# Mobil DTE 10 Excel™ Series

Mobil Industrial , New Zealand

Synthetic Technology Hydraulic Oils




## Product Description

Mobil DTE 10 Excel™ Series are high performance anti-wear hydraulic oils specifically designed to meet the needs of modern, high pressure, industrial and mobile equipment hydraulic systems.

The Mobil DTE 10 Excel Series is constructed from synthetic technology base oils and a proprietary additive package to provide well balanced performance in a range of applications. The products demonstrate outstanding oxidation and thermal stability allowing for long oil life and minimized deposit formation in severe hydraulic systems using high pressure, high output pumps. The innovative ultra keep-clean performance protects critical hydraulic system components from malfunction, such as tight tolerance servo and proportional valves found in many modern hydraulic systems. The shear stable, high viscosity index allows for a wide range of operating temperatures maintaining maximum hydraulic efficiency and utmost component protection at both low and high temperatures. Outstanding air release properties represent an added measure of protection in systems with low residence time helping to prevent cavitation damage and micro dieseling. The zinc free anti-wear system provides a high degree of protection in gear, vane and piston pumps while also minimizing deposit formation. In addition, Mobil DTE 10 Excel is not acutely or chronically toxic to the aquatic environment (per GHS criteria and OECD testing).

Formulated with extensive laboratory and in-service field testing, Mobil DTE 10 Excel series can help provide quantifiable increases in hydraulic efficiency compared to other Mobil™ hydraulic oils. This can translate to reduced power consumption or increased machine output, resulting in monetary savings.

In controlled laboratory efficiency testing, Mobil DTE 10 Excel series were measured to provide up to a six percent improvement in hydraulic pump efficiency compared to Mobil standard hydraulic fluids when operating in standard hydraulic applications.

In additional laboratory and in-service field demonstrations conducted on a wide range of modern hydraulic systems, Mobil DTE 10 Excel series demonstrated, compared to Mobil standard hydraulic fluids, exceptional oil life, outlasting these fluids by up to three times, while maintaining outstanding hydraulic system cleanliness and component protection. Mobil DTE 10 Excel also demonstrated the value of its high viscosity index and outstanding shear stability by operating successfully in temperatures as low as -34°C and by maintaining ISO viscosity grade.

*Energy efficiency explained

The energy efficiency design is a trademark of Exxon Mobil Corporation. Energy efficiency relates solely to the fluid performance when compared with Mobil's standard hydraulic fluids. The technology used allows up to 6 percent increase in hydraulic pump efficiency when tested in standard hydraulic applications. The energy efficiency claim for this product is based on test results on the use of the fluid conducted in accordance with applicable industry standards and protocols. Efficiency improvements will vary based on operating conditions and applications.

## Features and Benefits

The Mobil DTE 10 Excel Series hydraulic oils provide outstanding hydraulic system efficiency; ultra keep clean performance, and a high degree of fluid durability. The hydraulic efficiency feature can lead to reduced energy consumption for both industrial and mobile equipment, reducing operating costs and improving productivity. Their excellent oxidation and thermal stability can help to extend oil and filter change intervals while helping to ensure clean systems. Their high level of anti-wear properties and excellent film strength characteristics result in a high degree of equipment protection that not only results in fewer breakdowns but helps improve production capacity.

| Features | Advantages and Potential Benefits |
|---|---|
| Excellent Hydraulic Efficiency | Potentially reduced energy consumption or increased system responsiveness |
| Ultra Keep Clean Performance | Reduced system deposits leading to reduced machine maintenance and increased component life |
| Shear Stable, High Viscosity Index | Sustained component protection over a wide temperature |
| Oxidation and Thermal Stability | Extends fluid life even under harsh operating conditions |
| Good compatibility with elastomers and seals | Long seal life and reduced maintenance |
| Anti-wear properties | Helps reduce wear and protects pumps and components for extended equipment life |
| Excellent Air Separation Characteristics | Helps prevent aeration and cavitation damage in low residence time systems |
| Multi metal compatibility | Helps ensure excellent performance and protection with a wide variety of component metallurgy |

## Applications

- Industrial and mobile equipment hydraulic systems operating at high pressures and temperatures in critical applications
- Hydraulic systems subject to deposit build-up such as sophisticated Computer Numerically Controlled (CNC) machines, particularly where close clearance servo-valves are used
- Systems where cold start-up and high operating temperatures are typical
- Systems requiring a high degree of load-carrying capability and anti-wear protection
- Machines employing a wide range of components using various metallurgy

## Specifications and Approvals

| This product has the following approvals: | 15 | 22 | 32 | 46 | 68 | 100 | 150 |
|---|---|---|---|---|---|---|---|
| Arburg Hydraulic Fluid | | | | X | | | |
| Daimler Truck DTFR 31B100 | | X | | | | | |
| Denison HF-0 | | | X | X | X | | |
| Denison HF-1 | | | X | X | X | | |
| Denison HF-2 | | | X | X | X | | |
| Eaton E-FDGN-TB002-E | | | X | X | X | | |
| HOCNF Norway-NEMS, Black | X | X | X | X | X | X | X |
| Husky | | | | X | | | |
| Krauss-Maffei Hydraulic Oil | | | X | X | | | |
| Ortlinghaus-Werke GmbH ON 9.2.10 | | | X | X | X | X | |
| Ortlinghaus-Werke GmbH ON 9.2.19 | | | X | X | X | X | |

