

# SL SERIES

## Diesel Engine oils for In-House Generation and Cogeneration

Recent medium speed diesel engines are remarkable in terms of high power output and high Pmax. In addition, thermal load is rising compared to conventional engines because low-quality fuel is used in many cases. Land cogeneration engines operate in harsh conditions, because they are forced to operate with high load using low quality fuel for long-term continuously. In order to keep such engines clean and maintain good engine performance, it is desirable to use lubricating oil with excellent thermal stability and high temperature cleanliness. "SL SERIES" is a special oil for in-house generation and cogeneration diesel engines that has further enhanced high temperature cleanliness and other required performance over marine lubricating oil.

### ● Special Features

#### 1. Excellent High-Temperature Cleanliness and Thermal Stability

Today's medium-speed diesel engines have increasingly high outputs and use low-quality fuel oils that contain large amounts of sulfur and residue. When an engine operates at high output with a low-quality fuel, the increased thermal load promotes the formation of carbon and sludge that can adhere to the engine parts and cause ring sticking.

The **SL SERIES** is blended with powerful detergent-dispersants that disperse the carbon and sludge in the oil and keep the pistons and other engine parts clean, even at high temperatures.



Left side: Under crown after 8000 h (SL SERIES)

Right side: Under crown after 8000 h (Conventional oil)

#### 2. Outstanding Acid Neutralization

Sulfuric acid is produced by combustion of sulfur in fuel. This acid causes wear to the engine liners and piston rings and also corrodes crank journals, piston pins and bearing metals.

The **SL SERIES** powerfully neutralizes such acids and eliminates their corrosive effect.

#### 3. Superb Water Separation Properties

Water can enter engine oil due to condensation of moisture from the blow-by gas, a faulty centrifugal separator, leaks of cooling water, and etc. When water becomes mixed with engine oil, calcium carbonate in the oil's additives forms large particles, which reduce the oil's acid neutralizing ability, damaging the centrifugal separator, and clogging the filters.

To prevent these problems, the **SL SERIES** was designed with outstanding water separation ability so that centrifugal separators can easily remove water from the oil.

#### 4. Improved Maintenance of Centrifugal Separators

With the **SL SERIES**, the sludge formed on the separating plates of centrifugal separators is very soft and easy to remove. This property greatly improves the ease of maintenance of centrifugal separators.

### ● Containers

Bulk, 200-liter drum, 20-liter can (except SL440)

## ● Typical properties of SL SERIES

Item		SL140	SL240	SL340	SL440
Color	(ASTM)	L2.5	L3.5	L4.0	L5.0
Density	(15 °C) g/cm <sup>3</sup>	0.894	0.901	0.910	0.916
Kinematic viscosity	(40 °C) mm <sup>2</sup> /s	150	147	141	146
viscosity	(100 °C) mm <sup>2</sup> /s	14.9	14.9	14.5	15.0
Viscosity index		99	101	101	103
Flash point	(COC) °C	264	268	266	270
Pour point	°C	-10	-10	-15	-15
Acid number	mgKOH/g	1.3	1.3	1.3	1.7
Basic number	(D2896) mgKOH/g	11.9	23.2	34.7	40.8
Rust prevention	(Distilled water, 60 °C, 24h)	No rust	No rust	No rust	No rust
Copper strip corrosion	(100°C, 3h)	1	1	1	1
Foaming tendency	(Sequence II) mL/mL	0/0	20/0	10/0	10/0

Note: The typical properties may be changed without notice. (January 2018)



## Handling Precautions

▼ Follow these precautions when handling this product.

<b>Composition :</b>	Base Oil, Additives
<b>Precautionary pictograms:</b>	Not applicable
<b>Signal word:</b>	Not applicable
<b>Hazard Statement:</b>	Not applicable
<b>Precautionary Statements:</b>	<ul style="list-style-type: none"> <li>• Do not handle until all safety precautions have been read and understood.</li> <li>• Wear protective gloves/protective clothing/eye protection/face protection.</li> <li>• Do not allow the eyes to become exposed to the product. Do not swallow the product.</li> <li>• Wash hands thoroughly after handling.</li> <li>• Do not eat, drink or smoke when using this product.</li> </ul>
<b>Response</b>	<ul style="list-style-type: none"> <li>• IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.</li> <li>• IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</li> <li>• If the eyes are exposed to the product: Rinse the eyes with plenty of running water and immediately contact a physician.</li> <li>• IF ON SKIN: Wash with plenty of soap and water.</li> </ul>
<b>Storage</b>	<ul style="list-style-type: none"> <li>• The product must be stored in a cool, well-ventilated location where it will not be exposed to direct sunlight.</li> <li>• Containers that have been opened must be tightly sealed.</li> </ul>
<b>Disposal</b>	<ul style="list-style-type: none"> <li>• Dispose of contents/container in accordance with local/regional/national/international regulations.</li> <li>• If there are any doubts about proper methods of handling the product, contact the point of purchase before proceeding with usage.</li> </ul>