# Delo<sup>®</sup> 6170 CFO SAE 40

High Alkaline Reserve, Chlorine-Free Railroad Diesel Engine Oil



## Product description

Premium performance, 17 Base Number, "zinc-free", LMOA Generation 5 diesel engine oil, utilizing chlorinefree additive technology, for use in railroad-type diesel engines, particularly modern higher output, lower oil consumption designs. Compared with Generation 4 oils, it has significantly enhanced alkaline reserve and oxidation resistance.

## Customer benefits and product features

### **Customer benefits**

- **Reduces maintenance costs** High alkaline reserve ensures that corrosive acids formed by the combustion of fuel sulfur are effectively neutralized, thereby minimizing corrosive wear without causing valve distress due to "guttering". The special "zinc-free", ashless anti-wear additive system protects components from abrasive and adhesive wear, and guards against attack of silver plated bearings.
- **Maintains high power output** Superior thermal and oxidation stability assist the detergent/dispersant additive system in providing excellent control of high temperature deposits in areas such as the under-crown of the piston and piston ring belt area, enabling piston rings to function efficiently.
- **Prolongs oil change-out periods** Base Number (BN) level and superior alkalinity retention characteristics maintain sufficiently high BN under all service conditions to ensure corrosive acids formed by the combustion of fuel sulfur are effectively neutralized.
- **Prolongs service intervals** Improved oxidation stability and increased alkalinity reserve when compared with LMOA Generation 4 oils, allows the retention of standard service intervals with today's high specific output and lower specific oil consumption engines.

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### Applications

- Medium speed, two and four-cycle railroad-type diesel engines
- Including the most recent high-output, low oil consumption designs, whether in railroad, stationary or marine service
- · Certain medium speed marine-type engines without active purification systems
- Electro-Motive Diesel (EMD) two-cycle and four-cycle railroad diesel engines in railroad, marine and stationary
  powerplant service
- Fairbanks Morse (FM)/Alco railroad diesel engines in railroad, marine and stationary powerplant service
- General Electric (GE) railroad diesel engines in railroad, marine and stationary powerplant service

Not suitable for use in marine-type engines equipped with active purification systems.

### Product approvals, performance and recommendations

#### Performance

- Electro-Motive Diesel (EMD) LMOA Generation 5
- General Electric Generation 4 LL
- API CF, CF-2

#### Service considerations

Owing to the higher level of dispersancy of Delo 6170 CFO, it is not suitable for use in engines which are equipped with active purification systems. In these, marine trunk piston engine oils (TPEOs) such as Taro 20 DP should be used. Such systems continuously remove combustion contaminants from the oil, by use of centrifugal type separators and automatic back flushing type filtration systems. As a consequence, TPEOs are formulated to hold contaminants in suspension while in the engine and reserve tank, but release them in the purification system. At the same time, they must resist the loss of detergent/dispersant additives with the contaminants whilst undergoing purification. Because of this, they are formulated differently from automotive and railroad diesel engine oils which are designed for systems without active purification. Consequently, one type should never be substituted for the other.

The chlorine-free formulation of Delo 6170 CFO offers easier logistics for collection and disposal of used oil where the inclusion of chlorine-containing products is limited by regulation.

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## Typical test data

| DELO <sup>®</sup> 6170 CFO | TEST METHODS | RESULTS |
|----------------------------|--------------|---------|
| SAE Grade                  |              | 40      |
| Product Code               |              | 550037  |
| Density at 15°C, kg/l      | ASTM D4052   | 0.888   |
| Base No., mg KOH/g         | ASTM D2896   | 17.0    |
| Base No., mg KOH/g         | ASTM D4739   | 16.4    |
| Sulfated Ash, m %          | ASTM D874    | 2.0     |
| Kinematic viscosity,       |              |         |
| mm²/s @ 40°C               | ASTM D445    | 148     |
| mm²/s @ 100°C              | ASTM D445    | 14.7    |
| Viscosity Index            | ASTM D2270   | 98      |
| Zinc, mg/kg                |              | <10     |

ENVIRONMENT, HEALTH, and SAFETY. Information is available on this product in the Material Safety Data Sheet (MSDS) and Customer Safety Guide. Customers are encouraged to review this information, follow precautions, and comply with laws and regulations concerning product use and disposal. To obtain a MSDS for this product, visit the Product Information Center.

This Product Data Sheet (PDS) was produced for the Africa, Middle East and Pakistan region in good faith from the best information available at the time of issue. The specific information included may not directly reflect the local market or conditions. While the values and characteristics are considered representative, some variation, not affecting performance, can be expected. For the most up-to-date, country-specific information, please contact your local customer service center.

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