

TSAREV, B.A.; BOGDANOV, L.M.; MARTYSH, G.G.; LIPCHANSKAYA, V.I.

Possibility of partial substituting of synthetic polymers  
for gelatin in photographic emulsions. Tekh.kino i telev.  
4 no.8:8-11 Ag '60. (MIRA 13:8)

1. Leningradskiy institut kinoizhenerov.  
(Photographic emulsions)

L 33056-66 EWT(1)/T IJP(c)

ACC NR: AP6024071

SOURCE CODE: UR/0077/66/011/002/0081/0087

AUTHOR: Khismatullina, L. A.; Levi, S. M.; Bogdanov, L. M.; Kukhtin, V. A. 37  
B

ORG: All-Union Scientific Research Motion Picture Institute (Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut)

TITLE: Investigation of the application of grafted gelatin copolymers for photographic emulsions <sub>30</sub>

SOURCE: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, v. 11, no. 2, 1966, 81-87

TOPIC TAGS: photographic emulsion, graft copolymer, photographic processing, photographic property

ABSTRACT: Conditions are worked out for synthesis of grafted gelatin copolymers. As a result of physico-mechanical and photographic investigations of the grafted gelatin copolymers, introduced to the emulsion in quantities of 25-50%, it has been established that these materials have no negative effect on the photographic properties, but increase the elasticity, strength and heat stability of the emulsion layer, which makes the layer immune to separation during high-temperature photographic processing. Orig. art. has: 9 tables. [JPRS]

SUB CODE: 14, 07 / SUBM DATE: 15Sep64 / ORIG REF: 002 / OTH REF: 001

Card 1/1 *la*

UDC: 771.513

*0912* *16 32*

BOGDANOV, L. N.

Training of radiologists and radiological laboratory assistants  
on a local basis. Zdrav. Ros. Feder. 6 no.6:25-28 Je '62.

1. Iz rentgenovskogo tsentra (zav. L. N. Bogdanov) Kirovskoy  
oblastnoy klinicheskoy bol'nitsy (glavnyy vrach V. N. Potapenko).

(RADIOLOGY, MEDICAL—STUDY AND TEACHING)

BOGDANOV, I.N.; NOBOV, A.V.; BOGDANOVA, M.G.

Activities of the Kirov Province Scientific Society of Roentgenologists and Radiologists. Vest. rent. i rad. 39 no. 6:84-85 N-D '64.  
(MIRA 18:6)

BOGDANOV, L.S.

Tenth Pacific Science Congress. Okeanologia 2 no.1:185-188  
'62. (MIRA 15:2)  
(Pacific Ocean--Congresses)

BOGDANOV, L.N.

Organization of X-ray service in a consolidated district.  
Zdrav. Ros. Feder. 7 no.5:11-14 My'63. (MIRA 16:6)

1. Rentgenologicheskiy tsentr (zav. L.N.Bogdanov) Kirovskoy  
oblastnoy klinicheskoy bol'nitsy (glavnyy vrach V.N.Potapenko)  
i organizatsionno-metodicheskiy otdel (zav. - prof. I. M.  
Yakhnich) Nauchno-issledovatel'skogo rentgenoradiologicheskogo  
instituta (dir. - prof. I.G.Lagunova) Ministerstva zdra-  
vookhraneniya RSFSR.  
(RADIOLOGY, MEDICAL)

BOGDANOV, Leonid Pavlovich

[A knowledge of economics is important] Znanie ekonomiki -  
ool'shoe delo. Moskva, Mosk. rabochii, 1961. 33 p.  
(MIRA 17:2)

BOGDANOV, L.V.; LOSHAK, M.Z.

The KpA-1010-type six-spindle drilling-machine unit. Biul.  
tekh.-ekon.inform. no.12:29-30 '58. (MIRA 11:12)  
(Drilling and boring machinery)



ROZHANSKIY, M.O., starshiy nauchnyy sotrudnik; BOGDANOV, L.V., aspirant;  
MARKOVA, A.M., starshiy laborant

Determining the volume of circulating blood in adult horses and  
dairy cows by the T-1824 hematocrit method. Izv. TSKhA no.5:  
217-221 '61. (MIRA 14:12)

(Blood--Circulation)  
(Horses) (Cows)



BOGDANOV, L.V.

"The Blood Volume and Total Content of the Basic Components of  
the Blood of Milk Cows of Various Constitutional Types";

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

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

BOGDANOVIC, M.; MILOSAVLJEVIC, M.

Stimulative effect of the peat and lignite humic acids on the striking of vine grafts. Zemljiste biljka 11 no.1/3:325-328 '62.

1. Poljoprivredni fakultet, Zemun.

BOGDANOV, M.

~~How we increase the productivity of pumping equipment.~~ Zhil.-kom.  
khoz. 5 no.1:27-28 '55. (MIRA 8:5)

1. Brigadir slesarno-montashnoy brigady Kalininskogo tresta "Vodo-kanal".  
(Pumping machinery)

BOGDANOV, M.

The new face of the Pechora Basin. Sov.shakht. 11 no.11:24-25  
N '62. (MIRA 15:11)

1. Glavnyy inzh. Kombinata ugol'nykh trestov i predpriyatiy  
Vorkutskogo rayona.  
(Pechora Basin--Coal mines and mining)

BOGDANOV, M.; BEREL'SON, A.; VOLKOV, V.; VOZNESENSKIY, S.; ZELENUKHIN, S.;  
IOFE, N.; KORENEV, P.; KRIVINSKAYA, I.; KULAGIN, M.; MARSAVIN, M.;  
MINAKOVA, P.; POPOVA, M.; SUKHNEV, S.; SHTALTOVNIY, A.; FALEYEVA, L.  
FROKTISTOV, P.; CHULANOVA, M.; YATSYNIN, N.

Obituary. Ptitsevodstvo 9 no.2:48 F '59. (MIRA 12:3)  
(Shutov, Nikolai Ivanovich, d. 1958)

BULGARIA

BOGDANOV, Dr. M., OVL, Ruse

"Experience in Prophylactic Treatment of Hens Against Broodiness on a Large Scale"

Sofia, Veterinarna Sbirka, Vol 63, No 3, 1966, pp 26-28

Abstract: It was established in work conducted in the USSR, Hungary, and Germany that development of the mass instinct for brooding by hens results in considerable losses: every year, from March to July, 30-40% of the hens discontinue egg-laying for 20-40-60 days. A number of remedies for the condition in question has been developed, among them Ovogen-1, which has a therapeutic effect and has been proposed by M. Bogdanov and P. Gabrovski. These investigators also developed the prophylactic Ovogen-2, which contains the vitamins A, D<sub>3</sub>, E, and B<sub>12</sub>.

