



THE MARKET REPORT
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Valvoline launches hybrid and electric vehicle fluids in China P.11

Lubezine®

Focusing on Africa's lubrication needs

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📌 **MAIN FEATURE**

STEPS TOWARDS CARBON NEUTRALITY

LUBRICANTS SECTOR



PLUS: EXPERT INTERVIEW WITH JEAN-BAPTISTE BELLOY, SHAMROCK'S COMMERCIAL DIRECTOR P.22

WHO IS READING

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- Lubricants manufacturers and marketers
- Suppliers of base oils, additives and complimentary products e.g packaging
- Suppliers of lubrication equipments

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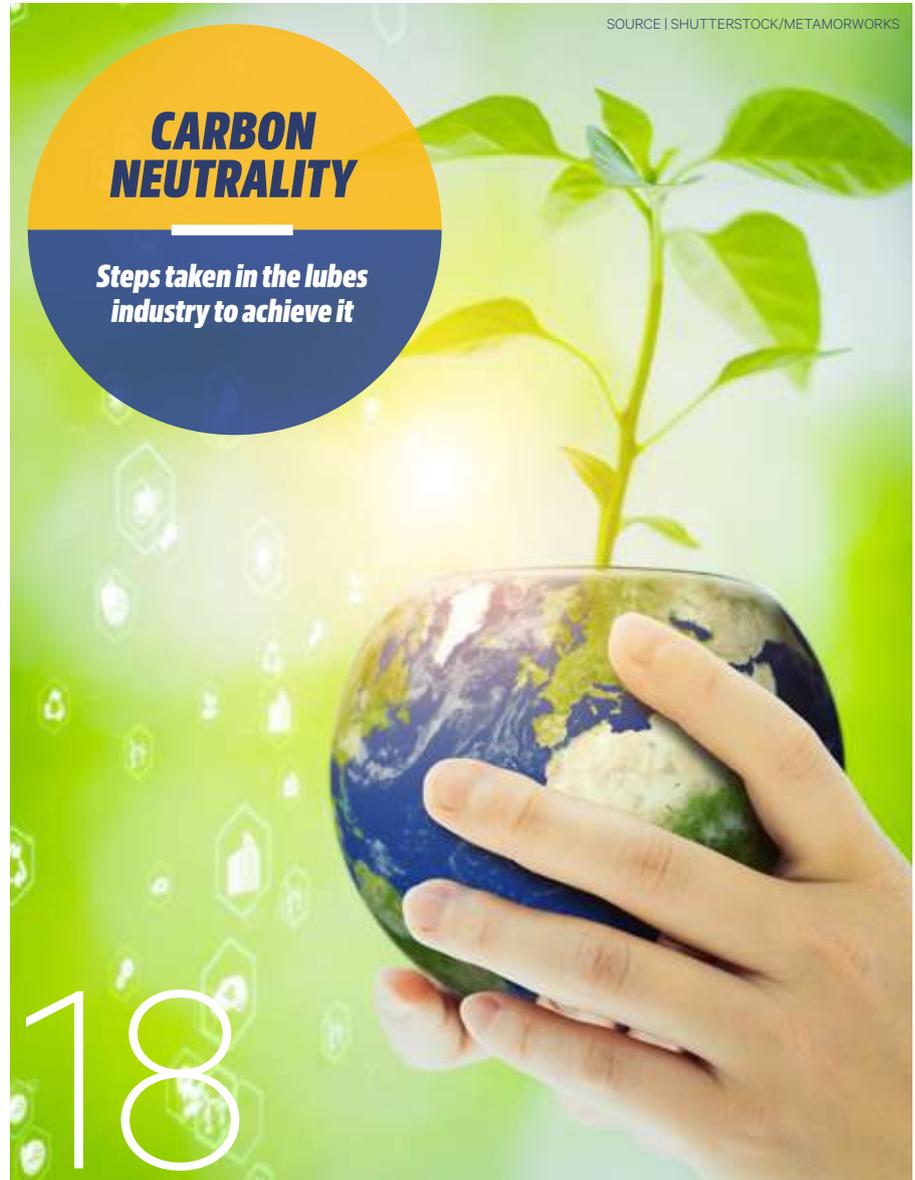
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Dr. James Wakiru

Lubezine Magazine | Editor-in-Chief

Gearing towards carbon neutrality

Welcome to the 39th edition of Lubezine Magazine. As always, we bring you industry news from Africa and all over the world.

Another challenging year has come to an end and though the effects of the pandemic are still with us, it is encouraging to see the progress industries are making including the lubricants industry.

Africa is envisaged as the next frontier for lubricants market growth, hence, has continued to attract more investors. In response to this, companies like FUCHS have embarked on local production of food-grade lubricants in South Africa while Chevron officially launched the production of Caltex-branded lubricants in East Africa.

While the African lubricants market is promising, the supply chain plays a crucial role in this business to ensure raw materials and products reach clients. We have therefore paid close attention to supply chain management in the lubricants industry in this edition. In the professional interview segment, we feature Jean Baptiste Belloy, Shamrock's Commercial Director who gives us insight into Shamrock's supply chain manage-

ment (SCM) of base oils, additives and finished lubricants around the world.

He shares the milestones Shamrock has achieved and as a leading player in supply chain management, the challenges it has faced in recent years and the impact of Coronavirus on its operations. Additionally, Mr Ramatri PD, the Global Head-Base Oils at Al Ghurair Energy DMCC based in UAE further explains the inroads of base oil supply chain management, to enhance understanding of SCM. He highlights the latest developments in this field and the role technology is playing to make supply chain management more efficient.

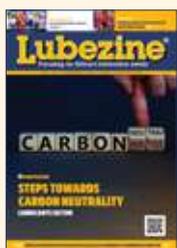
The drive towards sustainability and achieving carbon neutrality to mitigate challenges facing the world is momentous. In our cover feature, we focus on some of the steps oil marketing companies (OMCs) are taking and plan to take to reduce their carbon footprint and hence take part in helping the world become carbon neutral.

One of the areas OMCs are investing heavily in, to reduce carbon emissions, is supporting electrification in the transport sector. While some companies are investing in electric vehicles (EVs) charging stations, a majority of the OMCs have launched a variety of lubricants for

EVs and Hybrid electric vehicles (HEVs). In this edition, we feature PETRONAS and Valvoline's new lubricants for EVs and HEVs. Infineum, an additive manufacturing company has also launched a range of EV additives.

Re-using is likewise a vital aspect in achieving sustainability in addition to reducing carbon emissions. We feature re-refining of used oils and chemical recycling of plastic waste to produce base oils. We have this and much more prepared for you, and we welcome you to indulge.

Enjoy the read, and happy holidays! ■



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EAST AFRICA

AFAL officially launches production of Caltex lubricants in East Africa

AFAL Manufacturing Limited (AML) has officially launched the production of Chevron lubricants in East Africa. This comes after signing a long-term license agreement with Chevron Brands International LLC in September.

The Caltex branded lubricants that will be locally manufactured, marketed and distributed in Kenya, Uganda, Tanzania, Rwanda, Burundi and the Democratic Republic of Congo (DRC) are Delo and Havoline. Consequently, AFAL has changed its name to Caltex Lubricants East Africa.

Rochna Kaul, Chevron's Vice President, fuels and lubricants, for Europe, Africa, Middle East and South Asia said, "Since 2013 after re-entering the African market through our distributor AFAL, we have seen demand for our products grow increasingly, and AFAL has been strong in penetrating the market and reaching the customers. To be able to grow with the growth rate of the region which is 3-4%, we

need to get stronger with our presence by making sure our products are locally manufactured and readily available. The Agreement with AFAL gives them exclusive rights to represent the Chevron lubricant brand in Kenya and the neighbouring markets. This means that our customers will easily access our products relevant to this market and we shall hold ourselves to the quality standards and OEM requirements that you expect from the Chevron brand. We will continue being a seamless partner to AFAL to ensure they have access to the best technology for continued growth in this important geography."

"The move to local manufacturing in Nairobi is a step in the right direction for our relationship with Chevron, which started in 2013 with a distribution agreement covering the imported Caltex Delo and Havoline brands in Kenya and several East African countries through our subsidiary Africa Fuels & Lubricants Limited (AFAL). We are confident that



From L to R: Rochna Kaul Chevron's Vice President, fuels and lubricants, Abhijit Sarmah AFAL General Manager, Treasury Chief Administrative Secretary Eric Wafukho and Hezekiah Okeyo Industrialization Secretary. SOURCE | AFAL

through local manufacturing we will add value to enable us to take the Caltex lubricants brand to a strong market position by supplying high-quality lubricants backed by competitive prices and service. With more than 8 years of local market knowledge, we are confident that there is a growing need for high-quality lubricants in the region and we are extremely pleased with this move to be able to sell and distribute locally manufactured, cutting edge Caltex lubricants," said Tristar Group CEO Eugene Mayne.

"The partnership between AFAL and Chevron will immensely contribute to the country's implementation of the Big Four Agenda by raising the share of the manufacturing sector in GDP to 15% by 2022. The government is committed to creating an enabling environment for you to thrive as you launch production in the country. We will further put in investor-friendly policies, that will propel Kenya to a global and regional investment hub," said Treasury Chief Administrative Secretary Eric Wafukho. ■

BRANDS IN BRIEF

ENOC

Appoints Royal Marine Services for marine lubricants distribution in Egypt

CHEVRON

Acquires NESTE's global base oil business

Launches a renewable fully synthetic motor oil

Start production of Caltex lubricants in East Africa through AFAL

TOTAL ENERGIES

Strengthens lubricants partnership with AMADA in Europe

VALVOLINE

Launches HEV and EV fluids in China

CASTROL

Partners with WAE to co-develop E-Fluids

VIVO ENERGY

To be 100% acquired by Vitol Group

Starts a lubricants campaign in Uganda

GS CALTEX

Launches Kixx lubricant brand in Africa

INFINEUM

Launches a range of EV fluids

EVONIK

Appoints Umongo Petroleum to distribute oil additives in South Africa

PETRONAS

Launches EV fluids

LUBRIZOL

Partners with Intel in cooling immersion fluids

LUKOIL

Extends lubricants supply agreement with Daimler AG

AMSOIL

Starts new industrial business unit

ARTECO

Launches new hydrogen cell coolant

ANDEROL

Launches hazard free compressor oil

SIDDHARTH GREASE AND LUBES

Opens a lubes blending plant in UAE

ASTRON ENERGY

Unveils new brand identity

UGANDA

Vivo Energy Uganda launches a lubricants educational campaign for motorists

Vivo Energy Uganda has launched a campaign dubbed BeeraMu-Class to educate and empower motorists to make informed decisions about the best motor engine oils featuring Shell Helix and Shell Rimula. The campaign will entail a series of countrywide auto clinics offering professional car diagnostics, attractive customer rewards and expert tips on car maintenance from credible and reputable authorities.

