# Mobil Pyrogard™ 53

Mobil Industrial , Guinea

High Performance Phosphate Ester Synthetic Fluid

## Product Description

Mobil Pyrogard™ 53 is a high performance phosphate ester synthetic fluid designed to replace petroleum-based oils in hydraulic applications where operating conditions preclude the use of combustible petroleum products. Mobil Pyrogard 53 is approved by Factory Mutual (FM) as a fire-resistant fluid.

Mobil Pyrogard 53 has excellent resistance to oxidation at temperatures normally encountered in hydraulic systems and gives long service life without the formation of deleterious sludges and other materials. It resists foaming and separates readily from water. It offers good antiwear protection for high pressure, high output hydraulic pumps and is very resistant to shear so that it retains its viscosity throughout its service life. The product provides good long-term rust protection, provided there is proper control to avoid excessive water contamination. Mobil Pyrogard 53 has a specific gravity greater than that of water. Any water in the system will float to the top of the reservoir where it can easily be removed. The high specific gravity also affects the flow characteristics of the fluid and must be taken into account in the design and maintenance of the system.

The successful experience over the years in a wide variety of hydraulic applications where fire resistance is a key concern has made Mobil Pyrogard 53 the product of choice for many users.

## Features and Benefits

Mobil Pyrogard 53 is an important member of the Pyrogard brand of fire-resistant hydraulic fluids that have provided outstanding service, worldwide, in the most demanding of applications. Mobil Pyrogard 53 was developed in conjunction with hydraulic equipment builders to meet the needs of applications where fire-resistance properties are critical, but where the lubrication performance and long service life expected from mineral base products would be maintained.

Mobil Pyrogard 53 is engineered to provide a high level of fire resistance, and is approved as such by the Factory Mutual group. The product is formulated to provide excellent lubrication properties, including resistance to oxidation, sludge formation and foaming, along with long-term corrosion protection and good water separability.

Mobil Pyrogard 53 offers the following benefits:

| Features | Advantages and Potential Benefits |
|---|---|
| Excellent fire resistance | Increased safety in fire-sensitive applications |
| Outstanding antiwear properties | Long life of pumps, motors and valves with reduced parts replacement costs |
| Excellent oxidation stability and sludge resistance | Extended fluid life and long filter life |
| Long term rust protection in service | Problem-free hydraulic system operation, reduced downtime |
| Highly resistant to viscosity shear breakdown | Retains viscosity over life of fluid to give smooth, efficient and reliable operation |
| Good antifoam and water separation properties | Avoids excessive water contamination and erratic operation due to foamy oil; lower operational costs |

## Applications

Application considerations: Seal and accumulator bladder materials must be compatible with Mobil Pyrogard 53. Butyl rubber, silicon, Teflon, Viton or equivalent materials are generally satisfactory. In all cases, operating conditions and the variability of elastomer properties from different manufactures should be considered. For best results, consult the equipment supplier or seal manufacturer for specific recommendations.

Many paints, coatings and some plastics are not suitable for use with Mobil Pyrogard 53. The manufacture of the coatings used should be consulted prior to use. When changing from petroleum oil to a phosphate ester fluid it is recommended to completely remove the paint from the reservoir and leave the reservoir unpainted. If this is not possible, clean suction screens frequently to prevent pump cavitation or starvation.

Water-glycol and emulsion-type fluids are not compatible with Mobil Pyrogard 53. Systems must be thoroughly drained and flushed before installing a new charge of Mobil Pyrogard 53.

Mobil Pyrogard 53 is recommended for hydraulic applications where fire resistant type fluids are required. While there may be various possible sources of ignition in many industrial facilities, plants where metals are smelted or hot-worked are perhaps most at risk. Such plants frequently have a history of damage to and leakage from hydraulic system hoses and other components. For safety reasons, Mobil Pyrogard 53 is recommended in these situations. Specific applications include:

- Aluminum dye casting machines.
- Tilting systems of cast iron induction melting furnaces.
- Various steel industry applications where fire hazard is a key concern.

## Properties and Specifications

| Property | |
|---|---|
| Autoignition Temperature, °C, ASTM E659 | 538 |
| Flash Point, °C, ASTM D92 | 246 |
| Kinematic Viscosity @ 100 C, mm2/s, ASTM D445 | 5.1 |
| Kinematic Viscosity @ 40 C, mm2/s, ASTM D445 | 41.8 |
| Pour Point, °C, ASTM D97 | 0 |
| Specific Gravity, 60 F/60 F, ASTM D4052 | 1.155 |

## 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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