



SAMPLING INSTRUCTIONS FOR PHYSICAL/CHEMICAL TESTS ON INSULATING FLUIDS

Valid analysis of Dielectric Fluids / Liquid Insulating Fluids begins with proper sampling techniques. These techniques will ensure that the sample is representative of the fluid surrounding the core and coils. The risk that contaminants, not inherent within the fluid, will end up in the sample and interfere with the analysis results will be minimized. By eliminating contaminants, the results will be reproducible and allow for accurate monitoring of the dielectric fluid condition over time.

**The industry standard for sampling is ASTM D-923. (DANGER HIGH VOLTAGE!)
Notice: PCBs maybe present thus applicable EPA regulations must be observed for disposal of the waste generated on site and DOT regulation for shipping to the lab.**

Proper sampling begins with utilizing the proper container. A clean one pint (500 ml) or quart (1L) narrow mouth bottle should be utilized. The GE Liquid Insulation Laboratory (LIL) will supply clean, dry, glass bottles at no additional charge. Avoid the use of plastic containers. Caps should remain in place until time for procuring a sample. Oils and Silicone samples should normally be taken at the lowest level of the equipment, while Askarel and Wecosol (Westinghouse trade name for Perchloroethylene) fluids should be sampled at the top. Oil units not on-line or lightly loaded should have two samples taken. One from the bottom **AND A SECOND SAMPLE** from the **TOP**. Due to the lack of loading, the oil is poorly circulated and the quality of the oil may vary greatly between top and bottom.

Before sampling, insure that the unit has a positive pressure. A negative pressure situation could result in air being sucked into the unit upon opening any valve. When sampling from a drain valve, rapidly flush sufficient liquid through the valve to insure that fluid from the main tank has filled the line. This volume may range from less than a pint for small transformers, to 1-2 gallons for large transformers. **CHECK FOR FREE WATER. IF FREE WATER IS OBSERVED, REPORT THIS TO THE OWNER OF THE EQUIPMENT.**

After flushing the valve, rinse the sample bottle with the fluid by partially filling one-fifth, rolling several times, and discarding the fluid (if PCB contaminated or of unknown PCB levels, follow the disposal requirements discussed in 40 CFR 761).

Fill the bottle to within one inch of the top and tighten cap firmly.
COMPLETE the Dielectric Test Fluid Data Sheet and matching bottle label.

THE DIAGNOSTIC INTERPRETATION IS ONLY AS VALID AS THE CARE IN TAKING THE SAMPLE AND THE INFORMATION FILLED OUT ON THE DATA SHEETS.

SHIP TO:

GE Energy Services
Liquid Insulation Laboratory
4900 Kingston Street, Denver, CO 80239
(303) 329-2323 Fax: (303) 329-2322
mel.wright@ps.ge.com

IMPORTANT NOTES

- 1) For PCB testing of Dielectric Fluids, **FEDERAL LAW 40 CFR 761.65** requires that specific information accompany these samples. Fill out the **PCB-COC** form, and make sure of the following: a) **Sampler signs** the form; b) the **Shipper** (person packing the samples and offering this package for shipment) follows DOT regulations and signs the PCB-COC form.
- 2) **DOT and UN REQUIRED shipping kits for PCB and PCB-contaminated** fluids are available FOR PURCHASE at \$30.00 per kit. The Kits will be recycled for \$5.00 each, and RETURNED to the shipper. A new bottle, labels, forms & DOT hazard class labels will be included in the returned kit.
- 3) Free sample bottles and PCB vials supplied upon request. (UPS prepaid. If air shipment required, we ship Federal Express **COLLECT**. Please supply FEDEX account number.)
- 4) Syringes are supplied by the GE LIL for a current job. Due to the cost of these items, a **PO number must be supplied as a deposit for each syringe order**. Syringes not returned within 60 days will be billed at **\$100.00 each**. Syringes are shipped Federal Express **COLLECT**, allowing for quicker and more accurate tracking of shipments.
- 5) **NOTE: Minimum Sample Sizes Are Required For Specific Tests.**
- 6) Test results are only as good as the sample taken. The accuracy of a recommendation is dependent on the sample being representative of the body of the fluid and complete and accurate data being supplied, about the sample and equipment, to the laboratory.
 - **Flush one pint of fluid from valve before taking sample.**
 - **DO NOT REUSE tubing, especially for DGA or PCB testing.**
 - **Take correct size of sample.**
 - **Fill bottle to within one inch of top.**

See Data Sheet for the definition of routine and comprehensive tests, suggested specifications and ASTM test methods. Also NOTE the D-877 is the standard Dielectric test performed on in-service dielectric fluids. D-1816 is recommended only for filtered and degassed oils. The D-1816 is an effective "Particle Detection" test.