KUZNETSOV, Yevgeniy Semenovich; Prinimali uchastiye: RYTCHENKO, V.I.; ORLOV, V.P.; RUBETS, D.A.; ZAYATS, T.P.; KUROPTEV, V.T.; LEYDERMAN, S.R.; NOSOV, L.I.; SOKOLOV, O.V.; TULUKOV, G.A.; SHIBIN, P.V. LESNYAKOV, F.I., red.; DONSKAYA, G.D., tekhn.red.

[Efficient systems of maintenance and methods for their correction] Ratsional'nye reshimy tekhnicheskogo obsluzhivaniia i metodika ikh korrektirovaniia. Moskva, Avtotransizdat. Pt.2. [Second stage of motor vehicle maintenance] Vtoroe tekhnicheskoe obsluzhivanie. 1960. 98 p. (MIRA 14:3)
(Motor vehicles--Maintenance and repair)

KUZNETSOV, Yevgeniy Semenovich; PLEKHANOV, Ivan Petrovich; PAPMEL', S.V., red.; MANINA, M.P., tekhn. red.

[Sketches on traffic safety] Ocherki po bezopasnosti dvizhenii. Moskva, Gos. izd-vo "Fizkul'tura i sport," 1960. 135 p. (MIRA 14:5)

(Traffic safety)

KUZNETSOV, Ye., kand.tekhn.nauk; KUROPTEV, V., inzh.

Maintenance of motortruck brakes and clutches. Avt.transp. 38 no.2:19-22 F '60. (MIRA 13:6)
(Motortrucks--Maintenance and repair)

KUZNETSOV, Ye., kand.tekhn.nauk; SHTEYNBOK, L., inzh.

Efficient methods for wheel inspection and alignment. Avt. transp. 38 no. 5:18-19 '60. (MIRA 14:2)
(Automobiles—Maintenance)

KUZNETSOV, Yevgeniy Semenovich; PLEKHANOV, I.P., red.; GORYACHKINA, R.A., tekhn. red.

[Conditions of the maintenance of motor vehicles] Rezhimy tekhnicheskogo obsluzhivaniia avtomobilei. Moskva, Avtotransizdat, 1963. 246 p. (MIRA 16:8)
(Motor vehicles—Maintenance and repair)

KUZNETSOV, Ye.S., kand. tekhn. nauk; KRAMARENKO, G.V., prof., red.; VLASOV, A.I., red.

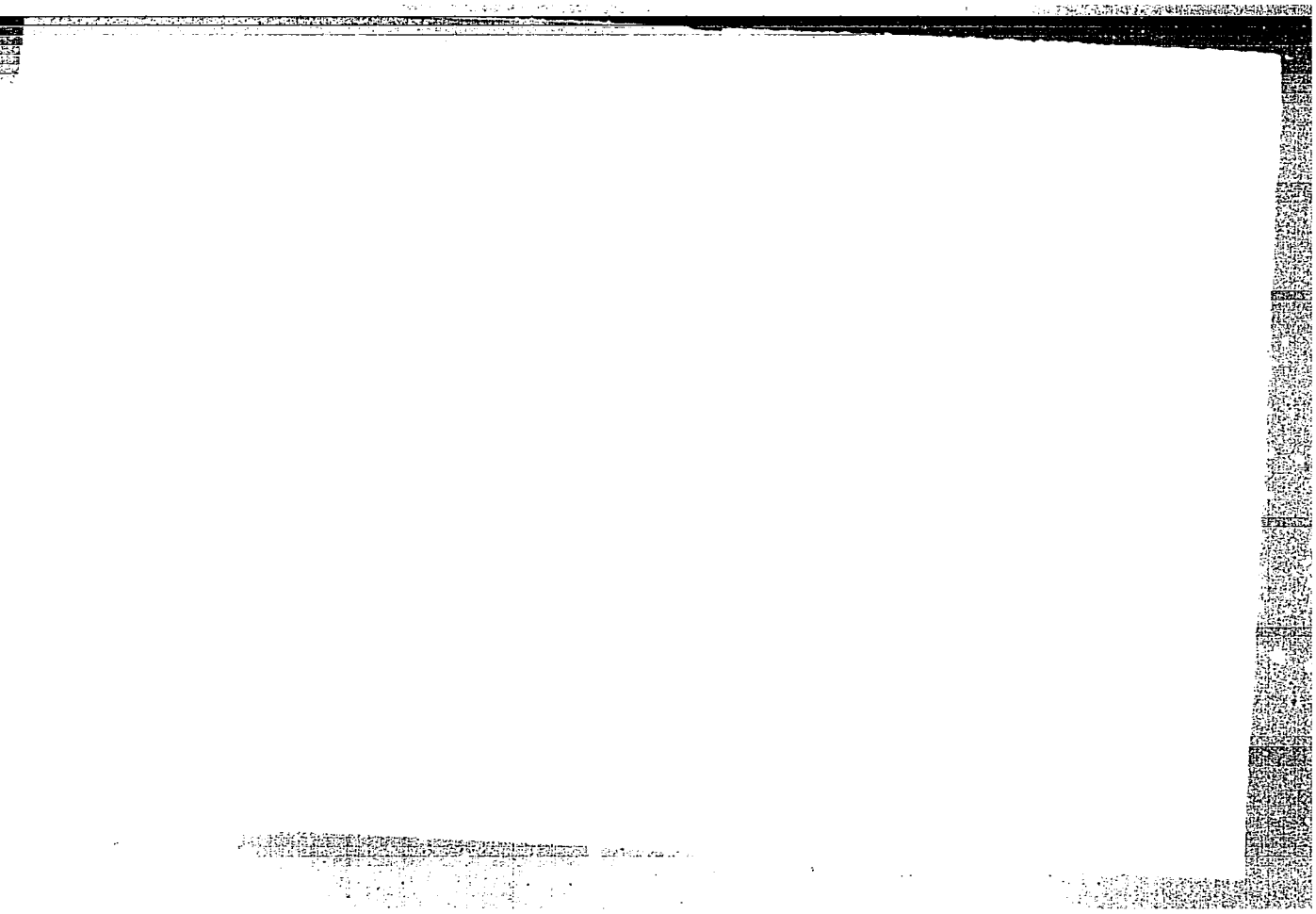
[Maintenance of motor vehicles] Tekhnicheskaia ekspluatatsiia avtomobilei. Moskva, Rosvuzizdat. No.1. 1963. 60 p. (MIRA 17:4)

KUZNETSOV, Ye.S., kand.tekhn.nauk

Some prospects of structural changes in automotive transportation rolling stock. Avt.prom. 30 no.1:19-22 Ja '64. (MIRA 17:3)

1. Nauchno-issledovatel'skiy institut avtomobil'nogo transporta.

automobile industry, lubricant, molybdenum



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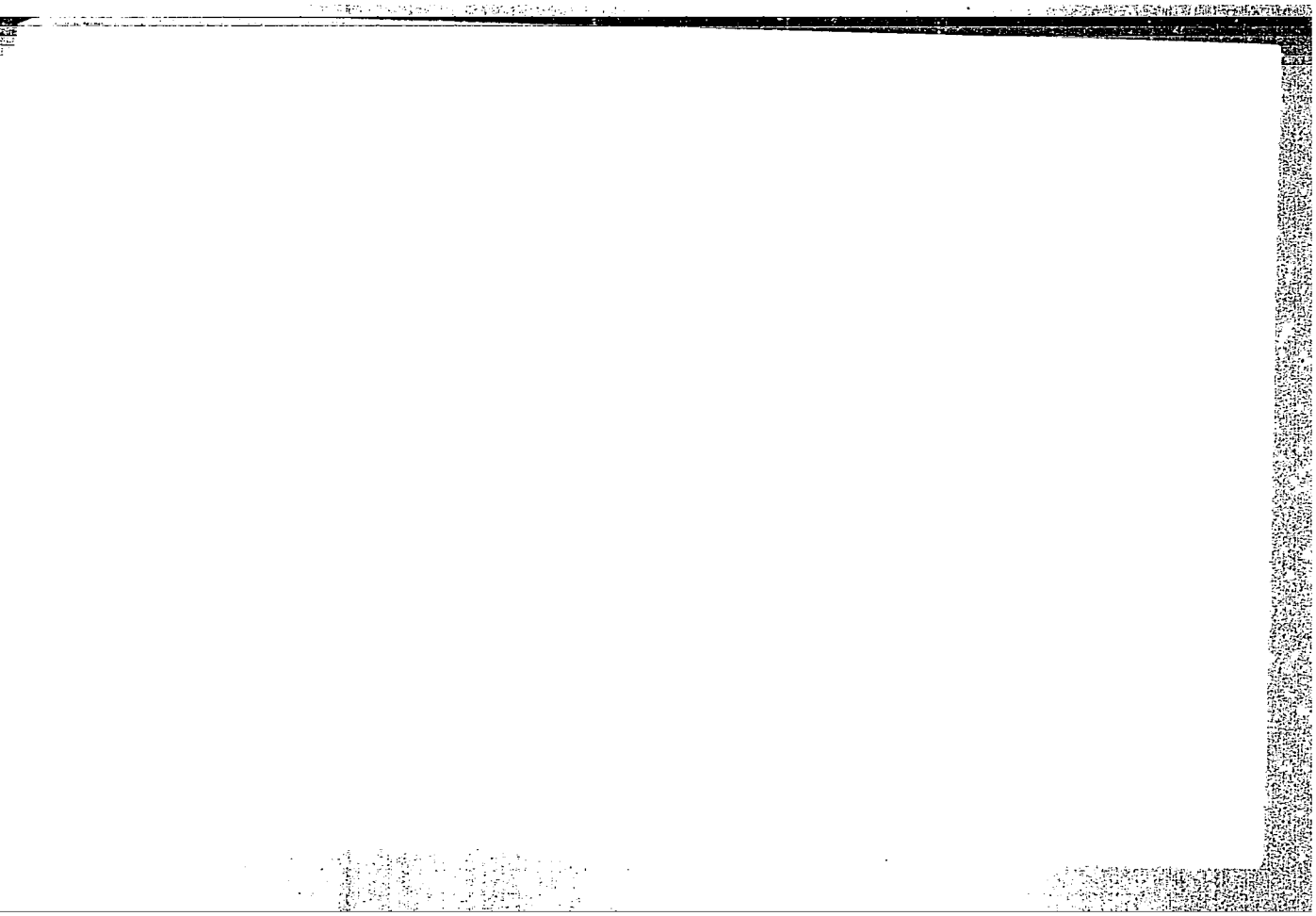

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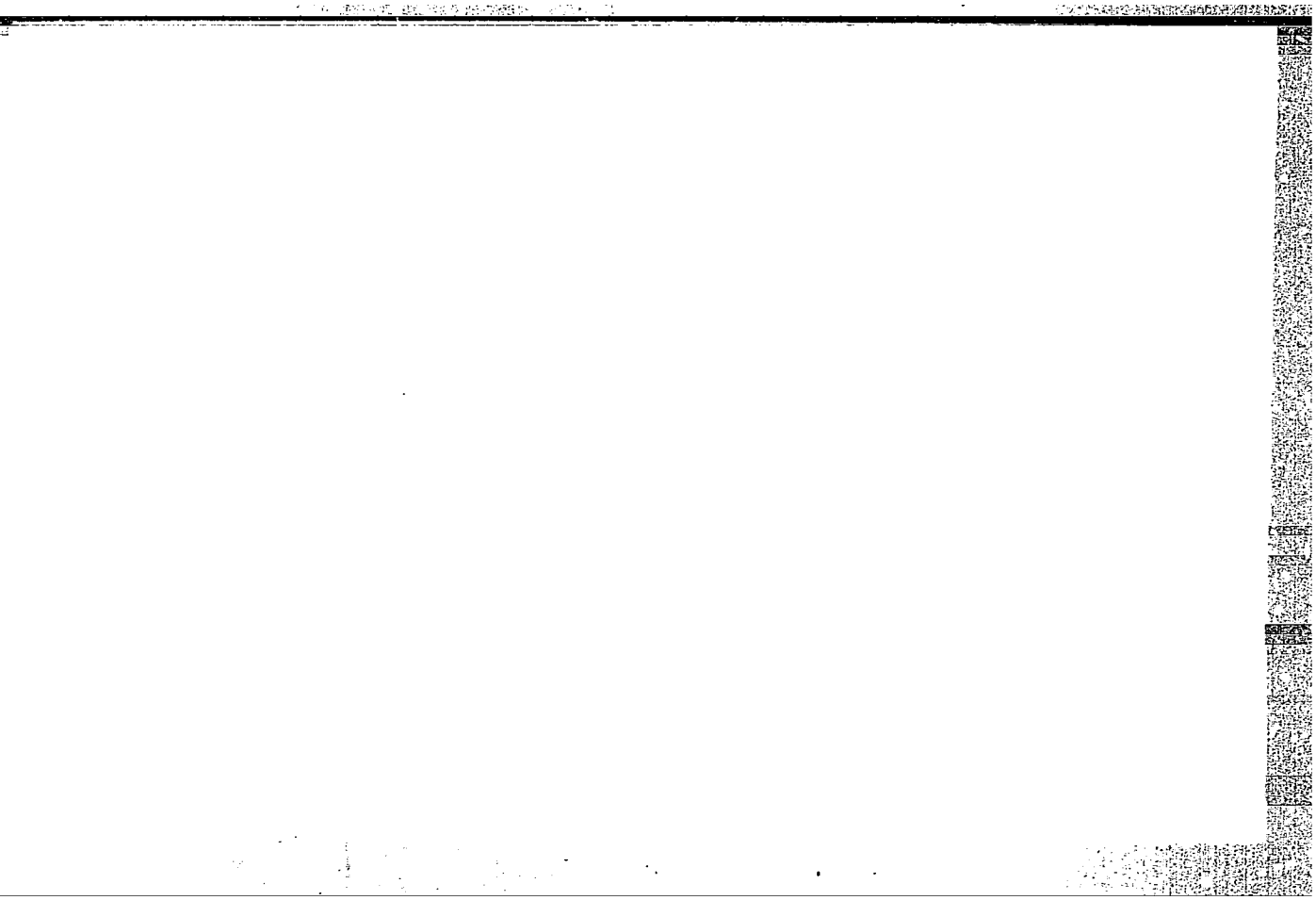

