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Porsche to use Mobil in Formula E race car

Turkish chemical industry breaks all-time export record

Petroyağ enters Turkey's “Best Managed Companies” list

Demand for VII to be sustained by high-quality engine oil sales

Editor's Letter

While reaching the end of 2019, sustainability and environment come first among the most debated items on the sectors agenda. In this context, the implications of increasing market share of electric-powered vehicles in the automotive market for the engine oil and automotive fluids manufacturers are discussed, and this subject is expected to attract even more interest in 2020. That's why our cover story in this issue is about EV fluids and Formula E race.

Turkish chemical sector continues its achievements. According to the Istanbul Chemicals and Chemical Products Exporters' Association (İKMİB) data, Turkish chemical sector broke an all-time record by reaching 18.8 billion dollars in exports in the first eleven months of 2019. The chemical sector protects its place as the second highest sector in terms of exports in Turkey. Congratulations to all sector representatives.

In this issue, we touched on the history of Petrol Ofisi, one of the most established brands in Turkey. The company, established in 1941, has brought many innovations and made significant contributions in Turkey since day one. You can read the article and see a couple of nostalgic photos from page 22.

Future Market Insights published a report examining the viscosity index improver market. The report indicates that the changing regulatory environment and strict emission standards are boosting lubricant manufacturers' demand for viscosity index improvers. Demand for increased efficiency both in automotive and industrial applications strengthens the VII market.

Expanding its base oils portfolio, Nynas offers many advantages for metalworking fluids and lubricants with its new base oil NYNAS S 3B. This product, which has virtually no aromatic content and no odor and has a flash point well above 100°C, is designed for applications where a high flash point and narrow boiling point ranges are important. It stands out as the ideal base oil especially for applications such as aluminium cold rolling.

Turkey Edition

In our facility review section, we focused on NYCO's Tournai Plant. The plant operates since 1997, and it reinforces the company's global position as a lubricant specialist. It consists of 4 synthetic ester production lines, 2 blending units for lubricants, 2 grease manufacturing units, and 1 pilot unit for synthetic esters and additives.

I would like to extend my blessings and regards for the New Year to all our readers and all stakeholders in the sector, and I hope 2020 becomes a very successful and fruitful year for all.

Wishing you a healthy and happy New Year!

Cansu Tuncer
cansu.tuncer@vizyonas.com

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MANAGEMENT
Publisher
On behalf of Vizyon Dergi Yayıncılık İletişim Pazarlama A.Ş.
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Att. Vahit Kaya
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Editor
Cansu Tuncer

Design
Melis Gönen

Printing
Sarsılmaz Basım & Yayım
Tel: +90- 212 289 07 49-50

For subscription: abone@vizyonas.com
For advertising: reklam@vizyonas.com

Contact
Hacımimi Mah. Kemeraltı Cad.
Balkan Han No: 15/4 34425
Karaköy/ İstanbul/ Turkey
Tel: +90- 212 252 08 40
Fax: +90- 212 252 81 51
www.lubricant-world.com

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Turkish chemical industry breaks all-time export record

Fuchs Group acquires Nye Lubricants

The Fuchs Group, which operates globally in the lubricants industry, has signed an agreement to acquire Nye Lubricants Inc. The Fairhaven, Massachusetts-based manufacturer is a leader in the innovation, formulation and manufacturing of synthetic lubricants. Pending final closing of this acquisition, the Fuchs Group further expands its specialty lubricants product portfolio, offering engineered solutions across multiple markets while creating opportunities to serve new high-end and critical applications. The business will continue to be operated out of its Fairhaven, Massachusetts, location.

"Nye's mission is to partner with innovative companies and provide high-performance lubricants using our leading-edge technology and engineering expertise. It combines its integrity, proven experience and deep technical knowledge to solve its customers' toughest engineering challenges focusing on the automotive, medical, aerospace and in-vacuum industries," says George Mock, President of Nye.

"We are very excited to have Nye join the Fuchs Group. While Fuchs and Nye operate in the same industries, the Nye product offering allows us to capitalize on additional high value-added applications. This furthers Fuchs' objective to be able to offer a full lubricant solution into our target markets," says Stefan Fuchs, Chairman of the Executive Board of Fuchs Petrolub SE.

"Nye brings specific engineering expertise and a design partnership approach to the customer relationship that is unique. We will use this approach and build upon it using our broad market penetration. The acquisition, and the Nye team, will significantly increase our R&D and engineering expertise while using Fuchs' supply chain and market presence to satisfy emerging customer needs," adds Keith Brewer, President & CEO of Fuchs Lubricants Co., USA.

The parties expect that the transaction will close towards the end of 2019.

Nye employs 180 people and generated USD 51 million (approx. EUR 46 million) in sales in its fiscal year 2018, throughout North America, Europe and Asia.

In 2018 the FUCHS Group accounted for EUR 2,567 million sales with staff of 5,446. Fuchs Lubricants Co. (USA) generated sales of EUR 284 million with 420 employees.

Keith Brewer, George Mock, Stefan Fuchs

Petronas Lubricants and Iveco: A strong partnership

Petronas, one of the leading global lubricants manufacturing and marketing companies, put its new engine oil Petronas Urania Next 0W-20 on the market, which has been specially developed for Iveco's new heavy duty vehicle Iveco S-Way.

Petronas Urania Next 0W-20, which complies with IVECO Standard 18-1804 TLV LS, is specifically designed for enhanced fuel economy with proven fuel savings up to 2.5 percent compared to standard lubricants. It therefore helps to reduce the TCO (Total Cost of Ownership), allows for consistent fuel savings, longer engine life and reduced CO_2 emission. This lubricant has been designed to ensure maximum engine reliability through the following four successfully achieved objectives: exceeding Euro 6 engines technical requirements, preventing the formation of deposits, reducing friction and improving the reliability of engine components. Its improved cold start properties are suitable for all weather conditions, including arctic cold.

The strong technical partnership between Petronas Lubricants International (PLI) and Iveco guarantees the highest level of technical and commercial support within the Iveco network and ensures a continued supply of lubricants for Iveco vehicles under the brand of Petronas Urania. With its new engine oil, Petronas continues to meet the needs of Iveco and the engine family FPT (Fiat Power Train).

High-level heavy duty engine oil

Petronas Urania Next 0W-20 is recommended on the Iveco S-Way Euro 6 equipped with Cursor engine FEP (Fuel Economy Package). Starting from Stralis, Petronas Urania Next 0W-20 is recommended on all Cursor 11 and Cursor 13 engines. As all Petronas Urania lubricants, Petronas Urania Next 0W-20 has been co-engineered considering Iveco and FPT Industrial needs and joins the already wide and technologically advanced range of original engine oils for heavy-duty vehicles, as proven by the Contractual Technical Reference Number (C.T.R. I139.D14).

