



# CITGO® CITGARD® 600 Engine Oils Monogrades

## OVERVIEW



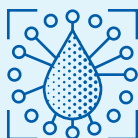
- High-quality, heavy duty crankcase oils manufactured with the latest additive technologies to provide excellent performance.
- SAE 30, 40, and 50 viscosity grades are designed with low sulfated ash to give optimal performance in Detroit Diesel two-stroke diesel engines calling for obsolete service categories CF-2 and CF.
- SAE 10W and SAE 30 viscosity grades are excellent for hydraulic applications calling for hydraulic oils with engine oil type additive systems.

## FEATURES & BENEFITS



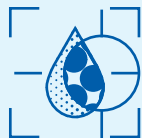
- Excellent detergency for control of exhaust port deposits in Detroit Diesel two-stroke diesel engines.
- Excellent dispersancy and oxidation resistance protect against excessive viscosity increase.
- Superior wear protection in hydraulic pumps and Detroit Diesel two-stroke diesel engines.
- Good TBN properties protect against corrosive wear.
- Proven oil consumption control in heavy duty service.
- Shear stability of monogrades assures stay-in-grade performance.
- Meet Detroit Diesel recommendations of 1.0% maximum sulfated ash for two-stroke diesel engines.

## APPLICATIONS



- Recommended for use in heavy duty service in commercial trucks, agricultural equipment, construction equipment, and other diesel fueled engine, hydraulic, and transmission applications.
- Specific viscosity grades are approved for use in power-shift, manual, and hydrostatic transmissions, final drives, and hydraulic systems where the equipment manufacturer designates the use of a heavy-duty, detergent-type engine oil.
- Recommended\* for equipment requiring:  
Detroit Diesel Two-stroke diesel engines      US CID A-A-52306  
\*Some performance capabilities are applicable to specific viscosity grade(s).
- Refer to equipment owner's manual for proper lubricant recommendation.

## PROPERTIES



## Typical Properties for CITGO CITGARD 600 Engine Oils - Monogrades:

| SAE Grade   | 10W             | 30        | 40        | 50        |
|---|-----------------|-----------|-----------|-----------|
| Material Code   | 622610001       | 622630001 | 622640001 | 622650001 |
| Gravity, ASTM D4052, °API                                       | 31.8            | 28.4      | 27.3      | 26.5      |
| Pounds Per Gallon   | 7.22            | 7.37      | 7.42      | 7.46      |
| Flash Point, ASTM D92 (COC), °F (°C)                            | 439 (226)       | 489 (254) | 486 (252) | 482 (250) |
| Viscosity ASTM D445   |                 |           |           |           |
| cSt at 100°C  | 6.9             | 12.0      | 14.9      | 19.0      |
| cSt at 40°C   | 41              | 102       | 145       | 212       |
| Viscosity Index, ASTM D2270                                     | 129             | 106       | 103       | 100       |
| HTHS Rate Vis at 150°C & 10 <sup>6</sup> sec <sup>-1</sup> , cP | 2.3             | 3.6       | 4.3       | 5.1       |
| CCS Vis, ASTM D5293, cP at °C                                   | 4,000 at -25    | NR*       | NR*       | NR*       |
| MRV Vis, ASTM D4684, cP at °C                                   | 10,000 at 3,000 | NR*       | NR*       | NR*       |
| MRV Yield Stress, ASTM D4684, Pa at °C                          | <35 at -30      | NR*       | NR*       | NR*       |
| Pour Point, ASTM D97, °F (°C)                                   | -38 (-39)       | -11 (-24) | 10 (-12)  | 10 (-12)  |
| Sulfated Ash, ASTM D874, %m                                     | 0.9             | 0.9       | 0.9       | 0.9       |
| TBN (Total Base No.), ASTM D2896                                | 8               | 8         | 8         | 8         |
| Color, ASTM D1500 (may vary by location)                        | L3.0            | L3.0      | L4.0      | L4.0      |

## Key Performance Claims and Applications:

## Obsolete Service Categories

|      |   |   |   |   |
|------|---|---|---|---|
| CF-2 | — | ✓ | ✓ | ✓ |
| CF   | ✓ | ✓ | ✓ | ✓ |

Approvals or performances that are  
Viscosity Grade specific:

|                  |   |   |   |   |
|------------------|---|---|---|---|
| US CID A-A-52306 | — | ✓ | ✓ | — |
|------------------|---|---|---|---|

\*NR = No Requirement

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