Key Speaker

Author: . Yevgeniy Razuvayev
Marketing Director for Khortitsa Distillery.

Yevgeniy worked as a brand manager of Khortitsa trademark and thereafter has occupied the position of Marketing Director for Khortitsa Distillery, the biggest alcohol producer in Ukraine, since Dec 2009.
His achievements during the last year were the following:

- An ultra-premium brand "Khortitsa De Luxe" (the most expensive Ukrainian vodka) has been launched under his running;
- A major brand of the company has been redesigned
- Despite the complex economic situation the brand financial indicators growth has proved the efficiency of marketing strategy kept
- Vodka brand "Medovuha" has entered the market
- Brand "Blagoff" has been repositioned.

About the company:
Khortitsa Distillery is the biggest alcohol producer in Ukraine. It is the first company in this industry certified in accordance with three international standards: ISO 9001 - Quality Management System, ISO 22 000; Food Safety Management System, ISO 14 001 - Environmental Management System. In addition Khortitsa Distillery has the right to use the label "Green Crane" ("Environmentally Clean and Safe") (ISO 14024), which confirms ecological cleanliness of products. In 2009 Khortitsa trademark was acknowledged as the most popular vodka brand in Ukraine and for the fourth time that it obtained the prestigious award "Choice of the Year". Khortitsa Distillery has also been a leader of project "TOP-100 biggest companies in Ukraine".

Presentation

1.. Vodka - a national drink for Ukrainians.
2.. Stages in vodka production development in Ukraine since ancient times till nowadays.
3.. Khortitsa - a market leader. General info about the company and their latest achievements.
4.. Invitation for a plant tour.

Grease market in Ukraine

Author: .Olexandr Stakhursky
JSC "AZMOL", Berdyansk, Ukraine

Olexandr graduated from National University "Lvivska Politechnika" in 1972, with speciality "Chemical Refinery of Oil and Gas" (a chemical engineer and technologist).
He started working for AZMOL (former Experimental Oil-and-Lubricant Plant) as an operator in 1974, then was a Production Unit Head, 1983-1984 – Chief Engineer, 1994-1995 – First Deputy Chairman of the Board, since 1995 – present moment has been occupying the position of Board Chairman. An Honored Worker of Ukrainian Industry and an Honorary Academician of Oil & Gas Academy of Ukraine. ELGI and NLGI collective membership

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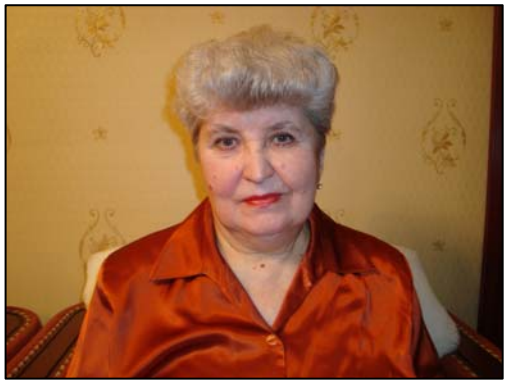
Situation and perspectives of grease production in Russian Federation.

Authors: V.M. Shkolnikov, M.B. Chepurova, R. G.Platonova, S.I. Krakhmalyov
All-Russia Research Institute of Oil Refining JSC (VNII NP JSC), Russia

Shkolnikov Viktor Markovitch
Adviser of VNIINP JSC General Director

In 1955 Mr. Shkolnikov graduated from Moscow Institute of Oil and Gas (now Gubkin State University of Oil and Gas), specialising in Technology of oil and gas refining. From 1964 to 1971 he worked as a chief engineer at Omsk Oil Refinery, and since 1971 – chief of the technical department of USSR Oil and Gas Industry Ministry; chief of scientific division, Scientific Work Deputy General Director of VNIINP JSC, first Deputy General Director of VNIINP JSC. He is a candidate of engineering science (1964), assistant professor (2003), a member of National tribology committee of Russian Academy of Sciences, editor in chief of "WORLD of OIL PRODUCTS. The Oil Companies' bulletin". He is author of numerous fundamental publications (articles, reference books, encyclopaedia and so on), and more than 60 inventions. His field of scientific interests: development of modern technologies of lubricants production, investigation of properties, testing and application of lubricants of different purposes.



