

## The analysis of instrument base for the assessment of tribological properties of materials of light industry

© Alexander I. Kopylov,\* and Alexey I. Starkov<sup>†</sup>

Department of Chemical Technology of Polymer Materials and Nanocomposites.  
State University of Russia Named after A.N. Kosygin. Sadovnicheskaya St., 33, P.1.  
Moscow, 117997. Russia. Phone: +7 (495) 951-38-26.

\*Supervising author; <sup>†</sup>Corresponding author

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### Abstract

The vast majority of materials used for manufacturing of light industry products, footwear, clothe, accessories, are materials, consisted of high molecular compounds, both natural and synthetic origin (polymers). Products, made on the base of high-molecular compound, whether shoes made of genuine or synthetic leather, clothe, including clothe. Made of nonwoven linen, are subjected to repeated cyclic burdens during exploitation, including numerous surface contacts, as a result of it, they are subjected to abrasion. An important indicator of the durability of materials is wearability indicator, which depends on surface topography, coefficient of friction, the chemical nature of the material, the pressure value and contact area. This article focuses on system analysis of the national instrument framework for evaluation of tribological properties of polymeric materials used for the production of clothe, shoes and other products of light industry. Analysis has shown that the currently existing instrument base for the evaluation of the tribological properties of polymeric materials based on the principles, that were set out near 50-70-ies years of the last century, and has more than 20 different devices. In the vast majority of devices implemented the principle of "one device – one kind of test". As a main idea of this article was taken a comparing of the basic parameters of the devices for the determination of following tribological properties: the shape and size of the sample, the pressing force, the specific pressure on the sample, the type of abrasive and wear resistance performance. Analysing of this parameters showed, that the existing national QC does not have a unified approach to the determination of tribological performance materials. There is no unity in the system units. Along with the international "SR" system of units uses a system of "GHS", as well as a number of other non-system units.

In conclusion it is possible to say, that the existing QC, unification of criteria evaluation of durability of materials, the development of a common approach to the assessment of tribological properties of light industry materials has to be revised. Also the light industry require the creation of a new multi-functional instrument base for the study and forecasting of the tribological properties of polymer materials, taking into account the achievements of modern measuring equipment.

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