

Transformer Oil Sampling

For Dissolved Gas Analysis (DGA) and Oil tests

Correct sampling is crucial for the test result. Incorrect sampling may result in loss of gases and higher water content in the sample, which can give an incorrect interpretation of the conditions in the transformer.

This instruction applies to breathable transformers. For hermetically sealed and other special transformers, check with the supplier what they recommend.

Health, Safety and Environment (HSE)

Use gloves, preferably gloves made from nitrile rubber. It is recommended to use an absorptive mat below the sampling valve. Outdoor sampling should preferably be in dry weather.

Preparation and equipment

To have reliable DGA results, the oil samples should be analyzed within a few days.

The sampling valve need to be carefully cleaned before sampling. Wipe off dirt and use methylated spirit if necessary. Rinse with oil and protect the sampling equipment against dirt. Rinse the equipment with oil if necessary.

The three-way valve at the tip of the syringe is operated by a yellow handle. The valve is open in the directions the arms of the handle at any time are pointing. When the sample is taken, remove hoses and T-connection from the syringe. The valve has a threaded connection to the syringe. Therefore, be careful not to unscrew the valve when removing the hoses after sampling. The valve could get loose, and the oil be exposed to the atmosphere. Used hoses should be disposed of. Surplus, not used, accessories should be returned along with the samples.



Filling of Forms

Please fill in the form completely. Transformer serial number, syringe number and oil sampling date are mandatory. For a precise interpretation of the result, all information is needed.

Oil sampling

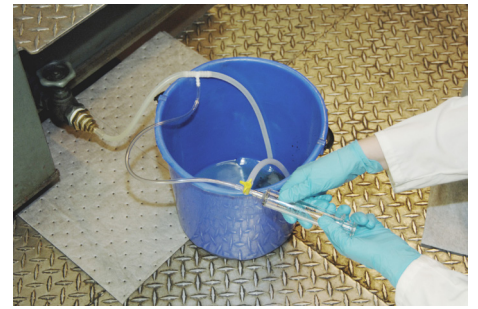
If there, after sampling, is dirt or air bubbles in the syringe, the sampling must be repeated. If the oil is hot when sampling, a bubble might form when the oil is cooled down. If so, there are no need of new sampling.



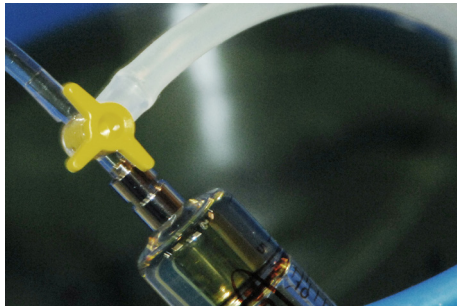
01 - 04



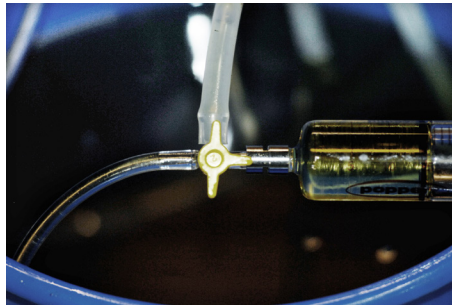
05 - 06



07 - 08



09



10 - 12



13 - 15

1. Open the valve, flush 2-3 liter of oil into a bucket and then re-close the sampling valve.
2. The oil temperature shall be measured either directly in the stream while pouring out the oil or in the bucket immediately after the oil has been drained.
3. Before taking the oil sample the aluminum flask should be flushed with the same oil. Flush the bottle well a couple of times and clear.
4. Fill the bottle by letting the oil flow gently along the bottle wall. Finally fill up the flask to about 1,5 cm from the top and close it immediately with the inner and outer cap.
5. Assemble the tubes and the T-connection to the syringe.
6. Connect the tube from the sampling valve to the T-connection.
7. Put the tube with the T-connection into the bucket and open the sampling valve carefully.
8. Allow an amount of oil to flow continuously into the bucket which is at least three times the volume of the valve and the tubes.
9. Turn the three-way valve as shown on the picture and fill the syringe with maximum 30 ml of oil by pulling the piston.
10. Make sure to hold the syringe upright with the valve on the top and the arms pointing as shown.
11. Empty the syringe by pressing the piston slowly inwards, allowing all air bubbles to escape as the oil is removed. It can be necessary to tilt the syringe a little forth and back to get rid of all air bubbles.
12. Refill the syringe with oil and empty it over again by repeating the procedure above.
13. Finally fill the syringe carefully with 20 to 30 ml of oil and close the three-way valve by turning it as shown on the picture.
14. Dispose all used tubes and T-connections.
15. Protect the sample against sun light.

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Video on oil sampling:
Scan the QR code with your
mobile camera

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