



Customer Information

| | |
|------------------|-----------|
| Contact Name | Account # |
| Company | E-Mail |
| Address | |
| City, State, Zip | |
| Phone/Fax/Pager | |

Billing Information

Same

| | |
|------------------|-------|
| Contact Name | P.O.# |
| Company | |
| Address | |
| City, State, Zip | |
| Phone/Fax | |

POWER TRANSFORMER PACKAGES

NTT TechCheck™

| | | | |
|--|---|---|---|
| <input type="checkbox"/> 1 - BASIC DGA & Oil Screen Cylinder/Syringe + 8oz.bottle •DGA Plus™ •Moisture •Acid •IFT •Color No. •Visual Exam •Dielectric D877 | <input type="checkbox"/> 2 - ANNUAL Routine Maintenance Cylinder/Syringe + 8oz.bottle •DGA Plus™ •Moisture •Acid •IFT •Color No. •Visual Exam •Dielectric D877 •Specific Gravity •Power Factor 25°C | <input type="checkbox"/> 3 - BASELINE Newly Filled Equipment Cylinder/Syringe+16oz.bottle •DGA Plus™ •Moisture •Acid •IFT •Color No. •Visual Exam •Dielectric D877 •Specific Gravity •Power Factor 25°C | <input type="checkbox"/> 4 - FULL ANALYSIS Comprehensive/Investigative Cylinder/Syringe+2x16oz.bottle •DGA Plus™ •Moisture •Acid •IFT •Color No. •Visual Exam •Dielectric D877 •Specific Gravity •Power Factor 25°C |
|--|---|---|---|

| | | | |
|--|------------------|-------|--------|
| <input type="checkbox"/> Dissolved Gas Analysis-DGA Plus™ | D3612A | 50 ml | 1.7 oz |
| <input type="checkbox"/> Moisture in Oil | D1533B | 20 | 0.7 |
| <input type="checkbox"/> Interfacial Tension (IFT) | D971 | 40 | 1.4 |
| <input type="checkbox"/> Acid No. | D974 | 12 | 0.4 |
| <input type="checkbox"/> Color No. & Visual Exam | D1524 | 5 | 0.2 |
| <input type="checkbox"/> Dielectric Breakdown Voltage | D877 | 200 | 7 |
| <input type="checkbox"/> Dielectric Breakdown Voltage 0.04" | D1816 | 500 | 17 |
| <input type="checkbox"/> Dielectric Breakdown Voltage 0.08" | D1816 | 500 | 17 |
| <input type="checkbox"/> Power Factor @ 25°C | D924 | 100 | 3.7 |
| <input type="checkbox"/> Power Factor @ 100°C | D924 | 100 | 3.7 |
| <input type="checkbox"/> Specific Gravity | D1298 | 11 | 0.4 |
| <input type="checkbox"/> Kinematic Viscosity | D445 | 7 | 0.3 |
| <input type="checkbox"/> Oxidation Inhibitor | D2668 | 7 | 0.3 |
| <input type="checkbox"/> Flash Point - Fire Point (circle one) | D92 | 75 | 2.0 |
| <input type="checkbox"/> Laser Particle Count | ISO | 20 | 0.7 |
| <input type="checkbox"/> PCBs-in-Oil | EPA 600-4-81-045 | 7 | 0.3 |
| <input type="checkbox"/> Metals(7 Metals:Ag,Al,Cu,Fe,Pb,Sn,Zn) | D3635 | 5 | 0.2 |
| <input type="checkbox"/> Furfural Analysis | D5837 | 20 | 0.7 |
| <input type="checkbox"/> Other | | | |