Mobil-branded lubricants and fluids to be used in Porsche Formula E race car

ExxonMobil is expanding its global business and technical partnership with Porsche by teaming with the luxury German automaker on its Formula E series car for the 2019/2020 season. The new partnership represents ExxonMobil's first entry into electric motorsports. Starting from the first race in Saudi Arabia at the end of this year, ExxonMobil will provide Mobil-branded high-performance electric powertrain fluids to Porsche, developed specifically to meet the specialized demands of electric vehicles.

The new technical partnership joins ExxonMobil's existing roster of global motorsports activities with Porsche including the World Endurance Championships, IMSA WeatherTech SportsCar Championship, Porsche Mobil 1 Supercup, Porsche Carrera Cup and numerous customer racing activities around the world.

"Our entry into Formula E with Porsche not only represents an expansion to our successful business relationship, but an expansion of a winning partnership in racing," said Russ Green, Vice President, finished lubricants at ExxonMobil. "As Porsche begins to compete and demonstrate the capabilities of its electric vehicle technology, ExxonMobil is engineering a full suite of Mobil-branded lubricants to help the new Porsche Formula E team build on its legacy of racing success around the world. Motorsport provides the ultimate proving ground to continue to develop high-performance lubricants and fluids."

"As a key technical partner of more than 20 years, no other lubricant supplier understands the Porsche performance philosophy like ExxonMobil," said Fritz Enzinger, Vice President, Porsche Motorsport. "ExxonMobil has not only been a valuable partner for our commercial business, but an important teammate in our pursuit of wins and championships from Sebring to Le Mans. They were a natural addition to our Formula E team as we enter an exciting new era of racing for Porsche."

ExxonMobil in motorsports

ExxonMobil remains proud partners with Aston Martin Red Bull Racing, Stewart-Haas Racing in NASCAR's Sprint Cup Series; Porsche, Bentley and Toyota Gazoo Racing in the FIA World Endurance Championship; Corvette Racing, Porsche North America, Lexus and Acura/Caterpillar in the IMSA WeatherTech SportsCar Championship; and numerous teams competing in series around the world.


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Idemitsu established second lubricant manufacturing plant in Indonesia

PT. Idemitsu Lube Techno Indonesia, an Indonesian subsidiary (90 percent) of Idemitsu Kosan Co. Ltd., established a new lubricant manufacturing plant with an annual production capacity of 50,000 KL in Bekasi, Indonesia, to augment the supply for the increase in the demand for high-performance lubricants in Indonesia. The inauguration ceremony was held on November 7.

Established on an area of approximately 80,000 square meters, the Cikarang plant will manufacture mostly engine oil for initial filling of motorcycles and automobiles and OEM replacement products (partner brand production) utilizing the latest production facilities. The product line also includes transmission oils, industrial lubricants and other relevant items.

Indonesia has the world's fourth largest population, and the company is expecting a steady growth in demand. The existing first plant, the Karawang plant with an annual production capacity of 65,000 KL, which started production in 2005, is situated in the Karawang International Industrial City, where many related Japanese enterprises have their offices. Due to there being no expansion room in this area, the new second plant was established in Bekasi Regency, which is near the Karawang plant. The establishment of the Cikarang plant makes for a total annual production capacity of 115,000 KL in Indonesia by Idemitsu. The Cikarang factory is the seventh lubricant manufacturing plant directly managed by Idemitsu overseas.

PT. Idemitsu Lube Techno Indonesia was founded on the investment of Idemitsu's local partner, Atlas Petrochem Indo in 2004, and supplies productions to Idemitsu Lube Indonesia, Idemitsu's fully-owned distributor, Atlas, and Idemitsu's overseas affiliates.

Idemitsu will continue to aim for the improvement and expansion of the business as a global supplier of lubricants as well as establish a community-oriented manufacturing and sales structure in Indonesia.

North American OEM Manager David Gray named Certified Lubrication Specialist

Evonik Oil Additives USA, Inc. announced that North American OEM Manager David Gray has been confirmed as a Certified Lubrication Specialist by the Society of Tribologists and Lubrication Engineers (STLE).

STLE is the premier technical society serving the needs of more than 13,000 individuals and 250 companies. STLE members are experts who research, develop and market the methods and products that make the industry more successful and enhance the well-being of people worldwide.


David Gray

STLE's Certified Lubrication Specialist certification is the only independent certification for lubrication professionals that verifies their broad lubrication engineering knowledge. Their core responsibilities include evaluating and selecting lubricants to use; conducting lube surveys; training lubricators; developing quality assurance and used lubricant analysis programs; troubleshooting and problem-solving lubrication issues; and maintaining records of all applications, as well as waste collection and disposal.

"I'm pleased to be able to offer our customers the assurance of knowing they are working with a company who truly are lubrication specialists," said David Gray. "While I've been in the lubrication industry for three decades, preparing for this exam gave me a new appreciation to how intricate this industry is, and being able to carry this title is an honor."

Gray holds a Bachelor of Engineering from the University of Portsmouth. He has been in the lubrication industry for over 30 years and represents Evonik on key standard setting organizations, industry bodies and committees covering the industrial lubricant market.

Clariant launches new bio-based additives to reduce resource consumption

Clariant unveils new high-performance additives promoting reduction in the consumption of fossil resources, to support the creation of value chain cycles which utilize viable and sustainable renewable sources and combat climate change.

