"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

DOGADKIN, B.A.; DROZDOVSKIY, V.F.; TARASOVA, Z.N.; ARKHANGEL'SKAYA, M.I.

Effect of mercaptans and disulfides on the properties of products of degradation of swollen vulcanizates of the butadiene-styrene rubber. Kauzh.i rez. 21 no.7:24-27 Jl '62. (MIRA 15:7)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.
(Rubber, Synthetic) (Sulfides) (Thiols)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

36277
S/069/62/024/002/002/008
B110/B101

15.9000

AUTHORS: Dogadkin, B. A. Tarasova, Z. N., Gol'berg, I. I., Kuanyshev, K. G.

TITLE: Effect of vulcanization structures on the strength of vulcanizates

PERIODICAL: Kolloidnyy zhurnal, v. 24, no. 2, 1962, 141-151

TEXT: The static and dynamic strengths of three-dimensional elastomers (vulcanizates without a filler) depend on (1) composition and structure of the molecular chains, (2) type, concentration and distribution of the vulcanized bonds, (3) secondary structures. The vulcanized bonds may be (a) covalent, (b) electrovalent, and (c) local and intramolecular. Since their energies and distributions are not uniform it was suggested that

$$P = \tau_0(\beta)\, x^{2/3} \left(\frac{1}{1+0{,}339x} - q\right)\left(1 - \frac{M_c}{M}\right)^{1/2}. \quad (1)$$

where

$$x = \left(\frac{aT_c}{kT\sigma}\right)^{1/2}, \quad (2)$$

Card 1/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

$$\tau_0(\beta) = \left(\frac{A\rho}{3M_0}\right)^{1/2} \left(\frac{kT}{aT_c}\right)^{1/2} T_c \frac{1}{1+b_1\beta}, \qquad (3)$$

$$q = \frac{1}{2+b\beta}, \ \beta = \frac{n_1}{n_1+n_2}, \ 0 \leqslant \beta \leqslant 1,$$

where ρ is the polymer density, M_c is the average molecular weight between the sites, M_0 is the molecular weight of the monomer, σ is the average of monomeric links per chain, a is the average interstitial chain segment length, T_c is the strength of the polymer chain, and n_1 and n_2 are the numbers of cross links of different types. Weak bonds and bonds that are easy to regroup (polysulfide, salt, and hydrogen bonds) promote the dissipation of local overstress, the alignment of the principal chain, and the formation of crystalline domains. The strong C-C bonds back up the strength of the space lattice at high temperatures and significant strain. The measurement of tensile strength was experimental proof of the proposed formula. Natural rubber was vulcanized (1) with sulfur and diphenylguanidine (polysulfide bonds ~27 kcal/mole), (2) treated with Co gamma rays at room temperature (lattice with C-C bonds ~64 kcal/mole), (3) with sulfur

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

and gamma rays. The optimum tensile strengths were (1) $\sim$270 kg/cm^2 at $\nu_c = 3.8 \cdot 10^{19}$ ml^{-1}, (2) $\sim$280 kg/cm^2, $\nu_c = 3.1 \cdot 10^{19}$ ml^{-1}, (3) $\sim$340 kg/cm^2 at $\nu_c = 6.0 \cdot 10^{19}$ ml^{-1}. Movable and regroupable salt bonds lead to a great static strength of butadiene styrene rubbers vulcanized with metal oxides. The dynamic strength depends on the types of bond and on the strain conditions. Symmetrical alternating-sign twist with bending at 120°C showed that vulcanizates with thiuram with C-C and C-S-C bonds have a greater strength than vulcanizates with diphenyl guanidine and sulfur with C-S_x-C polysulfide bonds. Examination of non-filled vulcanizates of butadiene styrene rubber with sulfur, hexachloro ethane, dicumyl peroxide, and tetrachloroquinone at $\sim$100°C, 250 cps, and 30% deformation amplitude showed that the vulcanizate of carboxyl rubber with salt bonds had the highest creep rate. The creep rate was dependent on the number of deformation cycles before rupture started to occur. There are 11 figures and 2 tables.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov)

SUBMITTED: November 14, 1961

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

35674
S/032/62/028/004/005/026
B101/B113

15.900

AUTHORS: Klauzen, N. A., and Dogadkin, B. A.

TITLE: Spectroscopic study of cis-trans-isomerization of rubber during vulcanization

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 4, 1962, 438-440

TEXT: The authors studied the change in infra-red spectra during vulcanization of natural rubber (I), polybutadiene rubber СКД (SKD) (II) containing 80% cis-configurations, and polybutadiene rubber СКБМ (SKBM) (III) containing 65% trans-configurations. Vulcanization was conducted at 143°C with sulfur in the presence of diphenyl guanidine. Results obtained for I: Already after 40 min heating (when only 2-2.5% sulfur was added), the intensity of the 840 cm^{-1} and 1130 cm^{-1} bands decreased, and a new 965 cm^{-1} band became visible, the intensity of which increased with increasing amount of bound sulfur. At the same time, the intensity of the 1640 cm^{-1}

Card 1/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

band increased, which is characteristic of the stretching vibrations of C atoms in trans-substituted ethylene groups. This suggests migration of the double bond from $R_1R_2C{=}CHR_3$ groups with formation of $R_1CH{=}CHR_2$ groups. Vulcanization of II caused a decrease of the 730 cm^{-1} band and an increase in intensity of the 965 cm^{-1} band. It was calculated that only 25-30% of the double bonds of cis-configurations was converted to trans-configurations. No new bands were observed in III which contained trans-configurations only. These results indicate that the migration of double bonds and the conversion to trans-configuration are characteristic of the vulcanization of rubbers of very different types. Thus, the physicomechanical properties of vulcanizates do not only depend on the type and density of the network but also on what part of the double bonds is converted from cis- to trans-configuration. The present paper was read at the Conference on Spectroscopy, Gor'kiy, July 5-12, 1961. There are 3 figures and 5 non-Soviet references. The four most recent references to English-language publications read as follows: H. E. Railsback, J. E. Haws, C. R. Wilder. Rub. World, 142, no.2, 67 (1960); F. J. Linnig, J. E. Stewart. J. Res. Nat. Bur. Stand., 60,

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

Spectroscopic study of ... S/032/62/028/004/005/026
B101/B113

no. 1, 2816 (1958); J. Mann. J. Res., 18, no. 9 (1949); L. H. Cross, R. E. Richards. Disc. Farad. Soc., no. 9, 235 (1950).

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tire Industry)

Card 3/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

34477
S/020/62/142/004/014/022
B106/B110

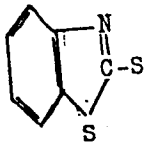
11.2211
15.9201

AUTHORS: Dogadkin, B. A., Fel'dshteyn, M. S., and Belyayeva, E. N.

TITLE: Reaction of di-2-benzo-thiazyl disulfide with rubbers of different structures

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 142, no. 4, 1962, 828-830

TEXT: The reactivity of rubbers of different structure (natural, butadiene-styrene (СКС-30А(SKS-30A)), sodium-butadiene (food-СКБ(SKB)) and butadiene (СКД(SKD)) rubber) toward thiobenzothiazolyl radicals



was studied. In the reaction with rubber these radicals absorb hydrogen from the rubber chain molecules. This leads to the formation of polymeric radicals and 2-mercaptobenzothiazole. A mixture of di-2-benzothiazyl

Card 1/4

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

S/020/62/142/004/014/022
B106/B110

disulfide and N-cyclohexyl-2-benzothiazole sulfene amide served as a source of thiobenzothiazolyl radicals, since such a mixture yields more radicals than either component alone. It was found that at 140°C the thiobenzothiazolyl radicals strip off hydrogen neither from the cyclohexyl amide groupings nor from the molecules of the solvent (xylene) they are, however, well capable of rubber dehydrogenation. The most intense dehydrogenation is observed in the sodium-butadiene rubber SKB. Only traces of 2-mercaptobenzothiazole are formed in the case of natural and butadiene rubber SKD which has a 1-4 cis-structure. Natural rubber is not noticeably dehydrogenated even when the experiment is conducted in vacuo. Butadiene-styrene rubber takes an intermediate position between sodium-butadiene and natural rubber. The difference in the dehydrogenation rate of rubbers in the reaction with thiobenzothiazolyl radicals is connected with the existence of different carbon-hydrogen bonds. Tertiary C-H bonds are most easily dehydrogenated. This explains the data in Table 1 (quantity of formed 2-mercaptobenzothiazole as dependent on the structure of the rubber used. The question whether the observed different reactivity of the rubbers toward thiobenzothiazolyl radicals influences the rubber structuralization was also studied. Di-2-benzo-thiazyl disulfide served as radical source. The reaction of the accelerator with the rubber was carried out under the