LTC-OCB-Regulator-Rectifier PACKAGES

NETA Guideline

Lubrication Fluids

| | | | | | |
|---|--|--|--|---|--|
| <input type="checkbox"/> 1 - BASIC •DGA Plus™ •Moisture •Acid •IFT •Color No. •Visual Exam •Dielectric D877 | <input type="checkbox"/> 2 - ANNUAL •Package #1 •Specific Gravity •Power Factor 25°C | <input type="checkbox"/> 4 - FULL ANALYSIS •Package #3 •Viscosity •Oxidation Inhibitor | <input type="checkbox"/> REQUIRED •DGA Plus™ •Acid •IFT •Color Number •Visual Exam •Dielectric D877 | <input type="checkbox"/> OPTIONAL <input type="checkbox"/> Moisture: Required if >25KV or Silicone <input type="checkbox"/> Specific Gravity <input type="checkbox"/> Power Factor 25°C | <input type="checkbox"/> Basic Analysis •Metals Analysis •Particle Count •Acid Number •Viscosity <input type="checkbox"/> Glycol/Anti-Freeze contamination <input type="checkbox"/> Additives |
|---|--|--|--|---|--|

DGA - Glass syringe or metal cylinder preferred. PCB - Glass vial with aluminum or teflon-lined cap required.
 Moisture - Minimize headspace in sample container. Metals - Non-metallic container preferred.

| Date Sampled | Container No. and Type | •Location •Transformer No./Misc. | •Serial No. | •Manufacturer •Year Built | •Main/LTC •Bank/Phase | •KVA •Oil Temp | RUSH (y/n) |
|--------------|------------------------|-------------------------------------|--|------------------------------|--|-------------------|------------|
| | DGA PCE | | <input type="radio"/> Nitrogen Blanket <input type="radio"/> Conservator <input type="radio"/> Free-Breathing Unit <input type="radio"/> Desiccant <input type="radio"/> Sealed <input type="radio"/> Other | Mfr Date | <input type="radio"/> Main <input type="radio"/> LTC <input type="radio"/> OCB <input type="radio"/> Reg Bank # Phase # | Temp | |
| | DGA PCE | | <input type="radio"/> Nitrogen Blanket <input type="radio"/> Conservator <input type="radio"/> Free-Breathing Unit <input type="radio"/> Desiccant <input type="radio"/> Sealed <input type="radio"/> Other | Mfr Date | <input type="radio"/> Main <input type="radio"/> LTC <input type="radio"/> OCB <input type="radio"/> Reg Bank # Phase # | Temp | |
| | DGA PCE | | <input type="radio"/> Nitrogen Blanket <input type="radio"/> Conservator <input type="radio"/> Free-Breathing Unit <input type="radio"/> Desiccant <input type="radio"/> Sealed <input type="radio"/> Other | Mfr Date | <input type="radio"/> Main <input type="radio"/> LTC <input type="radio"/> OCB <input type="radio"/> Reg Bank # Phase # | Temp | |
| | DGA PCE | | <input type="radio"/> Nitrogen Blanket <input type="radio"/> Conservator <input type="radio"/> Free-Breathing Unit <input type="radio"/> Desiccant <input type="radio"/> Sealed <input type="radio"/> Other | Mfr Date | <input type="radio"/> Main <input type="radio"/> LTC <input type="radio"/> OCB <input type="radio"/> Reg Bank # Phase # | Temp | |

| | | | |
|--------|--|--|---|
| Notes: | RUSH RESULTS <input type="radio"/> Phone <input type="radio"/> Fax <input type="radio"/> Email | Receive Routine Results Via: <input type="radio"/> Fax <input type="radio"/> Email <input type="radio"/> Mail Date requested: ___/___/___ | Send Additional Containers: ___syringes ___poly bottles ___cylinders ___pcb vials Date Requested: ___/___/___ |
|--------|--|--|---|

Syringe Sampling

Some considerations before sampling:

- ♦ Syringe should be filled to 80% full.
- ♦ The handle of the plastic stopcock always points to the closed port.
- ♦ **DO NOT PULL BACK ON THE BARREL.** This will result in bubble formation. Allow the fluid pressure to push back the barrel and fill the syringe. Apply a slight resistance to the barrel with your thumb.
- ♦ Filled syringe should contain no air bubbles. However, samples will begin releasing gases soon after sampling. Do not release any evolved gases since these gases must be included in the DGA Analysis.

Adjust flow from sampling port for a gentle flow of fluid through the tubing and stopcock.

