"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

CA

Raman spectra and the polymerization of isobutylene

by F. Gross, K. V. Nel'son, and Ya. M. Slobodin (A. A. Zhdanov State Univ., Leningrad). *Doklady Akad. Nauk S.S.S.R.* **75**, 697-700 (1950). — The dimer fraction sepd. by fractionation from the polymerizate of $Me_2C:CH_2$ with H_2SO_4, showed the Raman frequencies 1100, 1404, 1644, 1668, and 3079 cm.$^{-1}$. Of these, the 1668 line corresponds to a C:C bond not at the end of the chain, i.e. indicates the presence of the isomeric form $Me_2CCH:CMe_2$. The remaining lines belong to the end grouping $C:CH_2$, i.e. indicate the isomer $Me_2CCH_2C:Me:CH_2$. The trimer, prepd. by polymerization with floridin, showed the double-bond frequencies δ_1 = 1105, δ_2 = 1406, ν_3 = 1636, ν_4 = 1652, ν_5 = 1671, and ν_6 = 3087 cm.$^{-1}$. Of these, ν_5 corresponds to a double bond located in the middle of the mol.; the remaining lines belong to an end group $C:CH_2$. Consequently, the trimer is a mixt. of isomeric forms. The tetramer, also isolated from the floridin polymerizate, showed the lines δ_1 = 1110, δ_2 = 1408, ν_3 = 1637, ν_4 = 1650, and ν_5 = 3078 cm.$^{-1}$, corresponding to the end group $C:CH_2$, the frequency corresponding to a double bond in the middle of the mol. is absent. The same applies to the pentamer, which shows only the double-bond lines δ_1 = 1105, δ_2 = 1410, ν_3 = 1640, ν_4 = 1649, ν_5 = 3070, and ν_6 = 3085 cm.$^{-1}$, but no line at about 1670 cm.$^{-1}$. Consequently, the pentamer consists of only one isomeric form, $Me_2CCH_2CMe_2CH_2CMe_2CHCMe_2CH_2CMe:CH_2$. A polymer with a mean mol. wt. 800 showed the frequencies δ_1 = 1102, ν_3 = 1637, ν_4 = 1650, ν_5 = 3071, and ν_6 = 3080 cm.$^{-1}$, all belonging to an end grouping $C:CH_2$. There are two frequencies lying symmetrically on both sides of the 1644 line, which is absent in the higher polymers, from the trimer up. These 2 frequencies are shifted symmetrically relative to the 1644 line by 8 cm.$^{-1}$ in the trimer, 7 cm.$^{-1}$ in the tetramer and 6 cm.$^{-1}$ in the pentamer and in the higher polymer. This splitting may be explained by Fermi resonance, or possibly by rotation isomerism. N. Thon

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CA

Raman spectra of polymers of low molecular weight and the polymerization of isobutylene F. F. Gross, K. V. Nelson and Va. M. Slobodin (A. A. Zhdanov State Univ., Leningrad) *Zhur. Fiz. Khim.* 25, 504-12(1951). In order to elucidate the structure of polyisobutylene, the Raman spectra of the following polymers of isobutylene are studied: dimer, trimer, tetramer, pentamer, and a polymer of mol. weight 800. Both possible forms of the dimer are observed. For the other mols., the structures having a double bond at the end of the chain are favored. This finding, which is substantiated by analysis of the products of ozonolysis of the tetramer, is not in keeping with the ideas of Whitmore, *et al.* (C. A. 35, 6564[8], 6565[1]). Michel Boudart

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

NEL'SON, K.V.

USSR/ Physics - Spectral analysis

Card 1/1 Pub. 48 - 62/62

Authors : Nel'son, K. V.

Title : Infrared analysis of the microstructure of rubber

Periodical : Izv. AN SSSR. Ser. fiz. 18/6, 741-742, Nov-Dec 1954

Abstract : A new method is described for quantitative determination of 1,2-, trans-1,4- and cis-1,4- groups in divinyl and 1,2-, 3,4-, trans-1,4- and cis-1,4-groups in isoprene rubber. Some results obtained by the new method are described. Five references: 4 USA and 1 USSR (1946-1954)

Institution : The S. V. Lebedev Sc.-Res. Inst. of Synthetic Rubber

Submitted : .....

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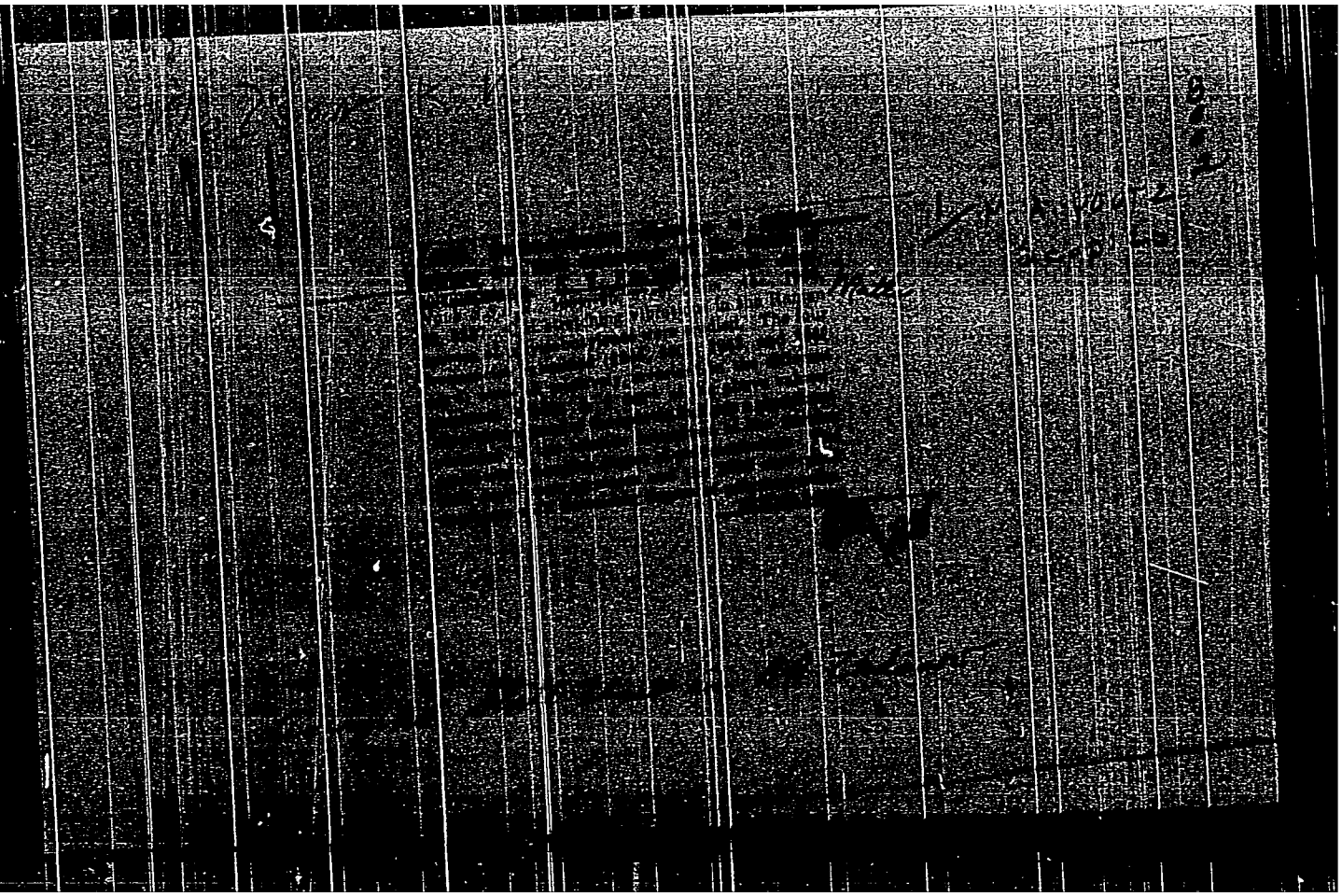

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NEL'SON, K.V.

PRIKHOT'KO, A F

24(7) 3 PHASE I BOOK EXPLOITATION SOV/1365

L'vov. Universytet

Materialy X Vsesoyuznogo soveshchaniya po spektroskopii. t. 1: Molekulyarnaya spektroskopiya (Papers of the 10th All-Union Conference on Spectroscopy. Vol. 1: Molecular Spectroscopy) [L'vov] Izd-vo L'vovskogo univ-ta, 1957. 499 p. 4,000 copies printed. (Series: Its: Fizychnyy zbirnyk, vyp. 3/8/)

Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po spektroskopii. Ed.: Lazer, S.L.; Tech. Ed.: Saranyuk, T.V.; Editorial Board: Landsberg, G.S., Academician (Resp. Ed., Deceased), Veporent, B.N., Doctor of Physical and Mathematical Sciences, Fabelinskiy, I.L., Doctor of Physical and Mathematical Sciences, Fabrikant, V.A., Doctor of Physical and Mathematical Sciences, Kornitskiy, V.G., Candidate of Technical Sciences, Rayskiy, S.M., Candidate of Physical and Mathematical Sciences, Klimovskiy, L.K., Candidate of Physical and Mathematical Sciences, Miliyanchuk, V.S., Candidate of Physical and Mathematical Sciences, and Glauberman, A. Ye., Candidate of Physical and Mathematical Sciences.

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Postovskaya, A.F., I.A. Salimov, A.S. Kiz'minskiy, and V.M. Tatevskiy. Variation in Structure of Sodium Butadiene Rubber in the Process of Light Oxidation 423

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

Nel'son, K. V.

