

# QUINTOLUBRIC® 888-46

## Fire Resistant Hydraulic Fluid



### APPLICATIONS

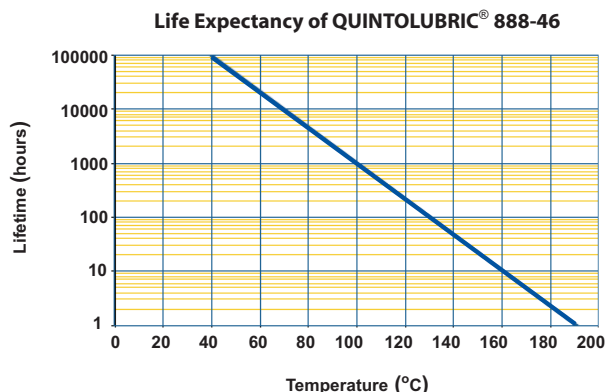
QUINTOLUBRIC® 888-46 was designed to replace anti-wear, mineral oil-based hydraulic fluids used in applications where fire hazards exist. QUINTOLUBRIC® 888-46 can also be used in environmentally sensitive hydraulic applications without compromising the overall hydraulic system operations. This fluid 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® 888-46 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® 888-46 has a useful life comparable to that of mineral oil fluids. Specific fluid lifetime depends primarily on temperature as shown in the graph.



### TYPICAL PROPERTIES

PROPERTIES	METHOD	QUINTOLUBRIC® 888-46
Appearance		Yellow to amber fluid
Kinematic Viscosity At 0°C At 20°C At 40°C At 100°C	ASTM D 445	349 mm <sup>2</sup> /s or cSt 116 mm <sup>2</sup> /s or cSt 49.7 mm <sup>2</sup> /s or cSt 9.7 mm <sup>2</sup> /s or cSt
Viscosity Index	ASTM D 2270	185
Density at 15°C	ASTM D 1298	0.92 g/cm <sup>3</sup>
Acid Number	ASTM D 974	2.0 mg KOH/g
Pour Point	ASTM D 97	< -20°C (< -4°F)
Foam Test at 25°C	ASTM D 892 Sequence I	50-0 ml-ml
Corrosion Protection	ISO 4404-2 ASTM D 665 A	Pass Pass
Flash Point	ASTM D 92	300°C (572°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	41-39-0 (30) ml-ml-ml (min.)

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### COMPATIBILITY

The following chart contains our recommendations regarding the use of QUINTOLUBRIC® 888-46 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
AU	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® 888-46 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® 888-46 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® 888-46 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® 888-46
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 <sup>-4</sup> per °C
Vapor Pressure At 20°C At 66°C	ASTM 02551	3.2 X 10 <sup>-5</sup> mmHg 7.5 X 10 <sup>-6</sup> mmHg
Bulk Modulus at 20°C At 210 bar At 3,000 psi		1.87 X 10 <sup>5</sup> N/cm <sup>2</sup> 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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