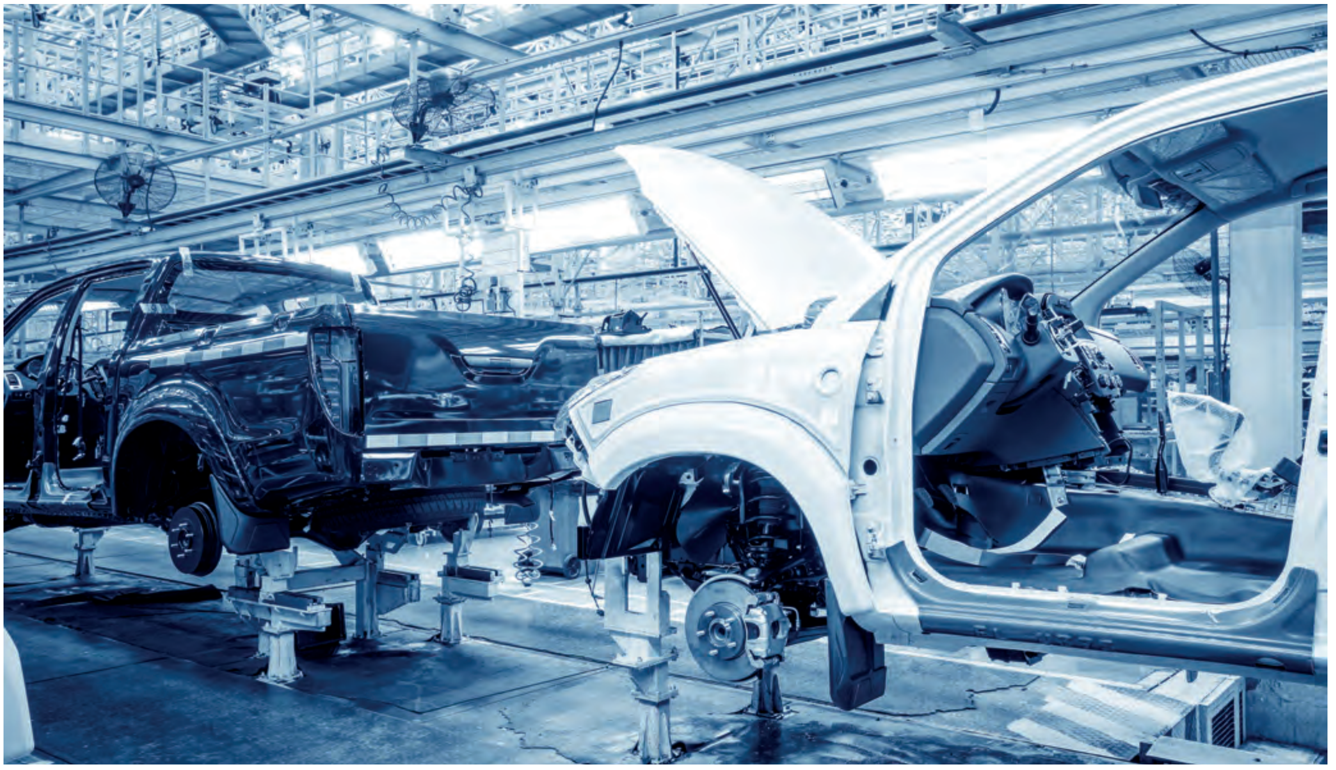
Clariant has teamed up with renewable hydrocarbon producer Neste to offer a wide range of additives based on mass balance certified ethylene and propylene from renewable feedstock, which reliably deliver both high performance and sustainability. Neste's renewable hydrocarbons are based on sustainably produced bio-based raw materials, such as waste and residue oils, so they help in reducing consumption of fossil resources, and fossil-based carbon emissions to the atmosphere. As an outcome of this cooperation, Clariant is launching new 'Terra' designated additives solutions, like-for-like drop-ins, performing precisely as fossil-based equivalents with no need to retest, renew registrations or to modify production processes or equipment and carrying a mass balance certification.

New Licocene Terra range is a renewable feedstock version of Clariant's Licocene range. Among the five new Licocene Terra products based on renewable feedstock, two are specifically targeting plastics processing: Licocene PE 4201 Terra, a highly valuable lubricant for polyolefins and nucleating agent for EPS and Licocene PP 6102 Terra, an excellent external lubricant for PVC extrusion and dispersing agent for pigments and additives in masterbatches.

In addition to its Terra range, Clariant introduces its new Vita range consisting of six rice bran wax based solutions for formulators of high-performing engineering plastics, bioplastic compounds and masterbatches. Among the Vita range, new Licocare RBW 360 TP Vita is a multifunctional additive that provides a special combination of lubrication and nucleation in engineering plastics, particularly in polyamides.

Stephan Lynen, Head of Clariant Business Unit Additives, comments: "With current forecasts predicting as much as 20 percent of the world's oil production being used to make plastics by 2050, we need to reduce resource intensity by enabling more sustainable material choices – like increasing the use of renewables and natural, non-food competing feedstock. To offer this we need partnerships along the value chain. With Neste we have found a partner who is equally committed to creating a more sustainable future."

Lars Börger, Vice President, Brand Owner Management, Neste's Renewable Polymers & Chemicals business unit, adds: "By working with partners like Clariant who share Neste's passion for developing renewable and circular solutions in order to create a healthier planet, we can be faster and bolder in making a difference. Our renewable hydrocarbons help reduce the fossil-based carbon emissions into the atmosphere."



Michael Manley of FCA elected ACEA President for 2020

The Board of Directors of the European Automobile Manufacturers' Association (ACEA) has elected Michael Manley, CEO of Fiat Chrysler Automobiles (FCA), as its new President.

As of January 2020, Mr. Manley will take over from Carlos Tavares, Chairman of the Managing Board of PSA Group, who served as ACEA President for two consecutive terms in 2018 and 2019.

The priorities of ACEA for next year include developing a pathway for the transition to carbon-neutral road transport, while ensuring the economic sustainability of the European auto sector.

''As an industry we want to take the lead in transforming mobility in a way that puts the consumer first, but also enables us to remain globally competitive and resilient,'' stated Michael Manley.

The ACEA President is elected for a year-long term, once renewable, from the CEOs of its member companies, which are the 15 major Europe-based car, van, truck and bus manufacturers.

About Michael Manley

Michael Manley was appointed Chief Executive Officer of Fiat Chrysler Automobiles NV on 21 July 2018.

Previously, Mr. Manley has served as Head of Jeep brand, Head of Ram brand and Chief Operating Officer for the APAC region. He was also the lead Chrysler Group executive for the international activities of Chrysler outside of NAFTA, where he was responsible for implementing the co-operation agreements for distribution of Chrysler Group products through Fiat's international distribution network.

He holds a Master of Business Administration from Ashridge Management College in Ashridge, England, and a Bachelor of Science in Engineering from Southbank University in London, England.

Mr. Manley was born in Edenbridge, Great Britain.

Michael Manley

We crowned our success with a prestigious award!

We are listed among
Turkey’s Best Managed Companies by Deloitte.

We are happy and proud to have achieved
this success as a result of our 26-year efforts.

petroyağ
LUBRICANTS

Gazprom Neft expands lubricants production abroad

Operating company Gazpromneft Marine Lubricants has begun producing high-tech marine oils at a production facility in Singapore. Localising lubricants production under the Gazpromneft Ocean brand at the AP Oil partner facility will cut delivery times for Gazprom Neft products to the Port of Singapore by up to two days, and to ports in Malaysia by up to 4 days.

The blending plant in Singapore is facilitating the production of marine lubricants whose original formulations have been developed in line with MARPOL 2020 standards. Gazpromneft Ocean lubricants are approved by leading marine equipment producers and are suitable for use on two- and four-stroke engines, operating on all types of fuel, including low-sulphur (with a sulphur content of less than 0.5 percent) and ultra-low-sulphur (less than 0.1 percent) fuels.

Roman Miroshnichenko, Managing Director at Gazpromneft Marine Lubricants says: "Manufacturing in Singapore will help meet the growing demand for high-tech marine oils, and strengthen the company's position in the Asia–Pacific market. Developing the production and logistics network and expanding our product offering, together with continuous service improvements, will increase efficiency in supplying cutting-edge lubricants, creating convenient environment for our clients, all over the world."