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BULGARIA

BOGDANOV, Dr. M.; District Veterinary Hospital, Ruse

"Application of the Blood of Pregnant Mares for Raising the Rate of Conception in Ewes"

Abstract: It was found in work conducted in the USSR and elsewhere that serum of the blood of pregnant mares can be used to advantage in sheep breeding because it raises the rate of fertilization of ewes. Prof. P. Shatalov developed in 1960 a method whereby a preparation that is richer in hormones than serum or citrated blood can be prepared from the blood of pregnant mares. This preparation, designated KZhK (blood of pregnant mares), has been produced in 1965 under the supervision of Prof. Shatalov at the laboratory of the District Veterinary Hospital at Ruse. Tests carried out on ewes indicated that the preparation was effective when applied in optimal doses. Table.

- END -

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CE-110

CS0: 2000-N (53 pages)

BOGDANOV, M.A.

8

PHASE I BOOK EXPLOITATION

SOV/5463

Sovetskaya antarkticheskaya ekspeditsiya

Vtoraya morskaya ekspeditsiya na d/e "Ob", 1956-1957 gg. ; obshcheye opisaniye i nauchnyye rezul'taty (Second Marine Expedition on the Diesel-Electric Ship "Ob", 1956-57; General Description and Scientific Results) Leningrad, Morskoy transport, 1959. 175 p. (Series: Its: [Materialy] no. 5) Errata slip inserted. 1,200 copies printed.

Sponsoring Agency: Arkticheskiy i antarkticheskiy nauchno-issledovatel'skiy institut.

Ed. (Title page): I. V. Maksimov, Doctor of Geographical Sciences, Professor;  
Ed. : L. G. Kaplinskaya; Tech. Ed. : O. I. Kotlyakova.

PURPOSE: This book is intended for oceanographers, meteorologists, and hydrochemists.

Card 1/6

Second Marine Expedition (Cont.)

SOV/5463

COVERAGE: The present volume, the fifth in a series of seven, is a collection of articles (except for two) devoted specifically to the oceanographic, meteorological, and hydrochemical findings of the Second Soviet Marine Expedition conducted on the diesel ship "Ob" (I. A. Man, Captain) during 1956-57. The first two articles outline the Expedition's organization and program, and provide a general account of its activities during the 223-day voyage, which covered more than 40,000 miles of the Atlantic, Antarctic, and Indian Oceans. The expedition was sponsored by the Arctic and Antarctic Scientific Research Institute of the Glavsevmorput<sup>1</sup> Ministerstva morskogo flota SSSR (Main Administration of the Northern Sea Route of the Ministry of the Merchant Marine of the USSR) as part of the International Geophysical Year program. Its purpose was to investigate 1) atmospheric processes in the Antarctic region and their effect on the earth's general circulation; 2) basic regularities in the distribution of waters in the southern oceanic zone, 3) exchange of the waters of the southern seas with the waters of the world ocean, 4) geological structure of the sea bottom in the Antarctic region, and 5) the plankton, benthos.

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Second Marine Expedition (Cont.)

SOV/5463

ichthyofauna, and microorganisms of the Antarctic waters. Observations of the magnetic field of the earth were also made. The expedition, headed by Professor Igor' Vladislavovich Maksimov, Doctor of Geographical Sciences and Professor at the Leningradskoye vyssheye inzhenernoye morskoye uchilishche imeni S. O. Makarova (Leningrad Higher Marine Engineering School imeni S. O. Makarov), consisted of the following 8 scientific task forces: aerometeorological (headed by Leonid Gennadiyevich Sobolev); hydrological (Kirill Vladimirovich Moroshkin); geological (Aleksandr Petrovich Lisitsyn); hydrochemical (Aleksey Nikolayevich Bogoyavlenskiy); hydrobiological (Viktor Aleksandrovich Arsen'yev); geophysical (Nikolay Panteleymonovich Grushinskiy); geographic (Gravila Dmitriyevich Rikhter); and hydrographic (Yuriy Aleksandrovich Gordeyev). A complete list of the names and affiliations of the 65 scientific and administrative members of the Expedition is contained in the first article. The articles were written by members of the Institut okeanologii Akademii nauk SSSR (Institute of Oceanology, Academy of Science - USSR), Gosudarstvennyy okeanograficheskiy institut Gidrometsluzhby SSSR (State Oceanographic Institute of the Hydro-

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Second Marine Expedition (Cont.)

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meteorological Service of the USSR), Vsesoyuznyy nauchno-issledovatel'skiy institut rybnogo khozyaystva i okeanografii (All-Union Scientific Research Institute of Fisheries and Oceanography), and the Arctic and Antarctic Scientific Research Institute. There are no references.

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Second Marine Expedition (Cont.)	SOV/5463	
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Second Marine Expedition (Cont.)

SOV/5463

Kutyurin, V. M. Determining the Content of Chlorophyll in Sea  
Water and the Spectral Analysis of Phytoplankton Pigments

173

AVAILABLE: Library of Congress (G860, S58)

Card 6/6.

JA/dwm/bc  
11-1-61

BOGDANOV, M.A., mladshiy nauchnyy sotrudnik

Measuring surface water temperatures with electric thermometers in the southern part of the Pacific Ocean. Inform. biul. Sov. antark. eksp. no.20:33-37 '60. (MIRA 13:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut morskogo rybnogo khozyaystva i okeanografii.  
(Pacific Ocean--Ocean temperature)



S/194/61/000/008/019/092  
D201/D304

AUTHOR: Bogdanov, M.A. and Ivanov, Yu.A.

TITLE: Sea currents and flow measurements by the ЭММТ  
(EMIT) instrument

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika,  
no. 8, 1961, 17, abstract 8 V143 (Tr. In-ta okeanol.  
AN SSSR, 1960, 39, 80-84)

TEXT: Comparison of results of flow measurements by the  
EMIT (electromagnetic flow meter) with those carried out by direct  
methods has shown that large discrepancies exist in certain cases,  
the EMIT output signal varying during the observation period by as  
much as 1.5-5 times. The cause of the error is the existence in  
certain sea regions of telluric currents. In regions where these  
currents are absent the EMIT measurement results agree with those  
of instrumental methods. The need is stressed for studies of tellu-  
ric ocean currents with the aim of understanding their character and

Card 1/2

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Sea currents and flow measurements...