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

conditions of press cure in the rubber mass at 143°C. Natural, butadiene-styrene (CKC-30(SKS-30)) and sodium-butadiene rubber SKB with 5.0 parts by weight of di-2-benzo-thiazyl disulfide were studied. The formation of cross links between the chain molecules of rubber was estimated from the swelling in xylene of rubber mixtures with different time of heating. It was found that the capability of the rubbers of being structuralized under the influence of thiobenzothiazolyl radicals increases in the same order as the capability of being dehydrogenated. Natural rubber is least, sodium-butadiene rubber most structuralized. For sodium-butadiene rubber, the number of cross links occurring in the cleavage of one hydrogen atom of rubber by one thiobenzothiazolyl radical is calculated from the maximum swelling of rubber in xylene by using the corresponding monographs. The number of hydrogen atoms absorbed from rubber was calculated from the amount of 2-mercaptobenzothiazole isolated from the rubber mixture by treating it with hot acetone. Table 2 shows the results. It can be concluded from the experimental results obtained that the structuralization of rubbers under the influence of thiobenzothiazolyl radicals is mainly the result of rubber dehydrogenation with subsequent recombination of the polymeric radicals. A paper by B. A. Dogadkin and V. A. Shershnev (Ref. 6: Vysokomolek. soyed.,

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

1, no. 1, 58 (1959)) is mentioned. There are 2 figures, 2 tables, and 7 Soviet references.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tire Industry)

PRESENTED: September 15, 1961, by A. A. Balandin, Academician

SUBMITTED: September 13, 1961

Table 1. Legend: (1) Rubber type; (2) structural formula; (3) number of double bonds in position 4-1, %; (4) amount of 2-mercaptobenzothiazole formed (after a 60 minute continuous heating up to 140°C) in % of the initial disulfide; (5) SKB; (6) SKS-30A; (7) NK; (8) SKD; (9) traces. Table 2. Number of cross links formed in rubber SKB on heating with 5.0 parts by weight of di-2-benzo-thiazyl disulfide. Legend: (1) Time of heating, minutes; (2) number of cross links $N_c \cdot 10^{19}$, ml^{-1}; (3) number of cross links per one H-atom absorbed from rubber; (4) number of H-atoms absorbed from rubber per cross link.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

or the experimental conditions with equal amounts of bound sulfur (0.6-0.75%). The maximum of swelling changes in the same way as in the reaction without accelerator, and remains unchanged after consumption of the free sulfur. Conclusion: MBT and TMTD with a 1:4 ratio of sulfur to polyethylene accelerate the principal processes taking place in this system. However, the kinetic curves the maximum amount of bound sulfur and the degree of crosslinking all retain, the same character as in reactions without accelerator. The accelerators investigated differ in behavior: MBT reacts with sulfur, which leads to increase in content of sulfur radicals. TMTD decomposes into radicals which not only activate the sulfur but also dehydrogenate the saturated polymer. There are 6 figures.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov)

SUBMITTED: July 14, 1961

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

45393
S/190/63/005/002/001/024
B101/B102

11,2320

AUTHORS: Belyatskaya, O. N., Dogadkin, B. A., Dobromyslova, A. V., Tomilina, L. A.

TITLE: Study of the scorching of rubber mixtures. III. Effect of vulcanization inhibitors on structural changes caused in the rubber by mastication and heat treatment

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 5, no. 2, 1963, 164-170

TEXT: Changes of intrinsic viscosity and molecular weight caused by mastication and heat treatment were studied in butadiene-styrene rubber CKC-30AM (SKS-30AM) and natural rubber (NR) under the effect of the inhibitors N-nitroso-diphenyl amine (NDPA) and phthalic anhydride (PA). In SKS-30AM, the viscosity was not changed by addition of 1% NDAP or PA and 20 min mastication or 30-60 min heating to 120°C. Since, however, mastication and heat treatment effect complex structural changes in butyl styrene rubber, the factors of which are difficult to define, the effect of

Card 1/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

NDPA on NR was investigated. Viscosimetric determination of the molecular weight showed that mastication and heat treatment cause intensive degradation of NR which is not affected by NDPA. On mastication in Ar atmosphere the initial degradation was more intensive in the presence of NDPA, but after 60 min the molecular weight had dropped to the same value as without inhibitor. NDPA had no effect when the heat treatment was performed in Ar atmosphere. If NDPA was added to a toluenic solution of NR the viscosity dropped rapidly within the first 2-3 hrs and then gradually for 7 days. Results of tests with NR solution in argon: Heating of the NR solution without addition does not change the viscosity; an addition of 5 parts by weight NDPA reduces the viscosity at first rapidly and then more slowly; addition of methyl-phenyl triacene in a quantity equimolecular to NDPA reduces the viscosity even within the first 15 min to such an extent that subsequently no further reduction takes place. The NDPA effect in mastication is explained by its decomposition into diphenyl nitrogen and nitrogen oxide. Nitrogen oxide aggregates with the polymer radicals that form as a result of the mechanical action, stabilizes the radicals and thus promotes the degradation. When NR is heated with NDPA in inert atmosphere the free NDPA radicals are not able to induce degradation. In solutions, however, diphenyl nitrogen and nitrogen oxide have a degrading effect

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

Study of the scorching of ... S/190/63/005/002/001/024
B101/B102

analogous to methyl-phenyl triazene decomposing into free radicals. The different effects of NDPA in solution and in bulk are explained by the "cellular effect". Since rubber is always processed in air the action of NDPA is negligible and cannot be compared with that of the atmospheric oxygen. The degradation effect of NDPA is not responsible for its efficiency as a vulcanization inhibitor. There are 6 figures and 2 tables.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov)

SUBMITTED: July 21, 1961

Card 3/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

B/007/62/000/002/004/012
D204/D307

AUTHORS: Dogadkin, B., Mladenov, I. and Tutorskiy, I.

TITLE: On the changes in carboxyl-containing butadiene-styrene rubbers and their mixtures with ε-caprolactam under the action of γ-rays

PERIODICAL: Referativnyy byulleten' Bolgarskoy nauchnoy literatury, Khimiya i khimicheskaya tekhnologiya, no. 2, 1962, 6, abstract 102, God. Khim.-tekhnol. inst. 6, 1960, book 1 and 2, 1961 (Dep. 1962), pp 51-63 (Rus. and Eng. summaries)

TEXT: Carboxyl-containing butadiene-styrene rubbers were γ-irradiated from a Co^{60} source with doses of 0.1 - 50 megaröntgens. Losses of carboxylic groups were determined, particularly at low doses. This process occurs as a result of a complex structurization mechanism which is also accompanied by some destruction. A linear relation exists between the amount of carboxylic groups lost and the radiochemical yield. During the irradiation of a mixture of carboxy-

Card 1/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

B/007/62/000/002/004/012
D204/D307

On the changes ...

late rubber with ε-caprolactam, addition of the ε-caprolactam to the rubber is observed (along the bonded nitrogen). The plot of the amount of caprolactam added on at various doses of radiation exhibits a maximum. This is ascribed to destruction of bonded ε-caprolactam, with evolution of nitrogen.
[Abstracter's note: Complete translation]

Card 2/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

OREKHOV, S.V., DOGADKIN, B.A., ZAKHAROV, N.D.

Covulcanization of various polymers in the production of rubber and the non-uniformity of vulcanizates based on different rubber combinations.

Report submitted for the 4th Scientific research conference on the chemistry and technology of synthetic and natural rubber, Yaroslavl, 1962

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

BERLIN, R.L.; DOGADKIN, B.A.; ZACHESOVA, G.N.; KOROTKOVA, A.A.; LINICHENKO, A.I.; SHOKHIN, I.A.

