36292

5.3100
15.8600

S/190/62/004/004/008/019
B119/B138

AUTHORS: Andreyeva, I. V., Koton, M. M., Kovaleva, K. A.

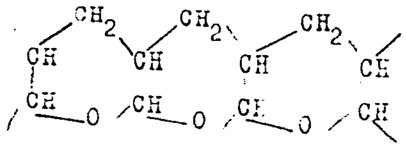
TITLE: Polymerization of acrolein and its derivatives. I. Low-temperature polymerization of acrolein and α-methyl acrolein

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 4, 1962, 528-532

TEXT: Acrolein (1) and α-methyl acrolein (2) were polymerized in the presence of gaseous $BF_3$ between 0 and -80°C in block and in solution (solvent: $CH_2Cl_2$). The experiments were made in sealed ampoules, partly with exclusion of $O_2$ and $H_2O$, partly in the presence of very small amounts of $H_2O$. Results: Polymers obtained in block polymerization with 10-15% conversion are completely soluble in organic solvents. With a higher degree of conversion, the reaction product becomes insoluble in organic solvents but soluble in sulfurous acid. The reaction with 15-20% conversion without $H_2O$ takes 15-30 hr at -20°C, with $H_2O$, 3-8 hr.

Card 1/3

The molecular weight of the polymer produced in the presence of $H_2O$ is lower than in the one produced without water. Maximum conversion was attained at -20 to -40°C with 1.5 mole% $BF_3$ (with 1) and 2.5 - 3 mole% (with 2). The block polymers give no aldehyde reaction, they are cyclized:



. Polymerization of acrolein in solution gives a soluble product with a melting point of 150-170°C and [η] 0.06 - 0.07 in benzene at -60°C and 30% conversion, but an insoluble and nonmelting product at -20°C and 30% conversion. The polymer obtained from dilute solutions is not cyclized. At -20°C the rate of polymerization decreases in the order acrolein - α-methyl acrolein - α-ethyl acrolein. There are 4 figures and 1 table.

X

Polymerization of acrolein and its ... S/190/62/004/004/008/019
B119/B138

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy AN SSSR (Institute of High-molecular Compounds AS USSR)

SUBMITTED: March 10, 1961

Card 3/3

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KOTON, M.M.

38289

15 8106

S/190/62/004/006/016/026
B124/B138

AUTHORS: Dokukina, A. F., Yegorova, Ye. I., Kazennikova, G. V., Koton, M. M., Kocheshkov, K. A., Smirnova, Z. A., Talalayeva, T. V.

TITLE: Synthesis and polymerization (copolymerization) of fluoron-substituted styrenes. I. Copolymerization of fluoron-substituted styrenes with vinyl monomers

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 6, 1962, 885 - 888

TEXT: This paper describes the authors' experiments in the production and characterization of the copolymers of $\alpha$, $\beta$, $\beta'$-trifluoro styrene with 2,5-dimethyl styrene and methyl methacrylate; o-, m- and p-methyl-$\alpha$, $\beta$, $\beta'$-trifluoro styrene with styrene, $\alpha$, $\beta$-difluoro-$\beta'$-chloro styrene with styrene, and 2,5-difluoro styrene. The emulsion used for copolymerization consisted of 80 - 85 % water, 2.5 emulsifier (sodium stearate or oleate), and 0.5 % persulfate initiator. The monomer mixture, which was added dropwise after heating to 80 - 90°C, contained azoisobutyric acid dinitrile (0.5 %) as initiator. Eleven copolymers of the above monomers were obtained. Their compositions and properties are given in Table 2. The heat

Card 1/3

2

KOTON, M.M.

New methods for the synthesis of the thermostable polymers with cycles in chain. Analele chimie 17 no.3:98-117 Jl-S '62.

S/074/62/031/002/001/001
B117/B101

AUTHOR: Koton, M. M.

TITLE: New methods of synthesizing heat-resistant polymers with rings in the chain

PERIODICAL: Uspekhi khimii, v. 31, no. 2, 1962, 153 - 167

TEXT: This is a survey of the progress made during the last two years in the field of synthesis of new heat-resistant polymers with rings in the chain, i. e., polymers with benzene rings or heterocyclic links in the principal chain. A. N. Nesmeyanov, A. A. Vansheydt, V. V. Korshak, Z. V. Vinogradova, Yu. V. Mitin, and A. V. Topchiyev are mentioned. There are 1 table and 47 references: 12 Soviet and 35 non-Soviet. The four most recent references to English-language publications read as follows: C. Marvel, Rubb. and Plast age., 42, 87 (1961) and J. Polymer Sci., 50, 511 (1961); W. Lee, Polytechnic Institute of Brooklyn, Polymer Seminar., 10, no. 5 (1960); L. Mulvaney, C. Marvel, J. Polymer. Sci., 50, 541 (1961); C. Abshire, L. Mulvaney, C. Marvel, Macrom. Chem. 44-46, 388 (1961) and J. Org. Chem., 26, 95 (1961).

Card 1/2

New methods of synthesizing...

S/074/62/031/002/001/001
B117/B101

ASSOCIATION: In-t vysokomolekulyarnykh soyedineniy AN SSSR (Institute of High-molecular Compounds AS USSR)

✓

Card 2/2

S/079/62/032/009/010/011
I048/I242

AUTHORS: Koton, M.M. and Florinskiy, F.S.

TITLE: The synthesis of lead organic metacrylates

PERIODICAL: Zhurnal obshchey khimii, v.32, no.9, 1962, 3057-3059

TEXT: The reactions of $(C_6H_5)_3PbOH$ and $(C_6H_5)_2PbO$ with isobutyric and metacrylic acids were studied in detail. The interaction of equimolar amount of $(C_6H_5)_3PbOH$ and freshly distilled isobutyric acid in an alcoholic solution yielded triphenyllead monoisobutyrate (colorless crystals, m.p. 188-190°). The interaction of 0.026 g-moles of $(C_6H_5)_2PbO$ and 0.054 g-moles freshly distilled isobutyric acid in an aqueous or alcoholic solution at 80-90°C yielded diphenyllead diisobutyrate (colorless crystals, m.p. 201-203°C). The main product of the interaction between one mole of $(C_6H_5)_3PbOH$ and one to five moles of metacrylic acid in an aqueous medium at 60°C was triphenyllead monometacrylate (colorless crystals, m.p. 126-128°C); a smaller amount of diphenyllead dimetacrylate was also formed. Diphenyllead dimetacrylate crystallizes as a colorless solid which

Card 1/2

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S/079/62/032/009/010/011
I048/I242

The synthesis of lead...

does not melt at temperatures up to 225°C; a 69% yield was also obtained from 0.03 g-moles of $(C_6H_5)_2PbO$ and 0.07 g-moles of freshly-distilled metacrylic acid, by mixing for 2 hrs in 50 ml of water, allowing the mixture to stand overnight, washing the precipitate with hot water, drying, and recrystallizing from dioxane.

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy Akademii nauk SSSR (The Institute of high-molecular weight compounds, Academy of Sciences USSR)

SUBMITTED: September 20, 1961

Card 2/2

KOTON, M.M.; FLORINSKIY, F.S.

Synthesis of organolead methacrylates. Zhur.ob.khim. 32 no.9:3057-3059 S '62. (MIRA 15:9)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.
(Lead organic compounds) (Methacrylic acid)

S/020/62/144/005/013/017
B124/B138

15 2076

AUTHORS: Koton, M. M., Corresponding Member, AS USSR, Andreyeva, I. V., and Getmanchuk, Yu. P.

TITLE: Emulsion polymerization of α-methyl acrolein in the presence of various redox systems

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 144, no. 5, 1962, 1091-1093

TEXT: α-methyl acrolein was polymerized in various redox systems in the presence of a new type of emulsifier, aqueous polyacrolein sulfite. This yields a stable emulsion, and polymerization takes place in the micelles of the emulsifier. Polymerization is carried out in ten times the amount of water with addition of twice the amount of a 2 % aqueous emulsifier, all related to the monomer used. The most suitable redox system for this scope is potassium persulfate and silver nitrate which gives high polymer yields of maximum molecular weight. All α-methyl-acrolein polymers obtained contain 65-70 % aldehydic groups, while for polyacrolein prepared in the same redox systems this figure is 20-70 %. This is due to the methyl group in the side chain of the α-methyl acrolein molecule, which prevents the

Card 1/2

S/020/62/144/005/C13/017
Emulsion polymerization of... B124/B138

cycling of the aldehydic groups, which occurs in the acrolein molecule. The polymers obtained are soluble in pyridine; their intrinsic viscosity in pyridine ranges from 0.19 and 0.43, and molecular weight, determined from the coefficient of progressive diffusion and the intrinsic viscosity, was between 70,000 and 195,000. The white powders obtained could be molded at 200°C and 75 at to light yellow plates with a softening point between 190 and 215°C. V. Ye. Eskin and S. I. Klenin are thanked for measuring the viscosity, finding the diffusion coefficient, and for calculating the molecular weights of the polymers obtained. There are 2 tables. The English-language reference is: E. Cilbert, J. Donleavy, J. Am. Chem. Soc., 60, 1737 (1938).

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy Akademii nauk SSSR (Institute of High-molecular Compounds of the Academy of Sciences USSR)

SUBMITTED: March 23, 1962

Card 2/2

KOTON, M.M.; ANDREYEVA, I.V.; ANDREYEV, P.F.; DANILOV, L.G.; ROGOZINA, E.M.

Reactions of an aqueous solution of polyacrolein with inorganic salts. Dolk, AN SSSR 146 no.3:608-610 S '62. (MIRA 15:10)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR. 2. Chlen-korrespondent AN SSSR (for Koton).
(Acrolein) (Salts) (Macromolecular compounds)

KOTON, M.M.; FLORINSKIY, F.S.

Synthesis of polymerizing organothallium compounds.
Dokl. AN SSSR 146 no.4:820-821 O '62. (MIRA 15:11)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.
2. Chlen-korrespondent AN SSSR (for Koton).
(Thallium organic compounds)

SLEPTSOVA, O.M.; GROBOVA, K.I.; KOTON, M.M.

Synthesis of unsaturated esters of hydroxamic acids. Zhur. ob. khim. 33 no.8:2568-2570 Ag '63. (MIRA 16:11)

L 13678-63 EPR/EWP(j)/EPF(c)/EWT(m)/BDS/ES(s)-2 AFFTC/ASD/ESD-3/SSD
Ps-4/Pc-4/Pr-4/Pt-4 RM/WW

ACCESSION NR: AP3003773 S/0080/63/036/006/1335/1341

84
82

AUTHOR: Koton, M. M.; Dobretsov, S. L.; Sokolova, T. A.

TITLE: Preparation and study of the properties of copolymers of N-substituted methacrylamides with styrene and methyl methacrylate

SOURCE: Zhurnal prikladnoy khimii, v. 36, no. 6, 1963, 1335-1341

TOPIC TAGS: styrene, methyl methacrylate, N-substituted methacrylamide, copolymer, o-biphenylmethacrylamide, p-biphenyl methacrylamide, alpha-naphthylmethacrylamide, beta-naphthylmethacrylamide, triethylamine, increased heat resistance, increased impact strength, dielectric property, temperature frequency dependence, loss tangent, dielectric constant, softening point, N-substituted methacrylamide-methyl methacrylate copolymer

ABSTRACT: The effect of N-substituted methacrylamides on the heat resistance and dielectric properties of the copolymers of such amides with styrene or methyl methacrylate has been investigated. The following N-substituted amides were used as monomers: N-o-biphenyl- (I); N-p-biphenyl- (II); N-$\alpha$-naphthyl- (III); and

Card 1/2

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methacrylamide content. Orig. art. has: 3 tables and 3 figures.

ASSOCIATION: Institut vy*sokomolekulyarny*kh soyedineniy AN SSSR (Institute of Macromolecular Compounds, AN SSSR)

SUBMI[illegible] DATE ACQ: 07Aug63 ENCL: 00

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

Card 2/2

KOTON, M.M.; LAVRENT'YEVA, Ye.M.

Sergei Nikolaevich Ushakov; on his 70th birthday. Zhur. prikl. khim. 36 no.12:2561-2564 D'63. (MIRA 17:2)

KOTON, M.M.; DOKUKINA, L.F.

Polymerization capacity of tin-containing monomers. Dokl. AN SSSR 152 no.6:1357 O '63. (MIRA 16:11)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.
2. Chlen-korrespondent AN SSSR (for Koton).

