

1 0154-27  
ACC NR: AP6014703

resolution, were highly evaluated in tests, and are recommended for commercial production. Orig. art. has: 2 formulas, 2 tables, 2 figures. 0

SUB CODE: 07,11/ SUBM DATE: none  
05/

Card 2/2 *egh*

CA  
FEDOTOVA, M.V.

PROCESSES AND PROPERTIES INDEX

Quinoline compounds as sources of medicinal preparations. VIII. Anesthetic compounds of amides of cinchoninic acid. O. Yu. Magidson, M. V. Fedotova and V. V. Zverev. *J. Gen. Chem.* (U. S. S. R.) 9, 2007-2133 (1938); cf. *C. A.* 33, 1327<sup>o</sup>.—The effects of different alkyls on anesthetic action was studied for compds. of piperidine type, 2-RO<sub>2</sub>C<sub>2</sub>NCONHR'NHR'', where R = Me, Et, iso-Pr, Bu or C<sub>6</sub>H<sub>5</sub>; and R' = (CH<sub>3</sub>)<sub>2</sub>CH, CH<sub>2</sub>CH(OH)CH<sub>3</sub>, or CHMeCH<sub>2</sub>(CH<sub>3</sub>). In almost all cases an increase of R caused an increase of the toxicity of the compd.; at the same time the effective dose decreased, but more slowly than the toxicity. For this reason the chemotherapeutic index of the amide with iso-Am radical is optimum when R is iso-Pr, and of the amide with hydroxypropyl radical when R is Me. Introduction of OH into the side chain sharply decreased the toxicity. *2-Methoxy-N-(δ-diethylamino-α-methylbutyl)cinchoninamide* (73% yield), b<sub>1</sub> 220-4<sup>o</sup>, index 1.26; *2-ethoxy deriv.* (97%), b<sub>1</sub> 218-22<sup>o</sup> m, 71-2<sup>o</sup>, index 0.75; *2-isopropoxy deriv.*, b<sub>1</sub> 220<sup>o</sup>, index 1.8; *2-octoxy deriv.*, m. 80-1<sup>o</sup>, index 3; *2-butoxy deriv.* (91%), m. 60-7<sup>o</sup>, b<sub>1</sub> 223-8<sup>o</sup>, index 8; *2-ethoxy-N-(δ-diethylamino-butyl)cinchoninamide*, m. 63-3<sup>o</sup>, index 0.3; *2-butoxy deriv.* (80%) m. 60-8<sup>o</sup>, index 2; *2-methoxy-N-(γ-methylamino-β-hydroxypropyl)cinchoninamide* (92%), m. 4<sup>o</sup>, index 14; *2-ethoxy deriv.* (83%), m. 85-6<sup>o</sup>, index 3; *2-butoxy deriv.* (92%), m. 61-4<sup>o</sup>, index 6; perraine index 12.5.

A. A. Podgorny

ASB-51A METALLURGICAL LITERATURE CLASSIFICATION

TIMOFEYEVA, A.G.; BARMENKOV, A.S.; FEDOTOVA, M.V.

Method for obtaining 11  $\alpha$ -oxyprogesterone by microbiologic  
hydroxylation of progesterone; concerning the synthesis of cortisone.  
Med.prom. 11 no.7:23-26 J1 '57. (MIRA 10:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy  
institut imeni S.Ordshonikidze.  
(PROGESTERONE)

BARMENKOV, A.S.; FEDOTOVA, M.V.; YEROSHIN, V.K.; GUSAKOVA, Ye.G.; OGAREVA, O.B.

Improved method for producing 11- $\alpha$ -hydroxyprogesterone. Med. prom.  
15 no.3:39-40 Mr '61. (MIRA 14:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy  
institut imeni S.Ordzhonikidze.  
(PROGESTERONE)

SUVOROV, N.N.; FEDOTOVA, M.V.; OGAREVA, O.B.; BALASHEVA, Ye.G.

Indole derivatives. Part 9: New synthesis of 6-methoxytryptamine.  
Zhur. ob. khim. 30 no.9:3118-3123 S '60. (MIRA 13:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy  
institut imeni S. Ordshonikidze.  
(Tryptamine)

ZHEREBCHENKO, P.G.; SUVOROV, N.N.; MURASHOVA, V.S.; PREOBRAZHENSKAYA,  
M.N.; SOROKINA, N.P.; FEODOVA, M.V.

Radioprotective activity of some tryptamine derivatives and  
their homologues. Med.rad. 6 no.8:27-32 Ag '61. (MIRA 14:8)  
(RADIATION PROTECTION) (INDOLE)

SUVOROV, N.N.; FEDOTOVA, M.V.; ORLOVA, L.M.; OGAREVA, O.B.

Derivatives of indole. Part 16: Synthesis of 6- and 4-substituted  
tryptamines. Zhur.ob.khim. 32 no.7:2358-2365 JI '62.

(MIRA 15:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy  
institut imeni S.Ordzhonikidz  
(Indole)

FEDOTCV, R.A.

PLANE I BOOK EXPLOITATION 30V/896  
P. E. Deserhinskogo

Automatskoye rotornyye lini - sledstvo kompleksoy avtomatizatsii  
rotornyye lini (rotary transfer-machine lines) Main of Full-  
Scale Production Moscow, Manager, 1960. 221 p. 10,000  
copies printed.

Ed.: I. N. Koshkin; Ed. of Publishing House: I. Vasil'yev; Tech.  
Ed.: O. V. Salmova; Managing Ed. for Literature on Metalworking  
and Machine-Tool Making: V. I. Niz'min, Engineer.

PURPOSE: The book is intended for technical personnel in the machin-  
ery industry.

CONTENT: This collection of articles explains the principles of roll  
automation based on the use of special devices in the metalworking  
industry. The rotary operational transfer machines used for plate  
processing are discussed, and also the special power equipment and  
accessories for these machines and (production) lines. No personalities are  
mentioned. There are no references.

Koshkin, I. I. Basic Problems in the Full Automation of  
Product Manufacture 3

Nedomyay, I. A. Installation and Working Principle of  
Rotors for Inspection Operations 62

Makhev, Yu. A. Rotors for Regular and "Hermetic" Coating 76

Harayev, P. Ye. Doses of Loose and Liquid Materials in  
Rotary Transfer Machine Lines 85

Orinbert, I. I. Rotors for Assembling and Packing 91

Querry, A. A. Rotors for Transfer and Zedding 108

PART II. SPECIAL POWER EQUIPMENT AND DEVICES FOR ROTARY  
TRANSFER MACHINE LINES

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Emel'yevskiy, V. V. Hydraulic Drives for Rotors 133

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Thermomechanical Processing 177

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Machine Line for Manufacturing of Plastic Articles 189

Chagin, V. P. Assembly Line for 38 mm Pitch Roller  
Chains for Combines 196

Sokolov, Y. N. Automatic Rotary-Transfer Machine Line for  
The Manufacture of Weaving Electrodes 205

AVAILABLE: Library of Congress (TJ1189.M5)

Card 1/1  
TK/dm/oa  
4/24/81



ABRAMOVICH, A.D., kand. tekhn. nauk; ANTONOV, M.F., kand. tekhn. nauk; KAPLAN, G.A., inzh.-ekonomist; LEVIN, S.M., inzh.-zemleustroitel'; LISTENGURT, F.M., kand. geogr. nauk; SAMOYLOV, Ya.M., kand. tekhn. nauk; SMOLYAR, I.M., kand. arkhitek.; SOLOFNIENKO, N.A., kand. arkht.; STERLIGOV, V.D., kand. arkht.; FALEYEV, V.G., inzh.; Prinsipali uchastiye: BUTUZOVA, V.P.; GLABINA, N.K.; GOL'DSHTEYN, A.M.; DEMYANOVSKIY, V.S.; KAPLAN, G.L.; FEDOTOVA, N.A.; TSEYTLIN, G.I.; BURLAKOV, N.Ya., red.; KOMPANEYETS, Z.N., red. izd-va; GOLOVKINA, A.A., tekhn. red.

[Regional planning of economic administrative regions, industrial regions and centers; planning guide] Raionnaya planirovka ekonomicheskikh administrativnykh raionov, promyshlennykh raionov i uzlov; rukovodstvo po proektirovaniyu. Pod red. N.IA. Burlakova. Moskva, Gosstroizdat, 1962. 266 p. (MIRA 15:10)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut gradostroitel'stva i raionnoi planirovki. 2. Zamestitel' direktora po nauchnoy rabote Nauchno-issledovatel'skogo instituta gradostroitel'stva i rayonnoy planirovki (for Burlakov).
  3. Nauchno-issledovatel'skiy institut gradostroitel'stva i rayonnoy planirovki (for Butuzova, Glabina, Gol'dshteyn, Demyanovskiy, Kaplan, Fedotova, Tseytlin).
- (Regional planning)

ZEYTUNYAN, Kh.N., kand. fiz.-matem. nauk; FEDOTOVA, N.A.

Spottiness of precipitation in a large city. Meteor. i gidrol.  
no.3:8-13 Mr '65. (MIRA 18:2)

1. Mirovoy meteorologicheskij tsentr.

Fedotova, N.I.

USSR/Forestry - Forest Plants.

Abs Jour : Ref Zhur - Biol., No 3, 1958, 10607

Author : Fedotova, N.I.

Inst : Stavropol' Scientific Research Institute of Agriculture.

Title : Infecting Acorns with Micorise Before Sowing Forest Belts.

Orig Pub : Byul. nauchno-tekhn. inform. Stavropol. n.-i. in-ta s. kh. 1956. No 1-2, 13-14

Abstract : In experiments at the Stavropol' Institute of Agriculture the following methods of infecting acorns with micorise were tested: 1) mixing acorns with soil from an oak grove, 2) infecting with a pure micorise culture, 3) burying them in fresh horse manure. Oak trees grown from the first two variations grew best. When the seedlings were dug up it was discovered that the well-developed root systems of the micorised seedlings had penetrated to a depth of 1.25-2

Card 1/2

ANOSOV, V.I.; SAVOSTIN, A.M.; PINES, V.G.; MILYUTKINA, V.P.; MIROPOL'SKAYA, M.A.;  
FEDOTOVA, N.I.; SAMOKHVALOV, G.I.

Preparation of  $\gamma$ - $\gamma$ -dimethylallyl alcohol and isopropenylethyl  
alcohol from the product resulting from the condensation of iso-  
butylene. Zhur. ob. khim. 31 no.4:1154-1157 Ap '61.

(MIRA 14:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut.  
(Butenol) (Pentenol)

MIROPOL'SKAYA, M.A.; FEDOTOVA, N.I.; VEYNBERG, A.Ya.; YANOTOVSKIY, M.TS.;  
SAMOKHVALOV, G.I.

Synthetic investigations in the field of polyene compounds.

Part 18: Selective hydrogenation of 6-methyl-3,5-heptadien-2-one  
and 6-methyl-3,5-heptadien-2-ol by Pd/CaCO<sub>3</sub>. Zhur.ob.khim. 32  
no.7:2214-2217 J1 '62. (MIRA 15:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut.  
(Heptadienone) (Heptadienol) (Hydrogenation)

FREYDLIN, I.Kh.; BORUNOVA, N.V.; SAMOKHVALOV, G.I.; MIROPOL'SKAYA, M.A.;  
YANOTOVSKIY, M.TS.; GVINTER, L.I.; FEDOTOVA, H.I.

Directed changes in the selectivity of catalysts in the process  
of hydrogenation of the dienone group. Report No.1: Hydrogenation  
of 6-methyl-3,5-heptadien-2-one on nickel catalysts. Izv. AN SSSR.  
Ser. khim. no.6:996-1003 Je '64.

