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PETROLEUM PRODUCTS: technology, innovation, market

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Conversion of hydrocarbons in hydrocracking process

Keywords: hydrocracking; the reaction of isomerization, hydrogenation and disclosure cycles; olefins, paraffins, aromatics, naphthenes; hydrocracking catalysts.

Abstract. All variants of hydrocracking of heavy distillate feedstock are characterized by reactions of sulfur, nitrogen, oxygen and metals removal, cracking and hydrogenation of hydrocarbons, which leads to increase of hydrogen/carbon ratio in target product. Hydrocracking catalysts consist of acid carrier and hydrogenating component (nickel, platinum, molybdenum etc.) The proceeding reactions ensure the generation of gasoline, kerosene and diesel fractions with high content of iso-paraffins and naphthenes, and low content of aromatics.

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Analysis of technological regimes and the quality of the product installation catalytic cracking gasoline hydrotreatment

Keywords: light gasoline, heavy gasoline, octane number, hydrotreatingof gasoline of catalytic cracking, monitoring of quality of raw materials, sulfur content.

Abstract. In the catalytic cracking gasoline hydrotreating was considered, which is necessary for the production of commercial gasoline meeting Euro-5 requirements for environmental standards. This article discusses the specificity of gasoline hydrotreating catalytic cracking technology. Due to the fact that the installation has been started recently been monitored this installation process conditions considered column rector, in which there is not only a deep hydrotreating, isomerization and α-olefins. We analyzed the process parameters, quality of raw materials and their impact on the effectiveness of the unit. Some suggestions have been proposed for maintaining optimal parameters of the column reactor to obtain gasoline with a sulfur content less than 10 ppm.

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Medzhibovskiy A.S., Kolokol'nikov A.S., Zibrova S.N., Rozhdestvina O.V.

Chemical structure of active part of alkylphenolic additives

Keywords: chemical structure of phenates, complex salts.

Abstract. Alkylphenolic overbased detergents are well known. They take a huge part (appr. 30%) of lubricant detergent market. Nevertheless, a certain chemical structure of alkylphenolic salts is still a question of doubt.

In this research, two possible sequences of chemical reactions between alkylphenols and alkaline earth metal compounds were considered. The possibility of getting chemical compounds of both sequences was shown, and the chemical structures were offered. To prove any variant, real syntheses were held. The results obtained prove that the formation of complex salts of condensed with aldehyde alkylphenols, ethylene glycol and calcium are more likely to form.

Qualitet Group; LLC Qualitet

Pozdniakov V.V., Kulikova I.A., Tyschenko V.A., Ovchinnikov K.A.

Development of domestic oil MPK-68 based polyoxyalkylene compressors for compressing propane

Keywords: industrial oils, oils for compressing propane stations, polyoxyalkylene polyols, import substitution, comparative tests.

Abstract. The refined processes are widely used propane refrigeration units, the main refrigerant which is propane. As lubricants for refrigeration compressors are widely used overseas based oils polyalkyleneglycols (PAG), including CPI-1516-68. In order to reduce dependence on Russian oil and gas processing enterprises overseas supplies lubricants, work was carried out to research and develop the MPK-68 domestic oil. Comparative tests MPK-68 and oil CPI-1516-68 showed the possibility of substitution.

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The application of possible study of selective treatment with ionic liquids of T-46 marked turbine oil

Keywords: extraction, ionic liquids, distillate, selective treatment, raffinate, extract.

Abstract. This article describes results of the researches carried out in the field of selective treatment of the mixture of oil distillate with viscosity 7.5 mm^2/s at 100°C with oil distillate with viscosity 18 mm^2/s at 100oC, with ion liquid content get from based on formic acid and acetic acid, to obtain T-46 marked turbine oil. Oil distillate extraction process has been carried out in two hours contact period of the components, at 60-75°C, in different weight rate ratios to oil distillate of taken selective solvent ionic liquid. As selective solvent, ionic liquid content synthesized based on formic acid and morpholine or N-methylpyrrolidone and acetic acid and N-methylpyrrolidone has been used in carried research done.

When using ionic liquid content synthesized basing on formic acid and N-methylpyrrolidone as extractant in selective treatment of process of oil distillate with viscosity 7.5 mm^2/s, raffinate outlet received by increasing with ratio of oil distillate of extractant content from 1:1 to 2:1 and increasing extraction temperature from 600 to 750°C, decreasing from weight 92.5% to weight 89.5%. At same time, viscosity index indicator is correspondingly increasing from 73.0 to 75.3, the amount of sulfur compounds is equal to 0.089%.

Basing on thermal stability of raffinates received from selective treatment with ionic liquid, it was identified that ionic liquid received based on morpholine and formic acid as well as oil sample received from selective treatment are more thermally stable.

In order to expand raw material base of turbine base oil, by compounding oil distillates with kinematic viscosity 7.5 and 18 mm^2/s at 100°C at with ratio 1-4:1, the process of getting different content oil distillate mixture and selective treatment with taken ionic liquid has been investigated and receiving conditions of turbine base oil has been identified.

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Synthesis of mono- and diakrilates of 1,2-cyclohexanediol

Keywords: acrylic acid, acrylic ester, diacrilate ester, 1,2-cyclohexanediol, catalyst KU-2-8 H-form reactive monomers.

Abstract. The reactions of esterification of 1,2-cyclohexanediol with acrylic acids, which is synthesized by a 2-hydroxycyclohexyl acrylate with a yield of 90.4%, and 1,2-cyclohexanediol diacrylate with a yield 91.5%. Unlike existing methods in the process used heterogeneous catalyst KU-2-8 H-form and shown that it significantly simplifies the technology of ester formation. The synthesized acrylates and diacrylates are reactive monomers that can be employed to produce substantially of oligomers and polymers that are used for glassy coatings, optical lenses and other polymeric materials.

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CHEMMOTOLOGOS

Lyubinin I.A.

Chemical motor-applied aspects of testing and application of greases

Keywords: tribological characteristics of greases, bearings, operating conditions.

Abstract. The laboratory methods for estimating the tribological characteristics of greases, testing stands and calculation methods for determining the service life of rolling bearings are considered. It is noted that the existing test methods and design models do not provide a comprehensive assessment of the operability of lubricants under operating conditions. The use of lubricants is based on accumulated empirical

Rosneft' – lubricants, Moscow

Lashkhi V.L., Chudinovskikh A.L.

Chemical motor-applied sciece assessment and its peculiarity

CONFERENCES. SEMINARS. EXHIBITIONS

3rd International conference "Kerosene and aviation fuel supply 2016" (November 29, 2016, Moscow) / Post release

MATERIALS of the PETROCHEMICAL and REFINERS ASSOCIATION

Extracts of the protocol #133 of ANN board meeting of 12.05.2016 / Subject – Russian oil refining main results for 2016