ACCESSION NR: AP4007960 S/0190/63/005/012/1817/1818

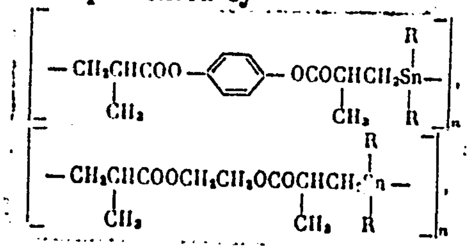
AUTHORS: Adrova, N. A.; Koton, M. M.; Klages, V. A.

TITLE: Synthesis of organometallic polymers with tin atoms in the basic chain.

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 5, no. 12, 1963, 1817-1818

TOPIC TAGS: polymer, organometallic polymer, organotin polymer, organotin, compound synthesis, tin.dihydrodibutyl-, polymer structure, polymer property, methacrylic acid, tin. dihydrodiphenyl-, ethylene glycol.methacrylic acid diester

ABSTRACT: A new tin-organic polymer has been synthesized from the reaction of $R_2SnH_2$ with dimethacrylate ethylene glycol and with dimethacrylate hydroquinone. The structures of the compound are represented by



$$\left[-\underset{\displaystyle CH_3}{CH_2\overset{|}{C}H}COOCH_2CH_2OCO\underset{\displaystyle CH_3}{\overset{|}{C}H}CH_2\overset{\displaystyle R}{\underset{\displaystyle R}{Sn}}-\right]_n$$

where $R = C_4H_9$; $C_6H_5$.

ACCESSION NR: AP4007980

The reactions were carried out in toluene, with and without initiators under atmospheric nitrogen, increasing the temperature gradually from 80 to 100-120C. The molecular weights were determined using the cryoscopic technique in benzol. Orig. art. has: 3 formulas and 1 table.

ASSOCIATION: Institut vy*sokomolekulyarny*kh soyedineniy AN SSSR (Institute of High-Molecular-Weight Compounds AN SSSR)

SUBMITTED: 26Apr62 DATE ACQ: 20Jan64 ENCL: 00

SUB CODE: CH, MA NO REF SOV: 001 OTHER: 000

Card 2/2

ACCESSION NR: AT4033978 S/0000/63/000/000/0009/0010

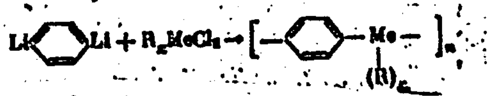
AUTHOR: Adrova, N. A.; Koton, M. M.; Prokhorova, L. K.

TITLE: Preparation of polymers containing phenylene groups and tin, antimony and phosphorus atoms in the principal chain

SOURCE: Geterotsepny*ye vy*sokomolekulyarny*ye soyedineniya (Heterochain macromolecular compounds); sbornik statey. Moscow, Izd-vo "Nauka," 1963, 9-10

TOPIC TAGS: polymerization, polymer, phenylene group, tin, antimony, phosphorus, metallic polymer

ABSTRACT: New metallic polymers: (1) poly-p-phenylenediphenylstannine, (2) poly-p-phenylenetriphenylstibine, and (3) poly-p-phenylenephenylphosphine, have been prepared by polycondensation resulting from the interaction of dilithiumphenylene and organometallic dichlorides by the scheme



(1)

in which Me is Sn, Sb or P, and R is $C_6H_5$. The n-butyllithium for the reaction

Card 1/2

ACCESSION NR: AT4020708 S/0000/63/000/000/0195/0197

AUTHOR: Koton, M. M.; Adrova, N. A.; Khomenkova, K. K.

TITLE: Polymerization of some derivatives of p-vinylbenzoic acid

SOURCE: Karbotsepny*ye vy*sokomolekulyarny*ye soyedineniya (Carbon-chain macromolecular compounds); sbornik statey. Moscow, Izd-vo AN SSSR, 1963, 195-197

TOPIC TAGS: polymerization, vinylbenzoic acid, vinylbenzoate, vinylbenzamide, polymer physical property, polyvinylbenzoate, dilatometry, azodiisobutyronitrile, butyl peroxide, block polymerization

ABSTRACT: Using a dilatometric method, the authors compared the block and liquid-phase polymerization rates of p-vinylbenzoic acid, its methyl and amyl esters, p-vinylbenzamide and its N-methyl, N,N-dimethyl and N-amyl derivatives, using 0.2 mol.% tert.-butyl peroxide or azodiisobutyronitrile as the initiators, respectively, at 120-180C. Some of the physical properties (thermal stability, solubility, weight loss during heating) of the polymers obtained were also studied. The polymerization rate of the derivatives of p-vinylbenzoic acid decreased in the following order: acid > amides > esters. It was found that the polymerized amides of p-vinylbenzoic acid have a higher softening point and a higher thermal stability than the corresponding polymerized esters. Orig. art. has: 1 figure

ACCESSION NR: AT4020708

and 1 table.

ASSOCIATION: Institut vy*sokomolekulyarny*kh soyedineniy AN SSSR (Institute of Macromolecular Compounds, AN SSSR)

SUBMITTED: 18Jun62 DATE ACQ: 20Mar64 ENCL: 00

SUB CODE: OC NO REF SOV: 002 OTHER: 004

ACCESSION NR: AT4020710

and that the ring formation is not complete. On heating polyphenylmethacrylamide at 320C in a vacuum for 2 hours, a soluble polymer with rings in the chain was obtained in a yield of 56.0%. The properties of all the methacrylamides investigated are reported before and after deamination, and the perimental conditions for deamination and polymerization are described. "T.A. Vorotilova also took part in the work." Orig. art. has: 3 tables.

ASSOCIATION: Institut vy*sokomolekulyarny*kh soyedineniy AN SSSR (Institute of Macromolecular Compounds, AN SSSR)

SUBMITTED: 02Jul62

DATE ACQ: 20Mar64

ENCL: 00

SUB CODE: OC

NO REF SOV: 005

OTHER: 000

Card 2/2

ACCESSION NR: AT4034008 S/0000/63/000/000/0236/0239

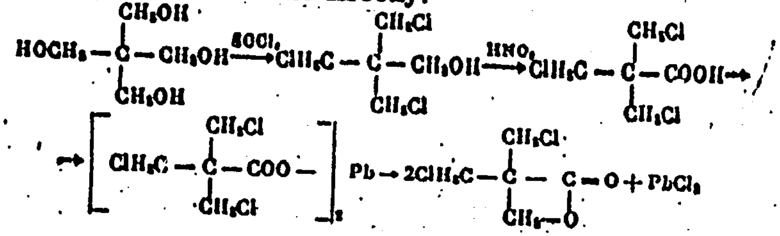
AUTHOR: D'yachenko, T. D.; Glukhov, N. A.; Koton, M. M.; Sazanov, Yu. N.

TITLE: Synthesis and polymerization of α, α'-bis-chloromethyl-β-propiolactone

SOURCE: Geterotsepny*ye vy*sokomolekulyarny*ye soyedineniya (Heterochain macromolecular compounds); sbornik statey. Moscow, Izd-vo "Nauka," 1963, 236-239

TOPIC TAGS: lactone, lactone synthesis, propiolactone, lactone polymerization, pentaerythritol

ABSTRACT: The authors accomplished the synthesis of the lactone from pentaerythritol which was successively converted to pentaerythritol trichlorohydrin by the action of chlorothionyl, and then to trichloropivalic acid by the action of nitric acid. Pyrolysis of lead trichloropivalate yields the lactone directly:



$$HOCH_2-\underset{CH_2OH}{\overset{CH_2OH}{C}}-CH_2OH \xrightarrow{SOCl_2} ClH_2C-\underset{CH_2Cl}{\overset{CH_2Cl}{C}}-CH_2OH \xrightarrow{HNO_3} ClH_2C-\underset{CH_2Cl}{\overset{CH_2Cl}{C}}-COOH \rightarrow \left[ClH_2C-\underset{CH_2Cl}{\overset{CH_2Cl}{C}}-COO-\right]_2 Pb \rightarrow 2ClH_2C-\underset{CH_2-O}{\overset{CH_2Cl}{C}}-C=O + PbCl_2$$

(1)

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ACCESSION NR: AT4034008

In the procedure, 190 g of pentaerythritol trichlorohydrin were treated with an excess of concentrated nitric acid for 30 hrs until the complete removal of nitrogen oxides. The mixture was then cooled down to room temperature and the crystals of trichloropivalic acid were washed with ice water, dried and recrystallized from n-hexane. The acid melted at 109-110 C, and the yield was 60-65% of the theoretical. C-, H- and Cl-analyses and M-determination agreed with the theoretical values. The acid was dissolved in ethyl alcohol and reacted with an equimolar amount of lead acetate. The precipitate of lead trichloropivalate was dried in a vacuum over $P_2O_5$. The melting point was 180 C, the yield — 65-70% and the analysis and molecular weight were in agreement with the theoretical. The pyrolysis of the lead salt was carried out on an oil bath at 150-160 C and $10^{-3}$-$10^{-4}$ mm vacuum in a specially devised flask preventing the over-heating of the product. Special care was taken to keep the salt absolutely dry. The lactone obtained melted at 35 C, had a yield of 65-78%, a mol. weight of 168.11, and the C-, H-, and Cl-content was in agreement with the theoretical. The thermal polymerization of the lactone was also investigated between 40 and 120 C and the destruction at 300 C. The latter showed that the lactone was stable at up to 250 C. Orig. art. has: 5 figures.

ACCESSION NR: AT4034008

ASSOCIATION: Institut vy*sokomolekulyarny*kh soyedineniy AN SSSR (Institute of High-Molecular Compounds, AN SSSR)

SUBMITTED: 14Mar63

DATE ACQ: 30Apr64

ENCL: 00

SUB CODE: OC

NO REF SOV: 001

OTHER: 004

Card 3/3

ACCESSION NR: AP4019008 S/0062/64/000/002/0331/0334

AUTHORS: Zhenevskaya, M.G.; Sheremeteva, T.V.; Koton, M.M.

TITLE: Synthesis and polymerization of p-butyl- and p-butyrophenyl methacrylates. Communication 3. Concerning ester structures and their tendency to polymerize

SOURCE: AN SSSR. Izv. Seriya khimicheskaya, no.2, 1964, 331-334

TOPIC TAGS: parabutyl methacrylate polymerization, polymerization, parabytyrophenyl methacrylate polymerization, ester structure, methacrylate phenylmethacrylic ester , substituted phenylmethacrylic ester

ABSTRACT: The purpose of this investigation is to find how the polymerization rate of the above esters is affected by the structure of the substituent. The determination of the polymerization rate of substituted phenylmethacrylic esters was made for the following monomers: p-normal, p-isoprimary, p-tertiarybutylphenylmethacrylates and p-normal, p-isoprimary butyrophenylmethacrylates. Polymerization was carried out at 80C in the presence of benzoyl peroxide (0.3%) and in a nitrogen atmosphere because oxygen inhibits polymerization. It was

Card 1/2

KOTON, M.

Invasion of polymers. Tekh. i vooruzh. no.3:72-75 Mr '64. (MIRA 17:8)

1. Chlen-korrespondent AN SSSR.

VOLKOVA, A.I.; KOTON, M.M.

Effect of the chemical structure of unsaturated esters on their ability to polymerize. Part 2: Substituted acrylates and methacrylates. Vysokom. soed 6 no.3:480-483 Mr'64. (MIRA 17:5)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.

ACCESSION NR: AP4043789 S/0190/64/006/008/1496/1497

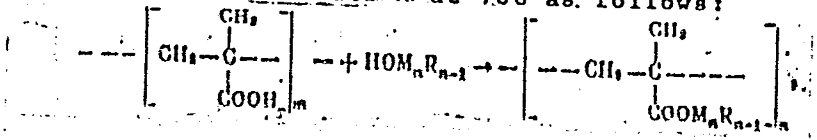
AUTHOR: Koton, M. M.; Kiseleva, T. M.; Arkhipova, I. L.