(MIRA 17:11)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR i  
Vsesoyuznyy nauchno-issledovatel'skiy i vitaminnyy institut.

FEDATOVA, M.V.

7  
✓ 3β-Hydroxy-5-cholestenic acid. V. I. Maksimov,  
A. V. Yarsulovskaya, N. V. Fedotova, and O. B. Omareva.  
U.S.S.R. 104,146, Nov. 23, 1967. This title compound is ob-  
tained from the acid oxidation product of cholesterol from  
which 3β-hydroxy-5-cholestenic acid has been removed.  
To this end cholenic acid mono-carboxylates freed of the  
cholehenic acid are treated first with KOH and then with  
I<sub>2</sub>O in MeOH. M. Hensch

4 5

*M. Hensch*

10

FEDOTOVA, N.Ya.  
CA

2-Amino-4,6-dimethylpyrimidine. O. Yu. Magidson and N. Ya. Fedotova. U.S.S.R. 68,310, Apr. 30, 1947. Preparation is simplified and yields increased by the action of guanidine salts on Na acrylate, produced by the action of  $Al_2Cl_6$  on a mixt. of AcOH and metallic Na. M. H.

ASD NEW INTERNATIONAL LITERATURE CLASSIFICATION



FEDOTOVA, N.Ya.; NIKOLAS, K.P.

rapid electroplating. G.S.Levitskii. Reviewed by N.IA.Fedotova.  
K.P.Nikolas. Avt.trakt.prom. no.4:32 Ap '54. (MLRA 8:5)

1. NIITM.

(Electroplating) (Levitskii, G.S.)

FEDOTOVA, N. Ya.; TITOV, P.S.

Electrodeposition of copper-nickel alloys from pyrophosphate  
electrolites. Izv. vys. ucheb. zav.; tsvet. met. 3 no.3:151-154  
'60. (MIRA 14:3)

1. Krasnoyarskiy institut tsvetnykh metallov, Kafedra elektrokhimii  
i korrozii.

(Copper-nickel alloys--Electrometallurgy)  
(Pyrophosphates)

85460

S/149/60/000/005/012/015  
A006/AG01

5.1310

1018, 1160, 1236, 1530

AUTHORS:

Fedorova, N.Ya., Titov, P.S.

TITLE:

Cathode Polarization During Deposition of Copper-Nickel Alloys  
From Pyrophosphatic Electrolytes

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy, Tsvetnaya metallurgiya,  
1960, No. 5, pp. 126-131

TEXT:

The authors present results of investigations into the mechanism and kinetics of electrodeposition of Cu-Ni alloys from pyrophosphatic electrolytes. A set of graphs (Figure 1) shows the dependence of the copper and nickel ion discharge rate on the cathode potential during their joint and separate deposition. The polarization curves were plotted for the two solutions: 1) 0.938 NK<sub>2</sub> [Ni(P<sub>2</sub>O<sub>7</sub>)<sub>2</sub>], 0.062 NK<sub>6</sub> (Cu(P<sub>2</sub>O<sub>7</sub>)<sub>2</sub>) and 0.8 NK<sub>4</sub> P<sub>2</sub>O<sub>7</sub> · 3H<sub>2</sub>O 2) 0.666 NK<sub>6</sub> [Ni(P<sub>2</sub>O<sub>7</sub>)<sub>2</sub>], 0.334 NK<sub>6</sub> [Cu(P<sub>2</sub>O<sub>7</sub>)<sub>2</sub>] and 0.8 NK<sub>4</sub> P<sub>2</sub>O<sub>7</sub> · 3H<sub>2</sub>O. The curves show that the discharge of nickel ions is facilitated during the deposition of the alloy from both of the solutions; partial nickel curves during joint deposition with copper are shifted toward more positive values of the potential than curves obtained during deposition of nickel alone. The separation of copper jointly with

Card 1/5

Card 2/5

marked as more difficult as compared to the separate reactions; the partial curves of copper separation are shifted to the negative potential range. These data are compared with those presented by N.V. Korovin, A.I. Vartanyan and I.K. Huzhak and it is stated that the causes entailing a retarded discharge rate of one of the solid solution components, are mainly determined by changed conditions of electrolyte during which individual processes occurring on the cathode, are limited. The magnitude of the partial curve shifts depends on the composition of the deposit and the solution. The nature of polarization is determined to include predeposited data on the mechanism of electrolytic deposition of Cu-Ni alloys. The authors used Gornostayev's method by investigating the effect of temperature on electrolyte at a constant polarization of the electrode, and the method of accelerated plotting of polarization curves developed by A.I. Vagramyan (Ref. 17). The potentials were measured in solution No. 1, at 60°C, the current density varying from 0 to 2 amp/dm<sup>2</sup>. A platinum spiral was used as a cathode and H-1 (N-1) Grade nickel as an anode. Prior to the measurement the cathode was preliminarily covered with a copper and a Cu-Ni alloy layer of about

Cathode Polarization During Deposition of Copper-Nickel Alloys from Electrolytes

5/149/60/00/005/02/015  
A006/A001

851460

Card 3/5

10-micron thickness. A calomel semi-element was used as a comparison electrode. Measurements were made at a rate of 60 sec (2 rev/min); 2.4 sec (50 rev/min); 1.2 sec (100 rev/min) and 0.48 sec (250 rev/min). The data obtained show that the deposition of Cu-Ni alloys containing up to 50-70% Ni, is mainly accompanied by chemical polarization, limiting the electrode process. Therefore, the degree of electrode polarization is not only determined by the partial activities of metals contained in the alloy but also by the ratio of the electrode process rates.

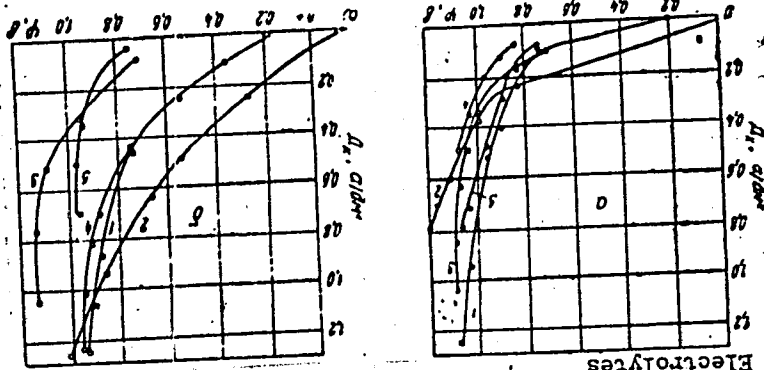
Cathode Polarization During Deposition of Copper-Nickel Alloys From Pyrophos-

S/149/60/000/005/012/015  
A006/A001

85460

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Figure 1. Cathode polarization during electrodeposition of copper, nickel and Cu-Ni alloy from pyrophosphate electrolytes No. 1 (a) and No. 2 (b) 1 - Cu-Ni alloy; 2 - Cu; 3 - Ni; 4 - partial curve for copper during deposition of the alloy; 5 - partial curve for nickel during deposition of the alloy. All the curves are corrected for hydrogen separation.



Cathode Polarization During Deposition of Copper-Nickel Alloys From Pyrophosphate Electrolytes

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A006/A001

85160

85460

S/149/60/000/005/012/015  
A006/A001

Cathode Polarization During Deposition of Copper-Nickel Alloys From Pyrophosphatic Electrolytes

There are 3 figures and 17 references: 16 Soviet and 1 German.

ASSOCIATIONS: Krasnoyarskiy institut tsvetnykh metallov (Krasnoyarsk Institute of Non-Ferrous Metals) Kafedra elektrokhimii i korrozii (Department of Electrochemistry and Corrosion)

SUBMITTED: February 16, 1960

Card 5/5

FEDOTOVA, N.Ya.; TITOV, P.S.

Cathode polarization in the deposition of copper-nickel alloys  
from pyrophosphate electrolytes. Izv. vys. ucheb. zav.; tsvet.  
met. 3 no.5:126-131 '60. (MIRA 13:11)

1. Krasnoyarskiy institut tsvetnykh metallov. Kafedra elektrokhimii  
i korrozii.

(Copper-nickel alloys--Electrometallurgy)



FEDOTOVA, N. YA.

ACCESSION NR: AT4017655

S/0000/63/000/000/0075/0082

AUTHOR: Ginberg, A. M. (Moscow); Rybakova, Yu. A. (Moscow); Fedotova, N. Ya. (Moscow)

TITLE: The structure of nickel plates precipitated in an ultrasonic field and the possibility of obtaining bright sediment

SOURCE: Vses. sovesh. po teor. i prak. bles. gal'. Vilnius, 1962. Teor. i prak. ples. gal' (Theory and practice of bright electroplating), osnovnyye materialy\*, 1963, 75-82

TOPIC TAGS: sediment, ultrasonic field, plating, nickel plate, nickel plating, nickel plate structure

ABSTRACT: There are different points of view in the literature on the growth of crystals in electrolytes under the simultaneous influence of ultrasonic waves. A. Roll (Z. Metallkunde, 41, Nr 11, 238 (1950)) writes that silver grains become coarse. Fr. A. Levi (Ricerca scient., 19, 887 (1949)) showed that silver precipitated in an ultrasonic field becomes finer. The present authors explain this phenomenon by the difference in electrolyte content, current and temperature, and the intensity of the ultrasonic waves. Their investigation showed that electro-  
lysis of  $\frac{1}{3}$  nickel in an ultrasonic field with currents allowable for the given  
Cold

ACCESSION NR: AT4017655

electrolyte leads to an enlargement of the structure. The use of an ultrasonic field when the current density is above the maximum allowable value leads to the formation of fine crystals. It is assumed that the effect of the ultrasonic field during nickel plating is connected with action of the sound on the secondary processes at the cathode, namely the formation and dispersion of nickel hydroxide (see Fig. 1 of the Enclosure). Orig. art. has: 3 figures.

ASSOCIATION: none

SUBMITTED: 06Jul63

DATE ACQ: 20Feb64

ENCL: 01

SUB CODE: MM

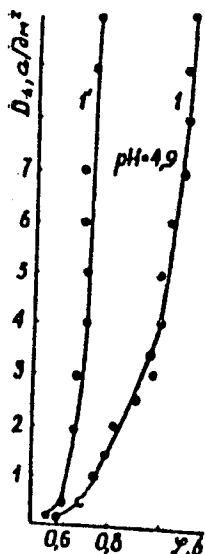
NO REF SOV: 002

OTHER: 008

Card 2/3

ACCESSION NR: AT4017655

ENCLOSURE: 01



Effect of adding  $Ni(OH)_2$  on cathode polarization in nickel electrolyte (deposited in an ultrasonic field).

1 - with addition; 1' - without addition

Card 3/3

L 23513-65 EWP(k)/EWT(l)/EWT(m)/EWP(b)/T/EWP(t) Pf-4/P1-4 JD  
ACCESSION NR: AP4047123 S/0080/64/037/010/2238/2244

23  
22  
B

AUTHOR: Ginberg, A. M.; Fedotova, N. Ya.

