

StaSo Transformer Oil I

Applications:

StaSo Transformer Oil I is a fully inhibited high grade quality transformer and insulating oil for transformers of all categories as well as for other electrical equipment such as circuit breakers or tap changers.

StaSo Transformer Oil I is based on naphthenic base oils, which are produced by MSR-Technology in Germany.

Characteristics / Qualifications:

StaSo Transformer Oil I fulfills all requirements for insulating oils based on mineral oil in electrical equipment of IEC 60296: 2020, Type A (Table 3) of inhibited oils with higher oxidation stability and low sulfur content.

StaSo Transformer Oil I is analytically proved non corrosive and does not contain DBDS, no passivators and no pour point depressants. **StaSo Transformer Oil I** is characterized by a very good low-temperature performance, excellent oxidation stability and gets delivered dried with a very high breakdown voltage.

StaSo Transformer Oil I is a resource-saving and sustainably produced insulating oil based on re-refined, naphthenic base oil and is defined as a recycled mineral insulating oil in accordance with section 3.9 of IEC 60296: 2020 and can be identified in accordance with 5.1.4. of IEC 60296: 2020 with TRAI (fully inhibited recycled high grade oil for transformers).

StaSo Transformer Oil I is subject to the strictest approval processes and quality controls. The quality is regularly confirmed by external reports from accredited laboratories.

Typical Characteristics:

	Unit	Test method	Guaranteed data		Typical data StaSo Transformer Oil I
			IEC	Min	
1.Function					
Viscosity, 40°C	mm ² /s	ISO 3104		12,0	9,8
Viscosity, -30°C	mm ² /s	ISO 3104		1800	890
Pour point	°C	ISO 3016		-40	-50
Water content (drum, IBC)	mg/kg	IEC 60814		40	10
Water content (bulk)	mg/kg	IEC 60814		30	7

Provided data are typical of current production, variations in given characteristics may occur, final determination of suitability of the product for the application contemplated by the user is solely their responsibility, for further information contact +49(0)4661-93495-0, info@nf-oel.de, www.starkeundsohn.de

Technical Data Sheet

Parameter	Unit	Test method	Guaranteed data		Typical data StaSo Transformer oil I	
			IEC 60296, Table 2			
			IEC	Min		
Breakdown voltage						
-Before treatment	kV	IEC 60156	30		65	
-After treatment	kV		70		>80	
Density, 20°C	kg/m ³	ISO 12185		895	870	
Dielectric dissipation factor (DDF) at 90°C		IEC 60247		0,005	0,0005	
2. Refining / stability						
Colour		IS 2049		L0,5	L0,5	
Appearance		IEC 60296	Clear, free from sediment		complies	
Acidity	mg KOH/g	IEC 62021		0,01	<0,01	
Interfacial tension	mN/m	ISO 6295	40		45	
Total sulphur content	%	ISO 14596		0,05	0,02	
Corrosive sulphur		DIN 51353	not corrosive		not corrosive	
Corrosive sulphur		ASTM D 1275 B	not corrosive		not corrosive	
Potentially corrosive sulphur		IEC 62535	not corrosive		not corrosive	
DBDS		IEC 62697-1		5	not detectable	
Inhibitors	%	IEC 60666	0,08	0,40	0,38	
Metal passivator additives	mg/kg	IEC 60666				
- TTAA (metal passivator Irgamet 39®)		IEC 60666		5	not detectable	
- TAA (metal passivator Irgamet 30®)		UPLC-MS/MS		5	not detectable	
- BTA (metal passivator)		IEC 60666		5	not detectable	
- TTA (metal passivator)		IEC 60666		5	not detectable	
Pour Point depressant		IEC 60666	not detectable		not detectable	
2-Furfural content	mg/kg	IEC 61198		0,05	not detectable	
Stray gassing under thermo- oxidative stress (oil saturated with air in presence of copper)		IEC 60296-A4	no stray gassing		no stray gassing	
3. Performance						
Oxidation stability						
At 120°C, 500 h		IEC 61125				
Total acidity	mg KOH/g	IEC 61125		0,30	0,04	
Sludge	%	IEC 61125		0,05	<0,01	
DDF/90°C		IEC 61125		0,050	0,020	
4. Health, safety and environment (HSE)						
Flash point, PM	°C	ISO 2719	135		145	
PCA content	%	IP 346		3	<3	
PCB content	%	IEC 61619		2	not detectable	

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