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OF CELLULOSE FROM HIGH CLEANLINESS FROM THE FIRE WASTE RELEASED IN COTTON GRINDING PLANTS

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Absract

In recent times, Spain, France, the United States (southern states), China, India, the Netherlands, where timber resources are rare and plant-rich and in Latin American countries, the technology of extracting pulp from the ginning industry and textile enterprises, as well as pulp from annual plants, is developing.

Keywords: polymerization rate, cotton lint, ugar, ulyuk, pentosan, alkali sediment, brittleness, ash content, moisture, cellulose, concentration, parameter, optimal conditions, destruction.

Cotton wool PM (lint) separated in ginneries Highly mixed -PU (lint) wastes of ginners and cotton short wool -PKM (fluff) has a higher purity than mixed waste synthesis of several brands of cellulose as well as the analysis of optimal conditions obtained as a result of studies on the effect of parameters.

O‘z DSt 841:2016 COTTON FIBER, COTTON LINT, ULUX-CONTAINING AND FLUSH-CONTAINING COTTON FACTORY WASTE - This standard applies to fibrous products of cotton ginning plants, including cotton fiber, cotton lint, uluc-containing and fluff-containing (hereinafter referred to as fibrous) waste and establishes requirements for packaging, labeling, transportation and storage of these products .

GOST 6309-93 Sewing threads, cotton and synthetic. Specifications GOST 17308-88 Twines. Specification O'z DSt 581:2002 Processing of raw cotton. Terms and definitions O'z DSt 665:2015 Containers for packing bales of cotton products. Specifications O'z DSt 2862:2014 Belts made of polyester tape for tying bales of cotton products. Specifications O'z DSt 2874:2014 Soft polyethylene container for packing bales of cotton fiber. Specifications O'z DSt 2876:2014 Soft round-knitted container for packing bales of cotton products. Specifications.

The large-scale use of cellulose and its simple and complex esters in the above-mentioned industries gives promising results. This, in turn, will lead to the production of modified composite polymer materials for these industries, which are export-oriented and import-substituting cellulose and organic substances based on it, simple and complex ethers and the creation of large innovative technologies for industrial-scale implementation and the application of positive results in production.

The world's demand for organic substances and modified composite polymer materials based on them is growing day by day. At present, organic substances are used in various industries, including pharmaceuticals, perfumery, food, construction, oil and gas industry, mining, metallurgy, mining of precious ores, textiles and the share of products based on them as the main raw material is growing rapidly [1-12].

In recent times, China, India, the Netherlands, Spain, France, the United States (southern states), where timber resources are rare and plant-rich and in Latin American countries, the technology of extracting pulp from the ginning industry and textile enterprises, as well as pulp from annual plants, is developing. However, these technologies are somehow copying the technology of obtaining cellulose from wood with all its shortcomings. In view of the above, in this section we have managed to obtain several brands of high-purity cellulose based on PTKTCh (fiber pulp of textile enterprises).

Improving the productivity of cotton industry enterprises by processing cotton ginning waste into high-quality cotton cellulose, which is a raw material for the chemical, light and textile industries and improving its impact on the environment, the superiority of existing technologies in the process of cellulose extraction, as well as sulfate obtained on the basis of deciduous and coniferous trees and sulfide, bisulfide celluloses do not lag behind in physicochemical and mechanical properties. The technology also envisages the synthesis of cellulose products obtained on the basis of waste from ginneries into assortments in different areas. The technology, which is supposed to be based on the project, is simple and control of the modes in it with high accuracy according to the required quality indicators that is, by changing the concentration, time, temperature, the desired yield, the degree of polymerization and α-cellulose with a-cellulose, as well as simple esters of cellulose with high quality [13-25].

Initially, the fiber was cleaned of mechanical waste then a boiling process was carried out in various solutions of alkali (NaOH). The effects of different parameters on the fiber cooking process were studied in parallel. From such parameters, the alkali concentration, boiling time and boiling temperatures were studied [26-38]. The following are some qualitative indicators of the cellulose formed during chemical processing after mechanical cleaning of PTKTCs (fiber pulp of textile enterprises).

