Spring 2024

OELCHECKER

HOT TOPIC

Oil changes and trend analyses – Key data for CO_2 emissions

PARTNER FORUM

Miba – Oil change intervals and CO_2 reductions are doubled

OILDOC ACADEMY

OilDoc Conference 2025 – Call for Papers has gone live!

AND MUCH MORE...

CHECK-UP

When OELCHECK was founded in 1991, our vision was: "We want to use analyses to contribute to a more sustainable use of lubricants and operating materials and in turn, ease the burden on the environment." Our vision became our mission and OELCHECK has grown into a successful company.

We have a clear strategy and long-term goal, and that is for OELCHECK to continue to be the undisputed market leader for lubricant and operating fluid analyses across Europe. Yet in order to achieve this goal, we also need a range of targets in the short and medium term. We review whether – and to what extent – our targets have been met every year and make any adjustments when drawing up new objectives for the following year.

Management are supported in this process by OELCHECK's division and department managers. Each department consults with their department and division managers and reports their targets to senior management. The range of proposals is discussed and targets for the upcoming year are set. We also designate the persons in charge and select a key figure for each target. At OELCHECK, all our processes are transparent, unlike in many companies where the targets are set purely by management. Our goals are clearly defined and communicated to staff. Our teams have clear guidelines and can tailor their actions as needed.

To ensure we stay on course in the long term, we take a structured approach by dividing our short- and medium-term goals into five areas. Our goals are ordered by priority as follows:

- Our customers
- Analytical and laboratory equipment
- OELCHECK employees
- All environmental and safety concerns
- And last but not least, our company's financial position

Our customers' needs, in particular, impact almost all areas of the company and our goals, and are always taken into account when making adjustments or setting new objectives. Recent examples are including analyses for coolant and AdBlue operating fluids in our portfolio and optimising our digital services.

When OELCHECK was founded, our vision was: "We want to use analyses to contribute to a more sustainable use of lubricants and operating materials and in turn, ease the burden on the environment." And it is precisely this idea of doing business sustainably and reducing CO_2 that we are increasingly seeing at the forefront of OELCHECK customers' minds. Using our all-inclusive analyses, we can establish the actual life cycle of lubricants. This means oils will no longer be changed at fixed intervals, but rather depending on their condition. At the same time, this helps to keep components and systems operational while detecting any damage at an early stage. We will shed more light on the potential this offers for customers' cost structure, reducing CO_2 emissions and creating a more sustainable business as a whole in the near future.

As always, our goals were ambitious throughout 2023. We achieved 67% of our goals in full, and partially completed a further 16%. This may seem underwhelming at first glance, but you can't evolve without setting the bar high. And anyone who always achieves all of their goals, hasn't reached their limit!

Paul Weismann *Barbara Weismann*

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OELCHECK EXPRESSO

Oil changes and analyses are key factors in reducing CO_2

Unlock the full potential of your lubricants. Extend your change intervals and ensure their continued use with OELCHECK all-inclusive lubricant analyses. Doing so not only reduces your operating costs, but also reduces your CO_2 emissions.

Learn how it all works and determine the savings potential for all your machines and systems. The new OELCHECK CO_2 calculator can also help you work everything out.

➔ Hop Topic | Pages 4–5

Is adding additives to lubricants worth it?

More power, less wear and tear, cleaner engines and many other positive effects... The number of promising additives are endless, particularly for engine oils. Yet additives are also available for industrial oils, and hydraulic oils in particular.

Does adding additives at a later date always make sense? Or are there risks involved? The OELCHECK tribologists explain everything in more detail later on in this issue.

➔ Q&A | Page 9

Miba leads the way in reducing energy, fresh oil and CO_2

Miba AG, an Austrian industrial and technology company with 7,500 employees at 29 locations around the world, wants to achieve a climate-neutral manufacturing process by 2040. And on their journey to becoming climate-neutral, they will also make continuous improvements.

One such example is optimising a powder press with 2,000 litres of hydraulic fluid. Its process is now far more energy- and carbon-efficient than ever before.

➔ Partner Forum | Pages 10–11

OilDoc Conference and Exhibition – Speakers and case studies

Held in Rosenheim, near Munich, the OilDoc Conference and Exhibition will once again focus on the topics of lubricants, maintenance and condition monitoring from May 13-15, 2025. And we need you – competent, engaging keynote speakers with interesting case studies, success stories from the field, personal expertise and new ideas.

Find out everything you need to know about the event highlights and your opportunities as a speaker.

➔ OilDoc Conference 2025 | Page 15

REDUCING CO_2 EMISSIONS

OIL CHANGES AND ANALYSES ARE KEY FACTORS

Our blue planet is sending us an SOS. Greenhouse gases, particularly gases harmful to the climate such as carbon dioxide (CO_2), affect global warming and destabilise the climate. That means we all need to reduce carbon emissions drastically.

