



## MANNOL TS-3 SHPD 7103

Innovative all-weather mineral-synthetic (esters + HC-synthes) motor oil for modern heavy duty and high-speed diesel engines with and without turbocharging, operated in difficult conditions. Designed specifically to protect machinery and benefit most out of it regardless of operating conditions.

Product properties:

- Ester components in combination with the highest quality mineral-synthetic base, featuring optimal viscosity in a wide temperature range, provide excellent anti-friction and anti-wear properties, which significantly extend the life of equipment in all, even the most extreme, operating modes in a wide range of ambient temperatures and provides significant fuel savings;
- The ester components in combination with natural antioxidants provide increased thermal oxidative stability to the oil, which, in combination with excellent detergent-dispersant properties (TBN > 10) effectively reduces the formation of scaling and varnish, prevents deposits of all kinds and maintains engine parts very clean throughout the service between replacements;
- A unique ester-containing formulation provides oil resistance to aging, meanwhile, by reducing evaporation it reduces oil scaling "waste", which enables it to be used in engines with an Long Life up to 45,000 km interval and conventional motors;
- Due to the ester-containing base, the optimal viscosity has excellent low-temperature properties, low pour point, along with good oil pumpability and crankability of engine components at low temperatures, easy "cold start" (up to -30°C) and reduced startup wear;

Designed for all types of heavy duty diesel motors (long distance trucks, buses, etc.), off-road machinery (construction, mining, agricultural) and special equipment from European, American and Asian manufacturers that meet the requirements of Euro I, II, III, IV where a performance level of CH-4 or lower is required.

Can be used in gasoline engines where API SL or lower performance is required.

SAE 10W-40  
API CH-4/SL  
ACEA E3  
ACEA A3/B4  
MAN M 3275  
MB 228.3  
MB 229.1  
VOLVO VDS-2

## PACKAGING

10L	MN7103-10		
1000L	MN7103-IBC		
208L	MN7103-DR	Drum	
60L	MN7103-60	Drum	
20L	MN7103-20	Plastic	