

# TECHNICAL DATA SHEET

## QH COSMOLUBRIC® B 230

FIRE RESISTANT HYDRAULIC FLUID



QH COSMOLUBRIC® B 230 was designed to replace anti-wear, mineral oil based hydraulic fluids as well as vegetable based fluids and polyol esters. QH COSMOLUBRIC® B 230 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 230 is based on high-quality, natural esters and carefully selected additives to achieve excellent hydraulic fluid performance. QH COSMOLUBRIC® B 230 does not contain water, mineral oil or phosphate ester.

### Engineering Data

PROPERTY	TYPICAL VALUE	UNIT
Specific Heat at 20°C (D 2766)	2.06 .49	kJ/kg°C Btu/lb°F
Coefficient of Thermal Expansion at 20°C (D1903)	6 X 10 <sup>-4</sup>	per °C
Vapor Pressure (02551) At 20°C At 66°C	3.2 X 10 <sup>-6</sup> 7.5 X 10 <sup>-6</sup>	mm Hg
Bulk Modulus at 20°C At 210 bar At 3,000 psi	1.87 X 10 <sup>5</sup> 266,900	N/cm <sup>2</sup> psi
Thermal Conductivity at 19°C (D2717)	0.167	J/sec m/°C
Dielectric Breakdown Voltage (D877)	30	kV

\*Country-specific SDS available

### Fluid Maintenance

In order to prolong fluid life, the product should be kept free from water and dirt. High temperatures should also be avoided. We recommend a program of regular fluid analysis (no less than twice per year). Fluid analysis services are available directly from Quaker Houghton.

### 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 20°C At 40°C At 100°C	149.0 66.0 16	mm <sup>2</sup> /s or cSt
Viscosity Index (ASTM D2270)	250	
Density at 15°C (ASTM D1298)	0.92	g/cm <sup>3</sup>
Acid Number (ASTM D974)	0.7	mg KOH/g
Pour Point (ASTM D974)	<-25   <-13	°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)	307   585	°C   °F
Fire Point (ASTM D92)	357   675	°C   °F
Auto Ignition Temperature (DIN 51794)	>427   >800	°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	
Demulsibility (ASTM D1401)	41-39-0 (25)	ml-ml-ml (min.)



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### Compatibility

#### Seals, Hoses and Packings

Most standard materials like NBR or buna (medium to high nitrile rubber) 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 Houghton laboratory. Excellent results are obtained with FPM (Viton®) and it is therefore recommended for higher system temperatures.

#### Metals

QH COSMOLUBRIC® B 230 is compatible with iron and steel alloys and most non-ferrous 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 230 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 230 is compatible with multicomponent 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 230 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

ISO 1629	DESCRIPTION	S*	MD*	D*
NBR	Medium to High Nitrile Rubber (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	Ethylene Propylene Rubber	N	N	N
PTFE	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

### Health, 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.

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