“Many motorists don’t have any idea what the best oil for their vehicle is. More often than not, motor engine oil decisions are left to mechanics or are made based on price. Unfortunately, this has long term implications for vehicles

and can result in under-performance or even damage that may be extremely costly to fix or irreparable. Through this campaign, we intend to empower customers to make decisions from a value-based perspective. By understanding motor engine oils and understanding their benefits, you are then able to know which oil is best for your car,” said Alex Tusingwire, Lubes Manager, Vivo Energy Uganda.

“For 14 years in a row, Shell has been ranked the world’s leading global lubricants supplier for offering top-notch motor engine oils. Innovation, product application and technical collaboration are at the heart of Shell lubricants. Customer benefits include



SOURCE | VIVO ENERGY UGANDA

lower maintenance costs, longer equipment life and reduced energy consumption. Unfortunately, many of our motorists are not armed with the knowledge and understanding to make the right decisions regarding engine oils. Now is the time

to change that,” said Moses Kebba, Marketing Manager, Vivo Energy Uganda.

In addition to the planned engagements under the campaign, Lubes Specialists are available at Shell stations around the country to provide relevant customer support. ■

SOUTH AFRICA

Umongo Petroleum to distribute Evonik oil additives in South Africa



SOURCE | EVONIK

The Oil Additives business line of Evonik has announced that Umongo Petroleum (PTY) Ltd will be the official distributor of its products in South Africa.

Umongo Petroleum will

officially start the distribution of Evonik Oil Additives in January 2022. The portfolio contains VISCOPLEX® and VISCOBASE® viscosity index improver, pour point depressants and synthetic base oils.

“We are looking forward to

the partnership with Umongo Petroleum. I am certain that the company’s customer-centric approach and prominence will contribute to the success of the oil additives business line distribution in the Republic of South Africa,” said Dr. Can Turhan, Head of Global Channel Management, Evonik Oil Additives.

Evonik develops formulation solutions and base oil technologies that improve fuel economy and flow efficiency of automotive lubricants for passenger cars and commercial vehicles and increase energy efficiency and productivity of industrial lubricants

for construction, mining, agricultural, and manufacturing equipment.

Umongo was established in 2005, and its business activities include the sale of additives, base oils, process oils and chemicals. It is also the exclusive distributor for Chevron Oronite Lubricant Additives in South Africa and Sub Saharan Africa, BASF Lubricant Additives and Group V base stocks in South Africa and Sub Saharan Africa, Chevron Group II base oils in South Africa and Sub Saharan Africa and BRB Lubricant Additives in South Africa amongst others. ■

AFRICA

GS Caltex launches Kixx lubricant brand in Africa



SOURCE | GS CALTEX

South Korean lubricant manufacturer GS Caltex has announced that its flagship lubricant brand, Kixx, will be expanding its global reach to Africa with a variety of upcoming marketing and business development plans. Already available in a variety of global markets including Russia, China, Vietnam, India,

and Indonesia. GS Caltex is aiming to replicate its international success with new opportunities throughout Africa.

As an emerging and rapidly growing market due to rising purchasing power and an increase in automobile sales in certain countries, this is pushing the demand for a

wider range of high-quality consumer engine oils. GS Caltex sees massive potential in this market and it will expand its marketing activities in Africa through its subsidiary GS Caltex India Pvt Ltd (GSIPL).

SH Lee, head of GS Caltex's lubricant business division said, "It is an honor and a delight to announce the launch of GS Caltex's digital assets in the African region." Africa is an important market. It is an emerging market that is growing and evolving where we see huge potential for lubricants. With this event, we are #KixxStarting a new journey in Africa with great zeal and enthusiasm."

The announcement of expansion into Africa was done in a virtual event

attended also by GS Caltex African partners from Angola, Cameroon, Senegal, Sierra Leone, Ghana, Côte d'Ivoire, South Africa, Kenya and Mozambique.

To support their partners in the region, Kixx will be launching a variety of digital channels, including Kixxoilaf-rica.com, an exclusive website for Africa, and dedicated social media pages. The digital channels will help build a strong foundation for Kixx to develop a strong distribution network and communicate with its consumers. Additionally, Kixx will also conduct a variety of online and offline marketing activities to build Kixx's brand awareness among African consumers. ■

EGYPT

ENOC's marine lubricants to be distributed by Royal Marine Services in Egypt



ENOC Group has signed a three-year agreement with Royal Marine Services in Egypt to distribute a wide range of ENOC's marine lubricants. The agreement is aimed at boosting ENOC's lubricants presence in Egypt's thriving market.

The marine lubricants' industry in Egypt is growing at a steady pace with annual transactions, covering local and international lubricants, at over 24 million litres, making Egypt a lucrative maritime market. ENOC has been strengthening its presence in Egypt with strategic

partnerships to expand the Group's footprint.

Saif Humaid Al Falasi, Group CEO, ENOC, said: "Over the years we have strived to establish a strong presence across local and international markets to offer our customers a diverse portfolio of lubricants. Our latest partnership with Royal Marine Services is another milestone as we continue to support the overall growth of the maritime and shipping sector at an international level."

ENOC Group supplies lubricants to a wide range of marine vessels such

as offshore supply boats, container liners, tankers, navy and coastguard ships. It also provides a portfolio of lubricants and greases designed for applications in industrial and marine sectors, as well as heavy-duty diesel engines and commercial use.

ENOC Group's marine lubricants portfolio is distributed in Singapore, Malaysia, Indonesia, Bahrain, Kuwait, UAE, Kenya, Djibouti, Mauritania, Togo, Ghana, South Africa, Spain, Namibia, Greece, Netherlands, Belgium, Germany, Egypt, Tanzania, Cameroon, Senegal, Congo,

Angola, Cote d'Ivoire and Gabon.

While ENOC Misr, a joint venture between Proserv Egypt Group and the UAE's Emirates National Oil Company (ENOC), will also be handling the local marine market, Royal Marine Services will manage the International marine market for ENOC Group.

Established in 2007, Royal Marine Services specialize in fuel, lubricants, operational and financial solutions to the maritime and energy trading industry around the world.. ■

South Africa's Astron Energy reveals the new brand identity



South Africa's Astron Energy has unveiled its new brand identity and a sneak peek into what its network of 850 Caltex service stations will look like when rebranded to Astron Energy.

The name change and rebrand follows the 2018 change of ownership of Astron Energy and its exit from the Chevron group of companies. Since then, Astron Energy has been operating the Caltex brand under a license agreement. The new corporate brand identity now sees all operations consolidated under a single, unifying brand. Over the next few years, all Caltex branded service stations in South Africa and Botswana will be rebranded to Astron Energy in a phased manner.

With Astron Energy being South Africa's second-largest petroleum network with over 850 service stations, the unveiling of its new logo and corporate colours, as well as the design of its forecourts,

is another important step in the company's ambition to become the next biggest fuel brand in South Africa.

Astron Energy Interim CEO, Braam Smit said: "The rebrand is a milestone moment for us on our journey to reimagine and reinvent ourselves. We have been a trusted player in fuels for over a century. We are looking forward to stepping confidently into the future and welcoming all our customers to our exciting new-look forecourts and experiences. Astron Energy is the future of fuel and the rebrand creates the ideal platform to enhance our service offering through innovations and exciting products which are designed to speak to an ever-changing consumer landscape. We will continue to offer customers, high-performance fuels, quality products and great service delivered by excellent people, as well as exciting new offerings and experiences as part of our new look.

We're looking forward to the rebrand and the enormous potential it holds."

Apart from the retail sites, the Cape Town refinery, the lubricants manufacturing plant in Durban, 15 terminals, 180 commercial and industrial sites, as well as corporate facilities will all be rebranded.

Astron Energy General Manager Cambridge Mokane said: "We have put an enormous amount of work and imagination into our fuel and non-fuel retail offerings and look forward to launching future products and innovations into this fresh, energized and vibrant space. We look forward to the first forecourt rebrand in the new year. Our country has been through tremendous challenges as a result of the pandemic and a struggling economy, so it will be wonderful to go into 2022 with a sense of freshness and revitalization." ■

Vitol Group to acquire 100% of Vivo Energy

Energy and Commodity trader Vitol Group will acquire 100% of Vivo Energy Group, the Shell licensee in Africa. The transaction is valued at \$2.3 billion at USD1.85 in cash for each Vivo share.

Vivo Energy was established in 2011, and it distributes and markets the Shell and Engen branded fuels and lubricants to retail and commercial customers in 23 countries in Africa.

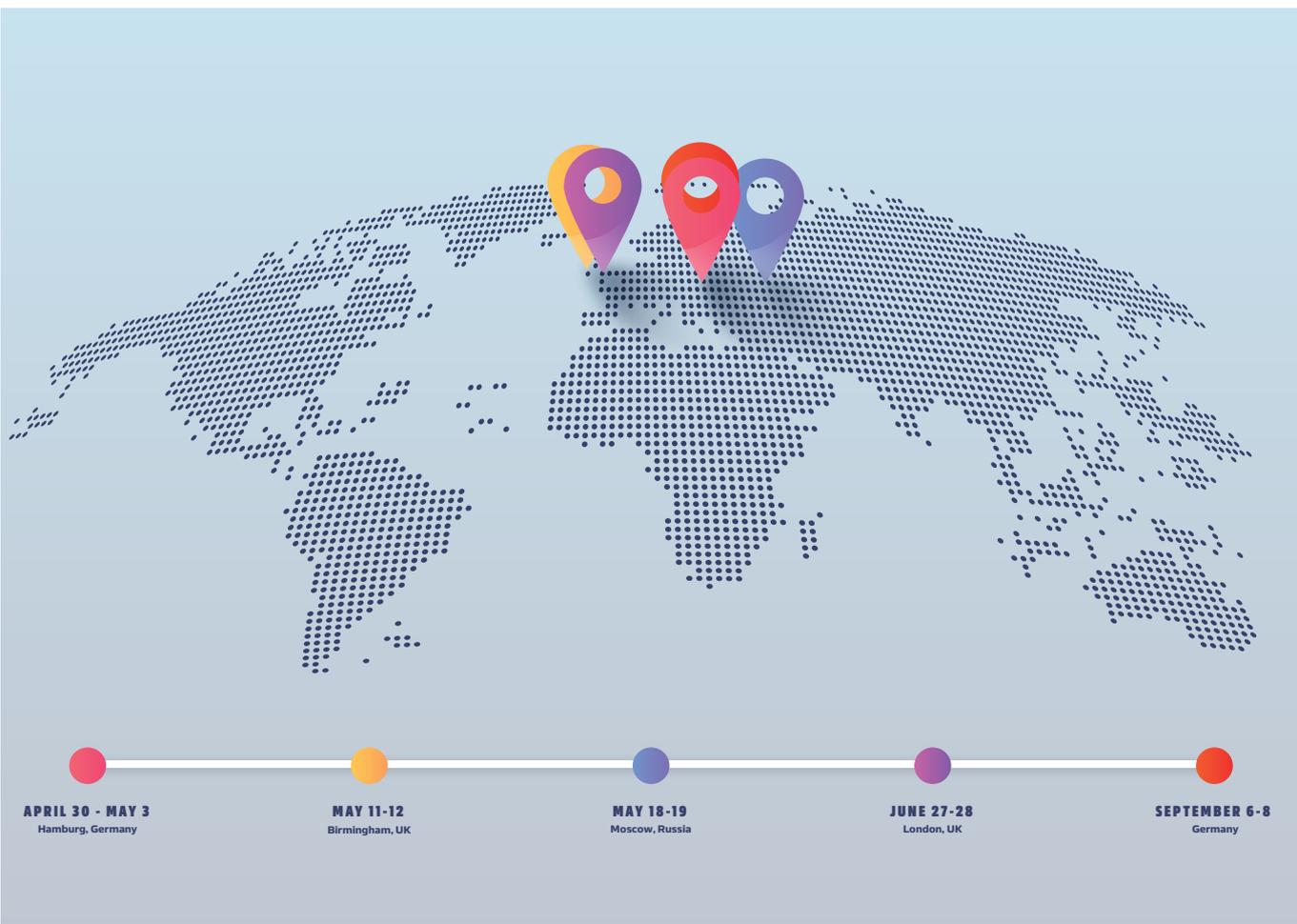
In 2017 Vivo acquired a stake in Shell & Vivo Lubricants (SVL) so that it is jointly owned by Vivo Energy (50%) and Shell (50%). SVL is the company that sources, blends and manufactures Shell Lubricants in Africa. SVL has a blending capacity of around 125,000 metric tons at plants in six countries (Ghana, Guinea, Ivory Coast, Kenya, Morocco, and Tunisia).

