



ACCREDITATIONS APLENTY!

WearCheck is now accredited to perform DGA, or dissolved gas analysis, in transformer oil, following a recent audit by SANAS (South African National Accreditation System).

Our Johannesburg transformer oil laboratory now has SANAS 17025 accreditation for testing DGA, moisture, acidity, dielectric, IFT (interfacial tension) and PCBs (polychlorinated biphenyls).

Gert Nel, transformer division manager at WearCheck, outlines the importance of DGA in transformer maintenance. 'Dissolved Gas Analysis is used mostly for fault detection in transformers, and it is critically important that the analysis is accurate. By analysing the gases dissolved in the transformer's oil, we gain important clues about the health and internal operation of the transformer.

'WearCheck is pioneering the way in transformer maintenance in Southern Africa, and this SANAS accreditation is a strong selling point for our laboratories.'

Transformers help to transfer electricity over long distances, often playing key roles in the infrastructure of a region and ensuring power supply to cities, industrial plants and other critical users. Therefore, early detection of faults and potential failures is critical. DGA saves transformer operators money on avoidable repairs, time, and helps avoid greater problems such as interrupted power supply. It also helps prolong the life of the transformer.

Gert explains the process, 'Small amounts of gases are formed in the oil when a transformer is in operation. Using DGA, hidden problems inside the transformer are revealed by detecting the gases in the oil.

'Some of the common transformer problems and the associated gases include oil overheating (ethane and ethylene), insulation paper overheating (carbon monoxide, carbon dioxide, and acetic acid gases), air ingress (oxygen and nitrogen), and partial discharge (hydrogen gas and carbon monoxide gases), sparking and arcing type of faults (methane and acetylene).

'The early detection of potential transformer faults enables remedial action to be implemented, and major failures averted.

Case study

Gert discusses a WearCheck client that only requested for M/A/D (moisture /acidity/dielectric) results over the years, and when the very first DGA was done, it showed a critical error.

'The DGA indicated an actual internal electrical problem, however the client wasnt convinced and even did two oil changes in 24 months, hoping this would solve the problem. Changing the oil did not fix the problem, however. All this did was to remove evidence of the problem. The actual electrical fault was still present in the transformer, and a new trend was then required after the oil was changed.



'In this case, the DGA was indicative of an actual fault, and the oil changes did not fix the fault. This is very important, as a lot of clients only test for M/D (moisture/dielectric), and not the full DGA analysis. 'Eventually, the client made the decision to include all tests in their ongoing maintenance plan, and took the recommended remedial action to fix the electrical fault.

ACCREDITATIONS



Transformer oil testing laboratory scores PCB SANAS accreditation

WearCheck's transformer oil testing laboratory was recently assessed by a SANAS technical assessor, who confirmed that the lab successfully met the requirements to be granted accreditation to ISO/IEC 17025 for testing for polychlorinated biphenyls (PCBs) in transformer insulating oils.

Pierre le Roux, WearCheck's transformer oil laboratories manager, gives more details: 'PCBs are a group of chemicals that contain 209 individual compounds, with varying harmful effects. PCBs, as found in transformer insulating oils, are a mixture of Aroclors that were produced between 1930 and 1979. Aroclor is one of the most commonly known trade names for PCB mixtures. We are accredited to test for three Aroclors, namely 1242, 1254 and 1260.

Pierre is pleased that the accreditation meets the stipulations of various transformer-oil-testing clients. 'WearCheck's latest accreditation supports the Anglo American Platinum requirement that service providers used to analyse PCB content in their transformer oil must be accredited specifically for the PCB analysis.

Top transformer team! Pictured here are members of WearCheck's transformer team who were instrumental in securing the ISO/IEC 17025 accreditation. They are (from left to right) Msutu Nyokana, Philemon Selemela, Pierre le Roux, Tumelo Seobi and Kefilwe Ntshabele

WearCheck India awarded ISO accreditation

WearCheck's laboratory in Durgapur, India, was recently awarded ISO 17025 accreditation by the National Accreditation Board for Testing and Calibration (NABL India) – a national accreditation body that evaluates and recognises laboratories, calibration and measurement providers, and reference material producers.

