# Complex Assessment and Justification of the Quality Indicators of Gases Obtained Based on Recycled Fibers

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**Abstract:** in this article, the complex evaluates the physical and mechanical properties of fabrics obtained from a mixture of different compositions and recycled fibers at the joint venture of Safira-Samira Textile LLC, EURASIYA ALLIANCE TEX LLC in the Bukhara region and CHACH TEX LLC in the Chirchik district of Tashkent area and recommended the best option.

**Keywords:** experimental, organoleptic, expert, sociological, computational, differential, complex and mixed assessment.

## 1. INTRODUCTION

The development of scientific and technical progress in the world and the increase in the volume of production of textile products lead to an increase in consumer waste, and sometimes secondary material resources in production, as a result, it is important to recycle them now. Research aimed at improving the quality of renewable fibers and determining their technological reserves is of urgent importance in the current conditions of shortage of raw materials. The use of such raw materials for the production of consumer goods leads to a decrease in the cost of finished products, it is important for the rhythmic operation of the enterprise and more rational use of raw materials [1].

In the global textile industry, research and development activities aimed at the effective use of raw materials and the development of new scientific and technical solutions of resource-efficient technologies and technical tools for competitive textiles are being carried out. In this regard, special attention is paid to the development of an effective technology for obtaining quality raw materials from the secondary material resources of the sewing and knitting industry, and to save energy and resources, to develop an energy-resource-efficient technology that realizes the production of finished products from the obtained raw materials, and to substantiate its technological process, parameters and work modes.

Globally, fibers obtained from waste and secondary material resources from the sewing process make up 25% of all textile raw materials. This is a huge stock that can be used for production. However, only 10% of these scraps are used. Basically, they are processed into materials that cannot be used for various purposes, or they are made into simpler, lower-cost ropes, furniture and technical fabrics, for wiping and other purposes [2].

In our republic, comprehensive measures are currently being taken to develop resource-saving techniques and technologies that allow effective use of secondary material resources, and certain results are being achieved. On the development strategy of the new Uzbekistan for 2022-2026, among other things, important tasks have been determined, including "improving techniques and technologies in the production of new types of competitive products through the effective use of secondary material resources" is defined as the most important. In the implementation of these

tasks, including the production of a new assortment of finished products from a mixture of different fibers and secondary material resources, as well as the high-quality processing necessary for their export, it is important to create technically and technologically modernized machines that perform in the prescribed manner.

As the need for textile fibers increases, the volume of waste and secondary raw materials generated during their processing also increases.

The evaluation of the quality of gas production is based on the results of the determination and measurement of its quality indicators, as well as the comparison with standard and regulatory documents. Because the methods of determining gas properties are mainly detailed in standards and other normative documents [3].

Depending on the nature of the complex assessment, the quality indicators of the gases are divided into real and approximate complex assessment.

The advantage of a comprehensive assessment is that it concludes on a number of final assessments. This assessment is not without its advantages and disadvantages, that is, we will not have complete information about its individual properties. In order to choose the right raw material, it is necessary to know the rational use of gas during the process management and use [4].

A comprehensive assessment of quality can be obtained from different calculations of individual quality indicators. The average composite assessment may not change according to the level of several quality indicators, some of them may have a lower level, and some may have a higher level [4].

## 2. METHODS

Increasing the competitiveness of textile products, optimizing the assortment and structural characteristics, as well as reducing the consumption of materials and the cost of raw materials, cannot be imagined. The rational and efficient use of textile and garment scraps and secondary material resources (IMR) received from the population and enterprises has a direct impact on the development and recovery of the local textile industry. Universal technologies and equipment developed on the basis of newly created or modernized existing aggregates and mechanisms used in textile production are of particular importance.

Thus, it is possible to complete a comprehensive assessment without changing the individual quality indicators of the gas.