TITLE: The effect of an ultrasonic field on the electrodeposition of nickel

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 10, 1964, 2238-2244

TOPIC TAGS: nickel plating, nickel electrodeposition, ultrasonics, nickel sol stability, secondary cathodic process, precathodic layer composition

ABSTRACT: The study was conducted to confirm a previous proposal (A. M. Ginberg, Yu. A. Rybakova, N. Ya. Fedotova. Teoriya i praktika blastyashchikh gal'vanopokry'tiy. "Theory and Practice of bright electrodeposits." Vil'nyus (1963)) that the effects of ultrasonics in nickel plating are caused by the action of the ultrasonics on the secondary cathodic processes of nickel hydroxide compound formation and dispersion. The effect of different ultrasonic intensities on the pH of the precathodic layer in the electrodeposition of nickel was studied. Even under cavitation conditions the pH of the precathodic layer increased proportionally

Card 1/2

L 23513-5  
ACCESSION NR: AP4047123

to the basic mass of the electrolyte and under certain conditions this pH exceeded the pH value of the start of the hydrate formation which determined the formation of a sol of the basic nickel compounds in the precathodic layer. Sedimentation analyses and x-rays established that the degree of dispersion and hence the stability of the sol in the precathodic layer, was increased by the application of a high intensity ultrasonics field. Nickel plating under ultrasonic cavitation conditions was recommended. Addition of nickel hydroxide to an ultrasonically-treated electrolyte also promoted the formation of a shiny nickel deposit at low current densities. "We thank A. L. Rotinyan for valuable instructions given in reviewing the present paper." Orig. art. has: 5 figures.

ASSOCIATION: None

SUBMITTED: 10Feb62

ENCL: 00

SUB CODE: MM, GP

NO REF SOV: 003

OTHER: 006

Cord 2/2

L 27381-66 EWI(m)/EWP(t) IJP(c) JD/HW/JG

ACC NR: AP6015013

(N)

SOURCE CODE: UR/0364/66/002/005/0551/0556

AUTHOR: Vagramyan, A. T. (Moscow); Ginberg, A. M. (Moscow); Fedotova, N. Ya. (Moscow); Ginberg, T. A. (Moscow)

29

ORG: none

TITLE: Effect of ultrasound on the electrodeposition of Ni-Fe-Mo alloys

SOURCE: Elektrokimiya, v. 2, no. 5, 1966, 551-556 18 27 21 27

TOPIC TAGS: electrodeposition, alloy electrodeposition, nickel alloy, iron containing alloy, molybdenum containing alloy, ultrasound effect

ABSTRACT: The effect of ultrasound on the electrodeposition of Ni-Fe-Mo alloys from a sulfate electrolyte containing 2.2—18.0 g/l sodium molybdate has been investigated. The alloys deposited without ultrasound contained less than 1% molybdenum, regardless of molybdate concentration. At concentrations of molybdate higher than 12 g/l, the deposits were dark and cracked owing to high internal stresses. Ultrasound with an intensity of 0.9—1.04 W/cm<sup>2</sup> and a frequency of 22—26 kc had a beneficial effect on the electrodeposition process and quality of alloys. At a molybdate concentration of 8—10 g/l, the Mo content in the alloy was 4—5%, the internal stresses in deposit decreased, and the deposits were dense and lustrous. The optimum pH of the electrolyte was found to be 2.3—2.7 and the optimum current density, 40—60 a/dm<sup>2</sup>.

Card 1/2

UDC: 543.251:546.3-19

L 27381-66

ACC NR, AP6015013

The yield under such conditions amounted to 70—80%. The deposits consisted of a solid solution with the free lattice having a parameter equal to  $3.54 \pm 0.02$  A. Orig. art. has: 6 figures. [WW]

SUB CODE: 11/ SUBM DATE: 11Aug65/ ORIG REF: 006/ OTH REF: 003/ ATD PRESS:

4259

Card 2/2

L 30388-66 EWP(j)/EWI(m)/T IJP(c) RM

ACC NR: AP6019548

SOURCE CODE: UR/0190/66/008/006/1135/1135

AUTHOR: Kolesnikov, G. S.; Fedotova, O. Ya.; Matvelashvili, G. S.

30  
28  
B

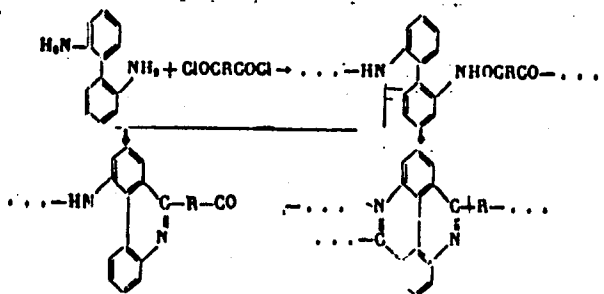
ORG: none

TITLE: Polyphenanthridinylamides a. polydiazapyrenylenealkyls (aryls)

SOURCE: *Vysokomolekulyarnyye soyedineniya*, v. 8, no. 6, 1966, 1135

TOPIC TAGS: synthetic material, polyamide, ~~cyclodehydration~~, ~~polyphenanthridinylamide~~, ~~polydiazapyrenylenealkyl~~, ~~polydiazapyrenylenearyl~~ **DIPHENYL COMPOUND, ALIPHATIC DICARBOXYLIC ACID, DEHYDRATION**

ABSTRACT: The authors have synthesized new polymers with phenanthridine or diazapyrene rings in the backbone:



Card 1/2

UDC: 541.64+678.675



L 30388-66

ACC NR: AP6019548

The polymers were prepared by cyclodehydration (by heating with  $\text{POCl}_3$ ) of polyamides made by reacting 2,2'-diphenyldiamine with aliphatic or aromatic dicarboxylic acid chlorides. The presence of phenanthridine and diazapyrene rings in the polymers was established by IR spectroscopy. Cyclodehydration of the polyimides increased the softening temperature of the polymers, e.g., the softening temperature of polyamide based on 2,2'-biphenyldiamine and terephthalic acid was 190-200C, but that of the product of its cyclodehydration was 250-260C. Further study of the cyclodehydration of reaction of polyamides and of the properties of the new polymers is in progress. 2

Orig. art. has: 1 formula.

[BO]

SUB CODE: 07, 11/ SUBM DATE: 23Dec65/ ATD PRESS: 5017

Card 2/2 CC

L 46291-66 EWP(j)/EWT(m) IJP(c) RM/WW/JWD

ACC NR: AP6027777

SOURCE CODE: UR/0190/66/008/008/1440/1444

AUTHOR: Kolesnikov, G. S.; Fedotova, O. Ya.; Khofbauer, E. I.; Khuseyn Khamid  
Mokhamed Ali Al'-Sufi

15  
B

ORG: Moscow Chemical Technology Institute im. D. I. Mendeleev (Moskovskiy khimiko-  
tehnologicheskii institut)

TITLE: Synthesis and study of poly(amido acids), and polyimides from 2,3,5,6-  
biphenyltetracarboxylic dianhydride and aromatic diamines

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 8, 1966, 1440-1444

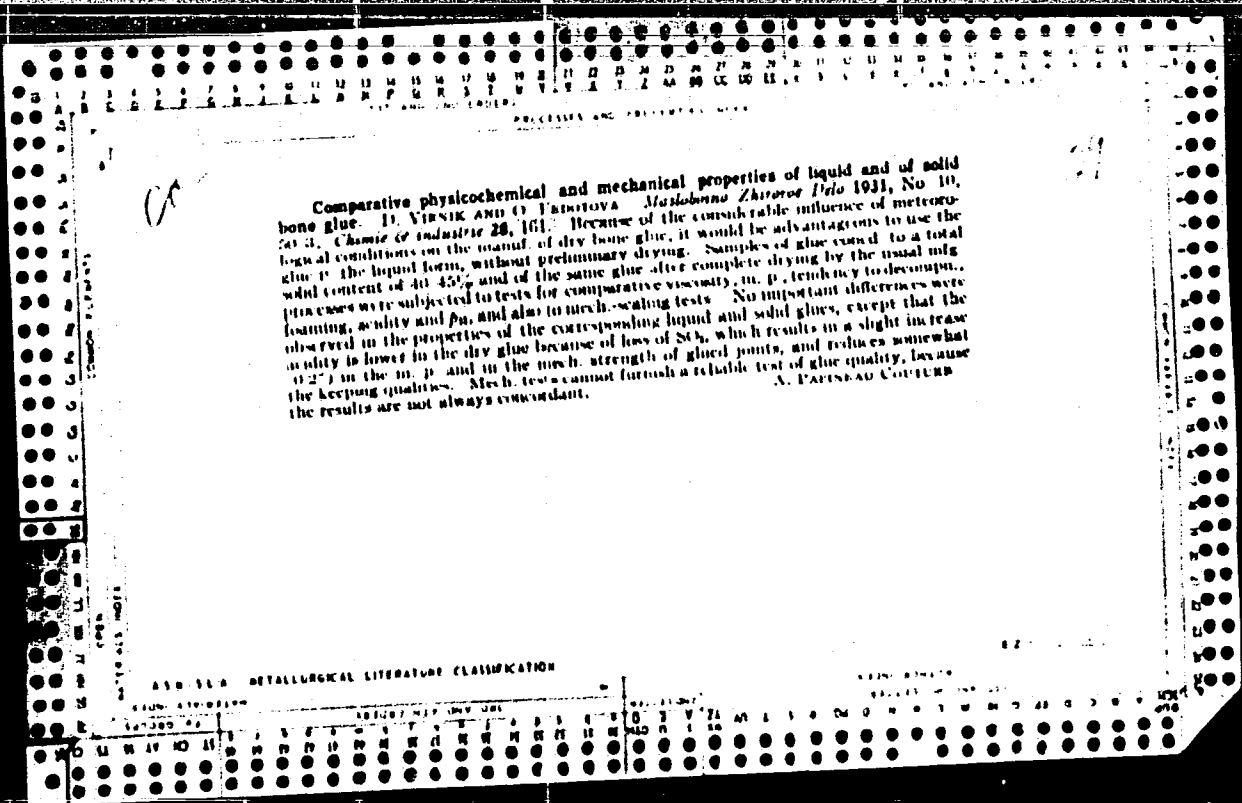
TOPIC TAGS: ~~poly(amido acid)~~ polyimide, heat resistant material, polymer synthesis

ABSTRACT: A study has been made of the synthesis and imidization of poly(amido acids) from 2,3,5,6-biphenyltetracarboxylic dianhydride and aromatic diamines (benzidine or 4,4'-diaminodiphenylmethane) in dimethylformamide or dimethyl sulfoxide. Poly(amido acids) with the highest molecular weights were obtained in dimethyl sulfoxide in two steps by heating the reactants, first for 2 hr at 40C and then for several hours at 50C (benzidine) or 75C (4,4'-diaminodiphenylmethane). It was established that imidization of the acids should be carried out at 250-300C. The polyimides obtained were soluble in organic solvents and alkalis. Orig. art. has: 1 figure and 3 tables.

[BO]

SUB CODE: 07/ SUBM DATE: 09Jul65/ OTH REF: 016/ ATD PRESS: 5057  
Card 1/1

UDC: 541.64+678.01:54+678.01:53



LADYGIN, B.N.; FEDOTOVA, O.K.