WearCheck's latest accreditation, which is valid from 2025 to 2029, covers testing under the General Requirements for the Competence of Testing and Calibration Laboratories category.

Sundip More, who is WearCheck's regional managing director for India, Middle East and Asia, is proud of his team for passing the stringent audit with ease. Congratulations to WearCheck India!



Pickstone Gold Mine implements condition monitoring

Pickstone Gold Mine in Zimbabwe recently implemented WearCheck's oil analysis programme for their mobile plant, fixed plant and electrical power transformers. The WearCheck Zimbabwe team travelled to the mine to set up the programme, train the team and ensure it is "all systems go".

Shesby Chabaya, head of operations for WearCheck Zimbabwe, worked with the mine's engineering team to set up systems necessary for efficient running of the oil analysis programme, including:

- Quality oil sampling & procedures.
- Systematic oil sampling following set intervals.
- Logistics for quick delivery of oil samples for testing at the laboratory.
- Methods of receiving reports from the laboratory.
- Maintenance planning, corrective action & feedback.
- Monitoring usage of sampling kits & minimum stock to trigger a re-order.

A follow-up session will be held with the team after a month to address any teething issues and make the necessary adjustments to ensure a smooth flow of all activities to guarantee success.



TECHNICAL TIP: SAMPLING TINS AND SAMPLING IN THE TRANSFORMER OIL FIELD

BY GERT NEL, TRANSFORMER DIVISIONAL MANAGER

Gert Nel, WearCheck's transformer divisional manager, is committed to providing transformer oil analysis results that are reliable and accurate. One of the ways to ensure the integrity of results, he says, is to take and transport the oil samples correctly. He offers the following advice:

The process for any laboratory involved in transformer oil analysis begins with sampling oil from oil-filled electrical equipment. The sampling process, including the type of container used, depends on the type of equipment and the specific analysis required. In this article, we focus on sampling in the transformer sector of the electrical field.

The importance of proper sampling

Laboratories follow strict standards and procedures before testing any sample, to ensure compliance with certifications and requirements in this field. It is crucial to understand that a laboratory can only provide accurate results based on the sample it receives. However, the accuracy of these results is contingent on the sample being taken correctly, at the specified location, and stored in the appropriate sampling container. Mistakes in sampling can compromise the results and lead to costly consequences.

Recommended sampling containers

In South Africa, the standard container for transformer oil sampling is a one-litre tin. However, exceptions exist based on specific circumstances:



1. Glass bottles: some customers require the use of clear glass bottles due to security demands. While glass bottles are suitable for sampling, they pose significant risks. They are prone to breakage during transport and handling, creating safety hazards both in the field and in the laboratory.

2. Plastic containers: the use of plastic containers is generally discouraged, as they can interfere with most laboratory tests, except for Polychlorinated Biphenyls (PCB) analysis. For PCB testing, WearCheck provides a 100 ml plastic bottle specifically designed for single use. These bottles are responsibly discarded after use to ensure environmental compliance.

3. Gas-tight syringes: for Dissolved Gas Analysis (DGA), gas-tight syringes are recommended. These syringes provide exceptional repeatability and are particularly useful for transformers with high DGA values, such as those in wind and solar farms. However, they have limitations: they only hold 50 ml of oil, which is insufficient for comprehensive testing, and are significantly more expensive than tins. Additionally, they are fragile and prone to breaking during sampling, transport, or laboratory handling.



The case for new tins

WearCheck strongly recommends using new tins for each sample. Although this increases sampling costs, it mitigates potential problems associated with second-hand tins. For example, a recent investigation revealed an increase in PCB values reported for a client. The source of the discrepancy was traced to a second-hand tin used for sampling. The history of second-hand tins is difficult to determine, as old labels are often removed and replaced. Contaminants from previous use can lead to incorrect moisture and dielectric results, causing clients to incur significant expenses in unnecessary oil purification or replacement.

