Transformer Fluid Analysis

Predictive Analysis for Electrical Transformers

WEARCHECK TRANSFORMER FLUID ANALYSIS PROVIDES A COMPREHENSIVE VIEW OF THE STATE OF YOUR ELECTRICAL TRANSFORMERS PROVIDING PEACE-OF-MIND FOR YOUR OPERATION.

OVERVIEW

- Reduced operating and maintenance costs.
- Fault prevention and increase in reliability.
- Extension of the transformer's useful life.
- Reduce Transformer downtime.
- Identify excessive overheating and overloading and arcing within the transformer
- Detect loose connections and badly butted joints
- Alerts you to possible paper insulation embrittlement
- Diagnose Tap-Changer problems e.g. burning contacts

BENEFITS

Your primary concern as a business is to be profitable. All too often, these days, this requires an increase in profit through a reduction in costs. A well run condition monitoring program will achieve a substantial reduction in costs. WearCheck's transformer fluid analysis packages offer you condition monitoring for your insulated electrical equipment. WearCheck offers three levels of analysis, from basic to advanced test kits, to meet your analysis requirements.

Transformers and oil filled insulating systems are usually large investments and provide the most important aspect to the majority of all industries. Power. Transformers account for the biggest investment in an electrical installation, and the indirect costs of an unscheduled shutdown are significant. To avoid unnecessary costs utilize transformer fluid analysis to ensure that transformers are operating reliably. Industry experience indicates that about 20% of transformers have latent defects that could result in an unscheduled shutdown.

Transformers can be affected by a wide range of internal and external conditions which, over time, may lead to rapid fluid ageing which can affect the internal insulation and windings and as a result lead to a reduction in the equipment reliability. Costly downtime can be averted by implementing a cost effective transformer fluid analysis program. Fluid analysis provides a diagnostic state of the transformer and insulation system through a series of tests of the dielectric oil. Once the appropriate testing has been carried out, a report of the results, including an analysis of the fluid and system condition is provided.

A WearCheck Technical Representative will recommend the proper test kits for your equipment. WearCheck provides you with clear and concise directions, forms and sample bottles and syringes required to submit samples to the WearCheck laboratory. After you have taken the appropriate samples of fluid from the transformer, simply fill out an information sheet and submit the form along with your sample to the laboratory.

WearCheck's transformer fluid analysis is effectively used today for a broad range of transformer fluids, dielectric oils and insulating fluids.

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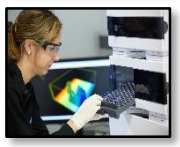
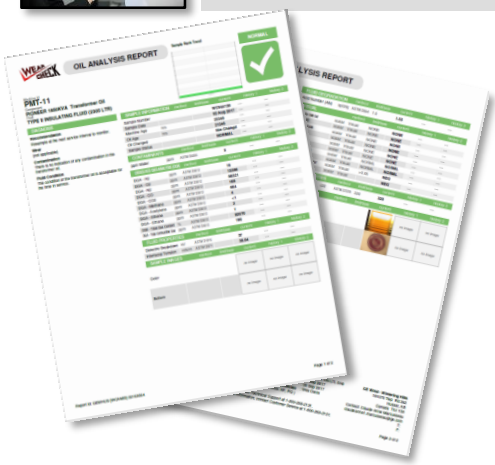
TESTING METHODS

		TRF1	TRF2	TRF3
	**Dielectric BDV** ASTM D1816 — The dielectric breakdown is the voltage at which the insulator no longer prevents an electrical discharge across two electrical contacts submerged into the fluid.	●	●	●
	**Interfacial Tension** ASTM D971 — A measure of the fluids surface tension as compared to water. Decreases in interfacial tension are an indication of fluid degradation.	●	●	●
	**Specific Gravity** ASTM D1298 — Different insulating fluids have varying specific gravities. A sudden change in the specific gravity is an indication of contamination by a different insulating fluid.	●	●	●
	**Acid Number** ASTM D664 — Determines overall acidity of the oil which is an indication of degradation. Single best test to determine change-out interval.	●	●	●
	**Moisture Content** ASTM D1533 — This is a measure of the water in the sample. The allowable content of water in electrical oil is much less than a lubricated system owing to the significance of water in hindering the ability of the insulating oil to be an electrical insulator.	●	●	●
	**Color** ASTM D1500 — Comparison of the fluid color on the ASTM color scale. Unusual color change or darkening can be an indication of fluid contamination or ageing.	●	●	●
	**Dissolved Gases** ASTM D3612 — Dissolved Gas Analysis is a must have tool to ensure your equipment remains in peak condition. By looking at concentrations of specific combustible gases then applying various diagnostic tools to identify fault conditions within the system.		●	●
	**Furans** HPLC — Furan analysis monitors derivatives in the fluid that identify possible deterioration or ageing of the solid insulation.			●



WearCheck Transformer Fluid Analysis includes everything to set-up a complete fluid analysis program. When you purchase a WearCheck Transformer Fluid analysis program you will receive the necessary sample kits. All WearCheck fluid analysis programs include laboratory testing, sample diagnosis and recommendations, sample report, and access to our patented WebCheck™ system to manage your fluid analysis program.

WearCheck offers additional programs for lubricated industrial machinery, mobile equipment, aviation, mining, fuels, coolants and Advanced Oil Monitoring.

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