



PLUS: EXPERT INTERVIEW WITH STEVE MUNGUTI, REGIONAL HEAD OF SPECIALTIES - LUBES & LPG AT LAKE OIL GROUP P.20



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VOL 47 | DECEMBER 2023

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NEWS • INDUSTRY UPDATE • NEW PRODUCTS • TECHNOLOGY • COMMENTARY

REGULARS



3-5

The Market Report Astron Energy and Chevron extend existing Caltex usage rights

RUBiS Energy to distribute Castrol lubricants in Uganda

SAIT awards outstanding professionals in the field of tribology

ADNOC Distribution Launches First Branded Service Stations in Egypt

Chevron and Tethys start a lubricants partnership in Nigeria

6 Lubes Diary

7

Frequently Asked Questions

8-10

What's New: Products and Innovations TotalEnergies increases recycled plastic in the lube packages to 50%

ENOC unveils environmentally acceptable lubricants for the marine industry

Infineum launches a lubes additive package for hybrid vehicles

GS Caltex launches a biodegradable saw oil, Kixx Chain BlO

Shell Lubricants introduces immersion cooling fluids

12-16

In Other Worlds

Lubrizol partners with IMCD Group to Expand Additives Business in Bangladesh

Arteco partners with Arom-dekor Kemi to create a coolant base fluid

WearCheck opens a second laboratory in India

PETRONAS Lubricants and PT Kilang Pertamina collaborate on a lube base oil plant

Aramco to enter South American market with Esmax acquisition

> 20-22 10 Questions for Lubricants Professionals

> > 28 Last Word





A man recharges a vehicle with compressed natural gas fuel, ecological fuel known as CNG. SOURCE I SHUTTERSTOCK/SVIDAL



7 FREQUENTLY ASKED QUESTIONS



24 TESTING GUIDELINES FOR NATURAL ESTER OILS IN TRANSFORMERS

EDITOR'SDESK VOL 47 • DECEMBER 2023



Dr. James Wakiru Lubezine Magazine | Editor-in-Chief

A look into the lubrication needs of natural gas commercial vehicles

elcome to the 47th edition of Lubezine Magazine and the last issue of 2023. The year has been amazing and busy for the lubricants industry. In the first quarter of the year, we looked at the state of tractor lubrication and the maintenance myths surrounding tractors and recommended best practices in the cover feature of the March edition. In the June edition, we ventured into understanding how automotive cooling fluids are stepping up to support changes in the automotive industry. The September edition cover feature delved into the Lubricants Producers Association of Nigeria (LUPAN), an organization based in Nigeria made of lubricants blenders, to understand its operations and its critical role in developing Nigeria's lubes industry.

In this edition, the cover feature touches on the growing natural gas commercial vehicle market and how that is spurring demand for advanced lubricant formulations. Adopting natural gas commercial vehicles is geared towards a more sustainable future in the automotive industry. Oils designed for internal combustion engines that run entirely on natural gas must handle conditions that are different from those formulated for conventional liquid fuels. The article looks at the challenges lubricants for Compressed Natural Gas (CNG) engines have to deal with, the critical requirements of natural gas engine oils, oil specifications and testing and the growth potential for CNG engines. The African continent is also gearing towards adopting CNG to provide cheaper and cleaner energy. In Tanzania, compressed natural gas stations have been in construction for the last few years to offer CNG.

Understanding the African lubricants market is important for a company intending to invest, and we get a better understanding of this market from the perspective of Steve Munguti, the Regional Head of Specialties: Lubes & LPG at Lake Oil Group, whom we feature in our ten questions for lubricants professionals' segment. Mr. Munguti has a wealth of knowledge and over 20 years of experience in the industry, and he shares some vital information about the African landscape.

In the Southern part of Africa, the South African Institute of Tribology

Miriam Wangari

Steve Munguti

Corné Dames

TotalEnergies

Infineum Insight

Rymax Lubricants

ENOC

Photography:

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(SAIT) held its annual Awards Dinner to acknowledge and celebrate excellence and hard work in the field of tribology. SAIT offers four annual awards divided into four categories: The Louw Alberts Award, Best Technical Achievement Award, Best Technical Presentation Award and SAIT Student Award. SAIT is a professional body that offers technical knowledge transfer through technical meetings and mini-seminars on topics of interest in lubrication and materials, such as wear of materials, bearings, gears and condition monitoring.

To further advance sustainability, environmentally sensitive lubricants are gaining attention. ENOC launched environmentally acceptable lubricants for the marine industry, GS Caltex debuted a biodegradable saw oil, and Castrol expanded its carbon-neutral products range. Moreover, TotalEnergies increased the recycled plastic in its lube packages to 50% and Infineum launched an additive package for hybrid vehicles.

This and so much more await you to read.

Happy Holidays.



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LUBES DIARY: 28th ICIS World Base Oils and Lubricants Conference | FAQS: Lubrication needs for turbochargers and catalytic converters

SOUTH AFRICA

Astron Energy and Chevron extend existing Caltex usage rights

hevron Brands International, LLC (Chevron) and Astron Energy have agreed to extend the existing Caltex Usage Rights and Debrand Agreements (URDA) for South Africa and Botswana until December 31, 2026.

Astron Energy remains Chevron's exclusive licensee for Caltex-branded retail service stations in South Africa and Botswana until September 30, 2024, after which the license becomes non-exclusive.

During the extended period from October 1, 2024, until December 31, 2026, Astron Energy will continue to rebrand the Caltex retail service stations in its network to the Astron Energy brand.

Thabiet Booley, CEO of Astron Energy, said, "Our commitment to the rebranding of our retail network, the successful restart of our Refinery and the significant investments associated with



SOURCE | ASTRON ENERGY

these flagship projects speaks to the solid future we envisage for Astron Energy as a proudly South African company and brand."

"The Caltex star is a symbol of quality, value and service and is a constant reminder of our commitment to our partners and customers," said Danielle Lincoln, Vice President for Chevron International Products.

"We are excited to build on Chevron's decades-long legacy in the market and are committed to growing the Caltex network across South Africa and Botswana, where we will continue to provide customers with high-quality products and fuels with Techron, modern facilities and fast and friendly service to our customers," Lincoln added.

This rebranding comes after the 2018 majority acquisition of the former Chevron South Africa Pty (Ltd) by Glencore South Africa Oil Investments (Pty) Ltd. Since then, Astron Energy has operated the Caltex brand under a license agreement.

BRANDSINBRIEF

TOTALENERGIES

Increasing recycled plastic in the lubricants package to 50% **P.8**

WEARCHECK

Opening a second laboratory in India P.13

ENOC

Launching environmentally acceptable lubricants for the marine industry **P.8**

SHELL LUBRICANTS

Introducing immersion cooling fluids P.10

CHEVRON

Starting a lubricants partnership Tethys in Nigeria **P.5** Extending existing Caltex usage right with Astron Energy **P.3**

INFINEUM

Launching a lubes additive package for hybrid vehicles

LUBRIZOL

Partnering with IMCD Group to Expand Additives Business in Bangladesh **P.12**

PETRONAS LUBRICANTS Collaborating with PT Kilang Pertamina on a lube base oil plant P.16

CASTROL Expanding carbon neutral product range in Europe P.10

ADNOC DISTRIBUTION

Launching First Branded Service Stations in Egypt P.4

SAIT

Awarding outstanding professionals in the field of tribology **P.5**

SAUDI ARAMCO

Entering South American market with Esmax acquisition
P.16

ARTECO

Partnering with Arom-dekor Kemi to create a coolant base fluid **P.12**

RUBIS ENERGY UGANDA Distributing Castrol lubricants in Uganda **P.4**

GS CALTEX

Launching a biodegradable saw oil P.9

THEMARKETREPORT

UGANDA

RUBiS Energy to distribute Castrol lubricants in Uganda

RUBIS Energy Uganda, in partnership with Castrol, officially launched Castrol Oils in the Ugandan market. These lubricants will be available in all the 54 RUBIS service stations across Uganda. The lubricants that will be available in Uganda are suited for cars, motorcycles, commercial vehicles, industrial and marine applications.

Speaking during this ceremony, RUBiS Energy Uganda Country Manager, Olivier Gatera said, "In our journey to provide our customers with the best quality products and experience, we are strategically partnering with leading brands that are customer-centric and offer quality products to our customers. Customers can access a wide range of premium quality lubricants through our partnership with Castrol."



From Left, Ed Savage, Castrol East Africa General Manager, RUBiS Energy Uganda Country Manager, Olivier Gatera and Jean-Christian Bergeron, RUBiS Energy East Africa Group CEO and Managing Director for RUBiS Energy Kenya during the partnership announcement ceremony SOURCE LIRUBIS ENERGY

Jean-Christian Bergeron, RUBIS Energy East Africa Group CEO and Managing Director for RUBIS Energy Kenya, added, "Our strategic partnership with Castrol is built on trust, mutual respect, and shared values. Together, we are committed to delivering high-quality products and services, driving innovation, and making a positive difference in the lives of our customers."