TITLE: Synthesis of metal-containing polymers by reaction in a poly(methacrylic acid) chain

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 8, 1964, 1496-1497

TOPIC TAGS: metal containing polymer, metal containing polymer synthesis, poly(tri-n-butyltin methacrylate), poly(triphenyltin methacrylate), poly(diphenylantimony methacrylate), poly(triphenyllead methacrylate), poly(phenylmercury methacrylate), thermostable polymer

ABSTRACT: Thermally stable organometallic copolymers which are soluble in organic solvents were synthesized by reacting poly(methacrylic acid) with alkyl- or aryl-metal hydroxides. The copolymers were synthesized in alcohol solution at 70C as follows:



$$-\left[\mathrm{CH_2}-\overset{\mathrm{CH_3}}{\underset{\mathrm{COOH}}{\mathrm{C}}}-\right]_m + \mathrm{HOM}_n\mathrm{R}_{n-1} \rightarrow -\left[\mathrm{CH_2}-\overset{\mathrm{CH_3}}{\underset{\mathrm{COOM}_n\mathrm{R}_{n-1}}{\mathrm{C}}}-\right]_n$$

L 10758-65 EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4 RPL/ASD(m)-3 RM/WW

ACCESSION NR: AP4047203 S/0190/64/006/010/1791/1794

AUTHOR: Koton, M. M.; Dokukina, L. F.

TITLE: Copolymerization of organometallic monomers with styrene 6

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 10, 1964, 1791-1794

TOPIC TAGS: tin, lead, styrene, p-vinyl phenyl-triphenyltin, p-vinyl phenyl-tricyclohexyltin, p-vinyl biphenyl-triphenyltin, p-vinyl phenyltriphenyl-lead, diazoisobutyronitrile, toluene, copolymerization, organometalloid polymer, styrene copolymer

ABSTRACT: The copolymerization of styrene with tin- and lead containing monomers such as p-vinyl phenyl-triphenyltin (m. p. 109-110C), p-vinyl-phenyl-tricyclohexyltin (m. p. 104-105C), p-vinylbiphenyl-triphenyltin (m. p. 142-143C) and p-vinyl phenyl-triphenyllead (m. p. 105-107C) was investigated, using diazoisobutyronitrile (0.1% by weight) as the initiator. The copolymerization temperature was 60C and the degree of polymerization was kept below 25%. The constants of copolymerization $r_1$ and $r_2$ were determined and the relative reactivity of the monomers with respect to the styrene radical were calculated. The

Card 1/3

L 10758-65

ACCESSION NR: AP4047203

constants of copolymerization show that all organotin monomers have a higher activity than styrene, and that these monomers combine more readily with their "own" radical than with the foreign radical ($r_1 > r_2$). p-Vinyl phenyl-triphenyllead is less active than p-vinyl phenyl-triphenyltin with respect to the styrene radical. The highest reactivity is shown by p-vinyl phenyl-triphenyltin ($1/r_2 = 1.21$) > p-vinyl biphenyl-triphenyltin > p-vinyl phenyl-tricyclohexytin. Tabulated data show that an increase in the number of substituents and a decrease in the degree of conjugation of the double bonds decreases the activity of the monomer. The substitution of the tin atom by lead leads to a considerable decrease in monomer activity. Thus, the activity of p-vinylphenyl-triphenyllead is close to that of styrene. The correlation between the composition of the copolymer and the time of polymerization shows that tin-containing monomers are more active with respect to sytrene because the tin content in the colpolymers is larger than the tin content in the initial mixture and the tin content decreases with increasing polymerization time. The constancy of the composition of copolymers of p-vinyl phenyl-triphenyltin and styrene after a 17-hour polymerization is probably due to the intensive formation of cross-linkage resulting from the rupture of hydrocarbon radicals. This is shown by the formation of an insoluble polymer. The increase in viscosity of the copolymers with increasing time of polymerization is

Card 2/3

L 10758-65

ACCESSION NR: AP4047203

associated with increased branching of the polymer chains, leading finally to crosslinkage. Orig. art. has: 6 tables.

ASSOCIATION: Institut vy*sokomolekulyarny*kh soyedineniy AN SSSR (Institute of Macromolecular Compounds, AN SSSR)

SUBMITTED: 29Nov63 ENCL: 00 SUB CODE: OC

NO REF SOV: 002 OTHER: 001

Card 3/3

L 12472-65 EPA(s)-2/EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4/Pt-10 ASD(m)-3/
RPL WW/RM

ACCESSION NR: AP4048199 S/0191/64/000/011/0001/0009

AUTHOR: Koton, M. M.

TITLE: Advances in the field of new polymer synthesis

SOURCE: Plasticheskiye massy*, no. 11, 1964, 1-9

TOPIC TAGS: polymer

ABSTRACT: New polymer syntheses are reviewed, with special emphasis on materials having high thermal stability and high heat resistance. Among Soviet-developed syntheses, the following preparations are mentioned: polymers from acetone; copolymers of formaldehyde and glyoxal, styrene, methyl methacrylate, or phosgene; chlorinated aldehydes; polyesters from dialdehydes (e.g., terephtaladehyde polymers from α-methylacrolein; bis(chloromethyl)arenes; p-diisopropylbenzene; polyacrylonitrile by pyrolysis; and polypyrazoles. Orig. art. has: 49 formulas.

ASSOCIATION: none

Card 1/2

L 12472-65
ACCESSION NR: AP4048199

SUBMITTED: 00
ENCL: 00
SUB CODE: OC

NO REF SOV: 016
OTHER: 034
ATD PRESS: 3127

Card 2/2

ACCESSION NR: AP4042082 S/0079/64/034/006/1757/1758

AUTHOR: Koton, M. M.; Dokukina, L. F.

TITLE: The synthesis of unsaturated tin organic compounds

SOURCE: Zhurnal obshchey khimii, v. 34, no. 6, 1964, 1757-1758

TOPIC TAGS: synthesis, copolymer, polymerization, organic solvent, tin organic monomer, stanniferous monomer, vinyl compound, metal organic compound

ABSTRACT: The authors investigated a method for developing a synthesis for the polymerization of unsaturated metal organic compounds by first obtaining: n-vinylbiphenyltriphenyltin (I), and n-vinylphenyltricyclohexyltin (II). Tin organic monomers (I and II), colorless crystals, are quite soluble in organic solvents; they polymerize, easily, in bulk as well as in solution and product copolymers with other vinyl compounds. The processes of synthesis are described for both I and II. The authors express gratitude to J. M. Kiselov for his valuable advice and assistance.

ASSOCIATION: Institut vy*sokomolekulyarny*kh soyedineniy, akademii nauk SSSR (Institute of High Molecular Compounds, Academy of Sciences,SSSR).

Card 1/2

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ACCESSION NR: AP4042082

SUBMITTED: 20May63 ENCL: 00

SUB CODE: OC NO REF SOV: 003 OTHER: 003

Card 2/2

KOTON, M.M.

Stable polymers of high strength. Priroda 55 no.2:57-60 '66.
(MIRA 19:9)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR, Leningrad; chlen-korrespondent AN SSSR.

KOTON, M.M.; DOKUKINA, A.F.; YEGOROVA, Ye.I.

Kinetics of homogeneous and heterogeneous polymerization of $\alpha,\beta$-fluoro-substituted styrenes. Dokl. AN SSSR 155 no.1:139-140 Mr '64.
(MIRA 17:4)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR. 2. Chlen-korrespondent AN SSSR (for Koton).

KOTON, M.M.; ANDREYEVA, I.V.; GETMANCHUK, Yu.P.

Polymerization of meta-acrolein with anion catalysts. Dokl. AN SSSR 155 no. 4:836-838 Ap '64. (MIRA 17:5)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR. 2. Chlen-korrespondent AN SSSR (for Koton).

L 11357-65 EPA(s)-2/EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4/Pt-10 RPL
WW/RM

ACCESSION NR: AP4045096 S/0020/64/158/001/0130/0132

AUTHOR: Adrova, N. A.; Prokhorova, L. K.; Koton, M. M. (Corresponding member AN SSSR)

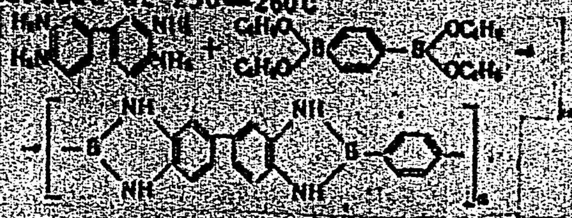
TITLE: Preparation of polymers with bi(borabenzimidazole) rings in the backbone

B

SOURCE: AN SSSR. Doklady, v. 158, no. 1, 1964, 130-132

TOPIC TAGS: heat resistant polymer, boron containing polymer, nitrogen containing polymer

ABSTRACT: Polymers containing 6,6-bi(2-borabenzimidazole) units alternating with p-phenylene units or oxygen atoms in the backbone have been synthesized at 230—260C



(I)

Card 1/3

L 11357-65 EPA(s)-2/EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4/Pt-10 RPL
WW/RM

ACCESSION NR: AP4045096 S/0020/64/158/001/0130/0132

AUTHOR: Adrova, N. A.; Prokhorova, L. K.; Koton, M. M. (Corresponding member AN SSSR)

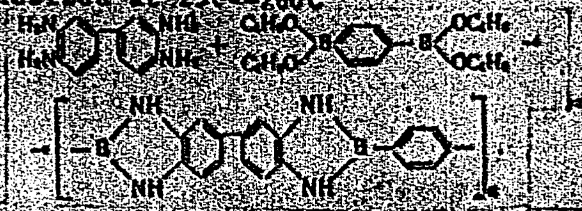
B

TITLE: Preparation of polymers with bi(borabenzimidazole) rings in the backbone

SOURCE: AN SSSR. Doklady, v. 158, no. 1, 1964, 130-132

TOPIC TAGS: heat resistant polymer, boron containing polymer, nitrogen containing polymer

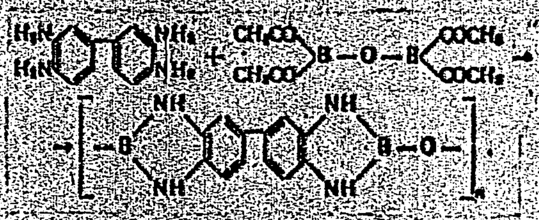
ABSTRACT: Polymers containing 6,6-bi(2-borabenzimidazole) units alternating with p-phenylene units or oxygen atoms in the backbone have been synthesized at 250—260C



(I)

Card 1/3

L 11357-65
ACCESSION NR: AP4045096



(II)

This research, part of a study of the synthesis of heat-resistant polymers containing stiff heterocyclic rings in the backbone, was done to study the effect of backbone structure on the thermal stability of such polymers. Polymer II is the first polymer containing B-O-B units ever prepared. The polymers are infusible dark-brown powders soluble in sulfuric acid. Both polymers have low molecular weight, and both, especially II, are stable in air at 300--400C. Polymer II hydrolyses in moist air. Orig. art. has: 2 formulas, 1 table, and 1 figure.

Card 2/3

L 11357-65
ACCESSION NR: AP4045096

ASSOCIATION: Institut vy*sokomolekulyarny*kh soyedineniy Akademii nauk SSSR (Institute of High-Molecular-Weight Compounds, Academy of Sciences SSSR)

SUBMITTED: 04May64 ATD PRESS: 3118 ENCL: 00

SUB CODE: MT NO REF SOV: 002 OTHER: 004

Card 3/3

L 19760-65 EPA(s)-2/EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4/Pt-10 RPL
WW/RM/HLK

**ACCESSION NR:** AT4049864 S/0000/64/000/000/0257/0259

**AUTHOR:** Adrova, N. A., Koton, M. M., Khomenkova, K. K.

B+1

**TITLE:** Reaction of poly-p-vinylbenzoyl chloride with alcohols and amines

**SOURCE:** Khimicheskiye svoystva i modifikatsiya polimerov (Chemical properties and the modification of polymers); sbornik statey. Moscow, Izd-vo Nauka, 1964, 257-259

**TOPIC TAGS:** vinylbenzoic acid, polyvinylbenzoyl chloride, polyacyl chloride, esterification, amidation, polymer thermostability

**ABSTRACT:** Under reflux in tetrahydrofuran solution, poly-p-vinylbenzoyl chloride, prepared by polymerizing the monomer at 100C with 0.2 mol. % azodiisobutyronitrile, gave polymeric methyl p-vinylbenzoate with dry methanol, and poly-N-n-amyl-p-vinylbenzamide with n-amylamine. The thermal stability of the polyamide was improved by partial deamination. Yields from 1 g poly-p-vinylbenzoyl chloride and 5 ml amylamine or 10 ml methanol were 0.7 g of the benzamide or 0.8 g of the methyl ester, respectively. Triethylamine was added in both reactions to neutralize liberated HCl. Poly-N-n-amyl-p-vinylbenzamide was also prepared by a second route by polymerizing the monomer at 90C with azodiisobutyronitrile in dimethylformamide solution, yielding after approximately 19% deamination by 2 hrs. of heating at 230-300C in argon under 8-10 mm Hg pressure, a

Card 1/2

L 19760-65
ACCESSION NR: AT4049864

yellow polymer with increased thermal stability. 1 This polymer was insoluble in "ordinary" 2 solvents, and its properties are ascribed to its crosslinked structure. Orig. art. has: 2 tables and 2 chemical equations.