Manufacture of spongy goods from latex using water dispersions of rubber. Kauch. i rez. 21 no.8:14-16 Ag '62. (MIRA 16:5)

1. Nauchno-issledovatel'skiy institut rezinovykh i lateksnykh izdeliy i Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.
(Rubber goods)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

KOZLOV, P.V., otv. red.; ANDRIANOV, K.A., red.; DOGADKIN, B.A., red.; DOLGOPLOSK, V.A., red.; YENIKOLOPYAN, N.S., red.; KARGIN, V.A., red.; KOLESNIKOV, G.S., red.; KOROTKOV, A.A., red.; KORSHAK, V.V., red.; LAZURKIN, Yu.S., red.; MEDVEDEV, S.S., red.; MIKHAYLOV, N.V., red.; PASYNSKIY, A.G., red.; SLONIMSKIY, G.L., red.; SMIRNOV, V.S., red.; TSVETKOV, V.N., red.; FREYMAN-KRUPENSKIY, D.A., tekhn. red.

[Adhesion of polymers] Adgeziia polimerov; sbornik statei. Moskva, Izd-vo AN SSSR, 1963. 142 p. (MIRA 16:10)
(Polymers) (Adhesion)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

KOLESNIKOV, G.S., otv. red.; ANDRIANOV, K.A., red.; DOGADKIN, B.A., red.; DOLGOPLOSK, B.A., red.; YENIKOLOPYAN, N.S., red.; KARGIN, V.A., red.; KOZLOV, P.V., red.; KOROTKOV, A.A., red ; KORSHAK, V.V., red.; LAZURKIN, Yu.S., red.; MEDVEDEV, S.S., red.; MIKHAYLOV, N.V., red.; PASYNSKIY, A.G., red.; SLONIMSKIY, G.L., red.; SMIRNOV, V.S., red.; TSVETKOV, V.N., red.; FREYMAN-KRUPENSKIY, D.A., tekhn. red.

[Heterochain high-molecular weight compounds] Geterotsepnye vysokomolekuliarnye soedineniia; sbornik statei. Moskva, Izd-vo "Nauka," 1963. 246 p. (MIRA 17:3)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

KOLESNIKOV, G.S., otv. red.; ANDRIANOV, K.A., red.; DOGADKIN, B.A., red.; DOLGOPLOSK, B.A., red.; YENIKOLOPYAN, N.S., red.; KARGIN, V.A., red.; KOZLOV, P.V., red.; KOROTKOV, A.A., red.; KORSHAK, V.V., red.; LAZURKIN, Yu.S., red.; MEDVEDEV, S.S., red.; MIKHAYLOV, N.V., red.; PASYNSKIY, A.G., red.; SLONIMSKIY, G.L., red.; SMIRNOV, V.S., red.; TSVETKOV, V.N., red.; FREYMAN-KRUPENSKIY, K.A., tekhn. red.

[Carbochain high-molecular weight compounds] Karbotsepnye vysokomolekuliarnye soedineniia; sbornik statei. Moskva, Izd-vo AN SSSR, 1963. 287 p. (MIRA 17:1)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

DOGADKIN, B.A.; DONTSOV, A.A.

Reaction of polyethylene with sulfur in the presence of mercaptobenzothiazole and tetramethylthiuram disulfide. Vysokom.soed. 5 no.1:39-43 Ja '63. (MIRA 16:1)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.V. Lomonosova.
(Polyethylene) (Sulfur) (Benzothiazole) (Thiuram disulfide)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

BELYATSKAYA, O.N.; DOGADKIN, B.A.; DOBROMYSLOVA, A.V.; TOMILINA, L.A.

Prevulcanization (scorching) of rubber compounds. Part 3: Effect of vulcanization inhibitors on structural changes in rubbers during mastication and heating. Vysokom.soed. 5 no.2:164-170 F '63. (MIRA 16:2)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni Lomonosova.
(Vulcanization) (Rubber--Analysis)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

S/190/63/005/004/018/020
B101/B220

AUTHORS: Tutorskiy, I. A., Markov, V. V., Fomina, L. P., Belyanin, V. B., Dogadkin, B. A.

TITLE: Cyclization of diene polymers. I. Investigation of the cyclization of natural rubber dissolved in phenol

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 5, no. 4, 1963, 593-597

TEXT: Mixtures of 100 parts by weight non-plasticized natural rubber, 165 phenol and 7.50 P_2O_5 were heated at 180°C and the changes of intrinsic viscosity and degree of unsaturation owing to cyclization of the rubber were studied along with the UV and IR spectra. Results: (1) The intrinsic viscosity decreases rapidly within the first 5 hr, but afterwards only slowly. (2) The rate at which rubber dissolves in phenol is much higher in the presence of P_2O_5 than in pure phenol. (3) The yield of acetic acid in the oxidation of rubber with chromic acid depends on the time of cyclization. It decreases very rapidly within the first 4 hr, but then remains constant. (4) The degree of unsaturation is after cyclization only about 25 % of the degree of unsaturation of the initial

Card 1/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

Cyclization of diene ... S/190/63/005/004/018/020
B101/B220

rubber. (5) The 275 - 280 mμ band with 278 mμ maximum in the UV spectrum as well as the 690 and 740 cm^{-1} bands and the bands in the 1500 - 1600 cm^{-1} region in the IR spectrum prove that the cyclorubber contains bound phenol. There are 6 figures.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov)

SUBMITTED: October 24, 1961

Card 2/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

TARASOVA, Z.N.; EYTINGON, I.I.; SENATORSKAYA, L.G.; FEDOROVA, T.V.; SHISARENKO, A.M.; ANDRONOVA, G.I.; DOGADKIN, B.A.

Effect of thio derivatives of amines and phenols on the course of thermomechanical treatment and on fatigue of vulcanizates. Vysokom. soed. 5 no.6:892-899 Je '63. (MIRA 16:9)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.
(Vulcanization) (Amines) (Phenols)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 14946-63 EPR/EWP(j)/EPF(c)/EWT(m)/BDS AFFTC/ASD Pc-4/Pc-4/Pr-4 RM/WW

ACCESSION NR: AP3003795 S/0190/63/005/007/1059/1061

73

AUTHORS: Al'tzitser, V. S.; Shershnev, V. A.; Tutorskiy, I. A.; Dogadkin, B. A. [redacted] 71

TITLE: Chemical modification of vulcanizates. 2. Reaction of comminuted vulcanizates with p-tert.butylphenylformaldehyde resin

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 5, no. 7, 1963, 1059-1061

TOPIC TAGS: vulcanizate, revulcanization, butylphenylformaldehyde resin

ABSTRACT: Revulcanization of natural vulcanized rubber by means of p-tert.butylphenolformaldehyde resin (BPF) was conducted on samples of natural vulcanized rubber without previous regeneration of the latter. The comminuted vulcanized rubber was mixed with BPF, followed by heating within a 140-180C range for 20-120 min. periods in the presence of zinc chloride or stannous chlorides as activators. The amount of bound resin was estimated by the difference between the added and the acetone-extractable resin. It was found that at an early stage nearly 90% of the resin became bound to the vulcanizate. The effect of vulcanization was checked by means of the swelling test in xylene. It was found that at 160C the addition of from 10 to 60% of BPF reduces within 30 minutes the percentage of swelling of the vulcanizate from 370 to 221, with further reduction to 201 within 120 min. The

Card 1/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 14946-63
ACCESSION NR: AP3003795

2

authors claim that a superior vulcanized polymer is obtained which possesses a higher temperature of plastic flow as well as greater strength, which is attributed to a chemical process where the hydrocarbon end of BPF becomes linked to the original vulcanized rubber material. Orig. art. has: 1 chart and 1 table.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova, vsesoyuzny*y nauchno-issledovatel'skiy institut plenochny*kh materialov i iskusstvennoy kozhi (Moscow Institute of Fine Chemical Technology, All-Union Scientific Research Institute of Layered Materials and Synthetic Leather)

SUBMITTED: 03Jan61 DATE ACQ: 08Aug63 ENCL: 00

SUB CODE: CH NO REF SOV: 001 OTHER: 001

Card 2/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

DOGADKIN, B.A.; POYARKOVA, A.D.