Platonova Raisa Grigoryevna is the Chief of special works and technologies department of VNIINP JSC. She graduated from Gubkin Moscow Institute of Oil and Gas (MIPC and GI) with qualification "Technology of oil refining" (1966) and was employed by VNIINP JSC. She started her career as an engineer and became a chief of the department.
She is candidate of engineering sciences since 1986 and senior research worker since 1988. She is also laureate of the Leninist Komsomol prize (1983). endowed with industry and federal awards. Field of scientific interests: Development of chemically stable soap and silica gel high- and low-temperature grease lubricants; rational application of grease lubricants depending on friction conditions, operational life, outdoor environment and term of operation; influence of structure, properties and condition of friction on grease lubricant operational life in friction unit.

Chepurova Margarita Borisovna
Chief of Greases Division.

In 1975 Mrs. Chepurova graduated from D. Mendeleyev University of Chemical Technology in Moscow specializing in "Basic organic synthesis". She started her career in VNII NP as an engineer and became the chief of grease lubricants and solid lubricant films division. In 1987 became a Candidate of science. Endowed with the Ministry of Oil and Gas Industry diploma (2003), laureate of "Government of Moscow' committee for science and technology Grant for science and technology" (2001, 2003). Field of scientific interests: development of lubricants, working in extreme operating conditions. She is author of more than 40 scientific articles, 1 scientific-technical subject review, 9 USSR certificates of authorship, 3 patents of RF.

Krakhmalyov Stanislav Ivanovich is the leading research associate of VNIINP JSC. He graduated from D. Mendeleev University of Chemical Technology of Russia with a qualification "Chemical technology of fuels" (1958)
Dr Krahmalyov worked at VNIINP since 1964. He started his career as an engineer and became a chief of the department. He is the senior research worker since 1969 and Doctor of engineering science 1994. He is a distinguished chemist of Russia (1999) & endowed with industry and federal awards. Field of scientific interests: development, studying, application, testing and long-term operation of different purposes grease lubricants (for devices, electric motors, friction units, and mechanisms of aviation, naval and other machines). He is the author of more than 140 publications, including 20 inventions.

Synopsis

Technical equipment serviceability and the efficiency of the national economy is directly dependent upon the expertise provided by the Institute (VNII NP JSC) with respect to high-quality lubricating greases.

Lubricating Grease Market in Belarus

National Academy of Sciences of Belarus
Author: Yu.M. Pleskachevskiy, V.P. Ivahnik

Synopsis

Belarus has a population of 10 million people and a rapidly developing industrial and agricultural industry. This now includes domestic lubricating grease manufacture.

High performance greases – definition, properties and application

Author: Prof. Dr.-Ing. Wilfried J. Bartz
Technische Akademie Esslingen, Germany

Prof. Wilfried Bartz obtained his PhD degree in mechanical engineering at the University of Hannover, Germany. From 1961 to 1963 lubrication engineer in the mineral oil industry; from 1963 to 1976 head of the Department of Tribology and Lubrication Engineering at the Institute of Petroleum Research, Germany. Since 1976 managing and scientific director of the Technical Academy Esslingen (TAE). Lecturer for tribology at the School of Engineering at Esslingen, the University of Stuttgart and the Technical University of Vienna, Austria. Professor Bartz organises and lecturers in more than 20 courses annually at the TAE, the DIE (Denmark) and the STLE (US). He is the author of 300 scientific and technical publications

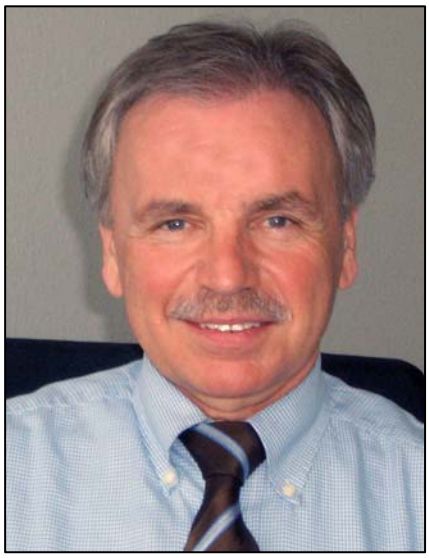
Synopsis

The increasing severity of the operating conditions in frictional contacts increase the requirements for all types of lubricants. This applies to both lubricating oils and lubricating greases

