# Mobil DTE™ FM Series

Mobil Industrial , Croatia

Food Machinery Lubricants

## Product Description

Mobil DTE™ FM Series oils are high performance lubricants designed to satisfy a wide range of multi-use equipment requirements for the food processing and packaging industry. These lubricants are qualified as NSF H1 type lubricants and also comply with Title 21 CFR 178.3570 by the Food and Drug Administration (USA) for use where there is the potential for incidental food contact. Mobil DTE FM Series are manufactured at ISO 22000 certified facilities that also meet the requirements of ISO 21469 helping to ensure that the highest levels of product integrity are maintained.

The lubricants are tasteless, odourless, premium quality lubricants formulated with non-toxic NSF/FDA food grade additives and base oils. The additive system provides good wear protection, excellent oxidation stability and protection against rust. They provide good system cleanliness, long oil/filter life, and optimum equipment protection. The Mobil DTE FM Series oils are excellent gear, bearing and circulating oils. They are also suitable for handling the critical requirements of hydraulic system components such as close clearance servo-valves and the high accuracy numerically controlled (NC) machine tools. These products meet the most rigorous performance requirements of a wide range of system and component manufacturers using various multi-metallurgy designs allowing a single product with outstanding performance characteristics.

The Mobil DTE FM Series oils have high ratings in the FZG Gear Test demonstrating their excellent protection against wear and scuffing. This allows their use in systems other than hydraulics that may contain gears and bearings. The naturally high viscosity index of the base oils ensures outstanding performance over a wide temperature range.

Mobil DTE FM Series will not contribute to MOAH content in food when used in accordance with FDA 21CFR178.3570 limitations.

## Features and Benefits

| Features | Advantages and Potential Benefits |
|---|---|
| Non-Toxic Formulation | Allows use in food packaging and processing applications |
| Very Good Anti-wear Properties | Reduces wear<br>Extends equipment life |
| Excellent Oxidation Stability | Provides long oil and equipment life<br>Extends filter life |
| High Level Corrosion Protection | Prevents internal hydraulic system corrosion<br>Reduces negative effects of moisture in systems<br>Provides corrosion protection of multi-metallurgy component designs |
| Meets a Wide Range of equipment requirements | Multi-service applications - One product can replace several<br>Minimises inventory requirements<br>Reduced potential for product misapplication |
| Excellent Air Separation Characteristics | Reduces foaming and it's negative effects |
| Very Good Water Separation Properties | Protects systems where small quantities of moisture are present<br>Readily separates larger quantities of water |

## Applications

- Suitable for multi-service applications in the lubrication of machinery used in all food processing industries, fish processing and meat packing plants
- Excellent gear, bearing, circulating system and hydraulic oils
- Compressors and vacuum pumps handling air and inert gasses
- Air line lubricators
- 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 is registered to the requirements of: | MOBIL DTE FM 32 | MOBIL DTE FM 46 | MOBIL DTE FM 68 |
|---|---|---|---|
| NSF H1 | X | X | X |

| This product meets or exceeds the requirements of: | MOBIL DTE FM 32 | MOBIL DTE FM 46 | MOBIL DTE FM 68 |
|---|---|---|---|
| FDA 21 CFR 178.3570 | X | X | X |

## Properties and Specifications

| Property | MOBIL DTE FM 32 | MOBIL DTE FM 46 | MOBIL DTE FM 68 |
|---|---|---|---|
| Grade | ISO 32 | ISO 46 | ISO 68 |
| Copper Strip Corrosion, 3 h, 121 C, Rating, ASTM D130 | 1A | 1A | 1A |
| FZG Scuffing, Fail Load Stage, A/8.3/90, ISO 14635-1 | 11 | 12+ | 12+ |
| Flash Point, Cleveland Open Cup, °C, ASTM D92 | 212 | 226 | 228 |
| Four-Ball Wear Test, Scar Diameter, 20 kg, 1800 rpm, 1 h, 54 C, mm, ASTM D4172 | 0.25 | 0.25 | 0.25 |
| Kinematic Viscosity @ 100 C, mm2/s, ASTM D445 | 5.5 | 6.8 | 8.7 |
| Kinematic Viscosity @ 40 C, mm2/s, ASTM D445 | 31.9 | 45.5 | 68.5 |
| Pour Point, °C, ASTM D97 | -12 | -9 | -12 |
| Rust Characteristics, Procedure A, ASTM D665 | PASS | PASS | PASS |
| Specific Gravity, 15.6 C/15.6 C, ASTM D4052 | 0.862 | 0.868 | 0.873 |
| Viscosity Index, ASTM D2270 | 106 | 105 | 101 |

## 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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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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