

- dioxidinitrile – 2,4,6-trimethylbenzoyl-1,3-dicarbonate acid (DDTBC);
- polycarbozynie.

The influence of selected chemical compounds on physical-mechanical and vulcanization properties of rubber compounds are carried out on standard mixtures based on butadiene rubber, which is used most in the production of rubber products.

It has been established that activity of selected chemical compounds can be placed in the following order:

DDTBC > Polycarbozynie > DPG.

The use of small admixtures of these chemicals can reduce the cure time of rubber compound standard from 100 minutes to 15 minutes.

Considering the chemical structure of the selected accelerators and possible mechanism of formation of active complexes, developed a number of model systems, vulcanizing accelerators, reciprocal activation of various types of general purpose rubbers sobrenome, styrene, nitrile, divinely.

The analysis of serial formulations that are most widely used in the production is obtained. To adjust vulcanization systems the following recipe is selected:

- type 6190 – for the manufacture of moulded and non-moulded parts based on styrene-butadiene rubber;
- type 3826 – for the manufacture of oil-resistant parts based on butadiene-nitrile rubber;
- type 57-2001 for molded parts based on isoprene rubber;
- type 73-371 – for the manufacture of pipes and hoses on the basis of styrene-butadiene rubber.

Active system rubber vulcanizing accelerators with a synergistic effect for the selected serial recipes was developed.

Prototypes of rubbers on the basis of the developed formulations, conducted advanced physical – mechanical studies on the compliance of indicators with the requirements of normative-technical documentation.

According to the results of physical mechanical testing of the application vulcanization system boosters with a synergistic effect allows to accelerate the vulcanization and to reduce the cure time up to 2 times, which will reduce energy consumption per unit of production.

References

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