Some qualitative indicators of cellulose formed during chemical processing of PTKTCh after mechanical treatment (under the influence of alkali concentration)

TABLE 1

NaOH concentration, g/l	Boiling time, min	Boiling temperature	Cellulose yield, %	a-cellulose, %	PD-degree polymerization	Amount of ash, %	Flexibility, %
Cotton wool-PM (lint)							
10	120	98-100	82	86,3	1550	1,7	70
20	120	98-100	91	93,1	1460	1,0	124
30	**120**	**98-100**	**94**	**97,7**	**1280**	**0,2**	**155**
40	120	98-100	96	97,6	1180	0,2	150
Ulyuk mixed -PU (ulyuk) waste							
10	120	98-100	72	86,3	720	2,5	90
20	**120**	**98-100**	**93**	**93,1**	**710**	**1,2**	**150**
30	120	98-100	94	95,7	510	0,6	152
40	120	98-100	93	97,2	470	0,3	150
Cotton short wool -PKM (fluff) mixed waste							
10	**120**	**98-100**	**94**	**92,8**	**770**	**0,7**	**90**
20	120	98-100	91	93,0	660	0,6	124
30	120	98-100	87	92,9	540	0,4	141
40	120	98-100	86	93,2	490	0,5	152

It can be seen from the table that some properties of cellulose formed under the influence of different alkali concentrations have different parameters, and based on the results of the study, the optimal value of alkali concentration for each of the PTKTCh (fiber pulp of textile enterprises) was determined. An increase in the concentration of alkali leads to the decomposition of the elementary links in the macro molecule that is, it leads to destruction. Conversely, it tends to increase the amount of α-cellulose. Accordingly, the concentration of NaOH was optimized for cotton wool-PM (lint) with a concentration of 30g / l, high-mixed -PU (ulyuk) for waste 20g/ l, and cotton short-wool -PKM (fluff) mixed waste with a concentration of 10 g/l. Accordingly, the concentration of NaOH was optimized for cotton wool-PM (lint) with a concentration of 30g / l, high-mixed -PU (ulyuk) for waste 20g / l, and cotton short-wool -PKM (fluff) mixed waste with a concentration of 10g / l.

The time of alkaline boiling of the fibrous waste is studied below.

Some qualitative indicators (effect of boiling time) of cellulose formed during chemical processing after mechanical cleaning of PTKTCh.

TABLE 2

NaOH concentration, g/l	Boiling time, min	Boiling temperature	Cellulose yield, %	a-cellulose, %	PD-degree polymerization	Amount of ash, %	Flexibility, %
Cotton wool-PM (lint)							
30	60	98-100	82	86,3	1550	1,7	70
30	120	98-100	91	93,1	1460	1,0	124
30	**180**	**98-100**	**94**	**97,7**	**1280**	**0,2**	**155**
30	240	98-100	96	97,6	1180	0,2	150
Ulyuk mixed -PU (ulyuk) waste							
20	60	98-100	72	86,3	720	2,5	145
20	**120**	**98-100**	**93**	**93,1**	**710**	**1,2**	**150**
20	180	98-100	94	95,7	510	0,6	152
20	240	98-100	93	97,2	470	0,3	150
Cotton short wool -PKM (fluff) mixed waste							
10	**60**	**98-100**	**94**	**92,8**	**770**	**0,7**	**150**
10	120	98-100	91	93,0	660	0,6	152
10	180	98-100	87	92,9	540	0,4	155
10	240	98-100	86	93,2	490	0,5	150

It can be seen from the table that the effect of different boiling times on the process, some properties of the resulting cellulose have different parameters, and based on the results of the study, the optimal value of boiling time for each PTKTCh (fiber pulp of textile enterprises) was determined. The increase in boiling time caused a variety of destructive conditions, including a negative effect on the degree of polymerization of cellulose, while a positive effect on its ash content and degree of suffocation. Accordingly, the boiling time for cotton wool-PM (lint) is 180 minutes / boiling time for the mixed -PU (ulyuk) waste is 120 minutes / and for the short cotton wool -PKM (fluff) mixed waste / is the boiling time is 60 minutes, time concentrations were optimal.

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