Sampling best practices

The sampling process itself is critical to ensuring accurate results. A client in the Northern Cape reported finding water in the flanges from which samples were taken. This highlights the importance of cleaning the sampling container with oil from the transformer to obtain a representative sample. The presence of water, dirt, or other contaminants in the sampling system can lead to incorrect results.

Additionally, the re-use of sampling tubes poses risks. Residual water or contaminants such as PCBs can compromise the sample. Clients must ensure that reputable companies with trained technicians handle the sampling process. Proper training and adherence to best practices are essential to avoid small mistakes that can result in incorrect diagnoses and unnecessary expenses.

Conclusion

Proper sampling is the foundation of accurate transformer oil analysis. Using the correct containers, ensuring cleanliness, and relying on trained professionals are all essential steps in obtaining reliable results. Cutting corners in sampling procedures can lead to incorrect diagnoses and costly consequences. By following these guidelines and investing in proper sampling practices, clients can ensure the integrity of their transformer oil analysis and make informed maintenance decisions.

WORLD OF WATER: THE FIRST IN ADBLUE®/ DEF ANALYSIS ACCREDITATION

WearCheck Water - one of our divisions - recently became the first laboratory in Africa to be officially ISO17025 accredited to test AdBlue[®]/ DEF (diesel exhaust fluid) by the South African National Accreditation System (SANAS).

This latest achievement is added to WearCheck Water's other accreditations – the company already has ISO17025:2017 accreditation for chemical and microbiological water analysis.

WearCheck Water's AdBlue[®]/ DEF-analysis accreditation means that we can test AdBlue[®]/ DEF solutions to make sure that Adblue manufacturers meet the required ISO 22241 standards. This analysis service will assist AdBlue[®]/ DEF manufacturers and users, OEMs, fuel depots, and large-scale truckers/ fleet managers.

SANAS is the only national body in South Africa that is responsible for carrying out accreditation of various entities, including laboratory testing, the relevant section which regulates WearCheck's laboratory services.

General manager of WearCheck Water, Thelma Horsfield, is proud of the company's ISO17025 achievements. 'AdBlue[®], a form of Diesel Exhaust Fluid (DEF), helps to reduce harmful emissions (NOx, or nitrogen oxide), and is added to diesel engines. It is not a fuel additive and is not added to the fuel tank of a vehicle. AdBlue[®] is a colourless, non-toxic liquid that converts pollutants into gases which do not harm the environment.

'AdBlue[®] is used in vehicles with Selective Catalytic Reduction (SCR) technology. It is a 32,5% solution of high-purity, synthetically manufactured urea in de-mineralised water, and is safe to use.



Moses Lelaka (technical manager - water) (right) and Lerato Hotane (quality manager) proudly display the company's ISO17025 Adblue®/DEF-analysis-accreditation certificate from SANAS. WearCheck Water is currently the only company Africa to achieve this accreditation

'Vehicles with SCR technology have a separate tank filled with AdBlue[®]/DEF, which is injected into the exhaust pipe, in front of the SCR catalyst, downstream of the engine. Heated in the exhaust, it decomposes into ammonia and CO₂. When the NOx from the engine exhaust reacts inside the catalyst with the ammonia, the harmful NOx molecules in the exhaust are converted to harmless nitrogen and water, which are released from the exhaust pipe as steam.

'Adblue®/DEF solutions are made up to ISO 22241 standards to ensure that the mixtures are created correctly and do not harm engines,' she said.

Moses Lelaka, technical manager for WearCheck Water, was instrumental in setting up and implementing the testing process, along with our quality manager, Lorato Hotane.