ASSOCIATION: Institut vy*sokomolekulyarny*kh soyedineniy AN SSSR (Institute of High Polymers, AN SSSR)

SUBMITTED: 10Jun63

ENCL: 00

SUB CODE: OC

NO REF SOV: 003

OTHER: 003

Card 2/2

L 11316-65 EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4 RPL WW/JW/RM

ACCESSION NR: AP4043788 S/0190/64/006/008/1493/1495

AUTHOR: Adrova, N. A.; Dubnova, A. M.; Koton, M. M.

TITLE: Preparation of new polymers with benzimidazoline groups in the backbone

B

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 8, 1964, 1493-1495

TOPIC TAGS: copolymer, benzimidazole group containing copolymer, polycondensation, thermally stable copolymer

ABSTRACT: Polymers with benzimidazoline groups in the backbone have been synthesized by polycondensation in the melt of 3, 3', 4, 4'-biphenyltetramine with terephthaldehyde, isophthaldehyde, their acetals, diacetyldiphenylmethane, or bis(-acetylphenyl)ether as follows:

Card 1/2

L 11316-65

ACCESSION NR: AP4043788

2

where: 1) R is $C_6H_4$; R', H; 2) R is $C_6H_4CH_2C_6H_4$; R', $CH_3$; 3) R is $C_6H_4OC_6H_4$; R', $CH_3$. The copolymers are insoluble and infusible dark-brown powders. The structure of the copolymers was confirmed by IR spectroscopy. Study of the thermal stability of the copolymers determined by weight loss showed that the loss is 0.5—7.6% at 300C, 6.8—14.5 at 400C, and 14.6—60.7 at 500C. Orig. art. has: 1 table.

ASSOCIATION: Institut vy*sokomolekulyarny*kh soyedineniy AN SSSR (Institute of Macromolecular Compounds AN SSSR)

SUBMITTED: 04Oct63 ATD PRESS: 3101 ENCL: 00

SUB CODE: GC, OC NO REF SOV: 002 OTHER: 005

Card 2/2

ADROVA, N.A.; PROKHOROVA, L.K.; KOTON, M.M.

Production of polymers with dibenzoborimidazoline links in the main chain. Dokl. AN SSSR 158 no.1:130-132 S-O '64
(MIRA 17:8)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR. 2. Chlen korrespondent AN SSSR (for Koton).

L 22531-65 EWG(j)/EWT(m)/EPF(c)/EPR/EWP(j)/T/EWA(h)/EWA(1) Pc-4/Pr-4/Ps-4/
Peb RPL RM/WW

ACCESSION NR: AP4047947 S/0020/64/158/005/1120/1122

B

AUTHOR: Koton, M. M. (Corresponding member AN SSSR); Kocheshkov, K. A. (Corresponding member AN SSSR); Gorshkova, I. A.; Dokukina, A. F.; Panov, Ye. N.

TITLE: Copolymerization of alpha, beta, beta-halosubstituted paradivinylbenzenes with styrene

SOURCE: AN SSSR. Doklady*, v. 158, no. 5, 1964, 1120-1122

TOPIC TAGS: halosubstituted paradivinylbenzene, copolymerization, styrene paradivinylbenzene copolymer, reaction kinetics, radical mechanism, copolymerization, kinetics

ABSTRACT: The copolymerizability of styrene and $\alpha,\beta,\beta$-halosubstituted p-divinylbenzenes, containing two vinyl groups of different activity, was studied. Neither p-vinyl-$\alpha,\beta$-difluoro-$\beta$-chlorostyrene (I), p-isopropenyl-$\alpha,\beta$-difluoro-$\beta$-chlorostyrene (II), p-bis($\alpha,\beta$-difluoro-$\beta$-chlorostyrene)(IV) would form polymers by radical polymerization, although I and II did form dimers. However I, II, and III copolymerized with styrene under emulsion, solution or bulk radical

Card 1/2

Card 2/2

L 2088-65 EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4 RPL/ASD(m)-3/
AFETR WW/RM

ACCESSION NR: AP4049923 S/0020/64/159/003/0602/0604

AUTHOR: Koton, M. M. (Corresponding member AN SSSR); Andreyeva, I. V.; Turbina, A. I.; Sinyavskiy, V. G.

TITLE: Polymerization of o-hydroxyphenyl vinyl ketone

SOURCE: AN SSSR. Doklady, v. 159, no. 3, 1964, 602-604

TOPIC TAGS: chelate polymer, o-hydroxyphenyl vinyl ketone, polymer, metal chelate copolymer, methyl methacrylate, divinylbenzene

ABSTRACT: The conditions of the radical polymerization of o-hydroxyphenyl vinyl ketone were studied in an effort to obtain polymers containing chelate groups by direct polymerization or copolymerization. The o-hydroxyphenyl vinyl ketone, synthesized specially for the study, was polymerized in a nitrogen atmosphere by several methods: in solution, in bulk, and in suspension. Either benzoyl peroxide or azobisisobutyronitrile were used as initiators. The polymerization temperature was 75—80C. The colorless (after reprecipitation) powder-like polymer is soluble in some organic solvents, such as benzene,

Card 1/3

L 16088-65
ACCESSION NR: AP4049923

5

acetone, pyridine, or dimethylformamide, and in dilute alkalis; it is insoluble in methanol, carbon tetrachloride, or ethyl ether. The molecular weight of 125,000 was determined by the light-dispersion method. The intrinsic viscosity of polymers depends on the method of obtaining them. The lowest values were obtained for the product polymerized in solution; the highest, in suspension. The kinetics of the polymerization were studied, and the curves and the constants were obtained. The IR spectra confirm that polymerization takes place only along the double bonds. The oxime derivatives confirm the presence of the theoretical number of carbonyl groups in the polymers obtained. Products of copolymerization of o-hydroxyphenyl vinyl ketone with methyl methacrylate or divinylbenzene were also obtained; the latter product has ion-exchange properties. The presence of chelate groups in the polymers studied makes it possible to use these polymers or copolymers for obtaining polymeric complexes with metals. Orig. art. has: 1 formula, 2 tables, and 2 figures.

ASSOCIATION: Institut vy*sokomolekulyarnykh soyedineniy Akademii nauk SSSR (Institute of Macromolecular Compounds, Academy of Sciences, SSSR)

Card 2/3

L 16088-65
ACCESSION NR: AP4045923

| | | |
|---|---|---|
| SUBMITTED: 09Jul64 | ENCL: 00 | SUB CODE: GC, MT |
| NO REF SOV: 004 | OTHER: 001 | ATD PRESS: 3145 |

Card 3/3

L 35071-65 EPF(c)/EWP(j)/EWA(c)/EWT(m)/T Po-4/Pr-4 RM

S/0081/64/000/024/S034/S034

ACCESSION NR: AR5006370

26

SOURCE: Ref. zh. Khimiya, Abs. 24S194

6+1

AUTHOR: Chetyrkina, G. M.; Sokolova, T. A.; Koton, M. M.

TITLE: Polymerization of N-substituted metacrylamides. V. Formation of rings in polymer chains

CITED SOURCE: Sb. Vysokomolekul. soyedineniya. Karbotsepn. vysokomolekul. soyedineniya. M., AN SSSR, 1963, 213-215

TOPIC TAGS: polymerization, polymer chain, cylcic polymerization, deamination, polyalkylmetacrylamides

TRANSLATION: Separation of the volatile products and the formation of cyclic structures in the chain of the main valencies are observed in the partial thermal decomposition of poly-N-alkylmetacrylamides. The possibility of forming cyclic structures during the partial deamination of poly-N-arylmetacrylamide was investigated. Upon heating the polymers of phenylmetacrylamide, n-carboxy- and n-carboethoxyphenylmetacrylamides in a vacuum (3 mm) at 270-320°C for 2-3 hours the cleavage of the amine molecules occurs with the simultaneous closing of the six-membered

Card 1/2

polymers.

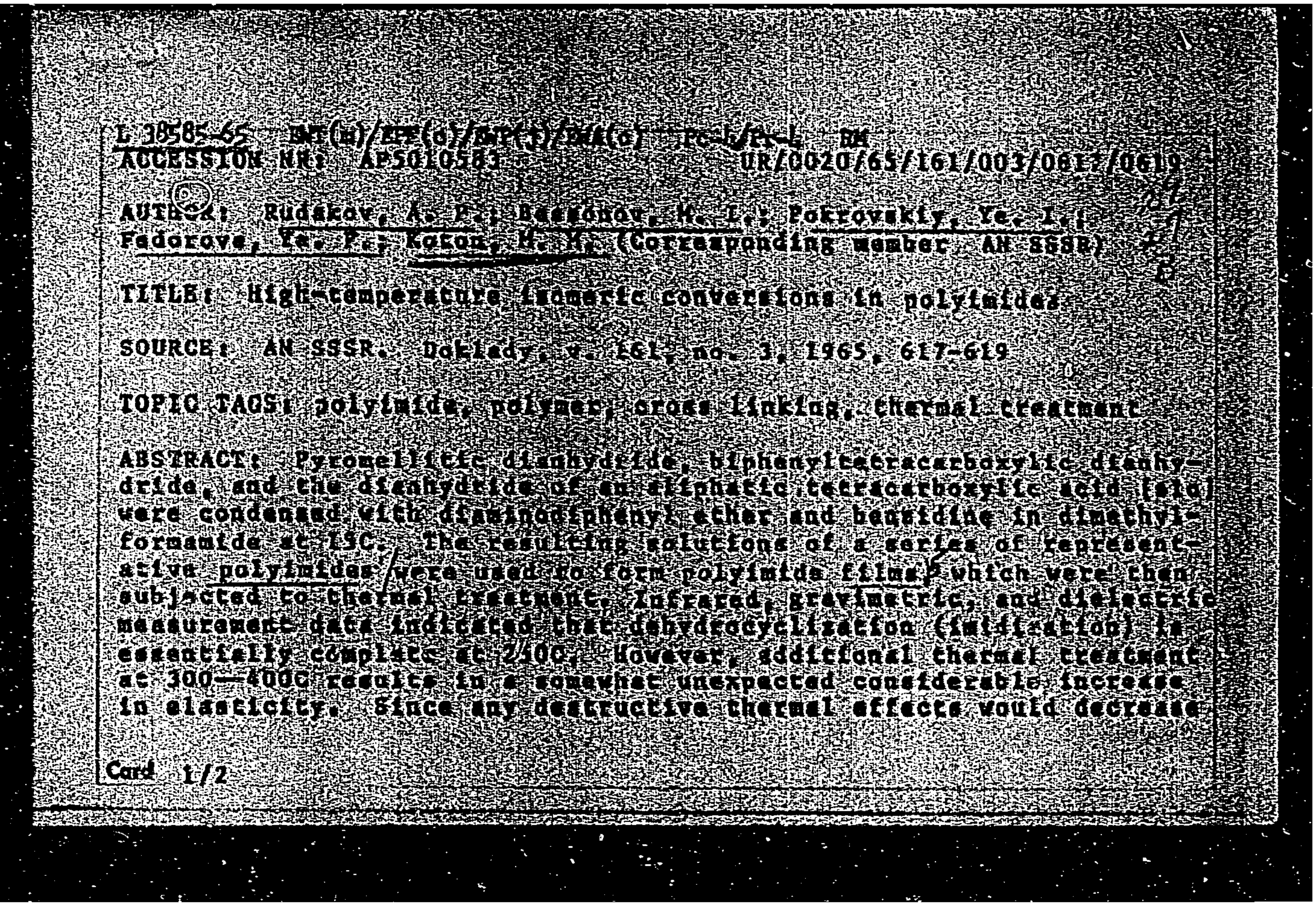
OC, GC ENCL: 00

Card 2/2

KOTON, M.M.; KISELEVA, T.M.; ARKHIPOVA, I.L.

Synthesis of metal-containing polymers by reactions in polymethacrylic acid chains. Vysokom.soed. 6 no.8:1496-1497 Ag '64. (MIRA 17:10)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.