Talking about the Castrol brand, Ed Savage, Castrol East Africa General Manager, said, "Globally, the Castrol brand is renowned for quality, innovation, and high performance. The brand has been redefining liquid engineering to ensure the optimization of engines. The partnership with RUBiS Energy Uganda is timely as customers seek oil products designed to suit their everyday mechanical needs. Castrol will leverage RUBiS Energy Uganda's countrywide footprint to ensure customers can get the oil lubricants at all service stations countrywide."

The range of oil products that will be available at RUBiS Energy Uganda service stations include Castrol EDGE, Castrol MAGNATEV, Castrol GTX, Castrol VECTON, Castrol CRB and Castrol TRANSMAX fluids.

SOUTH AFRICA

SAIT awards outstanding professionals in the field of tribology

he South African Institute of Tribology (SAIT) held its annual awards dinner on 10th November 2023 to acknowledge and celebrate excellence and hard work in the field of tribology. SAIT is a professional body based in South Africa that offers technical knowledge transfer through technical meetings and mini-seminars on topics of interest in the lubrication and materials, such as wear of materials, bearings, gears and condition monitoring.

SAIT offers four annual awards to worthy recipients. These awards are divided into four categories: The Louw Alberts Award, Best Technical Achievement Award, Best Technical Presentation Award and SAIT Student Award.

Dave Scott received the Louw Alberts Award for outstanding contributions to the field of tribology over the years. This award is not always rewarded and is dependent on the availability of a worthy recipient. FUCHS Lubricants South Africa was awarded the **Best Technical Achievement** Award. Leroka Selepe received this award on behalf of FUCHS. The Best Technical Presentation Award was awarded to Steven Lumley for her presentation titled "Engine Killers".

Hendrik Masenya received the SAIT Student Award for his research and achievement in the field of tribology as part of his postgraduate studies.

SAIT carries out plant visits and international tribology conferences every three years with local and international guest speakers and authorities in the various fields of tribology. In addition, SAIT offers training courses which were introduced on the principles and



L-R Steven Lumley, WearCheck Technical Manager receiving The Best Technical Presentation Award awarded by Henco Booysen, SAIT President. SOURCE ISAIT

technology of lubrication and materials. Over 3,500 students have attended the courses so far.

EGYPT

ADNOC Distribution launches first branded service stations in Egypt

DNOC Distribution has announced the inauguration of three ADNOC service stations in Egypt, located across Cairo, to offer a full range of vehicle services to the local communities.

The Company plans to open a further six ADNOC service stations nationwide by the end of 2023, after acquiring a 50% stake in TotalEnergies Marketing Egypt LLC (TEME) earlier this year.

The joint venture includes a diversified downstream portfolio of 240 fuel retail stations, 100+ convenience stores, 250+ lube changing stations, car washes, lubricants, wholesale, and aviation fuel operations. Additionally, the partnership is currently developing the necessary infrastructure and logistical framework to launch ADNOC Voyager, the brand's range of lubricants. ADNOC Voyager products will be available for Egyptian consumers to purchase at ADNOC service stations and within the broader local lubricants market.

Eng. Bader Saeed Al Lamki, CEO of ADNOC Distribution, said, "Today marks an important milestone in our international expansion journey as we launch ADNOC service stations in Egypt, positioning us as a leading regional provider of mobility solutions. As a future-focused business, we continue to take bold steps to address the needs of our customers and look forward to bringing more of our innovative and digitally-backed services to the Egyptian market and exploring further opportunities to grow our portfolio."

Thomas Strauss, Managing Director of TotalEnergies Marketing Egypt LLC, said, "We are delighted to announce this momentous collaboration with ADNOC Distribution.



Eng. Bader Saeed Al Lamki, CEO of ADNOC Distribution and Thomas Strauss, Managing Director of TotalEnergies Marketing Egypt LLC SOURCE | ADNOC DISTRIBUTION

This partnership signifies our shared vision to offer unparalleled products and services to our esteemed customers in Egypt. With great conviction, we believe that this alliance will enhance our offerings and reinforce our unwavering commitment to delivering excellence." The newly opened ADNOC service stations in Egypt are fully equipped to operate 24/7 and will have a full range of vehicle services, including car wash, lubricants, and tire changes. ■

NIGERIA

Chevron and Tethys start a lubricants partnership in Nigeria

Chevron Brands International LLC and Tethys Ltd have entered into a Branded Business Development Agreement to boost the production and distribution of Texaco-branded lubricants in Nigeria. This alliance is set to provide Nigerian motorists and industries with an array of automotive and industrial lubricants, including engine oils, transmission fluids, and hydraulic fluids under the Texaco, Havoline®, and Delo®

brands.

Pat McCloud, the General Manager of Chevron Europe Finished Lubricants, said, "We're embarking on a significant venture with Tethys to supply top-tier Texacobranded lubricants. This collaboration is a continuation of Texaco's longstanding presence in Nigeria and aligns with our commitment to meet the evolving demands of the Nigerian market."

Habib Bello, the Manag-

ing Director of Tethys Ltd, commented on the exclusive licensing agreement. "Our alliance with Chevron for Texaco-branded lubricants is a testament to our commitment to providing superior lubricant solutions in Nigeria. We're poised to distribute Texaco-branded products across the nation, reinforcing our goal to make these lubricants a staple in Nigerian households."

Chevron produces premium

base oils and additives used to make Texaco-branded lubricants. Chevron has a network of 10 facilities and 25 blending plants worldwide for its lubricants business.

Tethys Ltd is a Nigerian sales and marketing company specializing in the lubricants market. The company leverages its extensive industry knowledge and a network of key stakeholders to facilitate seamless transactions within the lubricants market.

THELUBES DIARY EVENTS FROM ACROSS THE GLOBE



Januray 8 - 10

ILMA – 6th International Metalworking Fluids Conference Atlanta, Georgia https://www.mwfconference.org/

January 23 - 25

TAE 24th International Tribology Colloquium - Industrial and Automotive Lubrication Esslingen, Germany https://www.tae.de/

February 6 - 8

28th ICIS World Base Oils and Lubricants Conference London, UK https://events.icis.com/ website/9160/



February 19 - 21

Argus Global Base Oils Conference London, UK https://www.argusmedia.com/conferencesevents-listing/global-base-oils-conference

March 19 - 21

Lubricant Expo North America Detroit, Michigan, USA https://lubricantexpona.com/

April 16 - 17

UNITI Mineral Oil Technology Congress 2024 Stuttgart, Germany https://goma.hr/?id=12&L=1

April 17 - 19

Tribology 2024 – Tribology International Conference Vienna, Austria https://www.setcor.org/ conferences/tribology-2024

April 20-23

ELGI 34th Annual General Meeting, Madrid, Spain https://www.elgi.org/
 Frequently Asked
 FAQS

 Questions
 FAQS
 ARE ALL OILS ADAPTED TO VEHI EQUIPPED WITH A CATALYTIC CONVER

Lubrication needs for turbochargers and catalytic converters



Turbocharger structure illustration with cross section, SOURCE ISHUTTERSTOCK/EVANNOVOSTRO

Which oil should we use in turbo-compressed vehicles?

Turbocharger lubrication is critical for all turbocharged engines (Diesel or

petrol) to protect the bearing and shaft. Turbochargers operate at very extreme conditions of high temperature and pressure. The shaft and bearing reach a very high temperature due to the proximity of the exhaust gasses and high revolutions per minute. Oil must lubricate the shaft and bearing continuously; otherwise, the high temperatures and pressure would permanently damage the two components.

The oil must answer very strict criteria to fulfil the turbo compressor's lubrication and shaft cooling needs. Oil must lubricate the shaft continuously; otherwise, the high temperatures would permanently damage it, and the temperature would then very rapidly reach very high levels.

These conditions mean the oil has to offer considerable detergent properties, an essential resistance to oxidization

and deposit formation, but especially very high thermic stability. Synthetic oils are, therefore, the most recommended solution in these conditions. Turbo-compressors are characteristic of diesel engines, as it is very easy for petrol engines to reach the same power level by other means, such as electronic injection, cylinder head multi-valves, etc.

TotalEnergies has two engine oil ranges specifically formulated for turbocharged applications:

RUBIA RANGE: - For all heavy-duty turbocharged diesel engines

QUARTZ RANGE: - For all passenger vehicles (Diesel/Petrol) with Turbo charger.

Are all oils adapted to vehicles equipped with a catalytic converter?

The reply is clear: NO. The catalytic converter has met this challenge; whose

role is to complete exhaust gas combustion just before it escapes into the atmosphere. To respect the environment, oils must offer a high lubrication property,

better detergent and dispersant properties, and a low sulphur and phosphorous content. These properties are essential for oils that will be used in vehicles equipped with catalytic converters. The use of a non-adapted oil can damage the catalytic converter. Synthetic lubricants are highly recommended because of the intrinsic properties of their base.