1 Bleed fluid through stopcock
Handle at Position 1.

2 Fill syringe
Handle at Position 2.

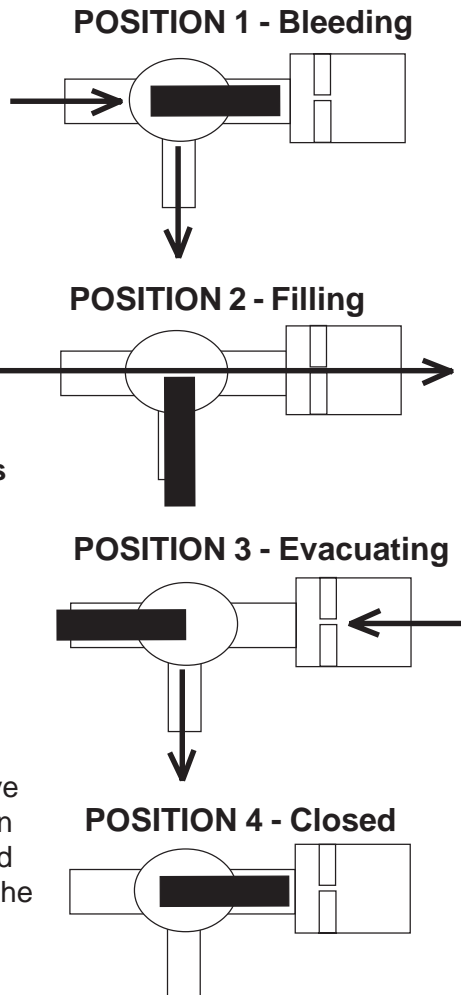
3 Evacuate fluid from syringe
Handle at Position 3.

4 Repeat steps 2 & 3 three times

5 Fill syringe to 80% full
Handle at Position 2.
Ensure no bubbles at this time.

6 Close syringe
Handle at Position 4.

You should now have a representative sample from the insulating fluid within the unit. Record the temperature and any other pertinent information onto the sample data sheet.



Metal Cylinder Sampling

Notes:

- ♦ Hold the cylinder in a vertical position at all times. This will ensure all air bubbles rise to the top and exit the container.
- ♦ Be sure to drain an adequate amount of fluid through the transformer drain valve to flush out stagnant fluid, water, and debris.

1 Drain the Sampling Valve

Flush enough fluid through the drain valve to remove any stagnant fluid, moisture, and debris. Attach a plug fitting with a tubing connector to the drain valve.

2 Attach the tubing to the cylinder

Connect tubing to the cylinder as illustrated.

3 Open valves in ordered sequence

First open the transformer valve (A), then the container's lower valve (B) and finally its upper valve (C). Allow about 1 quart to flow through. Rap the sides and shake the cylinder to dislodge any air bubbles.

4 Shut valves in reverse order

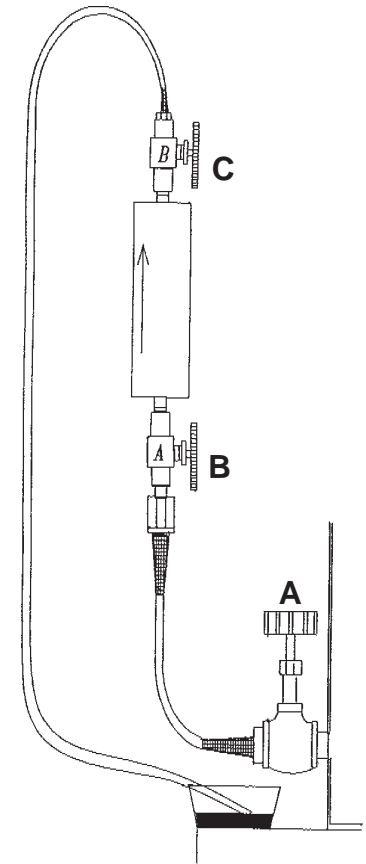
Close the valves C, B, then, A in that order.

5 Re-assemble drain valve and plug

Remove the plug with the tubing connector from the drain valve and replace the original plug.

6 Fill out sample data sheet

You should now have a representative sample from the insulating fluid within the unit ready to be shipped to the lab.



**Still have more questions?
Give us a call at the lab.**

We can also supply you with tubing and hose fittings if necessary. Your local hardware store carries these items also.