



Reolube[®] Turbofluid 46SJ

Fire Resistant EHC Fluid

Issued: *****
Revised: *****
Revision:**

DESCRIPTION

Reolube Turbofluid 46SJ 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 a selected xylenol distillate, 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 46SJ is also recommended for use as a fire-resistant lubricant, for example in steam and gas turbines. Reolube Turbofluid **46SJ** is approved by the Factory Mutual Research Corporation against Standard 6930 for 'Less flammable hydraulic fluids'. It also meets the requirements of ISO Standard 12922 for HFDR-type fire-resistant hydraulic fluids.

TYPICAL DATA

<u>PROPERTIES</u>	<u>TYPICAL VALUES</u>	<u>TEST METHOD</u>
Kinematic viscosity		ISO 3104
at 100°C	5.0 mm ² /sec	
at 40°C	43.4 mm ² /sec	
at 20°C	175 mm ² /sec	
at 0°C [†]	1700 mm ² /sec	
Specific gravity at 20/20°C	1.13	ISO 3675
Pour point	-20°C	ISO 3106
Acid number	≤0.05 mgKOH/g	ISO 6619
Chlorine content	25ppm	Microcoulometric
Water content	≤0.06%	ISO 760
Volume resistivity at 20°C	≥100Mohm m	IEC 247
Particulate contamination	3grade (SAE ARP 749D) ¹	Automatic particle counter
Boiling point at 13.3 x 10 ⁻³ bar (10mmHg)	15/12 262°C	ISO 4406
Foaming at 24°C		
-tendency	30ml	
-stability	0ml	
Air release at 50°C	1	ISO 9120
Emulsion characteristics	1	ISO 6614
Demulsification number	165	IP 19

¹SAE ARP 7490 is also known as SAE A-6D

The information contained herein is correct to the best of our knowledge. Your attention is directed to the pertinent Material Safety Data Sheets for the products mentioned herein. All sales are subject to Chemtura's standard terms and conditions of sale, copies of which are available upon request and which are part of Chemtura's invoices and/or order acknowledgments. Except as expressly provided in Chemtura's standard terms and conditions of sale, no warranty, express or implied, including warranty of merchantability or fitness for particular purpose, is made with respect to the products described herein. Nothing contained herein shall constitute permission or recommendation to practice any invention covered by a patent without a license from the owner of the patent.

Chemtura Corporation
Petroleum Additives
Benson Road
CT 06749 www.chemtura.com

Technical Service 800.336.9315
Customer Service 800.325.6252
Fax 203.573.2324 Middlebury,



Reolube[®] Turbofluid 46SJ

Fire Resistant EHC Fluid

Issued : *****
Revised: *****
Revision:**

FIRE RESISTANCE	<u>Fire Testing</u>	<u>Typical Values</u>	<u>Test Method</u>
	Flash point (open cup)	270°C	ISO 2592
	Fire point (open cup)	368°C	ISO 2592
	Autoignition temperature	780°C	ISO 20823
		575°C	ASTM D2155
	Wick ignition		ISO 14935
	-max. persistence	9s (pass)	
	Spray ignition		Factory Mutual Std 6930
	- max. persistence	3s (pass)	
	-spray flammability parameter	Group 1	ISO 15029-1
	-max. persistence of burning	6s (pass)	
	-ignitability factor	Class D	ISO 15029-2
	Hot channel test	No ignition (pass)	FM Std 6930
	Hot manifold ignition	No flashing or burning on tube at 704°C (1300°F) (pass)	CETOP RP 65H

LUBRICATION PERFORMANCE

Lubrication properties

Vickers vane pump test			CETOP RP 67H
	<u>250 hours</u>	<u>1000 hours</u>	
-ring weight loss	5.9mg	7.1mg	
-vane weight loss	3.3mg	3.7mg	
-total weight loss	9.2mg	10.8mg	
4-ball wear test (40kg load for 1 hour)			IP 239
-scar diameter	0.60m		
(70kg load for 1 hour)			
-scar diameter	2.18m		
FZG gear test			DIN 51354 part 2
-failure load stage	7		(A/8.3/90)
-specific weight loss	0.45mg/kWh		

The information contained herein is correct to the best of our knowledge. Your attention is directed to the pertinent Material Safety Data Sheets for the products mentioned herein. All sales are subject to Chemtura's standard terms and conditions of sale, copies of which are available upon request and which are part of Chemtura's invoices and/or order acknowledgments. Except as expressly provided in Chemtura's standard terms and conditions of sale, no warranty, express or implied, including warranty of merchantability or fitness for particular purpose, is made with respect to the products described herein. Nothing contained herein shall constitute permission or recommendation to practice any invention covered by a patent without a license from the owner of the patent.