STAR QUESTION-

Are there engine oils adapted to hybrid vehicles and vehicles fitted with post-treatment systems (catalytic converter/ diesel particle filter-DPFs)?

YES.

These are engine oils formulated with Low SAPS technology (Low content in Sulphated Ash, Phosphorous and Sulphur) to ensure optimal functioning of Catalytic converters and DPFs, whose role is to complete the combustion of the exhaust gas before they are released into the atmosphere by lowering emissions of NOx, HC, and CO particles.

Also, the oils extend the longevity of post-treatment systems by preventing catalytic converters and DPFs from clogging and filling.

These engine oils are very fluid/low viscosity, which completely reduces friction, delivering full power and generating fuel savings at the same time.

TotalEnergies has two engine oils specifically designed for these applications:

QUARTZ 9000 XTRA FUTURE XT 0W20: - Suited for use with "Downsized" engines equipped with Stop and Start technologies, Hybrid engines and posttreatment systems.

QUARTZ INEO MC3 5W30: - Suited for use with engines fitted with posttreatment systems.

This article is courtesy of TotalEnergies Marketing Kenya.

WHAT'S NEW RUDILLE ΙΝΝΠΥΑΤΙΠΝΟ

SUSTAINABILITY

TotalEnergies increases recycled plastic in the lube packages to 50%



ollowing a pilot project launched in 2021 on Quartz Xtra bottles, TotalEnergies Lubricants is now applying the process of incorporating 50% PCR high-density polyethene (HDPE) on a larger scale. From September 2023, all the bottles in the premium range produced in France and Belgium, recognizable by their platinum colour, are made from TotalEnergies RPE6314, a ready-touse polyethene compound.

Produced at TotalEnergies' Antwerp plant and part of the RE:clic range of circular polymers, this high-performance HDPE grade designed for blow-molding applications combines carefully selected recycled polyethylene

from post-consumer waste with a high-performance virgin booster. The resulting bottle has the same design, shape and weight as 100% fossil bottles, with a considerably reduced carbon footprint.

This innovation aligns with Total-Energies' ambition to contribute to a circular economy and reduce its virgin plastic consumption. Jean Parizot, General Manager of Domestic Markets at TotalEnergies Lubrifiants, said: "We are moving towards 50% recycled packaging by 2030 for all small packaging produced in France and Belgium, reducing the carbon footprint of our production and contributing to a more circular economy."

SOURCE | TOTALENERGIES

SUSTAINABILITY

ENOC unveils environmentally acceptable lubricants for the marine industry

ENOC Group has unveiled a comprehensive range of Environmentally Acceptable Lubricants (EALs) for marine vessels. ENOC aims to contribute to the maritime industry's decarbonization efforts locally and globally through these lubricants.

ENOC's latest marine lubricant range includes Stern Tube Oils, High-Performance EAL Hydraulic **Oils, High-Performance EAL** Gear Oils, and High-Performance EAL Greases. These products have been designed to meet the regulatory requirements of the **Environmental Protection Agency's** (EPA) 2013 Vessel General Permit (VGP), a regulation in place to stop harmful lubricant discharge and its impact on waterways, and the Vessel Incidental Discharge Act (VIDA), a US EPA framework that

regulates incidental discharges from commercial vessels.

Saif Humaid Al Falasi, Group CEO, ENOC, said, "As the maritime industry takes strong measures to meet its 2050 Net Zero target, Environmentally Acceptable Lubricants (EALs) will play a critical role in significantly

reducing environmental impacts across all applications since much of the lubricant lost from a vessel directly enters the water. Our newly introduced EALs will also help drive the nation's sustainability agenda when the country is preparing to host COP28. Over the years, ENOC Group has reiterated



SOURCE | ENOC

its commitment to protecting the environment, and our EALs will not only contribute to a cleaner environment but will also ensure optimal performance and reliability for marine operators."

These lubricants also comply with the European EcoLabel, widely recognized for its certification of products that demonstrate independently verified low environmental impact. According to ENOC, the European EcoLabel further reaffirms its commitment to promoting the use of lubricants with reduced environmental impact across the global maritime community. In addition to its ongoing sustainability initiatives, ENOC Group aims to expand its marine lubricants sales to cover over 300 ports by 2025.

ELECTRIFICATION

Infineum launches a lubes additive package for hybrid vehicles

n a move towards sustainable automotive lubrication, Infineum has unveiled its latest product, Infineum P6895A lubricant additive package, which meets the stringent Stellantis test for SAE OW-20, PSA B71 2010.

The new additive has been formulated with sustainability in mind from its initial research and development stages to its in-use performance, it meets stringent performance standards, and prioritises fuel economy, says Infineum.

The test run by Stellantis, formerly known as PSA Group before merging with Fiat Chrysler Automobiles, sets high standards for lubricants to ensure they align with modern engines' performance and protection needs. Multinational car manufacturer Stellantis, which includes renowned brands like Peugeot, Citroën, DS, Opel, and Vauxhall, has long been at the forefront of automotive innovation.

This additive is tailored for hybrid passenger cars since these cars continue to gain market share. Infineum P6895A

has undergone rigorous 'no harms' performance testing under severe conditions, ensuring it meets



the unique demands of hybrid vehicles. This additive package is compatible with the latest bio-derived base stocks, aligning with the automotive industry's sustainability goals. ■

SUSTAINABILITY

GS Caltex launches a biodegradable saw oil, Kixx Chain BIO

ixx, the lubricant brand of GS Caltex, is expanding its bio-based lubricant product line to include the new Kixx Chain BIO, a biodegradable machine saw oil based on plant-based base oil, in which 98% of the constituent materials are bio-based.

The new product is made using fatty acids extracted from rapeseed, palm, soybean, and sugarcane, making it easily decomposable. It also has the European Union's 'EU Eco-Label' certification, which requires high environmental standards with low ecotoxicity, bioaccumulative properties, and excellent biodegradability. The 'EU Eco-label' is a rigorous certification that can only be obtained by products that minimize the environmental impact throughout the entire product life cycle, from raw material extraction to production, distribution, and disposal.

Regarding Kixx Chain BIO', GS

Caltex said, "We will continue to do our best to provide sustainable solutions to all industries that require lubricants by developing



SOURCE | GS CALTEX

products that minimize the impact on the environment and contribute to carbon reduction. We are the first domestic lubricant brand to launch a bio-based machine saw oil."

Due to the nature of sawing machines used for logging, after completing the lubrication function, sawing oil is not returned to the reservoir inside the saw but flows out to the outside or sticks to sawdust and soil and is absorbed into the ground.

GS Caltex has also launched other biodegradable lubricants; the Kixx RD BIO product, an industrial biodegradable hydraulic oil, and Kixx BIO1, an engine oil made from base oil extracted from renewable plant raw materials, mainly for industrial and automotive use.

WHAT'S NEW

COOLANTS

Shell Lubricants introduces immersion cooling fluids



SOURCE | SHELL LUBRICANTS

hell Lubricants has introduced a range of single-phase immersion cooling fluids to keep computer components cool while helping to cut energy consumption and lower carbon dioxide emissions, especially in energy-intensive facilities such as data centres.

Immersion cooling is a way of cooling IT hardware, including whole servers, by immersing them in a dielectric (electrically non-conductive) fluid. In single-phase immersion cooling, the fluid stays as a liquid without changing phase.

"We believe Shell's immersion cooling technology is an essential piece of the puzzle in tackling data centre energy use that will be key to helping customers deliver on their sustainability commitments. Made from natural gas using Shell's gas-to-liquids (GTL) process, Shell Immersion Cooling Fluids are designed to maximise the energy efficiency and performance of data servers and information technology (IT) components," said Mansi Tripathy, Vice President, Shell Lubricants for Asia Pacific.

Shell's GTL products made from natural gas are synthetic fluids. They are colourless, odourless, inherently biodegradable to different extents, stable, and provide good performance and material compatibility.

Shell Lubricants is also looking to work with key players in the data centre ecosystem in Asia – such as tank original equipment manufacturers (OEMs), system integrators, data centre owners and co-locators – for proof-of-concepts with its immersion cooling fluids to meet next-generation computing requirements.





Join the entire base oils and lubricants value chain in Central London



MKTLZ20



28th ICIS World Base Oils and Lubricants Conference

Park Plaza Westminster Bridge, London, UK

Conference: 6-8 February 2024 Training: 5-6 February 2024

IN OTHER WORLDS By Miriam Wangari

DISTRIBUTION EXPANSION

Lubrizol partners with IMCD Group to Expand Additives Business in Bangladesh

ubrizol Corporation has announced a new distribution agreement with IMCD Group, a leading global distribution partner and formulator of specialty chemicals and ingredients, as part of its commitment to serving Bangladesh's growing lubricant and fuel additives market.

