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PETROLEUM PRODUCTS: TECHNOLOGY, INNOVATION, MARKET

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On the need to switch to a new type of sinks of hydrogen sulphide and mercaptans in oil, oil products, and gas

Keywords: hydrogen sulphide, mercaptans, absorbents, dioxazines, triazines, organic sulfur deposits, equipment corrosion.

Abstract. The article discusses the problems arising in connection with the use of hydrogen sulfide and mercaptans neutralization in the oil and gas industry. The most significant application in Russia found reagents based on formaldehyde. Free formaldehyde contained in such reagents is dangerous for the service personnel health and, as known from the experience of their application is technologically complicated. The reactants and their decomposition products react with sulfur compounds and form deposits in oilfield and oil refinery machines and pipelines. These problems necessitate the replacement of formaldehyde-containing reagents with other, safer and more technologically advanced ones. Replacement formaldehyde with triazine-based reagents, which are widely used in Western countries, will not give the desired result. Therefore, development and application of new reagents line with chemical neutralization mechanism different from amino-formaldehyde reagents is a very urgent task. VNIINP JSC investigates hydrogen sulfide absorbents, which are safer and have better performance properties.

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Increase o the capacity of vacuum distillation unit

Keywords: Vacuum distillation unit, vacuum creating system, heating furnace, capacity, residual oil, radiant coil, gas-liquid ejectors.

Abstract. In this work the questions of increase of the capacity of operating vacuum distillation unit using to the maximum extent current devices and equipment are considered. Measures to increase the capacity of heating furnace of residual fuel and vacuum creating system have been suggested. It was shown that in order to increase the capacity with the current vacuum column it is necessary to increase the pressure in the column that will in its turn lead to the reduction of the extraction of diesel fraction and vacuum gasoil. The operating parameters of the column and expected product yield after conversion to increased capacity have been specified.

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Delayed coking units in unheated coking chambers – the optimal technology for isotropic cokes producing

Keywords: isotropic coke, mesomophic phase, coking, coking temperature, recycle coefficient, consistent quality of coke, structure

Abstract. This work describes the coking technologies of pyrolysis resins in cubes and unheated chambers of delayed coking units. Based on the results of the research of mode and quality of the received isotropic cokes in cubes and delayed coking units, the conclusion is drawn about the reasonability of receiving isotropic coke in unheated chambers of delayed coking units.

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ANALYTIC METHODS FOR OIL and PETROLEUM PRODUCTS

Uhtorov V.N., Korolchenko I.A., Ulanin S.E., Sokolov D.N.

Prediction method of oil products stable quality during long time storing suggesting

Keywords: quality parameters of oil products, long time storing, acid number, fact resin concentration, kinetic of process, calculating methods, additional norms to oil products quality.

Abstract. The perspective to using of known methods for dynamic oil products quality parameters

kinetic low of chemical processes determining was shown. Those methods were using to calculate limit recommending data of quality parameters during long time storing.
It suggested that velocity constants of acid number dynamic for recently maiden liquid AMG-10 and liquid AMG-10 which was keeping during 7 years are the same under similar experimental conditions. The character of AMG-10 acid number dynamic is not depend from the value of that parameter at the beginning. Activation energy of acid number increasing was preliminary evaluating.
It shown that fact resin concentration increasing process during gasoline keeping are accounting with kinetic dependences for reactions which order is near 0,44-0,83. The reaction products has not autocatalytic influence to fact resin concentration increasing dynamic at gasoline. Universal character fact resin concentration increasing was suggested for different value of that parameter at the beginning of keeping.
The definition method for kinetic characteristics of quality parameters dynamic by chemical processes was produced. The method for additional norms to long keeping oil products quality calculating is elaborated.

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Determination of the characteristic viscosity of polyethylenterephtalate according to measured parameters of the pump

Keywords: characteristic viscosity, pump, relative error.

Abstract. We have analyzed the methods of measuring viscosity according to measured parameters of the operating pump. We have described the calculation algorithm of characteristic viscosity of polyethylenterephtalate in the conditions of the existing facility according to current measured parameters of the pump that pumps the measured material. We have suggested a device for measuring the characteristic viscosity of polyethylenterephtalate.

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New features of the effusion method of gas density analysis

Keywords: analyzer, gas density, effusion analysis.

Abstract. The scheme of the analyzer is given and it is shown that the use of the effusion method of analysis makes it possible to provide almost complete automation of the process of measuring the density of gases. An important feature of the analyzer is that it does not require special calibration, since the gas density is measured relative to the dried air.

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Method for monitoring the temperature performance of engine oils

Keywords: optical density, evaporation, thermal-oxidation stability factor, thermostating, test temperature, test time, decimal logarithm of time, temperature of the beginning of oxidation and evaporation processes, critical temperature of processes.

Abstract. A method is proposed for controlling additional temperature parameters for the performance of lubricating oils, including the determination of the temperatures of the onset of oxidation, evaporation, and temperature transformations, and the critical temperatures of these processes. It is shown that for comparison of lubricants of the same purpose it is necessary to take constant values of the test time and the parameters of thermal and oxidative stability, expressing the optical density, evaporability and the coefficient of thermooxidation stability.

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MATERIALS of the PETROCHEMICAL and REFINERS ASSOCIATION

Extracts of the protocol #138 of ANN board meeting of 01.02.2018 / Subject – Results of oil refining and petrochemical industries in Russia for 2017; Reduction of import-dependence in the field of catalysts