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000928210017-1"

ACC NR: AP6025927 SOURCE CODE: UR/0208/66/006/004/0769/0773

AUTHOR: Kuznetsov, Ye. S. (Deceased)

ORG: none

TITLE: A solution to the radiation transfer equation for a two dimensional anisotropic dispersion

SOURCE: Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki, v. 6, no. 4, 769-773

TOPIC TAGS: transfer equation, anisotropic dispersion, optic property, iteration

ABSTRACT: The author discusses the transfer equation for a two-dimensional layer of optical thickness τ^* which has the form

$$\cos\theta\frac{\partial I}{\partial\tau}=\frac{\lambda(\tau)}{4\pi}\int I(\tau,\Omega')\gamma(\tau,\Omega'\Omega)\,d\Omega'-I(\tau,\Omega)+J(\tau,\Omega)\quad(0\leqslant\tau\leqslant\tau^*).\qquad(1)$$

Here

$$\tau=\int_0^z[\sigma'(l)+\sigma(l)]\,dl\qquad\left(\tau^*=\int_0^\infty[\sigma(l)+\sigma(l)]\,dl\right)$$

is the optical thickness of a layer of height z computed from the lower boundary; and

Card 1/2 UDC: 517.9:536.24

$\alpha(z)$ and $\sigma(z)$ are coefficients of absorption and dispersion considered as arbitrary functions of height z. The integral in Eq. (1) is extended to the surface of a sphere corresponding to direction Ω'. The dispersion function $\gamma(\tau\,\Omega'\Omega)$ is standardized in the usual way, i.e., so that

$$\frac{1}{4\pi}\int \gamma(\tau, \Omega'\Omega)\,d\Omega = 1. \qquad (4)$$

It is assumed that the boundary conditions have the form

$$I(0, \Omega) = 0 \quad (\theta > 0), \qquad I(\tau^*, \Omega) = 0 \quad (\theta < 0). \qquad (5)$$

If the boundary conditions of the problem are not zero they may be reduced by ordinary substitution to the immediately preceding form, which will be reflected only in the free term $f(\tau,\Omega)$ of the Eq.(1). A program was composed for computer solution of the final result by an iterative method using certain basic parameter values and having its number of iterations dependent on τ^*. Orig. art. has: 17 formulas.

SUB CODE: 12, 20/ SUBM DATE: 14Jan66/ ORIG REF: 001

KUZNETSOV, Ye.S., kand. tekhn. nauk

Methods for determining the periodicity of maintenance and the expediency of compulsory repair. Avt. prom. 31 no.6: 10-14 Je '65. (MIRA 18:10)

1. Nauchno-issledovatel'skiy institut avtomobil'nogo transporta.

E. V. KUZNETSOV

Journal of the Iron and Steel Inst.
June 1954
Metallography

The Influence of Carbon on the Self-Diffusion of Iron in the Iron-Nickel System. P. Ju. Gruzin and E. V. Kuznetsov. (*Doklady Akademii Nauk S.S.S.R.*, 1953, 93, (6), 999–1002). [In Russian]. The influence of carbon on the self-diffusion of iron in Fe–Ni alloys was studied, using radioactive Fe_{59}, in the temperature ranges 800–1300° C. and 1050–1330° C. for alloys containing 20% and 25% of nickel respectively. The time of diffusion heating was such that the diffusion layer was 40–50 times thicker than the electroplated layer of radioactive iron. The dependence of the coefficients of self-diffusion of iron on the carbon content of the iron-nickel alloys are represented by the formulæ: (1) for alloys containing 20% of nickel

$$D_{Fe\text{-}Ni\text{-}C} = 18 \cdot 10^{-0.02p} e^{-\frac{73000 - 6000p}{RT}};$$

and (2) for alloys containing 25% of nickel

$$D_{Fe\text{-}Ni\text{-}C} = 71 \cdot 10^{-0.05p} e^{-\frac{79000 - 5000p}{RT}};$$

where p is the carbon content in at.-%, R a gas constant, and T the temperature (° K.) It is concluded that carbon lowers the bond energy of atoms in solid solutions of iron and nickel.

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Effect of intergranular structure of austenite on the self-diffusion of iron. P L Gruzin, E V Kuznetsov and G V Kurdyumov (*Doklad Akad Nauk SSSR*, 1953, 93, 1021–1023). Whereas the coeff of self-diffusion of iron in steels containing 19.8% and 24.6% Ni, 0.45 and 0.69% C, is the same above 1000° for samples which were quenched from 1360° to room and liquid N temp at 1000° the values for the samples cooled in liquid N are much greater than those cooled to room temp. This is ascribed to the preservation, after the diffusionless reconversion of martensite to austenite of the grain boundaries formed during the conversion of austenite to martensite which facilitate self diffusion. [illegible]

(2)

Inst. Metals + Physics of Metals, TsNII Ch M.

KUZNETSOV, Ye.V.

GRUZIN, P.L., kand.fiz.-mat.nauk; KUZNETSOV, Ye.V.; KURDYUMOV, G.V., akademik

Effect of the intergranular structure of austenite on the self-diffusion of iron. Probl. metalloved. i fiz. met. no.4:494-497 '55.
(Diffusion) (Iron alloys--Metallography) (MIRA 11:4)
(Austenite)

KUZNETSOV, Ye. V.

Category : USSR/Solid State Physics - Diffusion. Sintering E-6

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 6681

Author : Noskov, B.M., Kuznetsov, Ye.V., Shcherbedinskiy, G.V.
Inst : Gor'kiy, USSR
Title : Influence of Intragrenular Seperation Bounderies on the Coefficient of Self-Diffusion of Iron in Iron-Nickel-Carbon Alloys.

Orig Pub : Fiz. metalloy,i metallovedeniye, 1956, 2, No 3, 489-493

Abstract : The coefficient of self-diffusion of iron is 2-3 times greater in alloy specimens that have been subjected to martensitic transformation and have been again restored to austenite, than in specimens that have not been subjected to martensitic transformation. This is caused by the presence of traces of previous martensite bounderies, along which intercrystalline diffusion is more rapid. These traces are eliminated gradually as the temperature increases during the time of heating. The energy of activation of the process of eliminating the traces is nearly equal to the activation energy of the intercrystalline self-diffusion.

Card : 1/1

ACC NR: AP6001870 SOURCE CODE: UR/0190/65/007/012/2146/2149

AUTHORS: Kuznetsov, Ye. V.; Fayzullina, D. A.; Fayzullin, I. N.; Prosolova, T. N.; Avvakumova, N. I.

ORG: Kazan' Chemico-Technical Institute im. S. M. Kirov (Kazanskiy khimiko-tekhnologicheskiy institut)

TITLE: Interaction of aromatic disulfochlorides with dimethylol-containing organophosphorus compounds. 2nd communication in the series Phosphorus-containing polysulphonates

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 12, 1965, 2146-2149

TOPIC TAGS: polymer, polymerization, organic phosphorus compound, organic sulfur compound, sulfonic acid, organic synthetic process

ABSTRACT: This work was performed to extend the previously reported results of Ye. V. Kuznetsov, D. A. Fayzullina, and R. P. Tyurikova (Vysokomolek. soyed., 7, 761, 1965) and particularly to investigate the possibility of synthesizing linear polysulphonates on the basis of aromatic disulfochlorides and dimethyl-containing phosphorus organic compounds. The following phosphorus-containing polysulfonates based on bis-methylolphosphinic acid, propyl-, isopropyl-, isobutyl-, dimethylolphosphines and benzene-, toluene-, chlorobenzene-, diphenyl-, naphthalinedisulfochlorides were synthesized. The reactions were carried out either in the melt or

Card 1/2

UDC: 541.64+678.86

L 11520-66

ACC NR: AP6001870

in n-heptane at 70--130C. Several physical properties, e.g., refractive index, solubility, viscosity, etc. were studied, and the results were tabulated. It was found that polysulfonates derived from bis-methylol-phosphinic acid hardened when treated with diisocyanates. Orig. art. has: 2 tables and 4 equations.

SUB CODE: 07,11/ SUBM DATE: 29Jan65/ ORIG REF: 003/

Card 2/2

L 13295-66 EWT(m)/T/EWP(j) RM

ACC NR: AP6000330 SOURCE CODE: UR/0286/65/000/021/0019/0019

INVENTOR: Kuznetsov, Ye. V.; Fayzullina, D. A.; Fayzullin, I. N.; Prasolova, T. N.; Tyurikova, R. P.

ORG: none

TITLE: A method for producing polysulfonates which contain phosphorus. Class 12, No. 175964

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 21, 1965, 19

TOPIC TAGS: polymer, organic phosphorus compound, sulfonation, SULFUR COMPOUND

ABSTRACT: This Author's Certificate introduces a method for producing polysulfonates which contain phosphorus. New polymers are produced by interacting disulfochlorides with organophosphorus compounds which contain hydroxyl radicals.

SUB CODE: 07/ SUBM DATE: 06Jul62/ ORIG REF: 000/ OTH REF: 000

jw

Card 1/1

UDC: 678.85 : 678.684

KUZNETSOV, Ye.V.

USSR/General Section - Metrology. Laboratory Technique. A-6

Abs Jour : Ref Zhur - Fizika, No 4, 1957, 8362

Author : Ye.V. Kuznetsov
Inst :
Title : Scheme for Measuring Rapidly Varying Capacitances.

Orig Pub : Pribory i tech. eksperimenta, 1956, No 1, 58-60.

Abstract : Description of a simple one-tube circuit for measuring rapidly-varying capacitances. The sensitivity of the circuit is 1.8 ma/uuf; the "current-capacitance" characteristic is practically linear. The circuit can measure capacitances varying with a frequency from 0 to 100 -- 200 kc. The circuit is developed for the control of the operating conditions of the bubble chamber, but can be also in the investigation of working cycles in internal combustion engines, to study mechanical vibrations, etc.

Card 1/1

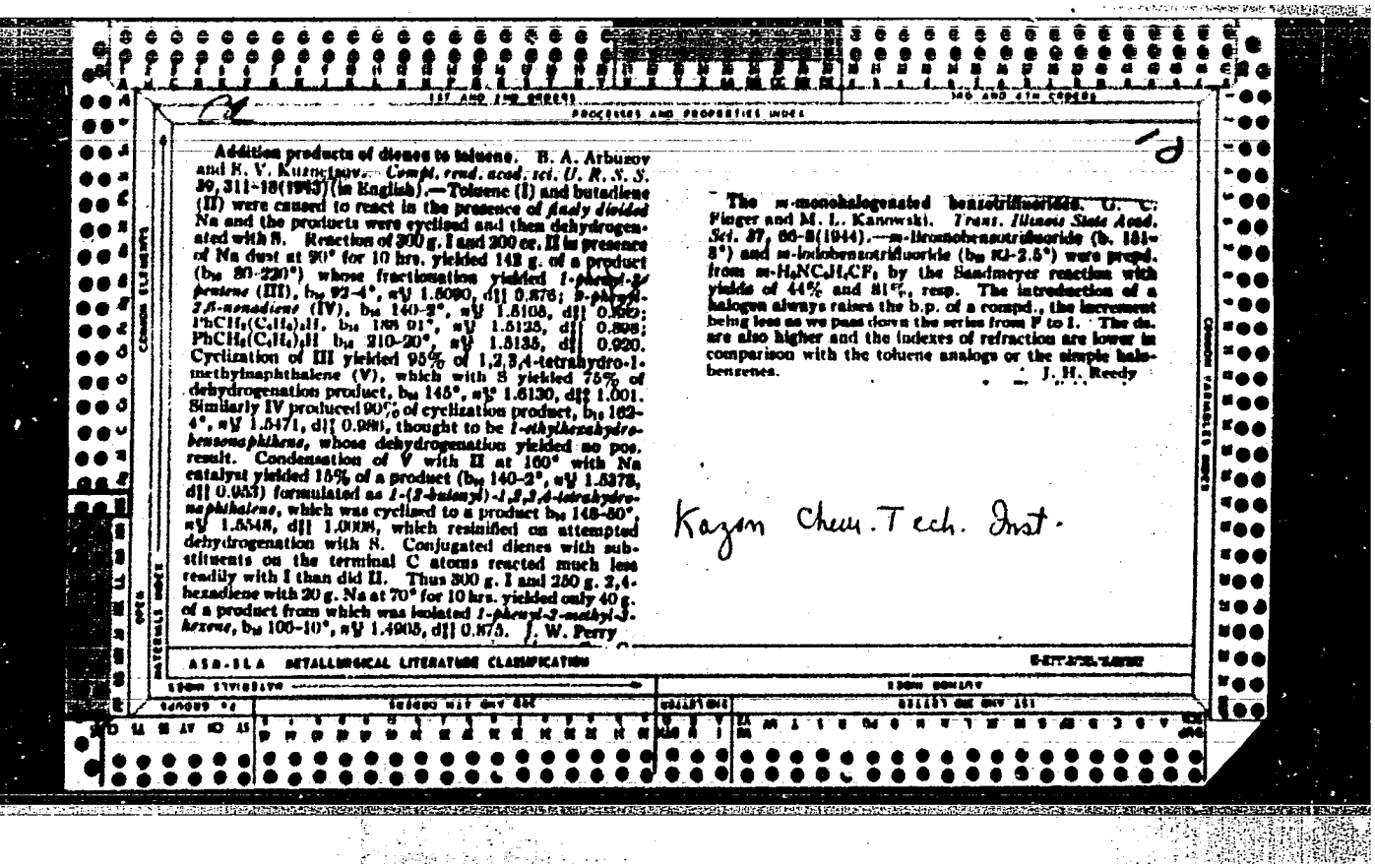
Kuznetsov, Ye. V.