Despite some of the disadvantages of lubricating grease, characterised by the lack of cooling and cleaning capabilities, they are gaining in importance reflecting several advantages compared to lubricating oils. Among the advantages is the recognition of the ease of fill-for-life applications in roller bearings

Lithium –future supply and demand

Author: Wolfgang Boes
Chemetall, Germany



Wolfgang Boes
Global Business Manager Lithium Salts
Born: 18.2.1954 in Wiesbaden/Germany
Married, 1 son
Graduated from Frankfurt Business school in 1975(International Marketing and Sales)
1976 -1977 Export Manager at Metallgesellschaft AG, Frankfurt
1978-1980 Market Manager Scandinavia at Ytteknik, Sweden
1981-1984 Export and Area Manager at Metallgesellschaft AG, Frankfurt
1985-1987 Marketing and Sales Manager Lithium Salts for France at Parker SA, Paris
Since 1988 Global Responsible for Lithium Salts at Chemetall GmbH, Frankfurt

Synopsis

Lithium – Future Supply and Demand

- Lithium World Market
- Major Applications
- Growth Rates
- Future Demand
- Main Lithium Reserves
- Main Producers

Determination of the low temperature performance of lubricating greases - correlation of methods

Author: Dr. Heike Adolph WIWeB Germany
Co-Author: Thomas Litters Fuchs Europe Schmierstoffe, Germany

Dr. Heike Adolph studied chemistry at the Technical University of Munich and received her Doctors Degree in 1993. She joined WIWeB (Research Institute for Materials, Fuels and Lubricants of the German Armed Forces) in 1990. She started working at the monitoring station for hazardous substances and occupational safety of this institute. Since 1996 she assumed responsibility for technical and quality assurance of lubricating greases of the German Armed Forces. As grease expert she has also been involved in various research activities.

In 1994, Thomas Litters received his Chemical Engineering Diploma from the University of Applied Science Mannheim, Germany. He has been with Fuchs Europe Schmierstoffe GmbH since 1995. From 1999 to 2002 he worked for Fuchs DEA Schmierstoffe GmbH at the former lubricating grease laboratory in Hamburg. Since 2002 he is the Head Chemist of R&D Lubricating Greases for Fuchs Europe. He has 7 publications to his credit and three patents pending. Thomas is Chairman of the DIN Grease Test Method and Round Robin Committee and an active member in some FVA and DMGK research working groups. Current activities: Development of industrial and automotive lubricating greases and is a member of the Fuchs Group Lubricating Grease Competence Team.

Synopsis

There are different methods existing for the determination of the Low Temperature Performance of Lubricating Greases: Low Temperature Torque Test acc. to IP 186/ASTM D 1478 has proved to be a useful test over the years. So also the Flow pressure-method acc. to DIN 51805, mainly used in Germany as a national standard.
Nowadays these methods are being replaced by rheology methods, which are more expressive. A correlation of these methods is still not available.
We will present results on model greases (especially prepared for this project) varying the type of thickener (3 types) and type of base oil (4 types: polar and apolar). NLGI-classes were also varied (NLGI 0, 1, 2).

Investigation on the visco-elastic properties of lubricating greases in dependency of base oil polarity and thickener type

Fuchs Europe Schmierstoffe GmbH, Mannheim Germany
Author: Bernhard Koch
Co-Authors: Thomas Litters, Nael Zaki

Bernhard Koch received his Diploma in Chemistry in 1979 from the University Hannover, Germany. From 1979 to 1984 he worked for the Institute of Clinical Biochemistry at the University Bonn on the development of analytical methods of human hormones. From 1984 to 1992 he was with DLR, German aerospace research centre in Stuttgart, as a scientist at the department for lubricants. From 1992 to 1994 he joined Klüber Lubrication. Since 1995 he has been with Fuchs as research scientist in their R&D department working on lubricating greases.
Current activities: development of industrial and automotive lubricating greases