"We see tremendous growth potential in South Asia, and that's why we are investing in the region and committing to fully supporting oil marketers in Bangladesh," said Flavio Kliger, Senior Vice President and President of Lubrizol Additives.

He added, "This new agreement with IMCD will allow us to reliably service the growing number of additives customers in the country with our high-performance technology."

Lubrizol has previ-



Left to Right; Mr. Sanjeev Kaul, Vice President, Lubrizol Additives, India, Middle East and Africa, and Mr. Narendra Varde, Managing Director, IMCD India & Bangladesh. SOURCE | LUBRIZOL

ously worked with IMCD to distribute additives in global markets. The companies' recent mutual successes in India and Africa in part led to the new commitment in Bangladesh.

"Lubrizol has been our partner in India for the past four years, and we are now excited to strengthen this relationship by expanding into Bangladesh," said Mr Narendra Varde, Managing Director, IMCD India & Bangladesh.

"With our proven track record of successfully nurturing and expanding businesses in India, bolstered by Lubrizol's cutting-edge technology and unwavering support from their dedicated team, we are confident in our ability to replicate the success in this region. This collaboration will result in a higher level of service and support for Bangladesh oil marketers looking to distinguish themselves from competitors. The entirety of the Asia-Pacific market represents an enormous opportunity for our business and our customers, and we are truly committed to our industry's collective success "Our ongoing relationship with IMCD is proof positive of our investment in high-growth markets, and we're excited for a mutually successful future, Kliger added."

IMCD will distribute Lubrizol additives nationwide to cater to the demand for lubricants and finished fluids, driven by increasing urbanization and industrialization.

RECYCLING

Arteco partners with Arom-dekor Kemi to create a coolant base fluid

rteco and the Swedish company Arom-dekor Kemi announced cooperation to unlock the environmental and economic benefits of purifying and recycling used de-icing fluids to use as base fluid in the production of coolants for automotive, industrial, and electronic applications.

Arteco is a coolant and heat transfer fluids manufacturer. At the same time, Arom-dekor Kemi is part of Vilokan Group Fluids business, which has environmental technologies that enable the purification and



SOURCE | ARTECO

recycling of de-icing fluid, among other waste streams. The de-icing fluid is collected from airports in Sweden and Norway. The fluid is transported to the facility at Arlanda, Sweden, where the final purification process occurs. "We are excited to embark on this cooperation with Arom-dekor Kemi," said Alexandre Moireau, General Manager of Arteco.

"By combining our strengths, we unlock the potential of recycling, benefiting the environment and creating economic opportunities. Together, we help pave the way for a better shared future," he added.

Christian Lundell CEO of Aromdekor Kemi, commented, "This strategic cooperation represents a significant milestone in our mission to recycling. Arteco, a leading coolant manufacturer in Europe, is the first customer to integrate recycled mono propylene glycol (MPG) into their coolants. We are taking an important step forward in building a more sustainable world."

The cooperation between Arteco and Arom-dekor Kemi will optimize resource recovery and contribute to a more sustainable and cost-effective waste management system. Additionally, the recovered materials can be reintroduced into the supply chain, promoting a closed-loop approach that reduces reliance on virgin resources.

CONDITION MONITORING

WearCheck opens a second laboratory in India

he South Africa-based Condition Monitoring Company, WearCheck, recently opened the doors to its second laboratory in Durgapur India, after the success of its Chennai-based laboratory, which has been in operation since 2010.

The new Indian laboratory is located in a major industrial city and mining hub catering to the Eastern Region and West Bengal, growing demand for condition monitoring services. Durgapur is home to various operations, including manufacturing, power generation and more. Wear-Check said the new laboratory is equipped with experienced professionals to offer condition monitoring services to



Neil Robinson, WearCheck Managing Director from the company's head office in South Africa, cuts the ribbon of the new WearCheck Durgapur laboratory. Looking on are team members from the Durgapur laboratory. SOURCE | WEARCHECK

the Bengalese mechanised sector for informed maintenance decisions.

WearCheck Regional Managing Director, Sundip More, explained the importance of maintenance, "By monitoring a component's condition regularly over time, our scientific techniques provide reliable data which enables our diagnosticians to predict accurately whether and when that component will potentially fail. We identify a potential failure before it occurs and recommend a remedy. This way, catastrophic failure is avoided, enhancing machine availability and performance. The repair work to the component can be scheduled for a time that suits the work programme."

WearCheck's core business is the scientific analysis of used oil, fuel and other fluids, whereby samples are analysed in the laboratory for trace particles, which indicate which component is suffering unusual wear patterns. This information is assessed by highly trained diagnosticians, who recommend the required remedial action for the component in question.



Condition Monitoring is at the **heart** of machine reliability

WearCheck specialises in a range of sophisticated condition monitoring techniques which help to boost the availability and reliability of machinery, thereby helping our customers to operate more efficiently and save money on maintenance costs.

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INFOMERCIAL

Setting Sail to Success ENOC Marine Earns Glowing

Approval from MAN Energy Solutions



ENOC has successfully completed the approval process (No Objection Letter-NOL) of MAN Energy Solutions (MAN ES) for its new ENOC Strata CYL 540 II marine cylinder oil, This achievement marked by receiving the No Objection Letter (NOL) from Man ES, a leading manufacture for 2 stroke diesel engines, places ENOC at the forefront of marine lubricants solutions.

The approval process involved rigorous testing of ENOC Strata CYL 540 II, which included passing MAN's Category II service test and an extensive 2000-hour confirmation test. After Successfully completing all MAN ES tests ENOC was awarded the full NOL, authorizing the product for use in MAN's Mark 9 and later engine models.



MAN Energy Solutions Future in the making

Background on Category II cylinder oils

All MAN B&W engines, including Mark 9 and above, now recommend Category II cylinder oils. In 2020, MAN ES introduced two categories of cylinder oils: Category I and Category II, with Category II being the higher-performing option, especially noted for its cleaning ability. Oils in this category, including the 40 BN, 100 BN, and 140 BN variants, undergo extensive testing to meet these standards.

Category II oils are versatile, suitable for all engine types, and specifically recommended for MAN B&W two-stroke engines from Mark 9 and higher, including ME-GA engines. For engines designed like Mark 8 or lower, the 40 BN Category II oils are also beneficial. Oils with 100 and 140 BN are primarily for high-Sulphur fuel applications.

The 40 BN oils in Category II are adaptable for use with fuels having Sulphur contents less than 0.10% to 0.50% and alternative fuels such as LNG, ethane, methanol, and LPG. They are recommended for continuous use without the need to alternate between high and low BN oils for engine cleaning. This makes the process of selecting a suitable lubricant for the engine more straightforward.

Benefits for the Marine Industry

By Enhancingthe the chemistry, 40 BN Category II lubricant marks a significant advancement in marine engine maintenance, by offering wear protection and acid neutralization capabilities of a 100 BN lubricant, while also delivering superior piston and ring pack cleanliness.

Such a development provides considerable logistical advantages for ship owners and operators, allowing them to use a single, more effective product instead of alternating between different BN oils. This is particularly beneficial for vessels equipped with only one cylinder oil tank. Additionally, the 40 BN Category II oil's compatibility with the entire MAN engine range, including Mark 9 and newer models, simplifies operations for the crew. It also future-proofs engines against the increasing adoption of low carbon alternative fuels like LNG and methanol.

Scheduled to be available in major ports from Q1, 2024, the ENOC Strata CYL 540 II, developed through a collaboration between ENOC's technology team and additive partners, has successfully met the demanding requirements of MAN ES. This achievement positions ENOC as a key player in meeting the evolving needs of the marine industry.



JOINT VENTURE

PETRONAS Lubricants and PT Kilang Pertamina collaborate on a lube base oil plant

ETRONAS Lubricants International (PLI) and PT Kilang Pertamina International (PT KPI) recently signed a Joint Study Agreement (JSA) to explore the possibility of developing a new greenfield lubricant base oil plant in Indonesia.

This collaboration will see the two companies carry out a technical and feasibility study, which is expected to cater to the demand of the Indonesian market and growing regional markets, including China and Southeast Asia, with the investment decision expected to be concluded by 2025.

PETRONAS Lubricants International's Managing Director and Group CEO, Hezlinn Idris, said, "This JSA is part of our larger strategic



L-R Aris Mulya Azof, Senior Vice President, Downstream, Power, Gas & NRE (Persero); Johan N.B Nababan, PT KPI's Director of Business Planning and Development; Hezlinn Idris, PETRONAS Lubricants International's Managing Director and Group CEO; and Ahmad Adly Alias, Vice President of Refining, Marketing & Trading, PETRONAS. SOURCE | PETRONAS

efforts to complement and grow our existing high-grade lube base oils portfolio. Through this collaboration, we will leverage each other's strengths, capabilities and existing network distributions, reaching out to our customers better and faster. We believe this JSA will provide both companies additional opportunities to explore the untapped markets and expand our regional presence as leaders in lubricant technology."