20-3-34/59

AUTHORS: Nel'son, K. V., Poddubnyy, I. Ya.,

TITLE: The Structure of Molecular Chains of Polyisoprenes, as Revealed by Infrared Absorption Spectra (Issledovaniye struktury molekulyarnykh tsepey poliizoprenov po infrakrasnym spektram pogloshcheniya)

PERIODICAL: Doklady Akad. nauk SSSR, 1957, Vol. 115, Nr 3, pp. 545-547, (USSR)

ABSTRACT: In the entire problem of the synthesis of caoutchoucs with prescribed properties the study of the influence of the polymerisation conditions on the structure and spatial configuration of the basic link of the molekular chains is rather important. In the present paper the mircostructure of a series of polyisoprene caoutchoucs was investigated according to the method of infrared spectra. Such ones from a catalytic polymerisation (SKI) which, according to their physical-mechanical properties, are a near approach towards natural caoutchoucs are investigated as well as emulsion polyisoprenes which were produced by polymerisation under the influence of free radicals. The formation of 4 various structures of macromolecule links is possible. They differ in the position of the double binding with regard to the basic chain as well as in the spatial configuration of the atoms with regard to the double binding: 1,2;3,4; Cis-1,4 and Trans-1,4. From the data of table 1 it can be concluded that all investigated SKI caoutchouc patterns have a high content of Cis-configurations (up to 75% of the total amount of the 1,4-links of the molecular chains). Thus it is furthermore shown

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20-3-34/59

The Structure of Molecular Chains of Polyisoprenes, as Revealed by Infrared Absorption Spectra.

that the existence of smaller branches in this polymer is on the whole due to the connections in the 3,4-position (isoprenyl groups) The number of 1,2-links is low here (1-1,5%). The microstructure of the emulsion-isoprene-caoutchoucs is to a certain extent influenced by the polymerisation temperature. In such produced at -47-0° the 1,4-links are entirely built in a Trans-position. A further rise of temperature leads to the occurrance of a certain amount of Cis-1,4-links. It increases monotonously with the temperature rise and amounts to 8% at+50°. The content of 1,2-and 3,4-links remains practically constant in this temperature range. The authors obtained from the above mentioned data a total analytic expression on the strength of which a relative content of the corresponding microstructural elements for all polymerisation temperatures can be computed. From the (here given) equations it appears that in the range of polymerisation temperature of from -47-+50° the formation of Trans-configurations is energetically more favorable than that of Cis-configurations. With regard to the prolongation of the chain in the 1,4-position, compared to the 1,2-connections, the activation heat- and entropy values favor the formation of a basic chain with inner double bindings C = C. From the relative content of the 1,2-and 3,4 connections one can conclude as to the regularity of the molecular chains from the standpoint of their structure which

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The Structure of Molecular Chains of Polyisoprenes, as Revealed by Infrared Absorption Spectra. 20-3-34/59

may be "head to tail" or "head to head". This content was in the experiments approximatively the same in each case. This leads to the final conclusion that the macromolecules of the caoutchouc SKI form mainly regular chains consisting on the whole of Cis-1,4-links which are jointed in s head-tail position, whereas the molecular chains of the emulsion polyisoprenes consist of irregularly alternating Trans-1,4-links which with the same probability are joined in both positions (head-tail and head-head). The former case causes the ability of the SKI isoprene caoutchoucs to crystallize in the case of extension. There are 4 Slavic references.

PRESENTED BY: Academician Kargin, V. A., February 2, 1957

SUBMITTED: Jan. 30, 1957

AVAILABLE: Library of Congress

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

SOV/51-5-6-13/19

AUTHORS: Nel'son, K.V. and Skripova, L.S.

TITLE: On the Study of Infrared Spectra of Insoluble Elastomers (Ob izuchenii infrakrasnykh spektrov nerastvorimykh elastomerov)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol 5, Nr 6, pp 704-706 (USSR)

ABSTRACT: Using compressed powders the authors studied infrared absorption spectra of the following insoluble rubber-like polymers: copolymer of divinyl with 2-methyl-5-vinylpyridine, copolymer of vinylidene fluoride with 3-fluorochlorethylene (SKF-32-12), vulcanized silicone rubber, and for the sake of comparison - the spectrum of vulcanized silicone rubber in the form of film. The powders must consist of uniform particles with dimensions not exceeding the infrared wavelengths, i.e. for measurement of spectra in the 2-15 μ region the particle dimensions must be of the order of one micron. Vulcanized silicone rubber was pulverized in 2 hours using an agate mortar together with KBr crystals. SKF-32-12 rubber was pulverized, together with KBr crystals, in 8 hours. In pulverization of copolymer of divinyl with 2-methyl-5-vinylpyridine and KBr, carbon tetrachloride was used. The amount of KBr in powders varied from 0.1 to 0.5%. To remove all moisture powders were dried for 15 min under an infrared lamp and in the process

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On the Study of Infrared Spectra of Insoluble Elastomers

of pressing they were outgassed until a pressure of 0.5 mm Hg was reached. The powders were compressed under a pressure of 8000 kg/cm^2. The sample thickness was 1.5 mm and the diameter was 25 mm. Measurements were made using an IKS-11 infrared spectrometer with a NaCl prism. The spectra are given in Fig 1 (vulcanized silicone rubber; curve 1 represents a compressed powder and curve 2 represents a film), Fig 2 (copolymer of divinyl with 2-methyl-5-vinylpyridine in powder form) and Fig 3 (SKF-32-12 rubber in powder form). Curves 1 and 2 of Fig 1 show that the spectra of a powder and a film are identical apart from the background. There are 3 figures and 9 references, 4 of which are American, 3 German, 1 international and 1 translation.

SUBMITTED: May 4, 1958

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SOV/138-58-11-2/14

AUTHORS Nel'son, [redacted] Podlubnyy, I. Ya; Krupyshev, M. A. and Stepanova, Z. D.

TITLE: Investigations on the Micro-Structure of Butadiene Rubbers (Issledovaniye mikrostruktury divinilovykh kauchukov)

PERIODICAL: Kauchuk i Rezina, 1958, Nr 11, pp 3 - 5 (USSR)

ABSTRACT: S. V. Lebedev et al. (Ref.1 - 3) determined the influence of the polymerisation temperature on the content of side chains (vinyl groups) in butadiene rubbers obtained by polymerisation with Li, Na and K. With the aid of this data, dependence of the glass temperature of butadiene polymers on the number of monomer chains, added in the 1,2 position, could be determined (Refs. 5 and 6). The micro-structure of polymers can be defined effectively by analysing their absorption spectra in the infra-red region. Results are given on the dependence of the micro-structure of butadiene rubbers, obtained by catalytic polymerisation, on the conditions of their preparation, the nature of the initiator (Li, Na and K) and the temperature of the process. The infra-red spectra between 800 - 1,000 cm^{-1} were analysed. The polymer molecule in buta-

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SOV/138-58-11-2/14

Investigations on the Micro-Structure of Butadiene Rubbers

diene rubbers shows three types of addition to the C=C bond; in the 1,2-, trans-1,4- and cis-1,4- position. If the addition occurs in the 1,2-position absorption occurs in the 909 cm^{-1} band; heptene-1 was taken as a standard. Analysis of the trans-1,4 configuration showed absorption in the 967 cm^{-1} band; in this case trans-octene-3 and trans-decene-5 were taken as standard. All samples were tested in CS_2 solutions on a VIKS-MZ apparatus with a NaCl prism. The samples were prepared by Z. A. Khrenovaya. The average experimental error was ±5%. The lithium-sodium- and potassium-butadiene polymers were prepared by polymerising butadiene when the temperatures of the thermostat were as follows:- 5, 10, 20, 30, 40 and 60°C. Neozone D (2%) was added to the polymer samples after the gaseous products had been separated under vacuum. The glass temperature, viscosity and physico-mechanical properties of the samples were determined (Table 1). After purification and vacuum drying at room temperature, 1% of solutions in CS_2 were prepared. Data on the quantitative determination of the micro-structure of the rubbers is given in Table 2.

Card 2/4 The polymerisation temperature influences the micro-structure

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Investigations on the Micro-Structure of Butadiene Rubbers

of lithium-butadiene rubbers (Fig.1). The micro-structure of sodium butadiene rubbers, prepared at various temperatures, is similarly affected (Fig.2). On increasing the polymerisation temperature a decrease in the addition in the 1,2 position and an increase in the number of chains in the cis-1,4 position can be observed. The trans-1,4 configuration does practically not change, and remains at approximately 15%. Hardly any changes occur in the investigated temperature interval in the micro-structure of potassium butadiene rubbers (Fig.3). The ratio:

$$\frac{\text{trans-1,4}}{\text{cis-1,4}}$$

for all samples was $\sim$3 (trans-1,4 $\sim$30% and cis-1,4 $\sim$10%) These results agree with data published by A.I.Yakubchik

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SOV/138-58-11-2/14

Investigations on the Micro-Structure of Butadiene Rubbers

et al. (Refs. 2 and 3). There are 2 Tables, 3 Figures and 11 References: 3 English and 8 Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut sintetiicheskogo kauchuka im. S. V. Lebedeva (Research Institute for Synthetic Rubber im. S. V. Lebedev)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

5(3) SOV/20-123-4-[illegible]

AUTHORS: Dolgoplosk, B. A., Corresponding Member, AS USSR,
Kropacheva, Ye. N., Nel'son, K. V.