S/194/61/000/008/019/092  
D201/D304

determining the regions where the EMIT measurement method can be applied. 7 references. [Abstracter's note: Complete translation]

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Card 2/2

TIMOFEYEV, I.A.; POTAYCHUK, S.I.; BOGDANOV, M.A.

Apropos of V.V.Rossov's article "Tidal variability of hydrological  
conditions." Okeanologiya 2 no.4:731-734 '62. (MIRA 15:7)  
(Oceanography) (Rossov, V.V.)

BOGDANOV, M.A.; YERMACHENKO, I.A.; POTAYCHUK, S.I.; EDEL'MAN, M.S.

Hydrology in the Faeroe-Iceland area. TRUDY VNIRO 46:61-64 '62.  
(MIRA 15:10)

(Faeroe Islands region—Oceanography)  
(Iceland region—Oceanography) .

BOGDANOV, M.A.

The Hawaiian Islands. Mor. sbor. 47 no.4:60-65 Ap '64.

(MIRA 18:7)

BOGDANOV, M.A.

Dynamics of the waters of the Faeroe-Iceland sill. Trudy  
VNIRO 57:33-41 '65.

Changes in the circulation in the atmosphere and hydrosphere.  
Ibid.:43-52 (MIRA 18:6)

BOGDANOV, M.A.

Semiconductor rectifiers reduce the consumption of electric  
power in nonferrous metallurgy. TSvet. met. 28 no. 12:4-6 D '65  
(MIRA 19:1)

BOGDANOV, Mikhail Borisovich

BOGDANOV, Mikhail Borisovich; ARKHANGEL'SKIY, S.S., redaktor; TRUTNEV, M.M.;  
BEKRASOVA, O.I., tekhnicheskiy redaktor

[Workers' protection and safety engineering in the cotton weaving industry] Okhrana truda i tekhnika bezopasnosti v khlopkotkatskom proizvodstve. Moskva, Gos.nauchno-tekhn. izd-vo Ministerstva promysh.tovarov shirokogo potrebleniia SSSR, 1955. 137 p. (MLRA 9:1)  
(Cotton manufacture--Safety measures)



BOGDANOV, M. I.

"The Problem of the Role of the Nervous System in Immunogenesis During  
Brucellosis." Cand Vet Sci, Inst of Experimental Veterinary Sci, Moscow, 1953.  
(RZhBiol, No 7, Dec 54)

Survey of Scientific and Technical Dissertations Defended at USSR  
Higher Educational Institutions (12)

SO: Sum. No. 556, 24 Jun 55



USSR / Microbiology. Microbes Pathogenic for Man and Animals. Bacteria. Brucelli. F-4

Abs Jour: Ref Zhur-Biol., 1958, No 17, 76773.

Abstract: infectious diseases, the immediate introduction of antigen in the region of CNS causes a more rapid immunological reorganization of the organism than during other methods of introduction. -- M. Ya. Boyarskaya.

Card 3/3

33

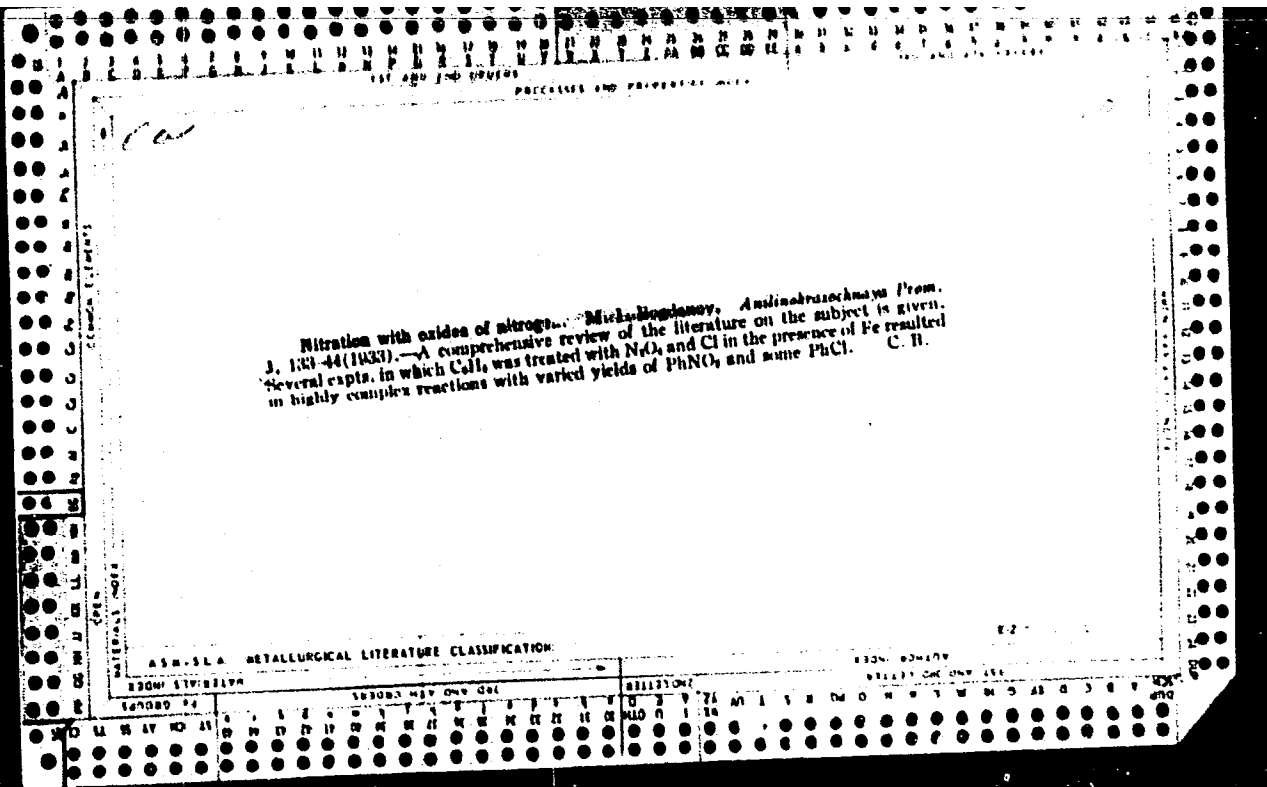
BOGDANDY, M.I., kandidat tekhnicheskikh nauk.