Nael received his Ph.D in 1994 in Applied Petroleum and Lubricants Chemistry and Technology at the Ain Shams University Cairo, Egypt, He did his Postdoctoral research at the Technical University of Clausthal, Clausthal-Zellerfeld in Germany. And Postdoctoral research at the Department of Chemical Engineering, North Carolina, State University, USA. In 2006. Dr. Zaki joined Fuchs Lubricants Company, in USA as Lubricating Grease Research and Development Manager. He previously worked as the Director of R&D Metal Working Fluids and Coatings, Pantheon Chemical in Phoenix, AZ; Senior Research Scientist, Troxler Electronic Lab Raleigh, NC; Research Asst. Prof. Dept. of Chemical engineering, North Carolina State University; Asst. Prof., Dept. of Petroleum Applications, Lubricating Additives Lab., Egyptian Petroleum Research Institute, Cairo, Egypt. Nael has over 45 publications and 8 US patents in the field of lubricants. Current activities: development of industrial and automotive lubricating greases and is a member of the Fuchs Group Lubricating Grease Competence Team

Synopsis

This paper reports on experiments with a modern high resolution viscosimeter where model greases were tested at 25 °C and 80 °C. The aim was to study the influence of base oil polarity on visco-elastic properties of greases. As thickening systems Lithium-12-hydroxystearate, diurea and highly dispersed silica were selected and each combined with PAO, PAO/mineral oil, ester and polyglycol. The experiments showed that there are significant differences in visco-elastic behaviour and yield point. Under the premise that the yield point relates to the ability of grease to seal a lubrication area from the outside or to flow to a lubricating gap it became obvious that the usual classification according to NLGI number is not sufficient when it comes to greases with different base oil types or thickeners.

Thickener concentration in grease using attenuated total reflectance, ATR, infrared spectroscopy.

Author: Paul A. Bessette
Triboscience & Engineering, Inc

Paul is currently president of Triboscience & Engineering, Inc. and has been involved with synthetic lubricants for thirty-two years. TS&E was established in 2000 and initially provided consulting services. Since 2005, TS&E has gravitated towards manufacturing specialty lubricants for both domestic and foreign customers with an emphasis on PFPE's Bessette spent twenty-four years at Nye Lubricants and three years at Ciba-Geigy. Vice Chairman of NLGI Grease Education Course for ten years. NLGI Fellows Award, Meritorious Service Award, Achievement Award, Clearance E. Earle Memorial Award and Author's Award. He is currently an associate editor for Tribology, Transactions, Journal of Synthetic Lubricants and peer reviewer for NLGI. He is a member of STLE, NLGI, and ASTM. BS Chemistry form Lowell Technological Institute, Graduate work polymer chemistry Brooklyn Polytechnic Institute, MBA University of Massachusetts at Dartmouth. Clients have included Engineered Custom Lubricants, DuPont, Castrol, Lubrication Technologies, Kyodo Yushi, Honeywell, HP, NASA and others. Research interests include: improving methods of grease filtration, vapour pressure of synthetic lubricants, thermooxidative stability, low temperature rheology of oils and greases, and advanced rolling element bearings greases.

Synopsis

Fourier transform infrared spectroscopy, FT-IR, is a powerful analytical technique for the rapid qualitative and quantitative analysis of lubricants and additives. However, the transmission of infrared radiation through opaque samples is impossible and variations in path length when capillary films of lubricant are used can be problematical. Specifically, thicker films exhibit more intense absorption in accordance with Beer's law. Attenuated total reflectance spectroscopy is a surface technique that facilitates the acquisition of spectra from lubricant samples containing molybdenum disulfide, graphite, and other solid additives. It is also extremely useful for the routine analysis of oils and thickeners. Moreover, since the procedure results in a constant depth of penetration of the infrared radiation, cell path length issues are virtually eliminated. Disadvantages of the technique include poor resolution of analytes possessing a weak extinction coefficient especially when the analyte is present at low concentration

Tribolayer – lubricant additives protecting against wear

Author: Dr.-Ing. Marius Kuhn
Co-authors: Dipl.--Ing. Philipp Staub Dr. rer.nat. Martin Schweigkofler
Klüber Lubrication München KG, Munich, Germany

Marius Kuhn studied Mechanical Engineering (design engineering and development) at the RWTH Aachen University. He graduated in the field of Tribology: PVD-coated roller bearings lubricated by environmental acceptable lubricants. Since 2006 he works as a Tribologist at Klüber Lubrication München with responsibility for tribological fundamentals and component analysis.