Gazprom Neft's marine lubricants are currently available at more than 250 ports, in 24 countries, worldwide. Gazprom Neft's strategy for developing its marine lubricants business envisages the further proactive expansion of its retail network, together with increasing its geographic coverage in producing innovative products abroad – thanks to which, sales of Gazpromneft Ocean lubricants are expected to grow to 100,000 tonnes by 2030, with the company's global market share in marine lubricants reaching four percent.

Gazprom Neft subsidiary Gazpromneft Marine Lubricants specializes in the production and sale of marine lubricants on the international market, with a product range including 43 branded oils and lubricants for all kinds of marine equipment.

AP Oil International Limited was established in 1975, specializes in the production of lubricants and service fluids since 1981. Total production capacity at AP Oil's lubricants plants in Singapore stands at 65,000 tonnes per year.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SUNLOG

Petroyağ enters Turkey's "Best Managed Companies" list

Implemented in 20 countries by Deloitte Private and held in Turkey for the first time last year, the Best Managed Companies program winners were announced for 2019. The companies that applied to the program were meticulously evaluated by a jury headed by Ümit Boyner and 15 finalists were awarded. Petroyağ was presented with Turkey's "Best Managed Company" title in the field of industrial oils and chemicals.

Ali Sabancı, Batu Aksoy, Ebru Özdemir, Hamdi Akın, M. Buğra Koyuncu, Orhan Turan, Umran İnan and Zeynep Bodur Okyay provided the jury support for the evaluation of the companies. Following the evaluation over four main criteria as strategy, competence and innovation, culture and commitment and governance and financials, 15 of the 37 companies that applied were presented with the "Best Managed Company" title at the ceremony on November 11 at Shangri-La Hotel in Istanbul.

Ünal Soysal, Chairman of the Board of Directors of Petroyağ, said that they are happy and proud for crowning their 26 years of hard work with this award. "At the beginning of this journey, everything started very naturally. We work hard and devotedly with our commitment to our motto 'good service guarantee to our customers and new product development'. I would like to thank Deloitte for pursuing a very different mission for many years and making effort to bring together Turkish industrial companies in such an effective platform," said Soysal.

Ali Çiçekli, Leading Partner at Deloitte Private Turkey, said the gains that for the companies throughout the process are as important as the awards. "I believe this program provides guidance on the implementation of good governance principles. We are planning to present Turkey's Best Managed Companies at the global program next year. Therefore, I think the instructional gains in the evaluation process on the road to the award rather than of the award itself are very valuable and I believe that the program will benefit these companies in the international arena as well. I would like to thank all participants and congratulate the winners," said Ali Çiçekli.

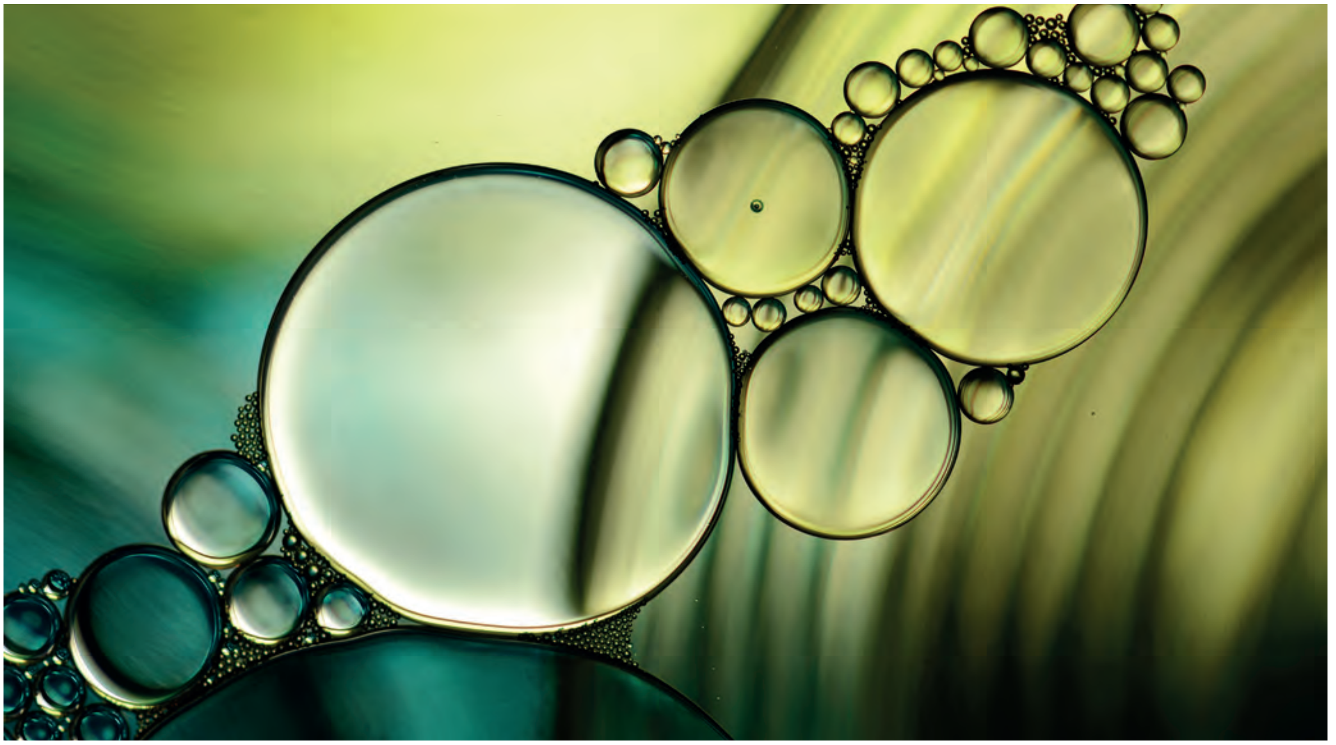
Motul hosts the premiere of Le Mans ’66 movie

As a long-standing partner of legendary French endurance race Le Mans, Motul hosted the Turkey premiere of Le Mans '66 movie, which tells the story of Le Mans. The premiere was held in Cinemaximum hall in Istanbul Kanyon Shopping Mall. Motul Turkey distributors, journalists and key figures from the automotive industry attended the event.

The movie depicts the events that happened prior and during the 24 hours of Le Mans in 1966, starring Matt Damon as Carrol Shelby, the legendary racer, and Christian Bale as Ken Miles, a great pilot and mechanic. The movie, telling one of the most legendary stories in the history of motorsports, describing the effort to overcome difficulties that are even hard to believe in order to achieve something extraordinary with creativity, determination and will, inspires the audience.

Dmitry Bakumenko, Motul Turkey General Director, said at the premiere: "We are very happy to host the movie of Le Mans, today the lubricant partner of which is Motul, a brand that we are used to seeing in race tracks since 1954. Motorsports are in Motul's DNA and the 18 victories gained by the teams we collaborated until today in Le Mans series make us indispensable for this series."