Vivo Energy was operated by Vitol, Helios and Shell as a joint venture before Vitol and Helios bought out Shell for \$250 million in 2016. Vitol owns 36% of Vivo Energy and it will also acquire Helios' 27.1% shareholding in Vivo and the rest of the shares it does not yet own.

"Since we founded Vivo with Helios and Shell, we have believed in the business' potential and we are excited to have it within the Vitol family, as a pillar of our strategy in Africa," said Chris Bake, Director at Vitol. ■

THE LUBES DIARY

EVENTS FROM ACROSS THE GLOBE



APRIL 30 - MAY 3
Hamburg, Germany

MAY 11-12
Birmingham, UK

MAY 18-19
Moscow, Russia

JUNE 27-28
London, UK

SEPTEMBER 6-8
Germany

January 25-27

23rd International Colloquium Tribology

Hybrid Event

<https://www.tae.de/kolloquien-symposien/tribologie-reibung-verschleiss-und-schmierung/international-colloquium-tribology/>

April 30 - May 3

32nd ELGI Annual General Meeting

Grand Elysee Hotel,
Hamburg – Germany

<https://www.elgi.org/elgi.org/index.php/agm/agm-2022-hamburg>

May 11-12

CHEMUK 2022 National Exhibition Centre

Birmingham, UK
www.chemicalukexpo.com



Big ben and house of parliament at night, london, united kingdom. PHOTO | FREEPIK - VWALAKTE

May 24

6th International Conference Metalworking Fluids & Industrial Lubricants

Moscow, Russia
www.rpi-conferences.com/en/oils-and-coolants

May 18-19

9th Annual CIS Base Oils and Lubricants Conference

Moscow, Russia
globuc.com/cisbaseoilsandlubes

May 25

Lube Sustainability Conference 2022 Institute of Directors

116 Pall Mall, St James,
London, UK

www.ukla.org.uk/event/sustainability-conference-2022

June 27-28

26th ICIS World Base Oils & Lubricants Conference

London, UK

www.icisevents.com/ehome/worldbaseoils/home

September 6-8

Lubricant Expo Messe Essen

Germany
<https://lubricantexpo.com/>

A glimpse of Spray Oils for crop protection by SIP Speciality Oils



SOURCE | SHUTTERSTOCK | BLANISLAVPUDAR

Q

What are crop spray oils?

Since the end of the 19th century, petroleum-based crop spray oils have been used to control insect pests, with kerosene-soap emulsions being used against scale and aphids in citrus trees. During the 20th century, a considerable amount of work was carried out in the development of more suitable fluids that could effectively combat insects but not have any adverse effects on plants. Crop spray oils today are formulated from highly refined petroleum-based oils along with a variety of emulsifiers to blend with water for easy application. Crop spray oils work well to control insect pests and plant diseases and, if used properly, can be a less toxic approach than chemically-based insecticides.

A

Q

What are the latest developments in spray oils?

As there is increasing awareness about using eco-friendly and less toxic products, and due to imposing regulatory restrictions, the latest developments of these products include improvements in the refining techniques that enhance their quality and the development of environmentally friendly paraffin oils for use in organic farming. Spray oils are now becoming an integral part of the Integrated Pest Management programs (IPM) in a wide variety of crops.

A

Q

What is the mode of action?

Crop spray oils offer an alternative physical mode of

A

action in killing insects and mites with no pest resistance recorded. They block the insects' respiratory system (spiracles) causing them to die from asphyxiation. They also kill insect eggs by penetrating the shells and interfering with metabolic and respiratory processes, deterring feeding by insects and inhibiting the spread of plant disease. When used against plant pathogens, these oils may smother fungal growth and reduce spore germination on treated surfaces.

Q

Which crops do the spray oils protect?

Crop spray oils can be sprayed onto crops of citrus, bananas, olive trees, fruit trees, vegetables, shrubs and ornamentals.

A

Q

What pests are controlled?

These oils are effective against aphids, mites, scales, whiteflies, mealybugs, plant bugs, leaf miners, and leafhoppers. They are also used to control plant diseases such as powdery mildew and Sigatoka, and potato virus Y infection.

A

Q

The uptake of spray oils in Africa has been low. What do you think is required to change this?

There is a growing awareness of the health impacts of chemical pesticide use. As concerns about the environment and sustainable growth become more prominent, crop protection will require the safe use of approved pesticides that are safe to the end-user and the environment and can be applied within IPM strategies. Two aspects could significantly change the African landscape concerning the importance of spray oils. Firstly, raising the market awareness on the availability, requirement, and importance of Spray oils and secondly, the implementation of regulatory frameworks governing crop protection.

A

Q

What are the main applications for the spray oils produced by SIP?

SIPSPRAY is a range of highly refined narrow boiling range paraffinic oils for use as insecticides and acaricides in a wide variety of crops. They can also be used as adjuvants to provide insecticide, fungicide and post-emergent herbicide efficacy. They provide optimal pesticidal strength paired with low phytotoxicity and their excellent selectivity allows products to be used throughout multiple growing seasons.

A

Q

What are the products of the SIPSPRAY range?

SIPSPRAY 12 is a superior agricultural spray oil that meets the stringent specifications for agricultural oils: Florida Citrus (FC), Californian Narrow Range (NR) and South African SANS standard for crop spray oils.

SIPSPRAY 12E is a concentrated

formula produced using SIPSPRAY 12 plus a well-balanced emulsifier package that has been used successfully for many years, for example in the protection of potato crops.

SIPSPRAY 15 is an extremely pure medicinal grade paraffin oil that is safe for direct food use. It is readily biodegradable and can be used in organic farming for a broad range of crops.

SIPSPRAY 20 is a heavier grade and has been specifically developed for use during the dormant season before the flowers begin to open.

Q

What differentiates SIPSPRAY from other formulations?

SIPSPRAY products are highly refined and very pure oils. Impurities in the oil associated with plant injuries, such as aromatic compounds and species containing sulphur, nitrogen or oxygen, are removed. They have a narrow range of distillation to ensure that most of the molecules are in the optimal zone of insecticidal efficacy, and ultra-high unsulphonated residue levels to reduce the risk of phytotoxicity. SIPSPRAY oils meet the requirements of the European Pharmacopoeia.

A

Q

Which benefits does SIP's spray oil provide above the other spray oils in the market?

SIPSPRAY oils are more highly refined than other spray oils to ensure the year-round protection of a wide variety of crops without the concern for phytotoxicity. They have an optimised viscosity so that the oil sprayed onto the plant remains long enough to kill the pests, but not too long

A

as to injure the plant. They are readily emulsifiable and have a fungistatic effect to control plant diseases. These oils can be used as adjuvants to enhance the wetting, spreading, penetration and efficacy of insecticides and herbicides.

SIPSPRAY oils are key components of IPM strategies as they are compatible with the auxiliary fauna, leave no residues and avoid the development of pest resistance due to its physical mode of action, asphyxiation. They are safe to the end-user and the environment. ■



By Laura Quintana

Laura Quintana is the Technical Advisor at SIP Specialty Oils and Fluids, who are recognized independent marketers and distributors of an extensive range of viscosity grades of white mineral oils and a wide range of base fluids for many product applications. These highly refined and very pure mineral white oils have been carefully selected for use in their extended range of products for crop protection. Laura who is leading important sustainability projects in SIP is responsible for crop spray products.

SIP Specialty Oils and Fluids have more than 30 years of experience. Based in London, they have been supplying demanding customers in Europe and the wider African and Middle Eastern markets for many years. They manage their vessel and road tanker operations in-house, based around their storage hub in North-West Europe. They have their own experienced in-house technical support and operations team who offer a bespoke service.

For more information, visit: www.sip.com

E-MOBILITY

Valvoline launches hybrid and electric fluids in China



SOURCE | VALVOLINE

Valvoline has announced the launch of Valvoline XEV, the brand's first China-based release of hybrid, plug-in hybrid and pure electric vehicle products. The announcement was made in conjunction with Shanghai-based car maintenance service provider, Tuhu, who will provide services using Valvoline XEV products.

Valvoline 'XEV' refers to a suite of hybrid and EV fluids including motor oil, battery protection fluid, transmission and brake fluids. Much like the Valvoline EV Performance Fluids launched in 2019, the Valvoline XEV product line works to address needs that are specific to hybrid and EVs, including battery temperature variations, powertrain performance, brake system

corrosion and seal bearing failure.

"Valvoline is doing now what it has always done; leading with innovation in an evolving automotive landscape," said Yu Chang, Vice President of Valvoline International. "In looking toward what will be a more robust demand for electrification in the coming years, our brand is prioritizing how to best meet consumer needs worldwide regardless of what powers each vehicle under the hood."

Valvoline developed Valvoline XEV new energy products in anticipation of an expected market shift. According to the China Society of Automotive Engineering's Roadmap 2.0 for Energy Saving and New Energy Vehicles, by 2035, new energy vehicles will account for more

than 50% of new automotive sales in China.

