



## MANNOL TS-9 UHPD Nano 7109

Semi-synthetic (hydrosynthetic-based) engine oil with a unique nanostructure for modern heavy duty and high-speed diesel engines with and without turbocharging, operated in difficult conditions. The oil complies with the Global Specification GLOBAL-DHD-1, which takes into account all the requirements of European, American and Japanese manufacturers for heavy diesel engines manufactured since 1998, operating in the most difficult conditions with increased mileage between oil changes that comply with current standards for the content of toxic substances in exhaust gases and installed on heavy vehicles (more than 3.9 tons).

Product properties:

- A semi-synthetic base of the highest quality with optimal viscosity over a wide temperature range and meeting the GLOBAL DHD-1 requirements, in combination with high adhesion nanomodifiers, provides unique anti-friction, anti-wear and anti-scuffing properties, significantly extending the service life of your equipment in all, even the most extreme, operating modes in a wide range of ambient temperatures and providing significant fuel savings;
- Hydrosynthetic components in combination with natural antioxidants provide increased thermal oxidative stability to the oil, which, in combination with excellent detergent-dispersant properties (TBN > 10) and low ash content, effectively reduces the formation of scaling and varnish, prevents deposits of all kinds and maintains engine parts exceptionally clean throughout the service between replacements;
- A unique formulation provides oil resistance to aging, and due to the reduced evaporation and high flash point, it reduces oil scaling "waste", which enables it to be used in engines with a long like interval and conventional motors;
- Due to the hydrosynthetic components, the viscosity has excellent low-temperature properties, including a 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;
- Effectively protects engine parts from all types of corrosion;
- Can be used in combination with few all with higher sulphur content.

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, I, V where a performance level of CI-4 or lower is required.

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

SAE 10W-40  
API CJ-4/SN  
ACEA E6, E7, E9  
JASO DH-2  
MB 228.31  
MB 228.51  
VOLVO VDS-4  
MAN M 3477  
MAN M 3575  
MACK EO-N Plus  
MACK EO-O Premium Plus  
GLOBAL DHD-1  
CUMMINS CES 20076  
CUMMINS CES 20077  
CUMMINS CES 20078  
DEUTZ DQC III-10 LA  
RENAULT RLD-3  
MTU Type 3.1  
CATERPILLAR ECF-2  
CATERPILLAR ECF-3  
DETROIT DIESEL DDC 93K218

## PACKAGING

20L	MN7109-20	Plastic	
208L	MN7109-DR	Drum	
60L	MN7109-60	Drum	
10L	MN7109-10	Plastic	