Johan N.B. Nababan, PT Kilang Pertamina International's Director of Business Planning and development, said, "We are proud to partner with PETRONAS Lubricants International, as we seek synergistic opportunities to expand our existing presence in the region further. There is much potential to push the boundaries of lubricant technology, and we are happy that this partnership will open the possibilities ahead of us."

The refinery can process raw materials and produce up to 800 tonnes/day of lube base oils and other products such as diesel fuel.

EXPANSION

Aramco to enter South American market with Esmax acquisition

ramco is set to purchase a 100% equity stake in Esmax Distribusción SpA ("Esmax") from Southern Cross Group, a Latin America-focused private equity company. Esmax is a diversified downstream fuels and lubricants retailer in Chile. Its business includes retail fuel stations, airport operations, fuel distribution terminals and a lubricant blending plant.

Aramco's planned acquisition of Esmax will be its first Downstream retail investment in South America. This transaction will enable Aramco to secure outlets for its refined products and help expand its retail business internationally, while also unlocking new market opportunities for Valvoline branded lubricants.Mohammed Y. Al Qahtani, Aramco Downstream President, said, "This agreement is yet another milestone in our strategy to grow Aramco's downstream presence globally and expand our retail, lubricants and trading businesses. We are excited by the opportunities it presents, creating synergies with our extensive trading and



Front row, from left: Southern Cross Group Partner Raoul Sotomayor and Acting President of Aramco Europe Mansour Al Turki. Back row, from left: Southern Cross Group Partner Jaime Besa, Aramco Executive Vice President of Products and Customers Yasser Mufti, Aramco Director of Retail Business Solutions Nader Douhan, and Aramco Director of Mergers & Acquisitions Mohammed Al Qahtani. SOURCE LARAMCO

manufacturing systems. Moreover, it creates a platform to launch the Aramco brand in Chile and South America more broadly, unlocking significant potential to capitalize on new markets for our products. Esmax is a well-run business in Chile with more than 100 years of experience with quality assets and growth potential. We are excited to have the outstanding people of Esmax join the Aramco family as we continue to execute our downstream strategy."

NEW ENERGIES

Natural gas on the move

Growing natural gas commercial vehicle market spurs demand for advanced lubricant formulations

The need to work towards a decarbonised future is driving heavy-duty vehicle manufacturers in India to explore lower carbon fuel sources, including natural gas. Dr Amol Nilpawar, Senior Technologist at Infineum, explains the impact of these fuels on engine oils and how, with limited industry lubricant specifications for these more challenging applications, there is a growing need for field proven technologies that can demonstrate sufficient engine durability over long drain intervals.

To help improve air quality in India significant changes have been made to vehicle emissions regulations. In 2020 the introduction of Bharat Stage 6 (BS 6) reduced oxides of nitrogen (NOx), hydrocarbons and particulate matter (PM) emissions from heavy-duty vehicles. From April 1 2023, the implementation of BS 6 on-board diagnostic (OBD-2) norms mandated a tighter NOx and PM limit for OBD for heavy-duty diesel vehicles. In addition, the country has announced its aim to reach net zero emissions by 2070 and, at COP 27 in 2022, submitted its Long-term Low Emission Development Strategy.

However, it is a long path and, to reduce emissions now as the industry works towards decarbonisation, the use of lower carbon fuels, such as natural gas, are growing in popularity.

CNG a fast growing market

In the heavy-duty sector, compressed natural gas (CNG) brings several advantages. Relative to diesel fuel, it is cleaner burning, emits lower particulates, NOx, carbon monoxide and greenhouse gas (GHG) emissions. CNG's clean burning property results in less carbon build-up, potentially reducing engine wear and extending engine life. In addition, CNG is generally less expensive than gasoline or diesel, which can result in significant cost savings for driver-owners and fleet operators.

Currently most are in the passenger car and three-wheeler segments, but there is also interest in the commercial vehicle segment – where 10% of the almost 1

CNG's clean burning property results in less carbon build-up, potentially reducing engine wear and extending engine life.

million units sold were powered by CNG.

However, natural gas vehicles still have barriers to overcome. Currently there is limited refuelling infrastructure, although forecasters suggest that the number of CNG fuelling stations in India could triple by 2030 from the 4,000 available today. Also, despite the reduced running costs, higher initial vehicle purchase prices mean that the payback period would be longer for vehicles used infrequently. But, OEMs are increasingly including CNG models in their commercial vehicle lineups with Tata announcing five new CNG trucks in September last year - including the country's first CNG-powered Medium & Heavy Commercial Vehicle in the 28 and 19 tonne nodes.

However, recent steep increases in the price of CNG has dampened CNG commercial vehicle sales, and sales are likely to remain pegged to the market price of CNG in the foreseeable future.

CNG lubricant challenges

Oils designed for internal combustion engines that are developed to run entirely on natural gas must handle different conditions to those formulated for conventional liquid fuels.

In a CNG internal combustion engine, higher combustion temperatures lead to higher oxidation and nitration of the engine oil, which depletes base reserves, »

	Gas engine	Diesel engine	Gasoline engine
Fuel phase	Gas	Liquid	Liquid
Combustion products	CO ₂ & H ₂ O	CO ₂ & H ₂ O	CO ₂ & H ₂ O
Combustion by-products	CO, CH ₄ , HC, NOx	Soot, NOx	CO, HC, NOx
Key oil performance	Oil life Piston cleanliness	Soot control Piston cleanliness	Fuel economy

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Compressed natural gas filling station. SOURCE | SHUTTERSTOCK| SCHARFSINN

» resulting in corrosion and deposit issues. More water is produced during combustion, which can lead to deposit formation. In addition, the gaseous fuel does not provide any valve lubrication, which means striking the correct sulphated ash balance in the finished oil is essential to prevent valve recession, guttering and torching. And, as oils trend to thinner viscosity grades for improved fuel economy, it is essential to ensure they can continue to deliver robust wear protection over an extended oil drain interval (ODI).

Key requirements of natural gas engine oils

- Strong oxidation and nitration control
- Valve lubrication (ash balance)
- Compatibility with aftertreatment systems (sulphur and phosphorus limits)
- High total base number (TBN) and TBN retention for corrosion control
- Low-speed pre-ignition (LSPI) protection

Diesel engine oils are typically formulated to handle soot and not nitration,



In a CNG internal combustion engine, higher combustion temperatures lead to higher oxidation and nitration of the engine oil, which depletes base reserves, resulting in corrosion and deposit issues.

with a high base number (high ash) for acid neutralisation, which means they are not ideally optimised for use in engines running on CNG. Additionally, as OEM warrantees are being extended in line with evolving customer demands, the need to maintain engine durability over extended drain intervals is increasingly important and is something that requires natural gas engine oil formulations tested to stringent OEM standards.

Oil specifications and testing

The engine oils used in heavy-duty vehicles are regulated by the ACEA oil sequences and API engine oil performance categories. However, these are not designed around the needs of mobile natural gas applications.

Here, the Cummins CES 20092 engineering standard for mobile natural gas engine oils is an important specification, including performance tests for oxidation stability and protection of the power cylinder. The standard is designed around CNG and LNG mobile applications and covers SAE xW-30 and xW-40 viscosity grades.

One of the key requirements is an extended field test across a range of engine types, which demonstrates wear and corrosion protection, oxidation and nitration control, cleanliness performance and



emulsion resistance. A second requirement is to pass an engine dyno test designed to stress the oil's oxidation and thermal stability in the natural gas environment.

Rapid evolution of gas engine oils

With a wide range of CNG vehicles expected to be introduced into the Indian vehicle parc in the coming years, there is a growing need to engineer lubricants designed to meet their specific needs.

To cater for the fast evolving requirements of the Indian market Infineum selected a proven technology that has CES 20092 credentials and field test experience in heavy-duty CNG tractor trailers and buses. This technology provided significant data on the condition of engine components and used oil analysis. In our experience, the use of approved additive technologies in natural gas engine oil (NGEO) formulation helps to speed up the field/dynamometer testing, approval and marketing. In our framework we have been able to condense the timeline to 12–18 months. Using the framework in recent testing of BS 6, long-haul cargo trucks running on CNG, our SAE 15W-40 candidate oil has doubled the length of the oil drain interval, exceeding 40,000 km.

Longer drain NGEOs are gaining market acceptance, although OEMs are already looking beyond current initiatives. While heavy-duty diesel engine oils can reach 80,000 km ODI in intermediate commercial vehicles, ODIs for NGEOs are still hovering around 20,000 km. The need to increase the latter means we can expect to see rapid developments in this oil category.

