

Product Code: FR0046  
Last Updated: 16.02.2016

**SARMAX HFDU 46** is a fire resistant fluid based on a carboxylic ester with a wide operating temperature range of between  $-25^{\circ}\text{C}$  to  $+120^{\circ}\text{C}$ . It contains a specific corrosion inhibitor package designed to prevent staining and corrosion of steel, copper, aluminium and other metals, and is also readily biodegradable.

## APPLICATION

Recommended for use in hydraulic equipment where fire risk is a concern or biodegradability is specified, making it ideal for use in environmentally sensitive areas. The inherent high viscosity index provides exceptional long term stay-in-grade performance characteristics.

Can usually be used directly in existing systems designed for mineral oil based hydraulic fluids without any modification. System conversion can be achieved by a straightforward drain-refill procedure. However, to keep the full benefit of the fire resistance properties, ensure that the equipment is completely drained prior to refill.

## BENEFITS

- Formulated with high flash and auto-ignition points for exceptional fire resistant capabilities
- Excellent anti-wear and anti-corrosion performance characteristics
- Good filterability
- Excellent air release
- Non-toxic
- High level of biodegradability

## TYPICAL PROPERTIES

Characteristic	Unit	Result	Test Method
Appearance		Clear, bright and free from sediments and other impurities	Visual examination
Density @ $20^{\circ}\text{C}$	$\text{kg}/\text{dm}^3$	0.923	ISO 12185
Flash Point, COC	$^{\circ}\text{C}$	320	ISO 2592
Fire Point	$^{\circ}\text{C}$	348	ISO 2592
A.I.T.	$^{\circ}\text{C}$	> 400	ASTM E 659
Pour Point	$^{\circ}\text{C}$	- 36	ISO 3016
Kinematic Viscosity @ $100^{\circ}\text{C}$ $40^{\circ}\text{C}$ $-20^{\circ}\text{C}$	$\text{mm}^2/\text{s}$	9.63 48.7 1839	ISO 3104
Viscosity Index	-	187	ISO 2909
Acid Number (pH=11)	Mg KOH/g	1.14	ISO 6619

## TYPICAL PROPERTIES (contd)

Characteristic	Unit	Result	Test Method
Foaming @ 24°C 94°C 24/94°C	ml/ml	0/0 0/0 0/0	ISO 6247
Air Release	min.	4	ASTM D 3427
Demulsibility	min.	30	ISO 6614
Filterability	-	1.1	NFE 48-690
Rusting Test (sea water)	-	Pass	ISO 7120/B
Copper Corrosion	-	1a	ISO 2160
Vickers V105 C Pump Test Total Wear	mg	14	DIN 51389
FZG	Damage stage	12	DIN 51354
4-Ball Test Results 1 Hour – 392 N	mm	0.41	ASTM D 4172
Specific Heat @ 20°C	KCal/kg/°C	0.460	ASTM D 2766
Thermal Conductivity	Watt/m <sup>0</sup> K	0.158	PLTL-73
Bulk Modulus	KPa	1.728E+06 (Scant) 2.016E+06 (Tangent)	ASTM D 6793
Coefficient Of Thermal Expansion	°C <sup>-1</sup>	6.10 <sup>-4</sup>	-
Biodegradability	% %	> 60 ≈ 90	ISO 9439 CEC L33 A93

## ELASTOMER COMPATIBILITY

Description	ISO Class	Compatibility
Butadiene Acrylonitrile (nitrile < 30%)	NBR	N
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Polychloroprene (temperature < 100°C)	CR	Y
Viton	FPM	Y
Ethylene Propylene Rubber	EPDM	N
Polyurethane	AU	Y
Teflon®	PTFE	Y
Natural Rubber	IR	N

## HEALTH & SAFETY

This product has been manufactured to the highest standards and when used for the purpose recommended is unlikely to present any significant health hazards. A Material Safety Data Sheet is available.

Indicated data are approximate values and are subject to the usual commercial fluctuations. All information correct at time of going to press to the best of our knowledge. This information may be subject to change without notification due to continual product research and development.

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