

# ONYX 99000

## High Performance Diesel Engine Oil Additive Package

### DESCRIPTION

ONYX 99000 is a low-sulfated ash, phosphorus and sulfur, heavy-duty diesel engine oil additive package meeting the performance requirements of API CK-4. Crankcase oils blended with ONYX 99000 are especially effective at sustaining emission control system durability where particulate filters and other advanced aftertreatment systems are used.

### RECOMMENDED DOSAGE & PERFORMANCE

At a recommended treat rate of 13.6 Wt.%, the finished lubricant meets the following performance levels in SAE 10W-30, SAE 10W-40 and SAE 15W-40 viscosity grades.

Performance	SAE 15W-40	SAE 10W-30	SAE 10W-40
API CK-4/ API CJ-4	✓	✓	✓
API SN	✓	-	✓
ACEA E9-16	✓	✓	✓
MB 228.31	✓	✓	✓
CES 20081	✓	✓	✓
CAT ECF-3	✓	✓	✓
VDS-4	✓	✓	✓
MACK EO-O PP	✓	✓	✓
RENAULT RLD-3	✓	✓	✓
DDC 93K218	✓	✓	✓
MAN M3575	✓	✓	✓
MTU TYPE 2.1	✓	✓	✓
DEUTZ DQC III-10 LA	✓	✓	✓
FORD WSS-M2C171-F1	✓	✓	-

### PHYSICAL / CHEMICAL CHARACTERISTICS

Parameters	Test Methods	Specifications	Typical Value
Viscosity@ 100°C, cSt	ASTM D445	-	TBR
BN, mgKOH/g	ASTM D2896	min 55	64

Nitrogen, % Wt.	ASTM D5291	0.70 – 1.30	0.99
Sulfated Ash, % Wt.	ASTM D874	Report	6.5
Flash Point, °C	ASTM D92	>180	TBR
Sp. Gravity @15.6 °C	ASTM D1298	-	TBR

**GENERAL HANDLING INSTRUCTIONS**

Neoprene or nitrile rubber gloves and safety goggles should be worn for handling. Maximum handling temperature is 60°C. Material safety data sheet should be consulted for specific information and for information on health and safety.

**Temperature Recommendations**

<b>Unloading:</b>	<b>Temperature</b>	
Pumping temperature	50°C	122°F
Maximum temperature	60°C	140°F
<b>Storage:</b>		
Maximum temperature for long term storage	45°C	113°F
<b>Blending:</b>		
Max. Base oil temperature for mechanical or in-line mixing	60°C	140°F

**Equipment Recommendations**

Type of Pump	Positive Displacement
Type of transfer line	Ball lunched, Insulated, Steam Traced Using 107°C/225F Steam Max.
Transfer Line Size	2-3inch/5-8cm.

**Heat Source**

Type	Steam 107°C/225°F max.
Storage Tank	Suction Heater Recommended

**NOTE**

If you require further information, please contact your regional Onyx representative.