TITLE: The Cis-Trans-Isomerization of Natural Rubber Under the Effect of Organo-Aluminium Compounds and Titanium Tetrachloride (Tsis-trans-izomerizatsiya natural'nogo kauchuka pod vliyaniyem alyuminiyorganicheskikh soyedineniy i chetyrekhkhloristogo titana)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 4, pp 685 - 687 (USSR)

ABSTRACT: As is known, the catalysts of Ziegler (Tsiglor) have recently gained importance in the synthesis of polymers of regular structure, especially of cis-poly-isoprene (Refs 1-4). Previously, the effect of physical and chemical properties of the catalysts have been made responsible for the break of the structure of the chain due to the formation of trans-members. These properties were said to influence the addition character of the monomer (diene) in the course of polymerization. In the present paper it was proved that the regular structure can depend on the isomerization of cis-members to trans-members in a complete polymer chain. This is due to the components used

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The Cis-Trans-Isomerization of Natural Rubber Under the Effect of Organo-Aluminum Compounds and Titanium Tetrachloride SOV/20-127-4-30/3

for stimulating the polymerization process. A short survey of publications (Refs 5,6) is given. The said phenomenon is known in the case of polybutadiene (Ref 7), however, not for natural rubber under similar conditions. The isomerizing effect of the compounds mentioned in the title was investigated in solutions of rolled rubber (NR) in benzene, within sealed glass ampoules in argon. The unsaturated character and the microstructure of the chain of each sample were determined. For the latter infrared spectra according to the method of the last mentioned author, reference 8, were used. Table 1 gives the results obtained. Therefrom it is concluded that the components of the Ziegler catalyst ($TiCl_4$, AlR_3, AlR_2Cl) exert an isomerizing effect on the polymer chain of natural rubber. By the example of $TiCl_4$ it was proved that the number of trans-members increases with the concentration of the isomerizing agent and the longer duration of the action. Figure 1 shows very clearly the isomerization of polyisoprene on absorption bands of infrared radiation which correspond to various contents of cis- and trans-members. This isomerization is accompanied

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The Cis-Trans-Isomerization of Natural Rubber Under the SOV/20-123-4-3?/53
Effect of Organo-Aluminum Compounds and Titanium Tetrachloride

by a considerable decrease of the unsaturated character of the polymer. Apparently this depends on: a) Cyclization processes within the chain, b) The additivity of the mentioned compounds to the C=C bond. It is probably preceded by the formation of an unstable complex which can decompose under the formation of initial substances. Triethyl aluminum dichloride causes deeper secondary changes of natural rubber; unsolvable amorphous powders with high melting points are formed. $TiCl_4$ leads to similar results, but only if large amounts are used (100% of the rubber weight). There are 1 figure, 1 table, and 8 references, 3 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S. V. Lebedeva (All-Union Scientific Research Institute of Synthetic Rubber imeni S. V. Lebedev)

SUBMITTED: August 22, 1958

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

69507

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AUTHORS: Boldyreva, I. I., Dolgoplosk, B. A., Corresponding Member, AS USSR, Kropacheva, Ye. N., Nel'son, K. V.

S/020/60/131/04/031/073
B011/B017

TITLE: Cis-trans-isomerization of Natural Rubber Under the Influence of Hydrogen Chloride and Ethyl Aluminum Dichloride

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 131, Nr 4, pp 830-832 (USSR)

TEXT: The authors investigated the effect of anhydrous HCl and of ethyl aluminum chloride on a benzene solution of natural rubber under conditions which had been described earlier (Ref 1). HCl was introduced as a saturated benzene solution. The microstructure of each sample was characterized by means of the IR-absorption spectra. The quantitative content of cis- and trans-configurations was determined on the basis of the band 840 cm^{-1}. Since, due to the HCl addition, the non-saturation of the polymer is partly reduced, the relative content of the links of each configuration was calculated in % of the double bonds remaining in the polymer. Table 1, and figures 1 and 2 show the results. The authors emphasize that the data of the relative content of cis-trans-links only characterize the qualitative picture of the process since the accuracy of spectroscopic determinations sensibly decreases with decreasing non-saturation of the polymer. Since the solubility of the polymer is limited, it was not always possible to compensate for the decrease in the

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Cis-trans-isomerization of Natural Rubber Under the Influence of Hydrogen Chloride and Ethyl Aluminum Dichloride

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number of double bonds by increasing the concentration of the polymer in solutions. Table 1 shows that ethyl aluminum chloride as well as HCl exercise an isomerizing effect on the polymer chain of natural rubber. The number of trans-links increases with the concentration of the isomerizing agent. In both cases, the isomerization is accompanied by a reduction of the non-saturation of the polymer chain. In the case of aluminum chloride, this seems to be mainly due to the intramolecular ring formation. HCl, however, reduces the non-saturation only insofar as it is added to the double bond (Fig 1). The amount of HCl added corresponds to the reduction of non-saturation of the chain. The non-saturation continuously decreases with extension of the reaction time (Curve 1). In this connection, the relative content of trans-links (Curves 2 and 3), and the chlorine content in the polymer, increase steadily (Curve 3). Figure 2 shows that the isomerization and the addition of HCl already start at -70°, and that they considerably are accelerated in the case of a temperature rise. At 60°, the total content of double bonds, and of added chlorine, is only 82% of the theoretical content. This is apparently due to the ring formation. The experiments of the authors show that under the described conditions cis-polybutadiene is not sensibly isomerized. The high sensitivity of cis-polyisoprene to isomerization under the influence of ion catalysts is probably connected with

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69507

Cis-trans-isomerization of Natural Rubber Under the Influence of Hydrogen Chloride and Ethyl Aluminum Dichloride

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B011/B017

the iso-structure of the chain. The easier stereospecific synthesis of cis-polyisoprene as compared to that of cis-polybutadiene is probably also due to this fact. There are 2 figures, 1 table, and 9 references, 2 of which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S. V. Lebedeva (Scientific Research Institute of Synthetic Rubber imeni S. V. Lebedev)

SUBMITTED: October 26, 1959

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S/190/61/003/001/013/020
B119/B216

AUTHORS: Gruber, V. N., Nel'son, K. V., Kozlova, N. V., Mikhaylova, T.A., Mukhina, L. S.

TITLE: Mechanism of catalytic polymerization of cyclic dimethyl polysiloxanes. III

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 1, 1961, 89-92

TEXT: In previous studies on this subject (Refs. 1,2) the authors were able to show that the polymerization of cyclic dimethyl poly siloxanes by the catalytic action of $FeCl_3$, $Al(SO_4)_3 \cdot 2H_2O + H_2SO_4$ or concentrated H_2SO_4 leading to resinous products is due to redox reactions which cause the formation of active centers at which chain-formation takes place. The following redox scheme was suggested for H_2SO_4 catalysis:

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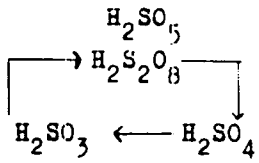

The present work deals with the quantitative evaluation of the redox processes occurring during polymerization by H_2SO_4. The amount of catalyst used for the polymerization tests corresponded to 2% of the silicone oil portion. Samples were drawn at intervals in the course of the reaction and analyzed quantitatively for H_2SO_3 (iodometrically, (Ref. 3)) and H_2SO_5 (by the method described by L. I. Kashtanov, O. N. Oleshchuk (Ref. 4)), and infrared-spectrographed (in the ИКС-11 (IKS-11) infrared spectrometer) to determine the quantitative relation between cyclic and linear polymer (the former has an intensive band at 1090 cm^{-1} and the latter peaks at 1025 and 1110 cm^{-1}). The peak at 1025 cm^{-1} characteristic of linear polysiloxanes

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increases in the course of the reaction, while the peak at 1090 cm^{-1} corresponding to the cyclic form becomes weaker and shifts to 1110 cm^{-1}. The findings signify the simultaneous presence of the lower-oxide and peroxide form of the catalyst in the reaction mixture to be due to redox processes involving constant regeneration of these forms. The decrease of H_2SO_3 content and simultaneous increase of H_2SO_5 content during the reaction process indicate the occurrence of macro stages according to N. M. Emanuel' (Ref. 5). The H_2SO_5 content in the reaction mixture is directly proportional to the formation of linear polymer. There are 2 figures and 7 references: 5 Soviet-bloc and 2 non-Soviet-bloc.

SUBMITTED: June 7, 1960

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

NEL'SON, K.V.; SKRIPOVA, L.S.; KOZLOVA, N.V.

Quantitative analysis of the cis-trans configuration in synthetic polyisoprenes. Zav. lab. 29 no.6:704-706 '63. (MIRA 16:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka.

(Isoprene—Spectra)

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L 12777-63 EPR/EWP(j)/EPF(c)/EWT(1)/EWT(m)/BDS AFFTC/ASD/ESD-3/
APGC Ps-4/Pc-4/Pr-4 RM/WW
ACCESSION NR: AP3001528 S/0032/63/029/006/0710/0712

80
77

AUTHOR: Al'tshuler, M. Z.; Murey, A. I.; Nel'son, K. V.; Skripova, L. S.

TITLE: Study of thermal structuration in insoluble polymers by quantitative infrared analysis

SOURCE: Zavodskaya laboratoriya, v. 29, no. 6, 1963, 710-712

TOPIC TAGS: thermal structuration, insoluble polymer, infrared analysis, thermovulcanization, divinyl rubber, potassium bromide

ABSTRACT: An earlier development, the so-called "powder-state method," was used for qualitative determination of the microstructure of insoluble samples of polybutadienes. Soluble samples of rubbers, the structure of which was determined by infrared spectroscopy of their solutions, served as standards. Divinyl rubber samples of 0.005 gm were subjected to pressure trituration with 2 gm of potassium bromide, which served as an abrasive. This was facilitated by the addition of some carbon tetrachloride, lowering the elasticity of the insoluble polymers. The infrared spectra of the thus treated SKB rubber before and after 4 hours heating at 250 and 250C showed that at 250C there takes place a break of double bonds in the 1,2 position, while those in trans-position remain unaffected.

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L 12777-63

ACCESSION NR: AP3001528

On the other hand, at a vulcanization temperature of 200C both the vinyl and the inside double bonds are ruptured, with a simultaneous increase in CH_2 sub 2 groups. A study of the thermovulcanization of cis-1,4-divinyl rubber showed that with an increase in temperature and heat duration the number of cis-1,4-links decreases considerably due to their rupture and transformation into the trans-form. Besides, there also takes place a break in the few double bonds in the position 1,2. The paper was presented at the conference on spectroscopy in Gor'kiy, June 5-12, 1961. L. G. Vartanyan participated in the work. Orig. art. has: 2 charts.

