

# MARINE F

## Diesel Engine Oils for Fishing Boat and Lifeboat

**MARINE F SERIES** is a lubricant which is developed especially to meet several use conditions of diesel engine for fishing boat, which is becoming high power. It is a high quality diesel engine lubricant formulated with highly refined paraffinic base oils and selected additives such as detergent-dispersant, oxidation inhibitor and anti-wear agent, etc. Also, multi-grade type lubricant, which can facilitate the start of the engine in the cold districts, is most suitable for a lifeboat diesel engine.

### ● FEATURES

**1. MARINE F SERIES** provides high thermal and oxidation stability and also excellent detergency, which can prevent the trouble of engine to extend the engine life.

**2. MARINE F SERIES** has good performance as a lubricant of the clutch for the engine with wet clutch.

**3. MARINE F SERIES** meets the requirements of API Service Category CF.

### ● CONTAINERS

200-liter drum, 20-liter pail can

### ● TYPICAL PROPERTIES of MARINE F SERIES

| SAE viscosity grade                               |                    | 10W-30             | 15W-40 | 30    | 40    |
|---------------------------------------------------|--------------------|--------------------|--------|-------|-------|
| Color (ASTM)                                      |                    | L3.5               | L4.0   | L3.5  | L3.5  |
| Density (15°C)                                    | g/cm <sup>3</sup>  | 0.883              | 0.888  | 0.895 | 0.898 |
| Flash point (COC)                                 | °C                 | 230                | 232    | 264   | 264   |
| Kinematic viscosity (40°C)                        | mm <sup>2</sup> /s | 72.9               | 101    | 101   | 142   |
|                                                   | (100°C)            | mm <sup>2</sup> /s | 11.3   | 14.0  | 11.7  |
| Viscosity index                                   |                    | 146                | 141    | 105   | 102   |
| Pour point                                        | °C                 | -37.5              | -35.0  | -25.0 | -15.0 |
| Acid Number                                       | mgKOH/g            | 1.9                | 1.9    | 1.7   | 1.7   |
| Base number (perchloric acid method; ASTM D 2896) | mgKOH/g            | 14.8               | 14.8   | 12.8  | 12.8  |

**Note:** The values of typical properties are subject to change based on revisions of the product without notification. (January 2024)



## Handling Precautions

▼ Follow these precautions when handling this product.

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Composition :</b>             | Base Oil(s), Additives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Hazard pictograms:</b>        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Signal word:</b>              | Warning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Hazard Statement:</b>         | Causes serious eye irritation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Precautionary Statements:</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Prevention</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/doctor.</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><li>• IF IN EYES: Rinse cautiously with water for several minutes.</li><li>• Remove contact lenses, if present and easy to do. Continue rinsing.</li><li>• If eye irritation persists: Get medical advice/attention.</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>                                                                                                                                                                                                                                                                                           |