L 38585-65 EWT(m)/EPF(c)/EWP(j)/EWA(c) Pc-4/Pr-4 RM
ACCESSION NR: AP5010583 UR/0020/65/161/003/0617/0619

AUTHOR: Rudakov, A. P.; Bessonov, M. I.; Pokrovskiy, Ye. I.; Fedorova, Ye. F.; Koton, M. M. (Corresponding member AN SSSR)

TITLE: High-temperature isomeric conversions in polyimides

SOURCE: AN SSSR. Doklady, v. 161, no. 3, 1965, 617-619

TOPIC TAGS: polyimide, polymer, cross linking, thermal treatment

ABSTRACT: Pyromellitic dianhydride, biphenyltetracarboxylic dianhydride, and the dianhydride of an aliphatic tetracarboxylic acid [sic] were condensed with diaminodiphenyl ether and benzidine in dimethylformamide at 15C. The resulting solutions of a series of representative polyimides were used to form polyimide films, which were then subjected to thermal treatment. Infrared, gravimetric, and dielectric measurement data indicated that dehydrocyclization (imidization) is essentially complete at 250C. However, additional thermal treatment at 300—400C results in a somewhat unexpected considerable increase in elasticity. Since any destructive thermal effects would decrease

Card 1/2

L 38585-65
ACCESSION NR: AP5010583

elasticity, and since crystallization is disproved by x-ray data, it was concluded that at higher temperatures cross-linking occurs, probably by opening of individual imide rings incorporated in the macromolecules and subsequent formation of imide cross-links between separate macromolecules. This is supported by attenuation of the 1780 $cm^{-1}$ band associated with carbonyl groups in five-membered rings. Further support for cross-linking is provided by thermomechanical tests on the above films. Intermolecular isomerization of this type may be utilized to control the properties of other thermosetting plastics. Orig. art. has: 3 figures, 1 table, and 1 formula. [VS]

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy Akademii nauk SSSR (Institute of Macromolecular Compounds, Academy of Sciences, SSSR)

SUBMITTED: 05Nov64 ENCL: 00 SUB CODE: OC, TD

NO REF SOV: 000 OTHER: 005 ATD PRESS: 3227

Card 2/2

KOTON, M.M.

Synthesis of new fiber-forming polymers. Vest. AN SSSR 34 no.9:71-74 S '64. (MIRA 17:10)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR, chlen-korrespondent AN SSSR.

KOTON, M.M.

Achievements in the field of the synthesis of new types of polymers. Plast. massy no.11:1-9 '64 (MIRA 18:1)

KOTON, M.M.; KOCHESHKOV, K.A.; GORSHKOVA, I.A.; DOKUKINA, A.F.; PANOV, Ye.M.

Copolymerization of $\delta,\beta,\beta$ -halo-substituted p-divinylbenzenes with styrene. Dokl. AN SSSR 158 no.5:1120-1122 O '64.

(MIRA 17:10)

1. Institute vysokomolekulyarnykh soyedineniy AN SSSR, Leningradskiy politekhnicheskiy institut im. M.I.Kalinina i Fiziko-khimicheskiy institut im. L.Ya.Karpova. 2. Chleny-korrespondenty AN SSSR (for Koton, Kocheshkov).

KOTON, M.M.; ANDREYEVA, I.V.; TURBINA, A.I.; SINYAVSKIY, V.G.

Polymerization of o-hydroxyphenyl vinyl ketones. Dokl. AN SSSR 159 no.3:602-604 N '64 (MIRA 18:1)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR. 2. Chlen korrespondent AN SSSR (for Koton).

L 00992-66 EPA(s)-2/EWT(m)/EPF(c)/EWP(j)/T WW/RM

ACCESSION NR: AP5019567 UR/0191/65/000/008/0034/0038
678.742'547.785.5-416.01:539.3

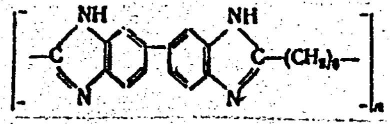
AUTHOR: Layus, L. A.; 44,55 Bessonov, M. I.; 44,55 Adrova, N. A.; 44,55 Koton, M. M. 44,55 40 37 B

TITLE: Physicomechanical properties of poly-2-octamethylene-5-5'-dibenzimidazole films 7

SOURCE: Plasticheskiye massy, no. 8, 1965, 34-38

TOPIC TAGS: heat resistant polymer, 44,55 polybenzimidazole

ABSTRACT: The mechanical properties and heat resistance 15 of isotropic and oriented films of poly-2-octamethylene-5,5'-dibenzimidazole



films of various molecular weights have been studied in a wide range of temperatures. The films were deposited from formic acid solutions. Testing involved thermomechanical and thermogravimetric measurements and measurements of tensile strength, elon-

Card 1/2

L 00992-66

ACCESSION NR: AP5019567

3

gation, and modulus of elasticity at various temperatures. The data are given in graphic form. On the basis of the data, optimum conditions for film drying and orientation stretching were selected. The results showed that the polymer is suitable for producing high-grade polymer films. In addition to good strength, elasticity, and thermal stability, the films also showed good dielectric properties. Film mechanical strength could be considerably increased by orientation stretching in the softened state: tensile strength attained 5000 kg/cm$^2$ while film elasticity and flexibility met the most stringent specifications [Sic]. The polymer was considered to be of considerable interest as a material for films suitable for construction, electrical and thermal insulation purposes and for fibers suitable for long-time service at temperatures up to 200C. Orig. art. has: 9 figures and 1 formula. [SM]

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: OC, GC

NO REF SOV: 006

OTHER: 002

ATD PRESS: 4068

Card 2/2

L 44169-65 EPF(c)/EWP(j)/EWA(c)/EWT(m) ~~Pc-4/Pr-4~~ RM
ACCESSION NR: AP5005599 S/0190/65/007/002/0305/0307

AUTHORS: Adrova, N. A.; Koton, M. M.; Dubnova, A. M.; Moskvina, Ye. M.; Pokrovskiy, Ye. I.; Fedorova, Ye. F.

TITLE: Synthesis and properties of polybenzimidazoles containing aliphatic units in the main chain

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 2, 1965, 305-307

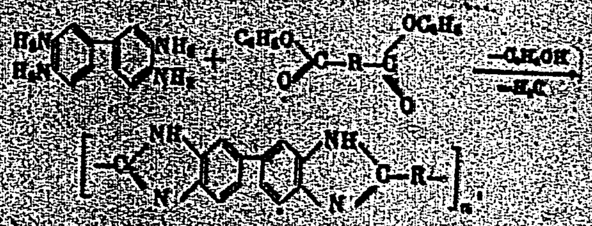
TOPIC TAGS: polymer, polybenzimidazole, polymer synthesis, polymer property, polycondensation

ABSTRACT: A number of polyalkylene dibenzimidazoles were synthesized by polycondensation of 3.3-diaminobenzidine with the phenyl esters of a number of aliphatic dicarboxylic acids. Equimolar mixtures of the reactants were heated in an argon flow for 2-3 hours at 250-270C and in a vacuum for an additional 0.5-1 hours (0.03 mm at 270C). The characteristic viscosity of the products was determined in 0.1-0.2% N solutions of formic acid, and the heat stability was determined by heating for one hour each at 300, 400 and 500C in air. The polycondensation occurs according to the reaction

Card 1/2

L 44169-65

ACCESSION NR: AP5005599



R = $(CH_2)_n$, n = 0, 1, 2, 3, 4, & $C_6H_4$.

yielding a yellowish-brown powder, soluble in formic acid and thermally stable in air and nitrogen. Polymers based on the following dicarboxyl acids were obtained: oxalic, malonic, succinic, glutaric, adipic and sebacic. Their characteristic viscosities were 0.3, 0.3, 1.2, 2.15, 3.3, and 1.5-13.0 respectively. Their weight loss at 500C was 98.5, 66.34, 72.38, 81.10, 73.94, 56.8, and 23.1% respectively. Orig. art. has: 1 figure and 1 table.

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy, AN SSSR (Institute of High Molecular Weight Compounds, AN SSSR)

SUBMITTED: 25Apr64 ENCL: 00 SUB CODE: [illegible]

NO REF SOV: 001 OTHER: 002

Card 2/2

L 8874-66 EWP(j)/EWA(c)/EWT(m)/T RM

ACC NR: AP5025957 SOURCE CODE: UR/0190/65/007/010/1693/1697

AUTHOR: Ivanov, S. S.; 44,55 Gavryuchenkova, L. P.; 44,55 Koton, M. M. 44,55 50

ORG: Institute of Macromolecular Compounds, AN SSSR 44,55 (Institut vysokomolekulyarnykh soyedineniy AN SSSR) 49 B

TITLE: Synthesis of poly-alpha-alkylglycyldehydroalanines. 7 Report No. 1.

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 10, 1965, 1693-1697

TOPIC TAGS: alanine, polymer, polymerization, biochemistry 7

ABSTRACT: The synthesis of carbon chain polymers with peptide and carboxyl groups in the side chains is of interest in the study of biologically active compounds. Poly-alpha-alkylglycyldehydroalanines were synthesized by reacting alpha-chloroacetyldehydroalanine with amines which leads to substitution of the halogen by the amine residue and simultaneous polymerization. 7 44,55 The polymerization mechanism is to be discussed elsewhere. The following compounds, unknown in the literature, were synthesized and characterized by elemental analysis and IR spectra: poly-alpha-alkylglycyldehydroalanine, where the term

Card 1/2 UDC: 678.675

2

L 8874-66

ACC NR: AP5025957

"alkyl" included the methyl, ethyl, n-butyl, n-hexyl, dibutyl, n-ethanol, aminoethyl, phenyl, and amino radicals. A study of the thermal decomposition/kinetics showed that most of these compounds start to decompose at 150°C. Orig. art. has: 2 figures, 2 tables and 2 equations.

SUB CODE: OC/ SUBM DATE: 03Nov64/ ORIG REF: 003/ OTH REF: 004

Card 2/2

(A) L 13520-66 EWT(m)/EWP(j)/T RM

ACC NR: AP6001858 SOURCE CODE: UR/0190/65/007/012/2039/2047

AUTHORS: Koton, M. M.; Andreyeva, I. V.; Getmanchuk, Yu. P.; Madorskaya, L. Ya.; Pokrovskiy, Ye. I.; Kol'tsov, A. I.; Filatova, V. A.

40

ORG: Institute of High-Molecular Polymers AN SSSR (Institut vysokomolekulyarnykh soyedineniy AN SSSR)

B

TITLE: Structure of methacrolein polymers, obtained in the presence of anionic catalysts. 3rd report in the series Polymerization of Acrolein and Its Derivatives

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 12, 1965, 2039-2047

TOPIC TAGS: polymerization, polymer structure, reaction mechanism, catalyst/ Nippon Bunko infrared spectrophotometer DS 301, GNM 3 nuclear magnetic resonance spectrometer

ABSTRACT: The structure of polymers obtained from methacrolein and $\alpha$-ethylacrolein in the presence of sodium naphthalene and sodium trityl using the method described by M. M. Koton, I. V. Andreyeva, and Yu. P. Getmanchuk (Dokl. AN SSSR, 155, 836, 1964) was investigated. The structure analysis was performed by chemical means: oxime formation, hydrogenation, oxidation with perbenzoic acid, ozonization, as well as by physical means: infrared spectra, using Nippon-Bunko spectrophotometer DS-301, and NMR spectra, using instrument GNM-3. It was established that the rate of conversion of methacrolein and the structure of the obtained polymer are both functions of the polymerization temperature, as illustrated in Fig. 1. Mechanism of the polymerization

44

Card 1/3 UDC: 678.01:53+678.744

L 13520-66

ACC NR: AP6001858

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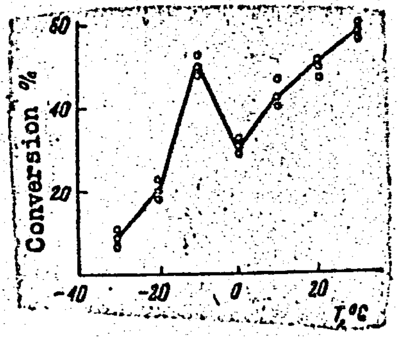
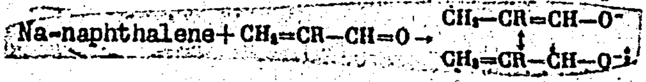