ASSOCIATION: Nauchno-issledovatel'skiy institut sinteticheskogo kauchuka (Scientific Research Institute of Synthetic Rubber)

SUBMITTED: 00 DATE ACQ: 17Jun63 ENCL: 04

SUB CODE: CO NO REF SOV: 002 OTHER: 003

Card 2/2

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

L 18900-63 EPR/EWP(j)/EPF(c)/EWT(m)/BDS ASD/ESD-3 Ps-4/Pc-4/Pr-4
RM/WW/MAY

ACCESSION NR: AP3006591 S/0020/63/151/006/1322/1325

AUTHORS: Bresler, L. S. (Corr. member AN SSSR); Dolgoplosk, B. A.; Kropacheva, Ye. N.; Nel'son, K. V.; Nikitina, A. P.

TITLE: Study of copolymerization process of butadiene-1,3 with 2,3-dimethylbutadiene-1,3 in the presence of various catalysts of the ionic type.

SOURCE: AN SSSR. Doklady*, v.151, no. 6, 1963, 1322-1325

TOPIC TAGS: butadiene, synthetic rubber copolymerization, lithium, 2,3-dimethylbutadiene, butyllithium, HCl, C sup 14, Al, tetrahydrofuran, IR, absorption spectrum, 2,3-dimethylbutadiene, aluminum, Li

ABSTRACT: The relative activities of 2,3-dimethylbutadiene and butadiene during its copolymerization in the presence of anionic type catalysts such as butyllithium complex with tetrahydrofuran, cationic type catalysts such as aluminum ethyldichloride in the presence of hydrochloric acid, and complex organo-metallic catalysts was studied. The microstructures of the polymers obtained by the above systems

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L 18900-63

ACCESSION NR: AP3006591

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were also studied. Butadiene tagged with carbon C^{14} was used to study the composition of copolymer. The non-radioactive polymeric microstructures were investigated by IR absorption spectra using NaCl prism. The vitrification temperature of the polymerized product mixture of butadiene and 2,3-dimethylbutadiene under the influence of catalysts decreases with an increase in its butadiene ratio. This points to the formation of true copolymers and not homopolymers. It was found that 2,3-dimethylbutadiene is more active in the cationic polymerization mechanism and butadiene is more active in the anionic type polymerization. Copolymers formed in the presence of complex catalysts are enriched in butadiene as compared to the initial monomeric mixture. The relative activity of 2,3-dimethylbutadiene is slightly lower than the activity of isoprene. Orig. art. has: 3 tables and 3 figures.

ASSOCIATION: Nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S. V. Lebedeva, (Scientific research institute for synthetic rubber)

Card 2/2

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

[illegible]

[illegible] S/0000/64/000/000/0142/0145

AUTHOR: [illegible]

TITLE: The participation of carboxyl groups in the formation of the vulcanized network of carboxyl-containing rubbers

SOURCE: [illegible] svoystva i modifikatsiya polimerov (Chemical properties and the modification of polymers); sbornik statey. Moscow, Izd-vo Nauka, 1964, 142-145

TOPIC TAGS: [illegible] vulcanization, carboxyl group, metal oxide, infrared spectrum, methacrylic acid, carboxyl rubber

ABSTRACT: Infrared spectra were obtained for the carboxyl-containing rubbers SKD-1 and SKS-30-1, and for rubbers vulcanized with Mg, Zn and SKD-1 containing 5.1% methacrylic acid (MAC) showed that the following bands corresponded to the presence of carboxyl groups: 1701 and 1225 cm^{-1}, the weak and strongly blurred bands 1400 and 1281 cm^{-1}, and the wide band in the region of 3300-2500 cm^{-1}, which corresponds to the intensive absorption of the stretching vibrations of the CH groups. A comparison of the spectra of unvulcanized and vulcanized rubber

Card 1/3

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L 34147-65

ACCESSION NR: AT4049053

3

[illegible] 1701 cm^{-1} disappeared almost completely, the intensity of the 1225 cm^{-1} band and the absorption at approx. 2600 cm^{-1} decreased considerably, and new bands appeared in the region of 1610-1550 cm^{-1}, 1400-1460 cm^{-1} and 3300 cm^{-1}. Analogous changes took place in the spectra of the vulcanized rubber SKD-1 with a different MAC content (2%) and in the terpolymer SKS-30-1 (1.5 and 4.5% MAC). The direct relationship between the decrease in intensity of the band at 1701 cm^{-1} and the amount of initial oxide (MgO, ZnO) is plotted. It is shown that the total intensity of absorption in the region of the asymmetrical vibration of the COO^- groups increases with the addition of the vulcanizing agent to the rubber, parallel to the decrease in the intensity of the C=O carbonyl band. The increase in intensity in the maximum of the band at 1586 cm^{-1} in zinc vulcanizates with an increasing amount of zinc oxide is shown. The infrared spectra of the vulcanizates all showed that carboxyl groups enter into salt formation almost completely (to more than 75%). "The authors express their gratitude to Z. V. Zimin for carrying out the determinations of the methacrylic acid content in the samples by titration with alcoholic alkali." Orig. art. has 3 figures.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S. V. Lebedeva (All-union synthetic rubber scientific research institute)

Card 2/3

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

L 9806-66 EWT(1)/EWT(m)/EWP(j)/T LJP(c) GS/RM

ACC NR: AT6000048 SOURCE CODE: UR/0000/65/000/000/0127/0135

44,55

AUTHOR: Nel'gen, K. V.; Stepanova, Z. D. 44,55

49
B+1

ORG: None

TITLE: Quantitative method of analysis of complex C_5 hydrocarbon mixtures by means of infrared absorption spectra

44
55

SOURCE: Leningrad. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka. Kolebatel'nyye spektry i molekulyarnyye protsessy v kauchukakh (Oscillating spectra and molecular processes in rubbers), Leningrad, Izd-vo Khimiya, 1965, 127-135

TOPIC TAGS: IR spectrum, quantitative analysis, alkane, alkene

21, 44, 55

ABSTRACT: The authors develop an infrared absorption technique for studying the composition and content of compounds resulting from the first and second stage of dehydrogenation of 2-methylbutane and methyl-1, 3-butadiene. The mixtures of hydrocarbons formed at these two stages include the following compounds: 2-methyl-2-butene, 2-methyl-1-butene, 3-methyl-1-butene, 1-pentene, cis-2-pentene, trans-2-pentene, cis-1,3-pentadiene, trans-1,3-pentadiene, 2-methyl-1,3-butadiene, n-pentane, and 2-methylbutane. The spectra are recorded with an IKS-11 spectrometer. The components are determined quantitatively by measuring the optical densities at certain chosen wavelengths and using graphs of optical density versus

44,55

Card 1/2

2

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

L 9806-66

ACC NR: AT6000048

concentration previously plotted for the pure compounds. The average relative error is ± 5%. It is concluded that the proposed infrared spectroscopic method permits a study of the structure and composition of multicomponent mixtures of C_8 hydrocarbons. Orig. art. has: 3 figures and 2 tables.

SUB CODE: 07, 14 / SUBM DATE: 10Jun65 / ORIG REF: 001 / OTH REF: 002

Card 2/2

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

YERMAKOVA, I.I.; KROPACHEVA, Ye.N.; DOLGOPLOSK, B.A., akademik; KOL'TSOV, A.I., akademik; NEL'SON, K.V.

Interaction of 3-methyl-2-pentene with cation-type catalysts. Dokl. AN SSSR 159 no.4:835-838 D '64 (MIRA 18:1)

1. Nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S.V. Lebedeva.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

L 9800-66 EWT(m)/EWP(j) RM

ACC NR: AT6000047 SOURCE CODE: UR/0000/65/000/000/0108/0126

AUTHOR: Nel'son, K. V.; Kul'kova, A. B.

ORG: None

TITLE: Infrared spectroscopic study of the vulcanizing network of carboxylated rubbers

SOURCE: Leningrad. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka. Kolebatel'nyye spektry i molekulyarnyye protsessy v kauchukakh (Oscillating spectra and molecular processes in rubbers), Leningrad, Izd-vo Khimiya, 1965, 108-126

TOPIC TAGS: IR spectrum, synthetic rubber, vulcanization, magnesium oxide, zinc oxide, calcium hydroxide, calcium oxide, lime, glycerin

ABSTRACT: Infrared spectra of thin films of SKD-1 carboxylated rubbers (copolymers of butadiene with 4-5% methacrylic acid) vulcanized with MgO, ZnO, $Ca(OH)_2$, and CaO are obtained. It is found that over 3/4 of the carboxyl groups present in the rubber participated in the reaction with MgO, ZnO, and $Ca(OH)_2$. In contrast to these vulcanizing agents, calcium oxide practically does not interact with the carboxyl groups. It is shown that vulcanization with MgO and $Ca(OH)_2$ involves formation of neutral magnesium and calcium salts. ZnO also participates in the reaction of salt formation in a proportion corresponding to the formation of neutral salts. The effect of glycerin on the vulcanization of carboxylated rubbers was determined: it not only increases the cross-linking of the rubbers, but also changes the nature of the COO-Me bond. Orig. art. has: 13 figures and 1 table.

Card 1/1 SUB CODE: 07, 11 / SUBM DATE: 10Jun65 / ORIG REF: 006 / OTH REF: 011

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

L 9805-66 EWT(m)/EWP(j) RM

ACC NR: AT6000049 SOURCE CODE: UR/0000/65/000/000/0136/0141

AUTHOR: Nel'gen, K. V.; Novikova, N. N.