New phase in the peaceful economic coexistence of two social systems.  
Trudy LMS no.4:3-14 '59. (MIRA 13:10)  
(Russia--Economic policy) (Europe, Eastern--Economic policy)

PROCESSES AND PROPERTIES INDEX

22

*ca*

Oxidation of paraffin with atmospheric oxygen at lower temperatures. A. B. Davankov and O. Ya. Nekotova. *Org. Chem. Ind. (U. S. S. R.)* 1, 79 (1950).—Kpts. were made in the oxidation of 200 g. paraffin, m. 52°, with atm. O at a rate of 500 l./hr. at 100°, 120°, 140° and 160° for different periods of time, with and without catalysts. Some expts. were repeated with 2 and 25 kg. of paraffin at a rate of 3000 l./hr. and 40-60 cu. m./hr. of atm. O, resp. The catalysts, prepd. by the interaction of salts with the fatty acids of paraffin oxidation at 100°, were added in the amts. of 1.5% of Mn, 2.5% of Ca and 2.5% of Al. Preliminary heating of paraffin in an. C<sub>6</sub>H<sub>6</sub> and H<sub>2</sub> reduces the initial period of oxidation, but the entire process proceeds slowly. Ca is a more active catalyst than Al, and Mn than Ca. The catalytic action is effective only at lower temps. (120° and 140°) and not at all at 160°. Mn at 120° accelerates the oxidation 5 times in lab. and 10 times in semicom. expts., and at 140° leaves only 15% of unseparable residue. Chas. Blanc

METALLURGICAL LITERATURE CLASSIFICATION

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86300  
S/190/60/002/008/014/017  
B004/B054

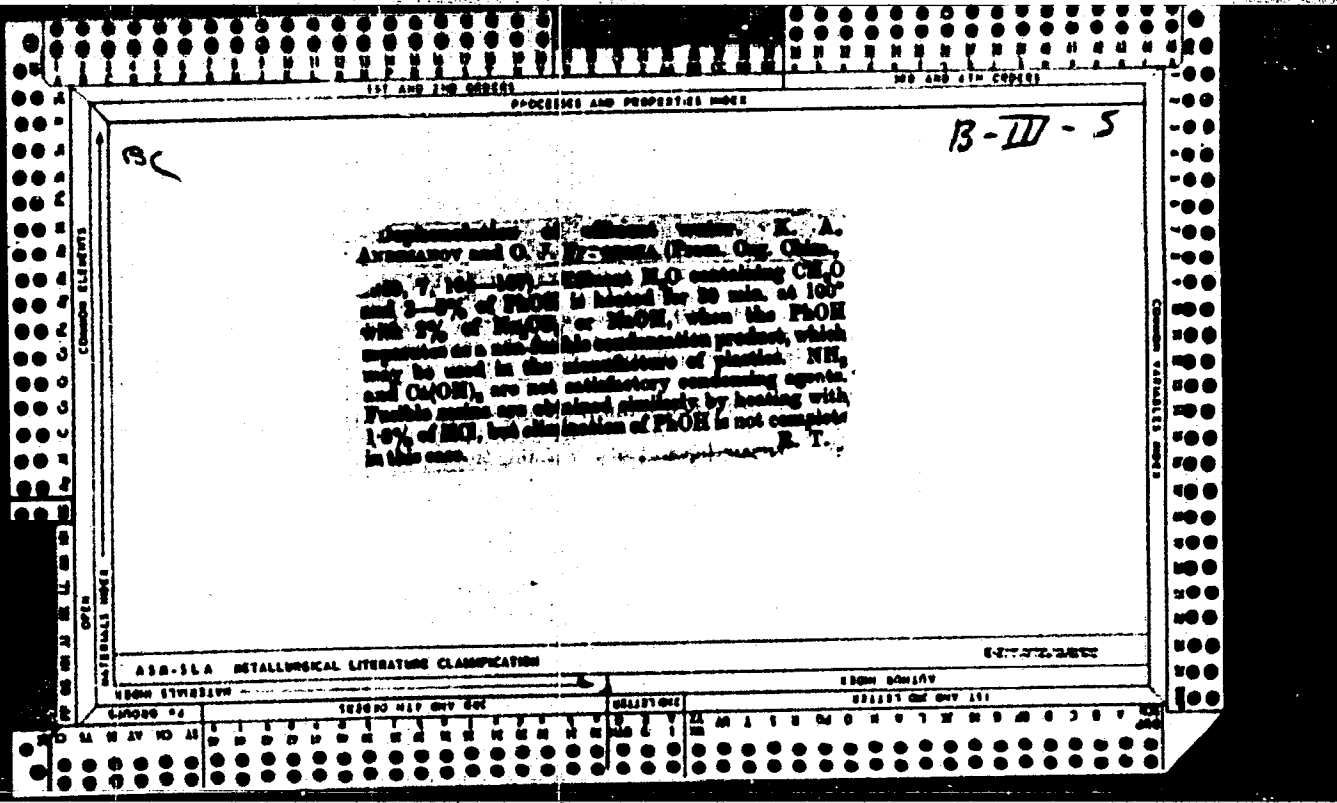
AUTHORS: Fedotova, O. Ya., Mao Bin-tsyuan'  
TITLE: Synthesis and Investigation of Urea Polyamides  
PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 8,  
pp. 1255-1260

TEXT: The authors describe the synthesis of the hitherto unknown polymers of poly-3,3'-dimethyl-diphenyl-sebacic-acid-N,N'-diethyl amide (E), -di-propyl amide (P), and -dibutyl amide (B) with hexamethylene diisocyanate (H) or m-toluylene diisocyanate (T). The synthesis was conducted a) by fusing equimolecular amounts of the components at 85°C, with CO<sub>2</sub> becoming free and the reaction mixture becoming solid; b) by boiling the components dissolved in acetone, benzene, or chloro benzene, with lower yields. The reaction rate depended on the solvent used. -NH<sub>2</sub> and -COOH groups were analytically detected in the polymers obtained so that they may be called urea polyamides. The polymers had a molecular weight 4-5 times higher than the initial polyamides. They are thermoplastic, bright-yellow substances. Due to hydrogen bonds, they have a higher heat resistance and lower  
Card 1/2

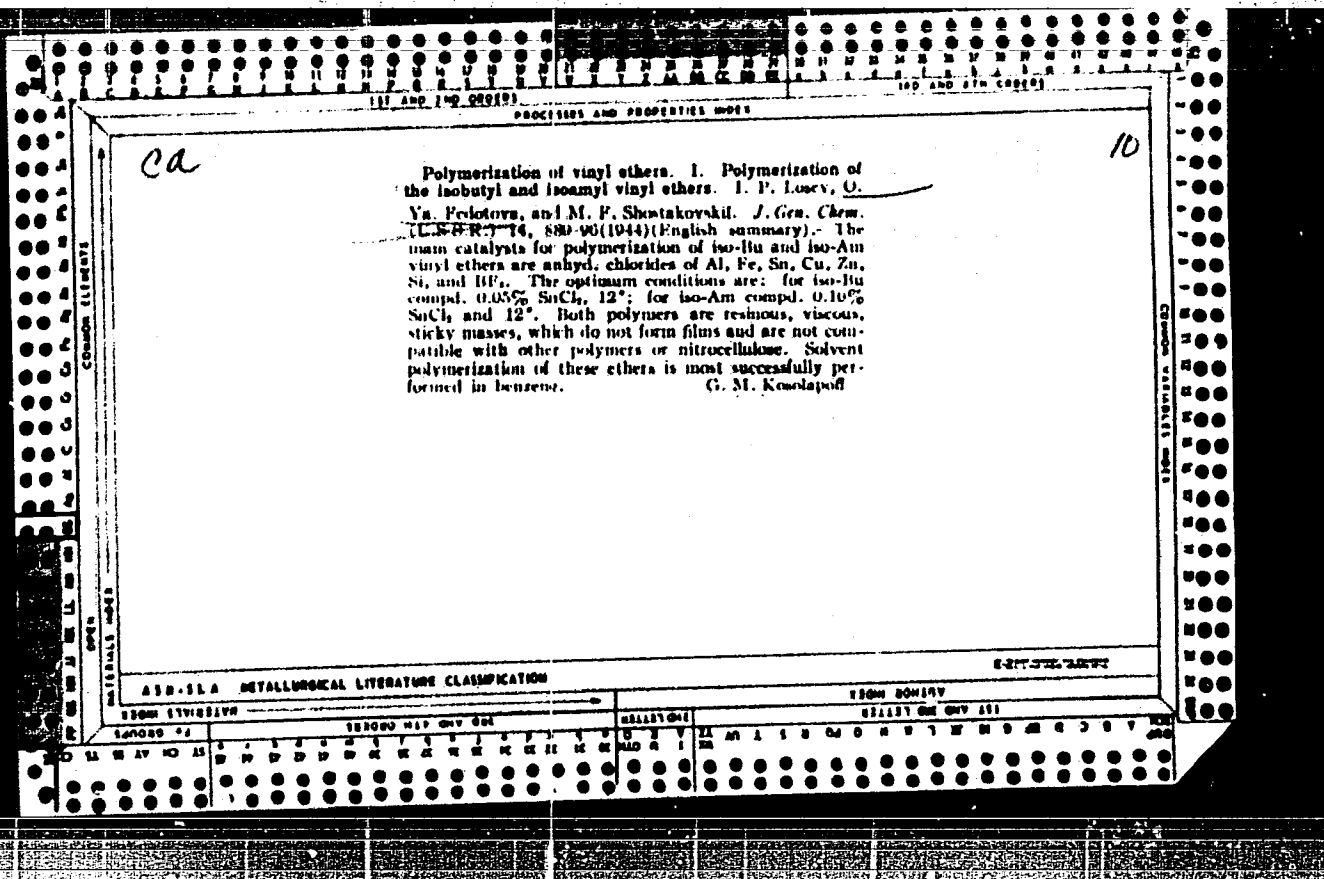
FEDOTOVA, O. J.

"Sur la condensation du 4,4-dioxydiphenylmethane avec le formaldehyde." Lossev, P., Andrianow, K. A. et Fedotowa, O. J. (p. 1828)

SO: Journal of General Chemistry (Zhurnal Obsheei Khimii). 1937, Volume 7, No. 13.







S.C.L.

38. Synth. Rub. v Allied Products

Polymerization of acryl vinyl ether. I. P. LOMEV,  
 D. V. FRIMUTOVA, and E. B. TRUSTYANSKAYA  
 (*J. Gen. Chem., U.S.S.R., 1965, 18, 363-7; Chem.  
 Abn., 1946, 60, 3737*). Solid polymers were  
 obtained from phenyl ether using aluminium  
 chloride or boron trifluoride. The latter catalyst  
 yields 72-78% of a hard glassy polymer with a  
 softening point of 115-118°. Polymerisation in  
 the presence of other catalysts and at elevated  
 temperatures leads to tacky products in low yields.  
 Co-polymerisation with vinyl acetate failed, as did  
 one with styrene (the latter polymerises *per se*).  
 A 1:1 co-polymer with maleic anhydride was readily  
 obtained at 150° in sealed tubes; it readily forms  
 a hard film. A co-polymer with glycerol trivinyl  
 ether was a viscous mass which formed a hard film  
 on drying. 352A21.12312

1946

FEDOTCVA, C. Ya. Cand. Tech. Sci.

Dissertation: "Investigation in the Field of Condensation of Aromatic Ketocacids with Polyhydric Compounds." Moscow Order of Lenin Chemicotechnological Inst imeni D. I. Mendeleev, 26 Sep 47.

SO: Vechernyaya Moskva, Sep, 1947 (Project #17836)

CA

31

Properties of polyvinyl copying interlayers (in offset printing). A. A. Sinegub-Lavrenko, O. Ya. Fedotova, and E. S. Venkova. *Polligraf. Prizmoskopia* 1951, No. 11, 6-9. Polyvinyl alc. coatings used in place of gum arabic and other natural colloids form insol. tough films with oxidizing agents which permit treatment of the printing form with aq. solns. For removing the film in blank spaces from Cu and Zn 2-3% HNO<sub>3</sub> or H<sub>2</sub>SO<sub>4</sub> is good. Removal from Al surface is difficult or impossible. HCl or H<sub>2</sub>SO<sub>4</sub> at 0.3-0.8% concn. do not dissolve the film and cause only little swelling. Apparently these acids act by reduction of residual dichromate and resulting O goes for further hardening of the

films. FeCl<sub>3</sub> solns in H<sub>2</sub>O dissolve hardened films on strong heating and unhardened ones at lower temps; FeCl<sub>3</sub>-EtOH solns do not dissolve the films. Treatment of film-coated Al with FeCl<sub>3</sub> soln causes dissolution and the film floats off. Polyvinyl alc. made by acid hydrolysis can be used in such films for pos. copying on Al after addn. into the light-sensitive soln. of a base (NH<sub>3</sub> or Na<sub>2</sub>CO<sub>3</sub>). For removal of the film from blanks on Al surface, the addn. of base to pH 9.5-10 is absolutely essential. Borax added to the chromate method of hardening the films increases their soly. and swelling. Light-exposed films swell less than unexposed ones the results being approx. proportional to duration of exposure. For best results on Al surfaces 0.15-0.16% borax is added to 3% polyvinyl alc. soln. with 2-4% NH<sub>3</sub> dichromate as hardening agent. G. M. Kosolapoff

FEDOTOVA, O. Ya.

