

HYDRAULIC FLUIDS

QUINTOLUBRIC® 822-450 FIRE RESISTANT HFD-U HYDRAULIC FLUID APPLICATION SHEET

BENEFITS

- » **Good fire-resistant properties**
- » **FM Approved as a less hazardous hydraulic fluid**
- » **Approved by MSHA Approval No. 30-20-3**
- » **Excellent lubrication properties**
- » **Excellent shear stability**
- » **Compatible with most standard seal materials**
- » **Low human and ecological toxicity**
- » **Cleanliness:** max. NAS 1638 class 6 in bulk, max. NAS 1638 class 7 in containers/drums
- » **Product is >90% biodegradable** according to CEC L-33-T-82
- » **Energy saving** because of low density compared to other HFD type fluid
- » **Excellent cost and quality balance** for selected systems



APPLICATIONS

QUINTOLUBRIC® 822-450 was designed to replace anti-wear, mineral oil-based hydraulic fluid used in fire hazardous and environmentally sensitive hydraulic applications without compromising overall hydraulic system operation.

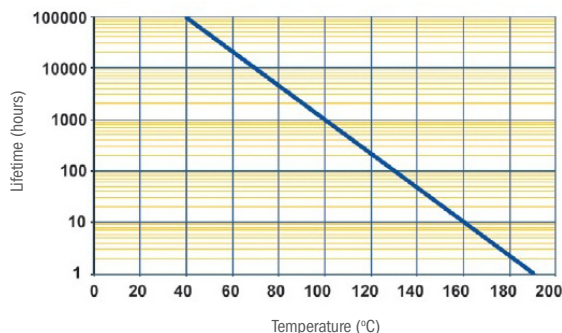
QUINTOLUBRIC® 822-450 is based on synthetic esters and contains an optimized additive package. It does not contain water, phosphate esters or chlorinated hydrocarbons.

The product is widely used over many types of industries. Major applications include the Steel industry, Non-ferrous industry, Glass industry, Mobile equipment and Mining.

PERFORMANCE

Properly maintained QUINTOLUBRIC® 822-450 has a useful life comparable to that of mineral oil fluids. Specific fluid lifetime depends primarily on temperature as shown in the graph.

LIFE EXPECTANCY



QUINTOLUBRIC® 822-450

FIRE RESISTANT HFD-U HYDRAULIC FLUID

APPLICATION SHEET

FLUID MAINTENANCE

In order to maintain optimal conditions, the product should be kept free from water and effective filtration used to avoid contamination with solids. Extremely high temperatures should also be avoided. The fluid's condition should be checked twice a year when its acid number will give an important indication of its state.

STORAGE AND HANDLING

If the following criteria is adhered to, the product can be stored for at least 12 months. Recommended long-term storage temperature range: 0-40°C. Keep containers/ drums tightly closed when not in use and store in a dry and well-ventilated area.

USAGE

QUINTOLUBRIC® 822-450 is used as received and pre-filtration is not necessary because the fluid is cleaned during production down to a low NAS 1638 class. Its higher viscosity index compared with mineral oil makes it ideal for use at a wider temperature range. It also has good cold start-up properties and offers a higher viscosity at increased temperatures.

SEALS, HOSES AND PACKINGS

Most standard materials like NBR (ISO 1629) are compatible, but because of the number of material types available and variations in their application, specific recommendations should be solicited from the materials manufacturer, or the Quaker laboratory. Excellent results are obtained with FPM (ISO 1629) and is therefore recommended for higher system temperatures.

METALS

QUINTOLUBRIC® 822-450 is compatible with iron and steel alloys and most non-ferrous metals and their alloys, but not with highly leaded alloys. Components containing highly leaded alloys should be replaced with a suitable substitute. For zinc please see "Paints".

OTHER FLUIDS

QUINTOLUBRIC® 822-450 is usually compatible with other HFD U fluids and mineral oils. However, we recommend that a test program be performed for every major fluid change over. QUINTOLUBRIC® 822-450 is not miscible with water and water based fluids, but is compatible with other fluids of the QUINTOLUBRIC® series.

PAINTS

Paint coatings inside the hydraulic equipment are usually not needed since the QUINTOLUBRIC® 822-450 provides sufficient corrosion protection. However, QUINTOLUBRIC® 822-450 is compatible with multiple component epoxy systems. Care should be taken when using zinc based coatings, which are not compatible under all circumstances. If paint coatings inside the hydraulic equipment are required, please consult the paint manufacturer or the Quaker laboratory for additional information, because the product is not compatible with all types of paint.

PROPERTIES

PROPERTIES (TEST METHOD)	TYPICAL VALUES
Appearance	Light amber, clear fluid
Kinematic Viscosity (ASTM D 445)	
At 0°C	1050 cSt
At 20°C	240 cSt
At 40°C	100 cSt
At 100°C	14 cSt
Viscosity Index (ASTM D 2270)	145
Density (ASTM D 1298)	
At 25°C	.922
At 50°C	.905
Acid Number (ASTM D 974)	2.0 mg KOH/g
Pour Point (ASTM D 97)	< -26°C / < -15°F
Foam Test at 25°C (ASTM D 892) Sequence I	Pass
Corrosion Protection	
ISO 4404-2	Pass
ASTM D 665 A	Pass
ASTM D 130	1a
Flash Point (ASTM D 92)	>260°C / >500°F
Fire Point (ASTM D 92)	>340°C / >645°F
Vane Pump Test (ASTM D 2882)	<20 mg weight loss (ring plus vanes)
Water Separability (ASTM D 1401)	40-40-0 (30) ml oil:water: emulsion (min)

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