INSTRUMENTATION: CHANNEL ANALYZERS

"Twenty-Four-Channel Amplitude Analyzer Using Type LP-1 Electronic Switch", by Ye.V. Kuznetsov, Pribory i Tekhnika Eksperimenta, No 2, September-October 1956, pp 62-68.

In the simple twenty-four-channel analyzer described in this article, the width of the analyzer channels is stable, on the average, with an accuracy of 2% of the width of the channel over a week; the stability of the threshold is 0.3%. The speed of the analyzer is 40 pulses per second per channel. Using supplementary counting circuits, the speed can be increased to 5×10^4 pulses per second for the entire analyzer. Provision is made for narrowing and widening the working range of the analyzer and for shifting this range to various places of the investigated spectrum. The analyzer is designed for positive and negative pulses ranging from 3 to 500 millivolts.

Card 1/1



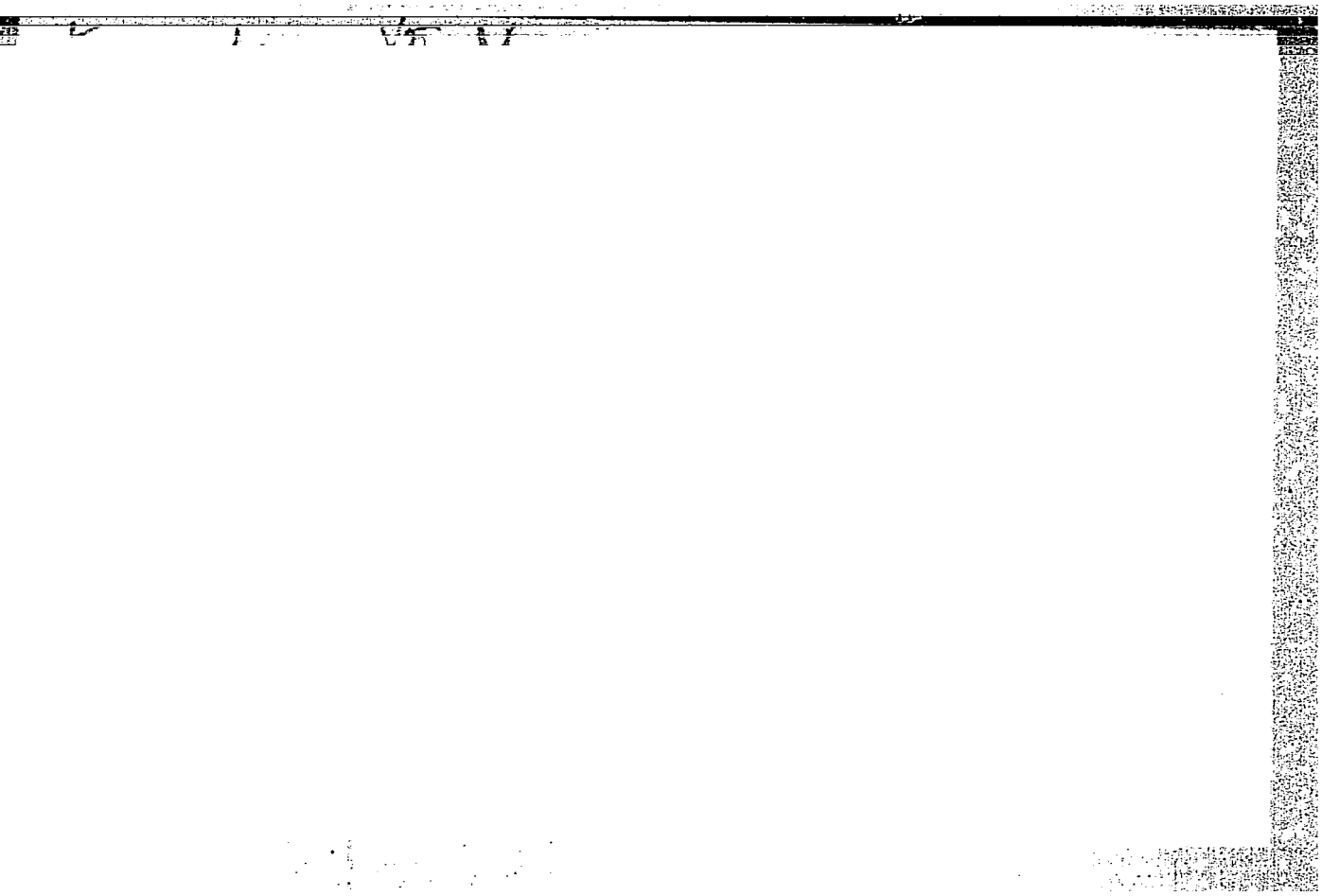
Addition products of dienes to toluene. B. A. Arbuzov and K. V. Kuznetsov. *Compt. rend. acad. sci. U. R. S. S.* 39, 311-18(1943) (in English).—Toluene (I) and butadiene (II) were caused to react in the presence of *finely divided* Na and the products were cyclized and then dehydrogenated with S. Reaction of 300 g. I and 200 cc. II in presence of Na dust at 90° for 10 hrs. yielded 142 g. of a product (b_{10} 80-220°) whose fractionation yielded *1-phenyl-2-pentene* (III), b_{10} 92-4°, n_D^{20} 1.5090, d_4^{20} 0.876; *5-phenyl-2,5-nonadiene* (IV), b_{10} 140-2°, n_D^{20} 1.5105, d_4^{20} 0.899; $PhCH_2(C_4H_6)_2H$, b_{10} 155-91°, n_D^{20} 1.5125, d_4^{20} 0.898; $PhCH_2(C_4H_6)_3H$, b_{10} 210-20°, n_D^{20} 1.5135, d_4^{20} 0.920. Cyclization of III yielded 95% of 1,2,3,4-tetrahydro-1-methylnaphthalene (V), which with S yielded 75% of dehydrogenation product, b_{10} 145°, n_D^{20} 1.6130, d_4^{20} 1.001. Similarly IV produced 90% of cyclization product, b_{10} 162-4°, n_D^{20} 1.5471, d_4^{20} 0.990, thought to be *1-ethylhexahydrobenzonaphthene*, whose dehydrogenation yielded no pos. result. Condensation of V with II at 160° with Na catalyst yielded 15% of a product (b_{10} 140-2°, n_D^{20} 1.5378, d_4^{20} 0.953) formulated as *1-(2-butenyl)-1,2,3,4-tetrahydronaphthalene*, which was cyclized to a product b_{10} 148-50°, n_D^{20} 1.5548, d_4^{20} 1.0008, which resinified on attempted dehydrogenation with S. Conjugated dienes with substituents on the terminal C atoms reacted much less readily with I than did II. Thus 300 g. I and 250 g. 2,4-hexadiene with 20 g. Na at 70° for 10 hrs. yielded only 40 g. of a product from which was isolated *1-phenyl-2-methyl-3-hexene*, b_{10} 100-10°, n_D^{20} 1.4905, d_4^{20} 0.875. J. W. Perry

The *m*-monohalogenated benzotrifluorides. G. C. Finger and M. L. Kaniewski. *Trans. Illinois State Acad. Sci.* 37, 66-8(1944).—*m*-Bromobenzotrifluoride (b. 151-3°) and *m*-iodobenzotrifluoride (b_{20} 80-2.5°) were prepd. from m-$H_2NC_6H_4CF_3$ by the Sandmeyer reaction with yields of 44% and 81%, resp. The introduction of a halogen always raises the b.p. of a compd., the increment being less as we pass down the series from F to I. The densities are also higher and the indexes of refraction are lower in comparison with the toluene analogs or the simple halobenzenes. J. H. Reedy

Kazan Chem. Tech. Inst.

Heats of formation for mixtures in the system sulfuric acid–citric acid–sulfuric anhydride. E. V. Kurnetsov and L. I. Kurnetsov-Fetisov (S. M. Kirov Inst. Chem. Tech., Kazan). *J. Appl. Chem. U.S.S.R.* 25, 1365–7 (1959) (English translation); *Zhur. Priklad. Khim.* 25, 1311–13 (1952).—The method, app., and interpretation of exptl. results used by Gelfman (*C.A.* 42, 4830d), are criticized. The max. miscibility heat in the ternary system H_2SO_4–HNO_3–SO_3 corresponds to the compn. $3HNO_3.4SO_3$ instead of $HNO_3.2SO_3$ as previously reported. Its value, according to detns. by K. and K.-F., is equal to 137 cal. per g. of mixt. instead of the 64 cal. as previously reported.

Herbert Lieberkind



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KUZNETSOV, Ye.V.

20-6-20/42

AUTHORS: Gil'm Kamay, Kuznetsov, Ye. V., and Valetdinov, R. K.

TITLE: Cyan Substituted Dialkylphosphates (O tsianzameshchennykh dialkilfosfitakh)

PERIODICAL: Doklady AN SSSR, 1957, Vol. 116, Nr 6, pp. 965 - 968 (USSR)

ABSTRACT: Hitherto the cyanic substitutes of the ether of the phosphorous acid have not been described. Because the introduction of the cyanogen group into the molecule of the dialkylphosphite must strongly modify its properties, the authors studied the interaction reaction of equimolar quantities of some α-cyanhydrines with phosphorus-trichloride. Thereby it has been stated that this reaction passes on formation of a mixture of products, and so of chloranhydrides of the α-cyanalkyl- and the di-α-cyanalkylphosphorous acids as well as of tri-α-cyanalkylphosphites. A scheme of the reactions following one another is mentioned. The latter compound will not be changed into the second above-mentioned acid, in spite of difficult reaction conditions (high concentration of the reagents), although the here known regrouping of Arbuzov could be expected. By the aid of manifold fractioned destillations altogether 21 α-cyanogen substituted phosphites and their chloranhydrides have been isolated from the mixture of reactions (table 1). They

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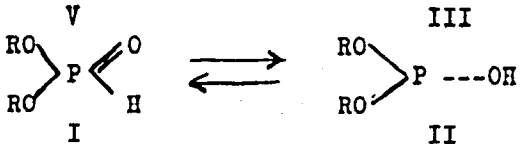
are achromatic liquids fuming in the moist air. Furthermore, the saponification reaction of the chloranhydrides of the di-α-cyan-alkylphosphorcus acid has been studied under different conditions. With an exactly measured quantity of water in the etheric medium and at the presence of pyridine, this reaction leads to the formation of acid cyanogen substituted ethers of the phosphorous acid. Table 2 shows 6 of those compounds including their properties. The isolated di-α-cyanogen alkylphosphorous acids are achromatic liquids with a weak smell. They retain as derivatives of the trivalent phosphor us in difference to the not cyanogen substituted acids. Since more than a half century Arbuzov has drawn the conclusion that all mean ethers of the phosphorous acid are built up on the base of the trivalent phosphorus, meanwhile the acid itself and its acid ethers contain a pentavalent phosphorus. Already at that time Arbuzov expressed the conception about a possible existence of the phosphorous acid and its acid ethers as tautomeric forms:



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Cyan Substituted Dialkylphosphates

According to Arbuzov the structure I has the free form of the acid. In solutions it may be existing in the tautomeric form. These conclusions have been brightly confirmed by the recent physical-chemical investigations (ref. 4 - 6). At the phosphites mentioned the tautomeric equilibrium seems to be removed in the direction of the trivalent phosphorus. Therefore the position of the equilibrium of the acid ethers is also dependent on the quality of the radicals (ref. 7). Furthermore, it has been stated by the authors that the di-α-cyanogen-containing radicals also show properties of the mixed ethers of the phosphorous acid. By the influence of heating-up the hydroxyl group within them is exchanged intermolecularly by a corresponding radical. But, in the case of the di-α--cyanisopropylphosphorous acid containing a tertiary radical, this practically will not be so. There are 2 tables, 7 Slavic references.