Synopsis

The operation of machine elements of all kinds can entail unfavourable lubrication conditions due to mixed friction. Extreme-pressure (EP) and anti-wear (AW) additives have been added to lubricants for years in order to reduce friction on interacting surfaces. When solid bodies contact temperature increases as a consequence. The additives react and form a tribolayer protecting the surfaces. This protective layer separates the interacting surfaces and leads to minimised wear.
By means of various tribological test regimes, the extent to which EP- and AW-additives protect against wear is analysed. Such tribometers serve to analyse different forms of contact geometry, types of movement, loads and temperatures. With each test regime, a particular form of lubricant stress can be tested.
The objective of this basic research project is to provoke and compare additive reactions depending on the interacting movement of surfaces in contact. For this purpose, we lubricate contact surfaces using test lubricants with specific additivation. The energy level impacting on the interacting surfaces, which is generated by the test regime, is set to a standard value to have a basis for comparing the additive reaction to different types of movement. To register the formation of non-conductive tribolayers, electric contact resistance is measured by means of on-line measurements during the testing period. On conclusion of the testing, the surfaces are analysed by various methods. Analysis results are set in relation to testing conditions, testing results, additive properties and reaction layers.
Test results will be used to offer customers lubricants with additive packages tailored to their individual applications and operating conditions while helping to conserve resources.

Lubricating greases for military equipment

Author: N.N. Grishin
Co-Author: S.N. Volgin
25th State Scientific Research Institute of Chemmotology attached to MOD of Russia

Nikolai Grishin, Doctor of Science, Professor, retired Colonel was born in 1946 in Moscow.
He graduated from the Moscow Institute of Petro-Chemical and Gas Industry named after I.M.Gubkin. Nikolai worked in the 25th State Research Institute of the Russian Ministry of Defense from 1969; from 1993 to 1999 in the capacity of the Deputy Chief of the Institute for Research. He is the author of 250 scientific papers, including 5 books, 13 brochures. He developed the fundamentals of competitive adsorbsion of surface active substances in complex heterogenous systems and participated in the formulation of a wide range of greases for ground, naval and air force equipment as well as a number of standardised and qualification methods for evaluation of their quality.

Sergei Volgin, Doctor of Science and Colonel was born in 1958 in the village Severnyi, Gorky Region. In 1980 graduated from the Ulyanovskoe High Military Technical College named after B.Khmelnitsky and in 1989 – Quartermaster and Transport Military Academy. Sergei worked in the 25th State Research Institute from 2001 in capacity of the Deputy Chief of the Institute for Research from 2003 till the present time. He is the author of more than 150 scientific papers, including 3 text books of the Russian Ministry of Defense. He developed the fundamentals of theory for simulation of chemmotologic processes in diesel fuels and methods for evaluation of their quality.

Synopsis

To ensure military friction joints and units operating on 32 base grease grades approved by established procedures are used. Depending upon their purpose greases are divided into: antifriction, preservative and sealing capability.

Outstanding behaviour of fluorinated molecules

Author: Giovanni Boccaletti
Co-Authors: Riganti Fabio, Pizzeghello Beatrice, Shinada Mitsuo
Solvay Solexis S.p.a. Italy

Giovanni obtained his PhD in Chemistry Science at the University of Padua, 2003. He has been working for Solvay Solexis since 2004. From 2004 to 2005 as researcher in the Perluoropolyethers Fluids and Auxiliaries Application Development Labs. From 2005 to present works as Technical Service Engineer of Fomblin products.

Synopsis

Fluorinated molecules are considered in the lubrication field as special and unlike conventional lubricants. They present unique properties together with outstanding performance. They are considered a different class of products compared to standard hydrocarbon lubricants. However, even if they are different in nature, the mixing of fluorinated chemicals with standard hydrogenated lubricants can improve some properties and performance of the latter. For instance, the addition of fluorinated derivatives to standard PAO greases can improve their lubrication properties eg. the reduction of oil migration.

Ecolabel basefluids in grease production

Author: Matthew Butterfield
Croda Lubricant Additives, United Kingdom

Matthew graduated from Newcastle University with a degree in Medicinal Chemistry in 1998. Started my career in cosmetics with Unilever in their Global technology Centre before moving into the lubricants industry developing products for steel and other metal rolling and metalworking. He has been working for Croda Lubricant Additives since March 2008.