Responsible companies are taking a holistic approach. All aspects of the value chain are taken into account to reduce CO_2 emissions and achieve climate neutrality as soon as possible.

Stefan Mitterer
Head of Technology, Service & Sales

Lubricants must not be overlooked when taking measurements, as they make sure that plants and machines are kept up and running. Although lubricants generate CO_2 during their production, use and disposal, they can be used smartly to save a greater amount of CO_2 and energy many times over.

- Even making the **switch to modern, premium lubricants** can have a positive effect on a company's CO_2 emissions. The majority of thinner products significantly reduce friction and wear on the components and help to ensure higher energy efficiency during operation, which saves millions of tonnes of CO_2 every year in itself.

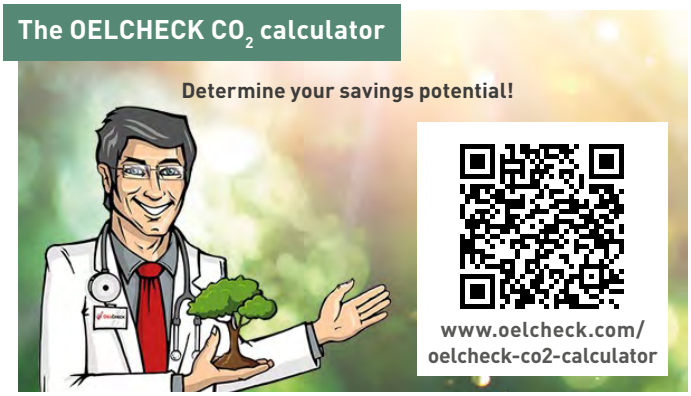
- However, CO_2 savings could reach another level entirely. One condition is that **you don't change the oil according to fixed intervals.** That's because modern, premium lubricants can be used for far longer. This not only has a positive effect on a company's balance sheet, but it also drastically reduces CO_2 emissions, too.

- **OELCHECK's professional, all-inclusive analyses** provide an answer to the question of how long lubricants can actually be used for. They also ensure the operational safety of systems and components. That said, it depends on **how often the analyses take place**. The analysis intervals listed in the table on the next page are tried and tested for the most common oils and their applications.

The OELCHECK CO_2 calculator works for used oil with a calculation factor of 3.8 per litre. This consists of 1.22 kg of CO_2 for fresh oil and its production and transport, plus 2.58 kg of CO_2 for the disposal and recycling of the used oil. The calculator assumes the oil change interval is extended by 100%. The calculation factor is moderate at 3.8 per litre. However, the actual CO_2 savings potential is likely to be much higher.

➔ **In short, unlock the full potential of your lubricants, extend their change intervals and safeguard their use with OELCHECK all-inclusive lubricant analyses, and reduce your company's carbon footprint.**

The OELCHECK CO_2 calculator



Any questions about our CO_2 calculator?
Please contact us by e-mail at sales@oelcheck.de or by phone on +49 8034 9047 250.

Recommended sampling intervals for trend analyses

These standard recommendations apply if no timeframe or runtime until the next sample is specified in the laboratory report or if there are no other specifications set out by the system manufacturer.

Application	Operating fluid	Recommended sampling interval
Cars (petrol and diesel engine)	Engine oil	15,000 km (short haul: 5,000 km) or annually
	Coolant	100,000 km or every five years
Trucks (diesel engine)	Engine oil	60,000 km (short haul: 20,000 km) or every six months
	Coolant	250,000 km or every two years
Construction/ agricultural machinery	Engine oil	500 OpHrs or every three months
	Hydraulic oil	500 OpHrs or annually
	Coolant	2,000 OpHrs or annually
	Transmissions	500 OpHrs or every six months
Gas engines (CHP, stationary)	Engine oil	500 OpHrs (for natural-gas operation) 300 OpHrs (for biogas operation) 100 OpHrsor monthly (for operation with special gases)
	Coolant	3,000 OpHrs or annually
Industrial gearboxes (e.g. agitator)	Gear oil	2,000 OpHrs or annually
Wind turbines	Gear oil	4,000 OpHrs or annually
	Hydraulic oil	8,000 OpHrs or annually
	Grease (blade bearing)	8,000 OpHrs or annually
	Grease (large roller bearings)	8,000 OpHrs or annually
	Coolant	8,000 OpHrs or annually
Gas turbine	Turbine oil	4,000 OpHrs or annually
	Hydraulic oil (steering hydraulics)	4,000 OpHrs or annually
	Gear oil	4,000 OpHrs or annually
Superheated steam turbines	Turbine oil	4,000 OpHrs or annually
	Hydraulic oil (steering hydraulics)	4,000 OpHrs or annually
	Gear oil	4,000 OpHrs or annually
Industrial hydraulics (e.g. compactors)	Hydraulic oil	2,000 OpHrs or annually
Compressors	Compressor oil	250 OpHrs or annually/every three months (piston compressors) 1,000 OpHrs or every six months (screw compressors) 1,500 OpHrs or every six months (refrigerant compressors)
Oil circulation system		2,000 OpHrs (paper machinery) 4,000 OpHrs (steel and rolling mills)

VISIT THE OELCHECK LABORATORY ONLINE

WELCOME TO THE VIRTUAL TOUR!

https://en.oelcheck.com/laboratory/

Discover the OELCHECK laboratory on our 360° tour. In the laboratory, we examine up to 2,000 samples of lubricating oils and greases as well as operating fluids such as coolants, AdBlue and diesel fuels every day.