Card 3/4

20-6-20/42

Cyan Substituted Dialkylphosphates

ASSOCIATION: Kazan' Institute of Chemical Technology im. S. M. Kirov
(Kazanskiy khimiko-tekhnologicheskiy institut im. S. M. Kirova)

PRESENTED: June 6, 1957, by B. A. Arbuzov, Academician

SUBMITTED: June 3, 1957

AVAILABLE: Library of Congress

Card 4/4

SOV/120-59-1-33/50

AUTHORS: Kuznetsov, Ye. V., Timoshin, I. Ya.

TITLE: The Use of Carbon Dioxide as the Working Liquid in a Bubble Chamber (Ispol'zovaniye uglekisloty v kachestve rabochey zhidkosti dlya puzyr'kovoy kamery)

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 1, p 132 (USSR)

ABSTRACT: In some cases, for example, in experiments connected with the theory of isotopic spin, experiments on the determination of the parity of particles, as well as in experiments with polarized particles, carbon dioxide is very useful as the working liquid in a bubble chamber since the spins and the isotopic spins of C^{12} and O^{16} are zero while their masses are not very different. In this respect a carbon dioxide chamber is analogous to a helium chamber. The present authors have investigated the possibility of using such a chamber. The volume of the chamber was 2.5 litres. The compression time was 8×10^{-3} sec and the decompression time was equal to it. It turned out that the chamber was sensitive to ionising radiations for saturated vapour pressures in the interval 37.5-48.5 atm which corresponds to the temperature interval 3.5-13.5°C. At 13.5°C the limiting pressure was 36 atm. It must be noted that carbon dioxide dissolves in plexiglass and rubber. This

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SOV/120-59-1-33/50

The Use of Carbon Dioxide as the Working Liquid in a Bubble Chamber

is not important during the actual working of the chamber but leads to difficulties after the working liquid has been removed from the chamber and the latter cannot be used again. If for some reason the working liquid has to be removed from the chamber then the windows must be made from ordinary glass and polyethylene. There are no figures or references.

SUBMITTED: January 25, 1958.

Card 2/2

KUZNETSOV, Ye.V.; BOGDANOV, A.P.

Reactivity of nitrophthalyl chlorides. Report No.1: Synthesis of 3- and 4-nitrophthalyl chlorides. Trudy KKHTI no.26:75-77 '59. (MIRA 15:5)

(Phthalic acid)

KUZNETSOV, Ye.V.; BOGDANOV, A.P.

Reactivity of nitrophthalyl chlorides. Report No.2: Interaction of 4-nitrophthalyl chlorides with saturated monoatomic alcohols. Trudy KKHTI no.26:78-87 '59. (MIRA 15:5)
(Phthalic acid) (Alcohols)

KUZNETSOV, Ye.V.; BOGDANOV, A.P.; DIVGUN, S.M.

Reactivity of nitrophthalyl chlorides. Report No.3: Synthesis of fully substituted alkyl-4-nitrophthalates. Trudy KKHTI no.26:88-92 '59. (MIRA 15:5)
(Phthalic acid)

AUTHORS: Kuznetsov, Ye. V., Valetdinov, R. K. SOV/79-29-1-49/74

TITLE: On the Reaction of α,γ-Dichlorohydrin of Glycerin With PCl_3, $POCl_3$ and $PSCl_3$ (O vzaimodeystvii α,γ-dikhlorgidrina glitserina s PCl_3, $POCl_3$ i $PSCl_3$)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 1, pp 235 - 238 (USSR)

ABSTRACT: In continuation of the papers by Kabachnikov (Ref 1) and other chemists (Refs 2-5) the authors found that glycerin-α,γ-dichlorohydrin reacts with PCl_3 (1:1) under formation of a mixture of products the constants of which are given by the table. The former two, the chloranhydrides of bis-β,β'-dichloro isopropyl- and β,β'-dichloro phosphoric acid are heavy fluids fuming in the air. The third is a viscous, colorless and non-smelling oil and does not react with CuCl and phenyl azide. The transformation of the compound of trivalent phosphorus into the compounds of pentavalent phosphorus probably proceeds according to the scheme one suggested

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by Kabachnikov with respect to tris-β-chloro-ethyl phosphite (Ref 2). In the case of saponification of chloranhydride of bis-β,β'-dichloro-isopropyl phosphoric acid with water in ether solution, in connection with the binding of chloro hydrogen to pyridine, the corresponding acid was the result (boiling point 145-147° at 0.4 mm). In the case of reaction of α,γ-dichlorohydrin of glycerin with phosphoroxy chloride a mixture of products is formed: the chloranhydride of β,β'-dichloro isopropyl phosphoric acid $(ClCH_2)_2CHOPOCl_2$, the chloranhydride of bis-β,β'-dichloro-isopropyl phosphoric acid $[(ClCH_2)_2CHO]_2POCl$ and the tris-β,β'-dichloro-isopropyl phosphate $[(ClCH_2)_2CHO]_3PO$. The first of the three chloranhydrides has hitherto been unknown (constants in the experimental part). Tris-β,β'-dichloro-isopropyl phosphate, as already earlier synthesized by Jones could not be preserved in pure state by the authors. The α,γ-dichlorohydrin of glycerin reacts with phosphorus sulfochloride less easily than with PCl_3 or $POCl_3$, only in the case of boiling of the

reaction mass. In this connection it was impossible to preserve certain reaction products. There are 1 table and 5 references, 2 of which are Soviet.

ASSOCIATION: Kazanskiy khimiko-tekhnologicheskiy institut imeni S. M. Kirova (Kazan' Chemotechnological Institute imeni S. M. Kirov)

SUBMMITED: October 28, 1957

5 (3)

AUTHORS: Kuznetsov, Ye. V., Valetdinov, R. K. SOV/79-29-6-53/72

TITLE: Synthesis of the Triallyl Phosphate (Sintez triallilfosfata)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 6, pp 2017 - 2018 (USSR)

ABSTRACT: The synthesis of the triallyl phosphate from allyl alcohol and phosphorus oxychloride (Ref 2) has been described in publications. The reaction takes place in a solution of toluene in presence of pyridine at a temperature of -35°. It is pointed out that the distillation which takes place thereby, proceeds under decomposition of the reacting substances, and often leads to an explosion. It seems to be difficult to obtain a sufficient quantity of a pure product in this way. Only the boiling temperature at a pressure of 0.5 mm is mentioned. The authors worked out a new synthesis of the triallyl phosphates which consists of an oxidation of triallyl phosphite, while dry oxygen is passed through it (70-80°). This synthesis is simple and does not require low temperatures; there is no danger of explosion during the distillation. The synthesis takes place in two stages: 1) According to A. Ye. Arbuzov and V. M. Zoroastrova

Card 1/2

Synthesis of the Triallyl Phosphate SOV/79-29-6-53/72

(Refs 3,4) triallyl phosphite is synthesized:
$3CH_2{=}CH\text{-}CH_2OH + PCl_3 + 3C_6H_5N \longrightarrow (CH_2{=}CH\text{-}CH_2O)_3P + 3C_6H_5N \cdot HCl$

2) The oxidation of the triallyl phosphite, according to the method developed by the authors is carried out as follows:
$(CH_2{=}CH\text{-}CH_2O)_3P + 0.5O_2 \longrightarrow (CH_2{=}CH\text{-}CH_2O)_3PO$

The progress of the oxidation is checked by the change of the refractive index of the light. The separation of the mixture of diallyl phosphite and triallyl phosphite is somewhat difficult, because the boiling temperatures are close to each other. Triallyl phosphate was obtained in pure state. Its constants were determined for the first time. There are 5 Soviet references.

ASSOCIATION: Kazanskiy khimiko-tekhnologicheskiy institut imeni S. M. Kirova (Kazan' Chemical-technological Institute imeni S. M. Kirov)

SUBMITTED: April 9, 1958

Card 2/2

AUTHORS: Kuznetsov, Ye.V., Minimullina, L. SOV/80-32-2-53/56

TITLE: On the Synthesis of Tridimethylphenyl-n-Cresylphosphate (O sinteze tridimetilfenil-n-krezilfosfata)

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol XXXII, Nr 2, pp 464-465 (USSR)

ABSTRACT: The phenyl ethers of the phosphoric acid are used as plasticizers, antioxidants, insectofungicides, etc. During the synthesis of these polyphenyl derivatives of the phosphoric acid trimethylphenyl-n-cresylphosphate is formed. Magnesium chloride is a good catalyst for this process. The substance boils at 390 - 400°C at 0.1 mm mercury column. The melting point of the crystalline product is 142°C. It is soluble in tricresylphosphate, benzene, butylacetate, acetone, etc. It may be used as plasticizer for polyvinylchloride, nitrocellulose and other polymers.

Card 1/2 There are 4 Soviet references.

On the Synthesis of Tridimethylphenyl-n-Cresylphosphate SOV/80-32-2-53/56

ASSOCIATION: Laboratoriya kafedry tekhnologii organicheskogo sinteza Kazanskogo khimiko-tekhnologicheskogo instituta (Laboratory of the Chair of Organic Synthesis Technology of the Kazan' Chemical-Technological Institute)

SUBMITTED: February 3, 1958

Card 2/2

KUZNETSOV, Ye.V.; VIZEL', A.O.; SHERMERGORN, I.M.; TYULENEV, S.S.

Relation between the molecular weight of polyethylene terephthalate and the viscosity of its solutions in a mixture of phenol and dichloroethane. Vysokom. soed. 2 no.2:205-209 F '60. (MIRA 13:11)

1. Kazanskiy khimiko-tekhnologicheskiy institut.
(Terephthalic acid)

KUZNETSOV, Ye.V.; BOGDANOV, A.P.; GIL', A.p.

Synthesis of resins on the basis of 3- and 4- nitrophthalic acids and polyatomic alcohols, and study of some laws of their polycondensation. Vysokom.soed. 2 no.5:759-764 My '60. (MIRA 13:8)

1. Kazanskiy khimiko-tekhnologicheskiy institut.
(Resins, Synthetic)
(Phthalic acid)
(Alcohols)

31552
S/081/61/000/022/024/076
B110/B138

53630 2220, 2209

AUTHORS: Kuznetsov, Ye. V., Bakhitov, M. I.

TITLE: Interaction of dialkyl phosphoric acids, trialkyl phosphites, and unsaturated carboxylic acids with diisocyanates

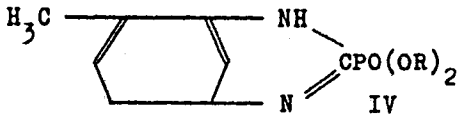
PERIODICAL: Referativnyy zhurnal. Khimiya, no. 22, 1961, 208, abstract 22Zh244 (Tr. Kazansk. khim.-tekhnol. in-ta, no. 29, 1960, 105-107)

TEXT: The following was obtained by the reaction of equimolar amounts of $OCN(CH_2)_6NCO$ (I) and $(RO)_2P(O)H$ (II) in ether: $OCN(CH_2)_6NHC(O)P(O)(OR)_2$ (R= $CH_2=CHCH_2$, C_2H_5, n-C_3H_7, n-C_4H_9). By heating equimolar amounts of $2,4-(OCN)_2C_6H_3CH_2$ (III) and II for 4-5 hr, 1 equivalent weight CO_2 is separated, and the substance (IV, where R= CH_3, C_2H_5, n-C_3H_7, iso-C_3H_7, n-C_4H_9, iso-C_4H_9, iso-C_5H_{11}) is formed.

Card 1/2

31552
S/081/61/000/022/024/076
B110/B138

Interaction of dialkyl phosphoric...



IV

The following was obtained by reaction of I with RCOOH: $(CH_2)_6(NHCOCOOR)_2$ (crystals) (R = CH_2=CH, CH_2=CCH_3, C_6H_5CH=CH). In the presence of RONa, I and II yield $(CH_2)_6[NHC(O)P(O)(OR)_2]_2$ (R = CH_3, C_2H_5, n-C_3H_7, iso-C_3H_7, n-C_4H_9, iso-C_4H_9, iso-C_5H_{11}). By heating I with $(RO)_3P$, polycondensation products are obtained under separation of CO_2. By reaction of I and III with $(HOCH_2)_3PO$ or $(HOCH_2)_4PCl$, polymeric products are obtained. [Abstracter's note: Complete translation.]

Card 2/2

S/020/60/134/004/033/036XX
B016/B067

AUTHORS: Kuznetsov, Ye. V. and Bakhitov, M. I.