Modern standard bracing design for pipeline trenches. Sbor. trud.  
VNIIGS no.6:107-122 '55. (MLRA 9:7)  
(Ditches) (Pipelines)

BOGDANOV, MITROFAN IVANOVICH

N/5  
735.91  
.B6

Remont Elektrokabelya Na Lesosekakh (Repair of Cables Through Wooded  
Section Clearings) Moskva, Goslesbunizdat, 1955.  
25 p. Illus., Diagr. (V Pomoshch' Mekhanizatoram Lesozagoto Vok)





B-II-1

BC

**Sulphonation of benzene vapour.** R. K. KICHMAN and M. I. BOGOMOLOV (Anilinokras. Prom., 1934, 4, 666-676). PhOH (I) is obtained in 92-96% yield by passing C<sub>6</sub>H<sub>6</sub> vapour at 150-160° into 78-100% H<sub>2</sub>SO<sub>4</sub> for 6-10 hr, 70% of the (I) being formed after 3 hr. The adsorbed C<sub>6</sub>H<sub>6</sub> (4%) is removed by steam-distillation at 150°, when the product (II) contains (I) 92-94, H<sub>2</sub>SO<sub>4</sub> 2-3, and H<sub>2</sub>O 5%. (II) is made neutral with 50% Na<sub>2</sub>SO<sub>3</sub>, obtained as a by-product of PhOH production, and SO<sub>2</sub> evolved incidentally is used for converting NaOPh into PhOH; the aq. Na<sub>2</sub>SO<sub>3</sub>-PhOH remaining after separation of PhOH is also used for neutralising (II). The material economies effected by this as compared with the ordinary process are: C<sub>6</sub>H<sub>6</sub>, 944, H<sub>2</sub>SO<sub>4</sub>, 2064, Na<sub>2</sub>CO<sub>3</sub>, 1192, and NaOH 46 kg. per ton of PhOH produced. R. T.

ASR-31A METALLOGICAL LITERATURE CLASSIFICATION

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24



59  
Regeneration of cupraammonium solution M. A. Rogo  
Janos, V. G. Baranova, V. V. Otkina, and V. M. Shcherbina  
U.S.S.R. 106,779, Aug. 23, 1957.  
cupraammonium soln. used for sepn. of divalent salts  
salts, the soln. is passed through active carbon, treated  
with water, and then with NH<sub>4</sub>OH or HCl.

BONDARENKO, A.V.; BOGDANOV, M.I.; FARBEROV, M.I.

Industrial synthesis of vinyltoluene. Uch.zap.IArosl.tekhnol.inst.  
2:33-46 '57. (MIRA 12:7)  
(Chemistry, Technical) (Styrene)



Bogdanov. M.I.

BONDARENKO, A.V.; BOGDANOV, M.I.; FARBEROV, M.I.

Investigating the dehydration process of ethyltoluene and vinyltoluene.  
Zhur.prikl.khim. 30 no.6:927-932 Je '57. (MIRA 10:10)

1. Yaroslavskiy Tekhnologicheskii institut.  
(Dehydration (Chemistry)) (Toluene)

BOGDANOV, M.I.; KOLOBIKHIN, V.A.; ISAKOVA, N.A.; GARMONOV, I.V., red.;  
ZONIS, S.A., red.; KLIMINA, Ye.V., red.; ERLIKH, Ye.Ye.,  
tekh.red.

[Analysis of the products obtained in the industrial preparation  
of bdivinyl from butane] Analiz produktov proizvodstva divinila  
iz butana. Pod red. I.V.Garmonova. Leningrad, Gos.nauchno-  
tekh.izd-vo khim.lit-ry, 1959. 115 p. (MIRA 13:2)  
(Butadiene) (Butane)

87675

15.9200

2209,1526

3/081/60/000/021/015/018  
A005/A001

Translation from: Referativnyy zhurnal, Khimiya, 1960, No. 21, p. 331, # 85707

AUTHORS: Bogdanov, M. I., Bol'shakov, D. A.

TITLE: Thermodynamical Calculation of the Main Reactions in the Process of Producing Isoprene From Isopentane

PERIODICAL: Uch. zap. Yaroslavsk. tekhnol. in-ta, 1959, Vol. 3, pp. 47-62

TEXT: The equilibrium output of isoprene was thermodynamically calculated for for the dehydrogenation of isopentane, isoamylenes, and isopentane-amylenes mixtures in a wide temperature range at 1 at without dilution and in the presence of an inert diluent (water); on this basis it is concluded that the one-stage dehydrogenation of the isopentane-amylenes mixtures diluted by an inert diluent is most efficient. In case of the dehydrogenation of isopentane, the maximum conversion in isoprene amounts to 34.5% at 600°C and the molar ratio of isopentane : water = 1 : 5. In case of isopentane-amylenes mixtures, containing 30 molar % of isoamylenes, the maximum conversion of isoamylenes in isoprene at 625°C and the molar dilution by the inert diluent in a ratio of 1:5 increases up to 38.1% instead of 16.4% without dilution. X

I. Konenko  
Translator's note: This is the full translation of the original Russian abstract.  
Card 1/1

5(3)

SOV/80-32-3-24/43

AUTHORS: Bogdanov, M.I., Krushinskaya, Ye.P.

TITLE: The Study of the Process of Separating Butylene-Divinyl Mixtures by the Method of Chemical Sorption (Izucheniye protsessy razdeleniya butilendivinilovykh smesey metodom khemosorbtsii)

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol XXXII, Nr 3, pp 603-608 (USSR)

ABSTRACT: The effect of the chemical composition of the solution, the temperature and the divinyl concentration on the sorption capacity of the water-ammonia solutions of copper acetate is investigated here. These solutions were prepared from electrolytical copper in the form of wires of 0.3-0.4 mm in diameter, technical acetic acid of 98.7%, ammonia water with a content of 25% NH<sub>3</sub> and liquid ammonia. The sorption was tested on mixtures containing 91% divinyl and at a temperature of 0°C. The sorption capacity is determined by the content of monovalent copper in the solution. If this content is 3.3 g-atom/l, the solubility of divinyl is 4.4 weight percent. At a lower content the solubility decreases. A higher content has only a slight effect on solubility. The solubility of divinyl increases with

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SOV/80-32-3-24/23

The Study of the Process of Separating Butylene-DivinyI Mixtures by the Method of Chemical Sorption

its concentration (Figure 2). The effect of the temperature was investigated within the range of from -9 to +20°C. The solubility increases noticeably with the decrease of temperature.

There are 2 diagrams, 3 tables, 1 graph, and 12 references, 2 of which are Soviet, 5 English, 3 American, 1 German and 1 French.

SUBMITTED: October 19, 1957.

Card 2/2



S/064/60/000/01/05/024  
B022/B008

5.3300

AUTHOR: Bogdanov, M. I.