"With the rise of hybrid-powered and electric vehicles, car manufacturers are facing unprecedented engineering and design reform in auto industry history," said Chang. "From traditional energy to new energy, Valvoline has been growing with global and Chinese markets, embracing reform together with its partners and achieving win-win innovation. As we look to the future of automotive not just domestically but abroad, we are committed to ensuring our products, services and science evolve, adapt and solve consumer issues accordingly." ■

SUSTAINABILITY

Chevron launches renewable full synthetic motor oil

Chevron Products Company, a Chevron U.S.A. Inc. division has launched Havoline® PRO-RS™ Renewable Full Synthetic Motor Oil, its first renewable motor oil product. Made with 25 per cent sustainably sourced plant-based oils manufactured by Novvi LLC, Havoline® PRO-RSTM supports Chevron's aim to advance a lower carbon future.

Havoline PRO-RS uses Chevron's ECOSTRENGTH™ Technology, a process to develop high-performance synthetic lubricants using renewable plant-based feedstocks. Its performance attributes include: cleaning power, wear protection, superior fuel economy retention and thermal stability, with an environmental attribute like lower carbon intensity.

"As an industry leader in motor oil through our trusted Havoline brand, Chevron continues to make strides in developing game-changing, premium products that support the desire of our customers to reduce their lifecycle carbon intensity," said Andy Walz, president of Americas Fuels and Lubricants for Chevron. "Havoline PRO-RS is Chevron's first renewable motor oil, building on our partnership with Novvi."

"Our work with Chevron to develop and deploy our renewable base oils has generated enthusiasm from our customers who want to enhance the environmental performance of their products while meeting increasingly stringent engine specifications. Havoline PRO-RS is an exciting opportunity to showcase the environmental and performance advantages of our product line," said Jeff Brown, CEO of Novvi. ■

E-MOBILITY

PETRONAS launches a range of EV fluids

PETRONAS Lubricants International Sdn. Bhd. (PLI), the global lubricants manufacturing and marketing arm of PETRONAS has announced the launch of PETRONAS Iona Electric Vehicle (EV) Fluids.

First launched in 2019, PETRONAS Iona aims to help accelerate the world towards a net-zero carbon future by optimizing the energy efficiency, safety and performance of electric vehicles with advanced EV fluid solutions.

The second generation of PETRONAS Iona is designed to meet the multiple requirements in the Electric Drive Unit and E-axes including friction and wear control as well as thermal management to maximize the performance, energy efficiency

and reliability of high-performance electric vehicles.

“We believe that e-mobility is expanding at a rapid pace. With this rapid growth, innovative solutions are key to accelerate the move towards e-mobility for a more sustainable future,” said PLI’s Managing Director and Group Chief Executive Officer Giuseppe D’Arrigo.

“With the rise of EV sales and the creation of market opportunities in this segment, we strive to continue working together with our esteemed partners and fellow industry leaders in championing e-mobility through our differentiated fluid technology solutions. PLI is committed to applying our lubricant technology towards EV fluids and to help customers



with the adoption of EV,” added Giuseppe D’Arrigo during the launch.

This move is in line with PLI’s commitment towards sustainability that was announced in 2018, whereby 75% of its Research and Technology investments will be directed at reducing emissions, and towards supporting the larger goal of achieving net-zero carbon emissions by 2050.

Following the launch, PLI brought industry-leading experts together and spearheaded its second webinar, PETRONAS EV Fluids Webinar 2021 as part of its commitment to accelerate efficiency and to continue its collective efforts towards a sustainable future. The webinar is a spin-off of the first PETRONAS EV Fluids Symposium PLI hosted in 2019 to further

continue the momentum and discussion surrounding EV fluids in the advancement of the EV industry. The webinar covered topics ranging from battery electric vehicles innovations to developments in fluid technology for e-Transmission systems by experts within PLI as well as spokespersons from the industry.

Commenting on the webinar, Giuseppe D’Arrigo said, “The presentations at the webinar are some of the strides and progress of co-engineered projects among our industry and academic partners. All the sessions are driven by one common goal – sustainability. The webinar is a testament that we have taken another step forward, entering a new leg of our journey towards advancing e-mobility for a greener and sustainable future. ■

COOLANT

Arteco launches new Hydrogen Fuel Cell Coolant

Arteco Ingenious Coolants; a joint venture company of Chevron and Total Energies created in 1998 has launched a new coolant, Freecor® EV Micro 10, specially designed to address the needs of electrified propulsion making use of hydrogen fuel cells. This new low conductive coolant is not only developed to cool adequately a fuel cell stack of a vehicle but also achieves an extended life of the coolant and the ion exchanger according to Arteco.

“According to several studies, fuel cells will mainly be installed

in buses, trucks, vans and some passenger cars. Some off-road applications, like marine and stationary equipment, considers the use of fuel cells as well, and even aircraft propulsion is being developed based on this method. Therefore, it is necessary to also provide adequate coolants to cool this new technology,” said Alexandre Moireau, General Manager of Arteco.

Dr Serge Lievens, Global Technology Manager at Arteco said, “With this new coolant, Arteco shows we are at the forefront of this particular

technology. Fuel Cells and specifically, their coolants, require specific engineering to provide reliable, long-lasting operation. The key is the coolant’s robust low electrical conductivity and additive stability. And it is here that Arteco now takes the lead.”

Arteco’s new coolant, Freecor® EV Micro 10, offers protection through the following ways:

- Frost protection
- Boiling protection
- A conductivity stabilizer package
- Oxidation protection
- Corrosion protection

Arteco develops, produces and markets engine coolants, heat transfer fluids and corrosion inhibitors for a wide range of industries. In 2009, Arteco’s geographical scope grew beyond Europe to include Asia-Pacific, the Middle East and Africa, and currently has offices in Belgium, China, India and Japan. In December 2016, Arteco became a stand-alone organization, but in its new structure, it remains a 50/50 JV between Chevron and Total Energies. ■

COMPRESSOR OIL

Anderol Launches Hazard Label-Free Compressor Oil

Anderol B.V. a wholly-owned subsidiary of German speciality chemicals company LANXESS has added a high-performance synthetic di-ester based compressor and vacuum pump oil, free of any hazard labelling to their product portfolio.

The hazard label-free Anderol® Syncomp DE HSL 100 meets the most demanding safety and performance requirement while reducing environmental impact.

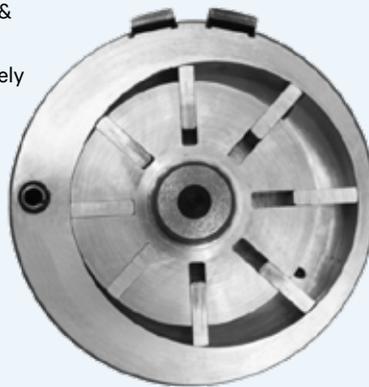
Approved by the German Federal Institute for Materials Research and Testing (BAM), it complies with the safety standards for vacuum pumps up to 2 bar and 100 degrees Celsius operating temperature. The oil offers high thermal oxidation stability resulting in long oil life and good control over deposit

formation.

Ingrid Ooms, Global Technical Manager at Anderol B.V. explained, "This is a very interesting product for compressor and vacuum pump lubrication, as it is one of only a few diester based products that are BAM registered without hazard Safety label. The benefits would be that there is no obligation in meeting the legal CLP requirements (labelling & SDS supply).

We have worked very closely with compressor original equipment manufacturers (OEMs) to formulate this, and it is a testament to our commitment to developing sustainable synthetic lubricants without compromising on safety or performance."

Anderol BV is a producer and marketer of synthetic speciality lubricants. Since 1941, Anderol® Specialty Lubricants has been producing innovative products in the field of synthetic lubricant solutions for a wide range of Industrial and Food Grade applications for compressors and pumps, gears and bearings, chains, hydraulics, greases and other applications. ■



IMMERSION FLUIDS

Lubrizol and Intel launches an immersion fluid



Lubrizol and Intel have jointly launched CompuZol™ immersion fluid solutions, which will be warrantied on Intel Xeon® and Core™ microarchitectures.

The CompuZol™ immersion cooling fluid addresses the limitations of air-cooled methods in data centres by delivering increased thermal management capabilities and enabling

increased infrastructure density.

"The launch of CompuZol™ and partnership with Intel is part of a multi-year effort to improve power consumption in data centres throughout the world," said Deb Langer, Senior Vice President, Corporate Ventures at Lubrizol. "We have come together to collaborate with industry partners, Submer; a constructor of data centres and GRC, to

develop an industry solution working very closely with leading OEMs."

"This relationship with Lubrizol and integration of CompuZol™ into our process is part of a multiyear engineering validation and optimization engagement to drive transformational change in the efficiencies of next-generation data centres. The opportunity to unlock energy efficiency and ultimately energy re-use is a powerful sustainability story moving forward," said Mohan Kumar, an Engineer at Intel. ■

E-MOBILITY

Infineum launches a portfolio of EV fluids

Specialty Chemical Company Infineum, which is a joint venture between Shell and ExxonMobil has announced the launch of a broad portfolio of dedicated e-mobility additives, covering the major hybrid and full battery electric vehicle models and tailored for every type of electrified transmission application.

The automotive industry's focus is shifting to electrification. However different types of electrification, from full battery-electric to hybrid options, bring distinct challenges and opportunities for lubricant and transmission fluid developments. E-fluids must balance the need to maintain outstanding gear and bearing protection, cleanliness and performance while meeting new e-specific requirements.

The new range of e-fluids offers enhanced electrical properties, materials compatibility and heat transfer performance that electrified vehicles demand.

Maurizio Abbondanza, Infineum Sustainability and Business Growth Director said, "Infineum has always maintained close cooperation with world-leading OEM and transmission manufacturers to ensure that our additive formulations can be used to help the industry meet the ever-increasing hardware technical challenges. We started working on electrifications over 20 years ago as the first hybrid vehicle began to penetrate the market, and we have been perfecting and evolving our technology since then. With proven worldwide field performance of more than 800 billion miles with e-motors, Infineum's e-specific fluids will continue to protect the very latest electrified vehicles." ■

ACQUISITION

Chevron to acquire NESTE's global base oil business

Chevron Global Energy Inc. has announced the signing of an agreement with Neste to acquire its NEXBASE™ brand, associated qualifications and approvals, and related sales and marketing business. The agreement covers a combination of share and asset deals forming Neste's entire global base oil business including Neste's base oils supply from Porvoo, Finland which has been producing Neste's base oil. On the same date, Neste signed an agreement to exit its base oils joint venture with Bahrain Petroleum Company and Nogaholding and will no longer have a presence in Bahrain.

"We expect the addition of the NEXBASE™ brand and associated business to provide value to our customers

through improved logistics, reduced complexity and optimized solutions," said Alicia Logan, General Manager of Chevron Base Oils. "This acquisition is poised to satisfy our customers' growing needs to meet increasingly stringent lubricant standards driven by evolving vehicle specifications and maintains the technology leading positions of our past base oil investments. Coupled with our investment in Novvi to bring renewable base oils to the market, this acquisition positions Chevron to be the supplier of choice to meet customers' needs both today and into the future."