To do this, our 46 laboratory staff use over 130 state-of-the-art examination devices across an area of 2,350 m² to carry out over 110 different test procedures. Up to 50 individual values are generated for each sample and then assessed by experienced tribologists.

In addition to the ASTM and DIN specifications, OELCHECK also has high company standards in place. Since 2009, the most important test methods have been accredited in the OELCHECK laboratory pursuant to DIN EN ISO/IEC 17025:2018. OELCHECK's laboratory in Europe is certainly one of a kind. Start your sightseeing tour and take a look around!

UNIQUE TESTING LINES IN THE OELCHECK LABORATORY

AUTOMATED VISUAL EVALUATION

This compact testing line is only available in the OELCHECK laboratory, and nowhere else on the planet. The **automated visual assessment** was developed jointly by HF-Innovation GmbH and OELCHECK according to our requirements. It has been integrated into our laboratory's routine operations since the end of 2023 and proved its worth within such a short timeframe that a second facility was installed. Now, almost all samples can be visually assessed in the OELCHECK laboratory fully automatically.

At first glance, the 3.8 m long and 1,200 kg machines are quite inconspicuous. The interior contains several high-quality camera systems, special lighting equipment, motors, grippers, heating elements and a computer-assisted image evaluation. With this setup, the automated visual assessment is able to take on several tasks that previously had to be carried out by lab technicians in intricate processes. Eighty samples pass through each device in each sequence.

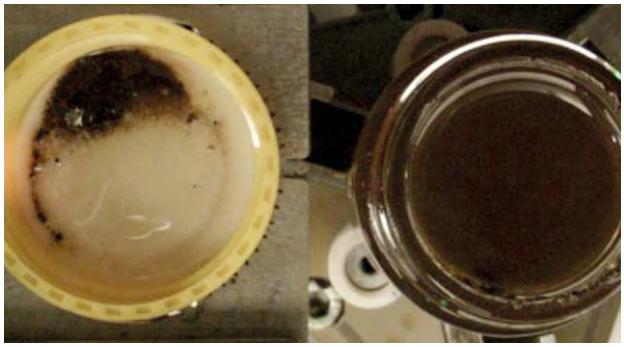
The stations are set up as follows:

- First, a camera system photographs the head or lid of each individual sample vessel.

- The colour of the sample, its turbidity and the fill level of the sample vessel are read automatically.

- The gripper then turns the vessel over, opens its lid and puts it down with its inside facing upwards to make any deposits visible.

- At the next station, photos are taken of the inside of the opened sample vessel and the sample lid.



- A computer-assisted image evaluation determines the degree of contamination from the photo of the sample lid showing any deposits. This image evaluation has been enhanced further with the construction of the second device and expanded to include an evaluation of the brightness distribution in the lid. Contaminants covering a large surface area can now be detected with certainty.

- Water, which may be present in the sample, is detected rapidly using the splash test, aided by computer-assisted image evaluation.

- Finally, subsamples are prepared for the infrared spectroscopy and viscosity measurement. The sample vessel is then be closed and the automated visual assessment completed.

Our new testing lines are fast, hassle-free and extremely accurate. Furthermore, they don't need time-consuming maintenance. This helps staff in the OELCHECK laboratory to save time, as they no longer need to do the time-consuming, monotonous task of opening and closing thousands of sample vessels by hand.

"Automated visual assessment doesn't take a subjective approach like a human, who has to determine the colour number of a sample by comparing it to a colour scale, for example. The new devices allow the colour number to be determined, sediment in the sample lid to be observed, and objective measurements to be taken during the splash test, all of which are further benefits for all OELCHECK customers."

Dr Thomas Fischer– Science Director

COMPACT, FAST AND ABSOLUTE PRECISION

OUR NEW FLASHPOINT INSTRUMENT

Ten devices are used in the OELCHECK laboratory when determining the flashpoint. One of those devices has now been replaced by a Series 8 Setaflash tester – a machine that we're extremely familiar with. This test device is used to determine the flashpoint in a small, closed crucible in a range of 30 °C to 300 °C.

The flashpoint is the key criterion for the flammability of combustible liquids. The flashpoint is defined as the lowest temperature at which a vapour phase formed over a liquid can be ignited with a test flame or electric igniter.