"This movie is the perfect choice for great action. The passion of the race pilots for innovation and their inexhaustible love for the competition reflects the spirit of Motul. In this modern era, where the computer-aided movie industry has produced many box-office record holders, Le Mans ‘66 project is critical to understanding what race pilots have gone through in the 1960s, pushing the boundaries of themselves and their vehicles. We are happy to be a part of this movie."



Turkish chemical industry breaks all-time export record

Turkish chemical industry broke the record with 18.8 billion dollars of exports in the first eleven months of 2019, according to Istanbul Chemicals and Chemical Products Exporters' Association (IKMIB) data. The chemical sector, which is the second highest sector in terms of exports this year, continues its achievements. Standing out as the sector that exports to the most countries among all sectors, the chemical sector came in first with its exports to 208 countries and regions in November.

The sector is drawing attention with its increasing performance in exports. Its exports in November 2019 increased by 23 percent to 1.83 billion USD. Exports of the sector in the first eleven months increased by 18 percent and reached 18.8 billion USD. Thus, the chemical sector has broken the export record of all time with the export numbers it reached in eleven months.

Adil Pelister, Chairman of the Board of Directors of IKMIB, evaluating the export figures of the chemical sector, said: "The highest export figure reached by our sector until now was 17 billion 851 million USD in 2014. I would like to congratulate all of our sector representatives and stakeholders, especially the companies that have made efforts for this great success by exceeding this figure in the eleven months of this year and making us proud with 18.8 billion dollar export. We are hoping to set a new record by exceeding our end-year target of 20 billion dollars."

"Mineral fuels, mineral oils and products" is the most exported sub-sector

The Netherlands was the most exported country in November. Chemical exports to the Netherlands in November 2019 was 110 million 837 thousand USD. To the Netherlands, "mineral fuels, mineral oils and products" were exported the most in November. Chemical exports to the Netherlands in the eleven months of this year reached 998 million 743 thousand USD.

In January-November 2019, the top 10 countries in Turkey's chemical exports are the Netherlands, Iraq, Italy, Spain, Germany, Egypt, USA, Malta, Greece and the United Kingdom.

In November, export of mineral fuels, mineral oils and products was the top among the sub-sectors with 553 million 229 thousand 750 USD.

Adil Pelister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The traditional leader in the fuel, lubricants and chemicals markets: Petrol Ofisi

Petrol Ofisi, one of Turkey's most established brands, takes the lead in many areas today. Founded in 1941, the company has contributed to the development of both the country and the society since the first day. Today, it takes justified pride of being one of the key values of Turkey as the third largest company in the country.

Continuing its traditional leadership in the Turkish fuel market and lubricants and chemicals market, Petrol Ofisi was founded during World War II, at a time when fuel shortage was on the rise and Turkey was completely dependent on foreign resources. Ever since its establishment with a staff of 9 people on February 18, 1941 as a national brand in Turkey, Petrol Ofisi has assumed the role and duty of "providing the products required within the scope of its activities and delivering them across Turkey, as well as providing support in all areas, including agriculture and industry, to strengthen and bring Turkey into the future".

Founded as a local and national brand using Turkey's equity, Petrol Ofisi has generated energy for the socio-economic development of the country and society since that day. Taking pride in every step it takes to move Turkey forward, Petrol Ofisi has become an exemplary industry leader that is much more than a market leader, which gives priority to people and technical safety.

Shortly it has become a brand of pride in the country

Petrol Ofisi has a female, fire breathing wolf symbol on its logo, which is based on the female wolf Asena, one of the main elements of Turkish mythology. With only 9 people, it quickly became able to render its services accessible for the most remote corners of the country. Through these investments, it has paved the way for major development initiatives in Turkey in various fields, including agriculture and industry. After being founded by the state, Petrol Ofisi became a national treasure and source of pride thanks to its investments and was converted into a Joint Stock Company in 1983 and privatized in 2000.

World energy titan Vitol acquired Petrol Ofisi in 2017

Today, Petrol Ofisi has a unique infrastructure with

more than 1,750 fuel stations, supplying fuel to over 1,400 village pumps, 9 fuel terminals, 3 LPG terminals, 20 airport supply units, 1 lubricant factory and a storage capacity of approximately 1 million cubic meters. It has created a unique synergy with another giant and multinational company. With the largest foreign capital investment in Turkey in 2017, Petrol Ofisi was incorporated into Vitol, the world's leading fuel and energy titan.

The only brand that can serve on land, at sea and in air

Providing great help for Turkey's journey into the future in its history of 78 years, Petrol Ofisi is the most important brand of our country today that can supply fuel not only to land vehicles but also to marine and aviation vehicles thanks to PO Marine and PO Air. PO Marine is the only brand that can refuel in all Turkish seas along the entire coastline. Similarly, PO Air serves more than 200 leading domestic and foreign airlines in Turkey and abroad. With its unique infrastructure, experience and expertise, Petrol Ofisi also supplies fuel to many important projects such as the Istanbul Airport, Yavuz Sultan Selim Bridge, Çanakkale Bridge and highways, contributing to the development of Turkey in these areas.