Synopsis

Ecolabel greases have been described as the product everyone wants yet nobody buys. In this presentation we will look at the types of baseoils available and how they fit with the Ecolabel criteria. We will look at issues such as hydrolytic stability, oxidative stability, renewability and raw material source, selection and optimisation.

Use of amorphous / semi crystalline butene-1 base polymers in grease application

Author: Stefano Pasquali
Basell Poliolefine Italia S.r.l., Ferrara, Italy

Stefano graduated in Chemistry at Ferrara University in 1988. Prior to joining LyondellBasell in 1991 he worked at Himont; Montell and Basell in different departments on different projects such as Polyolefins formulation; Polyolefins Catalyst development; catalyst Business Technical Support mgr. for Europe/Russia/India. He is currently working as Customer Project Mgr. for Plastomer in the Global Business.

Synopsis

Greases are used in a very wide range of applications and each of them require different lubricant properties. The final grease properties depend on:

- Base oil
- Thickener
- Additives
- Manufacturing conditions

Polymers are an important category of grease additives. LyondellBasell (LBI) one of the biggest world polyolefin producers and leader in polymerization technology, has recently developed a new range of plastomer based on 1-butene. These plastomers, are high molecular weight amorphous C4 based polymers, containing only butene-1 (plus some co-monomers). They have a very controlled chemical composition, so no butene-1 isomers (Poliisobutene) are present. Additionally, as a result of the LBI technology, these C4 based plastomers are completely saturated, with no carbon-carbon double bonds, which make them very stable. They show good oil solubility in paraffinic and naphthenic oils, so LyondellBasell has investigated their use as viscosity modifiers for soap-based greases. This paper will show the performance of greases produced using different butene-1 based plastomers.

Synthetic basestocks - perfect for greases!

Author: Sandy Reid-Peters
ExxonMobil Chemical Ltd, United Kingdom

Sandy Reid-Peters is a Product Performance Specialist for ExxonMobil Chemical's Synthetics business. He has worked within the lubricants industry in a variety of areas for more than 15 years.
A native of Edinburgh, Scotland, he served for eight years as a marine engineer officer with the Royal Fleet Auxiliary before going on to earn an honours degree in Mechanical Engineering from Edinburgh University. He then joined Mobil Oil Company at Coryton Refinery in the UK as a Project Engineer, Maintenance Controller and Reliability Engineer. He began acquiring his expertise in the lubricants area in 1995 in Lubricants Marketing, where he worked with original equipment builders to obtain lubricant approvals. In 1998, he moved to the Mobil Research Centre at Gravenchon, France, working on marine and gas engine oil development. Following the merger of Exxon and Mobil, he remained at the centre, providing technical support to the lubricants business. He returned to the UK in 2006 and joined the Synthetics business the following year.
In his current assignment, he draws on his extensive knowledge of lubricants to help customers use synthetic basestocks to develop innovative applications that can meet their performance requirements.

Synopsis

The continuing debate on how to describe or define lubricating grease has not prevented it from becoming an important component of modern automotive and industrial machinery. Between 80-90% of all rolling element bearings are now grease lubricated [1]. This is easily explained if we look at the numerous reasons for employing grease. Similarly synthetic basestocks offer numerous advantages over conventional mineral basestocks. Comparing the benefits of both grease and synthetic basestocks we can see a natural fit that encourages grease manufacturers to make tailored, high performance synthetic lubricants.
Recent developments in polymer thickener technology which extends grease life significantly [2] make the use of synthetic basestocks such as Polyalphaolefins and Alkylated Naphthalenes almost mandatory.
This paper will look at these specific synthetic basestocks and the benefits they offer the grease manufacturer whether that be long life, improved film thickness, energy saving, FDA approval or solvency.

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[2] Gow. G. "The role of lubricating grease in the "new world economy"", UEIL 2009

Friction wear

Author: Fabrice Herrero
Co-Authors: Gareth Fish, Ping Zhu, Bill Ward, John Lorimor, Matthew Sivik
Lubrizol Belper, Derby United Kingdom

Fabrice passed his engineering degree at the "Ecole Nationale Superieure d'Arts et Metiers" in Paris in 2006. Since then he worked for several companies as project manager and joined Lubrizol in 2008 to look after Eastern Europe and Greases.