| This product has the following approvals: | 15 | 22 | 32 | 46 | 68 | 100 | 150 |
|---|---|---|---|---|---|---|---|
| ZF TE-ML 04K | | | X | X | | | |
| ZF TE-ML 04R | | | X | X | | | |

| This product is recommended for use in applications requiring: | 15 | 22 | 32 | 46 | 68 | 100 | 150 |
|---|---|---|---|---|---|---|---|
| Fives Cincinnati P-68 | | | X | | | | |
| Fives Cincinnati P-69 | | | | | X | | |
| Fives Cincinnati P-70 | | | | X | | | |
| Valmet Paper RAUAH00929_04(hydraulic systems) | | | X | X | | | |
| Valmet Paper RAUAH02724_01 (mineral oil for hydraulic rolls) | | | | | X | X | X |
| Voith Paper VS 108 5.3.4 2021-10 (hydraulic roll) | | | | | X | X | X |
| Voith Paper VS 108 5.3.5 2021-10 (shoe press) | | | | | | X | X |

| This product meets or exceeds the requirements of: | 15 | 22 | 32 | 46 | 68 | 100 | 150 |
|---|---|---|---|---|---|---|---|
| ASTM D6158 (Class HVHP) | | X | X | X | X | | |
| China GB 11118.1-2011, L-HM(General) | | X | X | X | X | X | X |
| China GB 11118.1-2011, L-HM(HP) | | | X | X | X | X | |
| China GB 11118.1-2011, L-HV | X | X | X | X | X | | |
| DIN 51524-2:2017-06 | X | X | X | X | X | X | X |
| DIN 51524-3:2017-06 | X | X | X | X | X | | |
| ISO L-HM (ISO 11158:2009) | X | X | X | X | X | X | X |
| ISO L-HV (ISO 11158:2009) | X | X | X | X | X | | |
| JCMAS HK VG32W | | | X | | | | |
| JCMAS HK VG46W | | | | X | | | |

Properties and Specifications

| Property | 15 | 22 | 32 | 46 | 68 | 100 | 150 |
|---|---|---|---|---|---|---|---|
| Grade | ISO VG 15 | ISO VG 22 | ISO VG 32 | ISO VG 46 | ISO VG 68 | ISO VG 100 | ISO VG 150 |
| Brookfield Viscosity @ -20 C, mPa.s, ASTM D2983 | | | 1070 | 1900 | 4050 | 10360 | 32600 |
| Brookfield Viscosity @ -30 C, mPa.s, ASTM D2983 | | 1660 | 3390 | 6790 | 16780 | 71400 | 445000 |

| Property | 15 | 22 | 32 | 46 | 68 | 100 | 150 |
|---|---|---|---|---|---|---|---|
| Brookfield Viscosity @ -40 C, mPa.s, ASTM D2983 | 2490 | 7120 | 20000 | 125000 | | | |
| Copper Strip Corrosion, 3 h, 100 C, Rating, ASTM D130 | 1A | 1A | 1B | 1B | 1B | 1B | 1B |
| Density @ 15 C, kg/l, ASTM D4052 | 0.840 | 0.842 | 0.845 | 0.851 | 0.859 | 0.869 | 0.884 |
| Dielectric Strength, kV, ASTM D877 | 39.3 | 38.3 | 39.3 | 38.2 | 39.2 | 37.2 | 37.4 |
| FZG Scuffing, Fail Load Stage, A/8.3/90, ISO 14635-1(mod) | | | 12 | 12 | 12 | >12 | >12 |
| Flash Point, Cleveland Open Cup, °C, ASTM D92 | 210 | 215 | 225 | 230 | 260 | 260 | 270 |
| Foam, Sequence I, Tendency/Stability, ml, ASTM D892 | 20/0 | 20/0 | 20/0 | 30/0 | 30/0 | 30/0 | 30/0 |
| Foam, Sequence II, Tendency/Stability, ml, ASTM D892 | 20/0 | 20/0 | 20/0 | 30/0 | 30/0 | 30/0 | 30/0 |
| Foam, Sequence III, Tendency/Stability, ml, ASTM D892 | 20/0 | 20/0 | 20/0 | 30/0 | 30/0 | 30/0 | 30/0 |
| Kinematic Viscosity @ 100 C, mm2/s, ASTM D445 | 3.9 | 5.0 | 6.5 | 8.4 | 10.9 | 13.0 | 17.2 |
| Kinematic Viscosity @ 40 C, mm2/s, ASTM D445 | 15.0 | 22.0 | 31.5 | 45.7 | 66.9 | 97.0 | 148.0 |
| Pour Point, °C, ASTM D97 | -57 | -54 | -48 | -45 | -42 | -40 | -38 |
| Shear Stability, Viscosity (100 C) Loss, %, CEC L-45-A-99 | 4 | 6 | 5 | 8 | 10 | 8 | 7 |
| Viscosity Index, ASTM D2270 | 164 | 164 | 164 | 163 | 155 | 132 | 121 |

**Health and Safety**

Health and Safety recommendations for this product can be found on the Material Safety Data Sheet (MSDS) @ http://www.msds.exxonmobil.com/psims/psims.aspx

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Mobil Oil New Zealand Limited
164-188 Beaumont St
Auckland
New Zealand

+ 64 4 498 4000
http://www.exxonmobil.com

Typical Properties are typical of those obtained with normal production tolerance and do not constitute a specification. Variations that do not affect product performance are to be expected during normal manufacture and at different blending locations. The information contained herein is subject to change without notice. All products may not be available locally. For more information, contact your local ExxonMobil contact or visit www.exxonmobil.com

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