Over 350 products, particularly Maxima and Maximus, are produced

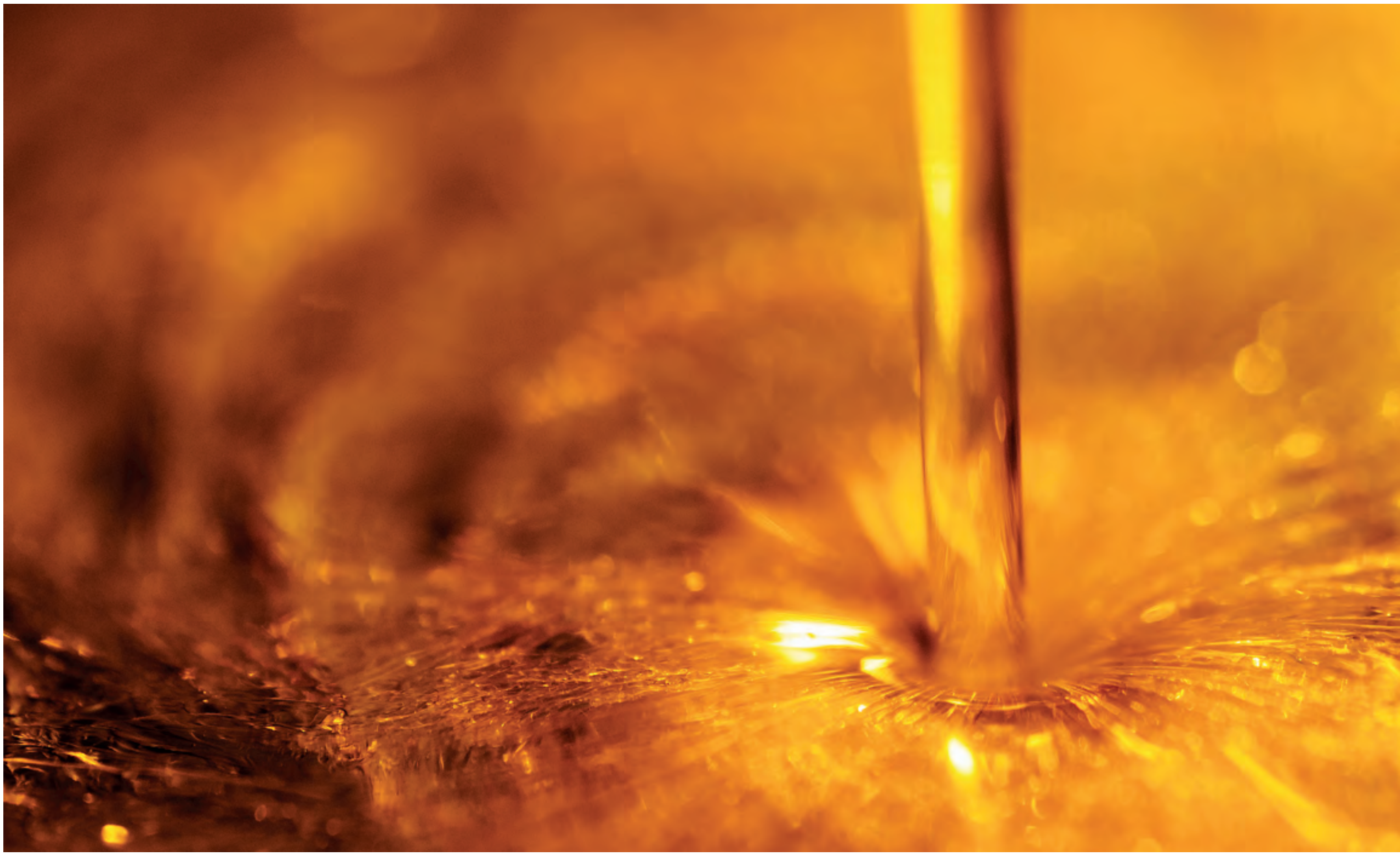
Petrol Ofisi is a traditional market leader in the 'Turkish fuel market' as well as in the 'Turkish lubricant and chemical market'. According to the Petroleum Industry Association (PETDER) data, Petrol Ofisi has maintained its leadership in the lubricants and chemicals market for the last 9 years in a row with a 24.9 percent market share. The company's lubricants and grease are manufactured in its high-tech factory in Derince, Kocaeli with an annual total production of 140,000 tons and a storage capacity of 65,000 tons. Over 350 products, primarily Maxima and Maximus, produced in the factory are offered for sale at 16,000 points all across Turkey. Hosting lubricant laboratories accredited in 84 tests by the Turkish Accreditation Agency (TURKAK), Petrol Ofisi Technology Center (POTEM) is the most advanced center not only in Turkey but in a larger geographical area. It serves not only Petrol Ofisi, but also the whole sector, especially public institutions. Lubricants, produced by Petrol Ofisi with its advanced production technology and R&D capacity, offer the ideal solution to almost all the needs in this area under a single brand, with its rich product diversity. Petrol Ofisi Lubricants meet the needs of many industries such as agriculture, industrial manufacturing, marine, machinery as well as automotive.

Lubricants are exported to 33 countries on 4 continents

Besides the Turkish market, lubricants and chemicals produced by Petrol Ofisi are exported to markets across the globe as well. In 2018, the total sales volume of these products reached 120,000 tons, 10,000 tons of which were exported to 33 countries on 4 continents. Countries such as Iraq, Romania, TRNC, Azerbaijan, Georgia, Turkmenistan, Yemen, Libya, Tunisia, Russia, Kosovo, and Bosnia and Herzegovina were among the leading export markets of Petrol Ofisi. In addition, countries such as Pakistan and Chile, which were exported to for the first time, served as examples of Petrol Ofisi Lubricants' access to remote markets.

Turkey's third largest company by turnover in 2018

One of Turkey's most important national values, Petrol Ofisi makes great contributions to employment and economy with its strong impact in all areas. According to the 2018 data of Capital 500, Petrol Ofisi is Turkey's third largest company with its total sales revenue of $49.9 billion. With a similarly significant impact on the field of employment, Petrol Ofisi creates employment opportunities for tens of thousands of people through its dealers, as well as for more than 800 employees under the General Directorate.



Demand for viscosity index improvers to be sustained by high-quality engine oil sales

Changing regulatory environment and strict emission standards are boosting lubricant manufacturers' demand for viscosity index improvers. Efficiency demands in not only automotive but also industrial applications are strengthening the VII market.

Increasing demand for high-performance lubricants with optimum viscosity has been a vital factor pushing consumption of viscosity index improvers. Although the global market for viscosity index improvers has been projected to exceed the US$ 5 billion mark by the end of 2029, the overall growth outlook would remain sluggish.

Consistently soaring consumption of vehicle lubricants such as engine oil, transmission fluids, and brake oil by OEMs and aftermarket operators will continue to significantly

contribute to the growth of viscosity index improvers market.

Key takeaways

- The demand for lubricants is estimated to reach 40 million tons by the end of 2019.
- The penetration of high performance lubricants in automotive as well as industrial sectors is increasing with growing focus on lubrication for performance efficiency of industrial machinery and automotive components.
- Increasing labelling initiatives have propelled the demand for ISO-grade viscosity lubricants. High-quality lubricants have optimum viscosity, offer corrosion protection, and ensure oxidative stability.
- Major companies are focused on the development of bio-preferred or bio-based products, which are compliant with the changing regulatory scenario.
- High regulatory standards laid down by organizations such as NHTSA & EPA, and growing emphasis on fuel economy have made the usage of viscosity index improvers crucial.
- Viscosity index improvers are commonly used in multi-grade engine oils. Increased adoption of high-performance engines has boosted the demand for high-quality engine oils with appropriate viscosity, which in turn, is positively impacting the growth of the viscosity index improvers market.
- Other industries such as marine, railways, energy & power generation/transmission equipment are also increasing the demand of high-quality lubricants, thus propelling the growth of viscosity index improvers market.

The viscosity index improvers market is witnessing a paradigm shift in terms of innovation and manufacturing, from traditional synthetic products to bio-based or bio-preferred products that are in compliance with regulatory framework. This transition, along with production cost optimization, will drive substantial demand for the product in automotive as well as non-automotive applications.

Viscosity index improvers market: Competition landscape

According to report analysis, the global viscosity index improvers market is moderately consolidated with key market players such as Infineum International Limited, Chevron Oronite LLC, Afton Chemical Corporation, The Lubrizol Corporation, Evonik Industries AG, and Mitsui Chemicals accounting for a significant share in the global market. Leading market players are strategically engaging in the development of close working relations with lubricant manufacturers for ensuring long-term supply contracts.