The flashpoints of fuels such as kerosene, conventional diesel fuel and biodiesel are determined in the lab, which is crucial when classifying fuels into their respective hazard classes. However, the flashpoint also plays a key role when inspecting engine oils and heat transfer media. If it is significantly reduced, for example, the engine oil is often found to be mixed with a fuel. In the case of heat transfer media, a lower flashpoint indicates the formation of volatile cracking products and an increased risk of fire.

For measurements with the Series 8 Setaflash tester, OELCHECK has established the ideal quantity to be just 30 ml. The tester works rapidly and with precision to ensure the samples to be examined are processed quickly one after another.

➔ Find out how OELCHECK takes an accurate approach to determining the flashpoint while keeping the environment firmly in mind here.
https://en.oelcheck.com/wiki/flash-point-analysis-methods/

SAVING RESOURCES AND SETTING AN EXAMPLE

HOW WE RECOVER SOLVENTS IN THE OELCHECK LABORATORY

When examining many lubricants and operating fluids, **solvents** are required as additives. After use, they are mixed with lubricating oils or greases. To date, a large amount of our solvent waste has been sent for thermal recovery by waste management companies. However, as we want to avoid waste as far as possible and save resources, OELCHECK has been recovering the solvent heptane using its own distillery since 2008. Now, we're recovering kerosene, too. This allows us to save resources, reduce our dependence on the supply of kerosene and improve our carbon footprint.

Heptane and kerosene in the laboratory

Heptane is a clear, colourless liquid and is an aliphatic compound. In the OELCHECK laboratory, it is primarily used as a solvent for cleaning viscometers and infrared spectrometers.

Kerosene is a fraction of the light middle distillate extracted from the petroleum refinery, alongside other fuels. At 150 °C to 280 °C, kerosene has a higher boiling point than conventional gasoline. Kerosene is used to dilute samples when examining the elements contained therein using ICP spectrometers and to rinse equipment for optical particle analysis.

Distillation and recovery

The OELCHECK laboratory requires around 10,000 litres of kerosene and 10,000 litres of heptane a year.

After use, the quantities mixed with lubricant residues are distilled on site. We already use a Heidolph large-scale rotary evaporator for heptane, and a second one is now being installed for kerosene. The evaporators stand out for their high level of safety and ease of use.

The distillation process is fully automated with repetitive cycles, which means the devices are extremely powerful. By way of comparison, a system not fully automated would have to be five times larger.

During the treatment process, the separated kerosene or heptane waste is distilled and separated back into oil and kerosene or heptane. The oil residues are collected as waste oil and disposed of by a designated company. The solvents recovered are reused straight away in the OELCHECK laboratory.

➔ **The distillation of used solvents on site means we require significantly lower quantities of fresh products, save resources and reduce our carbon emissions by at least 20 tonnes a year.**

PETRA BOTS – NEW HEAD OF MARKETING AND CORPORATE COMMUNICATIONS

Petra Bots has worked in OELCHECK's Marketing department since 1998. Fast-forward to spring 2024, and she is now Head of Marketing and Corporate Communications and therefore part of the company's executive management team.

Petra Bots will lead the Media Design department, working closely with Sales and IT. One of Petra's aims is to ensure the continuous improvement of our corporate communications and that OELCHECK GmbH is shown to the outside world in a professional light.

Daughter of the company founders Barbara and Peter Weismann, Petra Bots has the professional expertise to take on her new role to the full. As a qualified media designer and project manager, her core competences include professional communication with customers. While working for OELCHECK, she founded the advertising and marketing company Segel Setzen GmbH in 2005. Together with Rüdiger Krethe, she also headed up the OilDoc Academy, which emerged from a spin-off from OELCHECK, as managing director from 2013 to 2024.

Petra Bots (Marketing and Corporate Communications) will join the two Managing Directors, Barbara and Paul Weismann, Advisory Board Member Peter Weismann and Stefan Mitterer (Technology, Service & Sales) as part of OELCHECK GmbH's executive management team. We're sure the team will continue to lead the company safely into the future!

HEALTH IS EVERYTHING

OELCHECK PROMOTES EMPLOYEE WELL-BEING

At OELCHECK, our focus lies on people, and we take the health and well-being of our staff very seriously. For years, we have promoted a company-wide health programme to improve the health, performance and motivation of all our staff in a sustainable manner.

We offer a wide range of opportunities for staff to improve their health, with staff free to decide which benefits they use:

- **The OELCHECK Fitness Centre**
  Equipped with state-of-the-art equipment and high-quality weights, it is open to all employees on weekdays.

- **Fitness courses and external trainers**
  To ensure that the sporting activities also achieve the desired success, we offer fitness and prevention courses led by qualified external trainers. Whether staff want to focus on courses for a healthy back, HIIT (high-intensity interval training) courses or yoga sessions, there's sure to be something for everyone.