TITLE: Calculation of the Equilibrium of the Dehydrogenation Reaction of Isopentane, Isoamylenes, and Their Mixtures to Isoprene

PERIODICAL: Khimicheskaya promyshlennost', 1960, No. 1, pp. 25 - 31

TEXT: The investigation of the thermodynamics of the dehydrogenation processes mentioned in the title was the aim of the paper under review. The dehydrogenation of isopentane to isoamylenes, which in their turn are dehydrogenated to isoprene, takes place in this process. The single- and two-stage process of isoprene production is described and the importance of thermodynamic calculations for the determination of the maximum isoprene yield under given conditions is pointed out. Equations for the calculation of the reaction equilibrium at the dehydrogenation of isopentane to isoamylenes and of isoamylenes to isoprene are mentioned, and the dependence of the values of the equilibrium constants at the dehydrogenation of isopentane to isoamylenes and of isoamylenes to isoprene in

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Calculation of the Equilibrium of the Dehydro- S/064/60/000/01/05/024  
genation Reaction of Isopentane, Isoamylenes, B022/B008  
and Their Mixtures to Isoprene

the temperature range of 427-727° is given (Table 1). The composition of the equilibrium mixtures at the dehydrogenation of isopentane to isoamylenes and isoprene at 427-727°, atmospheric pressure, without dilution, and in the presence of an inert diluent, as well as the equilibrium composition of the gas mixtures after separation of the inert diluent, were calculated on the basis of the equilibrium constants calculated (Tables 2,3). The same values were also given for the dehydrogenation of isoamylenes to isoprene (Tables 4,5) and of isopentane-isoamylenes mixtures to isoprene (Tables 6,7). N. I. Shuykin and his collaborators M. I. Bogdanov and D. A. Bol'shakov are mentioned. There are 7 tables and 10 references, 6 of which are Soviet. X

Card 2/2

S/064/60/000/007/003/010  
B020/B054

AUTHORS: Bogdanov, M. I. and Krushinskaya, Ye. P.

TITLE: Isolation of Isoprene From Hydrocarbon Mixtures by  
Chemisorption With Copper Salt Solutions

PERIODICAL: Khimicheskaya promyshlennost', 1960, No. 7, pp. 10 - 15

TEXT: The most complicated and hitherto insufficiently studied stage of synthesis of isoprene from isopentane is the separation of hydrocarbon mixtures with isolation of highly concentrated isoprene. Extraction, azeotropic and extractive distillation, and chemisorption can be used for this purpose. Selective solvents used for separation by extraction are acetaldehyde, propionaldehyde, propylene oxide, methyl formiate, methyl alcohol, citric acid triethyl ester, dimethyl phthalate, furfurole, lactonitrile, ethylene glycol and its monomethyl ester, ethylene glycol mono- and diacetate, ethylene chlorohydrin, aniline, toluidine, phenyl hydrazine, esters of low polyglycols of chlorocarbonic acid, etc. To increase selectivity, it is convenient to add water to the solvents, or to extract hydrocarbon mixtures by a mixture of two immiscible solvents.

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Isolation of Isoprene From Hydrocarbon  
Mixtures by Chemisorption With Copper Salt  
Solutions

S/064/60/000/007/003/010  
B020/B054

The industry used extractive distillation with aqueous acetone combined with a simple rectification. The volatilities of the most important hydrocarbons C<sub>5</sub> (referred to isoprene) mixed with aqueous acetone

(80% by volume of the mixture) are compiled. A comparison of these data in Table 1 shows that the volatility of paraffinic and monocyclic hydrocarbons increases considerably in the presence of aqueous acetone, whereas the volatility of piperylene does not change. Besides acetone, it is possible to use various polar organic compounds containing oxygen, nitrogen, and sulfur (furfurol, pyridine, amines and their mixtures with water, low aliphatic nitriles and their mixtures, dimethyl formamide, dimethyl Sulfolane, etc.). The authors deal with the separating components for the azeotropic distillation, the extractive and simple rectification, the reaction mechanisms, and analyze the reaction products. The most efficient method of separating hydrocarbons C<sub>5</sub> with isolation of highly concentrated isoprene is the chemisorption by aqueous-ammoniacal solutions of salts of monovalent copper. The production of absorption solutions is described. Table 2 indicates the solubility

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Isolation of Isoprene From Hydrocarbon  
Mixtures by Chemisorption With Copper Salt  
Solutions

S/064/60/000/007/003/010  
B020/B054

of isoprene and isoamylene in aqueous-ammoniacal solutions of  $\text{Cu}^+$  salts of organic acids at  $0^\circ\text{C}$ . The solubility of isoprene and of isoamylene isomers in aqueous-ammoniacal solution of copper salicylate depends on the ammonia concentration (Table 3). The authors studied the effect of the concentration of isoprene on its solubility in a mixture with amylene isomers obtained by dehydrogenation of isopentane (by 2-methyl-butene-2, and 2-methyl-butene-1) at  $0-50^\circ\text{C}$  for mixtures of different compositions (Tables 4 and 5, and Fig.). The solubility of isoprene does not only depend on the composition of the mixtures but also on the molecular structure of the isoamylene isomer. A practically quantitative desorption of isoprene is attained at  $80^\circ\text{C}$ . Table 6 shows the stability of the absorption solution on heating in ampuls to  $100^\circ\text{C}$ . There are 1 figure, 6 tables, and 54 references: 16 Soviet, 28 US, 8 British, 1 French, and 1 Canadian. ✓

Card 3/4

Isolation of Isoprene From Hydrocarbon  
Mixtures by Chemisorption With Copper Salt  
Solutions

S/064/60/000/007/003/010  
B020/B054

ASSOCIATION: Yaroslavskiy tekhnologicheskii institut (Yaroslavl'  
Institute of Technology). Nauchno-issledovatel'skiy  
institut monomerov dlya SK (Scientific Research  
Institute for Monomers of Synthetic Rubber)

✓

Card 4/4

BOGDANOV, M.I., inzh.; BELOVOLOV, V.T., kand.tekhn.nauk; GELESKUL, M.N.;  
BUKHMEN, A.S.

Manufacture and use of framed, reinforced concrete timbering under  
Arctic conditions. Shakht.stroi, 5 no.4:8-10 Ap '61. (MIRA 14,5)

1. Kombinat Vorkutugol' (for Bogdanov). 2. Pecherskiy nauchno-  
issledovatel'skiy ugol'nyy institut (for Belovolov). 3. Institut  
gornogo dela AN SSSR (for Bukhman).  
(Pechora Basin--Mine timbering)

L 13511-63

EPP(c)/EWP(j)/EWT(m)/BDS Pr-4/Pc-4 RM/WW

ACCESSION NR: AP3002772

S/0204/63/003/003/0314/0319

AUTHOR: Bogdanov, M. I.