TITLE: Addition of the Dialkyl Phosphorous Acids to 1,5-Naphthylene Diisocyanate

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 134, No. 4, pp. 830-832

TEXT: In studying the addition of the dialkyl phosphorous acid (DPA) to 1,5-naphthyl diisocyanate the authors found that the acids of this group are easily added (see scheme). In the scheme R $=CH_3$; C_2H_5; n-C_3H_7; iso-C_3H_7; n-C_4H_9; iso-C_4H_9; iso-C_5H_{11}; $CH_2=CH-CH_2$. The possible transformation mechanism is based on the fact that first the sodium alcoholate enters the exchange reaction with DPA. The enol form of the sodium salt of DPA formed reacts with one of the carbonyl groups of the isocyano group of the diisocyanate molecule. In this connection the intermediate (I) is formed at the beginning. (I) reacts with DPA and yields the product (II) which is the naphthalene isocyanate-1 of the dialkyl ester of the

amidophosphono formic acid. Subsequently, the second NCO group reacts according to the same scheme under the formation of naphthylene-1,5-bis-dialkyl ester of the acid mentioned last. The reaction proceeds in the chlorobenzene medium with short heating in the water bath. The addition products are white, crystalline substances, soluble in acetone, alcohol, dioxane, and other solvents (Table 1). The structure of the products obtained was confirmed by the synthesis of naphthylene-1,5-bis-di-n-butyl ester of the amidophosphono formic acid (according to A. Ye. Arbuzov's method) from naphthylene-1,5-bis-acid chloride of the carbamic acid and tri-n-butyl phosphite. In conclusion, the authors state that the reaction between DPA and diisocyanates proceeds readily. They thank T. P. Veselova for assistance in the experiments. There are 1 table and 3 references: 1 Soviet and 2 US.

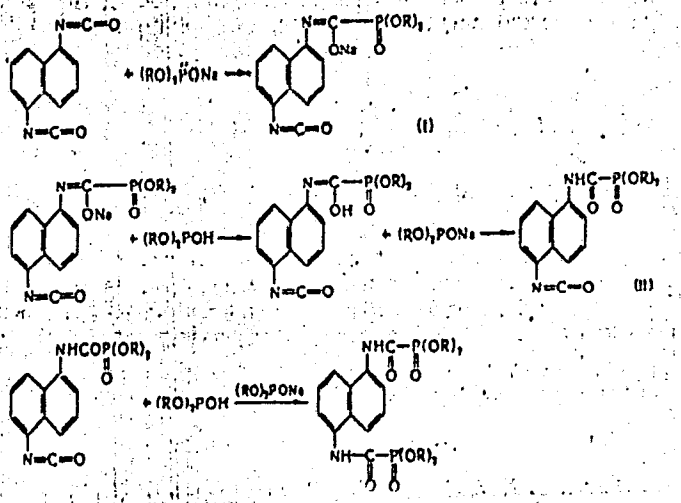
ASSOCIATION: Kazanskiy khimiko-tekhnologicheskiy institut im. S. M.Kirova (Kazan' Institute of Chemical Technology im. S. M. Kirov)

PRESENTED: May 23, 1960, by B. A. Arbuzov, Academician

SUBMITTED: May 17, 1960

S/020/60/134/004/033/036XX
B016/B067

$(RO)_2POH + RONa \rightleftharpoons (RO)_2PONa + ROH$



(I)

(II)

Card 3/3

KUZNETSOV, Ye.V.; PROKHOROVA, I.P.; FAYZULLINA, D.A.

Chemical transformations of polystyrene. Vysokom.soed. 3 no.10: 1544-1548 O '61. (MIRA 14:9)

1. Kazanskiy khimiko-tekhnologicheskiy institut imeni S.M. Kirova.

(Styrene polymers)

KUZNETSOV, Ye.V.; KAMAYEVA, Ye.B.; VALETDINOV, R.K.; ROYKH, A.I.

Interaction between α-hydroxy acids and phosphorus trichloride.
Zhur.ob.khim. 31 no.9:3013-3015 S '61. (MIRA 14:9)
(Acids, Organic) (Phosphorus chloride)

27502
S/079/61/031/009/003/012
D215/D306

5.3630

AUTHORS: Kuznetsov, Ye.V., and Bakhitov, M.I.

TITLE: Addition of dialkylphosphorous acids to 1,6-hexa--methylenediisocyanate

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 9, 1961, 3015 - 3017

TEXT: It has been found that the above reaction occurs in the presence of alkali metal alcoholates or alkali metals according to the following reaction

$$2(RO)_2P(O)H + Na \rightarrow (RO)_2P^{III}ONa$$

$$2(RO)_2P^{III}ONa + O{=}C{=}N(CH_2)_6N{=}C{=}O \rightarrow$$

$$\rightarrow (RO)_2POC{=}N(CH_2)_6N{=}CPO(OR)_2 \xrightarrow[-2(RO)_2PONa]{+2(RO)_2P(O)H}$$

(ONa and ONa)

$$\rightarrow (RO)_2POC{=}N(CH_2)_6N{=}CPO(OR)_2 \rightarrow$$

(OH and OH)

$$\rightarrow (RO)_2POCONH(CH_2)_6NHCOPO(OR)_2$$

R = CH_3, C_2H_5, n.-C_3H_7, iso-C_3H_7, iso-C_4H_9.

Card 1/4

Addition of dialkylphosphorous ...

It has been possible to prepare hexamethylene-1,6-bis-dimethyl, diethyl and diisopropylamidophosphoformate in the pure state and in good yield; higher alkyl ester, crystallize with difficulty. Hexamethylene-1,6-bis-di-n-butyl ester could not be obtained in a crystalline form and propyl and isobutyl esters crystallized out on standing for 3-6 months. The esters are readily soluble in alcohol, ether, benzene, dioxan and carbon tetrachloride. To establish the structure of the esters obtained one, -hexamethylene-1,6-bis-diisopropylamido-phosphoformate, was produced by the A.E. Arbuzov method. The addition reaction between some substituted dialkylphosphorous acids and 1,6-hexamethylenediisocyanate was also studied. It has been found that the introduction into the molecule of the cyano group reduces the ability of the latter to enter into an addition reaction which may be due to the influence of the cyano group on the mobility of the electrons of the phosphorus atom. 1,6-hexamethylenediisocyanate and α-dicyanisopropyl-phosphorous acid were sealed in an ampoule and left for 2 years. After the first year the increase in viscosity was notices. β,β'-dichloro-

Card 2/4

diethylphosphorous acid reacts faster with 1,6-hexamethylenediisocyanate under similar conditions which indicates that chlorine has a smaller effect on the mobility of electrons of the phosphorus atom. The addition reaction was conducted by introducing 0.1 mole dimethylphosphorous acid, a piece of metallic sodium and 0.05 mole 1,6-hexamethylenediisocyanate into an ampoule which was then sealed and left standing for 10 hours. After initial exothermic reaction the viscosity increased and the product cyrstallized within a further 2 hours. The yield of recrystallized product corresponded to 85 % yield, and its melting point was 88°C, (recrystallized from CCl_4). The preparation of hexamethylene-1,6-bis-diisopropyl amidophosphoformate was conducted by reacting triisopropylphosphite with hexamethylene-1,6-bis-carbonic acid chloride. The product when combined with the addition product above did not depress its melting point. There are 1 table and 3 references: 1 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: R.B. Fox, D.L. Venezky, J. Am. Chem.

Addition of dialkylphosphorous ...

Soc., 78, 1661, 1956; Reets, D.H. Chadwick, J. Am. Chem. Soc., 77, 3813, 1955.

ASSOCIATION: Kazanskiy khimiko-tekhnologicheskiy institut im. S.M. Kirova (Kazan Chemical and Technological Institute im. S.M. Kirov)

SUBMITTED: October 19, 1960

Card 4/4

KUZNETSOV, Ye.V.; BAKHITOV, M.I.

Addition of dialkylphosphorous acids to 3,3'-dimethoxy-diphenyl-4,4'- and diphenylmethane-4,4'-diisocyanates. Dokl. AN SSSR 141 no.5:1105-1106 D '61. (MIRA 14:12)

1. Kazanskiy khimiko-tekhnologicheskiy institut im. S.M. Kirova. Predstavleno akademikom B.A. Arbuzovym.
(Phosphorous acid) (Isocyanic acid)

KUZNETSOV, YE. V.

43

PHASE I BOOK EXPLOITATION SOV/6034

Konferentsiya po khimii i primeneniyu fosfororganicheskikh soyedineniy. 2d, Kazan', 1959.

Khimiya i primeneniye fosfororganicheskikh soyedineniy; trudy (Chemistry and Use of Organophosphorus Compounds; Conference Transactions) Moscow, Izd-vo AN SSSR, 1962. 630 p. Errata slip inserted. 2800 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Kazanskiy filial.

Resp. Ed.: A. Ye. Arbuzov, Academician; Ed. of Publishing House: L. S. Povarov; Tech. Ed.: S. G. Tikhomirova.

PURPOSE: This collection of conference transactions is intended for chemists, process engineers, physiologists, pharmacists, physicians, veterinarians, and agricultural scientists.

COVERAGE: The transactions include the full texts of most of the scientific papers presented at the Second Conference on the Chemistry and Use of

Card 1/14

Chemistry and the Use of Organophosphorus (Cont.) SOV/6034

Organophosphorus Compounds held at Kazan' from 2 Nov through 1 Dec 1959. The material is divided into three sections: Chemistry, containing 67 articles; Physiological Activity of Organophosphorus Compounds, containing 26 articles; and Plant Protection, containing 12 articles. The reports reflect the strong interest of Soviet scientists in the chemistry and application of organophosphorus compounds. References accompany individual reports. Short summaries of some of the listed reports have been made and are given below.

TABLE OF CONTENTS:[Abridged]:

when 0.001 to 0.1 mol of methyl iodide per mol of cyclic phosphonite is used. They form polyphosphonates with molecular weights of 270 to 3200.

Kuznetsov, Ye. V., R. K. Valetdinov, and M. I. Bakhitov [Kazanskiy khimikotekhnologicheskiy institut im. S. M. Kirova (Kazan' Institute of Chemical Technology imeni S. M. Kirov)]. Substituted Organophosphorus Compounds as Monomers of High-Molecular Substances 296

Cyano-substituted esters of phosphorus acids have been obtained and it has been shown that carboxy-substituted and amine-substituted organophosphorus compounds and polymer products based on them can be prepared. Amine-substituted esters of phosphorus acids have been synthesized; the synthesis can be made either with chlorides of alkylphosphonic acids or with esters of phosphorus acids. Methods of synthesis of phosphorus-containing thiokols have been developed, and it has been shown that a new type of phosphorus-containing polyurethan can be obtained by the reaction of diisocyanates, phosphites, and dialkyl phosphonates.

KUZNETSOV, YE. V.

Khimiya i Primeneniye Fosfororganicheskikh Soyedineniy (Chemistry and Application of Organophosphorus Compounds) A. Ye. Arbuzov, Ed. publ. by Kazan' Affil, Acad. Sci. USSR, Moscow, 1962 638pp.

Collection of complete papers presented at the 1959 Kazan Conference on Chemistry of Organophosphorus Compounds.

PUDOVIK, A.N., KUZNETSOV, YE.V., MALICHENKO, B.F., GRISHINA, O.P.

The synthesis of various phosphorus-containing monomers

Report presented at the 12th Conference on high molecular weight compounds devoted to monomers, Baku, 3-7 April 62

KUZNETSOV, Ye.V.; DEVITAYEVA, R.S.

Phosphorylation of polyethylene. Trudy KKHTI no.30:63-69 '62.
(MIRA 16:10)

KUZNETSOV, Ye.V.; SHERMERGORN, I.M.; BELYAYEVA, V.A.

Synthesis of polyesters based on trivalent phosphorus acids by condensation polymerization at the interface. Trudy KKHTI no.30: 70-76 '62. (MIRA 16:10)

KUZNETSOV, Ye.V.; VIZEL', A.O.; TYULENEV, S.S.; SHERMERGORN, I.M.

Stabilization of polyethylene terephthalate. Trudy KKHTI no.30: 82-88 '62. (MIRA 16:10)

KUZNETSOV, Ye.V.; BOGDANOV, A.P.

Destructive oxidation of α-nitronaphthalene under pressure. Trudy KKHTI no.30:89-91 '62. (MIRA 16:10)

LYZENTSEVA, M.A.; VALETDINOV, R.K.; KUZNETSOV, Ye.V.

Fireproofing treatment of cotton fabrics. Trudy KKHTI no.30: 170-173 '62. (MIRA 16:10)

KUZNETSOV, Ye.V.; BAKHITOV, M.I.

Reaction of dialkylphosphorous acids with 2,4-toluylenediisocyanate. (MIRA 15:2)
Zhur; ob. khim. 32 no.1:278-279 Ja '62.

1. Kazanskiy khimiko-tekhnologicheskiy institut.
(Phosphorous acid) (Isocyanic acid)

S/056/62/042/006/042/047
B104/B112

AUTHORS: Kuznetsov, Ye. V., Kuznetsov, Ye. P., Shalamov, Ya. Ya., Crashin, A. F.

