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Physical Properties of Fine and Medium Fiber Cotton Cellulose

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Abstract: *Fine-grained cotton cellulose was dissolved in the copper complex [Cu (NN3) 4] (OH) 2 copper-ammonia, which was produced in this way. The fine-fiber cellulose solution was made in a customized circular test tube with a capacity of 500 ml, in which 1 g of fine cotton cellulose samples cut into sizes ranging from 2 g to 4 mm were dissolved in 100 ml copper-ammonia complex. The melting process was sped up by boosting the temperature to 60 degrees Celsius and mechanically mixing the materials continuously. Filtration regulates the melting dynamics of cellulose fibers and their transformation to a totally soluble state.*

Keywords: *temperature, phenology, seeds, selection, pods, polymer, natural, inorganic, fungi, bacteria, chemistry, substances, flowers*

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Fine-fiber cotton types are mostly grown in the Republic of Uzbekistan's southern areas (Surkhandarya, Kashkadarya, Bukhara, Andijan, Namangan regions). Termez 24, Termez 31, 6249-V, 9883-I, 9871-I, S-6037, 6465-V, and other fine-fiber cotton types are the most often farmed in the country. necessitates a temperature sum of more than The physical and economic properties of fine-grained cotton cultivars are quite variable. Their vegetation period ranges from 110 to 120 days to 180 to 200 days and beyond. The bush comes in a variety of shapes and sizes, ranging from branchless to branchy ("zero type"). Stems strong, erect, 60-130 cm tall, hairless, green, reddish-brown in autumn. The leaves are large, thick, dark green, oblong-triangular. The flowers are large, the petals are lemon-colored with a bright dark red spot. The cocoons are small, most of them elongated ovoid cone-shaped, obtuse or sharp, 3-5-lobed. One cup yields 3—4,2 g of cotton, with the possibility of 4,5—5 g. The seeds are big, hairless, sparsely hairy, or hard, light green or gray, and weigh 110-140 g per 1000 seeds. The fiber is lustrous, pale yellow or white in color, and has 28-36 percent fiber. High-quality, exquisite fabrics and baked foods are made with fiber (categories I, II, and III). Distinct cultivars of fine-fiber cotton have different agronomic practices depending on varietal traits and soil-climatic variables in the cultivated areas. In the mid-1920s, work on fine-fiber cotton selection began in Central Asia.

Chemical fibers are classified as either textile or technical yarns, depending on their intended function. The majority of them are robust, wrinkle-resistant, and resistant to light, moisture, fungi, germs, chemicals, and heat. Elastic and lengthy, unbranched or less branched macromolecule-forming polymers are utilized to make chemical fibers. When melted or heated, these fibers have a big enough molecular mass to liquefy without disintegrating.

Chemical fiber production includes soluble solution preparation, fiber extraction and shaping, and fiber decorating. Chemical fibers are increasingly being produced because they are cheaper and better quality (mechanical properties: strength, elasticity, wear, toughness) than natural fibers. In 1990, 1.5 times more chemical fibers were produced worldwide than natural fibers (about 26 million tons), and in 2000, 2.5 times more (45-50 million tons) than natural fibers. t) chemical fibers were produced.

Polymer molecular weight qualities are vital for their practical application in a variety of disciplines, and determining them is largely a responsibility for researchers and technologists involved in the processing of polymer raw materials. In this investigation, an externally impurified polymer object was mechanically cleaned to prepare a solution of cellulose and medium-sized Sultan cotton fiber separated from various fine-staple cotton expressed in the Surkhandarya region. It was then washed in water, alcohol, and acetone to remove small amounts (about 0.01 to 0.02 percent) of minerals, oils, waxes, inorganic and organic chemicals generated by the natural synthesis of cotton cellulose. The fibers are then dried at room temperature for 1 day. As a result, the fibers turn white. They are then cut to 2-4 mm in size and melted.

To determine the molecular weight properties, the cellulose copper-ammonia complex [Cu (OH3) 4] (OH) 2 and zinc chloride ZnCl2 (60%) were dissolved in a Swiss reagent, an aqueous solvent for rheological studies. These solvents differ from other cellulose solvents, including sulfuric acid (H2SO4), in their ability to easily prepare a macromolecular dispersion system, i.e., a cellulose polymer solution.

There are numerous ways for producing copper-ammonia complexes now available, including chemical and electrochemical methods. All copper-ammonia complexes formed this way are dark blue in hue. In general, investigating the hydrodynamic properties of solutions, particularly determining the viscosity qualities, is not complicated by this color. As a result, in the research of hydrodynamic methods for determining the molecular mass of cellulose, the copper-ammonia complex is commonly used as the principal solvent. With this in mind, we decided to conduct the studies using the most basic chemical procedure possible. We have prepared a Swiss copper-ammonia complex reagent according to the following scheme. To do this, the copper hydroxide CuOH2 reagent was dissolved in an aqueous solution of ammonia.

For copper-ammonia fine-fiber cotton cellulose, the copper complex [Cu (NN3) 4] (OH) 2 was utilized as a solvent. The fine-fiber cellulose solution was made in a customized circular test tube with a capacity of 500 ml, in which 1 g of fine cotton cellulose samples cut into sizes ranging from 2 g to 4 mm were dissolved in 100 ml copper-ammonia complex. The melting process was sped up by boosting the temperature to 60 degrees Celsius and mechanically mixing the materials continuously. Filtration regulates the melting dynamics of cellulose fibers and their transformation to a totally soluble state. Under such conditions, it takes 2-3 hours to prepare a 1% polymer solution of cellulose fiber.

Cu (OH) 2+ + nNH3 + 2

To make medium concentration (S = 5-10%) cellulose solutions, ZnCl2 (60%) reagent was utilized. The preparation of moderately concentrated solutions was done under the same conditions as the copper-ammonia combination discussed earlier. Rheological research have been conducted using these solutions. These programs aim to maintain our economy's ongoing structural changes, such as the rapid development of the textile and garment industries, the deep processing of cotton fiber and silk, and the creation of competitive products in foreign markets through foreign investment. Provides a diverse range of processing options for the raw materials cultivated here. Customs and tax exemptions and preferences play an important role in the development of the industry. Surkhandarya has favorable climatic conditions for growing high-quality cotton fiber and silk. Currently, the raw silk grown in the region is fully processed locally.

Surkhanteks, a joint venture that makes yarn and gray fabrics in Jarkurgan, will increase its annual capacity to 9,000 tons of completed products following its modernisation. 200 women will be employed as part of the new $25 million initiative. Nortex Style, a textile facility being developed in the district for $ 11 million, will manufacture 2,500 tons of yarn per year.

The textile firm of Momin Tekstil LLC in the Shurchi area has a production capacity of 3,000 tons of yarn. The company, which will create 300 new jobs, is spending $ 6.4 million. The textile enterprises of Qizirik Tekstil Invest in Qizirik district, Janub Tekstil LLC in Termez district and Shokhmokhkashshob agro-industrial firm in Denau district will also be able to produce competitive yarn on the world market.

Sherabad Textile Invest LLC, based in Sherabad, is working on a project to create 15,000 tons of yarn, 5,000 tons of colored yarn, 4,000 tons of knitted textiles, and 2.5 million pieces of high-quality clothing every year. Surkhan Sifat Tekstil LLC in the Sariosiya district also has advanced machinery for spinning yarn and producing high-quality colors. In Termez, the Uzbek-British joint venture "Amudarya Tex" will install dyed yarn production equipment as part of a project led by "Surkhandarya Qurilish Montaj" LLC. It will be able to produce 1 million finished knitwear pieces each year.

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