Rubber to metal bonding with the aid of rubber oxidation products. Kauch.i rez. 22 no.2:32-36 F '63. (MIRA 16:2)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.
(Rubber to metal bonding)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 12684-63 EPR/EPF(c)/EWP(j)/EWT(m)/BDS AFFTC/ASD Ps-4/Pc-4/Pr-4 RM/WW

ACCESSION NR: AP3001594 S/0138/63/000/005/0020/0023

73
71
15

AUTHOR: Shershnev, V. A.; Ginsburg, L. V.; Dogadkin, B. A.

TITLE: Kinetics of vulcanized rubber structuration by phenol-formaldehyde derivates

SOURCE: Kauchuk i rezina, no. 5, 1963, 20-23

TOPIC TAGS: kinetics of structuration, vulcanized rubber, phenol-formaldehyde derivate, methylol group

ABSTRACT: The study was conducted on natural rubber as well as on synthetic rubbers SKS-30-AM and SKS-30-1, which were heated with rolling at 160 and 180C with 2,6-dimethylol-4-butylphenol and the resin 101, a p-butylphenol-formaldehyde oligomer. Two types of mixtures were used, each containing 12% of resin 101, while only one of them contained 3% of stannous chloride. The resulting products were characterized by low break test values, especially in the absence of stannous chloride. In another series of experiments, 12, 3, and 1 parts of 2,6-dimethylol-4-butylphenol and 3% stannous chloride were added to natural rubber under similar conditions. These produced vulcanized rubbers of a higher break test, as compared with resin 101, which was not adversely affected by

Card 1/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 12684-63
ACCESSION NR: AP3001594

2

aging. The authors conclude that the effectiveness of a vulcanizing agent may be related to the number of methylol groups contained therein, which are responsible for the formation of cross links. Orig. art. has: 3 charts and 2 tables.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonsova (Moscow Institute of Advanced Chemical Technology)

SUBMITTED: 00 DATE ACQ: 08Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 004 OTHER: 006

Card 2/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

SOURCE: Kolloidnyy zhurnal, v. 25, no. 3, 1963, [illegible]

all the factors which increase the number of such collisions or their [illegible]

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 25739-65
ACCESSION NR: AP3001567

accelerator (sodium diethyldithiocarbamate) has practically

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

AUTHOR:

TITLE:

measuring

SOURCE:

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 26051-65

ACCESSION NR: AP3001568

position. A change in the composition of the rubber does not change this sequence. A relationship was found between the stress relaxation [illegible]

[illegible]

NO REF SOV: [illegible] OTHER: 001

Card 2/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 26051-65

ACCESSION NR AP3[illegible]

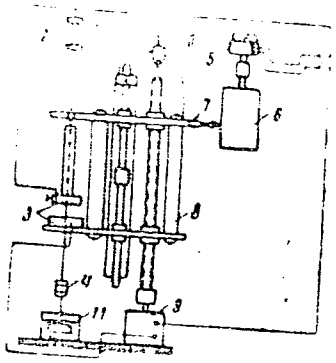


Fig. 1

[illegible] rding dynamic creep

[illegible] per and lower [illegible]

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

ABSTRACT: The purpose of this work was to investigate the nature of the electro-elastic phenomenon and the effect of different factors on it. The investigation of the development of electric charge during deformation of rubber was conducted under static compression as well as under static expansion [illegible]

Card 1/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 25738-65
ACCESSION NR: AP3001569

Card

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 34283-63 EPR/EWP(j)/EPF(c)/EWP(q)/EWT(m)/BDS AFFTC/ASD Ps-4/Pr-4/
Pc-4 RM/WW/JD
ACCESSION NR: AP3004083 S/0069/63/025/004/0412/0417

AUTHOR: Dogadkin, B. A.; Gul', V. Ye.; Lushcheykin, G. A.

TITLE: Study of electric charges produced during the multiple deformation of vulcanizates and their effect on fatigue strength

SOURCE: Kolloidny*y zhurnal, v. 25, no. 4, 1963, 412-417

TOPIC TAGS: vulcanizate, vulcanizate multiple deformation, compression electric-charge formation, electric-charge measurement, lithium butadiene rubber, nitrile rubber, unloaded vulcanizate, loaded vulcanizate, carbon-black conductive structure, inner orientation, polarization, outer-surface charge buildup, vulcanizate fatigue strength, Reznikovskiy machine, fatigue strength, compression electric charge

ABSTRACT: The effect of temperature, polymer type, and filler on the magnitude of electric charges produced during multiple deformation in the compression of vulcanizates has been studied by means of the two apparatus whose diagrams are shown in Fig. 1 of the Enclosure. In apparatus I, [maximum] deformation is constant (condition 1), and the charge is determined by measurement of peak voltage

Card 1/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 14283-63

ACCESSION NR: AP3004083

6

at the lower electrode. In apparatus II deformation is conducted under constant load (condition 2), and the charge generated during one cycle is first amplified and then computed. The experiments were conducted with lithium butadiene (SKBM) or nitrile (SKN-18, SKN-26, SKN-40) rubbers having an identical degree of cross-linking. The effects of polymer type and temperature are presented in the form of plots, shown in Figs. 2 and 3. The charges are maximum under condition 1 at temperatures somewhat below and under condition 2, somewhat above the glass transition temperatures. In channel black-loaded vulcanizates the charges are minimum for black contents corresponding to maximum development of a continuous carbon black conductive structure. Discussion of the results indicates that charges are produced both owing to inner orientation polarization and to outer-surface charge buildup. The effect of electric charges on the fatigue strength of carbon black-loaded butadiene-styrene (SKS-30A), natural, 1,4-cis-polyisoprene (SKI), and carboxylated (SKS-30-1) rubber vulcanizates was studied with incised specimens, which were subjected to bending-torsion tests on the Reznikovskiy machine. Fatigue strength was lowered by charges produced during the deformation of the vulcanizates. This phenomenon is considered to be the result of the generation of voltages which can activate both oxidation and degradation and of the rearrangement of vulcanization linkages. The fatigue strength of carbon black vulcanizates

Card 2/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 14283-63
ACCESSION NR: AP3004083

during multiple deformation can be increased by grounding the electric charges. Orig. art. has: 5 figures and 2 tables.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii (Moscow Institute of Fine Chemical Technology)

SUBMITTED: 16Feb63 DATE ACQ: 15Aug63 ENCL: 03

SUB CODE: CH, MA NO REF SOV: 004 OTHER: 003

Card 3/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

DOGADKIN, B.A.; ZACHESOVA, G.N.; ABRAMOVA, Ye.N.; BROKHIN, Yu.N.

Aqueous dispersions of polyethylene. Koll. zhur. 25 no.4: 427-430 Jl-Ag '63. (MIRA 17:2)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

DOGADKIN, B.A.; GUL', V.Ye.; ANFIMOV, B.N.; LUSHCHEYKIN, G.A.

Dielectric properties of unfilled vulcanizates of various structure. Koll.zhur. 25 no.5:515-519 S-O '63. (MIRA 16:10)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.V.Lomonosova.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

SHERSHNEV, V.A.; GINZBURG, L.V.; DOGADKIN, B.A.

Behavior in the stretching of natural rubber vulcanizates with p-tert-butyldimethylolphenol. Koll.zhur. 25 no.5:626-627 S-O '63. (MIRA 16:10)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.V.Lomonosova.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

TARASOVA, Z.N.; DOGADKIN, B.A.

Thermal stress relaxation in vulcanizates of various cross-linkage. Koll.zhur. 25 no.6:695-702 N-D '63. (MIRA 17:1)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti, Moskva.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

KUANYSHEV, K.G.; GUL', V.Ye.; DOGADKIN, B.A.

Apparatus for determining creep during cyclic stresses. Zav. lab. 29 no.9:1138-1139 '63. (MIRA 17:1)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni Lomonosova.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

GUL', V.Ye.; LUSHCHEYKIN, G.A.; DOGADKIN, B.A.

Electric charges due to the deformation of polymers. Dokl. AN SSSR 149 no.2:302-304 Mr '63. (MIRA 16:3)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.V.Lomonosova. Predstavleno akademikom V.A.Karginym.
(Polymers) (Polarization (Electricity)) (Deformations (Mechanics))

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

GINZBURG, L.V.; SHERSHNEV, V.A.; DOGADKIN, B.A.