Chemtura Corporation
Petroleum Additives
Benson Road
CT 06749 www.chemtura.com

Technical Service 800.336.9315
Customer Service 800.325.6252
Fax 203.573.2324 Middlebury,



Reolube[®] Turbofluid 46SJ

Fire Resistant EHC Fluid

Issued : *****
Revised: *****
Revision:**

STABILITY

Oxidation Stability

Method A

FTMS W-L-791C
method 5308.7, modified
(168 hours at 150°C; 5 litres
air/hour)

Viscosity change at 40°C	+1.8%
Acid value change	+0.09mgKOH/g
Metal weight change	
- magnesium alloy	-0.01mg/cm ²
- aluminium alloy	-0.01mg/cm ²
- copper	0.00mg/cm ²
- cadmium plated steel	-0.02mg/cm ²
- mild steel	-0.01mg/cm ²

Method B

ISO 15595

Fluid-neutralisation number increase	0.04mgKOH/g
Absorption fluid -neutralisation number	0.01mgKOH/g
Total acidity increase	0.05mgKOH/g
Metal weight changes	
- copper	+0.3mg
- iron	+0.2mg

Hydrolytic stability

Fluid layer		ASTM D-2619
-acid number change	+0.02mgKOH/g	
Acidity of aqueous layer	0.05mgKOH	
Weight change of copper	-0.008mg/cm ²	

Shear stability

Change in viscosity		CETOP RP 112H
-after 100 cycles		
At 40°C	-0.67%	
At 100°C	+0.76%	
-after 500cycles		
At 100°C	+1.14%	

The information contained herein is correct to the best of our knowledge. Your attention is directed to the pertinent Material Safety Data Sheets for the products mentioned herein. All sales are subject to Chemtura's standard terms and conditions of sale, copies of which are available upon request and which are part of Chemtura's invoices and/or order acknowledgments. Except as expressly provided in Chemtura's standard terms and conditions of sale, no warranty, express or implied, including warranty of merchantability or fitness for particular purpose, is made with respect to the products described herein. Nothing contained herein shall constitute permission or recommendation to practice any invention covered by a patent without a license from the owner of the patent.



Reolube[®] Turbofluid 46SJ

Fire Resistant EHC Fluid

Issued : *****
Revised: *****
Revision:**

COMPATIBILITY	Seals Packing Hoses accumulators	Wire and cable insulation	Paint *	Filters
ACRYLIC			U	
Activated alumina				A
Alkyd paint (stoved)			A	
Butyl rubber	R			
Cellulose				A
Ethylene-propylene rubber	A			
Epoxy paint (cured)				
Fullers' earth			R	
Ion exchange resins				A
Natural rubber	U			R
Neoprene	U			
Nitrocellulose			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 ¹	R	R		
Vinyl ester paint			A	
Viton ¹ rubber	R			

Key R = Recommended A = Acceptable U = Unsuitable

Internal surfaces should preferably be left unpainted. ¹ The Du Pont company

Safety & 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 Material Safety Data Sheet.

Package

Reolube Turbofluid 46SJ is available in 230kg drums.

The information contained herein is correct to the best of our knowledge. Your attention is directed to the pertinent Material Safety Data Sheets for the products mentioned herein. All sales are subject to Chemtura's standard terms and conditions of sale, copies of which are available upon request and which are part of Chemtura's invoices and/or order acknowledgments. Except as expressly provided in Chemtura's standard terms and conditions of sale, no warranty, express or implied, including warranty of merchantability or fitness for particular purpose, is made with respect to the products described herein. Nothing contained herein shall constitute permission or recommendation to practice any invention covered by a patent without a license from the owner of the patent.

Chemtura Corporation
Petroleum Additives
Benson Road
CT 06749 www.chemtura.com

Technical Service 800.336.9315
Customer Service 800.325.6252
Fax 203.573.2324 Middlebury,