

Mayboroda S.E. (EXPROM, Ltd)

Life cycle management of lubricants by their producers when performing of new legislative requirements of in Russia

Keywords: life cycle, management, lubricants, algorithm, used oils, utilization (recycling), manufacturers, marine fuel.

Purpose of this article – to help the Russian manufacturers of lubricants cost-effectively integrate environmental aspects in the life cycle of lubricants.

Legislative requirements for handling wastes (used oils) in Russia. The analysis of the current legislation in Russia: to the treatment of waste (used oils); to protect the environment, human life and health; to resource conservation. Practices and approaches to life cycle management of lubricants in Russia. Some possible approaches to managing the life cycle of lubricants that can be used when performing domestic manufacturers of innovations legal acts governing the treatment of used oils. Algorithms lifecycle management of lubricants by their manufacturers when the new regulations of the Russia. Substantiated algorithm life cycle management of lubricants in order to obtain positive PR-effect for Russian manufacturers of lubricants.

**PETROLEUM PRODUCTS:
TECHNOLOGY, INNOVATION, MARKET**

Safronova O.N., Kiselyov V.V. (JSC «PETROCHIM ENGINEERING», Moscow)

Features modeling reformat separation unit

Keywords: modeling, reformat, benzene, benzene-containing fraction stabilization, distillation column, isomerization, theoretical plate, reflux ratio, azeotrope.

Due to more stringent requirements to gasoline quality regarding benzene content, addition of reformat fractionator to the process configuration became necessary. Experience in simulating a complex stable reformat fractionator as a double-column arrangement is summarized. Some interesting features related to the properties of components to be fractionated were found out while simulating reformat fractionation tower. Simulation was performed using HYSYS software package. Extensive calculation for the developed model resulted in conclusions about the effects of reformat composition and benzene capability to form azeotropes on the fractionator product quality, tray number and reflux ratio in fractionator for removing benzene. Use of revealed specific simulation features while selecting optimum tray number and reflux ratio allows improving efficiency of engineering.

Krakhmalyov S.I., Platonova R.G. (“All-Russia Research Institute of Oil Refining” Joint Stock Company)

Preservation of initial structure and quality of special purpose plastic greases: pledge of modern machinery reliable operation

Keywords: reproduction of working parameters, change of greases composition, plastic greases, reliability, period of operation, precision mechanics, operational characteristics.

Parameters of precision devices operation depend on greases quality. Choice of plastic grease for such devices is based on assessment of influence upon reliability and duration of their work of such operational characteristics as start-off moment, resistance to bearing rotation, evaporability, thermooxidizing and aggregate stability etc. These indicators of greases quality are not under new companies control. Even a small change of structure or mode of production or quality of plastic greases from batch to batch complicates (making impossible sometimes) ensuring working parameters of devices and mechanisms at their multiple production. New firms are at production and trading of greases and pastes not always being guided by rules which have been established in our country to ensure reproduction of structure and quality of the lubricants delivered for military and special machinery. Only with guaranteed observance of structure and operational characteristics from batch to batch by producers of plastic greases is it possible to provide reproduction of working parameters of devices and operating mechanisms of the machinery produced at different times.

Karpov N.V., Vasilyev G.G., Nikolaev S.I., Zheleznov M.V. (LUKOIL-Nizhegorodnefteorgsintez LLC)

Smirnov V.K., Irisova K.N., Talisman E.L. (The Katahim Company LLC)

High purity solid paraffins production

Keywords: solid paraffin, hydrougrading, hydrocarbon impurities, catalysts, hydrotreatment, oil content, UV-stability, crystallites size, crystal material content.

Features are considered of raw paraffin hydrotreatment process for high purity paraffin production according to the RAL GZ-041 and TO-5747181-013-011 specifications on example of the technological train operating at the lubricants and oil bitumens (PSM-NB) plant of the Lukoil-Nizhegorodnefteorgsintez LLC. Influence of hydrocarbon composition of impurities of solid paraffin upon the value of its commodity indicators including stability of color, UV-stability is shown. Quality of studied samples of high-purity paraffin is given in terms accepted for description of crystalline solids (size of crystallites and crystallinity degree). During the research of a samples corpus of hydrotreated paraffin acquired in a wide time interval at processing of different quality feed with various technological parameters, an interrelation was found of paraffin characteristics as crystallised solid bodies with their oxidability under the influence of UV-radiation. The detected dependences are used for development of a catalytic system providing stable production of paraffin at the PSM-NB of Lukoil-Nizhegorodnefteorgsintez LLC under the RAL GZ-041 specifications.

Koval'skiy B.I., SHram V.G., Petrov O.N., YAnovich V.S.

(FGAOU VPO «Sibirskiy Federal'nyy Universitet»)

The test results are partially synthetic motor oils for thermal-oxidative stability

Keywords: absorption coefficients of luminous flux and termookisli-relative stability, volatility, relative viscosity, potential resource, the rate of the oxidation process.

The results of the test partially synthetic motor oils Zic 500 10W-40 GG-4/SH and ZicA + 10W-40 SL on thermal-oxidative stability in the temperature range from 180 to 200°C using the photometric method control processes of oxidation. The dependences of the optical properties, viscosity, volatility and anti-wear properties of temperature and time of the test, would provide additional information on the effect of temperature on the oxidation processes that are the basis for developing a theory that allows to determine the critical temperature performance of lubricating oils of various basic framework and destination. Identified potential resource investigated oils, which allowed to assess their compliance groups operating properties, rate of oxidation processes, as well as their volatility and the change in viscosity.

CHEMMOTOLOGY

Chudinovskikh A.L., Lachkhi V.L.

Role of Chimmotologiya in works on import substitution

Recently in relation to domestic industry due to political reasons import substitution questions became especially actual, i.e. replacements of foreign components (accessories) in the final product to domestic ones. In a direct statement it relates to production of fuels and lubricants, and oils in particular. Domestic lube oils of the highest operational groups can be produced only with use of foreign additives. From that view this question was especially sharply brought up by the Refiners and Petrochemists Association in 2010. Later on, it has been periodically raised at various meetings and conferences.

STUDYNG TOGETHER

Abridged English-Russian dictionary of Chimmotologiya terms and expressions: I-P

The Compiler – Danilov A.M.

HISTORY PAGES

Saifullin S.R. (BashNIPIneft LLC, RB, Ufa)

Telyashev G.G. (Institute of Petroleum Refining and Petrochemistry of the Republic of Bashkortostan, RB, Ufa)

Management structures of the Bashkortostan Republic oil refining industry. Part I. Quest for oil and advent of oil refining industry in 1917–1944 years

Keywords: oil industry, oil refining industry, organizational structure.

The article is devoted to the advent of oil refining industry of Bashkortostan Republic. It is shown that the occurrence and changes in the petroleum refining organizational structure of the Bashkir oil region took place under the leadership of the country's oil industry management, in accordance with the economic policy of the whole Russia. Development of sector management in the Republic is considered in the framework of the eight stages. Executives of management structures and the oil refining companies up to the 1945 are particularized.