

# Opt-Max Shieldguard 5040

## MARINE CYLINDER OIL

### Cylinder Lubricant for Low-speed Crosshead Diesel Engines

Opt-Max Shieldguard 5040 is formulated with carefully selected base oils and proven additives which meet the operational challenges of modern 2-Stroke engines that are operating with high and low loads.

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### Product Description

Opt-Max Shieldguard 5040 is a premium quality marine cylinder lubricant designed for use in low speed crosshead marine diesel engines which burn residual fuel oil with low sulphur content less than 2.0% m/m (please refer to the latest OEM guidelines for sulphur content).

### Features and Benefits

- Good acid neutralising properties and cold corrosion protection which help to prolong the service life of components.
- Good detergency and dispersancy properties which help:
  - Reduce and clean potential deposits between cylinder liner and piston.
  - Prevents ring sticking.
- Good lubrication properties that help maintain an oil film under severe, high load conditions, thereby reducing frictional wear and preventing scuffing of liners, pistons and rings.
- Good anti-wear properties that help protect against excessive cylinder liner and piston ring wear, thus allowing prolonged service intervals.

### Applications

- Opt-Max Shieldguard 5040 is recommended for use in two stroke marine cross-head diesel engines that burn heavy fuel oil with sulphur content less than 2.0% m/m. Special consideration is required for applications where the sulphur content is above 2.0% m/m.
- Suitable for use during In-service running-in, Sea trials and Test bed breaking-in.
- During low feed rate operations, it is crucial that the actual cylinder and piston rings conditions are inspected on a regular basis. Please refer to the latest OEM's recommended cylinder oil feed rate.
- Opt-Max Shieldguard 5040 has obtained the approvals by Wärtsilä and meet the requirements of many major engine manufacturers, including MAN B&W.

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**Opt-Max Global Pte Ltd**

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## Specifications

Product Properties		Opt-Max Shieldguard 5040	Testing Methods
SAE Grade	-	50	-
Kinematic Viscosity (100°C)	mm <sup>2</sup> /s	19.5	ASTM D445
Density at 15°C	kg/m <sup>3</sup>	933.1	ASTM D4052
Density at 20°C	kg/m <sup>3</sup>	930.1	ASTM D4052
TBN	mgKOH/g	40	ASTM D2896
Viscosity Index	-	95	ASTM D2270
Flash Point	°C	248	ASTM D92
Pour Point	°C	-9	ASTM D97

\* Above product properties are indicative and subject to change without prior notice.

## Storage and Handling

- All storage equipment, tanks, pipes, valves and etc. apparatus has to be cleaned thoroughly and inspected to be clean for use before transferring or transporting Opt-Max Shieldguard 5040.
- Opt-Max Shieldguard 5040 must be stored in dedicated storage tanks/equipment and it is recommended to be stored in an indoor controlled environment.
- Storage tanks/equipment must be waterproof, mist-proof and free from other mechanical particles.
- Opt-Max Shieldguard 5040 must be clearly labelled properly during the entire transportation process to prevent the risk of mixing with other petrochemical product.

## Health and Safety

Opt-Max Shieldguard 5040 is unlikely to present any significant health or safety hazard when properly used in the recommended application. This product must always be handled with care, particularly avoiding skin contact. For further guidance on Product Health & Safety refer to the appropriate Opt-Max Shieldguard 5040 Material Safety Data Sheet.

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