Changing regulatory scenario encourages advancements in lubrication technology

The demand for viscosity index improvers is directly proportional to the production rate of lubricants. Changing regulatory scenario and imposition of emission standards have led to the development of high-quality lubricants, which has increased the penetration of lubricant additives such as viscosity index improvers. Development of new customized product variants for target applications along with existing products gives a competitive edge to manufacturers.

These insights are based on a report on Viscosity Index Improvers Market by Future Market Insights.

Unique base oil for metalworking and lubricants

Pure and crystal clear, NYNAS® S 3B is the latest base oil in Nynas' extensive portfolio. With this base oil, which offers several advantages over paraffinic oils, such as excellent low-temperature properties and superior solvency, Nynas further expands the choice of low-viscosity base oils that it supplies in demanding applications.

The new NYNAS® S 3B is a unique product on the market, distilled from selected crude streams with unrivalled know-how of high purification technology.

"It is a highly refined base oil that meets FDA B, which defines the requirements of the food packaging industry, with virtually no aromatic content and no odor and with a flash point well above 100°C," says Dr. Gaia Franzolin, Nynas Global Marketing Manager.

With NYNAS S 3B, the company have listened to its customers and developed a product that further expands the choice of low viscosity base oils that it supplies in demanding applications such as aerospace and low-temperature hydraulics.

"It is a base oil designed for applications where a high flash point and narrow boiling point ranges are important for safety and performance," adds Professor Thomas Norrby, Senior Specialist Lubricants at Nynas. "NYNAS® S 3B will find its place in industrial applications including aluminum cold rolling, thin sheet stamping and some forming, for example in the beverage can industry."

He also emphasizes that the higher flash point combined with very good solvency makes NYNAS S 3B useful in metal removal applications like grinding, honing and lapping. Other applications may be found in other low-viscosity industrial lubricants, including spindle oils.

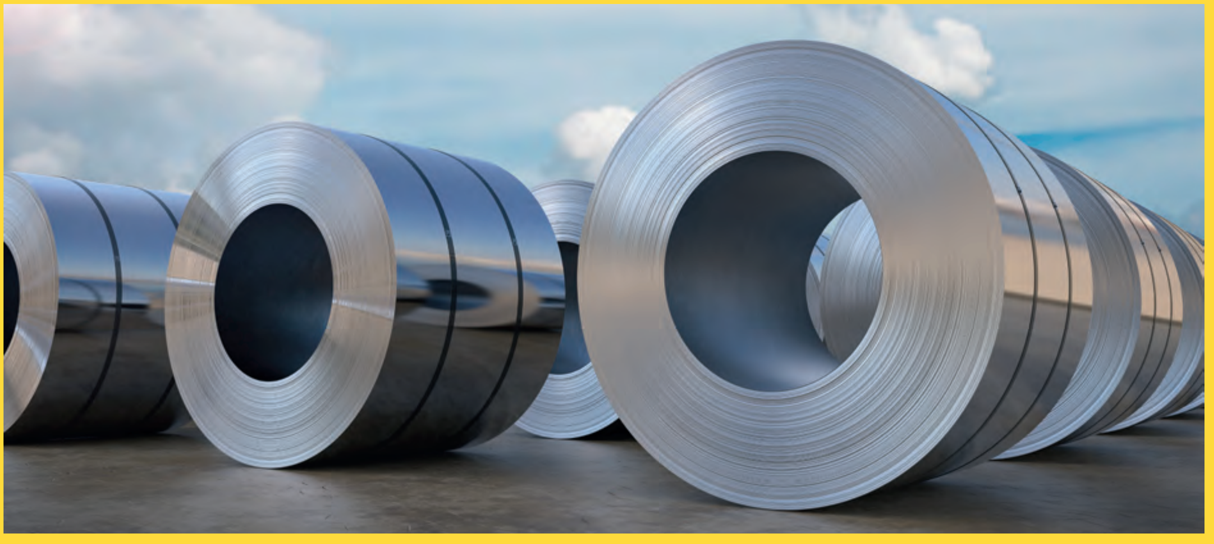
NYNAS S 3B offers several advantages over paraffinic oils, such as excellent low-temperature properties and superior solvency. The product can be blended with all other types of base oils to reduce viscosity and improve solvency of the blends.

"Remaining committed to providing consistent and high-quality specialty naphthenic oils worldwide, we are making NYNAS S 3B available on a global basis through our supply and distribution network," concludes Dr. Franzolin.

NYNAS® S 3B for aluminium cold rolling

The most abundant metal element in the earth's crust, about 41 million tons of aluminium are smelted each year. Used in a wide range of applications – from beverage cans to cars, boats and aircrafts and construction industry – this lightweight, highly conductive, reflective and non-toxic metal is a vital part of our everyday lives. Demand for aluminium products has doubled since 2000.

Lightness, strength and durability make rolled aluminium one of the most versatile materials available for packaging, transport, and building and construction. Nynas newly released NYNAS® S 3B is the ideal base oil for aluminium cold rolling.



A state-of-the-art production site: NYCO's Tournai Plant

Over more than 60 years, NYCO has acquired strong know-how in the engineering and manufacturing of high quality esters, oils, greases and specialty products. The company manufactures products in its Tournai Plant since 1997.

NYCO's state-of-the-art production site NYCO Tournai Plant, fully owned by NYCO, was built in 1997 to reinforce the company's global position as a lubricant specialist. The plant is managed with a complete range of operational services: engineering, maintenance, purchasing, supply chain, accounting, safety and quality control. It is located in Tournai, Belgium, at the cross-roads of European industrial and commercial routes. This ideal location, together with local warehousing, a flexible storage tank farm and well-located distribution facilities, allow efficient sourcing of raw materials and a better service and customer proximity. NYCO delivers to more than 100 countries all around the world.

