

### Marine D Series

#### *Multi-Purpose High&Medium Speed Marine Diesel Engine Oils*

#### PRODUCT DESCRIPTION

**Marine D 40/15**, is marine diesel engine oil for high&medium speed trunk piston type marine diesel engines. The combination of new additive technology with high quality base oils provides long oil life, protection against wear, resistance against sludge formation and very good engine cleanliness.

#### APPLICATIONS

- It is suitable for use in high&medium speed trunk piston type marine diesel engines.
- It also be used in stern-tubes and ship board equipments if it is recommended by the manufacturer.

#### PERFORMANCES

- API CF

#### CHARACTERISTICS

- Its high thermal and oxidation stability provides extended oil change interval.
- Detergent and dispersant additives controls formation of soot and deposit, thereby, ensures engine parts remain clean and reduces maintenance costs.
- Its high TBN reserve neutralizes acids forming during the combustion, thus provides very good protection against corrosion, wear and deposit formation.
- Antiwear additives provides very good protection against bearing wear even under heavy loads.

### TYPICAL PROPERTIES

		D30/12	D40/12	D30/15	D40/15	D40/20
<b>SAE</b>		<b>30</b>	<b>40</b>	<b>30</b>	<b>40</b>	<b>40</b>
Density@15°C, g/ml	ASTM D 4052	0,894	0,896	0,917	0,924	0,928
Viscosity@100°C, mm <sup>2</sup> /s	ASTM D 445	11,5	15,8	11,5	14,0	14,5
Viscosity@40°C, mm <sup>2</sup> /s	ASTM D 445	102,0	167,0	101,5	165,0	148,0
Viscosity Index	ASTM D 2270	95	95	95	95	95
Pour Point, °C	ASTM D 97	-9	-9	-9	-9	-9
Flash Point, °C	ASTM D 92	238	246	240	249	255
TBN, mg KOH/g	ASTM D 2896	12,0	12,0	15,0	15,0	20,0

### HEALTH AND SAFETY RECOMMENDATIONS

Waste oils must not be discharged into underground or surface water sources, sewage systems or garbage cans. Prolonged or repeated contact with used oils may cause skin diseases. Therefore sterilized gloves should always be used. If part of the skin comes into contact with waste oil, that part should be immediately washed with plenty of soap and water. In case of skin irritation or redness caused by contact, seek advice of your doctor immediately. For more information contact Material Safety Data Sheet (MSDS).

*The vehicle and equipment manufacturers specifications and relevant international standards were taken into consideration while preparing the content of this Technical Data Sheet. The expressions in the content of this Technical Data Sheet can not be considered as guarantee commitment or similar way in terms of product characteristics and product use in any applications.*

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