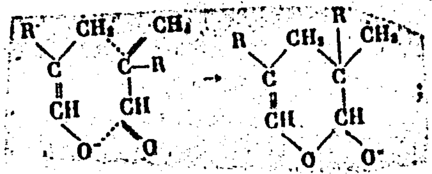
Fig. 1. Degree of methacrolein conversion to polymer within 8 hours as function of temperature. Polymerization conducted in THF in the presence of Na napthalene (1 mol %).

reaction is offered, and is summarized by following steps: 1) initiation



$$\text{Na-naphthalene} + CH_2{=}CR{-}CH{=}O \rightarrow \left[\begin{array}{c} \dot{C}H_2{-}CR{=}CH{-}O^- \\ \updownarrow \\ \dot{C}H_2{=}CR{-}\dot{C}H{-}O^- \end{array}\right]$$

2) propagation



Card 2/3

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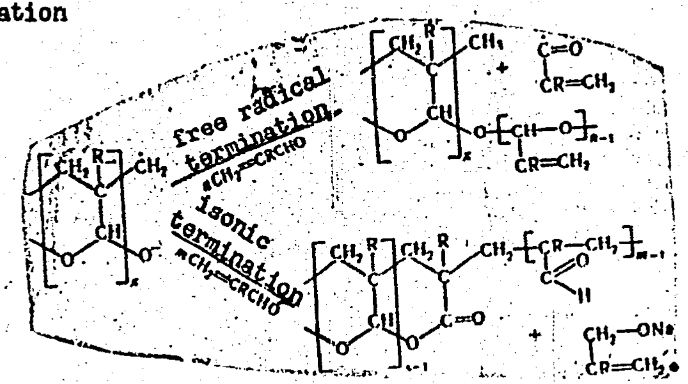
APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410012-8

L 13520-66

ACC NR: AP6001858

0

3) termination



At 0C and above, the termination step occurs mainly along the ionic path. This mechanism explains the formation of the predominantly cyclic structures consisting of condensed tetrahydropyrane rings at temperatures below 0C. Orig. art. has: 3 tables, 6 figures, 4 formulas, and 3 equations.

SUB CODE: 11, 07/ SUBM DATE: 01Dec64/ ORIG REF: 005/ OTH REF: 014

Card 3/3 *ode*

L 8127-66

L 34104-66 EWT(m)/EWP(j)/T WW/JWD/RM
ACC NR: AP6008713 SOURCE CODE: UR/0079/65/035/011/2036/2037

34

B

AUTHOR: Koton, M. M.; Kiseleva, T. M.

ORG: Institute of High Molecular Compounds, Academy of Sciences SSSR (Institut vysokomolekulyarnykh soyedineniy Akademii nauk SSSR)

TITLE: Reactions of dimagnesium organic compounds with metal halides and organometallic compounds

SOURCE: Znurnal obshchey khimii, v. 35, no. 11, 1965, 2036-2037

TOPIC TAGS: organosilicon compound, organotin compound, organolead compound, organomagnesium compound

ABSTRACT: Reactions of $BrMgCH_2MgBr$ (I) with stannic chloride (II), diphenyltin dichloride (III), diphenyllead diacetate (IV), and dimethylsilicon dichloride (V) in ether and tetrahydrofuran were studied. Most attention was devoted to the reaction of (I) with (II), which is represented as

$$BrMgCH_2MgBr + SnCl_4 \longrightarrow Cl_3Sn(-CH_2SnCl_2)_n-CH_2SnCl_3$$

Treatment of compound (VI) with alkali produced the organotin compound (VII):

Card 1/3

UDC: 547.419.6: 547.559

L 34104-66
ACC NR: AP6008713

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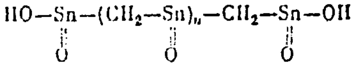
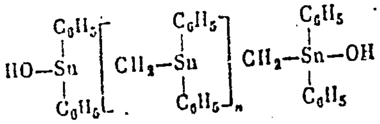


$$HO-\underset{\overset{\|}{O}}{Sn}-(CH_2-\underset{\overset{\|}{O}}{Sn})_n-CH_2-\underset{\overset{\|}{O}}{Sn}-OH$$

Reaction of (I) with (III), (IV), and (V) are similar; with (III), the dichloride $ClSn(C_6H_5)_2[CH_2Sn(C_6H_5)_2]_2Cl$, is formed, which under the influence of alkali converts into the corresponding oxide



$$HO-\underset{C_6H_5}{\overset{C_6H_5}{Sn}}\left[CH_2-\underset{C_6H_5}{\overset{C_6H_5}{Sn}}\right]_n CH_2-\underset{C_6H_5}{\overset{C_6H_5}{Sn}}-OH$$

In tetrahydrofuran, (I) and (V) produced

$$ClSi-(CH_3)_2[CH_2-Si(CH_3)_2]_2Cl$$

Card 2/3

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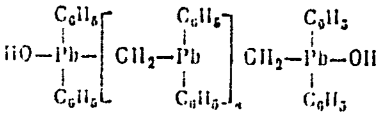
L 34104-66
ACC NR: AP6008713

0

(I) and (IV) produced



$$HO-\underset{C_6H_5}{\overset{C_6H_5}{Pb}}-\left[CH_2-\underset{C_6H_5}{\overset{C_6H_5}{Pb}}\right]_n CH_2-\underset{C_6H_5}{\overset{C_6H_5}{Pb}}-OH$$

Orig. art. has: 1 table.

SUB CODE: 07 / SUBM DATE: 14Jul64 / ORIG REF: 002 / OTH REF: 003

Card 3/3 n/T

(A) L 11235-66 EWT(m)/EWP(j)/T/EWA(c)/ETC(m) WW/RM

ACC NR: AP6002214 SOURCE CODE: UR/0080/65/038/012/2728/2734

44 55 44 55 44 55 44 55 44 55

AUTHOR: Koton, M. M.; Yakovlev, B. I.; Rudakov, A. P. Knyazeva, T. S.; Florinskiy, F. S.; ~~Bessonov, M. I.~~; Kuleva, M. M.; Tolparova, G. A.; Layus, L. A.

44 55 44 55 44 55 44 55 73 73 83

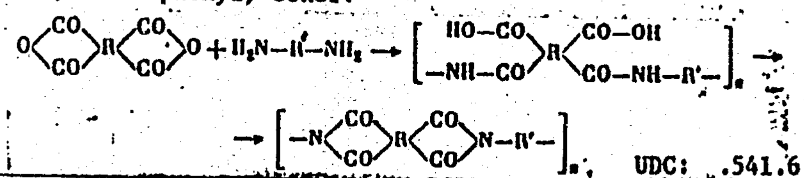
ORG: Institute of Macromolecular Compounds, AN SSSR (Institut vysokomolekulyarnykh soyedineniy AN SSSR) 44 55

TITLE: Preparation and physicomechanical properties of polypyromellitimide 1,44,55

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 12, 1965, 2728-2734

TOPIC TAGS: heat resistant plastic, fire resistant material, dielectric material, polyimide, polypyromellitimide/~~H film~~

ABSTRACT: A study has been made of the preparation and physical and mechanical properties of a polyimide, viz., polypyromellitimide. Test results showed that the polymer may find widespread use as a heat resistant 15 and low temperature resistant material, and is of special interest as a high temperature film dielectric. A polypyromellitimide film similar to the U.S. H-film was prepared from pyromellitic anhydride and bis(4-aminophenyl) ether:



Card 1/2 UDC: .541.6

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L 11235-66

ACC NR:

Polycondensation to the polyamido acid intermediate was carried out at 15C. Polypyromellitimide films were prepared by drying solutions of the polyamido acid on glass substrates at 20—40C followed by heat treatment at 80—400C to produce imidization. Optimum preparative conditions were determined. The films were transparent, gold-brown in color, thermally stable, nonburning at up to 600—700C, unaffected by organic solvents, highly resistant to γ- and UV radiation, low temperature resistant, nonshrinking, resistant to humidity, and readily metalized. In its mechanical properties at high temperatures, the material surpasses all existing polymers. These properties can be further improved by orientation stretching, after which they approach those of glass-reinforced plastics 15 and metals. Orig. art. has: 5 figures and 3 tables. [SM]

SUB CODE: 11/ SUBM DATE: 08Mar65/ ORIG REF: 008/ OTH REF: 011/

ATD PRESS: 4173

80

Card 2/2

L 13082-66 EWT(m)/EWP(j)/T RM

ACC NR: AP6002215 (A) SOURCE CODE: UR/0080/65/038/012/2740/2744

AUTHOR: Andreyeva, I. V.; Koton, M. M.; Getmanchuk, Yu. P.; Tarasova, M. G. 38

ORG: Institute of High Molecular Compounds, AN SSSR (Institut vysokomolekulyarnykh soedineniy AN SSSR) B

TITLE: Emulsion polymerization 1,44,55 of methacrolein 1

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 12, 1965, 2740-2744

TOPIC TAGS: emulsion polymerization, methacrolein, catalytic polymerization, high polymer, polymer, acrylic plastic

ABSTRACT: Emulsion polymerization of methacrolein was studied in the presence of potassium persulfate and silver nitrate with a solution of polyacrolein bisulfite as a specific emulsifier. The object of the work was to develop a process for making a soluble polymer with high molecular weight containing reactive aldehyde groups. The optimum ratio of the monomer to water is 1:8 and the optimum polymerization temperature is 50° C. In all experiments the emulsifier content was constant (5 wt % based on the monomer). The amount of the initiator varied but the ratio of silver nitrate

Card 1/3 UDC: 678.744

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L 13082-66

ACC NR: AP6002215

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activator to potassium persulfate oxidative agent was 10:1. The oxygen content in the inert gas was $0.05 \cdot 10^{-2}$ to $2 \cdot 10^{-2}$ %. The characteristic viscosity of polyacrolein product increased with increasing depth of polymerization. Presence of aldehyde groups in the polymer product permits further processing into new types of plastic sheets or resin fibers. The dependence of polyacrolein characteristic viscosity upon polymerization duration is shown in Fig. 1. The effect of pH upon polymer characteristic viscosity $\eta$ is shown in Fig. 2. It was found that the lower the oxygen and propionic aldehyde contaminant content, the higher was the polyacrolein molecular weight. Orig. art. has: 3 figures and 2 tables.

SUB CODE: 07,14/ SUBM DATE: 05Nov64/ ORIG REF: 004/ OTH REF: 002

Card 2/3

L 13082-66
ACC NR: AP6002215

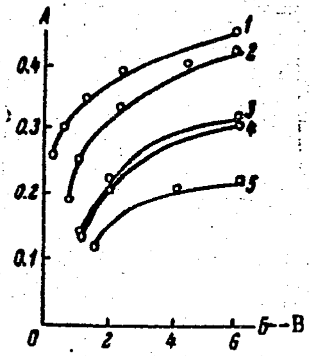

Fig. 1. Polyacrolein characteristic viscosity η as a function of polymerization duration. A - characteristic viscosity η; B - is polymerization duration in hours; the ratio of $K_2S_2O_8$ to $AgNO_3$ in mole %; 1 - 0.6:0.06; 2 - 0.6:0.06 (in presence of a buffer), 3 and 4 - 1.3:0.13; 5 - 2.6: 0.267.

Card 3/3

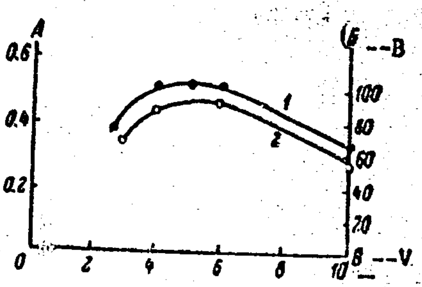

Fig. 2. The effect of solution pH on polyacrolein characteristic viscosity η and polymer yield for 6 hr polymerization and $K_2S_2O_8$:$AgNO_3$ ratio of 0.6:0.06 mole %.

A - η; B - percent conversion; V - initial solution pH; 1 - polyacrolein yield in percent; 2 - polymer characteristic viscosity η.

RUDAKOV, A.P.; BESSONOV, M.I.; KOTON, M.M.; POKROVSKIY, Ye.I.; FEDOROVA, Ye.F.

High-temperature isomeric transformations in polyimides. Dokl. AN SSSR 161 no.3:617-619 Mr '65. (MIRA 18:4)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR. 2. Chlen-korrespondent AN SSSR (for Koton).