- **Regular massages**
  A trained physiotherapist and massage therapist visits OELCHECK once a week. Employees can book 20-minute slots for a back massage, myofascial release treatments, or lymphatic drainage. The 14 slots available each week are always in high demand!

- **Health days for new ideas**
  Since 2018, we have held regular "health days" on selected topics with support from a health insurance fund. We have previously focused on a range of topics such as a general health check, mental well-being, ergonomic advice, back health and healthy nutrition. While the pandemic put our health days on hold for a while, we're happy to say we'll soon be starting this important and popular series of events up again.

- **The OELCHECK fresh kitchen**
  A healthy, balanced diet is important for all. That's why we offer freshly cooked meals sourced primarily from regional products at lunchtime in the OELCHECK canteen. We always offer a vegetarian or vegan dish on the menu, while employees can help themselves to snacks from our varied fruit basket.

ADDITIONAL ADDITIVES FOR LUBRICANTS

Additional additives for engine oils in cars and fuels have been around for many years. Now, such agents are also available for our industrial oils, and hydraulic oils in particular. But is adding additives to lubricants worth it? Does it make sense, or are there risks involved?

In principle, modern lubricants are designed to meet all the relevant requirements to perfection. To achieve this, individual additives and additive packages of selected additives that merge well together are added to the base oils. The manufacture of the lubricants is designed in such a way that the additives can work to their full potential in later use. Adding additives at a later date therefore only makes sense in exceptional cases.

New lubricants undergo extensive testing in the laboratory, on test benches and in trials in the field. Only when they have passed all of these tests and meet the relevant international specifications can they come on the market. These specifications and any OEM approvals are the key factors when it comes to selecting lubricants for machines and systems. The manufacturers list the lubricants to be used in their operating instructions, indicating the relevant specifications or approvals.

Users who comply with the OEM's operating instructions when selecting lubricants are safeguarded during the warranty period. However, if a lubricant is "added at a later date", its composition changes. As a rule of thumb, this means the lubricant no longer meets its original specifications. If the machine or system is now damaged and the lubricant is deemed to be the cause, neither the additive supplier nor the lubricant manufacturer will generally be held liable. Furthermore, any guarantees or warranty from the OEM may be lost.

© Adobe Stock – SashaMagic

- **If you wish to add lubricants at a later date, you should only do so after the warranty period has expired.**
- **Always make sure that the additives are compatible with the lubricant in question. Contact your lubricant supplier for more information. In the industrial sector, they will also support you if additives have been removed from an oil due to filtration or other cleaning methods, for example. In some cases, these can be replaced afterwards and therefore extend the oil's life cycle – and contribute to protecting the environment at the same time.**

OELCHECK also answers your questions on the topics of lubricant and fuel analyses as well as tribology.
Contact us by e-mail at info@oelcheck.de or by fax on +49 8034 9047 47.

ANOTHER BENEFIT FOR OELCHECK EMPLOYEES

TAX-FREE FRINGE BENEFITS WITH THE GIVVE® CARD

OELCHECK employees have enjoyed a tax-free bonus of €50 a month since the start of 2024. Your personal givve® card is automatically topped up with €50 every month and can be used at all Mastercard points of sale. The card can be used both in-store and online, and staff can save up their credit to make larger purchases if they wish. The givve® card online portal or app give employees a clear overview of their spending. The givve® card is just one example of the fringe benefits available to the OELCHECK team!

A Miba sintered gear – One product from the company's large portfolio

MIBA – TECHNOLOGIES FOR A CLEANER PLANET

Miba develops and produces function-critical components for applications throughout the energy value chain as a whole. Their products make a contribution to the efficient and sustainable production, transmission, storage and use of energy. Miba sintered moulded parts, plain bearings, friction linings, power electronics components, coatings and e-mobility components can be found around the world in vehicles, ships, aircraft, construction and agricultural machinery, wind turbines, power grids and more.

Since 2013, Miba's corporate mission of "Technologies for a cleaner planet" has focused on sustainability, a cleaner planet and helping to create an even more habitable world.

Miba products contribute to protecting the climate

Miba products make a significant contribution to greater efficiency and therefore to reducing CO_2 in customers' end applications. They ensure more sustainable production, transmission, storage and use of energy. Miba technologies support customers in reducing CO_2 emissions from their own end applications and in turn help them to achieve climate targets.

"COzero" strategy – Climate-neutral by 2040

With its "COzero" strategy, the company has defined a clear goal of climate-neutral manufacturing by 2040. As the first milestone on this path, carbon emissions from its own production facilities – i.e. from the machines and systems used as well as from the energy used – are due to be halved as soon as 2030. Across the company, all locations are continuing to develop specific measures to reduce their carbon footprint and use more green energy. In addition, Miba is investing in expanding its production capacity for green energy worldwide.

