

ONYX 53000

Automotive Engine Oil Additive Package

DESCRIPTION:

ONYX 53000 is a field-proven engine oil additive system developed for mainstream gasoline and diesel engine lubricants, covering both top-tier and mid-tier API categories. It has excellent detergency, dispersancy and oxidation stability which helps to inhibit oil deterioration and prevent engine wear.

The optimized formulation of ONYX 53000 brings simplicity at the plant and delivers both inventory and logistical cost savings by eliminating the need of booster package.

PERFORMANCE:

When blended with appropriate base stock(s) and viscosity modifiers, the formulated lubricant meets the following performance specifications.

| API Specification | Mass % | BN |
|-------------------|--------|-----|
| SN/CF | 7.69 | 10 |
| SM/CF | 7.31 | 9.5 |
| SL/CF-4 | 6.67 | 8.6 |
| SL/CF | 5.9 | 7.6 |
| SJ/CF | 5.31 | 7 |

PHYSICAL / CHEMICAL CHARACTERISTICS*

| Parameters | Test Methods | Specifications | Typical Value |
|---------------------------|--------------|----------------|---------------|
| Viscosity@ 100°C, cSt | ASTM D445 | Report | 70 |
| BN, mgKOH/g | ASTM D2896 | min 120 | 129 |
| Molybdenum, %Wt | ASTM D5185 | 0.1 – 0.135 | 0.119 |
| Calcium, % Wt | ASTM D4951 | 3.30 – 4.35 | 3.9 |
| Zinc, % Wt | ASTM D4951 | 0.86 – 1.20 | 1.08 |
| Phosphorus % Wt | ASTM D4951 | 0.80 – 1.15 | 1.0 |
| Nitrogen % Wt | ASTM D5291 | 0.78 – 1.17 | 0.98 |
| Flash Point (PMCC), °C | ASTM D93 | >160 | Report |
| Specific Gravity @15.6 °C | ASTM D1298 | 1.00 | Report |

*The above characteristics are provided to indicate the typical values measured on the product.

GENERAL HANDLING INSTRUCTIONS:

Neoprene or nitrile rubber gloves and safety goggles should be worn for handling. Material safety data sheet should be consulted for specific information and for information on health and safety.

Temperature Recommendations:

| Unloading: | Temperature | |
|--|--------------------|-------|
| Pumping temperature | 60°C | 140°F |
| Maximum temperature | 70°C | 158°F |
| Storage: | | |
| Maximum temperature for long term storage | 45°C | 113°F |
| Blending: | | |
| Max. Base oil temperature for mechanical or in-line mixing | 70°C | 158°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 |