BOLDYREV, A.G.; ADROVA, N.A.; BESSONOV, M.I.; KOTON, M.M.; KUVSHINSKIY, Ye.V.;
RUDAKOV, A.P.; FLORINSKIY, F.S.

Electron paramagnetic resonance study of free radicals in polyimides. Dokl. AN SSSR 163 no.5:1143-1146 Ag '65. (MIRA 18:8)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR. 2. Chlen-korrespondent AN SSSR (for Koton).

L 2139-66 EWT(m)/EPF(c)/EWP(j)/EWA(c) RM

ACC NR: AP5026988 SOURCE CODE: UR/0020/65/164/005/1069/1072

44,55 44,55 44,55

AUTHOR: Rudkovskaya, G. D.; Sokolova, T. A.; Koton, M. M. (Corresponding member AN SSSR) 48 B

44,55

ORG: Institute of Macromolecular Compounds, Academy of Sciences, SSSR (Institut vysokomolekulyarnykh soyedineniy Akademii nauk SSSR)

TITLE: The structure of polydimethacrylimides 1,44,55

SOURCE: AN SSSR. Doklady, v. 164, no. 5, 1965, 1069-1072

TOPIC TAGS: polymer, plastic , acrylic polymer, polyacrylimide, structural analysis, infrared spectroscopy

ABSTRACT: From a comparison of infrared spectra with those of model compounds it was demonstrated that while deamination of N-alkylated polyacrylamides leads to formation of six-membered imide rings in the polymer chain, polymerization of N-alkylated dimethacrylimides yield a polymer whose chain contains five-membered imide rings. This suggests head-to-head polymerization of dimethacrylimides. Unsubstituted dimethacrylimide, bearing no substituent at the nitrogen atom, constitutes an exception to the above. Orig. art. has: 2 tables and 1 figure. [VS]

SUB CODE: MT, GC/ SUBM DATE: 19Apr65/ ORIG REF: 003/ OTH REF: 006/
ATD PRESS: 4123

Card 1/1 dq UDC: 541.6

L 17625-66 EWT(m)/EWP(j)/T/ETC(m)-6 WW/RM

ACC NR: AP6001731 SOURCE CODE: UR/0020/65/165/004/0848/0850 45

AUTHORS: Sidorovich, A. V.; Bessonov, M. I.; Rudakov, A. P.; Koton, M. M. 44
(Corresponding member AN SSSR)

ORG: Institute for High-Molecular Compounds, Academy of Science, SSSR (Institut vysokomolekulyarnykh soyedineniy Akademii nauk SSSR)

TITLE: Thermographical and dilatometrical investigation of polypyromellitimide

SOURCE: AN SSSR. Doklady, v. 165, no. 4, 1965, 848-850 7,44,55

TOPIC TAGS: polymer, polyamide, polymer physical chemistry, polymer chemistry, amorphous polymer, thermal analysis

ABSTRACT: The effect of temperature on the state of aggregation of polypyromellitimide was investigated by differential thermal analysis and dilatometry. The experimental procedure followed is described by A. V. Sidorovich and Ye. V. Kuvshinskiy (Zav. lab., 25, No. 9, 1124, 1959). The experimental results are presented graphically (see Fig. 1). It is concluded that, after being subjected to a complete annealing cycle, the polypyromellitimide does not change its state

Card 1/2

UDC: 536.717+541.6 Z

L 17625-66

ACC NR: AP6001731

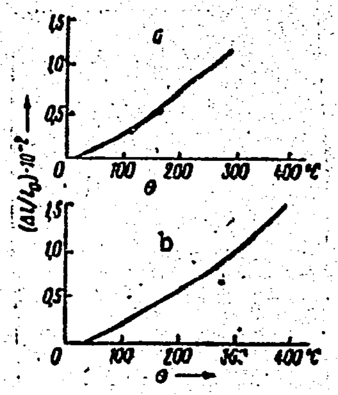

Fig. 1. Dilatometric measurements. Film III (imidized) a - thermal extension during first heating; b - thermal extension after several heating cycles (heating - cooling).

of aggregation in the temperature interval 20--400C. Orig. art. has: 3 graphs.

SUB CODE: 07/ SUBM DATE: 30Jun65/ ORIG REF: 004 OTH REF: 001

FW

Card 2/2

ADROVA, N.A.; KOTON, M.M.; MOSKVINA, Ye.M.

Synthesis of new aromatic polyimides based on
3,3:4,4'-diphenyltetracarboxylic acid dianhydride. Dokl.
AN SSSR 165 no.5:1069-1070 D '65. (MIRA 19:1)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.
2. Chlen-korrespondent AN SSSR (for Koton). Submitted
April 14, 1965.

ACC NR: AP6032081 (AN) SOURCE CODE: UR/0183/66/000/005/0020/0023

AUTHOR: Rudakov, A. P.; Bessonov, M. I., Koton, M. M.; Florinskiy, F. S.

ORG: Institute of Macromolecular Compounds, AN SSSR (Institut vysokomolekulyarnykh voyedineniy)

TITLE: Physical and mechanical properties of fibers obtained from polypyromellitimide

SOURCE: Khimicheskiye volokna, no. 5, 1966, 20-23

TOPIC TAGS: synthetic fiber, polypyromellitimide

ABSTRACT: The possibility of obtaining fibers from polypyromellitimide has been studied. It was found that heat-resistant, high-modulus, nonshrinking fibers could be obtained under laboratory conditions from polypyromellitimide. Their physical and mechanical properties are found to be considerably better than those of mass-produced heat-resistant fibers. Polypyromellitimide fibers apparently can be used to produce high-temperature cord and textiles, and also filler for plastic materials and textolites. Orig. art. has: 3 figures.

SUB CODE: 11/ SUBM DATE: 24May55/ ORIG REF: 007/ OTH REF: 008/

Card 1/1 UDC: 677.494.674

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L 31155-66 EWT(m)/EWP(j)/T/ETC(m)-6 WW/RM

ACC NR: AP6003423 SOURCE CODE: UR/0190/66/008/001/0120/0124

AUTHORS: Koton, M. M.; Gorshkova, I. A.; Dokukina, A. F.; Smirnova, Z. A. 85

85

8

ORG: Leningrad Polytechnic Institute im. M. I. Kalinin (Leningradskiy politekhnicheskiy institut); Institute of High-Molecular Polymers, AN SSSR (Institut vysokomolekulyarnykh soyedineniy AN SSSR)

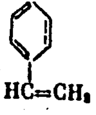
TITLE: Copolymers of α, β, β-halogen-substituted p-divinylbenzenes with styrene

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 1, 1966, 120-124

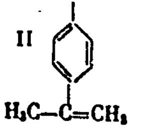
TOPIC TAGS: copolymerization, styrene, free radical, graft copolymer, thermal stability, IR spectrum

ABSTRACT: Properties of copolymers of styrene with p-vinyl-α,β-difluoro-β-chlorostyrene (I), p-isopropenyl-α,β-difluoro-β-chlorostyrene (II), and p-bis-(α,β-difluoro-β-chlorovinyl)benzene (III)

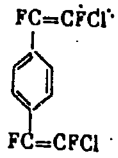
I



II



III



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Card 1/2 UDC: 66.095.26+678.746

L 22749-66 EWT(m)/EWP(j)/T RM

ACC NR: AP6010110 (A) SOURCE CODE: UR/0190/66/008/003/0470/0475

60

B 58

AUTHORS: Ivanov, S. S.; Gavryuchenkova, L. P.; Koton, M. M.

ORG: Institute of Chemistry of High-Molecular Compounds, AN SSSR (Institut vysokomolekulyanykh soyedineniy AN SSSR)

TITLE: Synthesis of polychelates based on poly-α-acyldehydroalanines

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 3, 1966, 470-475

TOPIC TAGS: polyamide, alanine, chelate compound, polymer, chain polymer, ion interaction, glycine, nickel, cobalt, iron, zinc, copper, heat resistance

ABSTRACT: Certain properties of polychelates are described. Poly-α-acetyldehydroalinine and poly-α-chloroacetyldehydroalanine are the carbochain analogs of α-alanine. They were used as chelate ligands. By interaction with the ions of bivalent metal ions of Cu, Co, Ni, Fe, and Zn, the polychelates having side five-membered chelate rings of structure analogous to glycine complexes were prepared. The thermodegradation analysis shows that the heat resistance of polychelates is higher than that of initial polymers and that it depends on both the nature of the metal and the chelating ligand. The authors thank

UDC: 541.64

Card 1/2

UR

Card 2/2

ACC NR: AP7001410 (A,N) SOURCE CODE: UR/0413/66/000/021/0110/0111

INVENTOR: Koton, M. M.; Adrova, N. A.; Dubnova, A. M.; Bessonov, M. I.; Rudakov, A. P.

ORG: none

TITLE: Preparative method for polyimides. Class 39, No. 188005 [announced by the Institute of Macromolecular Compounds AN SSSR (Institut vysokomolekulyarnykh soyedineniy AN SSSR)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 21, 1966, 110-111

TOPIC TAGS: polyimide resin, elasticity

ABSTRACT: An Author Certificate has been issued for a preparative method for polyimides, involving the polycondensation of pyromellitic anhydride and an aromatic diamine. To produce polyimides exhibiting high elasticity, hydroquinone bis(4-aminophenyl) ether is used as the amine. [SM]

SUB CODE: 07, 11/ SUBM DATE: 07Jan65/ ATD PRESS: 5109

Card 1/1 UDC: 678.675.002.2

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L 34131-66 EWT(m)/EWP(j) RM

ACC NR: AP6025525 SOURCE CODE: [illegible]

AUTHOR: Koton, M. M.; Kiseleva, T. M.

46
B

ORG: none

TITLE: Synthesis of spirocyclic compounds containing titanium and silicon

SOURCE: Zhurnal obshchey khimii, v. 36, no. 1, 1966, 87-89

TOPIC TAGS: chemical synthesis, titanium compound, silicon compound, polycondensation, pentaerythritol, molecular structure, isomer

ABSTRACT: In the polycondensation of pentaerythritol tetraacetate and pentaerythritol dichlorohydrin with tetra-n-butoxytitanium and tetra-n- and tetra-isobutoxysilane, spirocyclic compounds are formed, containing one to four titanium atoms and one to three silicon atoms in the molecule, depending upon the reaction conditions. In the case of normal and isotetrabutoxysilane, the normal isomer was found to be more reactive. In all cases pentaerythritol tetraacetate was more reactive than pentaerythritol dichlorohydrin. Tetrabutoxytitanium was more active in the reaction with pentaerythritol tetraacetate than either isomer of tetrabutoxysilane. [JPRS: 35,998]

SUB CODE: 07 / SUBM DATE: 22Oct64 ORIG REF: 003 / OTH REF: 001

Card 1/1 UDC: 547.348+541.64

0916 0923

L 01263-67 EWT(m)/T IJP(c) WW/RM

ACC NR: AP6003490 (N) SOURCE CODE: UR/0020/66/166/001/0091/0094 38 B

AUTHOR: Adrova, N. A.; Koton, M. M. (Corresponding member AN SSSR); Prokhorova, L. K.

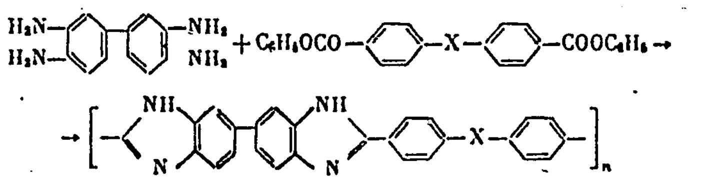
ORG: Institute of High-Molecular-Weight Compounds, AN SSSR (Institut vysokomolekulyarnykh soyedineniy AN SSSR)

TITLE: Synthesis of thermally stable polybenzimidazoles with diphenyl oxide and diphenylsulfone links in the main chain

SOURCE: AN SSSR. Doklady, v. 166, no. 1, 1966, 91-94

TOPIC TAGS: organic synthetic process, resin, thermal stability

ABSTRACT: Polybenzimidazoles were synthesized by thermal method (at 300C in argon atmosphere with subsequent heating in vacuo) according to the scheme:



where $X = —O—, —SO_2—$.