Using the Infineum framework for NGEO adoption enables customers to commercialise products faster. The use of high performance additive chemistries in formulations tailored to meet the requirements of CNG mobile applications delivers the long drains and engine durability necessary to service this high growth market. Through technology leadership, Infineum is well positioned to meet the upcoming challenges.

Rapid evolution of NGEO – framework



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10 QUESTIONS FOR LUBRICANTS PROFESSIONALS

Africa's Lubes market: Opportunities and Challenges

Lubezine Magazine interviewed Steve Munguti, the Regional Head of Specialties – Lubes & LPG at Lake Oil Group and he shares insights into the African market. Mr. Munguti talks about the similarities and differences in the lubricants market in different countries, he also highlights what removing trade barriers between African countries would mean for the lubricants business, among other things.

Would you tell us about yourself and your journey in the Lubes Industry?

My journey in the petroleum industry started in 2001 when I was recruited as a lab supervisor at SGS (K) Ltd, and I worked at their petroleum laboratory in Mombasa for two years. Thereafter I was employed by Kenya Shell Limited in the same capacity and after a while I became the Chief Chemist of the company in 2004. As a Chemist, I managed the Quality Control aspect of the lubes blending plant. It is in this role that I interacted with the lubes technical sales team. I eventually started fitting in their customer training program in Mombasa. During this period, the then Lubes Sales and Marketing Manager spotted my customer engagement talent and requested me to join his team. In 2007, I joined the sales team as a Field Based Account Manager for Nairobi, Central and Coastal regions in charge of transport, power, and construction segments. In this role I was again able to showcase my prowess in customer recruitment and retention. In 2011, I was added the role of General Manager Shell Tanzania Limited. This started my journey as a Regional Manager. When Shell Brand was acquired by Vivo Energy in 2012, I was formally given the role of Regional Business Development Manager (BDM) for East and Southern Africa reporting to the Vice President of lubes. I was covering 6 markets; Kenya, Ethiopia, Tanzania, Zambia, Zimbabwe and Rwanda. In 2016, I was made the acting Managing Director for Vivo Energy Mozambique as well. I separated with Vivo Energy in 2018 and joined Oryx Energies as a Regional Lubricants Sales Manager in charge of all lubricants sales activities in Anglophone countries including Kenya, Uganda, Tanzania, Rwanda, DRC, and Zambia. All country sales managers were reporting to me. Currently I am with Lake Oil Ltd working as the Regional Specilties Manager in charge of both Liquefied Petroleum Gas (LPG) and the Lubes business in the region.

As the Regional Head of Specialties – Lubes & LPG at Lake Oil, what does your work entail?

The role of a Regional Specialties Manager entails managing two Lines of Businesses (LoB), namely LPG as well as Lubes. In the LPG LoB, I oversee both sales and operational aspects of the business including stocks acquisition, inventory management, bulk sales, retail business management while ensuring a robust Health, Safety, Security & Environment (HSSE) culture is adhered to. I run two LPG depots in Tanzania and



eight filling plants across Tanzania. Similarly, in lubes LoB, I am responsible for sourcing all components, blending, quality control (QC), sales and distribution of packed products as well as providing hospitality service to other blenders.

3 You have immense experience in the East and part of Southern Africa lubricants market, what are some of the similarities and differences?

Primarily, the similarity in all these markets is the "Africanicity" of the people. I have been welcomed in all of them. Africans are social and welcoming by nature and this made it easy to mingle and interact with not only customers but stakeholders at large. The other similarity was the setup of these markets, especially the indirect channel. There is always a high street in all these countries and as a lubes guy, this always pumped adrenaline in my system once I identified and visited a new one. Meeting the mechanics, sharing ideas, and trying to make a sale. Clear differences were language barriers and cultures that I had to understand and assimilate to infiltrate the buyers/influencers. The need to understand the different currencies and how they relate to the dollar and sometimes home currency. There was also the issue of different motor vehicle technologies in different markets depending on local rules of second-hand car importation. In other countries one would find an Original Equipment Manufacturer (OEM) that is absent in other markets e.g., in the Southern countries, Freightliner is a very visible OEM on the road unlike East Africa where you will find Scania and Chinese brand. This meant different sales pitch depending on some of these variations. In other words, versatility is important to this role.

In these regions that you have worked in, what is your most memorable and impactful professional experience?

Understanding how the regional blocks work and how to make them work to the advantage of your business and being able to engage stakeholders at any level on any issue related to lubricants business in terms of market dynamics is something that I cherish. Interacting with professionals from diverse backgrounds provided opportunities to look at challenges from different angles and get multifaceted solutions. It also provided a chance to implement best practices across different markets.

Having worked in East and Southern African region, how would removing trade barriers between countries improve trade and more so in the lubricants industry?

Trade barriers are a necessary tool to protect investors in individual countries. However, once several countries enter into a pact to form a regional block, in the charter, the block is defined as a single market, which in my interpretation means that goods from member states should enjoy the same treatment in the entire region. However, this has not been the case, at least for the regional blocs that I have worked in. Therefore, removing trade barriers would level the playing field and benefit the citizenry of all member states. I recall that I had to lobby for a certain member

6

To foster better trade between African countries, removing trade barriers through forming regional blocs which are then defined as a single market is crucial. This would level the playing field and benefit the citizenry of all member states. It is key that member states respect these regional blocs because they are designed to benefit the locals.

state to start reciprocating preferential treatment of our lubes from Kenya because lubes from this member state was being exempted when imported to Kenya. Similarly, I had to find ways of ensuring that I was not charged. It is important that the member states respect these regional charters because they are designed to benefit the locals.

You are a chemist, what is the importance of lubricants formulation expertise, and do you think this is available in East Africa, and is there room for growth?

In a world that is changing technologically by day, I need not overemphasize on the importance of lubricant formulation. OEM's, in their attempts to meet more stringent environmental requirements, keep on trying new stuff with their engines to stay ahead of the competition. Engines have become smaller with more power; this has obviously changed their lubricants requirements and the need for more environmentally friendly lubricants. However, while lubricant formulation is especially important in the performance of a lubricant, even with the best formulation, having the right quality components used in the blending is critical. This means that choosing the right components plays a critical and vital role in the performance of the blended product. It is therefore extremely important to engage the services of an expert in this area. This expert will remain the focal point to align with base oil and additives experts like Chevron Oronite, Lubrizol, Infineum or Afton. In my experience, it is also impactful to pass some knowledge about lubricant formulations and performance to the end user. I have come across end users who out of lack of knowledge have topped up engines with gear oil etc., obviously this was to the detriment of the engines. All lubricant marketers should have a program to promote knowledge in the downstream supply chain to avoid such incidents.

2 Looking at the lubes blending landscape in East Africa, what is your comment in terms of the number of blending plants »

10 QUESTIONS FOR LUBRICANTS PROFESSIONALS

» available, are they fully utilized or underutilized? If underutilized, what can be done to ensure full utilization of these plants?

The overall size of the East African market is around 250KT annually serviced by around 13 blending plants, with various blending capacities ranging from 14KT to around 60KT annually. This number is growing rapidly, therefore existing players are expanding their existing investments while new investors are becoming interested in the lubricant segment especially after onboarding DRC into the East African bloc. Therefore, my response is that currently most of these Lubricants Oil Blending Plants (LOBPs) may appear to be underutilized but strategically, more may be required in the coming years especially with Africa becoming a key focus of investment across the globe. Whereas other markets are showing signs of shrinking, Africa is yet to attain its full potential in infrastructural developments. However, investors need to be encouraged to form Joint Ventures across certain markets especially for underutilized facilities across the region. This can even be made easier if trade barriers are further reduced to allow a fair playing field.

8 You were involved in setting up a laboratory for Shell in Ethiopia some years back, how important is a high-quality laboratory in terms of ensuring the lubricants quality that is produced by oil marketing companies?

It is essential that an excellent quality assurance process is set up in any manufacturing environment. LOBP's provide an essential commodity that is required to run some very expensive investments especially in the aviation & mining sector. Therefore, it is crucial that the owners of LOBP invests in the essential equipment required to ensure that this quality assurance process should be incorporated in the production process and more importantly segregate the duties of the QC Manager from the Production Manager. It's unfortunate that even with the right equipment, one still finds non-compliant products in the market simply because the QC Manager reports to the Production Manager which is clearly a conflict of interest. The Key Performance Indicators (KPIs) of the QC Manager are totally different from those of a Production Manager and therefore the 2 roles should report to a high office capable of making objective calls that will balance market demand as well as quality. Labs should

It is essential that an excellent quality assurance process is set up in any manufacturing environment. LOBP's provide an essential commodity that is required to run some very expensive investments especially in the aviation & mining sector.

The big challenge that is faced by local oil marketing companies is the ability to afford OEM approvals as this is a very costly and tedious exercise.

not only act independently with the support of top management but must be seen to be doing so.