"I want to thank our people in the base oils business who have been known for their pioneering spirit throughout



SOURCE | NESTE

the years. They have built the foundation for Neste to become one of the world's leading producers of Group III base oils, and we can be extremely proud of that. Chevron being a leading manufacturer of base oil products is, therefore, an excellent company to nurture and develop the NEXBASE base oils business further,"

said Neste's President and CEO Peter Vanacker.

The parties have agreed that the transaction price shall remain confidential. The transaction is expected to close within four to six months or by the end of Q1/2022 subject to customary antitrust regulatory approvals and other closing conditions. ■

PARTNERSHIP

Castrol partners with a British motorsport company to co-develop EV fluids

Castrol and Williams Advanced Engineering (WAE), a technology and engineering services business in motorsport among other fields, have entered into a five-year technical partnership to co-develop high-performance Electric Vehicle (EV) Fluids. As part of the agreement, Castrol will become the official supplier of EV Thermal Fluids for WAE's growing electrification programs and motorsport activities such as Formula E, Extreme E, ETCR and LMdH.

Castrol will develop and supply EV Thermal Fluids that are suitable for Williams Advanced Engineering's (WAE) high-performance

motorsport batteries from May 2022. While the partnership will initially focus on Williams Advanced Engineering's motorsport activities, the two companies will look to develop a full range of EV Fluids for wider electrification projects covering the aerospace and marine sectors.

The partnership will enable Williams Advanced Engineering to access the complete Castrol ON product range, which includes EV Transmission Fluids, EV Thermal Fluids and EV Greases.

A.S. Ramchander, Vice President Marketing and GAM, Castrol said, "As the world of mobility accelerates towards an electric

future, it's essential that we fully understand the requirements and challenges of electrifying all forms of mobility. By partnering with Williams Advanced Engineering, we hope to support the development of cutting-edge mobility solutions, as well as further advance our EV Fluid technologies."

Craig Wilson, CEO, Williams Advanced Engineering said: "We are delighted to be part of this strategic partnership with Castrol which I believe will allow the development of products specifically designed to support electrification, in whatever form that takes. In



addition to the motorsport sector, I believe advanced fluid technology will be important to several other key sectors."

Williams Advanced Engineering Limited was established in 2010 as a subsidiary of Williams F1. It offers engineering and technology services to the following sectors: automotive, motorsport, energy, defence, healthcare, aerospace and life science. The company is headquartered in England. ■

EXPANSION

Trinity Lubes & Greases open blending plant in UAE



Trinity Lubes & Greases FZC UAE, a wholly-owned subsidiary of India's Siddharth Grease and Lubes Pvt. Ltd., has opened a fully automated lubricant and grease blending plant in the inner port of Sharjah's Hamriyah Free Zone Authority (HFZA), UAE.

The plant was inaugurated by India's Petroleum Minister Shri Hardeep Singh Puri Ji. With the plant spread over an area of 12500 Sqm, it has an annual capacity of 36,000 KL of lubricants and 12,000 MT of greases.

Products manufactured at the plant are both automotive and industrial lubricants

and greases. Trinity Lubes & Greases plant is strategically located on the harbour and is sitting in the middle of some of the biggest base oil providers, adding value to the supply chain. More so, due to this prime location, there is access for barges to load and offload products.

Siddharth Sachdeva, Managing Director of the Executive Board of Trinity Lubes and Grease said, "Sharjah suits our needs the best. We are currently in Hamriyah Free Zone which is the petrochemical gateway to the world. In our facility here, there is a ship dock. This kind of strategic location was

very suitable to the kind of product offerings that we have as it helps not only from a supply chain perspective but also loading direct barges or ships from our factory. This is a key differentiator we have compared to our competitors."

Trinity Lubes & Greases is a wholly-owned subsidiary of Siddharth Grease & Lubes, India. Siddharth Grease & Lubes was established in 1988 as Siddharth Petro Product and became Siddharth Grease and Lubes Pvt. Ltd. in 2012. It currently has four lubricants manufacturing plants in India. ■

PARTNERSHIP

LUKOIL extends lubricants supply partnership with Daimler AG

LUKOIL Group and the German automotive manufacturer Daimler AG have expanded their partnership of LUKOIL lubricants being the first fill lubricants for Daimler engines for premium passenger cars in Europe and Eastern Asia.

LUKOIL will expand the product range of engine oils delivered to Daimler in Europe and China to include the low viscosity LUKOIL GENESIS engine oil for modern gasoline and diesel engines of the automotive producer per one of its newest first fill specifications. The new product provides reliable engine protection and improved fuel efficiency compared to the previous generation said LUKOIL.

LUKOIL further added, "The two companies have been in a partnership since 2015. LUKOIL engine oils supplies to the partner's manufacturing plants of gasoline and diesel engines of premium cars in Germany, Poland, China and Russia have been at the centre of the collaboration between the two companies. In addition, LUKOIL delivers industrial oils for technological equipment as well as gasoline and diesel fuel for the vehicles manufactured at the Russian plant of Daimler."

Daimler is among the leading manufacturer of premium and luxury cars, and commercial vehicles. Some of the brands are Mercedes-Benz, FUSO among others. ■

EXPANSION

AMSOIL starts new industrial lubricants business unit

AMSOIL INC., a manufacturer of synthetic lubricants, has launched AMSOIL Industrial, a new business unit dedicated to serving large business-to-business customers.

With more than 50 years of experience developing sophisticated lubrication solutions for the most demanding applications, expanding the company's industrial footprint is a natural progression. For more than a decade, the company has delivered exceptional results for industrial customers in power generation, hydraulics, compressor applications and more. AMSOIL Industrial customers can expect strong partnership, including consultative on-site analysis and support from Certified

Lubrication Specialists on staff said AMSOIL.

"AMSOIL is the factory-fill supplier for multiple industrial OEMs, with a strong global presence in the wind market and a dominant position in North America wind market. Our experience designing lubrication solutions has helped us develop unmatched technical expertise that serves industrial customers well. Our products certainly play a strong role in our success with industrial OEMs and end-users, but our ability to solve problems is what they value most," said AMSOIL VP, Industrial Dave Meyer.

AMSOIL Industrial will have a product line that will initially focus on customers in the following segments:

- Metal Stamping
 - Plastic injection Moulding
 - Power generation
 - General construction equipment manufacturers
- "We are a research-driven product-development company," said AMSOIL President & CEO Alan Amatuzio. "We have always approached product development from a problem-solving standpoint, and we don't compromise on product quality," said Amatuzio. "Those characteristics make AMSOIL an ideal partner for industrial customers."

In North America, AMSOIL consumer products are sold through an independent dealer network. That is not changing. AMSOIL Industrial, however, will serve B2B customers with a corporate



SOURCE | AMSOIL

sales team.

"Our commitment to our independent Dealers is unwavering," said Mr Amatuzio. "But large B2B relationships require deeper corporate interaction and carry greater liability, demanding the attention of a dedicated corporate sales force." ■

DISTRIBUTION PARTNERSHIPS

TotalEnergies and AMADA Europe strengthen their lubricants partnership

TotalEnergies and AMADA Europe, a manufacturer of machine tools for the sheet metal industry have signed a partnership for the supply of original equipment lubricants to AMADA Europe's plants as well as a range of AMADA branded lubricants.

The partnership will last for 5 years and will cover 14 countries in Europe. This partnership is an extension of an existing one where since 2016, TotalEnergies' Lubricants Department in France has been supplying part of the original equipment oils to AMADA's main plant in Europe, in Château-du-Loir.

"We are extremely proud to have been chosen by AMADA Europe as their preferred partner for the supply of lubricants for their plants in Europe and the



From left to right: Mr. Olivier Bertomeu, Director of Industrial Lubricants TotalEnergies, Mr. Lionel Fallourd, Head of Materials Energies Consumers Department TotalEnergies, Mr. Jean-François Vanier, Managing Director AMADA Europe, Mr. Emmanuel Reynier, Head of OEM Industry Relations Department, Mr. Pierre Duhot, Lubricants Managing Director TotalEnergies, Mr. Christophe Sangnier, Parts Supply Chain Director AMADA SA, Mr. Rémi Martin, Managing Director AMADA SA . SOURCE | TOTALENERGIES

extension of the contract for the production of genuine oils. This demonstrates our commitment to provide high-quality products, which are always developed to meet our customers' requirements," said Olivier BERTOMEU, General

Manager, Industrial Lubricants at TotalEnergies.

"This partnership is in line with the Group's strategy and its ongoing commitment of providing all its customers with an ever-higher level of service and product quality.

TotalEnergies' lubricants meet all the requirements of the Japanese quality standards on which the manufacture of AMADA machines is based," said Jean François Vanier, Managing Director of AMADA Europe SA.

The AMADA Group which was founded in 1946 is one of the world's leading machine tool manufacturers operating in the sectors of aeronautics, railways, automotive, agricultural equipment, construction, electronics, urban furniture, medical equipment amongst others. It has more than 100 branches and subsidiaries worldwide and over 9,000 employees. AMADA Europe SA has been in operation for the last 40 years combining tradition, Japanese expertise, and the best of European know-how. ■

Valvoline and Cummins renew their lubricants partnership



SOURCE | CUMMINS

Valvoline and Cummins Inc. an American multinational corporation that designs, manufactures, and distributes engines, filtration, and power generation products announced a five-year renewal of their marketing and technology partnership agreement.

Under this renewal, Cummins will endorse and recommend Valvoline's Premium Blue™ engine oil for its heavy-duty diesel engines and generators and will sell Valvoline products through its multiple channels worldwide. Additionally, Cummins' plants across the

globe will use Valvoline-supplied lubricants and oils in day-to-day operations.

"When I think about our unique partnership with Cummins, I think about two of the best-known teams in our respective fields making each other better," said Valvoline Chief Executive Officer Sam Mitchell. "This relationship is undeniably one of the most important ones we have, and our strategic and fruitful alignment is ultimately beneficial for our companies, our people and our customers."

Cummins Vice President and President of the Distribution Business Tracy Embree

said, "This is a fantastic partnership that couples our cutting-edge engines with Valvoline's innovative motor oils to provide optimal performance for our customers. Our engines are working in some of the toughest conditions around the world, so we benefit from the strong products that Valvoline brings to supplement their performance. We truly bring out the best in one another."

In addition to its strategic partnership and the ongoing collaborative product and technology innovation, Cummins and Valvoline have formed numerous joint

ventures around the world focused on the production, distribution and marketing of lubricants, grease and allied products.

"We believe that the Valvoline/Cummins relationship can get even stronger over these next five years and beyond as we partner more closely and align our teams to bring value to even more customers around the world," added Sam Mitchell.

Cummins Inc. was founded in 1919 and it is headquartered in Columbus, Indiana (U.S.) with approximately 57,800 employees worldwide. ■

SUSTAINABILITY

Steps towards carbon neutrality: Lubricants sector



By Miriam Wangari

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Over the last few decades, the climate has drastically changed for the worse. The result of this has been an occurrence like global warming which is caused by the excessive release of greenhouse gases into the atmosphere. The industrial and transport sectors are at the core of greenhouse gas emissions. This being the case and with pressure mounting on industries to participate in climate change and champion towards positive change, the lubricant industry has taken up the task of working towards preserving the environment and advocating for climate change.