Synopsis

Bearing manufacturers and end users have outlined grease requirements for improved performance in relation to fretting wear. The Fafnir Friction Oxidation Tester (FFOT) is the generally accepted test method to determine fretting wear weight loss from bearings, using the ASTM D4170 procedure.
When the NLGI LB & GC-LB requirement of <10 mg weight loss in the FFOT test was first published in 1991, it was considered a difficult target. Subsequently a grease that gave <5 mg was thought to offer good fretting wear protection. Recent feedback based on field data from a major vehicle manufacturer has indicated that the amount of allowable fretting wear needs to be less than the current level. The response of grease makers and customers has been to request challenging weight loss levels of =1 mg. Recent publications suggested that 2 mg should be achievable, but 5 mg is more normal.
Based on the literature, the perceived wisdom on fretting wear was that the grease needs to be soft, have a low yield strength and low apparent viscosity so that it can flow more easily into the contact zone. The base oil viscosity needs to be a balance between what will flow easily - such as a low viscosity fluid - and one of a higher viscosity that will form a thicker elastohydrodynamic film. However the move to softer, lower yield-strength and less-viscous greases can compromise the other requirements of wheel bearing greases such as low grease weight loss during leakage tests, bearing washout and bearing life.
The work outlined in this paper highlights some of the issues involved and identifies two different solutions to achieving the target of a grease with =1 mg weight loss.

Specialty Lubricants in CIS

Author: Dr. Victor Parashchuk
Dow Corning - Moscow Russia

Victor studied chemistry at the Moscow State University, specializing in polymer science. From 2005 he worked on the development and studying of the polymeric membranes at the A.V.Topchiev Institute of Petrochemical Synthesis, Russian Academy of Science. In 2008 he received his PhD Degree, specializing in Membranes and Membrane Technology. Today Victor is working on application engineering and technical support of sealants, rubber and lubricants product lines of Dow Corning, covering Russia, CIS & Baltic States.

Synopsis

In many cases when people talk about lubricants, they think in the main about a certain product or type of product (standard oils and greases). At the same time it is more appropriate to use an application approach. This is even more so regarding CIS, where the approach to choosing a lubricant and the culture of its usage in every industry might be very different.
In this paper we want to touch on a most important topic – is the CIS market prepared for innovative solutions in tribology? Here we talk about such industries as oil & gas, automotive, heavy engineering as the most significant ones. Each one of these industries are in need of different solutions for particular applications. In some cases even highly specialized technologies such as Anti-Friction Coatings or Solid Lubricant containing Pastes are required.
Also Synthetic Lubricants based on Silicone have a particular place in the CIS market and will be expanded in future. Silicone has wide temperature range but bad lubricating properties under high loads. Nevertheless we found compromises and use silicone-based lubricants for applications in extreme environments. Silicone-based lubricants do present a good perspective as synthetic lubricants in the CIS market.

Lubricating properties of high performance greases for various applications: ratings of efficiency

[1,2] Yu. L. Ishchuk, [1] O. A. Mishchuk, [2] O. A. Makedonsky, [2] A. V. Shaposhnyk, [1] A. V. Bogaichuk
[1] UkrNDINP "MASMA", Kyiv, Ukraine
[2] JSC "AZMOL", Berdyansk, Ukraine

O. Makedonsky

O. Mishchuk
Oleg A. Mishchuk, MS, Kyiv State University named T.G. Shevchenko. He obtained his PhD degree in Surface Physics and Chemistry, Surface Chemistry Institute of Ukraine National Academy of Science. UkrNDINP "MASMA". He is the leading specialist in surface chemistry and tribology

Synopsis

The wide field of tribological characteristics of some grease samples which design the high performance marketable greases for various specified applications is researched systematically. The ratings of these greases according to respective groups of tribological characteristics are formed and analyzed. The depth profiles of elements through the tribochemical surface layers on the steel friction surfaces are studied for explanation of rating peculiarities of the greases.

Keywords: lubrication greases; antifriction, antiwear, extreme pressure characteristics; ASTM test methods; friction surface, tribochemical layers.