ORG: None

TITLE: Spectroscopic study of the isomerizing effect of vulcanizing agents of cis-polybutadiene

SOURCE: Leningrad. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka. Kolebatel'nyye spektry i molekulyarnyye protsessy v kauchukakh (Oscillating spectra and molecular processes in rubbers), Leningrad, Izd-vo Khimiya, 1965, 136-141

TOPIC TAGS: IR spectrum, vulcanization, polybutadiene, rubber chemical

ABSTRACT: The article deals with the isomerizing effect of the most common ingredients of sulfur vulcanization of cis-polybutadiene (SKD rubber), i.e., Captax (mercaptothiazole), Altax (dibenzothiazole disulfide), sulfur, dipenylguanidine, zinc oxide, and stearic acid. The sulfur content varies from 0.15 to 62% of the weight of the rubber, and the content of the other ingredients ranges from 0.15 to 8 wt.%. The rubber films are spread on NaCl windows, vulcanized for 2 hr at 143C, and their infrared spectra are taken with Hilger H-800 and UR-10 spectrophotometers. The microstructure of polybutadiene isomerized by the above agents is also studied. The rate constants of the isomerization of cis-polybutadiene containing sulfur are found to be substantially lower than those for Captax and Altax. The data show that the

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ACC NR: AT6000049

indicated ingredients have various activating effects; this is consistent with the concept of the isomerization mechanism of cis-polybutadiene according to which corresponding intermediate π complexes (of Captax, Altax, or sulfur) are formed with the double bond of the elementary unit of the chain. Orig. art. has: 4 figures and 2 tables.

SUB CODE: 07, 11 / SUBM DATE: 10Jun65 / ORIG REF: 001 / OTH REF: 003

Card 2/2

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

ACC NR: AP7001409 (A) SOURCE CODE: UR/0413/66/000/021/0110/0110

INVENTOR: Fokina, T. A.; Apukhtina, N. P.; Klebanskiy, A. L.; Nel'son, K. V.; Solodovnikova, G. S.

ORG: none

TITLE: Preparative method for polyurethans. Class 39, No. 188004 [announced by All-Union Scientific Research Institute of Synthetic Rubber im. Academician S. V. Lebebev (Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 21, 1966, 110

TOPIC TAGS: polyurethane, chemical synthesis, diisocyanate, diene synthesis, olefin

ABSTRACT: An Author Certificate has been issued for a preparative method for polyurethans from diisocyanates and telomers of dienes, olefins or their mixtures. [BO]

SUB CODE: 11, 07/ SUBM DATE: 29May65/ ATD PRESS: 5109

Card 1/1 UDC: 678.664

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

1c

L 24495-66 EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NR: AP6006973 (A) SOURCE CODE: UR/0190/66/008/002/0207/0212

AUTHORS: Fokina, T. A.; Apukhtina, N. P.; Klebanskiy, A. L.; Nel'son, K. V.; Solodovnikova, G. S.

ORG: Scientific Research Institute of Synthetic Rubber (Nauchno-issledovatel'skiy institut sinteticheskogo kauchuka)

TITLE: Ionic telomerization of β,β'-dichlorodiethylformal with various unsaturated compounds

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 2, 1966, 207-212

TOPIC TAGS: catalytic polymerization, organic synthetic process, lead compound

ABSTRACT: Ionic telomerization of β,β'-dichlorodiethylformal (I) with isoprene (II), with divinyl and with styrene was investigated by using lead tetrachloride as a catalyst. Molar ratio of taxogen (II) and telogen (I) was varied from 10:1 to 1:1, respectively. The telomers obtained were colorless viscous resins, except in the case of styrene, which yielded crystalline powder (m.p. 64C). The course of reaction and the resulting products were studied by chemical means and by IR spectroscopy. The reaction was assumed to be a cationic telomerization consisting

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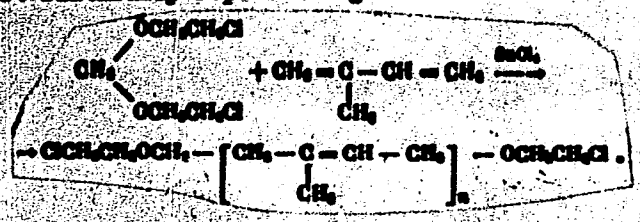
L 24495-66

ACC NR: AP6006973

of iniation, propagation, and termination steps. Of several possible routes, the one selected as most faithfully represented the actual reaction was:



Depending upon the ratio of reagents, telomers with molecular weights from 1000 to 4000 were obtained. Molecular weights were determined by K. A. Karandina. Orig. art. has: 2 tables, 3 figures, and 3 equations.

SUB CODE: 07/ SUBM DATE: 12Feb65/ ORIG REF: 010/ OTH REF: 004

Card 2/2

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

NEL'SON, Mikhail Solomonovich; TYUMENEVA, S.T., inzh., red.; GRIGOR'YEVA, I.S., red. izd-va; BELOGUROVA, I.A., tekhn. red.

[Quantitative evaluation of the reliability of machinery and instruments; according to results of testing]Kolichestvennaia otsenka nadezhnosti mashin i priborov; po rezul'tatam ispytanii. Leningrad, 1962. 31 p. (Leningradskii dom nauchno-tekhnicheskoi propagandy. Obmen peredovym opytom. Seriia: Kontrol' kachestva produktsii, no.7) (MIRA 15:8)
(Machinery—Testing) (Instruments—Testing)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

BALAKIRSKAYA, R.R.; BATALIK, B.S.; NEL'SON, R.A.; MAKMENKO, V.V.

Investigating the influence of chilling on the phase composition and structure of clinkers. Nauch. trudy PermNIUI no.5:95-102 '63. (MIRA 18:3)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

NEL'SON-SKORNYAKOV, F.B. [deceased] doktor tekhnicheskikh nauk, professor.

Flow of ground water into a river drainage channel enclosed with water impermeable sheet pile walls. Gidr.stroi. 25 no.9:44-47 O '56. (MLRA 9:11)

(Water, Underground)
(Soil percolation)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

TARAN, I.F.; POLYAKOVA, A.M.; NELYAPIN, N.M.; LUNINA, Ye.A.

Characteristics of immunity in cutaneous vaccination and revaccination with vaccine from the Brucella abortus 104-M strain. Report No.2: Testing the intensity of immunity producted by vaccine from the Brucella abortus 104-M strain in an epicutaneous application in experiments on guinea pigs. Zhur. mikrobiol., epid. i immun. 40 no.6:128 Je '63. (MIRA 17:6)

1. Iz Nauchno-issledovatel'skogo protivochumnogo instituta Kazkaza i Zakavkaz'ya.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

TARAN, I.F.; NELYAPIN, N.M.; POLYAKOVA, A.M.

Characteristics of immunity in cutaneous vaccination and revaccination with vaccine from strain 104-M of Brucella abortus. Report No.3: State of immunity in multiple revaccination with vaccine from 104-M strain of Brucella abortus in experiments on guinea pigs. Zhur. mikrobiol. epid.i immun. 41 no.1:77-81 Ja '64. (MIRA 18:2)

1. Protivochumnyy institut Kavkaza i Zakavkaz'ya, Stavropol' krayevoy.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

TARAN, I.F.; NELYAPIN, N.M.; POLYAKOVA, A.M.; LUNINA, Ye.A.

Comparative study of the vaccinal process and the intensity of immunity in guinea pigs vaccinated with Brucella abortus 19 and 104-M. Zhur. mikrobiol., epid. i im. 41 no. 2:53-60 F '64. (MIRA 17:9)

1. Protivochumnyy institut Kavkaza i Zakavkaz'ya, Stavropol' na Kavkaze.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

ACCESSION NR: AP5020097 UR/0016/65/000/008/0099/0104
615.371 : 576.851.42

AUTHOR: Taran, I. F.; Zamakhayeva, Ye. I.; Abakin, G. V.; Polyakova, A. M.; Nelyapin, N. M.

TITLE: A study of brucella vaccine from the *Br. abortus* 104-M strain

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 8, 1965, 99-104

TOPIC TAGS: brucella, vaccine, immunology, brucellosis

ABSTRACT: An experimental study on guinea pigs of the *Br. abortus* 104-M vaccinal strain showed that it possesses satisfactory immunogenic properties, viability, and capacity to induce active immunological reconstruction. Vaccine from *Br. abortus* 104-M proved to be harmless to sheep in doses of 8 to 10 billion microbial cells. It created stronger immunity than did *Br. abortus* 19. Sheep that received this vaccine had fewer abortions and gave birth to more healthy lambs than did the controls. Also, there was a sharp decrease in the incidence of brucellosis among those handling the animals. No side reactions were noted after subcutaneous inoculation with doses under 100 million microbial cells; doses ranging from 250 to 300 million

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L 6339-65

ACCESSION NR: AP5020097

cells produced severe general and local reactions. On the other hand, epicutaneous inoculation of doses ranging from 1 to 10 billion microbial cells were harmless and without side effects. Brucellosis incidence among vaccinated individuals was 2-4 times less than among non-vaccinated individuals. Orig. art. has: 2 tables.

ASSOCIATION: Nauchno-issledovatel'skiy protivochumnyy institut Kavkaza i Zakavkaz'ya (Scientific Research Plague Control Institute of the Caucasus and Transcaucasus)

SUBMITTED: 02Jul64 ENCL: 00 SUB CODE: LS

NO REF SOV: 002 OTHER: 000

Card 2/2

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

ACC NR: AP6032246 SOURCE CODE: UR/0016/66/000/009/0070/0074 3

AUTHOR: Taran, I. F.; Pogorelov, N. A.; Kulikova, G. G.; Kutsemakina, A. Z.; Rudnev, M. M.; Nelyapin, N. M.; Rudneva, V. A.; Suvorova, A. Ye.