LOSEV, I.P., doktor tekhnicheskikh nauk (Moscow); FEDOTOVA, O.Ya.,  
kandidat tekhnicheskikh nauk (Moscow); VENKOVA, Ye.S. (Moscow).

Reaction of polyvinyl alcohol and bichromate of ammonia on film  
subjected to light. Poligr.proisv. no.3:12-14 My-Je '54. (MLRA 7:8)  
(Photolithography)

LOSEV, I.P.; FEDOTOVA, O.Ya.; KIRBER, M.L.

Synthesis of  $\omega, \omega'$ -diamino-*p*-xylene and of its derivatives. Zhur.  
ob.khim. 26 no.2:548-550 # '56. (MLRA 9:8)

1. Moskovskiy khimiko-tekhnologicheskii institut imeni D.I. Mende-  
leyeva.

(Xylene)

PODOLINA, O. Y., ASHUROV, H. A., and IGOSOV, J. P.

"Symmetric diamidodarylmethanes and polyamides," a paper presented at the 9th Congress on the Chemistry and Physics of High Polymers, 28 Jan-2 Feb 57, Moscow, Moscow Polytechnic Inst.

B-3,004,395

FEDOTOVA, O. YA.

8  
14822 (7)  
2 May

Condensation products of aliphatic diamines and mono-carboxylic acids



FEDOTOVA, O.Ya., kand.tekhn.nauk; SMIRNOVA, O.V., kand.khim.nauk.

Present-day films and their use. Khim.nauka i prom. 2 no.5:613-621  
157. (MIRA 10:12)  
(Films (Chemistry)) (Polymers)

LOSEV, I.P.; FEDOTOVA, O.Ya.; FREYDLIN, G.N.

Alcoholysis of polyvinyl acetate in presence of polyacids as catalysts. Report No. 1: Study of the rate of reaction. Izv. AN Arm. SSR ser. khim. nauk 10 no.6:403-410 '57. (MIRA 11:6)

1. Yerevanskiy zavod "Polivinilatsetat."  
(Alcoholysis) (Acetic acid) (Chemical reaction, Rate of)

FERDOTOVA, O. YA.

Synthesis and investigation of the aryl-alkyl poly-

amides / I. P. Losev, O. Ya. Ferdotova, and M. D. Askarov

The condensation of aromatic diamines with adipic acid leads to polyamides. The introduction of alkyl groups into the aromatic ring of the diamine leads to a decrease in the melting point of the polyamides. The introduction of alkyl groups into the nitrogen atoms of the diamine leads to a decrease in the melting point of the polyamides. The introduction of alkyl groups into the nitrogen atoms of the diamine leads to a decrease in the melting point of the polyamides.

then raised to 80° C. In the addition of 10% NaOH gave white crystals of *N,N*-diethyl-4,4'-diamino-3,3'-dimethyl-1,3-diphenylmethane. The *N,N*-diethyl-4,4'-diamino-3,3'-dimethyl-1,3-diphenylmethane was purified by reprecipitation at 5-10 min. *N,N*-diethyl-4,4'-diamino-3,3'-dimethyl-1,3-diphenylmethane, m. 118°, 82% yield. *N,N*-di-Et analog, m. 93°, b. 285°, 66% yield. *N,N*-di-Pr analog, m. 64°, b. 276°, 82% yield, mol. wt. 311. *N,N*-di-Bu analog, m. 62°, b. 309°, 83% yield, 339.5; diisocamyl analog, —, b. 293°, 70% yield, 304; di-*n*-hexyl analog, —, b. 304°, 89% yield, 393; dioctyl analog, —, b. 318°, 81% yield, 450.

The polyamides were obtained by heating a mixt. of the aromatic diamine and adipic acid in an inert gas in a Wood

metal bath at 140-250° about 6 hrs. The course of the reaction was followed by acid no., m.p. of product, viscosity, and soly. in methanol and in tricresol. The polymers were reprecipitated by addition of water to their alk. or tricresol solns.: poly(3,3'-dimethyldiphenylmethaneadipamide), m. 339°, mol. wt. 1000-15,000,  $K_{sp} \cdot 10^{-4}$  13.32 in cresol; *N,N*-diethylamide analog, 70°, 6000-11,000, 10.46 in methanol; *N,N*-diisocamylamide analog, 60-61°, 6000, 10.2; *N,N*-dibutylamide analog, 64-67°, 6000, 11.1; *N,N*-diisocamylamide analog, 48-49°, 2500, —; *N,N*-di-*n*-hexylamide analog, 40°, 1000, —. Replacement of H by alkyl and increase in the length of the *N*-alkyl

groups strongly lowers the m.p. of the diamines, especially for acid nos. of C atoms in the alkyl substitution. Polycondensation of aromatic diamines with adipic acid leads to polyamides. The introduction of alkyl groups into the aromatic ring of the diamine leads to a decrease in the melting point of the polyamides. The introduction of alkyl groups into the nitrogen atoms of the diamine leads to a decrease in the melting point of the polyamides.

5  
2 May  
2

FEDOTAVA O. Ya

Condensation of arilins, *o*-toluidine and their *N*-mono-  
 alkyl derivatives with formaldehyde in acid medium.  
 Preparation of symmetric diam. *o*-toluidine 70.  
 Va. Fedotova, M. A. Astashev, and I. P. Lopyrev (D. I.  
 Mendeleev Chem. Technol. Inst., Moscow). *Zhur. Obshch.  
 Khim.* 27, 7 (1957). -- The best concn. of HCl in the  
 condensation is 11% and the best temp. is 48°. The  
 yield remains constant after some 3 hrs. To 60 ml. 36%  
 HCl, 200 ml.  $H_2O$ , and 150 g. *o*-M.  $C_6H_4NH_2$  at 13-15°  
 was added 40.5 ml. 37% formalin and the mixt. heated 4 hrs.  
 at about 50° yielding 15,4-Me(E<sub>1</sub>NH)C<sub>6H<sub>3</sub>CH<sub>2</sub>, 69%, m.  
 93°, b. 205°. Similarly were obtained: 59% (*o*-H<sub>2</sub>N-  
 C<sub>6H<sub>3</sub>CH<sub>2</sub>, m. 139°, b. 242°; 70% (*o*-E<sub>1</sub>NH)C<sub>6H<sub>3</sub>CH<sub>2</sub>, b.  
 252°; 85% (3,4-Me(H<sub>2</sub>N)C<sub>6H<sub>3</sub>CH<sub>2</sub>, m. 155°, b. 228°; (3,4-  
 MePrNH)C<sub>6H<sub>3</sub>CH<sub>2</sub>, m. 64°, b. 176°; 83% (6,2-Me-  
 (BuNH)C<sub>6H<sub>3</sub>CH<sub>2</sub>, m. 62°, b. 209°; 18% (3,4-MeArNH-  
 C<sub>6H<sub>3</sub>CH<sub>2</sub>, b. 204°; 80% (3,4-MeC<sub>6</sub>H<sub>3</sub>NH)C<sub>6H<sub>3</sub>CH<sub>2</sub>, b.  
 204°; 81% (3,4-MeC<sub>6</sub>H<sub>3</sub>NH)C<sub>6H<sub>3</sub>CH<sub>2</sub>, b. 318°.</sub></sub></sub></sub></sub></sub></sub></sub></sub>

G. M. Kosolapoff

fra  
amb

5(0)

SOV/153-58-2-2/30

AUTHOR:

Fedotova, O. Ya.

TITLE:

Ivan Platonovich Losev (Ivan Platonovich Losev)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i  
khimicheskaya tekhnologiya, 1958, Nr 2, pp 3-5 (USSR)

ABSTRACT:

On January 16, 1958, I. P. Losev celebrated his 80th birthday. He is a scientist and technical engineer of great merit, and he is also a Professor and Doctor of Technical Sciences, as well as an outstanding specialist in the fields of chemistry and the technology of high-polymer compounds. He was born on January 16, 1878 in the Voysko Donskoye oblast', the son of a Cossack farmer. He first attended a clerical seminary school and was several times reprimanded because of his revolutionary activities; thus, it was not before 1914 that he was able to take his degree. His interest in organic chemistry was aroused already during his studies at Kazan<sup>1</sup> University where he worked in the laboratory of A. M. Zaytsev. In 1915 he began to work as a teacher of chemistry and the knowledge of mercantile wares at the commercial school. It was, however, not before the beginning of the revolution that Losev

Card 1/3

Ivan Platonovich Losev

SOV/153-58-2-2/30

could develop his abilities as a scientist, teacher and politician. Losev continued his activities as a teacher first at the Department of Chemistry of the Veterinary Institute, and later, (beginning with 1924) at the Department of Organic Chemistry of the Moskovskiy khimiko-tekhnologicheskii institut imeni D. I. Mendeleeva (Moscow Chemical and Technological Institute imeni D. I. Mendeleev). All his further activities were closely connected with this university. First as Assistant, then as Docent, Losev began to show interest in high-molecular compounds. In 1932 he founded (together with Professor G. S. Petrov) the Chair of the Technology of Synthetics. Together with a team of good teachers he trained hundreds of specialists until 1943, who later obtained leading positions. In World War II Losev was employed as a trainer of specialists for synthetics in airplane construction. In 1944 he founded the Chair of Non-Metallic Raw Materials at the Aviatsionno-tekhnologicheskii institut (Technological Institute of Aviation). In the course of 13 years this chair under the supervision of Losev trained many good specialists. Losev also took over the newly founded kafedra tekhnologii vysokomolekulyarnykh soyedineniy (Chair of the Technology of High-Molecular Compounds) (including the two

Card 2/3

Ivan Platonovich Losev

SOV/153-58-2-2/30

special fields: Technology of elastoplastic materials and technology of organosilicon polymers). Apart from training engineers Losev also trains specialists of higher qualifications: Candidates of Sciences and Doctors. Losev wrote several books, monographs etc. He spent much time and energy on his scientific investigations. There is 1 photo.

Card 3/3

5(3,4)

AUTHORS:

Fedotova, O. Ya., Askarov, M. A.,  
Sedov, L. N.

