



Hi-Tec Oil Traders Pty Ltd ABN 28 053 837 362

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## PRODUCT DATA SHEET

### FIRE RESISTANT HYDRAULIC FLUIDS Q888 46 & 68

#### PRODUCT DESCRIPTION:

**Fire Resistant Hydraulic Fluids Q888 46 & 68** are designed to replace anti-wear, mineral oil-based hydraulic fluids used in applications where fire hazards exist. They can also be used in environmentally sensitive hydraulic applications without compromising the overall hydraulic system operations.

**Fire Resistant Hydraulic Fluids Q888 46 & 68** do not contain water, mineral oil, or phosphate ester, and are based on high-quality, synthetic organic esters and carefully selected additives to achieve exceptional hydraulic fluid performance. They offer 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

#### COMPATIBILITY

**Metals:** **Fire Resistant Hydraulic Fluids Q888 46 & 68** are compatible with iron and steel alloys and most nonferrous metals and their alloys. They are 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:** **Fire Resistant Hydraulic Fluids Q888 46 & 68** are compatible with multi-component epoxy coatings. They are not compatible with zinc-based coatings. Specific coating and application recommendations can be obtained from coating manufacturers or directly from your Hi-Tec representative.

**Fluids:** **Fire Resistant Hydraulic Fluids Q888 46 & 68** are compatible and miscible with nearly all mineral oil and polyol-ester type hydraulic fluids and with some, but not all, phosphate esters. They are not miscible or compatible with water-containing fluids. For conversion recommendations, please contact your Hi-Tec representative.

Hi-Tec suggests that the equipment manufacturers' recommendations for viscosity grade, performance requirements and general operating conditions should be checked prior to use.



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The following chart contains recommendations regarding the use of **Fire Resistant Hydraulic Fluids Q888 46 & 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.

<u>ISO 1629</u>	<u>DESCRIPTION</u>	<u>STATIC</u>	<u>MILD DYNAMIC</u>	<u>DYNAMIC</u>
NBR	Medium to high nitrile rubber (Buna N, >30% acrylonitrile)	C	C	C
NBR	Low nitrile rubber (Buna N, <30% acrylonitrile)	S	N	N
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

## STORAGE

If the following criteria are adhered to, **Fire Resistant Hydraulic Fluids Q888 46 & 68** can be stored for at least six months.

Maximum recommended long-term storage temperature: 40°C

Minimum recommended long-term storage temperature: 0°C

Keep drums/containers tightly closed when not in use.

Store containers/drums in a dry and well ventilated area.

## CHEMICAL AND PHYSICAL PROPERTIES

<u>Property</u>	<u>ASTM Method</u>	<u>Typical Results</u>	
ISO Viscosity		<b>46</b>	<b>68</b>
Item Code (HI5-)		2924	2925
Appearance	Visual	Clear amber fluid	Yellow to amber fluid
Kinematic Viscosity (cSt) -	D-445		
@ 0°C		320 cSt	554 cSt
@ 20°C		109 cSt	135 cSt
@ 40°C		47.5 cSt	68 cSt
@ 100°C		9.5 cSt	12.5 cSt
Viscosity Index	D-2270	190	185
Density at 15°C	D-1298	0.92 g/cm <sup>3</sup>	0.92 g/cm <sup>3</sup>
Acid Number	D-974	1.5 mg KOH/g	2.0 mg KOH/g





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### CHEMICAL AND PHYSICAL PROPERTIES (CONT)

Property	ASTM Method	Typical Results	
ISO Viscosity		<b>46</b>	<b>68</b>
Pour Point	D-97	< -30°C	< -30°C
Foam Test at 25°C	D-892	Sequence I: 50-0 ml-ml	Sequence I: 50-0 ml-ml
Corrosion Protection	ISO 4404-2	Pass	Pass
	D-665A	Pass	Pass/1a
Flash Point	D-92	300°C	304°C
Fire Point	D-92	360°C	360°C
Auto Ignition	DIN 51794	>400°C	>400°C
Air Release	D-3427	7 min	7 min
Fire Resistance	FM Approvals	Approved	Approved
Pump Test	D-2882	<5 mg wear	<5 mg wear
Gear Lubrication	DIN 51354-2	>12 FZG - load stage	>12 FZG - load stage
Water Separability	D-1401	41-39-0 (30) - ml-ml-ml (min.)	42-38-0 (30) - ml-ml-ml (min.)
Specific Heat at 20°C	D-2766	2.06 kJ/kg °C	2.06 kJ/kg °C
Coefficient of Thermal Expansion			
At 20°C	D-1903	6 X 10 <sup>-4</sup> per °C	6 X 10 <sup>-4</sup> per °C
Vapor Pressure	ASTM 02551		
At 20°C		3.2 X 10 <sup>-6</sup> mmHg	3.2 X 10 <sup>-6</sup> mmHg
At 66°C		7.5 X 10 <sup>-6</sup> mm Hg	7.5 X 10 <sup>-6</sup> mm Hg
Bulk Modulus at 20°C			
At 210 bar		1.87 X 10 <sup>5</sup> N/cm <sup>2</sup>	1.87 X 10 <sup>5</sup> N/cm <sup>2</sup>
At 3,000 psi		266,900 psi	266,900 psi
Thermal Conductivity at 19°C	D-2717	0.167 J/sec/m°C	0.167 J/sec/m°C
Dielectric Breakdown Voltage	D-877	30 kV	30 kV
Dry TOST	D-943 mod.	800 hours	800 hours

**Available in:** 200 Litres and 20 Litres

"Hi-Tec Oil Traders Pty Ltd (Hi-Tec Oils) has endeavoured to ensure that all information, representations and specifications contained in this product data sheet are accurate at the time of publication. This general information should be used in conjunction with appropriate inquiries by users of the product including consultation with the vehicle or equipment manufacturers published information.

It is the responsibility of users of the product to use the product safely. Users should consult the safety data sheets for each product at [www.hi-tecoils.com.au](http://www.hi-tecoils.com.au). Hi-Tec Oils takes no responsibility for injury or damage if the product is used in an inappropriate or unsafe manner.

Our product warranty and product quality statement can be viewed at [www.hi-tecoils.com.au](http://www.hi-tecoils.com.au)"

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