Sustainability is at the heart of climate change, and companies in the lubricants industry are incorporating this aspect into their operations. The goal is to be carbon neutral in their production and the entire value chain and eventually be carbon zero through avoiding, reducing and offsetting unavoidable carbon emissions. To achieve carbon neutrality, major players in the lubricants have set sustainability goals for 2025 and others for 2050, which stipulates the actions to be taken to achieve that goal.

These sustainability goals are set with



reference to the UN's 17 Sustainable Development Goals (SDGs) which were included in the 2030 Agenda for Sustainable Development adopted by the United Nations in 2015. SDG 13 tackles climate change and this, among others, has been the base of lubricant players' ambitions to achieve carbon neutrality. Apart from the UN's SDGs, another reference for the lubes industry is the UN Paris Agreement on Climate Change which aims to reduce global warming to below 2 Degrees Celsius to preferably 1.5 above pre-industrial levels.





One of the goals is to reduce direct carbon emissions from the day-to-day operations of these companies. To do this, the adoption of renewable energy as sources of energy like wind power and solar energy has been on the rise.

Therefore, we shall look at some of the steps several major players are planning to take to achieve carbon neutrality in

their entire value chains and what has been achieved so far.

Reducing direct emissions by the adoption of renewable sources of energy

One of the goals is to reduce direct carbon emissions from the day-to-day operations of these companies. To do this, the adoption of renewable energy as sources of energy like wind power and solar energy has been on the rise. For instance, Infineum's 2020 sustainability report states that by 2025, it aims to reduce its direct carbon emissions in all its manufacturing plants, business and technology centres by 20% per ton of product. This will be attained through using renewable sources of power amongst other measures. Some achievements by Infineum on this front include New Jersey, USA Business and

Technology site being partially powered by Solar power while the Singapore office is fully powered by renewable energy.

Shell has targeted to be net-zero by 2050 in step with society's progress in achieving the goal of the UN Paris Agreement on climate change. One of the ways Shell aims to achieve this is by reducing emissions from its operations. It has short-term reduction targets of 2-3% by 2021, 3-4% by 2022, and 6-8% by 2023. The medium and long-term reduction targets are 20% by 2030, 45% by 2035, and 100% by 2050.

FUCHS's 2020 sustainability report stated that it reduced its energy consumption by 9% per ton of lubricants produced in the past financial year. A key factor contributing towards this was the conversion of its European locations to a green power supply. More FUCHS locations are also switching directly to renewable energy by choosing green energy in their power contracts and using the roofs on production buildings and warehouses to install solar power systems to generate their electricity.

TotalEnergies also aims to be at net-zero carbon emissions by 2050. It plans to achieve this by producing green energy. In 2019, Total solarized its largest lubricants blending plant-based in Singapore. Equipped with 3,682 solar panels, this installation is designed to generate 1,511 Megawatt-hours of electricity per year, covering 35% of the site's energy needs, reducing its reliance on traditional fuels and avoiding up to 528 metric tons of carbon dioxide emissions a year.

It will also work on reducing GHG emissions at its oil and gas facilities from 46 Mt CO₂ in 2015 to less than 40 Mt CO₂ by 2025.

Lubrizol aims to reduce its emissions Scope 1 and 2 by 20% by 2030. It aims to achieve this by migrating to cleaner-burning natural gas for heat and transportation, recapturing energy that can be used for heat, and upgrading the efficiency of lighting, production and office equipment.

Chevron Oronite's Gonfreville l'Orcher (GV) plant has been getting a 100% of its electricity from a French hydroelectric source since the beginning of 2021.

These are just a few of the growing number of companies embracing renew- »





SOURCE | SHUTTERSTOCK/SCHARFSINN

» able energy. Other measures taken by most of these companies to conserve energy as a way of reducing their emissions include insulation of tanks and pipes, use of LED lighting, deploying technology to upgrade operations and installing energy management systems.

Renewable raw materials in lubricants manufacturing

The use of renewable raw materials is picking momentum as a pathway towards carbon neutrality because renewable raw materials mean renewable end products.

For example, *Infinium* has pledged to use renewable raw materials to manufacture additives. FUCHS targets shifting its raw material base from current fossil sources towards renewable raw materials or even base materials from waste flows.

Chevron has partnered with Novvi to manufacture renewable base oils to be used in the formulation of lubricants. From this partnership, *Chevron* recently launched its first renewable full synthetic motor oil, Havoline® PRO-RS™. This lubricant is made with 25% sustainably sourced plant-based oils manufactured by Novvi LLC.

Neste recently launched NEXBASE 4+ base oil made from renewable raw materials. Neste base oil business and the NEXBASE brand of base oil was also re-



Given that the transport sector contributes to a large share of the GHG emissions due to the use of fossil fuels, the electrification of vehicles is gaining popularity as an alternative to lower carbon emissions. Over the last 2-3 years, most of the major players in the lubes industry have launched complete oil ranges for electric vehicles.

cently acquired by *Chevron*.

Shell started producing group III base oils from natural gas using *Shell* proprietary gas-to-liquid (GTL) technology, marketed as *Shell PurePlus Technology*. Using this base oil, *Shell* has produced *Shell Advance Ultra* and *Shell Helix Ultra* synthetic oils for motorcycles and vehicles respectively.

Localized sourcing of raw materials and production

To reduce emissions from global transport chains, companies are resorting to looking for local raw materials suppliers in their areas of production, while still ensuring that the raw materials used comply with all environmental, health and safety (EHS) regulations and that they are readily available. Another approach is striving to produce products as close to the customers as possible. While this may not be easy to always get raw materials locally with the assurance of stable supply and good quality, for companies able to do this, it will be a step closer to achieving carbon neutrality.

Manufacturing carbon-neutral lubricants

Shell recently launched a range of carbon-neutral lubricants where it will compensate for the full lifecycle emissions of the lubricants. *Shell*'s global portfolio of nature-based carbon credits will compensate for CO₂ emissions from the entire lifecycle of these products, including the raw materials, packaging, production, distribution, customer use and product end of life. *Shell* aims to compensate around 700,000 tonnes of carbon dioxide equivalent emissions per year, which is equivalent to taking approximately 340,000 cars off the road for one year.

Rymax Lubricants launched an environmentally conscious line of products called the Apollo ECO line. Rymax partnered with the 'One Tree Planted' Initiative that plants a tree for every box of Rymax Apollo ECO sold.

Chevron launched a renewable full synthetic motor oil made from Novvi's renewable base oil. Havoline® PRO-RS™ will aid the end-users to lower their carbon emissions since it has a lower carbon intensity.

Supporting electrification in the transport sector

Given that the transport sector contributes to a large share of the GHG emissions due to the use of fossil fuels, the electrification of vehicles is gaining popularity as an alternative to lower carbon emissions. Since electric vehicles (EVs) require different lubricants compared to internal combustion engine (ICE) vehicles, lubricant companies are quickly adjusting to this and launching EV fluids.

Over the last 2-3 years, most of the major players in the lubes industry have launched complete oil ranges for electric vehicles. To name a few, there is Castrol ON range of EV fluids from Castrol, GS Caltex's Kixx EV brand, Shell's co-branded lubricant with Maserati for HEVs; Shell Helix Ultra Hybrid 0W-30, AD-NOC's VOYAGER lubricants for HEVs, FUCHS BlueEV line for EVs amongst others.

Additive companies have also launched product lines for EVs. Infineum, recently launched a range of e-fluids for EVs and HEVs while Afton launched a transmission fluid additive; HiTEC 35701 for EVs.

Renewable Packaging materials

Part of sustainability is reducing waste by recycling and using renewable materials. Since this has a direct relation to carbon emissions, lubricants companies are therefore turning to sustainable packaging materials as an alternative.

Castrol has partnered with Pulpex, a manufacturer of paper bottles made from wood pulp using 100% renewable feedstocks from responsibly managed forests for its lubricants. It is estimated that Pulpex's paper bottles offer a lower carbon footprint of up to 30% less than Polyethylene terephthalate (PET) and glass.

FUCHS has unveiled new small packs of 1-, 4- and 5-litre bottles for its automotive range of lubricants. The new small packs consist of up to 30 per cent recycled material (PCR) and are 100-per cent recyclable.

TotalEnergies' latest lubricants packages have been reduced in weight, and this will prevent the emission of approximately 9,500 tons of CO₂ per year while also saving raw materials.

Rymax eco line products packaging is made of 95% recycled bottles. The cardboard box that holds the 4-litre cans is made out of 70% recycled paper and has a Forest Stewardship Council (FSC) mix certification.

Investing in carbon offset projects

While companies work to eliminate and reduce carbon emissions, some emissions cannot be avoided. To compensate for these emissions, companies are investing in carbon offset projects.

FUCHS has been carbon neutral in its production facilities worldwide since 2020. In 2021, it included joint ventures and non-production facilities in its carbon neutrality scope irrespective of the stake held by FUCHS. To compensate for emis-

sions from these facilities, FUCHS has invested in high-quality climate protection projects. Some of the projects FUCHS has already invested in include; reforestation of 10,000 hectares in Mexico and a run-of-the-river hydroelectric plant in India which feeds around 39.78 gigawatt-hours of regenerative electricity into the regional grid for the local community to use.

Total is investing in two carbon sink solutions: natural carbon sinks, such as reforestation, and carbon capture and storage (CCS), and R&D programs to develop negative emissions technologies like direct air capture. The goal is to have a storage capacity of 5 Mt CO₂ per year by 2030.

Conclusion

While we have highlighted some steps being taken by some of the major oil companies, there is so still so much being done by these and other companies to be carbon neutral. While these companies are spearheading change in the industry, the Paris Agreement goals on Climate Change will require collective responsibility and action from all industries if the world is to be carbon neutral by 2050. Given that most of these companies operate in different locations with different regulations to adhere to, achieving their targets might be an uphill task, but governments have a key role to play in setting up policies and an enabling environment for carbon neutrality to be realized.