Slowly but surely, Miba is approaching its largest goal of climate-neutral manufacturing by 2040. Improvements are constantly being made by looking at all areas of the offices and production facilities, from saving energy, water and waste to the efficient use of compressed air and air conditioning, or optimising and modernising the machine fleet.

One example of many is optimising the N350 powder press

The N350 powder press is just one of the countless installations in Miba's large machinery fleet, which is now far more energy- and carbon-efficient than ever before.

Three factors proved key here:

- Using the latest technologies and control technology as well as servo-electric drives
- Switching to a thinner hydraulic oil
- Extending the oil service life, monitored with OELCHECK all-inclusive analyses

The N350 powder press is in operation at Miba Sinter Austria GmbH in Vorchdorf (Upper Austria). Vorchdorf is where the company produces sintered moulded parts using special process technologies.

The N350 press handles the pressing of metal powder mixtures using tools. The sintering process then takes place at temperatures up to 1,200 °C.

N350 powder press

Energy consumption reduced by more than 70 %

The N350 powder press has been equipped with the latest technology and energy-saving drive technology. Instead of the standard technology, in which the presses are powered by hydraulic drives and asynchronous motors, servo-electric drives and the latest control technology are now used. These measures have reduced the electricity needs of the N350 press by more than 70 % a year.

Less friction, less energy loss

The N350 powder press requires 2,000 litres of hydraulic oil. It uses a high-performance hydraulic oil that has properties including a high load-bearing capacity and reliable wear protection. Although the oil type stayed the same, improvements were also seen in this area. Furthermore, the same type of oil continued to be used, albeit at a lower viscosity level. That means the low-viscosity version of ISO VG 46, rather than ISO VG 68, is now used, which guarantees continued, trouble-free operation. However, it also reduces friction on moving components and reduces energy losses in the hydraulic system.

Longer oil service life with OELCHECK all-inclusive analyses

OELCHECK all-inclusive analyses support many lubricants used in Miba plants. Miba manages all samples and laboratory reports digitally with the help of Lab.Report, OELCHECK's online customer portal.

Samples are entered quickly and conveniently online, lab reports can be translated into up to 15 languages, sample data can be transferred to different formats, and the status of submitted samples can be queried.

Since 2016, the N350 powder press' hydraulic oil has also been subject to annual examinations by OELCHECK, using the comprehensive all-inclusive analysis kit 4 for stationary hydraulics. In the nine years of checks, all values recorded have been in the green range. This shows that there was no reason to change the oil in full, and instead it only had to be topped up from time to time.

Miba Sinter Austria production hall

➔ **In short,**
Miba not only saved more than 70% of the energy required to run the N350 powder press annually, but also doubled the oil life cycle and reduced CO_2 emissions by 7,600 kg with the help of OELCHECK lubricant analyses.

Miba – In the fast lane since 1927
Miba AG is a family-owned industrial and technology company founded in Upper Austria in 1927. Today, the company employs more than 7,500 staff at 29 locations worldwide. Miba focuses on technologically advanced niche segments along the whole energy value chain. In the 2022/23 financial year, Miba generated turnover of €1,114 billion in a market full of future growth opportunities.

www.miba.com

COME AND MEET US!

We will be exhibiting at the following trade fairs and conferences.
Will you be there, too? If so, we would be delighted if you could arrange a meeting with us in advance (sales@oelcheck.com), contact us or drop by our stand!

STLE ANNUAL MEETING
19–23/05/2024 | Minneapolis, USA

lubmat 2024
18–20/06/2024 | San Sebastian, Spain

LUBRICANT EXPO
17–19/09/2024 | Düsseldorf

WindEnergy Hamburg
The global on & offshore event
24–27/09/2024 | Hamburg

InnoTrans 2024
Internationale Fachmesse für Verkehrstechnik
24–27/09/2024 | Berlin

EuroTier
First in animal farming.
12–15/11/2024 | Hannover

OILDOC SEMINAR PROGRAMME

Current dates	
07/05/2024	Coolant – The underestimated operating fluid
13–16/05/2024	Expert knowledge for lubricant professionals *CLS certificate course*
04–05/06/2024	Certified hydraulic oil specialist *OilDoc Certificate Course* ***NEW***
11–12/06/2024	Damage to bearings, gears and motors – causes and solutions Module IV of the "Certified Lubricant Expert" series. Can be booked individually.
18–20/06/2024	Lubrication and oil monitoring for turbines and turbo compressors
25–26/06/2024	Lubrication and oil monitoring for combustion engines
02–04/07/2024	Machine element lubricant – Know-how for designers
08–11/07/2024	Machine monitoring by means of oil analysis, advanced course *MLA II Certificate Course*
09–12/09/2024	Lubrication for experts *CLS Certificate Course in English*
24–26/09/2024	Fundamentals of lubricant application I Module I in the "Certified Lubricant Expert" series. Can be booked individually.
07/10/2024	Coolant – The underestimated operating fluid
08–09/10/2024	Lubrication and oil monitoring for stationary gas engines
15–17/10/2024	Lubrication and oil monitoring for stationary hydraulics
22–23/10/2024	Online oil sensors – A practical seminar
24–25/10/2024	Infrared spectroscopy in practice – Understanding and interpreting IR spectra
05–06/11/2024	Fundamentals of lubricant application II Module II in the "Certified Lubricant Expert" series. Can be booked individually.
07–08/11/2024	Lubrication and oil monitoring for compressors
12–13/11/2024	Lubricating greases – Properties, selection and monitoring
14–15/11/2024	Lubrication and oil monitoring for hydro power plants
19–21/11/2024	Machine monitoring by means of oil analysis, for beginners *MLA I/MLT I certification course*
28–29/01/2025	Fundamentals of lubricant application Module III in the "Certified Lubricant Expert" series. Can be booked individually.