Moses explains, 'We offer an analysis service that includes testing titrimetric (alkalinity), gravimetric (insoluble matter), colorimetric (biuret and aldehydes), as well as the ionisation (metals). After investing in a refractometer for our laboratory, we are already conducting the tests in our Johannesburg laboratory, and will be extending the service to our Cape Town laboratory soon.'

He offers these tips for taking an Adblue[®] sample. 'Sample containers should be made of materials compatible with urea solutions, typically high-density polyethylene (HDPE) or stainless steel, and must be sealed properly to avoid contamination.

'The sampling container must not have any previous chemical residues, and it should be rinsed with distilled or deionised water before use. The sample must be representative of the entire batch, and avoid areas with potential sediment or contamination. Open the valve, allowing the initial few litres to flow out, discarding it to remove any residual contamination from the sampling point. Fill the container, seal and label it, and store it in a cool, dry place until it is tested.

'The sample will be tested for compliance with ISO 22241 standards, checking for properties like urea concentration, alkalinity, biuret content, and other contaminants.

WEARCHECK WATER WINS ACCREDITATION FOR MICROBIOLOGICAL TESTING

WearCheck Water's Johannesburg laboratory was recently awarded ISO/IEC17025 Accreditation for Total Coliforms and E.coli Testing, after a rigorous audit process, adding to our extensive list of certifications, and reinforcing the laboratory's adherence to national and international work-quality standards.

WearCheck Water is a division of WearCheck, which is the only oil analysis company in Africa with ISO 9001 quality certification and ISO 14001 certification for our environmental management programme, and ISO 17025 accreditation for our laboratory-centric quality management programme.

General manager of WearCheck Water, Thelma Horsfield, is proud of her team's achievements. 'It is no easy task to set up the method and gain accreditation - we work for many months to fine-tune methods that we can present confidently to SANAS for approval. Our ISO/IEC 17025 accreditation is for the membrane filtration method used in detecting total coliforms and Escherichia coli (E. coli) in water samples. This accreditation underscores the lab's commitment to delivering precise and reliable water-quality testing services.

'Total coliforms are a group of naturally occurring bacteria found in soil, vegetation, and surface water. Although most coliforms are harmless, their presence in drinking water can indicate possible contamination by pathogens. E. coli, a specific type of coliform, is commonly found in the intestines of warm-blooded animals. Certain strains of E. coli can cause serious illness, making its detection crucial for public health.

'The membrane filtration method that we use is a gold-standard technique in microbiological water analysis. It involves passing a water sample through a membrane filter that traps bacteria. The filter is then incubated on selective media, allowing the identification and enumeration of total coliforms and E. coli colonies.

'By securing ISO/IEC 17025 accreditation for this method, WearCheck Water's Johannesburg laboratory demonstrates our technical expertise and commitment to safeguarding public health through accurate and dependable water-quality testing,' says Thelma.

Khensani Mbuli is the WearCheck Water laboratory assistant who played a key role in securing the accreditation. Through this, she was appointed as an ISO/IEC 17025 Technical Signatory – a significant professional milestone in the field of laboratory testing and calibration.

Thelma elaborates, 'This accreditation not only reflects a high level of technical competence, but also entrusts the individual with substantial responsibility.



WearCheck Water laboratory assistant, Khensani Mbuli holds the company's latest accreditation certificate for microbiological testing. Mbuli is WearCheck Water's newest Technical Signatory - a significant professional milestone in the field of laboratory testing and calibration

A Technical Signatory (TS) holds the authority to validate and approve test results, ensuring they meet international standards of accuracy and reliability.

'The journey to becoming a TS is rigorous and demands extensive knowledge, experience, and dedication. The process involves comprehensive training in quality management systems, proficiency in specific testing methods, and a thorough understanding of ISO/ IEC 17025 requirements. Candidates must demonstrate their technical competency through assessments, internal audits, and continuous professional development.