While achieving this might be affected by different situations in different geographical locations worldwide, every country and all industries can start where they are and use what they have to be the pioneers of change. ■

FRIGMAIRES ENGINEERS
Mumbai - India

COMPLETE PLANTS & TECHNOLOGY FOR PRODUCTION OF

LUBRICANTS

- Automotive
- Industrial
- Synthetic
- Transformer Oil
- Brake Fluids
- AntiFreeze

GREASES

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Shamrock's one-stop shop: Base oils, additives, and Lubricants Supply Chain Management

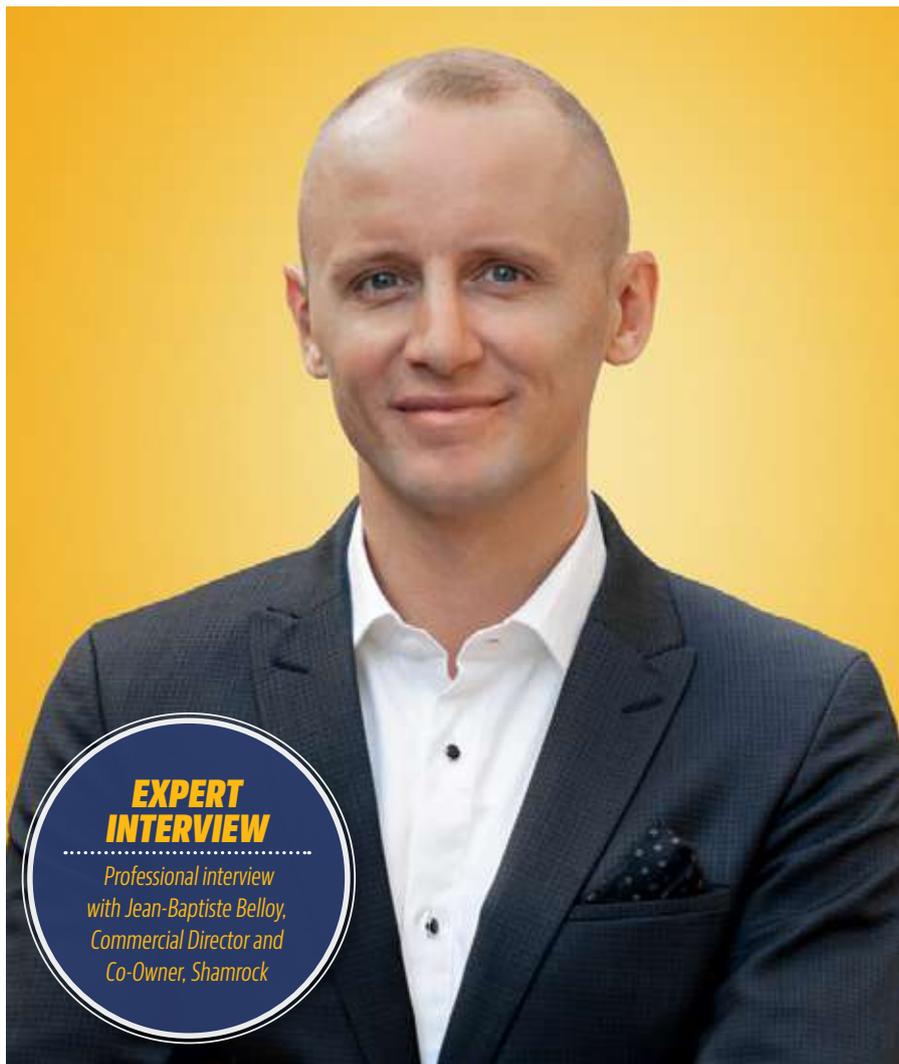
Lubezine had an interview with Jean-Baptiste Belloy, the Commercial Director and Co-Owner at Shamrock who shared at length Shamrock's operations in supply chain management while highlighting some of its biggest wins and challenges so far while marking the 15th anniversary.

1 Who is Jean-Baptiste Belloy? What does your role at Shamrock entail?

I started working with Shamrock in 2011 when I relocated from France to Cyprus. My first role was as a Sales and Marketing Trainee and despite not having any technical or chemical background, coming from one of the leading trading nations helped boost my desire for knowledge and overachievement. After completing the 6-month traineeship, I understood how exciting, stimulating, and rewarding trading can be and I decided to stay. I worked my way up, and today I occupy the position of Commercial Director, being responsible for sourcing and sales, ensuring only the best products from around the globe are purchased and excellent customer service permeates every stage of Shamrock's transactions. Looking back at the last decade of my life, I can see a lot of hard work, many victories but also defeats, all taken gracefully, as well as many valuable lessons which have been significant in shaping my personality.

2 Shamrock is celebrating its 15th anniversary. What achievements are you proud of in these years?

We are all very proud of achieving this new milestone, and we are thankful to all the people who have been contributing to our success, from our team members to our customers & suppliers. We have been maintaining in all these years the goal to be a leading company in the industry and the One-Stop Shop in the lubricants sector. In such a fast-changing business environment and with all the challenges the COVID-19 pandemic brought in the past two years, I am proud of all the efforts and work put into maintaining this leading position and for the growth of Shamrock on all levels: volumes, market presence and products portfolio. Another achievement I am proud of is being able to identify and safeguard



EXPERT INTERVIEW

Professional interview with Jean-Baptiste Belloy, Commercial Director and Co-Owner, Shamrock

our core partners who share the same values and who understand the importance of working transparently and honestly with the sole purpose of serving the end-user. This way, we have been working for the past 15 years as a purchasing arm for our customers and a reliable distributor and marketer for refineries all over the world.

3 Organizations inherently metamorphosize with time, what changes has your organization gone

through as pertains to the Brand and Management?

Indeed, the organization's people change and so do the organizations themselves. We have seen huge technological advances in the world and their use in our everyday life and of course in our work life. Sustainability, quick decisions, new trends, niche markets, environmental sensitivity and blockchain requirements are some of the new challenges that we all face and deal with. We are also currently dealing with COVID-19, so we are talking of a complete turn on thinking and

working, in everyday life. Shamrock likes changes in general, we like to experiment with new ideas and ways of moving forward. Our customers like this also as we clearly show the industry we are not stagnated, and we like to evolve. At the same time though, the main cores remain unchanged. This year, while marking our 15th Anniversary, we decided to have a makeover, to further emphasise our mission and the expansion of our team & business. Along with Sergey Galin, the Founder and Managing Director of Shamrock, I have been working on the brand identity, and since October we have had new visuals, a new logo & a new website, all with the aim of creating a new experience for our existing and new business partners. This change was very much noticed and congratulated by our partners all around the world.

4 What are the main challenges facing importers of Base oil, additives, and finished lubricants?

I wish the main cause of the current challenges faced by the importers was different, but unfortunately, the global pandemic is still having a strong impact on our industry. The Supply Chain is disrupted everywhere around the world. In 2020 and 2021 the imposed lockdowns, the surging COVID-19 cases in Ports and on board of vessels, and the change in buying behaviour brought with it extremely high freight rates, limited space for containerized cargo, and days of delay in arrivals. This doesn't only stop at the maritime sector, but inland too; the lack of trucks and drivers along with the reduced number of free days to return the empty containers has brought additional costs for the importers of base oils, additives, and finished lubricants.

Other challenges, of equal importance, that the lubricants producers face are caused on one side by the impossibility of securing the raw materials as refineries' utilization rate has been low for many months now, higher prices for these raw materials, and a decrease of lubricants sales on the other side.

5 As Shamrock, how are you addressing or mitigating these challenges to your current and potential clients?

In Shamrock as a Team, we always try to predict the unpredictable. We help our customers so that their business remains

unaffected by random events that form the global reality through resilient efforts. Lubricant production can never stop, and its manufacturers should only focus on the receipt of their raw materials, either oils, additives or anything needed in their formulation. Shamrock is to arrange the best solutions for an undisrupted supply chain in both sourcing of the materials and all the related logistics. Shopping locally to avoid congestions cannot be possible in our business. Nevertheless, our team can make the global market look local with terminals and associates all around the world that can assist with prompt deliveries.

6 What are the key distinguishable characteristics in the one-stop Supply Chain Management model that Shamrock prides itself in?

As a partner of choice for our customers, we want to make sure that our actions and efforts help them achieve high performance across all areas of their business. The customers rely on us to be able to provide them with the best solutions when it comes to the Supply Chain Management and, in return for their loyalty, a team of experts is always checking the best sourcing options combined with the most cost-effective logistics. At the

» In Shamrock as a Team, we always try to predict the unpredictable. We help our customers so that their business remains unaffected by random events that form the global reality through resilient efforts. Lubricant production can never stop, and its manufacturers should only focus on the receipt of their raw materials, either oils, additives or anything needed in their formulation.

same time, our trade finance department is looking for the optimal financing option for every new transaction. We understand how important it is for every business to free up cash flow and, besides the usual payment methods & instruments, we provide to our customers trade credit allowing them to benefit from an extended payment period. Besides the continuity of the business for us, we cherish moments such as being awarded the Supplier of the Year Title that we received in 2018 from one of our customers in South Africa.

Trading globally allows us a bigger picture of the industry and we take pride in the fact that we combine market intelligence & data analysis to further share our expertise with our customers when a decision is to be made.

7 During this pandemic, what solutions has Shamrock provided to clients in crisis?

We normally have a more individualistic approach to each customer. This proved to be extremely helpful in times when the customers needed to know that they are not facing these unprecedented times alone. We worked together in planning their stocks, considering the base oils and additives scarcities, planning the routes to avoid additional delays, or securing the finished lubricants according to their specifications and quantities required.

We changed the packaging and transportation methods when needed. In the backdrop of high freight rates and lack of containers, we shipped more cargo in bulk by chemical tankers in this past year.

In the early days of the COVID-19 outbreak, products, such as hand sanitizers, faced big shortages worldwide. Shamrock reacted in the quickest way possible and to the lubricants manufacturers who were able to re-purpose their factories to produce essential products in the fight against the virus, we were able to offer IPA (Isopropyl alcohol), Ethanol & other raw materials used to produce antibacterial substances.

These are just a few examples of the steps taken towards assisting our customers. Value-added relationships are at the core of who we are. We don't want to over-promise and under-deliver, what we want is to reach new levels of growth and development together with our business partners. ■

RE-REFINING

How re-refined oils could contribute to the circular economy of the future

Re-refining and chemical recycling processes can turn used oil and plastic waste into usable products.

By Lynne Peskoe-Yang

KEY CONCEPTS

- There are two broad approaches to motor oil recycling: re-refining and chemical recycling.
- Re-refining aims to extend the fluid's utility for another generation and avoid releasing it as a pollutant into the environment.
- Chemical recycling breaks down plastic waste into smaller components to be used as base oils in new products.

Refining crude oil for industrial use relies on separation processes like centrifuging and distillation to remove impurities and separate small and large hydrocarbons for use in different applications. To turn used oil into desirable products, plants can use similar approaches to those applied to crude oil to remove unwanted particles and sort degraded hydrocarbons from usable ones.

There are two broad approaches to motor oil recycling: re-refining and chemical recycling. Re-refining aims to extend the fluid's utility for another generation and avoid releasing it as a pollutant into the environment, while chemical recycling starts with breaking down the hydrocarbons that gave the former oil its unique properties to create feedstock for a wide variety of new products. Both approaches start with removing contaminants like dirt and metal particles from the fluid. Acid treatments trap greases and gums suspended in the fluid, while separation techniques like sedimentation, filtration and decantation remove them later, along with heavier sediments and metals.

Chemical recycling then goes even further to return value to the used lubricant by breaking down the hydrocarbons into simple feedstocks that can then be used as components of other products.

