

QUINTOLUBRIC® 888-68

Fire Resistant Hydraulic Fluid

APPLICATIONS

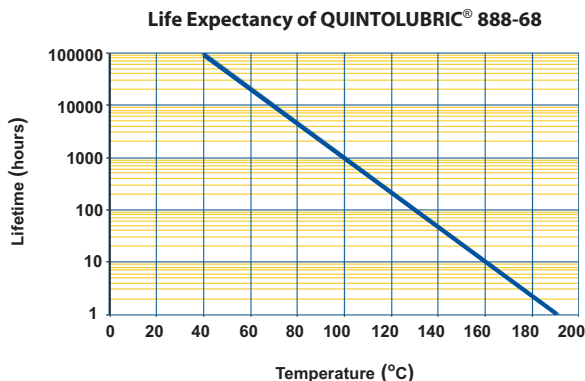
QUINTOLUBRIC® 888-68 was designed to replace anti-wear, mineral oil-based hydraulic fluids used in applications where fire hazards exist. QUINTOLUBRIC® 888-68 can also be used in environmentally sensitive hydraulic applications without compromising the overall hydraulic system operations. This fluid does not contain water, mineral oil, or phosphate ester, and is based on high-quality, synthetic, organic esters and carefully selected additives to achieve excellent hydraulic fluid performance. QUINTOLUBRIC® 888-68 offers the lubrication level of premium, anti-wear hydraulic oils, and can be used with hydraulic components from all major manufacturers.

BENEFITS

- Fire-resistant
 - High ignition temperature and low heat release
 - Properties that limit the spread of fire
 - Excellent shear stability
 - Approved by Factory Mutual Approvals
- Non-toxic / non-toxic to aquatic life
- Non-irritating
- Fully biodegradable
- Simple waste treatment

PERFORMANCE

Properly maintained QUINTOLUBRIC® 888-68 has a useful life comparable to that of mineral oil fluids. Specific fluid lifetime depends primarily on temperature as shown in the graph.



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TYPICAL PROPERTIES

| PROPERTIES (Test Method) | 888-68 (013725) |
|--|--|
| Appearance | Yellow to amber fluid |
| Kinematic Viscosity (ASTM D 445) At 0°C At 20°C At 40°C At 100°C | 554 mm ² /s or cSt 135 mm ² /s or cSt 68 mm ² /s or cSt 12.5 mm ² /s or cSt |
| Viscosity Index (ASTM D 2270) | 185 |
| Density at 15°C (ASTM D 1298) | 0.92 g/cm ³ |
| Acid Number (ASTM D 974) | 2.0 mg KOH/g |
| Pour Point (ASTM D 97) | < -30°C (< -22°F) |
| Foam Test at 25°C (ASTM D 892) Sequence I | 50-0 ml-ml |
| Corrosion Protection ISO 4404-2 ASTM D 665 A ASTM D 130 | Pass Pass 1a |
| Flash Point (ASTM D 92) | 304°C (579°F) |
| Fire Point (ASTM D 92) | 360°C (680°F) |
| Auto Ignition Temperature (DIN 51794) | >400°C (>752°F) |
| Air Release (ASTM D 3427) | 7 min. |
| Fire Resistance (FM Approvals) | Approved |
| Pump Test (ASTM D 2882) | <5 mg wear |
| Gear Lubrication (DIN 51354-2) | >12 FZG load stage |
| Water Separability (ASTM D 1401) | 42-38-0 (30) ml-ml-ml (min.) |



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COMPATIBILITY

The following chart contains our recommendations regarding the use of QUINTOLUBRIC® 888-68 with commonly used elastomers. The elastomer applications listed are “Static,” which refers to trapped nonmoving seals such as O-rings in valve sub-plates and rigid, low pressure hose connections; “Mild-Dynamic,” whose applications include accumulator bladders and hose linings where the hoses are exposed to high pressure and light flexing; and “Dynamic,” which refers to cylinder rod seals, pump shaft seals and constantly flexing hydraulic hose.

Elastomers

| ISO 1629 | DESCRIPTION | STATIC | MILD DYNAMIC | DYNAMIC |
|----------|--|--------|--------------|---------|
| NBR | Medium to high nitrile rubber (Buna N, >30% acrylonitrile) | C | C | C |
| FPM | Fluoroelastomer (Viton®) | C | C | C |
| CR | Neoprene | S | S | S |
| IIR | Butyl rubber | S | N | N |
| EPDM | Ethylene propylene rubber | N | N | N |
| PU | Polyurethane | C | C | C |
| PTFE | Teflon® | C | C | C |

C = Compatible

S = Satisfactory for short term use, but replacement with a completely compatible elastomer is recommended at the earliest convenience.

N = Not Compatible

Metals

QUINTOLUBRIC® 888-68 is compatible with iron and steel alloys and most nonferrous metals and their alloys. It is not compatible with lead, cadmium, zinc, and alloys containing high levels of these metals. Suitable substitutes for these materials are available and should be used.

Paints and Coatings

QUINTOLUBRIC® 888-68 is compatible with multi-component epoxy coatings. It is not compatible with zinc-based coatings. Specific coating and application recommendations can be obtained from coating manufacturers or directly from Quaker Chemical.

Fluids

QUINTOLUBRIC® 888-68 is compatible and miscible with nearly all mineral oil and polyolester-type hydraulic fluids and with some, but not all, phosphate esters. It is not miscible or compatible with water-containing fluids. For conversion recommendations, please contact Quaker.

ENGINEERING DATA

| PROPERTIES | METHOD | QUINTOLUBRIC® 888-68 |
|--|-------------|--|
| Specific Heat at 20°C | ASTM D 2766 | 2.06 kJ/kg °C .49 Btu/lb °F |
| Coefficient of Thermal Expansion at 20°C | ASTM D 1903 | 6 X 10 ⁻⁴ per °C |
| Vapor Pressure At 20°C At 66°C | ASTM 02551 | 3.2 X 10 ⁻⁶ mmHg 7.5 X10 ⁻⁶ mm Hg |
| Bulk Modulus at 20°C At 210 bar At 3,000 psi | | 1.87 X 10 ⁵ N/cm ² 266,900 psi |
| Thermal Conductivity at 19°C | ASTM D 2717 | 0.167 J/sec/m°C |
| Dielectric Breakdown Voltage | ASTM D 877 | 30 kV |

*Country-specific MSDS are available.

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