SOV/153-58-4-17/22

TITLE:

Dependence of Polyamides Melting Temperature on Their Structure (Zavisimost' temperatury plavleniya poliamidov ot ikh stroeniya)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 4, pp 106 - 111 (USSR)

ABSTRACT:

The physical properties of the polyamides are, as it is known, determined by the chemical structure of the macromolecules, by the polar groups contained in them, the number of the atoms in the member of the chain, and the presence and arrangement of the heteroatoms in the polymer chain. Thus, the melting temperature of the polyamides depends on the structure of the initial substances (Refs 1-3). The formula  $y = 7x + 110$  (1) establishes a connection between the melting temperature of the even polyamides (with an even number of methylene groups in the elementary members) and the number of hydrogen bindings in the basic member, where  $y$  denotes the melting temperature, and  $x$  the number of hydrogen bonds

Card 1/4



Dependence of Polyamides Melting Temperature on Their  
Structure

SOV/153-58-4-17/22

in mole per cent. However, the melting temperatures calculated according to the formula (1) do not always agree with those experimentally found. The authors regarded it as possible to prove the dependence of the melting temperatures of the even aliphatic polyamides on the number of the methylene groups in a basic member of the chain. To determine the influence exerted by each pair of methylene groups in the aliphatic chain the differences of the experimentally found melting temperatures of various pairs of even polyamides were calculated. Therefrom the mean value  $q_m$  was calculated as arithmetic mean from several  $q_m$  values.  $q_m$  turned out to be 22.2, i.e. the increase in number of the methylene groups by two decreases the melting temperature by  $22.2^\circ$ . From the experimental data the authors derived the equation  $T = 375 - 22.2q = 375 - 11.1n$  (2), where  $T$  denotes the melting temperature in  $^\circ\text{C}$ ,  $q$  the number of methylene groups pairs,  $n$  the number of methylene groups in a main member. The same expression can be determined

Card 2/4

Dependence of Polyamides Melting Temperature on Their  
Structure

SOV/153-58-4-17/22

graphically. The data in table 1 show a better agreement of the melting temperatures calculated according to formula (2) with the experimental data, than those of formula (1). In a similar way the formula

$T = 214 - \frac{73}{x}$  (3a) is suggested for the polyamides.

The melting temperature of all aliphatic and aryl aliphatic polyamides with an even number of methylene groups in the aliphatic part of the elementary member and with a linear structure can be expressed by the formula  $T = 375 - 11.4n + 20m^2$  (6), if there are no substituents; in this case  $m$  denotes the number of phenylene groups in the elementary member. Table 3 gives the melting temperatures of the aryl aliphatic polyamides obtained experimentally as well as by the calculation with formula (6). There are 1 figure, 3 tables, and 22 references, 11 of which are Soviet.

Card 3/4

Dependence of Polyamides Melting Temperature on Their Structure SOV/153-58-4-17/22

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskii institut im.D.I. Mendeleeva (Moscow Chemical Technological Institute imeni D.I.Mendeleev) Kafedra tekhnologii vysokomolekulyarnykh soyedineniy (Chair of the Technology of High-Molecular Compounds)

SUBMITTED: January 10, 1958

Card 4/4

5(3)

207/153-58-5-9/28

AUTHORS: Losev, I. P., Fedotova, O. Ya., Zakoshchikov, S. A.

TITLE: On the Interaction of the 4,4'-Diamino-3,3'-Dimethyl Diphenyl Methane With Lower Dicarboxylic Acids and Some of Their Neutral Esters (O vzaimodeystvii 4,4'-diamino-3,3'-dimetildifenilmetana s nizshimi dikarbonovymi kislotami i ikh nekotorymi neytral'nymi efirami)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 5, pp 58-60 (USSR)

ABSTRACT: Aryl aliphatic polyamides are highly heat resistant and insoluble in most organic solvents. Since, for these reasons, they are interesting for practical work, their synthesis as well as the utilization of accessible raw materials have attracted attention. The esters of lower dicarboxylic acids are more heat resistant than the acids themselves. In the present paper oxalic and malonic acid as well as their neutral esters were investigated from the viewpoint mentioned in the title. In the experimental part the production process of the initial substances as well as the method of their synthesis and the method of investigating them are described. The authors described the

Card 1/3

SOV/153-58-5-9/28

On the Interaction of the 4,4'-Diamino-3,3'-Dimethyl Diphenyl Methane With Lower Dicarboxylic Acids and Some of Their Neutral Esters

reaction of the anhydrous oxalic acid (Fig 1), of malonic acid (Fig 2) and of diethyl oxalate as well as of diethyl malonate with diamine (Fig 3). Properties of the polyamides produced. All polyamides are glass-like or horn-like thermoplastic products with a low molecular weight (about 2000). Besides in cresols, they are insoluble in most of the organic solvents; they are highly heat resistant; they easily form threads from the melt. The low molecular weight may probably be explained by the disturbance of the equimolar interrelations due to the thermal instability of the acid, and the volatility of the esters. The reactivity of the substances investigated in the reaction of the polycondensation changes according to the following order: it is higher with diethyl malonate than with diethyl oxalate; it is higher in oxalic acid than in malonic acid. There are 3 figures and 6 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy khimiko-tehnologicheskii institut imeni D. I.  
Card 2/3 Mendeleeva, Kafedra tekhnologii vysokomolekulyarnykh soyedineniy

SOV/153-58-5-9/28

On the Interaction of the 4,4'-Diamino-3,3'-Dimethyl Diphenyl Methane With  
Lower Dicarboxylic Acids and Some of Their Neutral Esters

(Moscow Chemo-Technological Institute imeni D. I. Mendeleev,  
Chair of the Technology of High-Molecular Compounds)

SUBMITTED: December 18, 1957

Card 3/3

FEDOTOVA, O.Ya.; ASKAROV, M.A.; KUCHKAREV, A.B.

Condensation of aromatic amines with formaldehyde in acid media and synthesis of symmetrical diaminodiarylmethanes. Dokl. AN Uz. SSR no.6:31-35 '58. (MIRA 11:9)

1. Sredneaziatskiy politekhnicheskiy institut. Predstavleno chlenom-korrespondentom AN UzSSR Kh. U. Usmanovym.  
(Toluidine) (Formaldehyde) (Condensation products (Chemistry))

LOSEV, I.P.; FEDOTOVA, O.Ya.; FREYDLIN, G.N.

Preparation of polyvinyl alcohol by the alcoholysis of polyvinyl acetate in the presence of polyacids as catalysts. Report no.2: "Life span" of catalysts and feasibility of their regeneration. Izv. AN Arm. SSR khim. nauk 11 no.1:31-36 '58. (MIRA 11:6)

1.Yerevanskiy zavod "Polivinilatsetat."  
(Acetic acid) (Alcoholysis) (Catalysis)



AUTHORS: Fedotova, O. Ya., Askarov, M. A., Sedov, L. N. 79-28-3-47/61

TITLE: ~~The Synthesis and the Investigation of the Poly-3,3'-Dimethyl-~~  
diphenylmethaneadipin-N,N'-Diethylamide (Sintez i issledovan-  
iye poli-3,3'-dimetildifenilmetanadipin-N,N'-dietilamida)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 3, pp. 775-779  
(USSR)

ABSTRACT: The authors wanted to investigate the effect of the substi-  
tution at nitrogen and to synthesize a polymer soluble in  
usual solvents. Therefore they used in this work one of the  
widely applied methods of the modification of polyamides, that  
is to say using an N-alkylated diamine as initial product.  
N,N'-diethyl-4,4'-diamino-3,3'-dimethyldiphenylmethane (re-  
ference 2) served for this, which enters reaction with adipic  
acid according to the given scheme. The final product of poly-  
condensation was a low-melting, brittle, vitreous yellow pro-  
duct soluble in most of the usual solvents. Experiments made  
it possible to find the best conditions for the synthesis of  
the polyamide; the highest molecular polymer is obtained by  
carrying out the reaction in the flow of an inert gas for five

Card 1/3

The Synthesis and the Investigation of the Poly-3,3'-Dimethyl-79-28.3-47/61  
diphenylmethaneadipin-N,N'-Diethylamide

hours with a subsequent vacuum treatment (3-5 mm) at 240-260° C. This made it possible to increase the molecular weight of the polyamide from 5500-6500 to 9050-9330. For the purpose of further increasing the molecular weight of the polyamide the effect of an excess diamine (0,5 to 10% above the equi-molecular weight) on the molecular weight and the melting point was examined. It turned out that with 2% excess diamine in the polycondensation process - in molten as well as in dissolved state - the molecular weight of the polyamide can be increased from 8500-8780 to 11130-12000 and the melting point can be raised from 46 to 78%. From the mentioned melting points and the data on the molecular weight can be seen (table 1) that an interdependence exists between them. The analytical expression of this dependence is graphically represented by the equation  $Bp = \frac{M-4000}{96,2}$ , Bp denoting the boiling point, M

the molecular weight. In order to support the validity of this equation a great number of samples of the poly-3,3'-dimethyl-diphenylmethaneadipin-N,N'-diethyl-amide were synthesized, their melting points and molecular weights being determined.

Card 2/3

The Synthesis and the Investigation of the Poly-3,3'-Dimethyl- 79-28-3-47/61  
diphenylmethaneadipin-N,N'-Diethylamide

The comparison of these molecular weights with the values of those calculated from the melting point completely proves the above mentioned rules (table 2). There are 1 figure, 4 tables, and 6 references, which are Soviet.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskii institut im. D. I. Mendeleeva (Chemical Technological Institute imeni D. I. Mendeleev)

SUBMITTED: May 9, 1957

Card 3/3

FEDOTOVA, O Ya.

PHASE I BOOK EXPLOITATION SOV/3567

Losev, Ivan Platonovich, and Ol'ga Yakovlevna Fedotova

Praktikum po khimii vysokopolimernykh soyedineniy (Laboratory Manual on the Chemistry of High-Polymer Compounds) Moscow, Goskhimizdat, 1959. 176 p. Errata slip inserted. 11,000 copies printed.

PURPOSE: This manual is intended for students at schools of higher education and may be useful to research and plant laboratory personnel engaged in the synthesis and testing of high polymers.

COVERAGE: This is a handbook of laboratory experiments to be used in conjunction with a course in physicochemical properties of high-polymer compounds. Laboratory techniques and methods of chemical analysis, synthesis, and the determination of the physical and chemical properties of various polymers are outlined. Each set of experiments is accompanied by an account of their underlying principles. There are eighty-six problems. No personalities are mentioned. There are no references.

Card 1/4

Laboratory Manual (Cont.)

30V/3567

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SOV 3567

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Laboratory Manual (Cont.)

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AVAILABLE: Library of Congress

Card 4/4

TM/jb  
6-7-70

5(3), 15(8)  
AUTHORS:

SOV/156-59-1-41/54

Losev, I. F., Fedotova, O. Ya., Askarov, M. A., Sedov, L. N.

TITLE:

The Synthesis and Investigation of Mixed Polyamides on the Basis of Aromatic Diamines and Adipic Acid (Sintez i issledovaniye smeshannykh poliamidov na osnove aromaticheskikh diaminov i adipinovoy kisloty )

PERIODICAL:

Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya tekhnologiya, 1959, Nr 1, pp 159 - 161 (USSR)

ABSTRACT:

The following substances were used for the mixed condensation with adipic acid: 4,4'-diamino-3,3'-dimethyl-diphenyl-methane and its N,N'-diethyl-, dipropyl- and dibutyl derivatives. Three binary systems of mixed polyamides were obtained. All of them are soluble in tricresol, sulphuric and formic acids, with the exception of those in which the ratio of the non-substituted diamine to the alkylated diamine was 0.2:0.8. These substances are alcohol-soluble, independently of the size of the alkyl radical. The N,N'-dipropyl- and N,N'-dibutyl derivatives of 4,4'-diamino-3,3'-dimethyl-diphenyl-methane bring about a more essential lowering of the melting point than does the polyamide of the N,N'-diethyl substituent. In

Card 1/3



The Synthesis and Investigation of Mixed Polyamides on the  
Basis of Aromatic Diamines and Adipic Acid

SSV/156-59-1-41/54

order to study the influence of the aromatic rings on the melting point of the condensation product mixed polymers were produced from AG-salt, the above-mentioned diamines, and adipic acid. Two types were thus obtained. The first group (constituted by 4,4'-diamino-3,3'-dimethyl-diphenyl-methane) yields little transparent to opaque substances. It is only with a molar ratio of 0.2:0.8 between fatty and aromatic diamines that a yellowish, vitreous product was obtained. The fusions of the polymers with aliphatic to aromatic diamine ratios of 0.8:0.2, 0.6:0.4, and 0.4:0.6 yield elastic filaments. Rising aliphatic diamine additions (AG-salt) result in a linear lowering of the melting point (Diagram). The second group (constituted by N,N'-diethyl-3,3'-dimethyl-diphenyl-methane) yields opaque white substances that are insoluble in the ordinary organic solvents. As in the first group, only the mixed polyamide with ratio of aliphatic:aromatic 0.2:0.8 constitutes an exception and forms a yellowish glass that dissolves on heating in methanol and that has an essentially lower melting point than the other products (Diagram). There are 2 figures, 1 table, and 6 refer-

Card 2/3

The Synthesis and Investigation of Mixed Polyamides on the SOV/156-99-1-41/54  
Basis of Aromatic Diamines and Adipic Acid

ences, 4 of which are Soviet.