Large recycling services tend to focus on the spent hydrocarbon streams that produce the greatest volume of recyclable materials, partly to secure a place in the broader petrochemical value chain. Scott Miller, senior vice president of refinery



Re-refined base oils inherently don't qualify as environmentally acceptable lubricants (EALs), though they do have the benefit of reducing the volume of used-oil waste that returns to the earth.

operations at Safety-Kleen, says the company collects some 200 million gallons of used motor oil per year in the U.S. and Canada. "[Recycled] oil's quality is directly linked to the quality of used motor oils which are collected," explains Miller. "As OEMs have continued to progress their lubricant quality requirements, today's engine oils begin with a minimum quality level of Group II, which increases up to Group III and PAOs."

Each re-refining process adds a layer of complexity to the already intricate role of base oils in industrial use, making the precise environmental impact of a particular final product even more difficult to ascertain. Re-refined base oils inherently don't qualify as environmentally acceptable lubricants (EALs), though they do have the benefit of reducing the volume of used-oil waste that returns to the earth. Douglas J. Adams, senior product development chemist at RSC Bio Solutions, says the requirements for each designation of EAL are sharply defined by the Vessel Incidental Discharge Act (VIDA), formerly the Vessel General Permit (VGP), based on their base oil types.

Base fluids that are prescribed for use

SOURCE | COURTESY



depletion that cannot be removed by re-refining. The result? “Re-refined mineral oils can be used to successfully formulate standard mineral oil-based lubricants; however, these lubricants could not be classified as EALs,” says Adams.

Chemical recycling breaks down plastic waste into smaller components to be used as base oils in new products. In a new process called continuous microwave-assisted pyrolysis (CMAP), plastic is sealed in an oxygen-free environment and bombarded with microwaves that vaporize and decompose the organic molecules, which are then cooled for use as a liquid fuel. The system is designed to convert waste streams to hydrocarbon liquids like diesel and gasoline, as well as chemical feedstocks like naphtha. A single kilogram of plastic waste typically produces between 600 and 900 mL of usable fluid through this process. “In addition, the platform produces a small amount of char, which is generally carbon black and benign carbon that has value,” says Jason Tanne, Resynergi’s co-founder and chair. “We produce some light hydrocarbon gases like methane, butane and pentane, which also have value as energy sources.”

in EALs are triglycerides, synthetic esters, polyalkylene glycols and PAO and related hydrocarbons. Adams explains, “Used oils are oxidized, often containing acidic compounds in addition to metals like zinc and antimony as well as biocides or other toxic components that are present in the used oils.” Additionally, Adams says, each used oil requires the addition of new components to make up for any

The type of fluid produced depends on both the source material and the preferences of whoever is operating the reactor vessel. CMAP units “can process everything from films to rigid materials,” says Tanne. “Feedstocks to make fuels with the best recovery yields are usually polyolefin plastics,” including mixtures of polypro-

pylenes and some polyethylenes with resin codes 2, 4, 5 and 6. To make chemical feedstocks, “we tend to focus on single streams, like styrene to make monomers or a single polypropylene or polyethylene [to make] naphtha,” Tanne explains. The reactor vessels can be customized to produce different properties in the final product, resulting in final products that include paraffins, olefins, aromatics and monomers.

CMAP technology also can be deployed on an industrial scale. Typical materials recovery facilities (MRFs) wind up with tens to hundreds of tons of unrecyclable plastics daily, all of which would typically be disposed of in landfills. Larger, permanent CMAP units installed adjacent to MRFs can help reduce this reject material significantly by zapping the bulk of it into usable feedstocks. A partnership between a typical MRF and a CMAP facility can produce between 5,000 and 7,500 gallons of recycled chemical feedstocks and fuels of lower carbon intensity daily, says Tanne.

Through an efficient, low-impact oil recycling process, re-refined oil can significantly reduce the harm inherent in oil usage and limit environmental damage from discarded oils.

Advocates of oil recycling say reintroducing used oils into the manufacturing cycle has other compelling benefits for the environment. The recycling process can help reduce the volume of plastic material and fluids that would otherwise contribute to environmental destruction in landfills and waterways. Most importantly, the integration of low-impact re-refining processes into the hydrocarbon value chain can help to mitigate the effects of the exploitation of petroleum reserves, a major contributor to climate change. ■

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A single kilogram of plastic waste typically produces between 600 and 900 mL of usable fluid through this process. SOURCE | COURTESY

AVIATION CONDITION MONITORING

Aviation condition monitoring is flying high

By Steven Lumley | WearCheck's Technical Manager

Reducing the risk of catastrophic aircraft engine failure, boosting safety and reducing maintenance costs – are the primary goals of WearCheck's dedicated aircraft testing programme.

Our thriving aviation division analyses used aircraft oil and filters for wear particles, oil degradation and cleanliness of hydraulic fluids. Our experienced aircraft diagnosticians provide expert insight into potential engine failure based on the test results.

I have spent over ten years in the aviation monitoring team, where we carry out oil and oil filter analysis on aircraft components such as piston engines, turboprop, turbofan and turboshaft engines, auxiliary power units (APU), helicopter rotor gearboxes and hydraulic systems.

In the programme, wear rates are monitored, contamination such as dust, water

and fuel in the oil is detected, and the type of oil in use is verified. The tests can also detect oil overheating and oil degradation.

The four main wear debris monitoring techniques used in WearCheck's laboratories are a spectrographic oil analysis programme (SOAP), oil filter debris analysis analytical ferrography – if no filter is available – and magnetic chip detector particle analysis. Oil filter analysis supplements spectrometric oil analysis as filters retain larger wear particles that are generated by abnormal wear.

So, what are the benefits of a bespoke aircraft condition monitoring programme?

Well, the financial and safety benefits of preventative oil filter analysis have been proven time and again. We have many case studies where serious incidents were avoided because the failing component was removed or repaired before disaster struck. In one case, a severely damaged bearing was removed from an accessory

gearbox. Had the bearing failed, the result would have been an IFSD (in-flight shutdown).

In another instance, the presence of a large amount of metallic debris prompted the replacement of the propeller gearbox. Subsequent boroscope inspection of the gearbox revealed severe ring wear. Knowing that a component is compromised, and the extent of the damage enables the aircraft maintenance team to make critical decisions regarding replacement or repair – these actions save money by avoiding unplanned failure. Planned maintenance minimizes the disruption to an aircraft's schedule.

WearCheck is the only accredited laboratory for US-based Honeywell turbine engines in Africa. Several of our diagnosticians regularly complete Honeywell's stringent bi-annual accreditation exam, including myself, Ravi Chetty and consultant Daan Burger. ■



Condition Monitoring is at the heart of machine reliability

WearCheck, Africa's leading condition monitoring company, is dedicated to saving money for you, our customers. We analyse data from condition monitoring and fluid analysis to schedule maintenance and avoid unexpected machine failure.

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LUBES

Vanol opens fully automated lubes blending plant in UAE

VANOL FZE has recently opened the first fully automated lubricant blending plant in UAE. This new plant located at Jebel Ali Free Zone in Dubai UAE is fully dedicated to Toll Blending, with in-house production of small pack bottles for the toll blenders thus reducing cost, while keeping the privacy of Brand molds, and designing of private labels.

This ISO certified (14001:2015, 9001:2015, 45001:2018) plant prides itself in being located at Jebel Ali Free Zone therefore saving on tax and enjoying flexible and faster

Shipments to most countries in the Middle East and Africa. Due to the plant's direct port link, Vanol is able to export products quickly and benefits from less cost in the export process.

The plant whose construction was started in 2018 and ended in 2021 has an annual capacity of 75,000MT and a storage capacity of 2800 MT, with a daily filling and packing capacity of 250MT. Vanol is already toll blending for Barox Lubricants, a German-based company. BAROX GmbH specializes in premium performance engine oils, gear oils, coolants, brake fluids and other lubricants.

Vanol also got to participate in the 18th edition of Automechanika Dubai held at Dubai World Trade Centre from 14 - 16 December 2021 which is the largest international trade show for the automotive aftermarket industry in the wider Middle East region. The event was attended by exhibitors from 47 countries with over 13 dedicated country pavilions giving Vanol a chance to market the new blending plant services. ■

For more information about Vanol and its operations visit their website: www.vanol.com



By Mr. Ramatri PD

Global Head-Base Oils at Al Ghurair Energy



BASE OILS

Understanding base oil supply chain management

Lubezine had an interview with Mr. Ramatri PD, the Global Head-Base Oils at Al Ghurair Energy DMCC as he shared insights into the base oils supply chain. Mr. Ramatri PD has a BSc in Chemistry and an MBA in marketing. He started his journey in the lubricants industry in 1996. He has worked at Vedol International (India), Hawk Petroleum (Singapore), Waxpol Industries Ltd and Henkel International before joining the Dubai-based Al Ghurair Group.

1. What are the main objectives of Base Oil Supply Chain Management (BOSCM)?

The first objective should be to add value by leveraging worldwide logistics, such as co-loading and optimizing the base oil loading and logistics routes. The second one is consistency. This is directed to the blenders where they expect a consistent supply of base oil so that production is not halted at any given point. The third is balancing and optimizing the base oil cost and quality, equally crucial to enable a consistent quality at a competitive price in the market. Finally, continuous improvement of the order-to-delivery time of base oil guarantees high quality and low-cost delivery with minimal lead time.

2. What base oil packaging is currently being preferred especially in the Middle East and Africa?

Due to the hike in prices of base oils as a result of Coronavirus, medium base oil suppliers have shifted to flexibags as the preferred package. Over the last three months, the cost of the flexibags has also increased, forcing suppliers to look for cost-effective means, resulting in bulk shipping especially for big players who deal with loads of between 1,000 and 2,000 tons.

3. How would you explain the supply chain dynamics of the various base oil groups?

Due to the trade volumes and demand, Group I base oil is mostly transported using tankers. Most of the movements of



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Group II and III into Africa, Europe utilize Flexi bag and Iso tanks, with options of bulk at times. However, Exports of Group II into the Middle East, Asia, India and China mostly use bulk transport.



Over the last three months, the cost of the flexibags has also increased, forcing suppliers to look for cost-effective means, resulting in bulk shipping especially for big players who deal with loads of between 1,000 and 2,000 tons.

4. What space has technology occupied in the current base oil supply chain management and what futuristic aspects do you see technology taking up?

Technology has smoothened the supply chain in that it is possible to track goods pretty fast, improve delivery times and help to proactively manage inventory. The introduction of block chain potentially will improve traceability and security, aspects that are critical in the base oil supply chain context.

5. What are the new supply chain techniques being employed to improve efficiency and competitiveness as far as Base oil is concerned?

Due to increased prices in flexitanks, production of Iso tanks has begun. This is the main change in the base oil supply chain now, but another thing has been base oil suppliers giving small parcels to small customers in the range of 500 -1000 tons. These and other factors are employed by Base oil suppliers leveraging Supply Chain Management to provide a competitive edge in a competitive market. ■

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