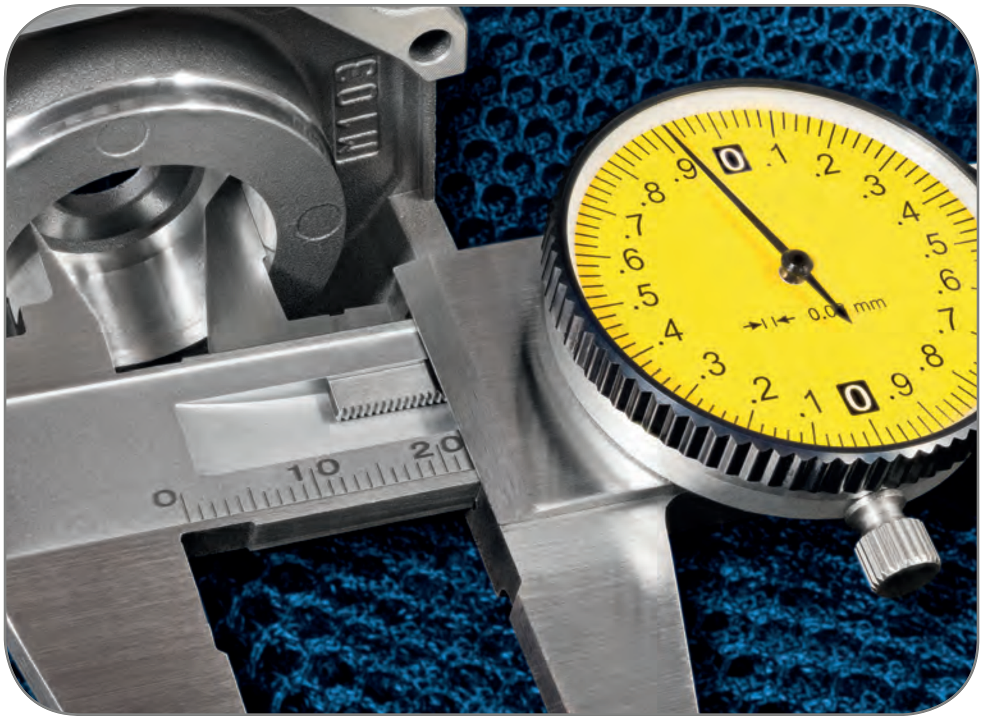
The plant consists of 4 synthetic ester production lines, 2 blending units for lubricants, 2 grease manufacturing units, and 1 pilot unit for synthetic esters and additives.

The production process is designed to manufacture high-purity esters and refined lubricants in small, medium and large volumes (from 1 litre cans to bulk containers). NYCO constantly strives to operate the plant safely and ensure the continuity of supply to its customers.

NYCO Tournai Plant is certified ISO 9001 version 2015 and ISO 14001 version 2015.

- Environment: ISO 14001 certification obtained in 2007; transition to ISO 14001 – 2015 in November 2017;
- Process safety: HAZOP studies carried out for all processes to minimize risks;
- Safety: risk analyzes performed continuously to improve the level of protection of our employees;
- Crisis management: procedure in place to face major issues;
- Back up plan: two separate, fully independent units.


NEVER APART
We will never back down in the face of our customers' technical challenges.
Our commitment to designing high-performing synthetic esters and lubricants with you will never waver.
You are always front and center in all we do.
www.nyco.fr
NYCO
Solutions ahead



Prof. Dr. Ertuğrul Durak
Süleyman Demirel University
Mechanical Engineering
Department
Academic Member
ertugruldurak@sdu.edu.tr

Journal bearing design criteria – V Bearing Width / Diameter (B/D) Ratio

In journal bearings, bearing width (length) / bearing diameter (B/D) ratio is an important parameter for determining the load carrying capacity of the bearing. Usually the bearing diameter is known at the outset of calculations for the bearing in design stage. Bearing width is selected according to this bearing diameter. The load carrying capacity of bearing increases, friction coefficient and oil flow rate (bearing leakage) decreases if the B/D rate is high. This is also good for boundary lubrication.

The lower the B/D rate is, the faster the pressure of the carrier oil film on bearing edges will be. The oil will flow down the ends of the bearing and leave the bearing without having any pressure within the film. The load carrying capacity decreases with low B/D rate. In return, better results will be achieved in cooling of the oil as the circulation of the oil will be faster. Therefore, B/D rate is designated low in bearings that operate with high annulus velocity.

If B/D rate is designated much higher than it should be, there can be metallic contact on the edges of bearing, which is called corner contact between shaft and bearing. Corner contact affects the oil film layer, and may cause wear on the edges of bearing and shaft.

In general machine construction, B/D rate usually varies between 0.125 and 1.5, but the recommended optimum value is between 0.8 and 1. *(to be continued)*

References: *Tevrüz, T., Makine Elemanları ve Konstrüksiyon Örnekleri, Vol. 2, Çağlayan Bookstore, Akkurt, M., Makine Elemanları Vol. 1, Birsen Printing House, Gemalmayan, N., https://websitem.gazi.edu.tr/site/nihatgem/files, Kurbanoğlu, C., Makina Elemanları, Teori, Konstrüksiyon ve Problemler, Nobel Printing House, Durak, E., Industrial Lubrication Techniques Lecture Notes)*

Engine oil
user guide

VISCOSITY GRADE: is the main feature of an engine oil and is important for product selection

Signification of grades

xx W- yy

xx refers to viscosity when cold

(measured at different temperatures)

The lower the viscosity when cold, the more fluid the oil is at low temperatures and the more easily it can be pumped.

For example, a 0W-20 or 5W-30 oil will make start-ups easier and will protect engines during trips to cold regions. These high technology “fluid” oils will meet the requirements of recent engines.

yy refers to viscosity when hot

(measured at 100 °C)

The higher the viscosity when hot, the more viscous the oil is.

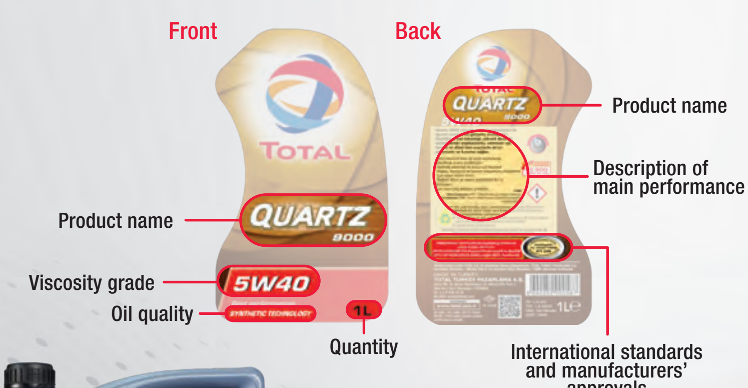
For example, a 15W-40 or 20W-50 oil has been developed for use in hot countries, and their “viscous” nature makes them suitable for older engines.

POINTS TO REMEMBER

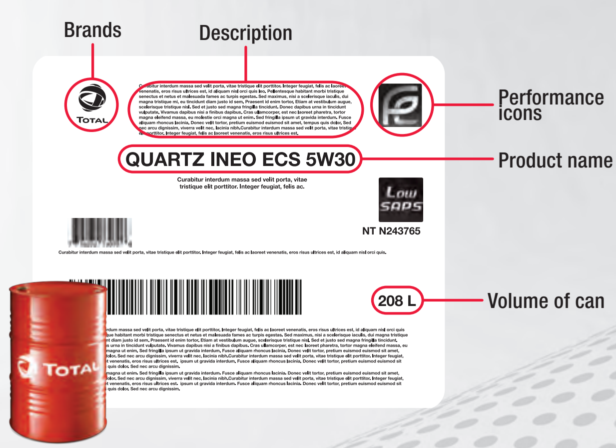
New-generation engine oils and those currently being developed by TOTAL are of increasingly fluid grades: 0W-20, 5W-20, 0W-30 and 0W-16.

How to read a product label for product selection?

Small packaging:



Large packaging:



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