Interaction of 2,6-dimethylol-4-tert-butylphenol with unsaturated elastomers. Dokl. AN SSSR 152 no.2:335-337 S '63. (MIRA 16:11)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.V. Lomonosova. Predstavleno akademikom A.A. Balandinym.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

TUTORSKIY, I.A.; SLONIM, I.Ya.; URMAN, Ya.G.; KUDRYAVTSEVA, Ye.P.; DOGADKIN, B.A.

Study of the cyclization of rubber by the method of nuclear magnetic resonance. Dokl. AN SSSR 152 no.3:674-676 S '63. (MIRA 16:12)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.V.Lomonosova. Predstavleno akademikom A.A.Balandinym.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

TARASOVA, Z. N.; DOGADKIN, B. A.; LYKIN, A. S.; KAPLUNOV, M. Ya.; KHOZAK, V. K.; KOZLOV, V. T.; SOBOLEV, V. S.; KLAUZEN, N. A.

"Struktura i svoystva vulkanizatov, poluchennykh kombinirovannym deystviem sery i ioniziruyushchikh izlucheniy."

report submitted for 35th Intl Cong, Industrial Chemistry, Warsaw, 15-19 Sep 64.

Nauchno-issledovatel'skiy institut shinnoy promyshlennosti, Moscow.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

ACC NR: AM6036775 (A) SOURCE CODE: UR/0081/66/000/009/S094/S095

AUTHOR: Tarasova, Z. N.; Sanatorskaya, L. G.; Fedoreva, T. V.; Eytingon, I. I.; Kavun, S. M.; Degadkin, B. A.

TITLE: Effect of the structure of vulcanizing network and rubber compositions on the effectiveness of antifatigue agents

SOURCE: Ref. zh. Khimiya, Part II, Abs. 8S673

REF SOURCE: Sb. Sintez i issled. effektiva. stabilizatorov dlya polimern. materialov. Voronezh, 1964, 138-144

TOPIC TAGS: chemical stabilizer, thermomechanical property, synthetic rubber

ABSTRACT: p-Phenylenediamines, thiazines, biphenols, thiophenols, phosphites and thiophosphites were studied as inhibitors (IN) of thermomechanical and thermal-oxidative degradation. The purity of the polymer has a strong influence on the stabilizing action of IN. Additional introduction of IN into cured rubbers from raw rubbers treated with stabilizers causes a marked increase in stability only when they form a mutually reinforcing system with the stabilizers of the raw rubber. The composition and nature of the vulcanizing network substantially affect the stability of the cured rubbers and the manifestation of the action of IN. According to chemical relaxation data, the relative effectiveness of the action of IN increases with rising content of the accelerators in the mixtures. Increasing the stability of sulfur-free cured rub-

Card 1/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 45710-66

ACC NR: AR6026775

bers by using IN is difficult, and can be accomplished only by using certain categories of stabilizers. The introduction of carbon blacks into polyisoprene mixtures causes the thermomechanical and thermal-oxidative stability to decrease, and in the case of polybutadiene mixtures does not decrease the stability of the vulcanizates. M. Otopkova. [Translation of abstract]

SUB CODE: 11

Card 2/2 ULR

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 19612-65 EWG(j)/EWT(m)/EPF(c)/EPF(n)-2/EWP(j)/EWA(h)/EWA(1) Pc-4/Pr-4/
Pu-4/Peb GG/RM/MLK
ACCESSION NR: AT4019862 Section 64 [illegible]

AUTHOR: Dogadkin, B.A. Shershnev, V.A. Boyarchuk, Y. M. [illegible]

[illegible]

SOURCE: Khimicheskiye svoystva i modifikatsiya polimerov (Chem[illegible] the modification of polymers), sbornik statey. Moscow [illegible]

TOPIC TAGS: metal oxide, rubber vulcanization, tetramethylthiuram [illegible] radical reaction, radiation yield, transverse bond

ABSTRACT: An attempt was made to track the course of free-radi[illegible] irradiation of natural rubber and to clarify the role in these processes [illegible] tetramethylthiuram disulfide (TMTD) and metal oxides. [illegible]
[illegible]
number of transverse bonds to 3.2 and 3.7 in the presence [illegible] 3.2 and 3.7 respectively. In the presence of TMTD, MgO and NiO [illegible]

Card 1/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 19612-65
ACCESSION NR: AT4049862

effect on the radiation yield, while MgO, in addition, does not affect formation of transverse bonds. The largest number of transverse bonds forms [illegible] in comparison with [illegible] work.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii [illegible] Moscow Institute of Fine Chemical Technology [illegible] Physics, AN SSSR

SUBMITTED: 18Feb63 ENCL: 00 SUB CODE: [illegible]

NO REF SOV: 007 OTHER: 002

Card 2/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

ACCESSION NR: AP4026364 S/0138/64/000/003/0012/0015

AUTHORS: Zakharov, N. D.; Orekhov, S. V.; Dogadkin, B. A.; Tyuremnova, Z. D.; Bogdanovich, N. A.; Glavina, V. S.

TITLE: Effect of covulcanization on the properties of mixes of nairit with other rubbers

SOURCE: Kauchuk i rezina, no. 3, 1964, 12-15

TOPIC TAGS: rubber, nairit, SKS 30, SKN 18, SKN 26, vulcanization, covulcanization, rubber compatibility, optical density, butadiene nitrile rubber, butadiene styrene rubber, additive property, vulcanization rate synchronization

ABSTRACT: The covulcanization of nairit with butadiene-styrene (SKS-30) and butadiene-nitrile rubbers (SKN-18 and SKN-26) was studied. As a preliminary step, the compatibility of these rubbers was investigated by three methods. The first method consisted of mixing 2.5% and 5.0% chloroform solutions of the rubbers, allowing them to stand up to 6 months, then recording their tendency to separate out. Secondly, measurements were made of the optical density of various mixtures of chloroform solutions of the rubbers. The third method determined the tensile strength of nonvulcanized plasticized rubber mixtures containing 50% lampblack.

Card 1/ 3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

ACCESSION NR: AP4026364

The system nairit + SKN-18 proved to be the most compatible by all three methods. It was found that an optimum vulcanization system for a mixture of two rubbers cannot be prepared by just putting together the ingredients which show the best performance in each, since they do not necessarily cross-link and bind the structure of one rubber to that of the other. Thus, it was found that in the case of nairit + SKN-18 the use of metal oxides and sulfur was rather harmful, yielding poor quality vulcanizates, while the incorporation of thiuram and metal oxides without sulfur was beneficial. This was in accord with the finding that in the absence of sulfur, the optimum vulcanization time was the same for a compound on a nairit base and for one on an SKN-18 base. The importance of synchronization of the rate of vulcanization of each rubber component in order to obtain vulcanizates with optimum properties is stressed. Orig. art. has: 4 figures and 1 table.

ASSOCIATION: Yaroslavskiy tekhnologicheskiy institut (Yaroslav Technological Institute); Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute of Fine Chemical Technology); Yaroslavskiy zavod rezinovy*kh tekhnicheskikh izdeliy

Card 2/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

ACCESSION NR: AP4026364

(Yaroslav Plant of Rubber Technical Products)

SUBMITTED: 00 DATE ACQ: 17Apr64 ENCL: 00

SUB CODE: GC, MT NO REF SOV: 009 OTHER: 001

Card 3/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

DOGADKIN, B. A.

3

L 17560-65 EWG(j)/EWT(m)/EPF(c)/EPF(n)-2/EPR/EWP(j)/T/EWA(h)/EWA(1) Pc-4/Pr-4/Ps-4/Peb/Pu-4 GG/RM

ACCESSION NR: AP4049784 S/0138/64/000/011/0028/0033

AUTHOR: Kaplunov, M. Ya.; Khozak, V. K.; Kozlov, V. T.; Sobolev, V. S.; Tarasova, Z. N.; Borisov, V. A.; Karpov, V. L.; Dogadkin, B. A.