TITLE: Experimental data on the existence of resonance in the $K^0\Lambda^0$ system at 1650 Mev

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 6, 1962, 1675-1677

TEXT: Previous papers (Ya. Ya. Shalamov et al., ZhETF, 40, 1302, 1962; I. A. Ivanovskaya et al., IX. Intern. Ann. Conf. on High Energy Physics, Kiev, 1960. Plenary sessions I-V, Moscow, 1960, p. 459) have shown that in the pair production of K^0 and Λ^0 particles by 2.8-Mev π^- mesons on complex nuclei (C, Cl, F), i.e., in the reaction $\pi^- + (A,Z) \rightarrow \Lambda^0 + K^0 + m\pi + (AZ)^*$ (m = 1,2, ...) (1), the angular distribution of the Λ^0 particles in the center-of-mass system of πN is directed backward and that the angular distribution of the K^0 particles is nearly isotropic. These angular distributions cannot be attributed to the production of $Y^* + K^0$, $Y^* + K^*$, or $\Lambda^0 + K^*$ with the subsequent decay reactions

Experimental data on the existence ... S/056/62/042/006/042/047
B104/B112

$Y^* \rightarrow \Lambda^0 + \pi$ and $K^* \rightarrow K^0 + \pi$. The angular distributions are explained by assuming, in (1), the intermediate reaction $\pi^- + N \rightarrow Z^0 + m\pi$, where $m = 1, 2, \ldots$ and $Z^0 \rightarrow \Lambda^0 + K^0$. In the center-of-mass system, the Z^0 particle travels from πN to the rear hemisphere. Results: $M_Z \approx 1650$ Mev; strangeness $S = 0$; spin $I = 1/2, 2/3, \ldots$; isotopic spin $I = 1/2$. Z^0 interacts as an individual particle with the nucleus. There are 2 figures.

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki Akademii nauk SSSR (Institute of Theoretical and Experimental Physics of the Academy of Sciences USSR)
Fizicheskiy Institut im. P. N. Lebedeva AN SSSR (Physics Institute imeni P. N. Lebedev AS USSR)

SUBMITTED: March 24, 1962

Card 2/2

ACCESSION NR: AT4033989 S/0000/63/000/000/0076/0080

AUTHOR: Kuznetsov, Ye. V.; Valetdinov, R. K.; Vershinina, G. M.

TITLE: Phosphorus-containing polyesters and polyamides of the aliphatic series

SOURCE: Geterotsepny*ye vy*sokomolekulyarny*ye soyedineniya (Heterochain macromolecular compounds); sbornik statey. Moscow, Izd-vo "Nauka," 1963, 76-80

TOPIC TAGS: polyester, polyamide, phosphorus containing polyester, phosphorus containing polyamide, aliphatic polyester, aliphatic polyamide, polycondensation, refractory polymer

ABSTRACT: The article reports on polycondensation reactions involving bis(beta-carboxyethyl)phosphine oxide (previously synthesized by the authors through hydrolysis of a bis(beta-cyanoethyl)phosphine oxide) and ethylene glycol, propylene glycol, glycerol a-chlorhydrin, or hexamethylene diamine. These reactions were carried out to study the preparation of phosphorus-containing polyesters and polyamides of the aliphatic series. Principles of a second order reaction governed for

Card 1/2

ACCESSION NR: AT4033989

the range of temperatures 165—185C and reaction times of 30—240 min. All the polymers obtained, except those based on glycerol α-chlorhydrin, were colorless, transparent, nonflammable, had significatnly higher melting points than comparable polymers lacking a P atom (i.e., 50—170C), and were suitable for fiber of film production. Reaction rate constants and activation energies were determined. Orig. art. has: 1 figure and 5 tables.

ASSOCIATION: Kazanskiy khimiko-tekhnologicheskiy institut im. S. M. Kirova (Kazan Institute of Chemical Technology)

SUBMITTED: 29Jun62 ATD PRESS: 3061 ENCL: 00

SUB CODE: OC, GC NO REF SOV: 008 OTHER: 002

Card 2/2

KUZNETSOV, Ye.V.; LOZHKIN, V.Ye.

Copolymers of salts of unsaturated dicarboxylic acids with methacrylic acid. Vysokom.soed. 5 no.1:24-27 Ja '63. (MIRA 16:1)

1. Kazanskiy khimiko-tekhnologicheskiy institut im. S.M.Kirova.
(Acids, Organic) (Methacrylic acid) (Polymers)

L 13554-63 EPR/EWP(j)/EPF(c)/EWT(m)/BDS AFFTC/ASD Ps-4/Pc-4/Pr-4
RM/WW

ACCESSION NR: AP3000701 S/0190/63/005/005/0724/0728

AUTHOR: Myagchenkov, V. A.; Kuznetsov, Ye. V.; Iskhakov, O. A.; Luchkina, V. M.

TITLE: Fractionation of methylmethacrylate-methacrylic acid copolymer and the properties of the fractions

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 5, no. 5, 1963, 724-728

TOPIC TAGS: fractionation, copolymers, methacrylate, methacrylic acid, macromolecules, Li

ABSTRACT: The purpose of the present investigation consisted in a study of the physical and chemical characteristics produced in copolymers of methylmethacrylate-methacrylic acid by varying its composition. To this end, a copolymer was produced by heating for 40 hours at 45C a mixture of 9.75% methacrylic acid, 90.2% methylmethacrylate, and 0.05% lithium methacrylate with the addition of an initiator. The obtained copolymer was dissolved in acetone, from which fractions were precipitated by a 2:1 mixture of hexane-dichloroethane. These were dried, and their properties studied by viscosimetry and spectroscopy. The examination of the fractions of the copolymer gave an identical methacrylic acid content of 7.4%, the 92.6% balance being accepted as methylmethacrylate. The constants K and a of the Staudiger-Mark equation for a copolymer of the given composition in acetone were determined. It

Card 1/2

L 13554-63

ACCESSION NR: AP3000701

was demonstrated that the addition of lithium methacrylate to the polymerizing mixture caused the reaction to proceed with the formation of a tertiary copolymer. Orig. art. has: 9 formulas, 5 figures, and 1 table.

ASSOCIATION: Kazanskiy khimiko-tekhnologicheskiy institut im. S. M. Kirova (Kazan' Institute of Chemical Engineering)

SUBMITTED: 05Nov61 DATE ACQ: 17Jun63 ENCL: 00

SUB CODE: CH NO REF SOV: 005 OTHER: 001

Card 2/2

L 17230-63 BDS/EPR/EPF(c)/EWP(j)/EWT(m)/ES(s)-2--AFFTC/ASD/SSD-L
Pn-4/Pc-4/Pr-4/Pt-4--RM/WW/MAY
ACCESSION NR: AP3006757 S/0190/63/005/009/1351/1353

AUTHOR: Kuznetsov, Ye. V.; Fayzullin, I. N.

TITLE: Synthesis of organophosphorus polysulfones

SOURCE: Vy*sokomolekulyarnyye soyedineniya, v. 5, no. 9, 1963, 1351-1353

TOPIC TAGS: inorganic polymer, organophosphorus polysulfone, polymerization, synthesis, polysulfone synthesis, copolymerization, 2-butoxyvinylphosphonic acid, 2-butoxyvinylphosphonic acid ester, sulfur dioxide, isopropylperoxybenzoic acid, initiat r, viscosity, reduced viscosity, curing, polysulfone curing, curing agent, polysulfone property modification, property modification, 1-naphthyl isocyanate, 1-6-hexamethylene diisocyanate, 2-butoxyvinylphosphonate

ABSTRACT: Phosphorus-containing polysulfones have been synthesized by the reaction of 2-butoxyvinylphosphonates with sulfur dioxide at 0°C. Copolymerization was conducted in benzene with constant bubbling of the SO_2; isopropylperoxybenzoic acid served as the initiator.

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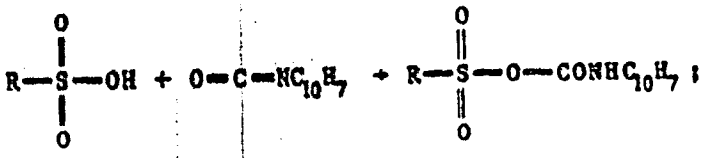
The reaction proceeded according to the equation:

$$n\ \begin{matrix} CH \text{---} CH \\ | \quad\quad | \\ OC_4H_9\ PO\ (OR)_2 \end{matrix} + n\ SO_2 \rightarrow \left[\begin{matrix} -CH - CH - SO_2- \\ | \quad\quad | \\ OC_4H_9\ PO\ (OR)_2 \end{matrix} \right]_n, \qquad (1)$$

where R is $-CH_3$, $-C_2H_5$, $-C_3H_7$-n, $-C_3H_7$-iso, $-C_4H_9$-n, $-C_4H_9$-iso, or $-C_6H_{13}$-n. A yield of 95% was obtained. The polysulfones are transparent resins, light yellow to brown in color; they exhibit good adhesion to glass, porcelain, paper, and cloth and do not burn or support combustion. Like carbon-chain polysulfones, phosphorus-containing polysulfones are slightly soluble in many organic solvents. At room temperature they are readily soluble in methanol and slightly soluble in benzene. Evidently the molecular weights of the polysulfones are not high, as they show viscous flow at room temperature. Viscosity of the polysulfones was measured for 1% solutions in methanol, and their reduced viscosity was calculated to be in the 0.054—1.550 range. It was assumed that the polysulfones have $-SO_2OH$ end groups. Curing of the polysulfones was attempted by

reaction with isocyanates. The polysulfones were mixed with 1-naphthyl isocyanate or 1,6-hexamethylene diisocyanate and were heated for 13 hr at 75C and for 3 hr at 100C. The reactions proceeded as follows:



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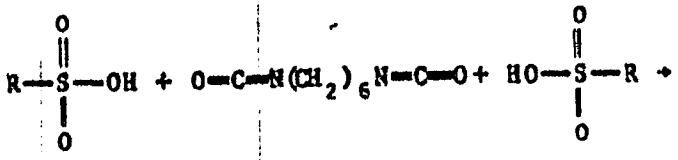
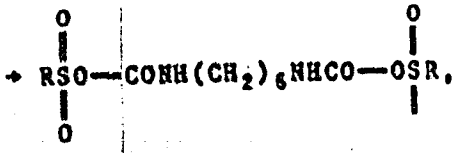




(3)

L 17230-6

ACCESSION NR: AP3006757

where R is a high-molecular-weight radical. The product of the reaction with 1-naphthyl isocyenate did not differ in appearance from the original polysulfone, but was highly viscous. The reaction with 1,6-hexamethylene diisocyenate led to the formation of solids which are insoluble in benzene even after prolonged heating. The purified product is a light yellow powder with a melting point of 115—120C. The reaction is of particular interest since it can be used both to cure polysulfones and to modify their properties. Orig. art. has: 1 table and 3 formulas.

ASSOCIATION: Kazanskiy khimiko-tekhnologicheskiy institut im. S. M. Kirova (Kazan' Institute of Chemical Technology)

SUBMITTED: 24Feb62	DATE ACQ: 30Sep63	ENCL: 00
SUB CODE: CH, MA	NO REF SOV: 006	OTHER: 010

Card 4/4

MYAGCHENKOV, V.A.; KUZNETSOV, Ye.V.; ISKHAKOV, O.A.; LUCHKINA, V.M.

Fractionation of a copolymer of methyl methacrylate and methacrylic acid and the properties of fractions. Vysokom. soed. 5 no.5:724-728 My'63. (MIRA 17:3)

1. Kazanskiy khimiko-tekhnologicheskiy institut imeni Kirova.

KUZNETSOV, Ye. V.; VALETDINOV, R. K.; ROYTBURD, TS. Ya.

Synthesis of aliphatic phosphorus containing dicarboxylic acids. Zhur. ob. khim. 33 no.1:150-153 '63. (MIRA 16:1)

1. Kazanskiy khimiko-tekhnologicheskiy institut imeni S. M. Kirova.

(Phosphorus acids)

IGNAT'YEVA, E.K.; KUZNETSOV, Ye.V.