Card 1/3 UDC: 541.64:54

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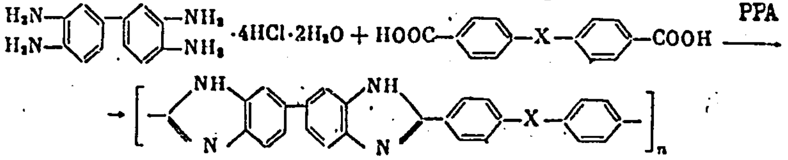
L 01263-67

ACC NR: AP6003490

or in solution of polyphosphoric acid (PPA) (in a mixture of 30 ml $H_3PO_4$ and 45 g $P_2O_5$ in argon atmosphere, at 200C for 15-20 hr) according to the scheme:



where $X = —O—; —SO_2—$.

Thermally synthesized polymers were thermally more stable, but had a very limited solubility. The polymers obtained in PPA were soluble in dimethylformamide and in formic and sulfuric acids. They can form fine transparent films; polymers having diphenyloxide links are more elastic. A comparison of thermal stability of the polymers obtained with such polybenzimidazoles having methylene links is given in Table 1. Orig. art. has: 1 table and 1 fig.

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ACC NR: AP6003490

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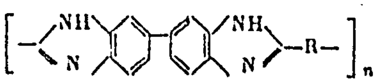
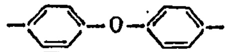
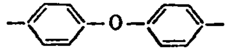
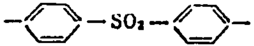
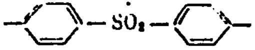
Table 1.



| №№ п.п. | R | Conditions of polycond. | [η] | wt. loss in % by heating in air | | |
|---|---|---|---|---|---|---|
| | | | | 300° | 400° | 500° |
| 1 |  | thermal | 1,3 | 2,3 | 5,0 | 9,8 |
| 2 |  | PPA | 2,7 | 8,9 | 10,6 | 31,0 |
| 3 |  | thermal | 0,5 | 4,0 | 5,1 | 19,0 |
| 4 |  | PPA | 1,3 | 9,5 | 11,0 | 30,0 |
| 5 | $-(CH_2)_6-$ | thermal | 3,0 | 5,2 | 16,6 | 60,0 |
| 6 |  | thermal | — | 5,2 | 7,6 | 23,1 |

SUB CODE: 11, 07/ SUBM DATE: 14Jun65/ ORIG REF: 003/ OTH REF: 007

awm

Card 3/3

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ACC NR: AP6035661 SOURCE CODE: UR/0105/66/000/011/0084/0085

AUTHOR: Rudakov, A. P. (Engineer); Bessonov, M. I. (Engineer); Koton, M. M. (Engineer); Florinskiy, F. S. (Engineer)

ORG: Institute of High-Molecular Compounds, AN SSSR (Institut vysokomolekulyarnykh soyedineniy AN SSSR)

TITLE: Lacquer-film multilayer capacitor with homogeneous polyimide dielectric

SOURCE: Elektrichestvo, no. 11, 1966, 84-85

TOPIC TAGS: electric capacitor, polyimide

ABSTRACT: Based on Soviet and American (Plastics Technology, v. 8, no. 12, 1962) published data, mechanical and electrical characteristics of polyimides, polyethylene terephthalate, and polyarylates are tabulated. Experimental 4-layer capacitors were prepared by alternatively spraying layers of a polyimide and a

Card 1/2 UDC: 621.319.4:621.315.616.9

ACC NR: AP7011355

SOURCE CODE: UR/0062/66/000/010/1824/1828

AUTHOR: Adrova, N. A.; Prokhorova, L. K.; Koton, M. M.

ORG: Institute of High-Molecular Compounds, Academy of Sciences USSR (Institut vysokomolekulyarnykh soyedineniy AN SSSR)

TITLE: Production of new polymers with dibenzophosphorimidazoline links in the principal chain

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 10, 1966, 1824-1828

TOPIC TAGS: polymer heat resistance, ester, polycondensation

SUB CODE: 07

ABSTRACT: A number of heat-resistant polymers containing dibenzophosphorimidazoline links in the principal chain were produced by polycondensation of 3,3'-diaminobenzidine with tetraphenyl esters of phosphorus-containing acids in equimolar quantities with heating for two hours in a stream of inert gas at 250-260° C. The phenyl esters included triphenoxyphosphine, diphenoxychlorophosphine, tetraphenyl ester of pentamethylene diphosphorous acid, tetraphenylpyrophosphate and tetraphenylpyrophosphite. The resultant materials show thermal stability with heating up to 400°C. The authors

UDC: 541.64+541.6+547.7+661.718.1

0931 1735

thank Ye. I. Pokrovskiy for taking the infrared spectra of the polymers. Orig. art. has: 2 figures, 5 formulas, 1 table. [JPRS: 40,351]

P/022/63/000/001/001/002
D271/D308

AUTHOR: Kołtonski, Wacław, Doctor of Technical Sciences

TITLE: An objective method for measuring the stereophonic effect

PERIODICAL: Przegląd Telekomunikacyjny, no. 1, 1963, 1-3

TEXT: The method developed at the Instytut Podstawowych Problemów Techniki PAN (Institute for Fundamental Technical Problems, PAS) is based on the measurement of four directional components of the sound. The quality of the stereophony is described by the space localization angle $\theta_s$ and the error of space localization, Q. These two parameters can be calculated from four known amplitudes of sound waves received by the ear, viz. the wave amplitude received by the left ear from the left loudspeaker, left ear - right speaker, etc. The localization effect depends on the mutual relationship of the above stereophonic sound components. A block diagram is shown of equipment for sending identical signals to the two channels but spaced at some milliseconds so that they can be received separately by two

Card 1/2

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P/022/63/000/001/001/002
D271/D308

An objective method for measuring ...

microphones. The waveforms corresponding to the sound components are displayed on the screen from the symmetry axis of the loudspeakers, the angle $\theta_s$ and the error Q differ from zero. Measured errors of the space localization are shown in diagrams for several arrangements of the loudspeakers. The areas in which the error is below 10% substantially agree with the areas of optimal stereophonic reception determined theoretically in a previous publication (Przegląd Telekomunikacyjny, no. 9, 1962, 257-261). There are 8 figures.

Card 2/2

L 20437-66
ACC NR: AT6009310

correspondingly, has been ascertained as a function of the distance from the phantom surface. Comparison of spectral distribution, as obtained by this method, with the results of investigations using different equipment and high activity sources up to hundreds of Curie is also presented in this paper. Orig. art. has: 10 figures and 10 formulas. [Author's abstract.] [KS]

SUB CODE: 07/ SUBM DATE: 21Mar64/ ORIG REF: 001/ OTH REF: 010

Card 2/2 ()L

formulas. [Based on author's abstract]

SUB CODE: 20/ SUBM DATE: 13Feb63/ ORIG REF: 001/ SOV REF: 001/
Card 1/1 OTH REF: 001/

S/058/62/000/010/021/093
A061/A101

AUTHOR: Kotoński, Zdzisław

TITLE: Scintillation spectrometer with the elimination of the Compton background

PERIODICAL: Referativnyy zhurnal, Fizika, no. 10, 1962, 11, abstract 10B82 ("Pierwsze krajowe sympoz. zastosowań izotopów techn., Rogów, 8 - 12 czer., 1960". Warszawa, 1961, no. 4, Polish; summaries in Russian and English)

TEXT: The method suggested for suppressing the Compton background in gamma spectrum measurements, uses a scintillation spectrometer with two NaI(Tl) crystals connected in coincidence. The block diagram of the experimental system is given, and results of measurements of the gamma spectra of $Co^{60}$, $Cs^{137}$, and $(Co^{60}+Cs^{137})$ sources are reported. The gamma spectrum curve peaks correspond to the maximum energy of recoil electrons. It is reported that the resolution of these lines proved to be by 20% worse than that of the photolines.

[Abstracter's note: Complete translation] A. Lebedev

Card 1/1

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KCTORA, F

Railroads in a nutshell. (Supplement)

P. 1. (ZELEZNICAR.) (Praha, Czechoslovakia) No. 1, Jan. 1958

SO: Monthly Index of East European Accession (EEAI) LC. Vol. 7, No. 5, 1958

KOTORA, Frantisek, inz.; OSTRY, Jan, inz.

For organized development of heavy tonnage freight traffic on electric railroads. Zelez dop tech 9 no.11:324-326 '61.

KOTORA, Frantisek, inz.

Joint task for miners and railway men. Zel dop tech 11 no.3:64-65 '63.

KOTORA, F., inz.

What we learned from the new organization. Zel dop tech 12 no.1:4-5 '64.

KOTORA, Frantisek, inz.

Ways to the performance of the December and January Resolutions of the Central Committee of the Communist Party of Czechoslovakia. Zel dop tech 12 no. 3: 57-58 '64.

KOTORA, Frantisek, inz.

International Friendship Competition. Zel dop tech 11 no. 12: 349-350 '63.

KOTORA, Frantisek, inz.

Railroads before the winter tasks. Zel dop tech 11 no.9: 253-254 '63.

KOTORA, Frantisek, inz.

Foreign exchange management in railroad transportation. Zel dop tech 12 no.6:143-144 '64.

KOTORA, KAROL

[illegible]

HRUSKOVA, J.; STUCHLIKOVA, E.; MLATECKOVA, V.; KOTORA, O.; POKORNY, J.; RIEDL, O.; Statisticka spolupráce: SPALA, M.

Effect of obesity and age on the carbohydrate metabolism. Cesk. gastroent. vyz. 19 no.5:273-279 Jl '65.

1. IV. interni klinika fakulty vseobecneho lekarstvi Karlovy University v Praze (prednosta prof. dr. M. Fucik).

NOVAK, S.; KOTORA, O.; technicka spoluprace: SLAISOVA, X.

Results of gastric acidity tests with a catheter. Sborn. lek. 63 no.10:309-312 O '61.

1. IV interni klinika fakulty vseobecneho lekarstvi University Karlovy v Praze, prednosta prof. dr. Mojmir Fucik.
(GASTRIC JUICE) (ION EXCHANGE RESINS)

KOTORA, R., inz.

Freight cars and their utilization in 1964. Zel dop tech 13 no.2:30-31 '65.

SHIPILOV, Mikhail Mikhaylovich; KUZNETSOVA, Zoya Nikolayevn ,agr.;RYKINA, Antonina Nikolayevna; KOTORA, Vasiliy Ivanovich; LEONOV, S., red.; POKHLEBKINA, M., tekhn. red.

[Agronomist]Agronom. [By] M.Shipilov i dr. Moskva, Mosk. rabochii, 1962. 57 p. (MIRA 16:2)

1. Glavnyy agronom sovkhoza "Konstantinovo" Podol'skogo rayona (for Shipilov). 2. Kolkhoz "Bol'shevik" Podol'skogo rayona (for Kuznetsova). 3. Glavnyy agronom kolkhoza imeni Lenina Serebryano-Prudskogo rayona (for Rykina). 4. Glavnyy agronom opornopokazatel'nogo sovkhoza imeni Tel'mana Ramenskogo rayona (for Kotora).

(Agriculturists)

ACCESSION NR: AP4033699 S/0073/64/030/004/0370/0376

AUTHOR: Kotorlenko, L. A.; Gardenina, A. P.; Oleynik, V. G.

TITLE: Oxidative destruction of polyamides I. Investigation of thermal and radiation oxidation of polycaprolactam by IR spectroscopy

SOURCE: Ukrainskiy khimicheskiy zhurnal, v. 30, no. 4, 1964, 370-376

TOPIC TAGS: polyamide, oxidative destruction, oxidation, thermal oxidation, radiation oxidation, polycaprolactam, IR spectra, methylene bond rupture, peptide bond rupture, stabilization, cross linkage, carbonyl containing compound formation

ABSTRACT: Polycaprolactam films were subjected to thermal oxidation at 120-200C in an atmosphere of oxygen, and to radiation oxidation at 30C; radiation was effected with cobalt-60, 25 roentgens/sec, and maximum exposure of 400 hours. The changes in the IR spectra were examined and interpreted. In both types of oxidation approximately the same decrease occurred in the relative optical density of the bands for the valency vibration C-H of the methylene groups, the amide I and amide II, indicating rupture of the methylene and the peptide groups. Increase, on oxidation, in the optical density of the 1713 $cm^{-1}$ band of the C=O vibration

Card 1/2

KOTORLENKO, L. A.

KOTORLENKO, L. A.: "The viscosity and molecular structure of non-aqueous solutions of electrolytes", Kiev, 1955. Kiev State U imeni T. G. Shevchenko. (Dissertations for the Degree of Candidate of Chemical Sciences)

SO: Knizhnaya letopis', No. 52, 24 December 1955. Moscow.