ENMAR MSDO

PRODUCT DESCRIPTION

ENMAR MSDO are a range of new generation high performance engine oils for all types of marine medium speed diesel engines operating on high sulphur residual fuels. They have been developed from the latest complex dispersant and detergent technology to provide long lubrication life and enhanced engine performance particularly in low emission engines and those with anti-bore glazing piston designs.

APPLICATIONS

- A range of high Total Base Number oils for use in Trunk Piston Engines burning variable quality residual fuel with high sulphur content available in the market.
- Provide gear lubrication qualities for reduction gear applications where similar viscosities might be used.
- Suitable for high output turbocharged engines.
- It is recommended that ENMAR MSDO oils are suitable for centrifuging and/or filtered in accordance with the manufacturer's instructions.
- Suitable for MAN (B&W), KHD DEUTZ, PIELSTICK, NIGATA, MAK, DAIHATSU, MIRLESS BLACKSTONE trunk piston diesel engines (4 Stroke).

RECOMMENDATIONS

ENMAR MSDO series lubricants are recommended for all types of marine medium speed diesel engines operating on high sulphur residual fuels. ENMAR MSDO series should be used in accordance with OEM guidelines and recommendations. The good load carrying capacity of ENMAR MSDO series lubricants also makes these suitable for use in engine reduction gears and other applications where EP properties are required.

BENEFITS

ENMAR MSDO provides:

- Suitability for engines using high sulphur residual or distillate fuels .
- Superior resistance to oxidation and oil thickening.
- Effective neutralization of acidic combustion products.
- Proven detergent/dispersant technology to reduce deposit formation.
- Long engine and oil service life.
- Excellent centrifugal separator operation.

ENMAR MSDO meets performance MAN B&W; WARTSILA and Cummins for four-stroke engines.

Technical Data *						
ENMAR MSDO		**320**	**330**	**340**	**350**	**355**
SAE Viscosity Grade		30	30	30	30	30
Density @15°C	g/mL	0.8940	0,9033	0.9110	0.9166	0.9197
Kinematic Viscosity @ 40°C, ASTM D-445	mm2/s	97.0	106.3	102.2	104.3	103.2
Kinematic Viscosity @ 100°C, ASTM D-445	mm2/s	11.10	11.52	11.39	11.66	11.59
Flash point, COC, ASTM D-92	°C	>230	>230	>230	>230	>230
Pour Point, ASTM D-97	°C	-15	-15	-15	-15	-15
Total Base Number ASTM D2896	Mg KOH/g	20	30	40	50	55
FZG fail stage (A8.3/90)		12	12	12	12	12

Technical Data *						
ENMAR MSDO		**430**	**440**	**445**	**450**	**455**
SAE Viscosity Grade		40	40	40	40	40
Density @15°C	g/mL	0.9091	0,9141	0.9221	0.9237	0.9226
Kinematic Viscosity @ 40°C, ASTM D-445	mm2/s	146	145.2	142.5	143.0	141.1
Kinematic Viscosity @ 100°C, ASTM D-445	mm2/s	14.55	14.69	14.46	14.61	14.30
Flash point, COC, ASTM D-92	°C	>230	>230	>230	>230	>230
Pour Point, ASTM D-97	°C	-15	-15	-15	-15	-15
Total Base Number ASTM D2896	Mg KOH/g	30	40	45	50	55
FZG fail stage (A8.3/90)		12	12	12	12	12

Technical Data *			
ENMAR MSDO		**530**	**540**
SAE Viscosity Grade		50	50
Density @15°C	g/mL	0.9131	0,9181
Kinematic Viscosity @ 40°C, ASTM D-445	mm2/s	212.6	211.5
Kinematic Viscosity @ 100°C, ASTM D-445	mm2/s	19.18	19.10
Flash point, COC, ASTM D-92	°C	>230	>230
Pour Point, ASTM D-97	°C	-15	-15
Total Base Number ASTM D2896	Mg KOH/g	30	40
FZG fail stage (A8.3/90)		12	12

* The information prepared provides the typical properties that are considered as representative. Some variation which will not affect performance is possible

HEALTH AND SAFETY, ENVIRONMENT

The information on this product is available in the ENMAR Material Safety Data Sheet (MSDS) as a guide to the precautions and safe handling of this product and its disposal. For further information we recommend you review the MSDS. Handled correctly there are no special precautions suggested.

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