TITLE: Calculation of the equilibrium reaction of dehydration of n-butane, n-butenes, and their mixtures in butadiene-1,3

SOURCE: Nektekimiya, v. 3, no. 3, 1963, 314-319

TOPIC TAGS: n-butane, n-butenes, butadiene-1-3, inert diluent, isotherm equation, dehydration equilibrium reaction

ABSTRACT: The calculation of equilibrium process of dehydration of n-butenes into n-butenes and butadiene-1,3 and butane-butene mixtures into butadiene-1,3 was accomplished in an inert diluent. The obtained results can be used to select the optimum conditions for the process of dehydration of hydrocarbons in a vacuum. The composition of equilibrium mixtures for the dehydration reaction of n-butane into butadiene-1,3 in the presence of an inert diluent was also calculated. The equilibrium constant of the dehydration reaction was accomplished by a change in free energy at a constant pressure using the isotherm equation. The temperature interval at which the above calculations were made was between 427 and 727C. The equilibrium constant of gaseous

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L 13511-63

ACCESSION NR: AP3002772

mixtures was calculated after the separation of the inert diluent from the mixture. The dilution of n-butane with an inert diluent at atmospheric pressure or a corresponding lowering of pressure in the system increases the degree of conversion of n-butane into n-butenes and butadiene-1,3 by a considerable margin. A change in temperature between 500 and 600C greatly affects the character of conversion of n-butane. The formation of butenes is preferential below 600C and formation of butadiene from butane is preferential above 600C. Orig. ar. has: 3 tables.

ASSOCIATION: Yaroslavskiy tekhnologicheskij institut (Yaroslav Technological Institute)

SUBMITTED: 12Nov62

DATE ACQ: 23Jul63

ENCL: 00

SUB CODE: 00

NO REF SOV: 005

OTHER: 004

Card 2/2

BOGDANOV, M.I.

Calculating equilibria of the dehydrogenation reactions  
of butane-butene mixtures and of n-butenes to 1,3-butadiene.  
Part 2. Neftekhimiia 3 no.4:488-493 J1-Ag '63.

(MIRA 16:11)

1. Yaroslavskiy tekhnologicheskii institut.

BOGDANOV, M.I., kand. tekhn. nauk; ANISHCHENKO, A.N., inzh.; ALEKSEYEVA, T.M.  
inzh.

Comparative characteristics of surface and underground laying  
of process piping. Prom. stroi. 41 no.6:15-17 Je '64.

(MIRA 17:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrotekhnicheskikh  
i sanitarno-tekhnicheskikh rabot (for Alekseyeva).

DULIN, I.L.; BOGDANOV, M.I.; KICHAYEVA, G.K.; POPOV, V., red.

[Long term planning of timber for coal mines] Perspektiv-  
noe planirovanie lesomaterialov na ugol'nykh shakhtakh.  
Syktyvkar, Komi knizhnoe izd-vo, 1964. 47 p.  
(MIRA 18:6)

BOGDANOV, M. N.

"On the amount of vitamin "C" in milk," Trudy Buryat-Mongol zoovet, in-ta, Issue 4, 1948,  
p. 100-03-Bibliog: 7 items

SO: U-3850, 16 June 53, (Letopis 'Zhurnal 'nykh Statey, No. 5, 1949).

BOGDANOV, M.N.; TETYUREVA, I.V., redaktor; PEVZNER, V.I., tekhnicheskii  
redaktor

[Poultry raising] Ptitsevodstvo. Moskva, Gos. izd-vo selkhoz. lit-ry,  
1956. 638 p. (MLRA 9:11)  
(Poultry)

SMETNEV, S.I., prof., doktor sel'skokhoz.nauk; BOGDANOV, M.N., zootehnik;  
GOFMAN, M.B., zootehnik; GRIGOR'YEV, G.K., zootehnik; ZHIDKIKH,  
Z.A., kand.sel'skokhoz.nauk; PENIONZHKEVICH, E.E., doktor biolog.  
nauk, prof.; PREVO, A.A., kand.biolog.nauk; TRET'YAKOV, N.P., doktor  
'sel'skokhoz.nauk, prof.; USPENSKIY, A.A., kand.sel'skokhoz.nauk;  
USHAKOV, A.A., kand.veterin.nauk; SHAPOVALOV, Ya.Ya., kand.sel'sko-  
khoz.nauk; YAGODIN, P.Ye., zootehnik; YATSYNIN, N.N., zootehnik; FEDO-  
ROVSKIY, N.P., kand.biol.nauk; SYCHIK, Ye.V., red.; PAVLOVA, M.M., tekhred.

[Poultry raising; a manual for farm managers] Ptitsevodstvo;  
rukovodstvo dlia zaveduiushchego fermoi. Izd.5, perer.i dop.  
Moskva, Gos.izd-vo sel'khoz.lit-ry, 1957. 495 p. (Bibliotechka  
po ptitsevodstvu, no.1) (MIRA 12:4)

1. Deystvitel'nyy chlen Vsesoyuznoy akademii sel'skokhozyaystvannykh  
nauk im. V.I.Lenina (for Smetnev).  
(Poultry)

~~BOGDANOV, Mikhail Nikolayevich; BANNIKOV, N.A., red.; GOR'KOVA, Z.D.,  
tekh.red.~~

[Making use of poultry for meat production] Ispol'zuite ptitsu  
dlia proizvodstva miassa. Moskva, Gos. izd-vo sel'khoz. lit-ry,  
1958. 68 p. (MIRA 11:5)  
(Poultry)



BOGDANOV, M.N.

Valuable initiative. Ptitsevodstvo 8 no.9:13-15 S '58.

(MIRA 11:10)

(Poultry breeding—Study and teaching)

BOGDANOV, M. N.

Importance of the production of meat-type chickens and principles  
underlying its organization. Ptitsevodstvo 9 no.6:6-9 Je '59.  
(MIRA 12:10)

1. Glavnyy zootekhnik po ptitsevodstvu Ministerstva sel'skogo  
khozyaystva SSSR.

(Poultry)

BOGDANOV, M.N.