ORG: Stavropol' branch, "Microbe" Antiplague Scientific Research Institute (Stavropol'skiy filial, Nauchno-issledovatel'skogo protivochumnogo instituta "Mikrob")

TITLE: Brucellosis cultures isolated from rodents and their ectoparasites

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 9, 1966, 70-74

TOPIC TAGS: [redacted], [redacted], epidemiology, disease vector, rodent, parasite, animal disease, tularemia, brucellosis

ABSTRACT: Twenty-eight *brucella* cultures were isolated from wild rodents, their ectoparasites and from domestic swine during a study of the effects of tularemia vaccination and infection upon *brucella* penetration. Bacteriological as well as phage typing methods were used in identifying the individual strains. There was no difference in cultures isolated from wild and domestic animals. Prolonged passaging of *brucella* cultures in mice vaccinated with tularemia vaccine and infected with virulent tularemia strains

UDC: 576.851.42

Card 1/2

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ACC NR: AP6032245

did not alter their cultural or biochemical properties. Transmission of *brucella* from wild rodents to the domestic hogs used in this study was established. [WA-50; CBE No. 12]

SUB CODE: 06/ SUBM DATE: 29Jan66/ ORIG REF: 004/

Card 2/2

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

BASHILOVA, N.I.; NELYAPINA, N.I.

Possible error of thallium determination in the presence of iron. Zhur. anal. khim. 19 no.12:1516-1519 '64 (MIRA 18:1)

1. N.S. Kurnakov Institute of General and Inorganic Chemistry, Academy of Sciences of the U.S.S.R., Moscow.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

NELYAYEVA, Ya.I.

Aceratheres of Mongolia. Trudy Paleont. inst. 77:108-127 '60.
(MIRA 13:10)

(Mongolia--Rhinoceros, Fossil)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

L 04781-67 EWP(e)/EWT(m)/EWP(t)/ETI IJP(c) JD
ACC NR: AP6023444 (N) SOURCE CODE: UR/0369/66/002/003/0295/0299

AUTHOR: Kaydash, N. G.; Nelyub, M. G.; Baranova, Z. I.; Pokhmurskiy, V. I. 51 B

ORG: Uman' Pedagogical Institute (Umanskiy pedagogicheskiy institut); Physico-Mechanical Institute, AN UkrSSR, L'vov (Fiziko-mekhanicheskiy institut AN UkrSSR)

TITLE: Effect of boronizing, borosiliconizing, calorizing and borocalorizing on the corrosion resistance of steel

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 2, no. 3, 1966, 295-299

TOPIC TAGS: BORON, SILICON, photocolorimeter, metal coating, corrosion resistance, fatigue strength / / FEK-M photocolorimeter, steel 45, steel 20

ABSTRACT: The effect of each of these types of the surface impregnation of steel was investigated with respect to such properties of steel 45 as corrosion resistance, fatigue strength and corrosion-fatigue strength. Boronizing was accomplished in a mixture of boron carbide and borax and of crystalline silicon with ammonium chloride; calorizing, in a mixture of ferroaluminum and ammonium chloride; and boronizing-calorizing and calorizing-boronizing, in boronizing and calorizing mixtures (G. V. Zemskov, N. G. Kaydash, MiTOM,

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L 04781-67
ACC NR: AP6023444

1964, no. 3; 1965, no. 5). The steel specimens thus treated were tested for corrosion in freshly prepared 10% aqueous solutions of table salt, NaOH, HCl, H_2SO_4, HNO_3 and phosphoric acid, with subsequent analysis of the spent solutions for Fe and diffusing elements (B, Al, Si) and visual observation of corrosion damage to the specimens (cracks, pits and peeling of the diffusion layer from the base metal). Quantitative analysis was performed with the aid of a FEK-M photocolorimeter. Findings: diffusion boronizing, borosiliconizing, calorizing and borocalorizing all enhance the corrosion resistance of 45 steel in 10% aqueous solutions of the aforementioned aggressive media. In the NaCl solution the corrosion resistance of steel is best enhanced by calorizing, calorizing-boronizing and boronizing; in the NaOH solution, by calorizing, boronizing, borosiliconizing, and boronizing-calorizing; in the HCl solution, by borosiloconizing, boronizing, and calorizing-boronizing. Considering that many work parts perform under loads while being exposed to aggressive media, the effect of these types of surface treatment on the fatigue and corrosion-fatigue strength of steel 20 was also investigated and it was found that boronizing and borosiliconizing enhance the fatigue limit of the steel in corrosive media by as much as 35 and 80%, respectively. Boronized specimens display a higher corrosion resistance and lower corrosion-fatigue strength than borosiliconized specimens. This indicates that for diffusion coatings -- at least for those of the boride type -- there does not exist a correlation between the corrosion resistance of metals in nonstressed state and their corrosion-fatigue strength. Orig. art. has: 1 figure, 2 tables.

SUB CODE: 13, 11, 20/ SUBM DATE: 26Jan66/ ORIG REF: 009

Card 2/2

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

06420
SOV/107-59-5-15/51

(

AUTHOR: Nelyubin, A.

TITLE: The Way to Mastership

PERIODICAL: Radio, 1959, Nr 5, p 13 (USSR)

ABSTRACT: The author praises the radio amateur activities of Yuriy Kuznetsov having a station with the call sign UA3-10637. Yu. Kuznetsov is presently a radio operator in the Soviet Army where he can practice his skill in radio communications. There is 1 photograph.

Card 1/1

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

KOROVYAKOV, I.A.; NELYUBIN, A.Ye.; RAYKOVA, Z.A.; KHORTOVA, L.K.; GON'SHAKOVA, V.I., nauchnyy red.; POSPELOVA, A.M., red.izd-va; IYERUSALIMSKAYA, Ye., tekhn.red.

[Origin of Noril'sk trap intrusions bearing sufide copper-nickel ores.] Proiskhozhdenie noril'skikh trappovykh intruzii, nesushchikh sul'fidnye medno-nikelevye rudy. Moskva, Gosgeoltekhizdat, 1963. 100 p. (Moscow. Vsesoiuznyi nauchno-issledovatel'skii institut mineral'nogo syr'ia. Trudy, no.9). (MIRA 17:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo syr'ya (for Korovyakov, Nelyubin, Raykova, Khortova).

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

NELYUBIN, D. T.

PA 26T13

USSR/Engineering
Mines and Mining
Mining Machinery

Oct 1947

"Simultaneous Mining of Ore in Upcast and Downcast Sequence," D. T. Nelyubin, M. V. Zotov, Mining Engrs, 3 pp

"Gornyy Zhurnal" No 10

This method working was adopted at the Leninogorsk workings because of the complex geological, mining, and technical conditions which were met at the IXth level. This method is recommended for working rich ore deposits, which are pitted with poor seams. It is complex and

26T13

USSR/Engineering (Contd) Oct 1947

expensive, but the results, such as the wide front which can be worked, the rapid working of blocks, and safety of operation, compensated for the few undesirable qualities.

26T13

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

MELYUBIN, Konstantin Mikhailovich; ZIL'PERT, I.V., redaktor; SIDEL'NIKOVA, L.A., redaktor izdatel'stva; SHITS, V.P., tekhnicheskiy redaktor

[Work practices of the Ussuri lumber mill] Opyt raboty ussuriiskogo lesozavoda. Moskva, Goslesbumizdat, 1956. 25 p. (MIRA 10:1)
(Lesozavodsk--Sawmills)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

USPENSKIY, V.N., glav. red.; TER-ARUTYUNYANTS, G.O., zam. glav. red.; AIR-BABAMYAN, Ya.A., red.; BOGORAD, D.I., red.; KAPLAN, L.Z., inzh., red.; MALYSHENKO, O.A., red.; MEZENTSEV, I.V., red.; BONDARENKO, [illegible].I., red.; NELYUBIN, K.P., red.; OREKHOV, V.M., red.; POGREBOV, S.N., red.; SLIVAK, I.M., kand. tekhn. nauk, red.; STANISLAVSKIY, A.I., red.; SLUTSKIY, G.M., red.; SOLOFNENKO, N.A., red.

[Transportation and engineering facilities of cities; an aid to designers] Transport i inzhenernoe oborudovanie gorodov; v pomoshch' proektirovshchiku. Kiev, Budivel'nyk, 1964. 100 p. (MIRA 18:5)

1. Ukrainskiy gosudarstvennyy institut proyektirovaniya gorodov. 2. Gosstroy SSSR (for Kaplan, Orekhov). 3. Gosstroy USSR (for Pogrebov). 4. Kiyevskiy inzhenerno-stroitel'nyy institut (for Slivak). 5. Kiyevskiy Gosudarstvennyy institut proyektirovaniya gorodov (for Uspenskiy, Ter-Arutyunyants, Malyshenko, Mezentsev, Bondarenko). 6. Leningradskiy Gosudarstvennyy institut proyektirovaniya gorodov (for Nelyubin). 7. TSentral'nyy nauchno-issledovatel'skiy i proyektnyy institut po gradostroitel'stvu, Moskva (for Solofnenko). 8. Kiyevskoye upravleniye po proyektirovaniyu zhilishchno-grazhdanskogo i kommunal'nogo stroitel'stva (for Slutskiy).

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

NELYUBIN, N.L., zasl. uchitel' shkoly RSFSR; KACHANOV, I.A.; NOVIKOVA, L.I., red.; PARFENT'YEV, M.V., red.; TARASOVA, V.V., tekhn. red.

[Manual training in eight-year schools; conference on theory and practice of the Sverdlovsk Province teachers] Iz opyta trudovogo vospitaniia v vos'miletnei shkole; nauchno-prakticheskaia konferentsiia uchitelei Sverdlovskoi oblasti. Pod red. L.I. Novikovoi. Moskva, Izd-vo Akad. pedagog. nauk RSFSR, 1961. 190 p. (MIRA 15:4)

1. Akademiya pedagogicheskikh nauk RSFSR, Moscow. Institut teorii i istorii pedagogiki. 2. Direktor Sverdlovskogo oblastnogo instituta usovershenstvovaniya uchiteley (for Nelyubin). 3. Zaveduyushchiy kabinetom pedagogiki Sverdlovskogo oblastnogo instituta usovershenstvovaniya uchiteley (for Kachanov). 4. Zaveduyushchaya laboratoriyey trudovogo vospitaniya Nauchno-issledovatel'skogo instituta teorii i istorii pedagogiki Akademii pedagogicheskikh nauk RSFSR (for Novikova).