Your contact for further training:
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Rüdiger Krethe
Kerschelweg 29
83098 Brannenburg
Tel. +49 8034 9047 700
info@oildoc.de

All of the current dates, detailed seminar content and conditions of participation as well as the links to uncomplicated online registration can be found on our website:

www.oildoc.com

Our most popular certification course is back!

Get one step ahead with an additional qualification! At the OilDoc Academy, you can acquire valuable specialist knowledge and document your achievements with recognised certificates!

Lubrication – Fundamentals, Applications and In Practice

Optional: Certification as "Professional Lubricant Expert"

Acquire comprehensive fundamental and practical knowledge on lubrication and lubricants.
This course is suitable for both beginners and experienced practitioners. All four modules are offered on a repeat basis – allowing you to get started at any time. A new series will be launched in September 2024, which can be completed in spring 2025. You can also book all four modules individually, of course, but it's certainly worth following all four units.

At the end of the training course, you will take a multiple-choice exam, receive a high-quality certificate after passing the test, and be able to use the official "Professional Lubricant Consultant" logo. The certificate documents your in-depth knowledge of lubrication and lubricants. As a Professional Lubricant Consultant, you are well on your way to passing the official Certified Lubrication Specialist (CLS) certification examination in the future.

Module 1: Fundamentals of lubricant application I	24–26/09/2024
Module 2: Fundamentals of lubricant application II	05–06/11/2024
Module 3: Professional lubricant management	28–29/01/2025
Module 4: Preventing damage to bearings, gears and motors	11–12/06/2024 or 11–12/03/2025

Book all modules and save 350 €!

AUTUMN HIGHLIGHTS

Online oil sensors

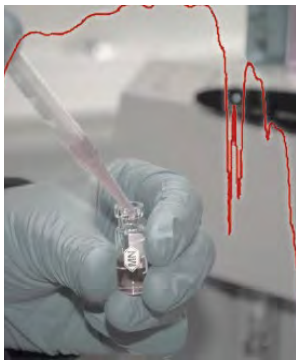
22–23/10/2024: Two-day seminar

This seminar focuses on a topic that's always on trend. It is aimed at system manufacturers, operators and maintenance staff who intend to use or already use online oil sensors to monitor the condition of their systems. Sensors are playing an increasingly important role. Their benefit lies in the permanent recording of data, which allows even the slightest changes in trends to be detected. Rüdiger Krethe presents the different types of sensors and answers questions such as: Which sensor is suitable for which system? Do all sensors work with any type of oil? How can the data generated be prepared, visualised and evaluated?

Lubrication and oil monitoring for hydraulics

15–17/10/2024: Three-day seminar

Increasingly small oil fill quantities, higher pressures, rising operating temperatures and permanent availability are challenges facing hydraulic fluids. It's high time we take a closer look. Our seminar provides you with the tools you need to operate your hydraulic systems in a cost-effective and reliable manner: extend oil change intervals, reduce costs through better filtration and oil maintenance, detect wear and faults early, identify causes of damage after failures, carry out oil analyses as part of proactive maintenance, and analyse warning values to assess machine damage and oil condition.



Infrared spectroscopy in practice – Understanding and interpreting IR spectra

24–25/10/2024: Two-day seminar

The infrared spectrum of a used oil sample provides information on changes in the oil or impurities compared to the spectrum of a new oil or reference oil. In addition, conclusions can be drawn about oil ageing, the base oil type and any mixtures. Infrared spectroscopy is therefore one of the most important investigations in lubricant analysis, and for good reason. At first glance, infrared spectra often look like a book with seven seals. Yet it's not that difficult to read IR spectra for oils and lubricating greases and to better understand many correlations. For the first time, our seminar gives an overview of the fundamental principles and the practice of FT-IR spectroscopy of new and old lubricants. Real-life examples deepen the newly acquired knowledge. You can use this immediately when viewing IR spectra, as shown in every OELCHECK laboratory report, for example.

