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**PHYSICAL AND CHEMICAL PROPERTIES
OF MINERAL OILS**

The raw material for the production of lubricating oils are petroleum fractions that boil away above. Macromolecular oils are concentrated in these fractions, being at the same time complex multicomponent mixture of hydrocarbons of various groups and their heteroderivative, molecules of which contain atoms of oxygen, sulfur, nitrogen and certain metals (nickel, vanadium, etc.). Components of oil fractions have different properties and their contents in finished oils can be useful and necessary or harmful and undesirable. Therefore, the most common way of processing oil fractions for oil is to remove them from “unwanted” components as possible while preserving “desirable” ones, capable to provide the finished products with the necessary physical and chemical and operating properties.

To select the most rational technology of reprocessing oil that enables the set of properties with a maximum output, we should have a sufficiently complete picture of the original chemical composition of oils and oil fractions of those coming for production. Obviously, it is economically and technically appropriate to adapt those oils in heavy fractions of which “preferred” components are dominated. On the contrary, many tar-pyrobitumen substances, polycyclic aromatic hydrocarbons, sulfur and other hetero compounds complicates processing, assists small output target products and in many cases does not allow them to provide the necessary quality.

One of the main conditions in study of the chemical composition of raw oil is separation it into narrow homogeneous by composition fractions, analysis of which can give the most complete information about the structure of compounds included in these fractions.

In 1930-1940-s there was a sharp jump in technical possibilities of studying the chemical composition of complex mixtures. To separate heavy oil fractions, along with the methods of distillation and rectification chromatography adsorbents, complexing with carbamide,



thermal diffusion were used for. The numerous physical methods of UV and infrared spectroscopy, nuclear magnetic resonance, mass spectrometry, differential thermal analysis, electrical methods (determination of dielectric constant, resistivity and volume resistance, dielectric losses), etc. became widespread. The computational approach determining structural-group composition, allowed a first approximation to get an idea of the composition of oil fractions was in great application as well. New methods of separation and analysis have advanced in our knowledge of composition and structure of heavy oil components and allowed to solve the technological problems of producing oil and chimnotological problems of their rational use under operation conditions.

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TOLERANCE FEATURES IN STUDENT SURROUNDING

Period during the late XX century – the beginning of the XXI century is marked by high number of social and political conflicts all over the world. Obviously, natural and environmental disasters, a wave of post-Soviet revolutions, endless wars, and terrorist actions led to the spread of ethnic conflicts [7, p. 17]. Consequently, the attention of progressive members of the scientific world, politicians, and educators focused on the problem of xenophobia as a new phenomenon for the beginning of the third millennium. This notion is associated with the unfriendly attitude to all foreign, strange and unfamiliar which at the same time is a sign of cultural limitations of a modern person. In turn it encouraged foreign and native scientists to develop and introduce new ways of tolerant coexistence of different nations and nationalities, both within one state, and on a global scale. We consider organization of educational work in this direction to be one of the best ways to overcome the ethnic conflicts.

As we see the urgency of the problem is determined by the importance of public awareness the necessity of education a tolerant personality, forming the youth culture of interethnic relations. We do not accidentally pay special attention in our research to young students, because this age group is characterized by social immaturity, the uncertainty of values and goals, and the inability to predict the full conse-