Interaction of acetone cyanohydrin and allyl alcohol with trialkoxystibine. Zhur.ob.khim. 33 no.2:617-622 F '63. (MIRA 16:2)

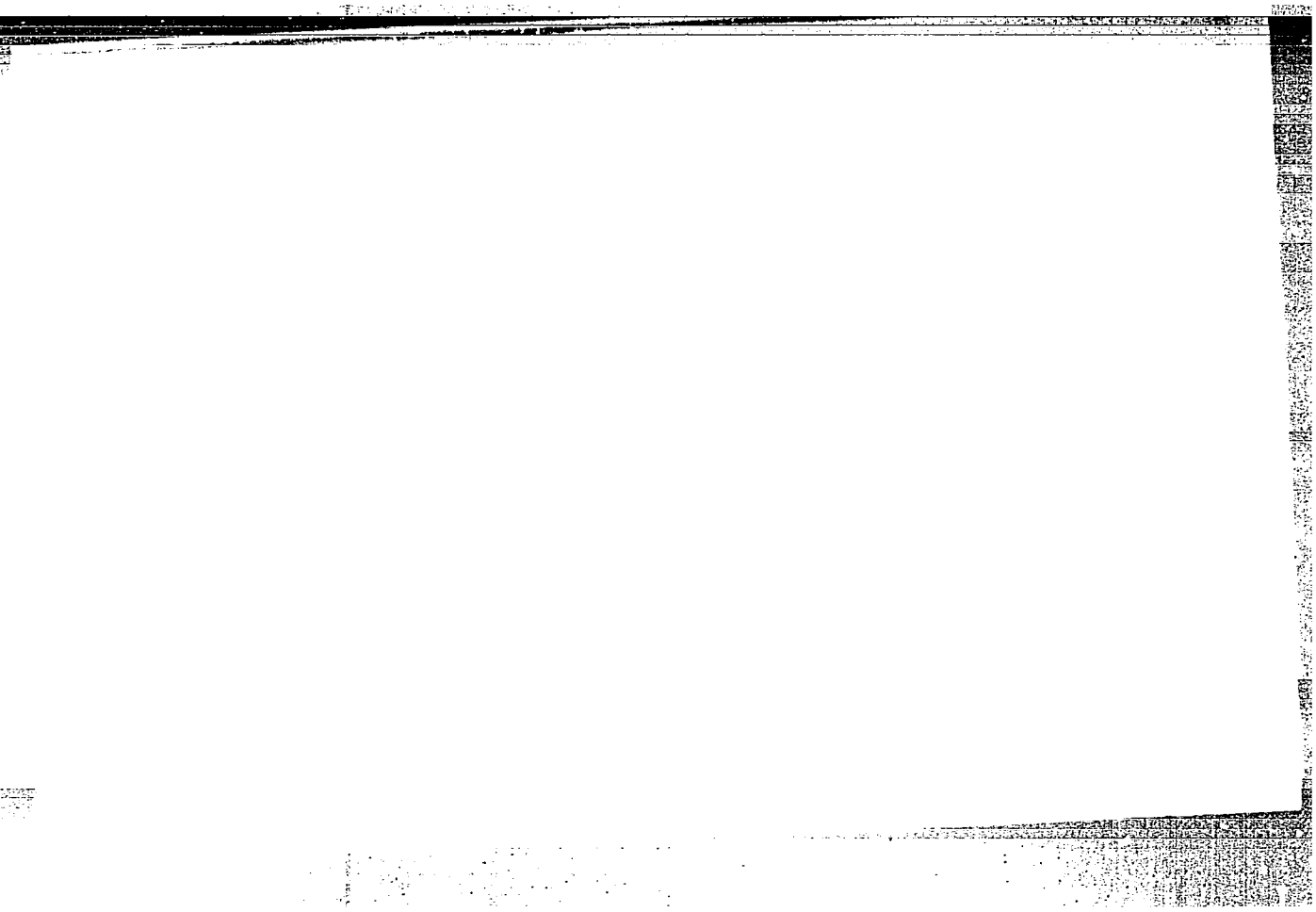
1. Kazanskiy khimiko-tekhnologicheskiy institut imeni S.M. Kirova.

(Lactonitrile) (Allyl alcohol) (Stibine)

KUZNETSOV, Ye.V.; SOROKINA, T.V.; VALETDINOV, R.K.

Realkylation of bis- and tris (β-cyanoethyl) phosphines.
Zhur. ob. khim. 33 no.8:2631-2634 Ag '63. (MIRA 16:11)

1. Kazanskiy khimiko-tekhnologicheskiy institut imeni S.M. Kirova.



APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000928210017-1"

showed considerable adhesion to metal and glass. Orig. art. has: 7 tables, 1 figure and

ACCESSION NO: AP4009146 S/0190/64/006/001/0031/0033

AUTHORS: Kuznetsov, Ye. V.; Gil', A. P.; Shermergorn, I. M.; Kuznetsova, S. F.

TITLE: Synthesis of polyesters and polyamides on the basis of nitrophthalic acids by interfacial polycondensation

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 1, 1964, 31-33

TOPIC TAGS: synthesis, polyester, polyamide, polycondensation, interfacial polycondensation, nitrophthalic acid, dichlorides of nitrophthalic acids, terephthalic acid

ABSTRACT: Solutions containing 0.2 Mol/liter of dichlorides of terephthalic-, nitroterephthalic-, 4-nitrophthalic-, and 3-nitrophthalic acids in n-xylene were reacted with aqueous solutions of 2,2-di-(4-oxyphenyl)propane (OPP) or hexamethylenediamine (HMD) of the same molar concentration in the presence of 0.45 Mol/liter of NaOH. The synthesis was conducted in a flask, with 10 minutes of energetic mechanical stirring. Following this, the obtained polyesters or polyamides were separated by filtration, washed with water, and dried to constant weight. The yield of the polyesters, obtained by the interaction of the dichlorides of nitroterephthalic and 4-nitrophthalic acids with OPP amounted to 86.8 and 36%, their

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ACCESSION NO: AP4009146

respective specific viscosities for 0.5% solutions in tricresol averaging 0.072 and 0.019. As to the polyamides synthesized from the dichlorides of nitroterephthalic-, 4-nitrophthalic-, and 3-nitrophthalic acids with HMD, their yields amounted to 88.0, 84.2, and 76.6%, with respective specific viscosities of 0.5% solutions in concentrated sulfuric acid averaging 0.352, 0.280, and 0.223. The higher yields and viscosities registered in the polyesters derived from the dichloride of nitroterephthalic acid as compared with the ones obtained on the basis of the dichloride of 4-nitrophthalic acid is attributed by the authors to the fact that the latter ingredient has its nitro group located in a meta-position in respect to the chloride group. A similar trend, although on a less pronounced scale, was observed in polycondensation products of dichlorides of nitrophthalic acids with HMD. Orig. art. has: 2 tables.

ASSOCIATION: Kazanskiy khimiko-tekhnologicheskiy institut im. S. M. Kirova (Kazan Chemical-Technological Institute)

SUBMITTED: 07Jul62 DATE ACQ: 10Feb64 ENCL: 00

SUB CODE: CH NO REF SOV: 006 OTHER: 003

Card 2/2

ACCESSION NR: AP4042192 S/0190/64/006/007/1318/1322

AUTHOR: Kuznetsov, Ye. V., Fayzullin, I. N., Merzlyakova, E. Ya.

TITLE: Synthesis of phosphoorganic polysulfones. III. The reaction of sulfur dioxide with unsaturated phosphoorganic polyesters

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 6, no. 7, 1964, 1318-1322

TOPIC TAGS: polyester, interfacial condensation, vinylphisphinic acid, Beta-(n-butoxy) vinylphosphinic acid, diphenol, dichloroanhydride, hydroperoxide, dichloroethane, dioxane, sulfur dioxide, polymer hardening, polymerization initiator, phosphoorganic polyester, unsaturated polyester, polymerization catalyst, polysulfone, phosphoorganic polysulfone

ABSTRACT: Several unsaturated phosphoorganic polyesters were synthesized by the interfacial condensation of the dichlorides of vinylphosphinic and β-(n-butoxy) vinylphosphinic acids, and their properties were investigated. The resulting polyesters are liquid or solid resins of various colors, depending on the initial reactants. The tabulated data on the properties of the synthesized polyesters show that for polyesters obtained by the interaction of diphenols with the dichloroanhydrides of alkylenephosphinic acids the specific viscosity

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ACCESSION NR: AP4042192

increases during the transition from diphenylolpropane to resorcinol to hydroquinone. The main product is a cross-linked polymer which is insoluble in organic solvents and melts with decomposition. The equations for the reaction of unsaturated phosphoorganic polyesters with sulfur dioxide are given. The experimental data show that polyesters based on β-(n-butoxy) vinylphosphinic acid do not react with sulfur dioxide, apparently because of steric factors. With the other polyesters, when dichloroethane, dioxane or their mixture are used as solvents and the initiator is isopropylbenzene hydroperoxide, the reaction proceeds with evolution of heat. The resulting products do not dissolve in dichloroethane, dioxane or other organic solvents. A change in the reaction conditions does not lead to an increase in the amount of sulfur in the polymer. The curves relating the degree of hardening and the amount of initiator show that an increase in the amount of initiator decreases the formation of an insoluble residue. This is explained by the assumption that the addition of an increased amount of hydroperoxide forms a compound containing SO_3H groups with the cross-linked polymer.

ASSOCIATION: Kazanskiy khimiko-tekhnologicheskiy institut im. S. M. Kirova (Kazan Chemical-Engineering Institute)

ACCESSION NR: AP4042192

SUBMITTED: 06Sep63 ENCL: 00

SUB CODE: OC NO REF SOV: 009 OTHER: 001

3/3

MYAGCHENKOV, V.A.; LUZNETSOV, Ye.V.; KITKEVICH, V.Ya.

Concentration effect in the degradation of a series of polymers in dimethylformamide. Vysokom.soed. 6 no.8:1366-1370 Ag '64.
(MIRA 17:10)

1. Kazanskiy khimiko-tekhnologicheskiy institut imeni S.M.Kirova.

MYAGCHENKOV, V.A.; KUZNETSOV, Ye.V.; DOMINOVA, N.I.

Viscosity of solutions of copolymer fractions of methyl methacrylate-methacrylic acid in organic solvents. Vysokom.soed. 6 no.9:1612-1616 S '64. (MIRA 17:10)

