STRUB Spindelfluid XLI

Corrosion protection fluid for spindle cooling systems

Art. No. 30719



Description

Strub Spindelfluid XLI is a low-toxic, environmentally friendly inhibitor concentrate.

Application

Based on patented aliphatic acid technology, Strub Spindelfluid XLI provides long-life corrosion protection in aqueous solutions for all engine metals, including aluminium, iron, copper and solder alloys. Mixing ratio: 7 Vol.% in tap water.

The concentration should be periodically checked by refractometer (% Brix).

Refractometer reading x 2.9 =% vol effective concentration.

By not expected change Strub Systemcleaner (ask for TDB) should be added with 2% into the system minimum 24 hours before changing.

Features and Benefits

- ✓ Extended & superior corrosion protection
- ✓ Superior technology
- ✓ Excellent protection
- ✓ Reliability
- ✓ Improved hard water stability
- ✓ Save time and money
- ✓ Environmentally friendly

Chemical and physical properties

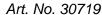
CORROSION PROTECTION Modified ASTM D1384 glassware corrosion tests - 300 ppm chloride Gewichtsverlust in mg/Coupon* Brass Cooper Solder Steel Cast Iron Aluminium AlMn ASTM D3306 (max) 10 10 30 10 10 30 / 5 % Strub Spindelfluid XLI 9.8 4.8 0.6 0.6 4.5 0.0 0.7

technical parameter	Strub Spindelfluid XLI	Method
Inhibitor content	33 % w/w	
Water content	67 % w/w	ASTM D1123
Nitrite, amine, phosphate, borate, silicate	nil	
Colour	colourless	
Density at 20°C	1.055 typ.	ASTM D1122
pH	9.4 typ.	ASTM D1287
Cloud point	- 15 °C typ.	
Storage stability	3 years	

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	5 % dilution	method
рН	8.1 typ.	ASTM D1287
Foaming properties at 25°C	10 ml typ.	ASTM D1881
∜ brea time	1 sec. typ.	
Effect on non-metals	no effect	GME 60 255
Hard water stability	no precipitate	VW PV 1426

Corrosion test during aging with Strub test parameters

To emphasize the corrosion protection offered by **Strub Spindelfluid XLI**, the aging test is conducted under more severe conditions compared to those commonly used in the industry.

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Test conditions	Typical Industry	Strub Spindelfluid XLI	
Test duration	169 h	504 h	
Fluid content	5.0	6.0 I	
Pressure	1.5 bar	2.5 bar	
Flow	3.0 l/min	3.5 l/min	
Heat input	5500 W	5000 W	
Temperature in heating vessel	95°C	115°C	
Temperature in cooling vessel	75°C	95°C	
Concentration of coolant in water	40 vol. %	20 vol. %	

	Weight loss in g/m² (using Strub test parameters) 1						
	Al ²	AlMn	Cast Iron	Steel	Cu	CuZn	Solder CB
Reference Coolant ³ after initial cleaning after final cleaning	82.10 125.01	64.02 94.33	-2.19 -0.36	-1.68 0.11	3.62 4.99	2.90 5.66	21.45 25.83
Strub Spindelfluid XLI after initial cleaning after final cleaning	23.91 60.16	27.05 63.15	0.52 0.69	0.36 0.40	1.03 1.46	1.13 1.76	0.27 0.52

Modified MTU High Temperature corrosion test (2000 W)				
	Weight loss in mg/coupon ¹			
	Cast Iron	Aluminium		
test duration 116 hrs		Al ²	AlMgSi1	
5 % Spindelfluid XLI in deionized water hot coupon	-1.3	9.3	1.8	
5% Spindelfluid XLI in FVV-water hot coupon	-9.0	-16.4	40.7	

- 1. Weight loss AFTER chemical cleaning acc. to (shortened) MTU procedure. Weight gain is indicated by a sign.
- 2. Aluminium SAE 329.
- 3. Reference coolant is conventional, high quality, ethylene glycol- and silicate-based coolant.

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<u>Dilution range:</u> % 6.0 / 10.0 <u>Temperature:</u> 60°C

Dilution (%)	7 %	8 %	10 %
Density (kg/m3)	983.42	987.92	989.17
Kin. viscosity (mm ² /s)	0.515	0.52	0.54
Spec. heat (kJ/kg.K)	4.17	4.17	4.17
Thermal conductivity (W/mK)	0.6382	0.6348	0.6316
Vapor pressure (Pa)	19851.51	19891.51	19891.51
Electr. conductivity (µS/cm)	6245.13	6866.97	8368.31
Prandtl number	3.37	3.40	3.52

SEAL	SEALS COMPATIBILITY				
•	Nitril rubber	(NBR)			
•	Hydrogenated nitril rubber	(H-NBR)			
•	Acrylate rubber	(ACM)			
•	Silicon rubber	(MVQ)			
•	Fluorated rubber, e.g. Viton from DuPont	(FPM)			
•	Ethylene-propylene-diene-rubber	(EPDM)			
•	Butyl rubber	(IIR)			
•	Natural rubber	(NR)			
•	Styrolbutadiene rubber	(SBR)			
•	Polychlorinated butadiene- elastomers, e.g. neoprene from DuPont	(CR)			
•	Polytetrafluorethylene, e.g. teflon from Hostaflon	(PTFE)			
•	Polyethylene, low density and high density	(LDPE und			
•	Polypropylene	HDPE) (PP)			
•	Polyvinylchloride, soft and hard type	(PVC)			
•	Polyamide	(PA)			
•	Polyester resin	(UP)			
•	Elastogran 1100	(PUR-Ether)			

Transportation

ADR/SDR: not dangerous goods

Disposal

LVA VeVA / EAK: 12 01 09

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