'This role carries immense responsibility, as the TS is accountable for the integrity and validity of laboratory results. Their decisions directly impact public health, environmental safety, and regulatory compliance. Upholding these standards requires unwavering commitment, attention to detail, and adherence to best practices.' Khensani is now the seventh member of WearCheck Water's team of accredited senior Technical Signatories, joining Moses Lelaka, Thelma Horsfield, Lerato Letsoalo, Lorato Hotane (nominated representative), Katlego Mokoroane and Michelle Wium.

WearCheck Water provides professional water analysis services to multiple industries across Southern Africa, including mining, agriculture, fleet management, manufacturing and more.

Well done to the WearCheck Water team!



LONG SERVICE VALUED

At WearCheck, we truly value staff loyalty. So says Michelle Padayachee, WearCheck's HR manager, as she commended long-serving team members who achieved important milestones recently.

'It is heartwarming, and highly beneficial to the company and our clients, to note the large number of staff members who have served WearCheck for so long. This year, we celebrate Richard van Vuuren, who has been part of the WearCheck family for 45 impressive years, Karen Govindsamy who celebrates 25 years with us, and many others.



Richard van Vuuren machine inspector



Karen Govindsamy software support supervisor



Elinah Sibeko cleaner



Bheki Mbambo PAD co-ordinator



Eddie Pieterse Jnr operations manager



Mohamed Hussain BD manager, India



To meet the needs of an ever-growing customer base around Africa, the WearCheck family continues to expand and welcome new team members. We are excited to introduce these ladies as part of our most recent talent acquisition, and to congratulate promotions.

Welcome, Charmain!

Charmain Palav has joined the LubriGard team as office administrator. Charmain has 27 years' experience in the corporate world.



Welcome, Bronwynne!

Bronwynne Davids has joined WearCheck's team in Cape Town, as the transformer laboratory administrator and customer services assistant.



Welcome, Saskia!

Saskia Coetzee, previously the customer support assistant at WearCheck in Cape Town, has moved into the WearCheck Water division, in the role of sales and administration.



Vincent embarks on PhD studies

We are very proud of Vincent Sithole, WearCheck's junior laboratory manager, who has been accepted to study for his PhD at UNISA. His chosen field of research is water sustainability

He is studying through the Institute for Nanotechnology and Water Sustainability (iNanoWS) and aims to write his thesis on the development of early warning systems for real-time pathogen surveillance through monitoring of sewer systems and wastewater treatment works.

To make things tougher, Vincent is holding down his usual full-time job at WearCheck while studying after hours and on weekends. Part-time studying means the PhD could take up to four years to complete. We wish you well in your academic pursuits, Vincent!



New EZ-SAM pump simplifies sampling

Taking an oil sample has never been easier, using WearCheck's new hand-held, batterypowered, sample-extraction pump - the EZ-SAM. The motorised pump, weighing in at just 700g, is imported by Petrolube Energy.

Keith Finlayson, of Petrolube Energy, and who worked for WearCheck for 24 years, says the pump is a game changer. 'Older, traditional hand-held pumps are slow and cumbersome, require two hands to operate, and need constant cleaning, making it challenging to take uncontaminated oil samples efficiently.

The new EZ-SAM pump is fast, can be placed on a flat surface and draws samples at the flick of a switch. It also offers far greater safety for the operator as both hands can be free while the pump does its work.

The pump draws oil into the sample bottle by vacuum, using the integrated rechargeable, battery-driven motor. The battery life is +- three hours, dependant on the quantity of samples taken. High-viscosity oil samples of 320 and 460 grade are extracted easily using the high-performance pump.

The new unit is suitable for sampling all equipment types, including mining machines, trucks, buses, cars, aeroplanes, agricultural units, ships, factory machinery and any other industrial components which are lubricated by oil.

The EZ-SAM pump retails for R3,900, and the unit includes a rechargeable battery, a battery charger (100V~220V) and a shoulder strap.

We have also introduced a customised "high visibility" sampling backpack, which is chemical resistant, and holds all the sampling equipment and items required for professional oil sampling. The backpack enhances safety, as technicians do not need to carry a cumbersome toolbox - rather, they have a hands-free and safe means of moving around plants and workshops.

