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Synthesis of Technical Carboxymethyl Cellulose with Increased Content of the Main Substance

M.K. Urozov, M.G. Djurayev, A.X. Raximov, B.B. Ochildiyev

Termez State University

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Annotation: It is known that a conventional cellulose ether Mecca CMC wide application in various industries, including the construction industry. CMC has a viscosity of the water used for the construction sector, heat tolerance positive.

Keywords: carboxymethyl cellulose, the level of viscosity of water, inhibitors, Monoapparat alkaline environment, the degree of polymerization, sand and cement.

Introduction

The main raw material for obtaining technical carboxymethyl cellulose (CMC) is wood pulp, both in our country and abroad. Given the wide range of CMC applications, the possibility of its synthesis from non-traditional raw materials: beechwood, bark, sugar beet pulp, hydrolytic cellulose, waste of viscose yarns has been studied in world practice. As a cellulosic raw material, waste from the production of alkaline cellulose that does not require additional activation can also be used. Waste cereals, i.e. straws of rice and wheat in terms of cellulose content occupy after wood. If the cotton contains up to 98%, and in the wood up to 50% cellulose, and in the straw contain 40 to 42% cellulose.

At the Namangan Karbonam LLC, the CMC is currently produced on the basis of sulphite cotton cellulose from the Fergana Furan Plant (FZFS), which is not satisfied with cellulose. In our country there is a large amount of cellulose-containing raw materials (cotton linters, rice and wheat straw, kenaf fire, cotton lint and hardwood wood - poplar, etc.) from which various brands of CMC can be obtained. However, the issue of isolating cellulose from these cellulose-containing fibrous materials for obtaining CMC has not been fully resolved and its production is not established, which is the main obstacle in the organization of the CMC industrial output based on them. In this connection, this chapter of the thesis deals with the development of technology for the production of CMC from cellulose from local annual plants and poplar wood, which can provide the demand for cellulose to LLC "Carbonam".

The above cellulosic semi-finished products contain 85-90% cellulose. In the circle of problems of oilfield chemistry, one of the first places belongs to drilling fluids. This is due to their importance as an environment in which rock destruction takes place and by the fact that they carry a number of responsible technological functions that largely determine the success of drilling. The success of drilling wells depends to a large extent on the composition and properties of drilling fluids, which should ensure safety and trouble-free operation at high speed and drilling and a qualitative opening of the productive formation. The use of drilling fluids with controlled properties justifiably requires considerable resources in order to economize the time spent on work related to accidents, complications, processing and washes, duration and results of development. For the drilling of oil and gas wells, the stabilization of drilling muds based on the use of protective colloids, in which high-molecular compounds, in particular widely used in drilling, carboxymethylcellulose (CMC), are used as one of the decisive factors.

The water-soluble carboxymethylcellulose (Na-CMC) is obtained by the action on alkaline cellulose monochloroacetic acid according to the following reaction: The main parameters of Na-carboxymethylcellulose, which determine the properties of drilling muds based on it, are the degree of polymerization, the degree of substitution, and also the content of the basic substance. As is known, with standard methods of producing Na-CMC, it is possible to obtain a technical product with a main substance content of 45-55%. This is due to a number of

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technological parameters leading to a decrease in the selectivity of the carboxymethylation reaction of alkaline cellulose with sodium monochloroacetate (a decrease in the efficiency of sodium chloroacetate). One of these factors is the water content of alkaline cellulose, leading to a shift in the carboxymethylation reaction towards the hydrolysis of sodium monochloroacetate to form glycolate and sodium chloride, with a general decrease in the content of the basic substance and the degree of substitution in the technical Na-CMC. In view of this, the effect of the content of the organic solvent in the dissolution solution on the content of the basic substance, the degree of substitution, the viscosity, the solubility, and also the filtration index of the clay solution was studied. To synthesize Na-CMC, an aqueous and water-methanol solution of sodium hydroxide with a concentration of 260 g / l was used, water was replaced by methanol by 10-40%, cotton cellulose, and sodium monochloroacetate the water yield of the clay solution was determined by a standard method, with a sodium chloride content of 10%, bentonite-10%, NaCMC-0.75%.

From the data given, it can be seen that replacing the traditional solvent in a dissolving solution, water, with an organic solvent, leads to an increase in the content of the basic substance and the degree of substitution in the technical Na-CMC, while improving its other characteristics.

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