CALTEX PRODUCT BULLETIN

Taro® 30 DP

Marine & Stationary Diesel Engine Oil

Moderately high alkaline reserve (30 Base Number) trunk piston engine oil (TPEO) designed for use in high specific output medium-speed trunk piston engines burning residual fuels (up to 2.5% sulfur). Particularly suited to high load factor operations in marine or stationary service and where heavy residual fuels with high asphaltene content (vis broken residue) are used.

APPLICATIONS

- Medium-speed trunk piston engines including latest designs in stationary power generation, especially in high load factor operations
- Medium-speed trunk piston engines in marine service
- Certain crosshead type engines (where recommended by the manufacturer)
- Cylinder lubrication in certain trunk piston engines with separate lubricators

PERFORMANCE STANDARDS

- API CF
- Approved by major manufacturers for use in their medium-speed engines
- Listed by Caterpillar for 3600 Series engines exceeding 85% load factor (HFO)

ENVIRONMENT, HEALTH and SAFETY

Information is available on this product in the Caltex Material Safety Data Sheet (MSDS) and Caltex 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 www.caltexoils.com.

BENEFITS

Reduces maintenance costs
High performance detergent/dispersant additive system provides superior engine cleanliness in the most severe service conditions by controlling formation of deposits which can adversely affect operation and maintenance. Effective anti-wear additives protect cams and bearings against damage.

Severe duty operation
Superior thermal and oxidation stability withstands the stresses of high output/high load engines and helps maintain control of damaging deposits in hot zones such as piston undercrown and ring belts.

Prolongs oil change-out periods
High base number (BN) and excellent alkalinity retention characteristics maintain sufficiently high BN under all service conditions to ensure corrosive acids formed from combustion of fuel sulfur are effectively neutralized.

Efficient purifying system performance
Special detergent/dispersant additive system provides outstanding insolubles control and extends oil filter cleaning intervals. Excellent water separation characteristics enable water to be centrifuged out with essentially no loss of additive.

KEY PROPERTIES

SAE Grade	30	40
Base No.,		
D2896, mg KOH/g	30	30
D4739, mg KOH/g	29	29
FZG Fail Load Stage	12	12
Sulfated Ash, m %	3.6	3.6
Viscosity,		
mm^2/s @ 40°C	96.8	139
mm^2/s @ 100°C	11.1	14.0
Viscosity Index	100	97
Zinc, m %	0.04	0.04

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Produced by ChevronTexaco Global Lubricants, Asia Pacific

CALTEX

A **ChevronTexaco** Product

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SERVICE CONSIDERATIONS

BASE NUMBER (BN) SELECTION

Manufacturer's lubricant recommendations must be matched to the properties of the fuel and to the severity of the application. Use of an oil with a BN lower than required can result in rapid corrosive wear. Excessively high BN lubricants, relative to fuel sulfur content, can result in ash deposit accumulation on exhaust valves and result in possible valve distress.

FUEL QUALITY

Heavy residual fuels often have poorer combustion characteristics due to their asphaltene content and can result in greater loading of soot and unburned fuel in the lube oil. A higher detergency oil has a greater ability to contain these materials and minimize the formation of "black sludge" as well as piston deposits.

PURIFICATION SYSTEMS

Active purification 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 that are designed for systems without active purification. Consequently, one type should never be substituted for the other.

As a result of the need for TPEOs to release their contaminants in purification systems, the additive system must be extremely well balanced. This "detergency balance" can be easily disturbed if large amounts of top-up oil are added to a system oil containing a higher than normal loading of contaminants, such as can occur with faulty purifier operation. For this reason, it is recommended that oil levels be maintained daily and not fall below 95% of nominal capacity.

In addition, top-ups with an oil of different detergent/dispersant characteristics will very likely cause a disturbance in dispersancy balance and will, therefore, require careful management of oil changeover procedures.

Water can be centrifuged out with essentially no loss of additive. However, water washing of the oil is not recommended.

IN-SERVICE OIL ANALYSIS

Wherever possible, oil analysis should be carried out on a regular basis to determine when change-out of the oil should occur, in accordance with the manufacturer's guidelines.