

TECHNICAL DATA SHEET

QH COSMOLUBRIC® B 220

FIRE-RESISTANT HFD-U HYDRAULIC FLUID



QH COSMOLUBRIC® B 220 is designed to replace anti-wear, mineral oil based hydraulic fluids as well as vegetable-based fluids and polyol esters. QH COSMOLUBRIC® B 220 can be used in or near fire hazards and in environmentally sensitive hydraulic applications without compromising the overall hydraulic system operation.

Applications

QH COSMOLUBRIC® B 220 is based on high-quality, natural esters and carefully selected additives to achieve excellent hydraulic fluid performance. QH COSMOLUBRIC® B 220 does not contain water, mineral oil or phosphate ester.

Engineering Data

PROPERTY	TYPICAL VALUE	UNIT
Specific Heat at 20°C (D 2766)	2.06 0.49	kJ/kg°C Btu/lb°F
Coefficient of Thermal Expansion at 20°C (D1903)	6 X 10 ⁻⁴ per °C	
Vapor Pressure (02551) At 20°C At 66°C	3.2 X 10 ⁻⁶ 7.5 X 10 ⁻⁶	mm Hg
Bulk Modulus at 20°C At 210 bar At 3,000 psi	1.87 X 10 ⁵ 266,900	N/cm ² psi
Thermal Conductivity at 19°C (D2717)	0.167	J/sec m/°C
Dielectric Breakdown Voltage	30	kV

*country specific SDS are available

IGNITION TEST DATA	TYPICAL VALUE	UNIT
Hot Manifold Auto Ignition Temperature (ISO 20823)	>427°C	°C

The Benefits

- Excellent lubrication properties and shear stability
- Compatible with standard seal materials
- Readily biodegradable according to OECD 301 Methodology

Properties

PROPERTY	TYPICAL VALUE	UNIT
Appearance	Yellow to amber fluid	
Kinematic Viscosity (ASTM D 445) At 0°C At 20°C At 40°C At 100°C	306 107 47.5 10.1	mm ² /s or cSt
Viscosity Index (ASTM D2270)	207	
Density at 15°C (ASTM D1298)	0.92	g/cm ³
Acid Number (ASTM D974)	1.5	mg KOH/G
Pour Point (ASTM D97)	<-26 <-15	°C °F
Foam Test at 25°C (ASTM D892) Sequence I	15-0	ml-ml
Corrosion Protection ISO 4404-2/ ASTM D665 A ASTM D130	Pass / Pass / 1a	
Flash Point (ASTM D92)	304 580	°C °F
Fire Point (ASTM D92)	343 650	°C °F
Air Release (ASTM D3427)	7	min
Vane Pump Test (ASTM D2882)	<10	mg wear
Gear Lubrication (DIN 51354-2)	>12 FZG load stage	
Water Separability (ASTM D1401)	41-39-0 (25)	ml-ml-ml (min.)



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Compatibility

Metals

QH COSMOLUBRIC® B 220 is compatible with iron and steel alloys and most nonferrous metals and their alloys. It is not compatible with lead, cadmium and has limited compatibility with alloys containing high levels of these metals. QH COSMOLUBRIC® B 220 has limited compatibility with hot dipped or electro galvanized surfaces and good compatibility with zinc containing alloys. Suitable substitutes for these materials are available and should be used.

Paints and Coatings

QH COSMOLUBRIC® B 220 is compatible with multi-component epoxy coatings. It shows limited compatibility with one component (zinc-dust containing) coatings. Specific coating and application recommendations can be obtained from coating manufacturers or directly from Quaker Houghton.

Fluids

QH COSMOLUBRIC® B 220 is compatible and miscible with nearly all mineral oil, phosphate esters and polyolester-type hydraulic fluids. It is not miscible or compatible with water-containing fluids. For conversion recommendations, please contact Quaker Houghton.

Elastomers

The following chart contains our recommendations regarding the use of QH COSMOLUBRIC® B 220 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	S*	MD*	D*
NBR	Medium to High Nitrile Buna N (Buna N, >25% acrylonitrile)	C	C	C
FPM	Flouroelastomer (Viton®)	C	C	C
PU	Polyurethane	C	C	C
CR	Neoprene	S	S	S
IIR	Butyl Rubber	S	N	N
EPDM	Ethelene Propylene	N	N	N
PTFF	Teflon®	C	C	C

** (S- Static, MD- Mild Dynamic, D- Dynamic)

C = Compatible

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

N = Not Compatible

Safety and Handling

Please consult the Safety Data Sheet (SDS) for information on storage, safe handling and disposal. The conditions or methods of handling, storage, use and disposal of the product are beyond our reasonable control - we assume no liability for any ineffectiveness of the product or any injury or damage, arising out of or in connection with these conditions.

All reasonable care has been taken to ensure this publication is accurate upon issue. Such information may be affected by changes subsequent to issue. This Technical Data Sheet is to be used solely for this product. Prior to any use, consult the Safety Data Sheet (SDS) for information on hazard risks and product use parameters. All liability and all warranties express or implied are hereby excluded as to product performance results, the accuracy of these data including any warranty of merchantability or fitness for any purpose. 200489

