

# United Synthetic Diesel Engine Oil



United Synthetic Diesel Engine Oil withstands the stress of heat, soot, and acids to help prevent deposits, wear, and corrosion, outperforming best-in-class conventional SAE 15W-40 oils. United Synthetic Diesel Engine Oil is formulated for use with all modern emissions control systems.

Use United Synthetic Diesel Engine Oil in diesel engines that require any of the specifications listed below.

| Specifications                                        | 5W-30 | 10W-30 | 0W-40 | 15W-40 |
|-------------------------------------------------------|-------|--------|-------|--------|
| ACEA E9, E7                                           | ✓     | ✓      |       | ✓      |
| API CK-4, CJ-4, CI-4+, CF                             | ✓     | ✓      |       | ✓      |
| Caterpillar ECF-3, ECF-2, ECF-1-a                     | ✓     | ✓      | ✓     | ✓      |
| Chrysler MS 10902                                     |       | ✓      | ✓     | ✓      |
| Cummins CES20086, CES 20081                           | ✓     |        | ✓     | ✓      |
| Detroit Diesel DFS 93K222, DDC 93K218, 93K215, 93K214 | ✓     | ✓      | ✓     | ✓      |
| Deutz DQC III-10 LA                                   | ✓     | ✓      |       | ✓      |
| Ford WSS-M2C171-F1                                    | ✓     | ✓      |       | ✓      |
| Jaso DH-2                                             | ✓     | ✓      | ✓     | ✓      |
| Mack EOS-4.5, EO-O                                    | ✓     | ✓      |       | ✓      |
| MAN 3575                                              | ✓     | ✓      | ✓     | ✓      |
| MB 228.31                                             | ✓     | ✓      |       | ✓      |
| MTU Type 2.1, Type I & II                             | ✓     | ✓      |       | ✓      |
| Renault RLD-4, RLD-3                                  | ✓     | ✓      |       | ✓      |
| Volvo VDS-4.5, VDS-4, VDS-3                           | ✓     | ✓      |       | ✓      |
| ACEA E9, E7                                           | ✓     | ✓      | ✓     | ✓      |

## Features and Benefits:

- Enables fleets to capture significant long-term cost efficiencies, while maximizing equipment performance and protection.
- Provides better cold-flow properties than conventional oils for faster startup protection and improved cold-weather efficiency.
- Outstanding wear protection
- Extended drain capable with used oil analysis program
- Improved fuel economy performance over conventional SAE 15W-40 oils
- Exceptional soot dispersancy
- Superior protection against deposit and sludge buildup
- Greatest resistance to thermal and oxidative breakdown
- Advanced additive technology to protect modern emission-control systems
- Long-lasting TBN to neutralize acids and guard against corrosive wear



## Typical Properties

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| Description                                              |            |            |            |            |
|----------------------------------------------------------|------------|------------|------------|------------|
| SAE Grade                                                | 5W-30      | 10W-30     | 0W-40      | 15W-40     |
| Kinematic Viscosity @ 100°C, cSt<br>ASTM D445            | 12         | 11.9       | 15.4       | 15.4       |
| Kinematic Viscosity @ 40°C, cSt<br>ASTM D445             | 67.5       | 79.4       | 91.6       | 113.2      |
| Viscosity Index<br>ASTM D2270                            | 177        | 145        | 179        | 142        |
| Cold Crank Simulator, cP<br>ASTM D5293                   | 5739 (-30) | 5650 (-25) | 5800 (-35) | 5050 (-20) |
| Flash Point °C (°F) (COC)<br>ASTM D92                    | 228 (442)  | 228 (442)  | 224 (435)  | 240 (464)  |
| Pour Point °C (°F)<br>ASTM D97                           | -43 (-45)  | -38 (-36)  | -47 (-53)  | -38 (-36)  |
| Noack (% wt loss)<br>ASTM D5800                          | 7.1        | 4.7        | 11         | 4.8        |
| Total Base Number (TBN)<br>ASTM D2896                    | 10.0       | 10.0       | 10.0       | 10.0       |
| High-Temperature/High-Shear<br>Viscosity,(cP) ASTM D5481 | 3.6        | 3.6        | 4.1        | 4.6        |
| Sulfated Ash, (wt %)<br>ASTM D874                        | 1.0        | 1.0        | .99        | 1.0        |

The typical properties listed above reflect the general characteristics of the products and are not manufacturing specifications. Variations that do not affect product performance should be expected. Product formulations are subject to change without notice. The customer or user is responsible for determining the product's suitability for use with their equipment.

## Product Availability

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| Pack Type      | 5W-30 | 10W-30 | 0W-40 | 15W-40 |
|----------------|-------|--------|-------|--------|
| 5-gal. Pail    | √     | √      | √     | √      |
| 55-gal. Drum   | √     | √      | √     | √      |
| 275-gal. Totes | √     | √      | √     | √      |