Additionally, the backpack has a removable inner shoulder bag, which holds just the pump and bottles, and is ideal for use when only a limited number of samples is required to be taken.

The backpack is available in a variety of colours (red, blue, yellow and green) and costs R995.00 excluding VAT.

Customers throughout the world can order the products, which will be delivered via courier either directly or to your local WearCheck branch. To order an EZ-SAM pump and backpack, please contact the WearCheck sales team or Keith Finlayson on keith@plenergy. co.za or +27 82 882 7927.





The new, high-performance, motorised vacuum pump has revolutionised the process of taking uncontaminated oil samples for testing in WearCheck's laboratories

Manual

OUT AND ABOUT

WearCheck team members dedicate a lot of their time to travelling both nationally and internationally – to visit customers, to participate in trade expos, to conduct training courses on-site for customers, and to present courses and participate in industry-related panel discussions. Here are some of their recent journeys:

WearCheck invited to present paper in London



WearCheck technical manager, Steven Lumley was honoured to be invited to present a paper at the ICIS (Independent Commodity Intelligence Services) conference in London in February. She was part of a panel discussion on the role of industrial lubricants in wind turbine technology, and gave a presentation entitled 'It's more than just oil - bridging market perceptions and lubricant reality'. She originally presented this paper at the ICIS African base oil conference in Cape Town last November. Impressed with it, the organisers invited her to present in the UK.

WearCheck presents at Mobius event

'Keeping the blades turning: gearbox reliability with oil analysis' – this is the topic of a paper by WearCheck technical manager, Steven Lumley, which she was invited to present at a Mobius WOW (Week of Webinars) event.

The Mobius Institute is a worldwide provider of reliability improvement, condition monitoring and precision maintenance education to industrial plant managers, reliability engineers and condition monitoring technicians.

Says Steven, 'In the world of renewable energy, maintaining wind turbine reliability is critical to maximising uptime and profitability. The gearbox, often considered the heart of the turbine, faces some of the most demanding operating conditions, making it prone to wear and failure. Delegates were invited to an insightful webinar where we examined the critical role of oil analysis in ensuring the health and longevity of wind turbine gearboxes.

Steven's presentation included these key takeaways:

Understanding Gearbox Vulnerabilities

We explored the most common failure modes in wind turbine gearboxes, including micro-pitting, axial cracking, and scuffing, and how these issues impact turbine reliability.

Leveraging Oil Analysis for Predictive Maintenance

Delegates learned how oil analysis can detect abnormal wear, contamination, and oil degradation, enabling proactive measures to extend gearbox life and minimise downtime.

Mining Indaba 2025

The WearCheck stand at the African Mining Indaba was popular with delegates.



from left, Werner Buys (WearCheck Kathu), Pierre le Roux (transformer laboratories manager), Peet Peacock (service manager), Vanessa Evans (marketing manager) and Wayne Moodley (Diagnostician)



Optimising Maintenance through Data-driven Insights

We discussed how advanced oil-testing techniques like spectrometric analysis, ferrography, and RULER testing help predict failures and optimise maintenance schedules.

Quantifying the Cost Benefits of Oil Analysis

We explained the financial impact of effective oil analysis on reducing operational costs, extending gearbox service life, and improving wind turbine profitability.

WEARCHECK CARES

Springbok ladies' angling team wins silver

WearCheck lab assistant, Hajra Ahmod, represented South Africa again on the ladies' Rock & Surf Angling team in Namibia in December.

Says Hajra, 'After a mentally and physically tough competition, the Springbok team placed second behind the Namibians. The difference between winning and second place was a single fish! In addition to the silver medals, the South African ladies also won the prize for the greatest number of fish caught.

