6	240	20	50	70
NAVIGO 100 MCL	-6	240	20	50	100

**MARINE IN ALL WE DO!**

## Health and Safety

The Safety Data Sheet is available on request and describes the product from the points of view of safety in use, handling and transport. The product is not classified as dangerous according to the provisions of the Regulation 1907/2006, and of the Directives D67/548/CEE and 1999/45/CE, respectively. Under normal use conditions, this product does not pose significant risks for the health. Repeated exposure may cause skin drying or cracking. Immediately wash with plenty of water and soap the area that came in contact with the product. Remove contaminated clothes.

## Handling and Packaging

The compatibility and miscibility with comparable products from other suppliers have been tested successfully by an independent institute. In order to achieve full scale benefits of product performance the mixing of lubricants should be limited to its minimum.

The products are available in bulk and drums of approximately 205 liters.

## Further Information

For further information about LUKOIL Marine Lubricants please contact any representative of LUKOIL Marine Lubricants or visit our web site [www.lukoilmarine.com](http://www.lukoilmarine.com).

LUKOIL Marine Lubricants Ltd.  
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