

LAB REPORT

Unit ID **Transformer**
 Component **Insulating oil**
 Current sample number **1704436**



OELCHECK GmbH · Kerschelweg 28 · 83098 Brannenburg

Machine type: **DOTR 63000/110**
 Manufacturer: **SGB**
 Oil quantity in system: **15800 l**

Example report
 Analysis scope: Analysis-Kit ISO 4

Diagnosis for the current laboratory values

There is no significant change in comparison to the previous sample. No wear metals present in the sample. The breakdown voltage is in the normal range. The dissipation factor and the interfacial tension show no unusual amount of polar components, which could be an advise for oil aging or impurities. Please observe further changes with the next sample. I recommend that you send the next sample at the next service interval or at your regular inspection for trend analysis.

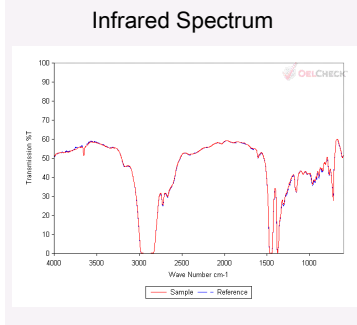
Dipl.-Ing. Andy Böhme (CLS)

Sample Rating



normal

ANALYSIS RESULTS			Current sample	Previous samples	
LAB NUMBER			1704436	1704437	
SAMPLE RATING			✔	✔	
Date tested			30.08.2021	26.08.2020	
Date of sample taken			17.08.2021	11.08.2020	
Date of last oil change			-	-	
Top-up since change			-	-	
Operating time since change			-	-	
Total operating time	M		44	32	
Oil changed			-	-	
WEAR					
Iron	Fe	mg/kg	0	0	
Chrome	Cr	mg/kg	0	0	
Tin	Sn	mg/kg	0	0	
Aluminum	Al	mg/kg	0	0	
Nickel	Ni	mg/kg	0	0	
Copper	Cu	mg/kg	0	0	
Lead	Pb	mg/kg	0	0	
Molybdenum	Mo	mg/kg	0	0	
Antimony	Sb	mg/kg	1	-	
Manganese	Mn	mg/kg	0	0	
CONTAMINATION					
Silicon	Si	mg/kg	0	0	
Potassium	K	mg/kg	0	0	
Sodium	Na	mg/kg	1	1	
Water K. F.		ppm	9	6	
OIL CONDITION					
Viscosity at 40°C		mm ² /s	8.52	8.67	
Oxidation		A/cm	1	1	
Color		Color index	0.5	0.5	
ADDITIVES					
Calcium	Ca	mg/kg	0	0	
Magnesium	Mg	mg/kg	0	0	
Boron	B	mg/kg	0	0	
Zinc	Zn	mg/kg	0	0	
Phosphorus	P	mg/kg	0	0	
Barium	Ba	mg/kg	0	0	
Sulphur	S	mg/kg	89	34	
ADDITIONAL TESTS					
AN / NN		mgKOH/g	< 0.01	0.02	
Density 15°C		kg/m ³	867	867	
Breakdown voltage		kV	72.80	72.30	
Test frequency		Hz	60	60	
Dielectric dissipation factor		tan δ	0.0023	0.0010	
Resistivity		g+ GΩm	330.85	1840.00	
Relative permittivity		ε	2.09	2.10	
Interface tension		mN/m	42.96	43.86	



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Dissolved gas analysis (DGA)

The gas concentrations measured by the Dissolved Gas Analysis are unremarkable. Therefore a failure in the system is not obvious.

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Operating time since change			-	-	
Total operating time	M		44	32	
Oil changed			-	-	
DISSOLVED GAS ANALYSIS					
Nitrogen	N2	ppm	49090	31273	
Oxygen	O2	ppm	21840	11379	
Hydrogen	H2	ppm	0	1	
Carbon monoxide	CO	ppm	294	122	
Carbon dioxide	CO2	ppm	2330	1057	
Methane	CH4	ppm	0	10	
Ethane	C2H6	ppm	0	1	
Ethylene	C2H4	ppm	0	1	
Acetylene	C2H2	ppm	0	0	
Total gas		ppm	73554	43844	
DGA INTERPRETATION					
C2H2/C2H4			n/a	n/a	
CH4/H2			n/a	10.00	
C2H4/C2H6			n/a	1.00	
DUVAL GAS CONCENTRATION					
Amount for Duval triangle	CH4	%	-	90.9	
Amount for Duval triangle	C2H4	%	-	9.1	
Amount for Duval triangle	C2H2	%	-	0.0	
Duval error type			-	T1	

Sampling syringe

