LANXESS

Lubricant Additives Business

Reolube® Turbofluid 46XC

Fire Resistant Hydraulic Fluid

DESCRIPTION

Reolube® Turbofluid 46XC is a high performance, fire-resistant hydraulic fluid designed for use in electrohydraulic governor control systems of steam turbines, including systems using fine tolerance servo valves. It is a triaryl phosphate based on synthetic butylated phenol and is formulated to provide good oxidation stability. Physical properties such as air release, foaming and demulsibility are also carefully controlled within turbine manufacturers ' specified limits.

Reolube® Turbofluid 46XC is also recommended for use as a fire-resistant lubricant, for example in steam and gas turbines.

Reolube® Turbofluid 46XC is approved by major OEMs such as General Electric, Siemens and Alstom and is approved by FM Global against Standard 6930 for 'Less flammable hydraulic fluids '. It also meets the requirements of ISO Standard 12922 and ASTM D4293 for HFDR-type fire-resistant hydraulic fluids.
The values given in the tables are typical and do not constitute specification limits.

Technical data*

PHYSICAL PROPERTY	UNIT	TYPICAL VALUE	TEST METHOD
Colour	Hazen	30	ASTM D1500
Kinematic Viscosity at 100°C	cSt	5.2	ISO 3104
Kinematic Viscosity at 40°C	cSt	45.2	ISO 3104
Kinematic Viscosity at 0°C	cSt	2136	ISO 3104
Specific Gravity at 20°C		1.14	ISO 3675
Pour Point	°C	-24	ISO 3016
Acid Number	mgKOH/g	0.01	ISO 6619
Chlorine Content	ppm	<2	Microcoulometric
Water Content	%w/w	0.03	ISO ISO 760
Volume Resistivity at 20°C	MOhm.m	500	IEC 60247
Particulate Contamination		Passes -/15/12	ISO 4406
Foaming Tendency at 24°C	ml	10	ISO 6247
Foaming Stability at 24°C	ml	0	ISO 6247
Air Release at 50°C	min	1.4	ISO 9120
Water Separation (Demulsification)	min	5	ISO 6614

**The analytical data are guide values.*

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FIRE RESISTANCE PROPERTY	UNIT	TYPICAL VALUE	TEST METHOD
Flash Point (open cup)	°C	279	ASTM D92
Fire Point (open cup)	°C	356	ASTM D92
Autoignition Temperature (method A)	°C	545	DIN 51794
Autoignition Temperature (method B)	°C	530	ASTM E659
Wick Ignition Maximum Persistence	s	0.8	ISO 14935
Spray Ingnition Maximum Persistence of Burning	s	8	ISO 15029-1
Spray Ignition Stabilised ignitability grade		E	ISO 15029-2
Spray Ignition Stabilised flame length grade		D	ISO 15029-2
Hot Manifold Ignition	°C	No flashing or burning on tube at 741 (pass)	ISO 20823

**The analytical data are guide values.*

LUBRICATION PERFORMANCE	UNIT	TYPICAL VALUE	TEST METHOD
Vickers Vane Pump Test ring weight loss	mg	6.0	ISO 20763
Vickers Vane Pump Test ring vane weight loss	mg	2.2	ISO 20763
Vickers Vane Pump Test ring total weight loss	mg	8.2	ISO 20763
Four Ball Wear Test wear scar diameter	mm	0.48	ASTM D4172
FZG Gear Test Failure Load Stage		7	DIN 51354 part 1
FZG Gear Test Specific Weight Loss	mg/kWh	<0.2	DIN 51354 part 1

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STABILITY PROPERTY	UNIT	TYPICAL VALUE	TEST METHOD
Oxidative Stability Method A acid value change	mgKOH/g	0.14	DIN EN 14832
Oxidative Stability Method A Metal weight changes iron, copper	mg	0.2, 0.2	DIN EN 14832
Oxidative Stability Method B viscosity change at 40°C	%	1.3	FTM 791 5308.7
Oxidative Stability Method B acid value change	mgKOH/g	0.16	FTM 791 5308.7
Oxidative Stability Method C time to 275 kPa pressure drop	min	321	ASTM D2272
Hydrolytic Stability Method A acid value change in fluid	mgKOH/g	0.0	DIN EN 14833
Hydrolytic Stability Method A acid value change in water	mgKOH/g	0.17	DIN EN 14833
Hydrolytic Stability Method B acid value change in fluid	mgKOH/g	0.00	ASTM D2619
Hydrolytic Stability Method B acid value change in water	mgKOH/g	0.08	ASTM D2619
Hydrolytic Stability Method B copper weight change	mg	0.01	ASTM D2619

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MATERIAL APPLICATION	SEALS PACKING HOSES ACCUMULAT-ORS	WIRES AND CABLE INSULATION	PAINTS	FILTERS
Acrylic			U	
Activated Alumina				A
Alkyd Paint			A	
Butyl Rubber	R			
Cellulose				A
Ethylene-Propylene Rubber	R			
Epoxy Paint (cured)			R	
Fuller's Earth				A
Ion Exchange Resins				R
Natural Rubber	U			
Neoprene	U			
Nitrocullulose			U	
Nitrile Rubber	U			
Nylon	R	R		
Paper				A
Phenolic Resins			U	
Polyethylene		A		
Polypropylene		A		
Polyurethane Paint			A	
PVC		U		
Silicone Rubber	U	A		
Teflon	R	R		
Vinyl Ester Paint			A	
Viton Rubber	R			

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Packaging

Reolube® Turbofluid 46XC is available in 230kg drums.

Storage conditions

Store in a cool, dry location

Handling

In accordance with safe industrial practice, gloves, safety glasses and an apron should be worn when handling Reolube Turbofluids, and spillages should be dealt with immediately. If allowed to overheat, breathing the fumes should be avoided.
For more extensive information on the safe handling and use of this product, see the Safety Data Sheet.

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