

Unit ID **Transformer**
 Component **Insulating oil**
 Lab 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 indication of 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. Wi-Ing. (FH) Rainer Schöpf (CLS)

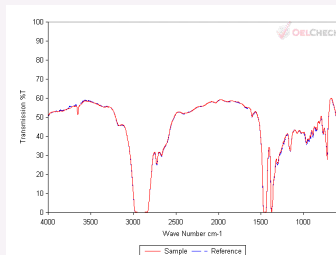
Sample Rating



normal

| ANALYSIS RESULTS | | | Current sample | Previous samples | |
|-------------------------------|----|--------------------|----------------|------------------|--|
| LAB NUMBER | | | 1704436 | 1704437 | |
| SAMPLE RATING | | | | | |
| Date tested | | | 30.08.2023 | 26.08.2022 | |
| Date of sample taken | | | 17.08.2023 | 11.08.2022 | |
| 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 | < 0.10 | < 0.10 | |
| 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 | |

Infrared Spectrum



LAB REPORT

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Dissolved gas analysis (DGA)

The dissolved gas analysis shows no conspicuous gas concentrations. Therefore, an error event is not evident.

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Sample Rating



normal

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|-----------------------------|------|-----|----------------|------------------|--|
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| 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 | |