Raising broilers for market as a specialized activity.  
Zhivotnovodstvo 21 no.3:7-13 Mr '59. (MIRA 12:4)

1. Glavnyy zootekhnik po ptitsevodstvu Ministerstva sel'skogo kho-  
zyaystva SSSR.

(Poultry)

ARSENHVI, A.Yu.; BOGDANOV, M.N.; GORIZONTOVA, Ye.A.; YERSHOVA, Ye.I.;  
YELENBAUM, N.I.; IOFE, N.Sh.; KARAVAYEV, A.M.; KOLOBOV, G.M.;  
LOBIN, N.V., kand. sel'khoz. nauk; KUSHNER, Kh.F., doktor biolog.  
nauk; MISHIN, P.N.; PATRIK, I.A., kand. sel'khoz. nauk; REDIKH,  
V.K., kand. sel'khoz. nauk; SEMTNEV, S.I., akademik; SAMOLETOV,  
A.I.; FILASOV, V.V.; SHKUDOVA, R.I.; SOKOLOVA, G.S., red.;  
ROMANOVICH, Ye.F., red.; LEVINA, L.G., tekhn. red.

[Chickens for meat] TSypliata na miaso. Moskva, Izd-vo M-va  
sel'.khoz. RSFSR, 1960. 197 p. (MIRA 15:1)  
(Poultry)

BOGDANOV, Mikhail Nikolaysvich; IOFE, Nokhm Shleymovich; DOBYCHINA, I.N.,  
red.; TRUKHINA, O.N., tekhn. red.

[Raising chicken for meat] Vyrashchivanie miasnykh tsypliat. Mo-  
skva, Gos.izd-vo sel'khoz.lit-ry, 1961. 87 p.      (MIRA 15:1)  
(Poultry)

L 33525-66 INT(m)/T/EWP(j) RM

ACC NR: AP6015055

(A)

SOURCE CODE: UR/0190/66/008/005/0903/0909

AUTHOR: Bogdanov, M. N.; Leshchiner, A. U.; Plyashkevich, L. A.

37  
B

ORG: Scientific Research Institute of Synthetic Fiber (Nauchno-issledovatel'skiy institut Iskustvennogo volokna)

TITLE: Introduction of terminal aromatic amino groups into polycaproamide. (First report in a series on "Synthesis and chemical modification of polyamides with reactive groups")

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 5, 1966, 903-909

TOPIC TAGS: polymer, amino acid, polyamide, polymerization, molecular weight, ~~polycaproamide~~, amino group

ABSTRACT: The hydrolytic polymerization process of ~~epsilon~~ caprolactam in the presence of aromatic diamines and other aminocarboxylic acids has been investigated. It was shown that these compounds are regulators of the molecular weight of the poly-epsilon-caproamide and that through them it is possible to introduce into the polymer a certain number of aromatic amino groups to preserve the fiber productive capacity. A method of quantitative determination of small concentrations of aromatic amino groups in the polycaproamide was developed. Orig. art. has: 4 figures, 3 formulas, and 1 table.

[NT]

SUB CODE: 11, 07/ SUBM DATE: 22May65/ ORIG REF: 009/ OTH REF: 006  
Card 1/1 9.2, UDC: 541.64+62+375

L 14535-66 ENT(m)/SNP(1)/T RM

ACC NR: AP6006358 (A) SOURCE CODE: UR/0413/66/000/002/0094/0094

INVENTOR: Khar'kov, S. N.; Bogdanov, M. N.; Spirins, I. A.; Leshiner, A. U.-A.; Plyashkevich, L. A.

ORG: none

TITLE: Preparative method for polyamides. <sup>15, 44, 56</sup> Class 39, No. 178102  
[announced by All-Union Scientific Research Institute of Artificial Fibers (Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1966, 94

TOPIC TAGS: polyamide, carboxyl group, interfacial polycondensation

ABSTRACT: An Author Certificate has been issued for a preparative method for carboxyl group-containing polyamides. The method involves interfacial polycondensation of diamines containing no acyclic chains with benzenetricarboxylic acid dichlorides. [80]

SUB CODE: 11/ SUBM DATE: 28Mar63/ ATD PRESS: 4198

07/

Card 1/1

UDC: 678.675.002.2

BOGDANOV, M. N.

Shilov, E. A. and Bogdanov, M. N., About the mechanism of carboxylation and analogous reactions. p. 1060

The presence is established of a cross reaction between the sodium anilide of *n*-chloro-phenyl-carbonic acid and  $\alpha$ -naphtholate which proves the intermolecular course of the reaction of formation of anilide of oxyacid.

The Ivanov Chemical Technological Inst. Lab. of Organic Chemistry.  
May 10, 1947

SO: Journal of General Chemistry (USSR) 18 (80) No. 6 (1948)



BOGDANOV, M. N.

TA 9/49T12

USSR/Chemistry - Carboxylation (Cont'd) Jun 48

In aromatic reactions are unusual. Triphenyliso-  
cyanurate and acylcarboxylic acids yield correspond-  
ing oxy-acid anilides on heating with phenolates  
and naphtholates. Established nature of cross re-  
action between nitrilide of n-chlorophenylcarboxylic  
acid and  $\alpha$ -naphtholate, thus proving intramolecular  
course of oxy-acid anilide formation. Submitted  
10 May 1947.

9/49T12

USSR/Chemistry - Carboxylation Jun 48  
Chemistry - Phenolates

"Problem of the Mechanism of Carboxylation and  
Analogous Reactions," Ye. A. Shilov, M. N. Bog-  
danov, Izvesto Chem-Tech Inst, Lab of Org Chem,  
4 1/2 pp

"Zhur Obshch Khim" Vol XVIII (1944), No 6

Examines Bershzon's work on mechanism of carboxy-  
lation of phenolates and analogous reactions.  
Shows that proofs of intramolecular course of these  
reactions do not withstand criticism. Demonstrates  
that Bershzon's views on intermediate compounds

9/49T12

BOGDANOV, M. N.

Dissertation: "Research Into the Theory of the Rearrangement of Salts of Amino and Hydroxy Aromatic Sulfonic Acids." Cand Chem Sci, Inst of Organic Chemistry, Acad Sci Ukrainian SSR, Kiev 1953.

W-30928

SO: Referativnyy Zhurnal, No. 5, Dec 1953, Moscow, AN USSR ~~(1953)~~

USSR.