The region has seen multinational companies exit the market and their space is being taken by local companies, what can be done to ensure that these companies perfectly fit the big shoes left by the multinationals in terms of product quality, technical offering, and strategies?

In my view, the local companies have fitted perfectly into the gap left by departing multinationals. One critical factor that they have done, given that I am currently working for one, is to ensure that the quality of lubricants is not compromised. Those I have interacted with prefer to use the same formulations and get technical support from the BIG 4 additive suppliers i.e Chevron Oronite, Afton, Lubrizol & Infineum. This is a plus for them since they are also able to interact with the technical experts from these suppliers. They also purchase and use specially selected base oils to blend the highest quality lubricants for their respective markets. The big challenge that is faced by these local companies is the ability to afford OEM approvals as this is a very costly and tedious exercise, as such there is need for OEMs to recognize this and try to support these local companies knowing that this also gives confidence of their equipment. Without this, the big brands that dominated these markets since pre-independence will continue being perceived as the only high-quality lubricants available, a notion that I highly dispute.

10

Counterfeiting is a big problem in many African countries, what measures would you recommend to tame this menace?

Indeed, counterfeiting is a major challenge having experienced this in 2 of my former companies. Unfortunately, there is no straight forward way to handle the menace. On one hand, you avoid engaging the counterfeiters directly fearing that the press will highlight this and give a perception that your brand is not genuine in the market (a brand killer). Second option is to take "Scorch earth policy" approach. This means employing scouts to identify the counterfeiting dens and making raids with the relevant authority, unfortunately, this poses a risk to the scouts, and they always spring back again even stronger. I believe that if lawmakers can be convinced to make much stiffer penalties in the line of "Economic sabotage" for counterfeiters, this may reduce this to manageable levels.

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perma STAR VARIO operates fully automatically, independent of temperature and pressure with a precise discharge. The system consists of an electromechanical drive, an LC with 60, 120, 250 or 500 cm³ of lubricant and a battery pack. The desired discharge period and LC size can easily be selected with the push button and are immediately visible in the LCD. The current operating status is indicated on the LCD and via LED signal lights (red / green) visible all round. The LED signals are recognisable from a distance.





OIL ANALYSIS FEATURE

ESTER-GAZERS

Testing Guidelines for Natural Ester Oils in Transformers



By Corné Dames, WearCheck Transformer Consultant

nsulating fluids can be categorised in many different ways. One of the most common classifications would be by identification of the constituent base oil: mineral oil, synthetic, or natural oils. Mineral oil is derived from crude oil, this type of oil is known for specific characteristics – chemical and electrical characteristics – that are highly reliant on the specific process of refining that is used during the manufacturing of the oil.

Natural esters are derived from a 100% renewable source, vegetable oils are superior to mineral oil in some instances and for some applications. They can be used for power transformers and are especially well suited for distribution transformers. These types of transformers can be retro-filled using natural or synthetic ester fluid if previously filled with mineral oil. The manufacturer should be contacted to confirm if the retro-fill is advisable for that specific design, as ester fluids might flow slower through the transformer, causing lower heat dissipation.

In this article transformer consultant Corné Dames discusses the different condition monitoring options for the analysis of transformer component performance, where natural esters are used as insulating fluids in transformers, to determine the degree of contamination and degradation.

Before getting into the various types of tests conducted on transformer fluids that are based on esters, it is imperative that we understand some background information on mixtures of natural ester oils and other dielectric fluids.

Natural esters and mineral oils are miscible and mostly compatible; they are also compatible with halogenated hydrocarbon insulating fluids. Mixing mineral oil and natural esters may significantly impact the typical properties and impact performance. If the fluids are mixed, the concentration of the different oils will determine the chemical and electrical properties of the fluid mixture now in the transformer. This might not adhere to the desired properties of the ester fluids, but this might enhance the properties of the mineral oil. This ensures a lower flammability and lower acid formation, but the environmental impact upon spillage would still be devastating. The other problem would be testing the mixed oil, as there are different acceptable levels for ester and mineral fluids to determine the quality and safety of the insulating fluid for the intended purpose.

It is worth noting that, a natural ester oil must comply with the National Electrical Code, which stipulates that less-flammable fluids have a fire point of not less than 300°C and that the installation complies with all the restrictions provided in the product listing of the fluid.

Too much mineral oil contamination causes the mixture of oils not complying with the required Safety Code. The natural ester manufacturer should be contacted to determine the maximum mineral oil content range that is allowed, to ensure that flammability parameters are still met. Typically, a maximum of 7% mineral oil is acceptable.

As a rule, it is not advisable to mix synthetic esters, synthetic hydrocarbons, and high-molecular-weight hydrocarbons, although they are miscible. Silicone fluid is not miscible with natural ester oils, so cross-contamination should be avoided. Typically, natural esters are miscible with non-flammable halogenated hydrocarbons, like Polychlorinated biphenyls (PCBs). This might occur when retro-filling older transformers with this insulating fluid. It would be advisable to consult the manufacturers in such a case.

To classify natural ester oils that are in service, the following laboratory screenings are recommended:

- Visual condition of the oil (American Society for Testing and Materials (ASTM) D1524)
- Colour of the oil (ASTM D1500)
- Dielectric breakdown voltage (ASTM 1816)
- Water content (ASTM D1533)
- AC loss characteristics (dissipation factor) (ASTM D924)
- Fire point (ASTM D92)
- Viscosity (ASTM D445)

The functional tests outlined below although not required, they can be carried out:

- Interfacial tension (ASTM D971)
- Relative density (ASTM D1298)
- Pour point (ASTM D97)
- Volume resistivity (ASTM D1169)
- Neutralisation number (ASTM D664 and ASTM D974)

Types of oil tests and the significance of each test

After classifying the ester oils, the following tests are applied to natural ester insulating fluid and compares them to standards set for mineral oils. Due to inherent differences, standards may require updates. This article delves into key tests:

a. Sampling Practices (ASTM D923): Emphasises the critical role of accurate



sampling to ensure valid diagnostic evaluations, preventing misleading results and unwarranted expenses.

- **b.Acid Number (ASTM 664 and ASTM 974):** Describes the unique paths of acid formation in natural esters, addressing the impact of hydrolysis, pyrolysis, and oxidation on acid levels—differentiates between harmless long-chain acids and potentially harmful short-chain acids.
- c. Dielectric Breakdown Voltage (ASTM 1816): Highlights the importance of measuring an insulating fluid's ability to withstand electrical stress and the potential impact of contamination on dielectric values, especially when using natural ester oil.
- d.AC Loss Characteristics (ASTM D924): Discusses dissipation factor and relative permittivity, emphasising that natural ester oils inherently exhibit higher dissipation factors and relative permittivity than mineral oils.
- e. Interfacial Tension (ASTM D971): Explains the measurement of interfacial tension against water, noting its sensitivity to surfactants and the need for further ASTM limits for new natural ester oils.
- **f. Colour (ASTM D1500):** Compares colour considerations between the natural ester and mineral oils, highlighting the importance of additional tests for oil deterioration or contamination in natural ester oils.

- **g. Kinematic Viscosity (ASTM D445):** Addresses the impact of viscosity on cooling and performance, noting the higher viscosity of natural esters and the potential for increased viscosity over time due to polymerisation.
- **h.Flashpoint and Fire Point (ASTM D92):** Emphasises natural ester oils' higher flash and fire points than mineral oils and their significance in fire risk assessment.
- i. Relative Density (ASTM D1298): Explains that relative density is not a significant indicator of fluid quality but may be relevant for specific applications.
- **j. Pour Point (ASTM D97, D5949, D5950):** Discuss the pour point's significance in fluid circulation and its role in fluid identification and equipment selection.
- **k.Volume Resistivity (ASTM D1169):** Explores the electrical insulating capability of fluids, noting the lower resistivity of new natural esters compared to mineral oils.
- **1. Gas Analysis (ASTM D3284, D3612):** Details the importance of dissolved gas analysis (DGA) in identifying faults, with a focus on the unique gas profiles of natural ester oils compared to mineral oils.

Conclusion

There are differences in gas solubility

coefficients between the various natural esters and mineral oils, and their respective values should be used for data interpretation.

Thus, mixing the two types of oil might lead to a lot of confusion and misinterpretation of possible faults, or indicate dangerous scenarios, as pointed out when performing oil diagnostic testing. We should wait on International Electrotechnical Commission (IEC) or Institute of Electrical and Electronics Engineers (IEEE) or ASTM to supply us with guidelines to identify dangerous levels of gases, moisture etc effectively when performing diagnostics for mixed insulating fluids.

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About the writer...

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Valuable partners of Rymax Lubricants in Africa

There's a famous African saying that goes: "if you want to go fast, go alone; if you want to go far, go together'. This very much applies to Rymax Lubricants and the company's expansion in Africa over the years. Only teamwork leads to success, underlining the importance of a good match between distributor and headquarters. In this talk with Rymax' management team, we deep-dive into the importance of their network of distributors in Africa.