(Sverdlovsk Province—Manual training)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

NELYUBIN, V., kapitan-nastavnik

Control of bank erosion on the Amu Darya. Rech. transp. 21 no.12:36-37 D '62. (MIRA 15:12)
(Amu Darya River—Shore protection)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

2

CA NELYUBIN, V.K.

Change of crystal faces of ammonium nitrate under the influence of various ions. T. V. Zabolotskii and V. K. Nelyubin. *Doklady Akad. Nauk S.S.S.R.* 75, 215-17 (1950).—Microscopic observation was made of the changes brought about in crystal habit (from needle to isometric forms) by the following ions: K, Na, Ca, Ba, Zn, Cd^{2+}, Pb^{2+}, Fe^{2+}, Cr^{3+} all introduced as nitrates; NH_4 salts of Cl^-, SO_4^{2-}, PO_4^{3-}; salts KCl, $MgSO_4$, $MgCl_2$, in variable concns. A "modification limit" (C_M) is defined as the mol. concn. of the ion in question, added to the NH_4NO_3 soln., which brings about the quant. transition of the needles to the isometric-habit crystals. C_M is particularly detd. by the valency of the ions: the higher this is, the lower is C_M; 0.105-0.108 moles per l. of the NH_4NO_3 soln. are sufficient for K^+ and Na^+; 0.07-0.08 for Pb^{2+} and Zn^{2+}; 0.06 for Fe^{2+} and Cr^{3+}; 0.08 Cl^-; 0.06 SO_4^{2-}; 0.05 PO_4^{3-}. The crystn.-impeding effects of adsorption films and anomalous cryst. solns. are discussed, especially for the valency effects. W. Eitel

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

NELYUBIN, V.P., nauchnyy sotrudnik; RUD', I.A., veterinarnyy vrach

Ditilin in the castration of swine. Veterinariia 40 no.10:46 O'63. (MIRA 17:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut veterinarnoy sanitarii (for Nelyubin).

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

MELYUBIN, V.P., nauchnyy sotrudnik

Diagnosis of tuberculoid lesions in the veterinary sanitation control of swine carcasses. Veterinariia 41 no.2:105-106 F '65. (MIRA 18:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut veterinarnoy sanitarii.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

NELYUBIN, N.P., nauchnyy sotrudnik

Veterinary hygienic expertise of pork from swine with pseudotuberculosis. Veterinariia 41 no.10:85 O '64. (MIRA 18:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut veterinarnoy sanitarii.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

NELYUBIN, V.V.

Characteristics of the hydrogeological conditions of continental sediments in Tyumen' Province. Mat. Kom. po izuch. podzem. vod. Sib. i Dal' Vost. no.2:37-43 '62. (MIRA 17:8)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

NELYUBIN, Vitaliy Yakovlevich; MATYUSHINA, S.P., red.; TIKHONOVA, Ye.A., tekhn. red.

[Amu Darya] Amu-Dar'ia. Moskva, Izd-vo "Morskoi transport," 1963. 130 p. (MIRA 16:6)
(Amu Darya--Navigation)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

NELYUBINA, G.A.

State of the bronchi in primary tuberculosis in children. Probl. tub. no.7:24-29 '62. (MIRA 15:12)

1. Iz kafedry legochnogo tuberkuleza (zav. - prof. A.D.Semenov) Leningradskogo instituta usovershenstvovaniya vrachey imeni S.M. Kirova, detskogo (rukovoditel' - dotsent Ye.P.Gaganova) i rentgenologicheskogo otdeleniy (rukovoditel' - prof. A.M. Rabinovich) Leningradskogo instituta tuberkuleza.
(TUBERCULOSIS) (BRONCHI--RADIOGRAPHY) (BRONCHOSCOPY)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

3

The role of enzymes in the rancidifying process of meals. V. Krotovich, M. Popov, and G. Nelyubina (Technol. Inst. Food Ind., Moscow). *Muhomol. Elevator. Proc.* 23, No. 10, 14-16(1956).—The stability of steamed and unsteamed oatmeal and wheat meal in storage is compared. The acid no. of the oil in oatmeal steamed 5 min. rose from 21.3 to 29.0 during a 72-day storage period, whereas the oil of unsteamed controls rose to 103 during the same period. With wheat meal samples steamed 5 min., acid no. increased from 19.6 to 25.2 and in the unsteamed control from 24.6 to 44.0. Onset of rancidity in steamed and unsteamed samples, resp., during storage was evident as follows: oatmeal 46, 9; oatmeal gruel 72, 28; wheat meal 10, 6; wheat-meal gruel not up to 40 days, 27 days.

M. M. Piskar

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

KRETOVICH, V.L.; KAGAN, Z.S.; NELYUBINA, G.M.

α-keto-β-methyl-n-valeric and α,β-dioxy-β methyl-n-valeric acids as precursors in the biosynthesis of isoleucine in wheat. Biokhimiia 27 no.1:181-187 Ja-F '62. (MIRA 15:5)

1. Institute of Biochemistry, Academy of Sciences of the U.S.S.R. and Technological Institute of Food Industry, Moscow.
(VALERIC ACID) (ISOLEUCINE) (WHEAT)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

1. NELYUBOV, A. A.

2. USSR (600)

4. Steel - Heat Treatment

7. Gradual method of hardening machine parts made of 20A steel. Vest. mash., 32, no. 3 1952

9. **Monthly List of Russian Accessions**, Library of Congress, February 1953. Unclassified.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

MELYUBOV, A.I., inzhener; BEZHUCHKIN, I.P., kandidat tekhnicheskikh nauk.

Machine for drying green forage, preparing hay meal and making it into briquets. Sel'khozmashina no.4:3-7 Ap '56. (MLRA 9:7) (Hay) (Agricultural machinery)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

NELYUBOV, A.I.

"An Experimental Investigation of the Process of Drying Finely-Ground Green Fodder";

dissertation for the degree of Candidate of Technical Sciences (awarded by the Timiryazev Agricultural Academy, 1962)

(Izvestiya Timiryazevskoy Sel'skokhozyaystvennoy Akademii, Moscow, No. 2, 1963, pp 232-236)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

NELYUBOV, A.I., inzh.

Conversion of SZPB-2.0 grain driers for drying green forage. Trakt. i sel'khozmash. 32 no.1:23-26 Ja '62. (MIRA 15:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennogo mashinostroyeniya.

(Forage plants--Drying)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

NELYUBOV, I.D.

Ornithosis in domestic ducks on poultry farms in the Irkutsk Province. Trudy TSIU 68:49-51 '64.

Characteristics of an ornithosis outbreak in a poultry slaughterhouse. Ibid.:52-54 (MIRA 18:5)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

NELYUBOV, I.D.

Experimental study of the mechanism of the transmission of ornithosis infection. Trudy TSIU 80:25-27 '65.
(MIRA 18:11)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

BEZDENEZHNYKH, I.S.; DEVYATOVA, L.N.; NELYUBOV, I.D.

Analysis of the occurrence of ornithosis in the U.S.S.R.
Trudy TSIU 80:20-24 '65. (MIRA 18:[illegible])

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

1. NELYUBOV, L. P.

2. USSR (600)

4. Water, Underground

7. Divisional districts of underground waters of the Quaternary deposits of the region covered by the glacial formations of the European part of the U.S.S.R. [Abstract.] Izv. Glav. upr. geol. fon. no. 2, 1947.

9. Monthly List of Russian Accessions, Library of Congress, March 1953. Unclassified.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

NELYUBOV, L. P.

USSR/Cosmochemistry - Geochemistry. Hydrochemistry, D

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61358

Author: Semikhatov, A. N., Dukhanina, V. I., Nelyubov, L. P., Rodionov, N. V., Garmainov, I. V., Tolstoy, M. P., ~~Syrokvashina~~, Ya. A., et al

Institution: None

Title: Map of Ground Waters of European Portion of USSR on a 1:1,500,000 Scale with Explanatory Notes

Original Periodical: Sb. nauch.-tekhn. inform. M-vo geol. i okhrany nedr, 1955, No 1, 51-57

Abstract: The compiled map of ground waters of European portion of USSR made it possible to render more precise the distribution of waters of different type according to their chemical composition and mineralization. Limits of mineralization vary within a range from 40-60 to 190,000 mg/l. Revealed are areas of higher K-content in spring and borehole water which makes it possible to undertake exploratory

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

USSR/Cosmochemistry - Geochemistry. Hydrochemistry, D

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61358

Abstract: work for K in underground waters of subsaltbearing beds of Lower Cambrian deposits.

Card 2/2

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

BAKIROV, A.A.; LANGE, O.K.; NELYUBOV, L.P.; SERGEYEVA, N.A.

In memory of Aleksandr Sergeevich Sergeev. Sov. geol. no.62:158-165 '57. (MIRA 11:6)

(Sergeev, Aleksandr Sergeevich, 1878-1942)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

ANTIPIN, V.I.; BUDANOV, N.D.; KOTLUKOV, V.A.; LEYBOSHITS, A.M.; PROKHOROV, S.P., kand.geol.-miner.nauk; SIRMAN, A.P.; FALOVSKIY, A.A.; SHTEYN, M.A.; BASKOV, Ye.A.; BOGATKOV, Ye.A.; GANEYEVA, M.M.; ZARUBINSKIY, Ya.I.; IL'INA, Ye.V.; KATSIYAYEV, S.K.; KOMPANIYETS, N.G.; NELYUBOV, L.P.; PONOMAREV, A.I.; REZNICHENKO, V.T.; RULEV, N.A.; TSELIGOROVA, A.I.; ALSTER, R.K.; SHVETSOV, P.F.; VYKHODTSEV, A.P.; KOTOVA, A.I.; KASHKOVSKIY, G.N.; LOSEV, F.I.; ROMANOVSKAYA, L.I.; PROKHOROV, S.P.; MATVEYEV, A.K., dots., retsenzent; CHEL'TSOV, M.I., inzh., retsenzent; KUDASHOV, A.I., otv. red.; PETRYAKOVA, Ye.P., red. izd-va; IL'INSKAYA, G.M., tekhn. red.