## 3. RESULTS

Based on the physico-mechanical properties of gasses obtained from a mixture of different composition and processed fibers, a comprehensive evaluation was carried out and the diagram is given in Fig. 1.
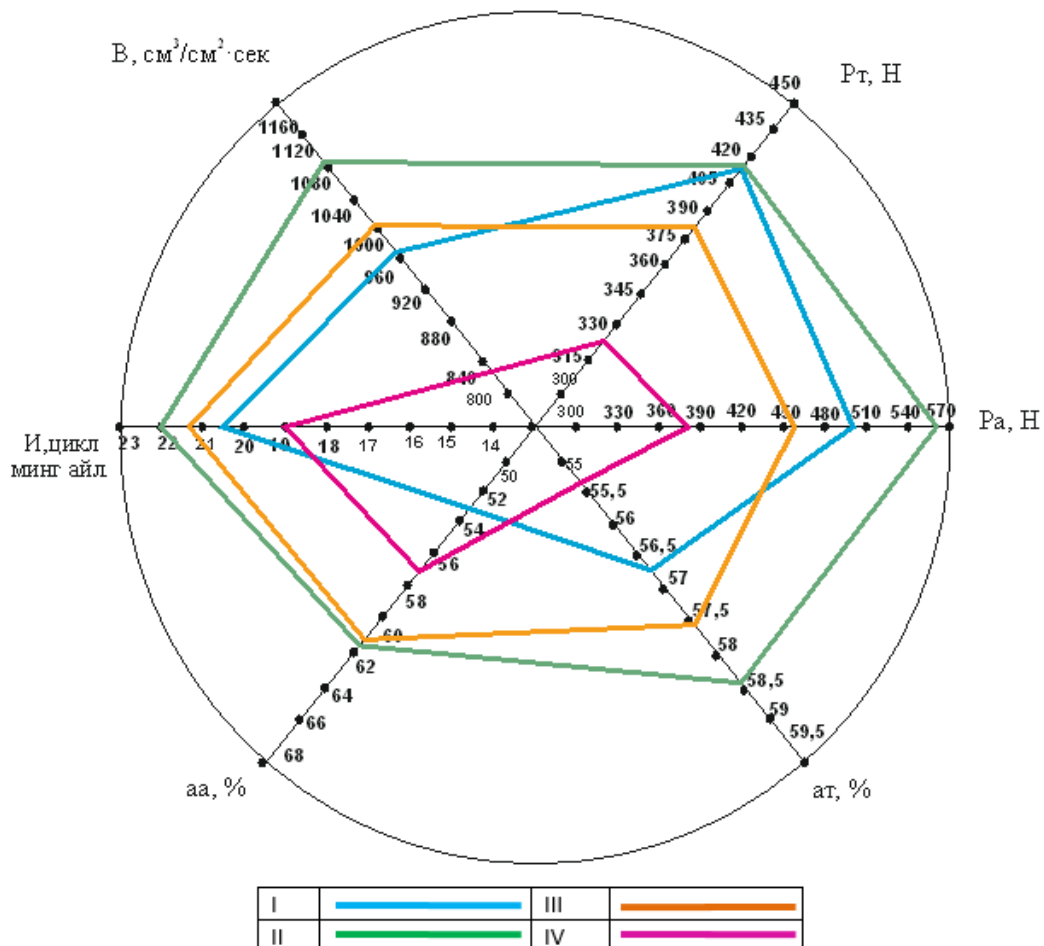
Figure 1. Diagram of comprehensive assessment of quality indicators of gasses obtained from a mixture of different composition and processed fibers.

A comparative histogram of the comprehensive evaluation based on the physical and mechanical properties of gasses obtained from a mixture of different compositions and processed fibers is presented in Fig. 2.
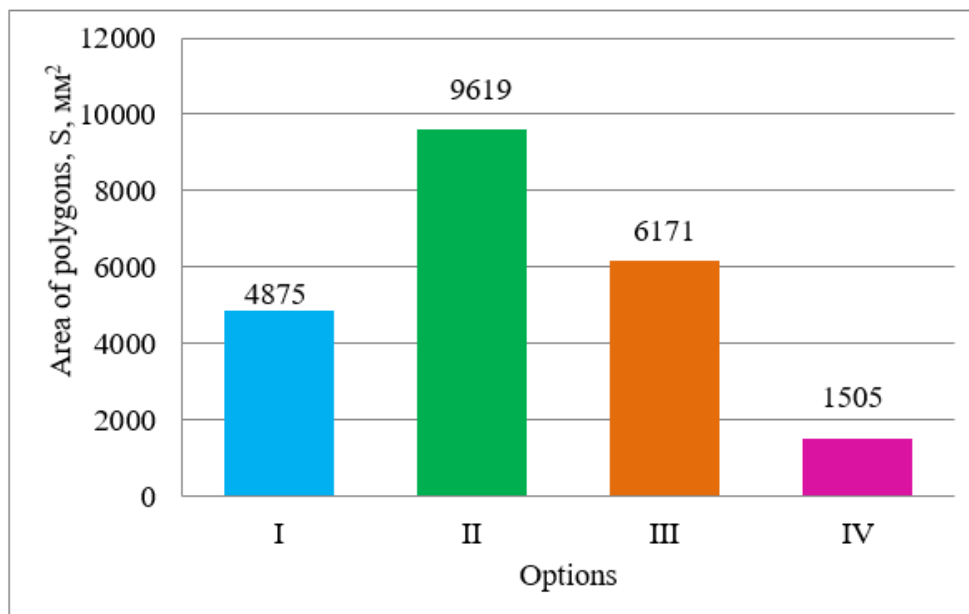


Figure 2. Comparative histogram of the quality indicators of gasses obtained from a mixture of processed fibers with different composition.

The analysis of the results of the comprehensive assessment based on the physico-mechanical properties of the gauzes obtained from a mixture of different composition and processed fibers showed that the area of polygons according to the quality indicators of the gasses obtained from a mixture of 10% nitron, 60% cotton and 30% secondary fibers under production conditions is 4875 mm$^2$, 1- The area of polygons according to the quality indicators of the gas obtained according to the option was 9619 mm$^2$, the polygon area according to the quality indicators of the gas obtained according to the 2nd option was 6171 mm$^2$, the area of polygons according to the quality indicators of the gas obtained according to the 3rd option was 1505 mm$^2$. If we compare the obtained results with the quality indicators of the gauze obtained from a mixture of 10% nitron, 60% cotton and 30% secondary fibers under production conditions, the area of polygons according to the quality indicators of the gauze obtained according to option 1 increased by 49.4%, The area of polygons according to the quality indicators of gas obtained according to option 2 increased by 21.1%, according to the quality indicators of gas obtained according to option 3, the area of polygons decreased by 69.1%.

## 4. CONCLUSION

Based on the results of a comprehensive assessment of the physico-mechanical properties of gasses obtained from a mixture of different composition and processed fibers, it was determined that the area of polygons according to the quality indicators of gasses obtained according to option 1 is higher than the quality indicators of gasses obtained according to other options.

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