TITLE: Thermoradiation vulcanization of tires

SOURCE: Kauchuk i rezina, no. 11, 1964, 28-33

TOPIC TAGS: thermoradiation vulcanization, rubber structure, sulfur vulcanization, tire wear, thermal aging

ABSTRACT: The effectiveness of the method of thermoradiation vulcanization was investigated from the point of view of increasing the quality of the tires. The radiation unit consisted of 18 spent, heat-liberating elements from an atomic reactor. The total activity amounted to 76,000 gram-equivalents of radium. Not more than six 5.60-15 tires could be treated at one time in a cylindrical vat with a hermetically closed cover. The tires had a reduced content of vulcanizing agent; one contained a sensitizer of radiation structuring-hexachlorethane. Irradiation was in an argon medium at 0.35 atm pressure. The temperature did not exceed 40C. Radiation doses amounted to 5, 9, 13, and 20 Mrad. The resulting vulcanizate had the optimum relationship of crosslinks of the type -C-C- and

Card 1/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 17560-65

ACCESSION NR: AP4049784

-C-S_x-C. The destructive processes as well as processes of oxidation and trans-isomerization were less than during sulfur and radiation vulcanization. The relative content of rubber in the "active" portion of the vulcanization network was high. The rubbers had much higher elasticity and strength, as well as increased resistance to thermal aging and wear. Accelerated road tests showed 15-20% greater wear resistance than standard tires. "The relationship between structurization and destruction was determined by A. S. Ly*kin. N. D. Stepanov, V. Ye. Losnichiy and L. M. Dunayev (member of NIFKhI) took part in setting up the apparatus. The design of the apparatus was developed under the guidance of G. N. Lisov (member of NIFKhI). Measurements of radioactivity and dosimetry were carried out by A. G. Vasil'yev and V. Ye. Drozdova (member of NIFKhI). The TsZL MShZ took part in manufacturing the tires." Orig. art. has: 5 figures and 4 tables.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promy*shlennosti (Scientific Research Institute for the Tire Industry); Nauchno-issledovatel'skiy fiziko-khimicheskiy institut im. L. Ya. Karpova (Scientific Research Institute for Physics and Chemistry)

SUBMITTED: 00 ENCL: 00 SUB CODE: MT

NO REF SOV: 005 OTHER: 001

Card 2/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 10793-65
ACCESSION NR: AP4032565

by the radicals formed during vulcanization from the accelerators. In the present

reversed, however, when 3.6% of elemental sulfur was added. The authors theorize that the S radicals may have a prime affinity for vinyl side chain [illegible] the maximal reactivity of natural rubber towards elemental sulfur may be due to its [illegible] attach itself [illegible]

[illegible] Research Institute of the Tire Industry

SUBMITTED: 15Apr63 ENCL: 00
SUB CODE: MT NO REF SOV: 006 OTHER: 000
Card 2/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 10762-65 EWT(m)/EPF(c [illegible]/T Pc-4/Pr-[illegible]

ACCESSION [illegible]

[illegible] A. A.

[illegible] benzoic acid and dicumyl peroxide [illegible]

[illegible] soyedineniya, v. 6, no. [illegible]

TOPIC TAGS: polyethylene, sulfur, iodine, benzoic acid, dicum[illegible] crosslinking, hydrogen sulfide, polymer structuration

ABSTRACT: The kinetics of the addition of sulfur, evolution of hydrogen [illegible] and formation of an insoluble fraction (gel) during the intera[illegible] lene with sulfur in the presence of benzoic acid, iodine [illegible] investigated at 230C. The rate of the reaction is not affected [illegible] but is increased by the addition of iodine or dicumyl [illegible] sulfur is a first-order reaction, but the ve[illegible] to 0.012[illegible] [illegible] The ratio between the amount of hydrogen sulfide evolved and the amount [illegible] sulfur at the end of the reaction is close to 2, but the maximum amount of gel, as in mixtures without iodine, is obtained at 0.6÷0.7% bound sulfur. On the basis of the experimental data, it is concluded that in solutions

Card 1/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 10762-65

ACCESSION NR: AP4047195

of sulfur in polyethylene, as well as in a sulfur melt, the cyclic sulfur [illegible] cules dissociate into radicals and the sulfur reacts with polyeth[illegible] to the radical mechanism. The addition of sulfur results [illegible] tion, but also in the destruction of the structure [illegible] These processes [illegible] ed by the reaction of the elemental [illegible] a tertiary carbon atom. Orig. [illegible]

ASSOCIAT[illegible]

[illegible] Technology]

SUBMITTED: 19Nov63 ENCL: 00

NO REF SOV: 004 SUB [illegible]

OTHER: 004

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 26103-65 EPF(c)/EWP(j)/EWT(m) Pc-4/Pr-4 [illegible]
ACCESSION NR: AP4047196 S/0190/64/[illegible]

AUTHOR: [illegible], A. A., Shevchenko, Ye. A., [illegible]

[illegible]

[illegible]ysokomolekulyarnyye sovedineniya, [illegible]

[illegible] ation [illegible]

[illegible] turation

[illegible]

[illegible]

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 26103-65
ACCESSION NR: AP4047196

a maxim[illegible], the ascending curve being a first [illegible] constants [illegible] S and formation of mer[illegible] DRT[illegible]

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 26106-65 EWT(m)/EPF(c)/EWP(j) Pc-4/Pr-4

ACCESSION

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 26106-65

ACCESSION NR: AP4047214

to com[illegible] the extent of the reaction on [illegible]
marked in the case of natural rubber and [illegible]
polymeric [illegible]

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 64547-65 EWT(m)/EPF(c)/EWP(j)/T RM

ACCESSION NR: AP5023221

UR/0190/64/00

AUTHOR: Dontsov, A. A.; Shevchenko, Ye. A.; Novitskaya, S.

TITLE:

... Sovedineniya, v. 6, no. 11, 1964.

TOPIC TAGS: polyethylene plastic, sulfur, chemical reaction, polymer, organic sulfur compound

ABSTRACT: The article is the fifth communication from the series ... of Polyethylene with Sulfur." The kinetics of the reaction ... with sulfur in the presence of Altax dibenz ... was invest...

approximately ... but smaller ...

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 64547-65

ACCESSION NR: AP5023221

the consumption of Altax (20.8 kcal/mole). Gel formation [illegible] after the Altax consumption, it is accompanied [illegible] benzothiazole [illegible]

[illegible] authors conclude that [illegible]

[illegible] Khimicheskoy tekhnologii [illegible] of Fine Chemical Technology)

SUBMITTED: [illegible]

[illegible]

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 64548-65 EWT(m)/EPF(c)/EWP(j)/T

ACCESSION

AUTHOR

[illegible] Lyarnyye soyedineniya, v. 5, no. 11, [illegible]

TOPIC TAGS: polyethylene plastic, sulfur, chemical reaction, polymer, sulfur compound, zinc oxide

ABSTRACT: [illegible] represents the sixth communication [illegible] Interaction of Polyethylene with Sulfur." The kinetic [illegible] polyethylene with sulfur was investigated [illegible] with [illegible] stearic [illegible]

[illegible] polyethylene [illegible]

Card 1/[illegible]

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 64548-65

ACCESSION NR: AP5023222

and zinc oxide at 220°, the reaction proceeds differently [illegible] ratio of zinc oxide to mercaptobenzothiazole [illegible] does not exceed [illegible]

[illegible]

[illegible] tonkoy Khimicheskoy Tekhnologii [illegible] of Fine Chemical Technology)

SUBMITTED: [illegible]

NR REF SOV: [illegible] ENCL: 00

[illegible]

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 21211-65 EWT(m)/EPF(c)/EWP(j) Pc-4 Pr-4

ACCESSION NR: AP5001480

AUTH:

[illegible] of polyisoprene with thiocompounds. [illegible] of the reaction of polyisoprene with thiocompounds

SOURCE: Vysokomolekulyarnyye soyedineniya, v. [illegible]

TOPIC TAGS: polyisoprene, natural rubber, gutta percha [illegible] thiobenzoic acid, isopentene, cumene hydroperoxide, az [illegible] bond

ABSTRACT: [illegible] isopentene, [illegible] acid was studied [illegible] of double bonds [illegible] hydroperoxide catalyzed condensation [illegible] and 2-methyl-2-butene with [illegible] gave 60% conversion based on [illegible] several days at 15-125C in benzene or [illegible] with rubber or gutta-percha in the presence of cumene hydr[illegible] butyryl dinitrile. The low reactivity of the [illegible] to the low electr[illegible] due to the delocalization of the double bonds [illegible]

Cord[illegible]

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 21211-65
ACCESSION NR: AP5001480

regularly arranged 1,5 linkages in the polymer molecules. Thiobenzoic acid re-
acted with gutta-percha and natural rubber at 75-125C in the presence of [illegible]
mol.% cumene hydroperoxide. The conversion based on thiobenz[illegible]
from the spectroscopic or chemical analysis of [illegible]
be significantly [illegible] than the results of conduct[illegible]
[illegible] is explained by the heterogeneous [illegible]
and the [illegible] molecular fractions [illegible]
[illegible] and, proceeds in the [illegible]
[illegible] double bonds. Similar reaction[illegible]
[illegible] have been observed in previous publications [illegible]
Orig. art. has [illegible] tables and 4 formulas.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. [illegible]
Lomonosova (Moscow Institute of Fine Chemical Technology)

SUBMITTED: 17Feb64 ENCL: 00

NO REF SOV: [illegible] OTHER: 007

Card 2/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

TARASZOVA, Z.N.[Tarasova, Z.N.];KOZLOV, V.G.; DOGADKIN, B.A.