1. Kazanskiy khimiko-tekhnologicheskiy institut Kirova.

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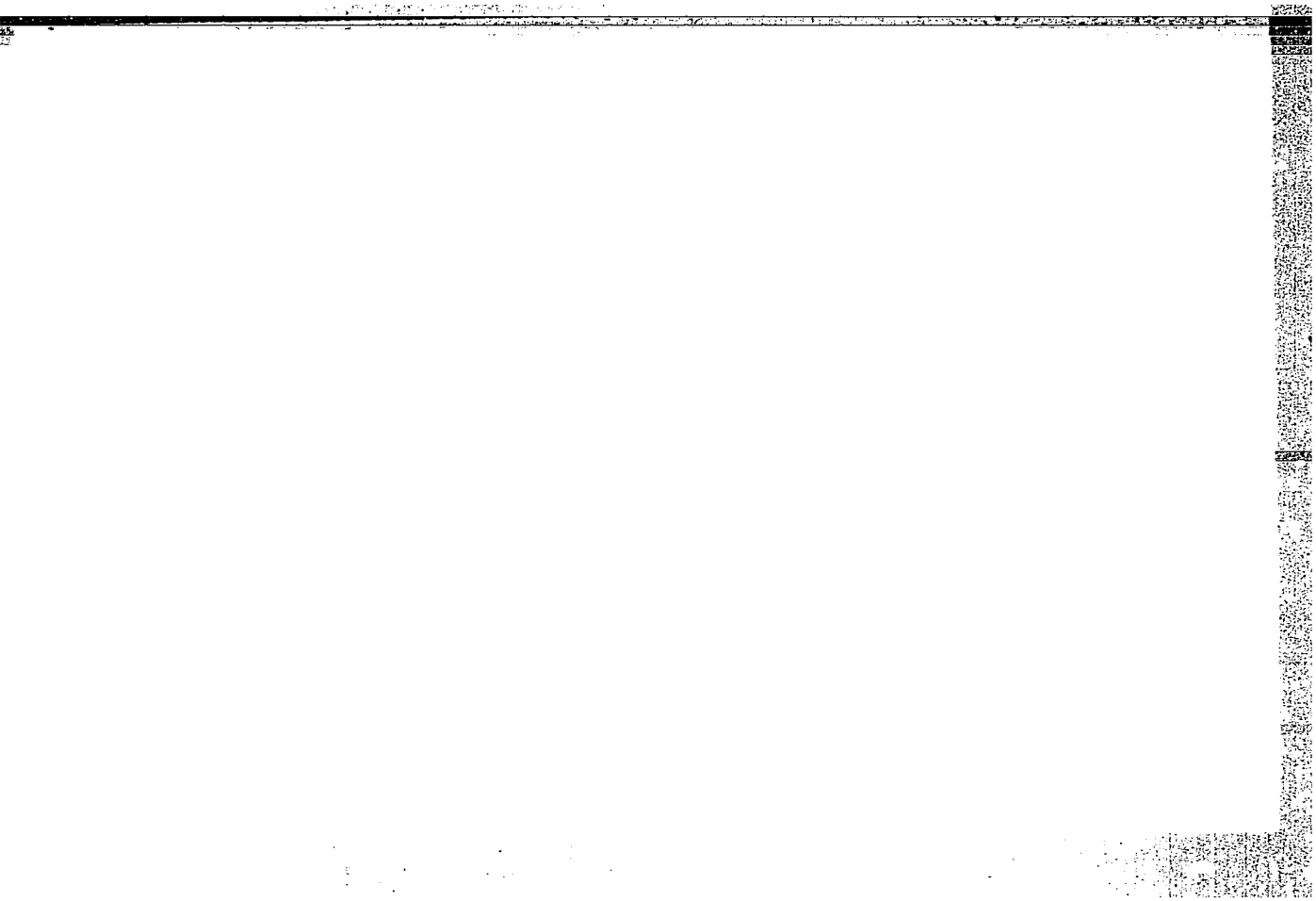
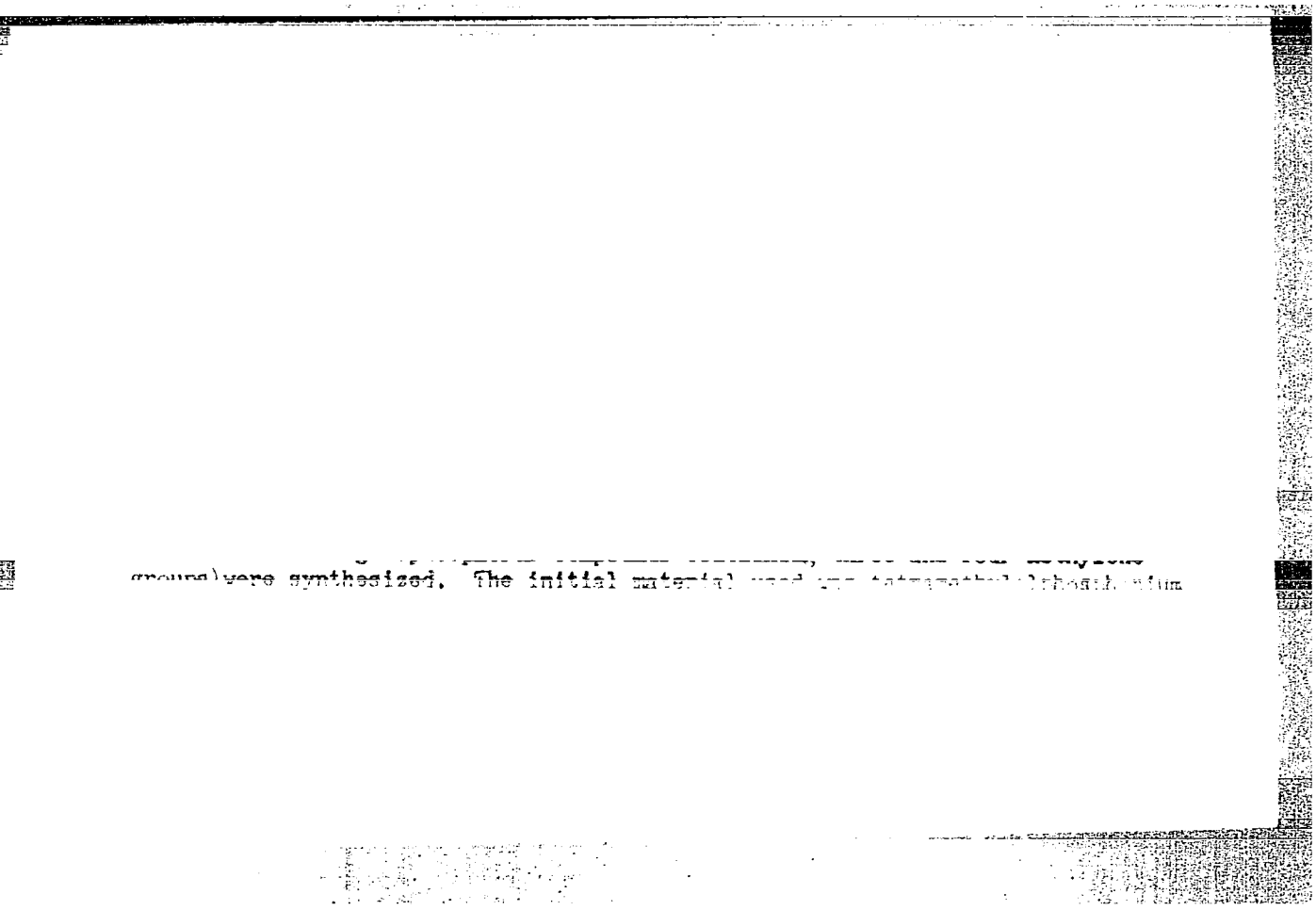


APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000928210017-1"

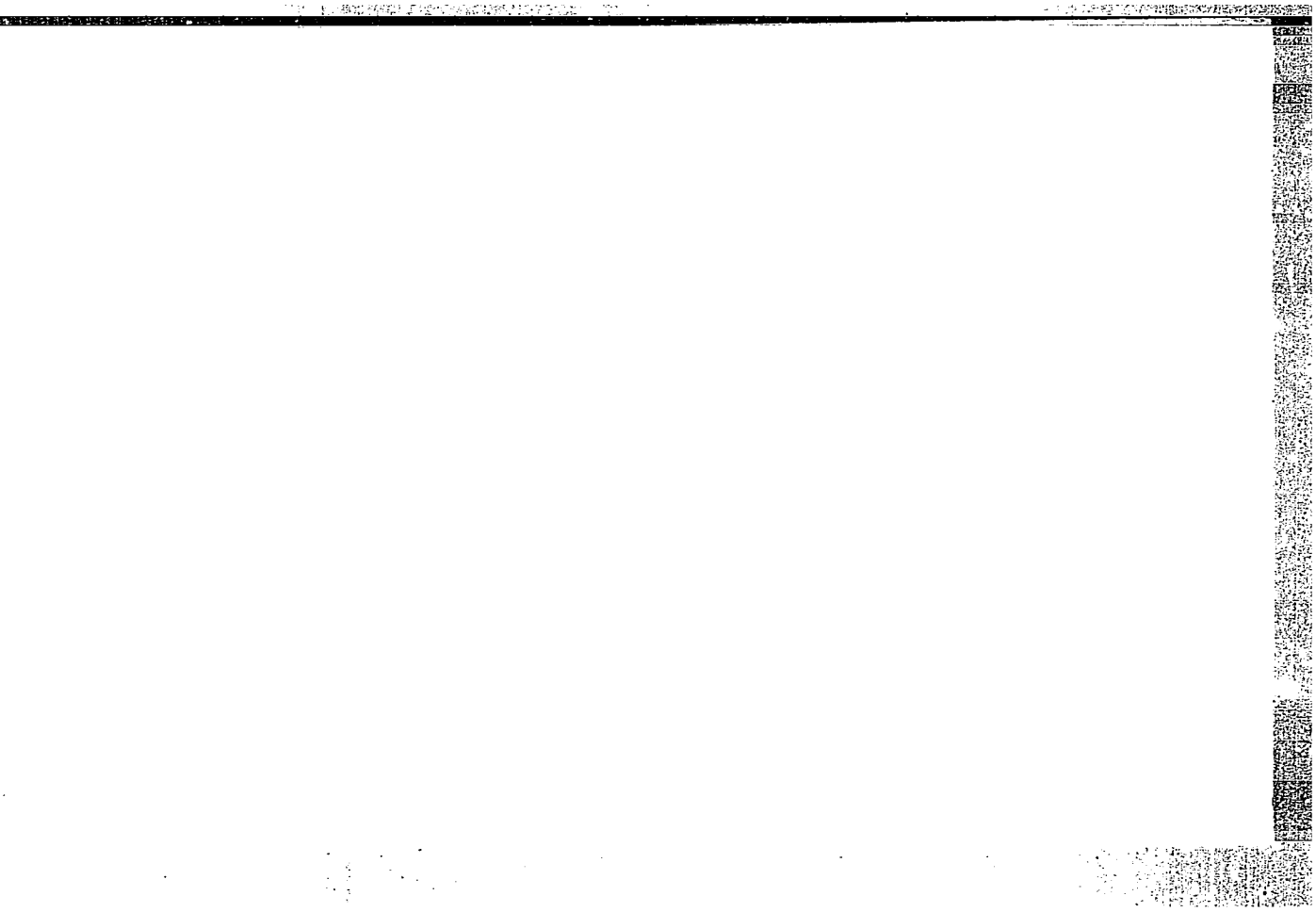
KUZNETSOV, Ye.V.; BOGOYAVLENSKAYA, L.A.

Polarographic study of the copolymerization of methyl methacrylate with methacrylic acid in the presence of some of its salts. Vysokom. soed. 7 no.2:259-263 F '65. (MIRA 18:3)

1. Kazanskiy khimiko-tekhnologicheskiy institut imeni Kirova.



were synthesized. The initial material used



APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000928210017-1"

ACC NR: AP6029052 (A) SOURCE CODE: UR/0413/66/000/014/0080/0081

INVENTORS: Kuznetsov, Ye. V.; Gusev, V. I.; Zhidkova, T. N.; Andreyeva, I. N.; Semenova, L. S.

ORG: none

TITLE: A method for obtaining copolymers of propylene. Class 39, No. 183938

SOURCE: Izobret prom obraz tov zn, no. 14, 1966, 80-81

TOPIC TAGS: polymer, copolymer, propylene, polymerization, ester, phosphoric acid, catalyst, titanium compound, aluminum compound

ABSTRACT: This Author Certificate presents a method for obtaining copolymers of propylene with unsaturated compounds in the medium of an inert carbonaceous solvent at the temperature from 20 to 60C. The process is carried out in the presence of a catalyst consisting of titanium tetrachloride and aluminum alkyls. To impart the property of fire resistance to the copolymers, unsaturated mixed esters of phosphoric acid are used as the unsaturated compounds.

SUB CODE: 11/ 07/ SUBM DATE: 06Sep62

Card 1/1 UDC: 678.742.3-134.573

ACC NR: AP7001408 (A) SOURCE CODE: UR/0413/66/000/021/0110/0110

INVENTOR: Kuznetsov, Ye. V.; Bakhitov, M. I.; Volkova A. V.

ORG: none

TITLE: Preparative method for polyurethans. Class 39, No. 188003 [announced by the Kazan Chemical Technology Institute im. S. M. Kirov (Kazanskiy khimiko-tekhnologicheskiy institut)]

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

TOPIC TAGS: polyurethan, heat resistance, ~~polyurethan~~, diisocyanate, trimethylolphosphine, pyridine, chemical synthesis

ABSTRACT: An Author Certificate has been issued for a preparative method for polyurethans with an improved heat resistance. The method consists of reacting diisocyanate with trimethylolphosphine in pyridine. [BO]

SUB CODE: 11, 07/ SUBM DATE: 06Sep65/ ATD PRESS: 5109

Card 1/1 UDC: 678.85:678. .664-9

L 41217-66 EWI(m)/EWP(v)/T/EWP(j) WW/RM

ACC NR: AP6011236 (A) SOURCE CODE: UR/0413/66/000/006/0075/0075

34

B

INVENTOR: Kuznetsov, Ye. V.; Chichinadze, N. M.

ORG: none

TITLE: Preparation of polymers. Class 39, no. 179923

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 6, 1966, 75

TOPIC TAGS: copolymer, methacrylic acid, polymerization

ABSTRACT: This author Certificate introduces a method for preparing copolymers from methacrylic acid by radical polymerization in a reactive compound. To obtain copolymers with a high adhesion capacity and surface-active effect, E-caprolactam is suggested as the reaction medium. [Translation] [LD]

SUB CODE: 07,11/ SUBM DATE: 23Sep63/

Card 1/1 mlp

UDC: 678.744.332-139

L 43909-66 EWT(m)/EWP(j)/T RM
ACC NR: AP6015669 (A) SOURCE CODE: UR/0413/66/000/009/0075/0075

33
B

INVENTOR: Kuznetsov, Ye. V.; Gusev, V. I.; Semenova, L. S.; Shurygina, L. A.

ORG: none

TITLE: Method of obtaining organophosphorus polymers. Class 39, No. 181200

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 9, 1966, 75

TOPIC TAGS: polymerization, catalyst, titanium tetrachloride, trietylaluminum, organophosphorus polymer

ABSTRACT: An Author Certificate has been issued for a method of obtaining organophosphorus polymers by polymerization of unsaturated phosphates in a medium of an inert liquid upon heating in the presence of a catalyst. To expand the variety of catalysts, the system of titanium tetrachloride—trietylaluminum is used as the catalyst. [Translation] [NT]

SUB CODE: 11/ SUBM DATE: 22Feb62/
07/

Card 1/1 UDC: 678.745.73

I. 15334-66 EWT(m)/ETC(F)/EWG(m)/EWP(j)/ DS/WW/RM

ACC NR: AP6000985 SOURCE CODE: UR/0286/65/000/022/0059/0059

AUTHORS: Kuznetsov, Ye. V.; Lozhkin, V. Ye.

ORG: none

TITLE: A method for obtaining carboxyl-containing cation exchangers. Class 39, No. 176409 [announced by Kazan' Chemical Engineering Institute im. S. M. Kirov (Kazanskiy khimiko-tekhnologicheskiy institut)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 22, 1965, 59

TOPIC TAGS: polymer, copolymerization, cation, ion exchange, resin

ABSTRACT: This Author Certificate presents a method for obtaining carboxyl-containing cation exchangers by copolymerization of unsaturated dicarboxylic acids, methacrylic acid, and cross-linking (vulcanizing) agents. To obtain highly basic, chemically stable sorbents, diisocyanates are used as cross-linking agents.

SUB CODE: 11/ 07/ SUBM DATE: 25Sep63

Card 1/1 UDC: 661.183.123.2:678.744.33-134.434.2