'Thank you to WearCheck for sponsoring me, as part of the We Care programme. It helps promote fishing, particularly on the female side of the sport, which receives no government funding. My WearCheck jacket and branded WearCheck fishing tackle definitely brought me luck!

'It was encouraging to receive recognition from the local people when I wore my branded WearCheck clothing in Swakopmund, Walvis and Henties – many people came up to chat with me because of the WearCheck branding.'



WearCheck keeps the ball rolling



35 aspiring young soccer stars in Vosloorus have a shot at achieving their football goals thanks to WearCheck's We Care programme, following the company's sponsorship of soccer jerseys for the junior divisions.

Coach DannyBoy Nkomo, who trains 35 boys in the U11 and U13 divisions as well as players aged 17 – 25 years in the Vosloorus Football League, reports that the WearCheck soccer jerseys boosted team morale and motivated them to play harder.

'Due to financial constraints, the players had no access to the basics needed for a football team – bibs, balls, referees, jerseys, and team registration. Our teams, named El Clasico F.C, play under SAFA in the Super League Division. I have been using my own salary to cover these costs, which is tough. We are so grateful to WearCheck for answering our call for corporate donations. The team jerseys have gone a long way to nurturing and empowering marginalised children through sport.

WEARCHECK WORD WHIZZ!

BY RIVENDREN MOODLEY, DIAGNOSTICIAN

Puzzle Power #1

Welcome to our first crossword puzzle! There is little more stimulating than a good crossword. Especially one that has you scratching your head and searching for the answers. You can find the solutions on the WearCheck website under the <u>INFO tab</u>, to see how many you got correct!





Across

- 3. A chemical element commonly used in engine oils for cleaning and dispersing contaminants.
- 7. A flexible tube used to carry liquids or gases in various systems.
- 9. A famous figure in the oil industry, known for making the first oil strike.
- 11. A common substance that is filtered in engines to ensure optimal performance.
- 12. A method used to extract oil and gas by injecting highpressure fluid into rock.
- 14. The rotational force that causes an object to rotate around an axis.
- 15. The amount of loose play or excess movement in mechanical systems.

Down

- 1. The forward force produced by engines or turbines to propel an object.
- 2. The gradual loss of material due to friction or use over time.
- 4. A substance added to oil to enhance its properties and performance.
- The presence of this element in engine oils indicates an internal coolant leak.
- 6. The statistical average of a set of values or measurements to determine rate of wear.
- 8. A family whose company monopolised the oil industry during its early stages.
- 10. A component that converts linear motion into rotational motion in an engine.

- 17. A gear system that allows wheels to rotate at different speeds.
- 19. A component used to prevent the leakage of fluids in machines or engines.
- 20. A substance used to reduce friction and wear between moving parts in engines.
- 23. A central shaft for a rotating wheel or gear, crucial for vehicle movement.
- 24. A storage container that holds fluids like coolant.
- 27. A device that detects changes in physical conditions, often used for monitoring.
- 28. Interlocking mechanical parts that transmit torque and motion in machinery.
- 13. A crude oil derivative collected from the top trays of the fractionating column.
- 16. The part of an engine where fuel is burned to produce power.
- 18. A device that removes contaminants from fluids to ensure clean operation.
- 19. Rotating components that transmit mechanical power within a system.
- 21. Refers to the measurement of fluid flow or viscosity.
- 22. The mixture of fuel and air that enters an engine cylinder for combustion.
- 25. A testing method used to assess varnish formation.
- 26. A measure of an oil's alkalinity, indicating its ability to neutralise acids.

UPSKILL YOUR WORKFORCE

The value of training

"If you are not willing to learn, no one can help you. If you are determined to learn, no one can stop you." — Zig Ziglar, author and motivational speaker.

WearCheck's customer training courses include oil analysis courses and condition monitoring training for maintenance practitioners operating at various levels within an organisation.

WearCheck has been an accredited training partner for the internationally acclaimed Mobius Institute since 2015, and all the Mobius courses can be run online.



For full training list scan the QR code.