A selection of the Rymax products in the remarkable orange bottles.

"Rymax is available in over 20 countries on the African continent" states Mr. Erik Vermeer, Commercial director of Rymax Lubricants as we speak to him in a videocall. "Finding the right distributor to represent our product assortment and brand is not easy. There are a couple of values that we look for when searching for new partners. But we also have something to offer. Once a decision is made, we fully commit to success and go all-in with everything we have to offer: a very professional marketing team, top-notch logistical support, a full product assortment with a dedicated Account Manager to advise the best products. And one of the most valuable assets we can offer is exclusivity. Our potential partner, given we meet our mutually agreed goals, will be the only one allowed to distribute our products in their market. A valuable asset that comes with a responsibility." We ask the Managing Director of Rymax Lubricants, Mr. Wouter Cuppen, to elaborate a bit more on how Rymax got such a solid market position in Africa. He explains: "Our company was founded almost 30 years ago, in 1986. At that time, we worked as a private label manufacturer and explored every part of Africa. We've built a very valuable network, some of those customers are still with us today. A good example is Rwanda", Mr. Cuppen continues: "Together with our local partner, Société Petrolière-SP with whom we had many years of successful business, we combined forces and invested in the construction and operation of the Rymax blending plant ALMC in Kigali's Economic Free Zone, providing local markets with high-quality products following our Dutch standards. This fruitful corporation has resulted today in a substantial market share of Rymax Lubricants in Rwanda. The foundation of our partner SP provided the perfect ground to reach this success. SP is a large player in the fuels sector. The company is financially healthy and locally rooted and their willingness to invest, truly made the difference. Together we seized the opportunity and now we are one of the biggest brands in the market." Mr. Vermeer agrees to Cuppen's statements and adds to this: "We have many examples of these successful partnerships that we are very proud of: the Azar family who run Beever Company in Liberia, Tchakwanda in Angola who has grown very hard in a short period of time, or our ambitious partner in South Africa, Jaco from Orbit Industrial who is very committed and has chosen to focus 100% on Rymax: these are just a couple of examples of a very good match."

The global marketing manager of Rymax, Mr. Jan-Pieter Doove shares his vision on what the key to success is: "The first steps in any corporation are exiting. You are both discovering each other's strengths and weaknesses. Obviously, we expect our partners to be knowledgeable, to understand the lubricants market in their country and to have a network to distribute the Rymax products to. But as an exclusive distributor, we also expect our partners to invest in the brand awareness. The global marketing department offers a lot of assistance in for example online marketing, sponsoring, and advertising, but the local distributor also needs to take

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an active role in this. A good example is our new partner in Mozambique. The team has invested in sponsoring and corporations with brand ambassadors, elevating the brand to a flying start. But also, our partner in French speaking Mali has proven to be an excellent representer of the Rymax brand with consistent on and offline advertising campaigns." Mr. Doove states: "It is our goal to facilitate and inspire our partners, we want them to feel that the Rymax brand is just as much theirs, as it is ours. Only through these committed partnerships where we truly work together, we can make a difference in a highly competitive market. We understand this very well and we are fortunate enough to have many partners that share this vision".

It is interesting to see the clear strategy that Rymax follows to be successful in Africa. During our call with the management team, we get a better understanding of their commitment to teamwork. Mr. Erik Vermeer summarizes the most important elements for success: "Financially healthy, an established company, committed owners, a professional sales- and marketing team and a strong local network are the key-factors we are looking for in potential Rymax distributors. We are fortunate enough to have found these partners in Congo Brazzaville, Ivory Coast, Ghana, Senegal, La Reunion, Zimbabwe, Togo, Mauritania, Sierra Leone, and

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many other countries, not only in Africa. All with their own expertise's and strong points. And together we investigate where the opportunities for growth are, what points we need to work on. But it always comes down to teamwork. The ones that are open for our help are the ones that are most successful. And vice-versa: we listen to their experiences in the market to see where we need to further develop our services, products, and assistance. When we travel to visit our distributors, we like to learn about their company and their market activities, but also about their family, hobbies, and personalities. If we have the right match, we like to consider our partners as friends, or even family: the ever-growing Rymax family. Because we truly believe that shared success is so much more sustainable, and the saying we mentioned in the introduction of this article underscores the value of collaboration and teamwork for achieving longterm success."

Do you recognize yourself in the profile of a Rymax distributor? There are still many African countries where Rymax is looking for professional partnerships. You can contact Mr. Erik Vermeer directly on erik@rymax-lubricants.com.



Mr. Jan-Pieter Doove, Global Marketing Manager of Rymax Lubricants.

MARKET PENETRATION

Navigating Africa; the story of Goodyear lubes

Goodyear Lubricants is the lubricant brand of the Goodyear Tire & Rubber Company based in Ohio, USA. To expand its footprint, Goodyear has been investing and distributing its product range through Alonsa Electric Gulf FZCO. Sunil Khanchandani, CEO, Alonsa Electric Group gives us insight into Goodyear lubricants business in Africa.



1. When did Goodyear Lubricants start supplying lubricants in Africa, and which was the first country?

Goodyear Lubricants are distributed exclusively by ALONSA ELECTRIC GROUP (A member of Al Tara Group since 1978) since 2020. Goodyear (and Winged Foot Design) and Blimp Design are trademarks of The Goodyear Tire & Rubber Company used under license by Alonsa Electric Gulf FZCO. Copyright 2023 The Goodyear Tire & Rubber Company. The first country in Africa where Goodyear Lubricants were sold was Burkina Faso. Later, the Lubricants were introduced in Ghana, Libya and Egypt. In 2022, they were introduced in South Africa and in the second quarter of 2023 they were launched in Cameroon.

2. How many countries in Africa are Goodyear Lubricants being sold currently?

Goodyear lubricants are being sold in over 15 countries in Africa. Africa is a huge market for Goodyear Lubricants and a very promising window of opportunity. Some of the African countries where Goodyear Lubricants are actively available are: Benin, Burkina Faso, Cameroon, Democratic Republic of Congo, Ghana, Ivory Coast, Mali, Nigeria, Senegal, and South Africa.

3. Which lubricant ranges are available in Africa, and which market segments do you target with these products?

Goodyear Vigor and Vigor Plus which are API grade CI-4 15W-40 for high performance Diesel engines are available. Goodyear Thread Hydraulic lubricants, Goodyear motorcycle oil 20W-50 SL, Goodyear Dominor, Goodyear Cruizer and Cruizer plus are available for the petrol gasoline engine range for medium and new advanced engines. The range caters for the automotive industry, covering diesel and petrol engines and motorcycles.

4. Does Goodyear blend the lubricants sold in Africa locally, or are the lubricants imported as finished products?

Goodyear lubricants are only imported into Africa. The essence is to maintain its consistency and durability. The specifications of API are applied to products where applicable. Goodyear VIGOR 15W40 CI4 is a high-performance diesel lubricant with Volvo & Mercedes Benz OEM certification. GOODYEAR CRUIZER PLUS 5W40 API SN is Mercedes Benz certified. Goodyear Lubricants blending plants are in Europe, Malaysia, UAE & USA. The products are tested under ISO 17025 laboratories primarily.

5. Which distribution strategies has Goodyear adopted in Africa? Is it through exclusive distributors, joint ventures or subsidiaries?

Distribution is the primary strategy for Goodyear Lubricants and ALONSA Group is

the exclusive distributor in Africa. ALONSA has already set up distribution partners in over 26 countries for Goodyear lubricants since 2020 under its distribution program. In the early start up years, the sales funnel was based on exclusive distribution models in many zones around Africa. ALONSA Group CEO, Sunil Khanchandani outlined the 2024–2025 development plan: Egypt, Nigeria, Saudi Arabia and South Africa are critical focal points for the company's increased footprint. It plans to establish additional distribution points across these zones.

6. What are some of the challenges Goodyear has faced in the African market so far, and what opportunities have you identified?

The biggest challenge we see is the currency fluctuations in local economies, which make consistent importation volatile. Other than that, there are several opportunities. Africa is the second-largest continent. It has a young and growing population. Goodyear sees an advantage in the fully synthetic segment. If Goodyear connects to the right distributors, it hopes to enter the synthetic engine oil business for the automotive sector and the industries within Africa to provide consistent virgin blended engine oil.

7. What does the future look like for Goodyear lubricants in Africa?

ALONSA's product development team is set to launch a comprehensive range of lubricants, fluids, and additives tailored for electric vehicles. Additionally, products from its USA production facility, featuring fully synthetic gasoline engine oil adhering to SP API standards, are set to hit the market. Alonsa & Goodyear are also in the final stages of developing a high-performance lubricant for racing engines, formulated with Ester and metal treatment, additives & synthetic (MAS) treatment for enhanced horsepower and torque.

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