[State of flooding and conditions for the exploitation of coal-bearing areas in the U.S.S.R.] Obvodnennost' i usloviia ekspluatatsii mestorozhdenii ugol'nykh raionov. Pod nauchn. red. S.P.Prokhorova. Moskva, Gosgortekhizdat, 1962. 243 p. (MIRA 15:7)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrogeologii i inzhenernoy geologii. 2. Kafedra geologii i geokhimii goryuchikh iskopayemykh Moskovskogo Gosudarstvennogo universiteta (for Matveyev).

(Coal geology) (Mine water)

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POZDNYAKOV, B.V., kand.tekhn.nauk; NELYUBOV, Yu.V., gornyy inzh.; TACHEV, A.A.

Study of the shattering effect of large-scale blasting in the Zyryanovsk open-pit mine. Gor. zhur. no.11:46-47 N '61. (MIRA 15:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut tsvetnykh metallov, Ust'-Kamenogorsk.

(Zyryanovsk region--Blasting)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

POZDNYAKOV, B.V., kand.tekhn.nauk; NELYUBOV, Yu.V., gornyy inzh.; SERDYUKOV, A.K., gornyy inzh.; ZHUYKO, Yu.P.; SEDLOV, M.G.

Effect of short-delay blasting on the extent of the seismic effect of large-scale blasting. Gor. zhur. no.8:25-28 Ag '63. (MIRA 16:9)

1 Vsesoyuznyy nauchno-issledovatel'skiy gorno-metallurgicheskiy institut tsvetnykh metallov (for Pozdnyakov, Nelyubov, Serdyukov).2. Zyryanovskiy svintsovyy kombinat (for Zhuyko, Sedlov.).
(Blasting)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

NELYUBOV, Yu.V., inzh.; BAZHIN, Ye.I., inzh.; SVETLICHNYY, S.I., tekhnik

Vibrations of the reinforced concrete tower headframe under the seismic effect of open pit blasting. Shakht. stroi. 9 no.7:20-22 Jl '65. (MIRA 18:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy gornometallurgicheskiy institut tsvetnykh metallov.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

ACC NR: AP7005655 SOURCE CODE: UR/0413/67/000/002/0109/0109

INVENTOR: Pozdnyakov, B. V.; Nelyubov, Yu. V.

ORG: None

TITLE: A device for determining dynamic elastic soil deformations. Class 42, No. 190639 [announced by the All-Union Mining and Metallurgical Scientific Research Institute of Nonferrous Metals (Vsesoyuznyy nauchno-issledovatel'skiy gornometallurgicheskiy institut tsvetnykh netallov)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1967, 109

TOPIC TAGS: soil mechanics, elastic deformation, seismograph

ABSTRACT: This Author's Certificate introduces a device for determining dynamic elastic soil deformations. The unit contains electrodynamic seismographs with identical constants and an oscillograph with galvanometer. To extend the measurement base and improve accuracy, the like poles of the working coils in the seismographs are interconnected and the free poles are connected to the integrating galvanometer of the oscillograph.

Card 1/2 UDC: 531.781:539.3:624.131.55.002.5

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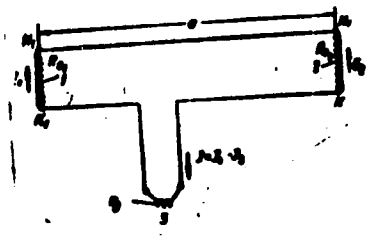
ACC NR: AP7005655



a—measurement base; $R=R_{S_1}+R_{S_2}+r_g+R_{wire}$; 1 and 2—working coils; 3—integrating galvanometer

SUB CODE: 08, [redacted]/ SUBM DATE: 27Jul64

Card 2/2

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

FROLOVA, M.K.; FRIDMAN, O.A.; LIPSKIY, A.I.; STUDENNIKOV, V.A.; NELYUBOVA, G.A.

Waterproof roofing on a base of bitumen and rubber composition.
Stroi. mat. 11 no.2:10-11 F '65. (MIRA 18:3)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

NELYUBOVA, G. L.

Nelyubova, G. L.

"The effect of boron on the growth and yield of sunflowers, soybeans, buckwheat, and onions." Moscow Order of Lenin Agricultural Academy imeni K. A. Timiryazev. Moscow, 1956 (Dissertation for the degree of Candidate in Biological Science)

Knizhnaya letopis'
No. 25, 1956. Moscow

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

USSR/Plant Physiology - Mineral Nutrition. I

Abs Jour : Ref Zhur Biol., No 12, 1958, 53306

Author : Shestakov, A.G., Pryanishnikova, Z.D., Nelyubova, G.L.
Inst : -
Title : Influence of Different Doses of Boron on Buckwheat Flower Development and Fruiting

Orig Pub : Dokl. Mosk. s.-kh. akad. im. K.A. Timiryazeva, 1957, vyp. 29, 35-40

Abstract : In experiments with buckwheat the doses of boron varied from 0 to 4 mg in 1 kg of sand. Signs of a deficiency in plants which had not received B appeared after 12 - 15 days and were clearly manifested after 1 - 1 ½ months. The optimal dose of boron in the experiments was 0.15 - 0.50 mg in 1 kg of sand. The microscopic investigation of the blossoms showed that with boron deficiency, apart from disturbances in the normal structure of the conducting tissues, there was observed a destruction of pollen

Card 1/2

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NELYUBOVA, G.I., kand. biol. nauk

Role of boron in the phosphorus metabolism of sunflowers [with summary in English]. Izv. TSKhA no. 3:167-176 '58. (MIRA 11:7)
(Plants, Effect of boron on)
(Phosphorus metabolism)
(Sunflowers)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

PETERBURGSKIY, A.V.; NELYUBOVA, G.L.

Methods for determining the general anion-exchange absorptive capacity of roots by adsorption Fiziol. rast. 9 no.5:651-653 '62. (MIRA 15:10)

1. Department of Agronomic and Biological Chemistry K.A.Timiryazev Moscow Academy of Agriculture.
(Roots(Botany)) (Ion exchange)
(Plants--Chemical analysis)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

NELYUBOVA, G.L., kand. biolog. nauk

Some conditions of the efficient use of trace element fertilizers in the non-Chernozem belt. Izv. TSKHA no.1: 84-91 '64. (MIRA 17:4)

1. Kafedra agrokhimii i biokhimii Moskovskoy ordena Lenina sel'skokhozyaystvennoy akademii imeni Timiryazeva.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

VOL'PER, I.N.; NELYUBOVA, M.A.

Our efficiency promoters. Kons. i ov. prom. 13 no.9:9-12 S'58. (MIRA 11:10)

1. Leningradskiy kombinat pishchevykh kontsentratov.
(Canning industry--Equipment and supplies)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

MAN'KOV, D.F.; OREKHOV, N.I.; POLONETSKIY, S.D.; NELYUBOVA, Ye.I., red.; DUDAKOV, V.A., tekhn. red.; OKOLELOVA, Z.P., tekhn. red.

[Agricultural machines] Sel'skokhoziaistvennye mashiny. Moskva, Sel'khozizdat, 1963. 502 p. (MIRA 17:3)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

BULKIN, A.; KOROBEYNIKOVA, A., ekonomist; MURTAZINA, Kh.; NELYUBOVSKAYA, V.

Work conscientiously and have a creative attitude toward work! Fin. SSSR 23 no.10:59-61 O '62. (MIRA 15:10)

1. Starshiy inspektor Zhdanovskogo rayonnogo finansovogo otdela (for Bulkin). 2. Kiyevskiy rayonnyy finansovyy otdel (for Korobeynikova). 3. Starshiy ekonimist Timiryazevskogo rayonnogo finansovogo otdela (for Murtazina). 4. Starshiy ekonimist Finansovogo upravleniya Ispolnitel'nogo komiteta Mosgorsoveta (for Nelyubovskaya).
(Moscow—Finance)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

RODIONOV, A.N.; MEL'NIN, V.I.; [illegible], red.

[Analysis of the transportation costs of hauling forest products from Krasnoyarsk Territory] Analiz transportnykh izderzhek po vyvozu lesnoi produktsii iz Krasnoiarskogo kraia. Moskva, Tsentr. nauchno-issl. in-t tekhn. informatsii i tekhniko-ekon. issl. po lesnoi, tsellyulozno-bumazhnoi, derevoobrabatyvaiushchei promyshl. i lesnomu khoz., 1963. 18 p. (MIRA 17:10)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

RODIONOV, A.K.; MEL'ZIN, V.I., nauchnyy sotrudnik

Specialization and cooperation of the sawmilling and woodworking industry in Krasnoyarsk Territory. Trudy VNIIPIIlesdrev no.8:38-48 '63. (MIRA 18:11)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

RODIONOV, A.K.; NEL'ZIN, V.I., nauchnyy sotrudnik

Analyzing the export of forest products from the Krasnoyarsk Economic Region. Trudy VSNIPILesdrev no.9:37-44 '64. (MIRA 18:11)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001136510006-8

ASS, Ya.K.; NEL'ZINA, O.S.; PYATOVA, V.N.

Abstracts of articles received by the editors. Ort. travm. i protez. 23 no.10:77-79 O '62. (MIRA 17:10)

1. Iz gospital'noy khirurgicheskoy kliniki (zav.- prof. S.Yu. Minkin) Permskogo meditsinskogo instituta (rektor - dotsent T.B. Ivanovskaya) i Permskoy oblastnoy klinicheskoy bol'nitsy (glavnyy vrach- V.V. Pleshkov).

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