Simultaneous vulcanization of caoutchouc by sulfur and ionizing radiation. Magy kem lap 19 no.7:354-359 Jl '64.

1. Scientific Research Institute of Rubber Industry, Moscow.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

KAPLUNOV, M.Ya.; KHOZAK, V.K.; KOZLOV, V.T.; SOBOLEV, V.S.; TARASOVA, Z.N.; BORISOV, V.A.; KARPOV, V.L.; DOGADKIN, B.A.

Thermoradiation vulcanization of tires. Kauch.i rez. 23 no.11:28-33 N '64. (MIRA 18:4)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti i filial Nauchno-issledovatel'skogo fiziko-khimicheskogo instituta im. L.Ya.Karpova.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

DOGADKIN, B.A.; FEL'DSHTEYN, M.S.; BELYAYEVA, E.N.

Cross-linkage of rubbers by the action of di-2-benzothiazolyl disulfide. Koll.zhur. 26 no.2:186-189 Mr-Ap '64. (MIRA 17:4)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti, Moskva.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

ACCESSION NR: AP4037176 S/0069/64/026/003/0308/0311

AUTHOR: Dogadkin, B. A.; Snezhko, A. G.; Gul', V. Ye.

TITLE: Aqueous dispersions of polypropylene

SOURCE: Kolloidny*y zhurnal, V. 26, no. 3, 1964, 308-311

TOPIC TAGS: polypropylene, polypropylene aqueous dispersion, polypropylene dispersion emulsifier, rosin, oleic acid, stearic acid, polypropylene dispersion saponifier, polypropylene dispersion time, polypropylene dispersion temperature, polypropylene dispersion stability

ABSTRACT: The influence of the main factors determining the dispersion process was studied for the purpose of broadening the range of aqueous dispersions and for obtaining films for food wraps. Powdered non-stabilized polypropylene was used as test material. Its preparation, i.e. dispersion on rollers, adding of emulsifier, alkaline hydrolysis and aqueous redispersion are described. This was evaluated according to size of particles (microphotography) and aggregate stability in a water solution (dilution threshold - maximum water dilution obtainable without coagulation). The main factors were: nature of the emulsifier, concentration and

Card 1/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

ACCESSION NR: AP4037176

method of introducing the alkaline solution. The time required for dispersion and the dispersion properties depended upon the speed of introduction and the concentration of the saponifying agent added to the mixture of polypropylene and emulsifier. Increased alkaline concentration (2% and 5% KOH tested) and its rapid introduction (15-50 minutes tested) resulted in a lower dispersability of the system, due to bigger particle size. Compared to oleic and stearic acid, rosin as emulsifier gave best results. Mycellar emulsifier formation, which depends upon temperature, gave the best stabilizing results. The selection of dispersion temperature depended upon the emulsifier (20C for oleic, 70C for stearic acid, 50-60C for rosin). Lower temperatures increased the particle diameter and decreased aggregate stability of the system. The best dispersion stability with ionogenic emulsifiers was obtained within narrow pH limits (11-11.5). Such dispersions had a low dilution threshold (to 4%); 20% dispersions with pH 11 easily coagulated upon slight dilution. Orig. art. has: 1 table and 4 figures.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy technologii im. M. V. Lomonosova (Moscow Institute of Fine Chemicals Technology); Moskovskiy tekhnologicheskiy institut myasnoy i molochnoy promy*shlennosti (Moscow Technological Institute of Meat and Milk Industry)

Card 2/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

ACCESSION NR: AP4037176

SUBMITTED: 05Oct63 ENCL: 00

SUB CODE: OC, GC NO REF SOV: 003 OTHER: 000

Card 3/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 14325-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 RM

ACCESSION

[illegible]

[illegible] v. [illegible]

[illegible] unfilled resin [illegible]

[illegible]

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 14325-65
ACCESSION NR: AP4043125

Mechanical properties of the filled [illegible]

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 14325-65

Card 3/4

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 14325-65

ACCESSION NR: AP4043125

ENCLOSURE

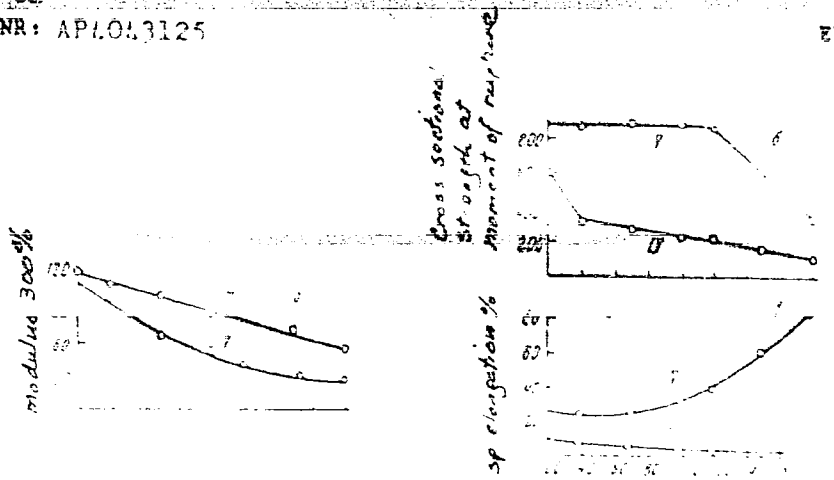


Fig. 1.
[illegible] of physical-mechanical properties of [illegible]

Card 4/4

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

ACCESSION NR: AP4043129 S/0069/64/026/004/0475/0480

AUTHORS: Kuleznev, V.N.; Krokhina, L.S.; Lyakin, Yu.I.; Dogadkin, B.A.

TITLE: Investigation of the structure of solutions of polymer mixtures by the light scattering method

SOURCE: Kolloidny*y zhurnal, v. 26, no. 4, 1964, 475-480

TOPIC TAGS: light scattering, polystyrene polyisobutylene toluene system, refractive index, polymer association, apparent molecular weight, polystyrene, polystyrene association, asymmetry of light scattering, second virial coefficient, true solution, emulsion, colloid

ABSTRACT: This study of light scattering (at R''_{45}, R''_{90}, and R''_{135}) in the polystyrene-polyisobutylene-toluene system in which the refractive indices of the polyisobutylene ($M = 1.2 \times 10^6$) and toluene are equal provided new proof of the increased degree of association of one polymer upon the addition of a second polymer. Optical densities of the solutions illuminated with monochromatic light of 5460 and 4360A were measured on the FEKN-56 photoelectric nephelometer. The association of polystyrene, i.e., the apparent molecular

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

ACCESSION NR: AP4043129

weight, and the asymmetry of the scattering increased and the second virial coefficient diminished on addition of the optically invisible polyisobutylene. Quantitative measurements of the degree of association are possible only on double extrapolation of the light scattering to zero angle and zero concentration. On changing in concentration a mixture of two polymers may pass from a true solution to a rapidly separating emulsion via a stable intermediate colloid state. For a 1:1 mixture of polystyrene and polyisobutylene the true solution exists up to a concentration of 0.7 gm. of the mixed polymers per 100 ml. toluene, and the emulsion separates when the concentration exceeds about 1.2 gm./100 ml. "The authors sincerely thank V.E. Eskin for participation in evaluating the results and I.M. Bel'govsk for permitting work on the photoelectric nephelometer." Orig. art. has: 5 figures and 1 table.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.V. Lomonosova (Moscow Institute of Fine Chemical Technology)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

ACCESSION NR: AP4043129

SUBMITTED: 26Oct63

SUB CODE: OP, OC

NR REF SOV: 005

ENCL: 00

OTHER: 004

Card 3/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 16378-65 EWT(m)/EPF(c)/EWP(j)/T re-a/lr-a [illegible]

ACCESSION NR: AP4045404 S/0069/64/026/005/0567/0573

AUTHOR: [illegible] G. V.; Dogadkin, B. A.; Prozorovskaya, N. V.; [illegible] A. P.