Customer training courses run by WearCheck, and the duration: Course Days

Course	Days
Precision Shaft Alignment	2, incl. practical
Precision Balancing	2
Vibration Analysis ISO CAT I	5, incl. exam
Vibration Analysis ISO CAT II	5, incl. exam
Vibration Analysis ISO CAT III	6, incl. exam
Infrared CAT I	5, incl. exam
Oil Analysis 1	2
Oil Analysis 2	1
WearCheck Customised	2
Asset Reliability Practitioner (3 courses)	6 months
InfraFocus	2

Oil Analysis courses 2025

3 DAY ADVANCED	Oil Analysis 1: Understanding oil and its analysis (2 CPD points)	Oil Analysis 2: Report interpretation (1 CPD point)		
Location	Two day workshop	One day workshop		
Cape Town	June 10-11	June 12		
Durban	August 12-13	August 14		
Johannesburg	September 09-10	September 11		

All the public courses listed in the WearCheck training schedule can be presented at the customer's site of preference in South Africa or abroad. Courses are also offered online.

We have the pleasure of offering customised training content to suit your requirements, your dates and your locaton. Customised training on offer includes sampling of lubricating and transformer oils, lubricant storage and handling, introducton to oils and concise oil analysis for workshop technicians.

For more details on course content and prices, click here: <u>https://www.wearcheck.co.za/training.html</u>.

To book the above courses, please contact Michelle van Dyk on <u>training@wearcheck.co.za</u> or call +27 31 700 5460 or +27 82 381 3321

2 DAY WORKSHOP	Oil Analysis 1: Understanding oil and its analysis	Oil Analysis 2: Report interpretation
Location	One day workshop	One day workshop
Bloemfontein	July 22	July 23
Johannesburg	May 13	May 14
Kathu	July 08	July 09
Nelspruit	November 11	November 12
Richards Bay	October 21	October 22
Rustenburg	October 07	October 08

NEW NEW NEW Transformer Oil Analysis courses 2025

WearCheck now offers a transformer oil analysis course.

COURSE	Date 2
Location	One day workshop
Bloemfontein	May 27

MOBIUS TRAINING

Course	CPD points	Date 1	Date 2
Vibration Analysis – CAT I *	4	May 26-30	Sep 15-19
Vibration Analysis – CAT II *	5	Jun 23-27	Oct 27-31
Vibration Analysis – CAT III *	5	Jul 21-25	Nov 24-28
Infrared CAT I		May 02-06	Dec 01-05
Precision Balancing		Aug 25-26	Dec 08-09
Precision Alignment		Aug 27-28	Dec 10-11

LUBE TIP: water absoption in fluids

The amount of water that a given fluid will absorb depends upon its base stock, viscosity, additive package, and temperature. The amount of water that can dissolve in a fluid is termed its saturation level. The saturation level for a hydraulic fluid is 200-300 ppm while for a lubricating oil it is around 500-600 ppm. Oil is cloudy when it is above its saturation level. The saturation level for a synthetic fluid is generally much higher than for a mineral base fluid.

HIGHLIGHT YOUR SUCCESS

If oil analysis has helped prevent a major failure or saved your company money, we would like to feature this in Monitor. Our writer will contact you for the details and will write the article for your approval. Simply email marketing@wearcheck.co.za and we will contact you.

MOBIUS INSTITUTE OARD of CERTIFICATION

All the Mobius courses can be attended online or in person at various venues throughout Africa.

For more information or to book a Mobius training course, please contact Louis Peacock on +27 82 494 9461 or louis@wearcheckrs.com.

* 6 day course, with the exam written on the following Monday.

UPCOMING EXPOS 2025

- ENLIT Africa: May 20-22, Cape Town ICC .
- Mining Expo 25: 5 7 August, Windhoek . Show Grounds, Namibia
- NAMPO Cape: 10 13 September, Bredasdorp Park.

TECHNICAL BULLETIN TOPICS?

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