Lubrication and oil monitoring for compressors

07–08/11/2024: Two-day seminar

Technical advancements have revolutionised the world of compressors, their lubricants and oil monitoring. The topic is more varied than ever before. That's why in 2024, we will once again be offering our two-day seminar on compressors, their lubricants and their monitoring.
The gas to be compressed, the design of the compressor and the operating conditions result in very different loads on the lubricating oil, depending on the system. In our new seminar, we will take a detailed look at the range of compressor oils, how they behave during use and any possible changes. Oil analyses with the test scope and past evaluation criteria do not sufficiently take these changes into account. That's why we're introducing the latest oil analysis technology – a highly accurate, reliable tool for monitoring lubricants and equipment. Several examples from different areas of application round off our seminar and guarantee a high degree of practical relevance.

Lubricating greases – Properties, selection and monitoring

12–13/11/2024: Two-day seminar

Immerse yourself in the world of lubricating greases and expand your expertise in our two-day seminar "Lubricating greases – Properties, selection and monitoring". Discover the right grease application and monitoring to increase the reliability of your equipment and machinery. Learn how to identify lubrication problems, use analytics effectively and reduce costs. You can then put your newly acquired knowledge to good use and optimise the performance and reliability of your machines. The aim is to select the best grease, extend lubrication intervals and detect warning signs of machine damage at an early stage. Seize this opportunity to improve your maintenance strategy and minimise downtime now.

CALL FOR PAPERS

DEADLINE: Oct. 31, 2024

The OilDoc Conference

Since 2011 the OilDoc Confernece is the trend-setting event in Europe in the fields of sustainable lubrication, maintenance and condition monitoring. It is an international platform for acknowledged experts in the fields of practical lubricant application, research and development as well as experienced engineers. They present their latest insights and results as well as success stories from their daily work and provide crucial impetus to practicioners.

The last OilDoc Conference and Exhibition in May 2023 provided real added value to roughly 400 participants, 45 exhibitors and 90 top-notch speakers. The conference is organized and executed by the OilDoc GmbH, the leading European center of excellence for professional education in the fields of lubrication, oil analysis and maintenance.

Speakers wanted!

OilDoc is looking for speakers with interesting case studies, personal expertise and new ideas to contribute to the presentation program.

Provided benefits:

- Increase your company's brand awareness and image.
- Convince the attendees that your company is a leader in the lubricant and maintenance industry - become subject of expert discussions.
- Gain increased status and credibility within the industry by appearing in official conference documents.
- Distinguish yourself as an expert in your relevant specialist area(s).
- Get valuable advice from other attendees and speakers.
- Benchmark and gauge your performance against market players and competitors.
- Attract the attention of high potential employees and promising partners.
- Take advantage of the significantly reduced participation fee.

TOPICS

Condition Monitoring & Maintenance 4.0

Gears • Turbines • Engines • Hydraulic systems • Rolling and plain bearings • Special applications • KI - Artificial intelligence

Fluid Condition Monitoring – Online • On-Site • Offline

Digitalization • Analysis methods for oils / greases /coolants • Sampling • Evaluation and Interpretation • Oil Sensors • Troubleshooting • Success Stories • On-site Measurement

Asset & Fluid Management – Innovative & Sustainable

Asset & Lubrication Management • Lubrication Schedules & Programs • Professional Oil Maintenance • Lubricators • Lubricant Storage, Transport & Handling • Disposal • Lubrication Methods • Lubrication systems • Sustainability

Tribology - Research targeting Experience

Friction and wear • Materials, surface engineering, contact mechanics • Tribometry • Hydrodynamic and elasto-hydrodynamic Lubrication • Minimal quantity lubrication • Dry lubrication • Tribology of machine parts and components

Lubricants - Latest developments

Base oils • Additives • Lubricating greases & pastes • Bonded coatings • Solid lubricants • Dry lubrication

E-Drive Lubrication

Lubricants & Lubrication for E-Mobiles / powertrain / bearings • Coolants • Concepts & Solutions • Energy Efficiency

Lubricants - Design to Application

Engines • Sewage gas, biogas and wood gas engines • Gears • Hydraulics • Bearings • Turbines • Wind energy plants • Compressors • Fuel & Energy economy • Sustainability

Metal working and forming lubrication

Water based and water free fluids • Multifunctional lubricants • Minimum quantity lubrication and dry processing • Modular systems in lubricant formulation

Lubrication in Special Environments

Environmental and health aspects of lubrication • Vacuum lubrication • Biodegradable fluids • Food grade lubricants • Fire resistant lubricants • High or low temperature lubrication

Functional fluids – Everything but lubrication

Insulating oils • Heat transfer fluids • Coolants • Corrosion protection • Cleaning agents

Supported by

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OELCHECK since 1991

OUR ADVANTAGES AT A GLANCE


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Expertise

Experience


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Innovation


Individuality


Independence


All-in-one analysis kit


International

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