ASSOCIATION: Kafedra tekhnologii vysokomolekulyarnykh soyedineniy Moskovskogo  
khimiko-tekhnologicheskogo instituta im. D. I. Mendeleeva  
(Chair of the Technology of High-molecular Compounds of the  
Moscow Institute of Chemical Technology imeni D. I. Mendelyev)

SUBMITTED: March 21, 1958

Card 3/3

SOV/79-29-2-65/71

AUTHORS: Fedotova, O. Ya., Losev, I. P., Askarov, M. A., Kostina, R. G.

TITLE: Polycondensation of Some N,N'-Dialkyl-substituted Derivatives of 4,4'-Diamino-3,3'-Dimethyldiphenyl Methane With Adipinic Acid (Polikondensatsiya nekotorykh N,N'-dialkilzameshchennykh proizvodnykh 4,4'-diamino-3,3'-dimetildifenilmetana s adipinovoy kislotoy)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 2, pp 672-676 (USSR)

ABSTRACT: The authors earlier described the synthesis of polyamides, which they had obtained by polycondensation of 4,4'-diamino-3,3'-dimethyldiphenyl methane and its N,N'-diethyl-substituted derivative with adipinic acid. Reactions are dealt with here, taking place according to the same scheme, with the exception that the diamines used possess larger substituents at the nitrogen (R=C<sub>3</sub>H<sub>7</sub>, C<sub>4</sub>H<sub>9</sub>, C<sub>5</sub>H<sub>11</sub>, C<sub>6</sub>H<sub>13</sub> and C<sub>8</sub>H<sub>17</sub>). The polycondensation of propyl and butyl-substituted diamines with adipinic acid yielded two products, namely, poly-N,N'-dipropyl-3,3'-dimethyldiphenyl methane adipine amide and poly-N,N'-di-butyl-3,3'-dimethyldiphenyl methane adipine amide. These are

Card 1/3

Polycondensation of Some N,N'-Dialkyl-substituted Derivatives of 4,4'-Diamino-3,3'-Dimethyldiphenyl Methane With Adipinic Acid

SOV/79-29-2-65/7:

glass-like products, easily soluble in organic solvents; the former melts at 57° and the latter at 55°. Their molecular weights are between 4500 and 5200. The condensation of N,N'-di-propyl-4,4'-diamino-3,3'-dimethyldiphenyl methane with adipinic acid at 160° was found to lead chiefly to the monomer amide, while the other likewise yields the monomer and, in a smaller quantity, a dimer. Polyamides having the highest polycondensation degree (10-12) and the lowest amine and acid numbers formed at the optimum reaction temperature (260°). Moreover, also N,N'-diisocamyl-N,N'-dihexyl and N,N'-dioctyl-substituted diamine was caused to react in the same way (Table 1). A comparison was made of the properties of the polycondensation products; these properties depend on the amount of the substituent radical at the nitrogen atom, as well as on the disappearance of the hydrogen bonds. There are 6 figures and 2 tables.

ASSOCIATION:

Moskovskiy khimiko-tekhnologicheskii institut imeni D. I. Mendeleyeva (Moscow Chemical-technological Institute imeni D. I. Mendeleev)

Card 2/3

SOV/79-29-2-65/71

Polycondensation of Some N,N'-Dialkyl-substituted Derivatives of 4,4'-Diamino-3,3'-Dimethyldiphenyl Methane With Adipinic Acid

SUBMITTED: December 28, 1958

Card 3/3

FEDOTOVA, O. Ya.; LOSEV, I.P.; SKRIPCHENKO, N.I.; OKUNCHIKOVA, M.A.;  
BYKOVA, L.V.; SHTIL'MAN, M.I.

Synthesis and investigation of polyurea. Vysokom.soed. 1 no.11:  
1685-1690 N '59. (MIRA 13:5)

(Urea)

S/081/62/000/009/064/075  
B101/B144

AUTHORS: Asharov, M. A., Fedotova, O. Ya., Chebotareva, V. M.

TITLE: Production of poly-3,3'-dimethyldiphenylmethanazelaïnamide and its copolymers with AH salt and caprolactam

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 9, 1962, 591, abstract  
9P36 (Dokl. AN UzSSR, no. 4, 1960, 29 - 31)

TEXT: Polyamides (PA) with molecular weights of 10,000 - 15,000 were produced by polycondensation of: 4,4'-diamino-3,3'-dimethyldiphenylmethane (I) with azelaic acid (II); I, II and AH salt; and I, II and  $\epsilon$ -caprolactam. When I is polycondensed with II, vitreous PA with a m.p. of 233°C, soluble in cresols, formic, acetic and sulfuric acids, are formed. The polycondensation of I, II and AH salt, as well as that of I, II and  $\epsilon$ -caprolactam at various molar ratios, gives rise to mixed PA with properties which vary regularly according to the ratios between their components; their m.p. are lower than those of the homogeneous PA and they are more soluble. The physicochemical properties of the polyamides obtained are given.

[Abstracter's note: Complete translation.]

Card 1/1

FEDOTOVA, O.Ya.; ZAKOSHCHIKOV, S.A.

Method of determining the decomposition temperature of polymers.  
Plast.massy no.5:64-65 '60. (MIRA 13:7)  
(Polymers)



FEDOTOVA, O.Ya.; SHAPIRO, A.B.

Synthesis of sulfur-containing aryl aliphatic polyamides, and properties of members of the series. Vysokom.sosd. 2 no.1: 153-157 Ja '60. (MIRA 13:5)

1. Moskovskiy khimiko-tekhnologicheskii institut imeni D.I. Mendeleeva.

(Amides) (Sulfur organic compounds)

83703

S/190/60/002/006/008/012  
B015/B064

17-4312

15-8107 also 2209

AUTHORS:

Redotova, O. Ya., Losev, I. P., Brysin, Yu. P.,  
Pugachevskaya, N. F.

TITLE:

Synthesis and Investigation of Aromatic Polyamides

PERIODICAL:

Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 6,  
pp. 899-903

TEXT: Aromatic cycles in the molecule of polyamides are known to increase strength, hardness, and heat resistance. In this connection it was tried to synthesize polyamides with a maximum number of aromatic cycles in the molecule. For this purpose diamines of the benzidine- and diamino diphenyl methane series and the dimethylterephthalate were used. The use of the latter is of interest since the aromatic cycle in this ester lies in the same plane as that of the diamines used, i.e., of benzidine, toluidine, 4,4'-diaminodiphenyl methane and 4,4'-diamino-3,3'-dimethyl diphenyl methane. By slowly heating the diamine melt with dimethylterephthalate in two steps (1) to 190-200°C in the inert gas current at normal pressure, and 2) at a residual pressure of 2-3 mm

Card 1/2

FEDOTOVA, O.Ya.; MAO BIN-TSYUAN'

Polycondensation of some N and N'-dialkyl-substituted derivatives of  
4,4'-diamino-3,3'-dimethyldiphenylmethane with sebacic acid.  
Vysokom.soed. 2 no.6:952-956 Je '60. (MIRA 13:6)

1. Moskovskiy khimiko-tekhnologicheskii institut imeni D.I.Mendele-  
yeva.

(Methane) (Sebacic acid). (Condensation products)

FEDOTOVA, O.Ya.; KERBER, M.L.; LOSEV, I.P.

Some properties of aromatic and aryl aliphatic polyamides  
obtained by condensation at the boundary between two phases.  
Vysokom.sced. 2 no.7:1020-1025 J1 '60. (MIRA 13:8)

1. Moskovskiy khimiko-tekhnologicheskii institut im. D.I.  
Mendeleeva.

(Polyamides)

FEDOTOVA, O.Ya.; MAO BIN-TSYUAN' [Mao Ping-ch'üan]

Synthesis and study of polyamidoureas. Vysokom. soed. 2  
no.8:1255-1260 Ag '60. (MIRA 13:9)

1. Moskovskiy khimiko-tekhnologicheskii institut im. D.I.  
Mendeleeva.

(Urea)

85418

S/190/60/002/011/015/027  
B004/B060

15.8107

AUTHORS: Fedotova, O. Ya., Kurochkin, A. S. <sup>b</sup>  
TITLE: The Problem of Producing Polyamides From Neutral Esters of Dicarboxylic Acids and Aromatic Diamines  
PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 11, pp. 1688 - 1691

TEXT: A thorough study was made of the reaction between dicarboxylic acid esters and diamines. The investigation made by the authors covered the reaction of m-toluylene diamine with dimethyl-, diethyl-, and dibutyl ester of adipic and sebacic acid. The reaction rate decreased from methyl- to butyl ester. Adipic acid reacted more vigorously than sebacic acid. The reaction of methyl esters with m-toluylene diamine yielded macromolecules with an ester group on one end, and an amino group on the other. Polymers of low molecular weight (500) were obtained at 180°C. An increase of temperature to 260°C increased the molecular weight, the optimum being observed at 260°C and a reaction time of 7 hours, while decomposition sets in above 260°C. Molecular weights ranged between 2530 and 4200. Bright-  
Card 1/2

85118

The Problem of Producing Polyamides From  
Neutral Esters of Dicarboxylic Acids and  
Aromatic Diamines

S/190/60/002/011/015/027  
B004/B060

yellow brittle substances, melting at 200°C, soluble in cresol and glacial acetic acid, were obtained. Addition of 2.5% orthophosphoric acid gives rise to a high molecular weight. Polymers become stronger and can be drawn to threads. Only sirupy substances, soluble in organic agents, were obtained with diethyl and dibutyl esters. This different reactivity could be utilized for regulating the properties and the molecular weight of polymers, so that the latter could be used as lacquer binding media. I. P. Losev is mentioned. There are 2 figures, 1 table, and 1 Soviet reference.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskii institut im.  
D. I. Mendeleyeva (Moscow Institute of Chemical Technology  
imeni D. I. Mendelevey)

SUBMITTED: May 10, 1960

Card 2/2

15.8107

2109, 2209

S/079/60/030/009/012/015

B001/B064

AUTEORS:

Losev, I. P., Fedotova, O. Ya., Filippova, N. M.

