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THE POSSIBILITY OF APPLYING SULPHUR RECOVERED FROM WASTE OIL IN THE PRODUCTION OF RUBBER

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In the process of cleaning crude oil from hydrogen sulfide produced many elemental sulfur, which is in Tengiz a result of processing of sour oil and gas, indicating the content of hydrogen sulfide. Many elemental sulfur consumes the rubber industry for the vulcanization of rubbers. Sulfur vulcanizing agents included in the group, ensures the vulcanization, i.e., the transformation of plastic and viscoelastic rubber compounds in highly elastic rubber due to the formation of a uniform spatial with the sulfur atoms linking the individual chemical bonds of the macromolecules rubber.

Constantly increasing demands on the quality of tires cause the necessity of creation of effective components of rubber compounds. Particular attention is paid to development of curing agents. Previously, we have carried out work on the application of purified sulphur in the Tengizbrekina and tread rubber compounds that have shown promise for the future. However, the manufacture of frame rubber compounds using purified Tengiz sulfur is not justified, because rubber was hard. In this work, we have conducted research and presented the results of experiments on the possibility of application of polymeric sulfur, obtained from purified Tengizsulfur.

Polymeric sulfur reduces the amount of sulfur in the formulation of rubber compounds without reducing the curing rate, which leads, consequently, to improve the quality of rubber. The use of polymeric sulfur can also adjust the elastic properties of the resulting rubbers. Polymeric sulfur was introduced on a laboratory mill at the end of mixing, in a second stage, in order to prevent premature vulcanization. In the process of cleaning crude oil from hydrogen sulfide produced many elemental sulfur, which is in Tengiz a result of processing of sour oil and gas, indicating the content of hydrogen sulfide. Many elemental sulfur consumes the rubber industry for the vulcanization of rubbers. Sulfur vulcanizing agents included in the group, ensures the vulcanization, i.e., the transformation of plastic and viscoelastic rubber compounds in highly elastic

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The experiments have shown that the technology of mixing, processing of rubber mixtures and vulcanization is virtually indistinguishable from the standard mode, used in normal practice. Vulcanization of the samples was conducted at a temperature of 1550C for 15 utes. As can be seen in figure 1 when using cengizkoy purified sulfur a decrease in abrasion of the rubber frame, which shows an improvement of elastic properties. From the experimental data shown in figure 2, with the addition of polymeric sulfur in the compounding of the mixture is observed a significant increase lasting properties characterized by conventional tensile strength and bond strength between rubber and textile cord carcass rubber.

Thus, the results showed that the use of of polymer sulphur leads to improving the strength properties of the rubber frame by increasing the number of intermolecular bonds in elastomeresmatrix, since all used in the recipe of the rubber mixture, the sulfur reacts to better physico-mechanical properties and quality of tire rubbers.