

Hanasaki Marine MDO Series

Premium Quality Marine Trunk Piston Engine Oils (for distillate fuel)

Product Description

Hanasaki Marine MDO Series of lubricants are designed for use in modern high or medium speed diesel engines operating on distillate fuels. The modern additive technologies used in these oils provide superior engine cleanliness and protection. These oils are available in SAE 30 and 40 viscosity grades with a BN (Base Number) of 12, 15 and 20. These oils exhibit a high degree of water tolerance and meet the performance requirements of API CF

The Hanasaki Marine MDO of lubricants provide the following benefits:

- 1) Neutralization value of 12 to 20 TBN and superior alkalinity retention characteristics of the oils ensure excellent protection in neutralizing the acids from the use of distillate fuels.
- 2) Superior detergency/dispersancy additive systems provide exceptional engine cleanliness by effectively controlling varnish, lacquer and other common engine deposits resulting in reduced maintenance cost.
- 3) Excellent high temperature deposit control in areas such as piston undercrown and piston ring belt areas enabling piston rings to function efficiently to maintain high power output and engine efficiency.
- 4) Separate easily from water to minimize additive depletion during centrifuge.
- 5) Outstanding thermal and oxidation stability to ensure long oil life and good oil consumption control.

Typical Properties

Product Name	Hanasaki MDO3012	Hanasaki MDO3015	Hanasaki MDO3020	Hanasaki MDO4012	Hanasaki MDO4015	Hanasaki TP 4020
BN (Base Number)	12	15	20	12	15	20
SAE Viscosity Grade	30	30	30	40	40	40
Viscosity @ 40°C (ASTM D445),cst	112	114	113	148	150	151
Viscosity @ 100°C (ASTM D445),cst	11.9	12.0	11.9	14.5	14.6	14.7
Viscosity Index (ASTM 2270)	95	95	95	95	95	95
Pour Point (ASTM D97) , °C	-9	-9	-9	-9	-9	-9
Flash Point (ASTM D92) , °C	262	263	265	268	271	272
Density @ 15°C (ASTM D4052),kg/l	0.900	0.905	0.912	0.909	0.912	0.911

Health and Safety

Based on available information, this product is not expected to produce adverse effects on health when used for the intended applications and the recommendations provided in the Material Safety Data Sheet (MSDS). MSDS is available upon request through your sales contact at Hanasaki. This product should not be used for purposes other than its intended use. When disposing of used product, please take care to protect the environment.