TITLE:

Synthesis and Investigation of Polyamides From  
 $\omega, \omega'$ -Diamino-p-xylene and Dicarboxylic Acids

PERIODICAL:

Zhurnal obshchey khimii, 1960, Vol. 30, No. 9,  
pp. 3074-3077

TEXT: The authors continued their previous investigation (Ref. 1) on the synthesis and properties of polyamides, proceeding from  $\omega, \omega'$ -diamino-p-xylene and dicarboxylic acids and obtained a series of salts of glutaric, pimelic, azelaic, and sebacic acid whose elementary analysis also permits the determination of their empirical formulas that correspond to the neutral salts. On heating the salts to temperatures between 220 and 290°C, a number of curves was obtained of the specific viscosity of 0.2% solutions of polyamides forming in cresol as a function of the reaction temperature. In the case of poly-p-xylene glutaric acid amide (I) and poly-p-xylylene pimelic acid amide (II) the optimum reaction temperature is 240°C, in the case of poly-p-xylene azelaic acid amide (III) it is 250°C, and in the

Card 1/2



Synthesis and Investigation of Polyamides  
From  $\omega, \omega'$ -Diamino-p-xylene and Dicarboxylic Acids

S/079/60/030/009/012/015  
B001/B064

case of poly-p-xylylene sebacic acid amide (IV) it is 260°C (Fig. 1). Table 1 gives the constants of these polyamides. Moreover, the thermo-mechanical properties of the polymers obtained were investigated by means of the device by Zhurkov (load 975 g, 10 sec permanent load). Fig. 2 shows the thermomechanical curves for the products (I - IV). The data reveal that the polyamides have a crystalline structure, no highly elastic states, and that they are not deformed when heated to between 260 and 270° under load; this indicates their high thermal stability. The properties of the polyamides depend on the structure of the homologous acids: e.g., the melting points of "even" polyamides are higher than those of the respective polymers with odd number of C-atoms in the dicarboxylic acid. The solubility (in cresol, water, cyclohexanone, ethylene glycol) rises with the higher number of carbon atoms in the molecule of dicarboxylic acid. The polyamides obtained can be easily treated by pressing, though treatment by casting under pressure is more expedient. There are 2 figures, 2 tables, and 1 Soviet reference.

ASSOCIATION: Moskovskiy khimiko-tehnologicheskii institut imeni Mendeleyeva (Moscow Institute of Chemical Technology imeni Mendeleev)  
August 11, 1959

SUBMITTED:  
Card 2/2

5.3832

80105  
3/000/60/033/04/36/045

AUTHORS: Fedotova, O.Ya., Losev, I.P., Skripchenko, N.I., Shtil'man, M.I.

TITLE: The Synthesis and Application of Some Aromatic and Arylaliphatic Polyureas

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 4, pp 962 - 968

TEXT: During the investigation of polyureas by the reaction of diamines with diisocyanates several new polymers were obtained from symmetrical aromatic diamines and diisocyanates of the fatty and aromatic character. Polyureas obtained on the base of non-substituted diamines have high melting points, sometimes above their decomposition points. Diamines containing substituents at nitrogen atoms produced polyureas with lowered melting points by decreasing the number of hydrogen bonds between the macromolecules. The specific viscosities of 0.5%-x polyurea solutions based on non-substituted diamines did not exceed 0.08, which corresponds to a molecular weight of 4,000 - 5,000, the numbers for substituted diamines being 0.035 and 2,000 - 3,000, respectively. The plasticizing action of the CH<sub>2</sub> group between two aromatic nuclei was confirmed. The combined synthesis of N,N'-dialkylsubstituted symmetrical aromatic diamines and diisocyanates in the ratio 1:2 with subsequent steam treatment produced polyureas with higher specific viscosity and improved physical-mechanical properties.

Card 1/2

80105

S/080/60/033/04/36/045

The Synthesis and Application of Some Aromatic and Arylaliphatic Polyureas

The polymers obtained are monodispersed, which was proved by turbidimetric titration. For the investigation of the physico-mechanical properties the thermomechanical curves were taken. The gluing capacity was determined by gluing metal plates. The gluing stability decreased with an increase in the number of carbon atoms in the side chain of polyurea and with a decrease in the molecular weight of the polymer. There are: 4 tables, 5 graphs and 2 Soviet references. 4

SUBMITTED: August 10, 1959

Card 2/2

15.8107

87676

S/C81/60/000/021/018/018  
A005/A001

Translation from: Referativnyy zhurnal, Khimiya, 1960, No. 21, p. 563, # 87309

AUTHORS: Fedotova, O. Ya., Losev, I. P., Zakoshchikov, S. A.

TITLE: On the Interaction of Butanedioic Acid With 4,4'-Diamino-3,3'-Dimethyl-Diphenyl Methane

PERIODICAL: Tr. Mosk. khim-tekhrol. in-ta im. D. I. Mendeleyeva, 1959, No. 29, pp. 63-68

TEXT: By the reaction of  $(CH_2COOH)_2$  with  $(4-NH_2-3-CH_3C_6H_3)_2CH_2$  at 140, 180, 220°C in a  $CO_2$  stream, polyamides were obtained of the general formula  $H[-4NH-3-CH_3C_6H_3CH_2C_6H_5-3-CH_3-4-NHCO(CH_2)_2CO-]_n-OH$ , which represent transparent glass-like thermoplastic substances with the molecular weight of about 3,400 (viscosimetrically), melting point 215-220°C, which are soluble only in cresol and, in the molten state, easily oxidizable in air. The optimum conditions of polyamidation were determined: 212°C and 4% excess of  $(CH_2COOH)_2$ . One warms 0.25 g of the reaction mass during 30 min. at 50°C in  $CH_3OH$ , titrates by 0.1n. HCl with methyl orange for the determination of the amine number and by 0.1n. KOH with phenol-phthalein for the determination of the acid number.

Translator's note: This is the full translation of the original Russian abstract.  
B. Timoshevskiy

Card 1/1

S/081/61/000/001/017/017  
A005/A105

Translation from: Referativnyy zhurnal, Khimiya, 1961, No. 1, p. 526, # 1P156

AUTHORS: Fedotova, O.Ya., Karp, A.S.

TITLE: On the Problem of Polyvinyl-Chloride Plasticization

PERIODICAL: "Tr. Mosk. khim.-tekhnol. in-ta im. D.I. Mendeleeva", 1959, No.29,  
pp. 69 - 71

TEXT: The plasticization of polyvinyl-chloride by a mixture of dibutyl-phthalate and mineral oils (МВП (MVP), vaseline oil, CY (SU)) makes it possible to obtain a masticated rubber with good resistance to frost and good dielectric properties. Hereat, the quantity of mineral oils to be added without the risk of their sweating amounts to 2-10%. ✓

E. T.

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

87025

S/190/60/002/007/005/017  
B020/B052

15.8107

AUTHORS: Fedotova, O. Ya., Kerber, M. L., Losev, I. P.

TITLE: Some Properties of Aromatic and Aryl-aliphatic Polyamides  
Produced by Interfacial Polycondensation. I

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 7,  
pp. 1020-1025

TEXT: In former papers the authors have already shown (Ref. 4) the high reactivity of aromatic diamine in non-equilibrium polycondensation with sebacic acid chloride. From their results, the optimum reaction conditions (concentrations, component ratios, addition of HCl acceptors, time of reaction) have been chosen. A high-speed mixer with 6000 rpms was used. The polycondensation of diamines with aromatic rings separated by methyl groups, and alkyl groups bound to the ring or to nitrogen were investigated. The results of polycondensation obtained by the authors or other researchers are given in Table 1. The initial products were produced from sebacic and terephthalic acids with thionyl chloride in the presence of secondary amines as catalysts (Refs. 15,16). Polycondensation  
Card 1/3

87025

Some Properties of Aromatic and Aryl-aliphatic Polyamides Produced by Interfacial Polycondensation. I

S/190/60/002/007/005/017  
B020/B052

always was carried out under the same conditions. The polyamides were produced from p-phenylene diamine, m-toluylene diamine, p-xylylene diamine, benzidine, 4,4'-diamino-3,3'-dimethyl diphenyl, 4,4'-diaminodiphenyl methane, 4,4'-diamino-3,3'-dimethyl diphenyl methane, 4,4'-diaminodiphenyl ethane, N,N'-dimethyl- and N,N'-diethyl-diaminodiphenyl methane, N,N'-diethyl-diaminoditolyl methane, and sebacic and terephthalic acid chlorides. The melting points of the polyamides are given in Table 1. The melting points of the polymers produced by non-equilibrium polycondensation, usually differ little from those obtained in the melt. However, they are somewhat higher, which proves that the molecular weight of the polymers obtained by non-equilibrium polycondensation is higher. The polymers obtained in the melt have a low molecular weight (approximately  $5 - 7 \cdot 10^3$ ) with melting points up to  $500^\circ\text{C}$  (Ref. 18). Tables 2 and 3 give the yields of polycondensation at the phase boundary, and the effect of the composition of the initial diamine on the polymer produced. Aromatic diamines give higher polymer yields than aliphatic diamines (Ref. 20). The condensation of diamine salts also shows high yields. The

Card 2/3

87025

Some Properties of Aromatic and Aryl-aliphatic  
Polyamides Produced by Interfacial  
Polycondensation. I

S/190/60/002/007/005/017  
B020/B052

polymers obtained from non-substituted diamines, are not soluble in any of the usual solvents for polyamides (cresol, dimethyl formamide, formic acid, ethylene chlorohydrin, chloroform, aqueous  $\text{CaCl}_2$  solution); the only exception is concentrated sulfuric acid.

There are 3 tables and 20 references: 14 Soviet, 3 US, 2 German, and 1 French.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskii institut im. D. I. Mendeleeva (Moscow Institute of Chemical Technology imeni D. I. Mendeleev)

SUBMITTED: March 7, 1960

Card 3/3



FEDOTOVA, O.Ya.; KUROCHKIN, A.S.

Synthesis of polyamides from neutral esters of dicarboxylic acids and aromatic diamides. Vysokom. soed. 2 no. 11:1688-1691 N '60. (MIRA 13:11)

1. Moskovskiy khimiko-tekhnologicheskii institut imeni D.I. Mendeleeva.  
(Polyamides) (Amides)

ASKAROV, M.A.; FEDOTOVA, O.Ya.; CHEBOTAREVA, V.M.

Synthesis of mixed polyamides. Uzb. khim. zhur. no.3:62-65 '60.  
(MIRA 13:10)

1. Sredneaziatskiy politekhnicheskiy institut.  
(Polyamides)

S/191/60/000/005/017/020  
B004/B064

AUTHORS: Fedotova, O. Ya., Zakoshchikov, S. A.

TITLE: Method of Determining the Decomposition Temperature of  
Polymers

PERIODICAL: *Plasticheskiye massy*, 1960, No. 5, pp. 64-65

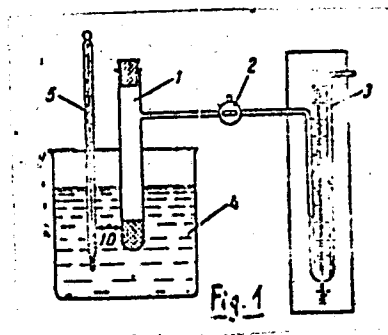
TEXT: The decomposition temperature is suggested as a characteristic of polymers which do neither melt nor soften when heated. As no standard method exists and the method for polyvinyl chloride according to TY MXN 1374-46 (TJ MKhP 1374-46) is inaccurate and not applicable to other polymers, the following method was developed: At rising temperature of a bath (distance between thermometer and sample: 10 mm), the sudden pressure increase occurring during decomposition is measured. Fig. 1 shows the apparatus. The decomposition temperatures determined for some polymers are given: Polyvinyl chloride of the ПЭ-ср2u (PF-spets) type, nonstabilized, 176°C, acetyl cellulose, 230°C, low-pressure polyethylene, 383°C, poly-methyl methacrylate, 185°C, polyurethan, 135°C. Legend to Fig. 1: 1) test

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Method of Determining the Decomposition  
Temperature of Polymers

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tube, 2) three-way cock, 3) mercury manometer, 4) bath, 5) thermometer.  
There are 5 figures and 3 Soviet references.



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