TITLE: Rheology of polymers. Study of viscous properties [illegible] rubber [illegible]

SOURCE: Kolloidny*y zhurnal, v. 26, no. 5, 1964, 567-573

TOPIC TAGS: rubber viscosity, viscosimeter, deformation, shear stress

ABSTRACT: The viscous properties of elastomers were determined by measuring the [illegible] (D) [illegible] [illegible] shear [illegible] pressure [illegible] [illegible] viscosimeter [illegible] [illegible] types [illegible] [illegible] of the body [illegible] enters the cylinder. The polymer is separated from the [illegible] or a piston with a teflon gasket (position 3 in fig. 1). A replaceable stainless

Card 1/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 16378-65
ACCESSION NR: AP4045404

steel calibrated capillary (5), mounted in the case (4) is placed into the bottom [illegible] (4) is tightened with a nut (6) [illegible] between the [illegible] rubber was obtained with [illegible] temperature range and at different [illegible] (magnitude). The measurements [illegible] of [illegible] rubber at elevated temperatures [illegible] structuring of these grades [illegible] This structuring is significantly [illegible] becomes intensive above 130C. It was found that the expansion [illegible] a first approximation a function of shear stress. Orig. art. has [illegible] figures and [illegible] tables.

ASSOCIATION: Institut neftekhimicheskogo sinteza im. A. V. Topchiyeva (Institute of Petrochemical Synthesis)

SUBMITTED: 28Dec63 ENCL: 01

SUB CODE: GC NO REF SOV: 003 OTHER: 004

Card 2/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 16378-65
ACCESSION NR: AP4045404

ENCLOSURE: 01

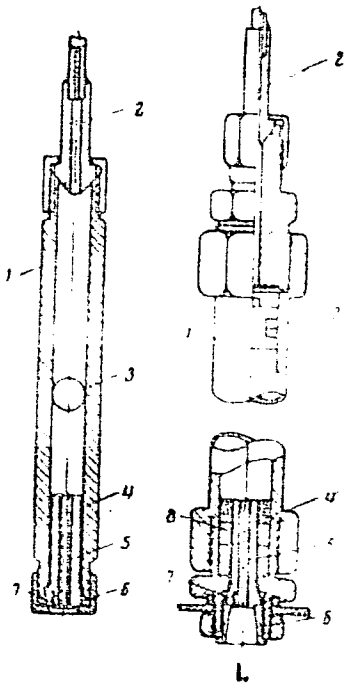


fig. 1
Viscosimeter reservoirs

Card 3/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

TUTORSKIY, I.A.; NOVIKOV, S.V.; DOGADKIN, B.A.

Reaction of polychloroprene with thiobenzoic acid. Dokl. AN SSSR 159 no.2:389-390 N. '64. (MIRA 17:12)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.V. Lomonosova. Predstavleno akademikom A.A. Balandinym.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

ACCESSION NR: AP5[illegible]

AUTHOR: Ginzburg, L.V.; Shvarts, A.G.; Shershnev, V.A.; Dogadkin, B.A.

TITLE: [illegible]

SOURCE: [illegible] 1965 [illegible]

TOPIC TAGS: vulcanization, carboxylated rubber, synthetic rubber [illegible]

[illegible]

styrene, copolymerized at 5C with rosin soap emulsifier obtained [illegible]

Card 1/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 25264-65
ACCESSION NR: AP5002920

were also tested. Alkylphenol-formaldehyde resin was shown to [illegible] curing agent [illegible] butadiene-styrene rubber [illegible] zinc [illegible] increased [illegible] [illegible] and [illegible]

ASSOCIATION [illegible]

SUBMITTED: [illegible]

NO REF SOV: 005 OTHER: 002

Card 2/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

[illegible]

[illegible]

[illegible] ...skiy, I. A., Dogadkin, B. A.

[illegible] ...ber, vulcanized [illegible]

SOURCE [illegible] no. [illegible], 1965, 9-11

TOPIC TAGS: [illegible] polymerization, rubber, vulcanized rubber, polyethylene [illegible] styrene [illegible]

ABSTRACT: [illegible] the type of polymer on the kinetics of the [illegible] of styrene in the presence of polymers was investigated. The polymers [illegible] used were pure [illegible] synthetic rubbers, vulcanized rubbers which [illegible]

Card 1/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 48605-65
ACCESSION NR: AP[illegible]

were studied the elastomers retard the polymerization of styrene. [illegible] elastomers is more pronounced than with [illegible]

[illegible] tonk[illegible] khimicheskoy tekhnologii [illegible]

Card 2/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 34160-65 EPF(c) EPF(n)-2/EWP(j)/EWA(h)/[illegible]
RM

[illegible]

A[illegible] [illegible]gal[illegible], [illegible] A., [illegible]torskiy, [illegible] A., Mark[illegible], [illegible]
[illegible] [illegible]

TITLE: A method for the preparation of radiation-resistant [illegible] 19 Class [illegible], No. [illegible] 5

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 5, [illegible]

TOPIC TAGS: polymer coating, radiation damage, polymer solution, [illegible] rubber

ABSTRACT: This Author Certificate describes the use of a 40% [illegible] polyisoprene rubber in xylene and white spirit for producing [illegible] coatings.

ASSOCIATION: none

SUBMITTED: 30Oct61 ENCL: 00 [illegible]

NO REF SOV: 000 OTHER: 000 ATD PRESS: 3212

Card 1/1

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L [illegible] EWT [illegible] EEF(c)/EWP(j) JAJ/RM
A[illegible]

A[illegible] Tutorskiy, I. A.; Dogadkin, [illegible]

TITLE: The influence of carbon black, vulcanization catalysts, [illegible] the copolymerization of vulcanized rubber with styrene

SOURCE: Kauchuk i rezina, no. 6, 1965, 4-7

TOPIC TAGS: rubber, vulcanizate, vulcanized rubber, copolymerization, copolymerization rate, carbon black, styrene, polymerization catalyst

ABSTRACT: The paper is an extension of the work of A. I. Vasil'yev, I. A. Tutorskiy, and B. A. Dogadkin, (Kauchuk i rezina, No. 3, 9, 1965). [illegible] on the kinetics of copolymerization of pulverized rubber of type [illegible] with styrene [illegible] the presence of gas black, chimney soot [illegible] [illegible] accelerating action of all types [illegible]

Card 1/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 63003-65
ACCESSION NR: AP5016633

per isometric amount of material; i.e., for same specific surface area. [illegible] inhibit the [illegible] rate by a chain termination process [illegible] tables and [illegible] graphs.

ASSOCIATION: [illegible] institut tonkoy khimicheskoy tekhnologii [illegible] [illegible] plastmass [illegible]

SUBMITTED: [illegible] ENCL: 00 [illegible]

NO REF SOV: 001 OTHER: 005

Card 2/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 33508-65 EPF(c)/EWT(m)/EWP(j)/T Pc-4/Pr-4 RM

ACCESSION NR: AP5003828 S/0190/65/007/001/[illegible]

AUTHORS: Ginzburg, L. V.; Shershnev, V. A.; Pshenitsyna, V. P. [illegible]

TITLE: Reaction of unsaturated elastomers with phenolformaldehyde [illegible] under vulcanizing conditions

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 1, 1965, 55-67

TOPIC TAGS: butyl rubber, vulcanization, IR analysis, IKS-14 IR apparatus, [illegible] apparatus

[illegible]

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2

L 33508-65

ACCESSION NR: AP5003828

rubbers (dissolved in [illegible]). It was found that the degree of [illegible] be expressed as [illegible]

$$N_c = -2{,}0 \cdot 10^{12} \lg \frac{c}{0{,}3} \text{ см}^{-3}$$ (where c = ester group concentration [illegible]

for [illegible] parts [illegible]

Card 2/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000410720005-2"