✓ New compounds from acrylonitrile. A. A. Stepanov and M. N. Bordenov. *Sbornik Statei Otskhet Khim.* 2, 1462 (1952). Heating 28 ml.  $CH_2=CHCN$  with 25 ml.  $PhNH_2$  and 28 ml.  $AcOH$  7 hrs. in a sealed tube at 130-15°. Filtering, evap., in *vacuo* and distn. gave 0.1 g.  $PAN(CH_2CH_2CN)_2$ ,  $b_p$  170-85°, while the residue, after soln. in MeOH and filtration, gave 9%  $PAN(CH_2CH_2CN)_2$ , m. 82-3°. The latter (14.8 g.) and 60 g.  $Ba(OH)_2 \cdot 8H_2O$  and 44 ml.  $H_2O$  refluxed 3.5 hrs., dild. with 900 ml.  $H_2O$ , satd. with  $CO_2$ , filtered and evapd., gave on addn. of MeOH 20 g.  $PhN(CH_2CH_2CO_2)_2Ba$ ; this (13.0 g.) heated with 350 ml. 0.1N  $H_2SO_4$  1 hr., allowed to stand 4 hrs., filtered, evapd. to a sirup, taken up in 10 ml. MeOH and mixed with 5.5 g.  $(CH_3)_3NH_2$  in  $Et_2O$  gave on chilling 10.2 g.  $PAN(CH_2CH_2CO_2)_2(CH_3)_3NH_2$ , m. 172-3°. Passage of  $MeNH_2$  (2.29 moles) into 150 ml.  $CH_2=CHCN$ , followed by heating the product in sealed tube 10 hrs. at 80-90° gave 51%  $MeN(CH_2CH_2CN)_2$ ,  $b_p$  193-7°,  $n_D^{20}$  1.4023; this (10 g.) in 400 ml. BuOH treated with 41 g. Na gave after completion of reaction and acidification with HCl, evapn., treatment with 40% NaOH, and extra. with  $H_2O$ , 22%  $MeN(CH_2CH_2CH_2NH_2)_2$ ,  $b_p$  119-12°,  $n_D^{20}$  1.4809, a liquid which fumes in air and attacks glass; triprate, m. 209-10° (decompn.). G. M. Kosolapoff.

Lab. 7 Organic Synthesis,  
All-Union Sci. Res. Inst. 7  
Synthetic Fiber

Linear polymers containing sulfamido groups in the ipathylene chains. A. A. Strensherev and M. N. Bergdanov. *Soviet State Chemicals Rev.* 2, 1464-6 (1957). Heating 8 g.  $\text{p-H}_2\text{NC}_6\text{H}_4\text{SO}_2\text{F}$  with 10 g.  $\text{2-C}_6\text{H}_4\text{ONa}$  finally 1 hr. at  $135^\circ$  gave 19.0% *2-naphthyl sulfanilate*, m.  $179^\circ$ , which heated to  $200-10^\circ$  merely darkens and does not change its m.p. Similarly was prepd. 29.8% *p-nitrophenyl sulfanilate*, m.  $108-9^\circ$ , which darkens at  $200-10^\circ$ . Ph sulfanilate also failed to form a polymer on heating. Heating  $\text{CH}_2(\text{CH}_2\text{SO}_2\text{Cl})_2$  with 3 molar proportion of PhONa at  $160^\circ$  (exothermic beginning) 1.5 hrs. gave 39%  $\text{CH}_2(\text{CH}_2\text{SO}_2\text{Ph})_2$ , m.  $92^\circ$  (from MeOH). This heated with an equiv. amt. of  $(\text{CH}_2)_6(\text{NH}_2)_2$  in 1:1 to  $178-83^\circ$  gave a distillate of PhOH and in 2.5 hrs. yielded a yellowish crumbly solid, m.  $126-210^\circ$ ; after 4 hrs. heating, the polymer was a hard and yellow solid which could be drawn into fragile threads; continued heating 4 hrs. at  $240-50^\circ$  yielded more PhOH and a brown solid that was rubbery when hot (heated with 10% NaOH it formed a gel). Heating the hexamethylenediamine salt of 1,3-propanedisulfamido-*N,N'*-hisapric acid,  $[\text{HO}_2\text{C}(\text{CH}_2)_2\text{HNSO}_2(\text{CH}_2)_2\text{SO}_2\text{NH}(\text{CH}_2)_6\text{CO}_2\text{H}(\text{CH}_2)_6(\text{NH}_2)_2]$  (cf. U.S. 2,232,918; C.A. 35, 1904) 1.5 hrs. in N in ampul  $210-20^\circ$  then 2 hrs. *in vacuo* gave a yellow-green polymer, m.  $183-5^\circ$ , which was sol. in  $\text{HCO}_2\text{H}$ , PhOH, and not in the usual solvents. In atm. with 62% relative humidity the polymer picked up 2.54% moisture. Its composition was  $(\text{C}_{26}\text{H}_{46}\text{N}_4\text{S}_2\text{O}_8)$ . G. M. Koslanoff

### CZECH

Sulfamide compounds from di(2-cyanoethyl)amine. A. Streplický and M. N. Bigratová. *Chem. Abstr. 2, 107-108 (1953) (Czech. J. Chem. 2, 107-108 (1953))*. 10 g. PNCN<sub>2</sub> (C<sub>4</sub>H<sub>8</sub>N<sub>4</sub>) in 50 ml. concd. HCl gave 18% of PNCN<sub>2</sub> (C<sub>4</sub>H<sub>8</sub>N<sub>4</sub>) (I), m. 153-54° (from MeOH). (C<sub>4</sub>H<sub>8</sub>N<sub>4</sub>) (I) with slight excess of HCH<sub>3</sub>NH<sub>2</sub> in MeOH gave the hexamethylenediamine salt (C<sub>6</sub>H<sub>16</sub>N<sub>4</sub>)<sub>2</sub>SO<sub>2</sub> (II) (from MeOH-Et<sub>2</sub>O). Refluxing 11.6 g. MeSO<sub>2</sub>Cl with 32 g. NH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>CN in dry C<sub>6</sub>H<sub>6</sub> 1.2 hrs. followed by evap. and heating the residue with 170 ml. H<sub>2</sub>O 1.5 hrs. and cooling, gave 7.7% of the residue from the point of soln. (MeSO<sub>2</sub>NHCH<sub>2</sub>CH<sub>2</sub>CN) (III), m. 102° (from MeOH). II evapd. with concd. HCl, the residue extd. with MeOH and the ext. mixed with H<sub>2</sub>O gave 32% MeSO<sub>2</sub>NHCH<sub>2</sub>CH<sub>2</sub>CN (III), m. 124°, which forms a hexamethylenediamine salt (C<sub>6</sub>H<sub>16</sub>N<sub>4</sub>)<sub>2</sub>SO<sub>2</sub>, m. 177-8° (from CHCl<sub>3</sub>-Et<sub>2</sub>O).  
 J. M. Kouda (p. 108)

BOGDANOV, M. N.

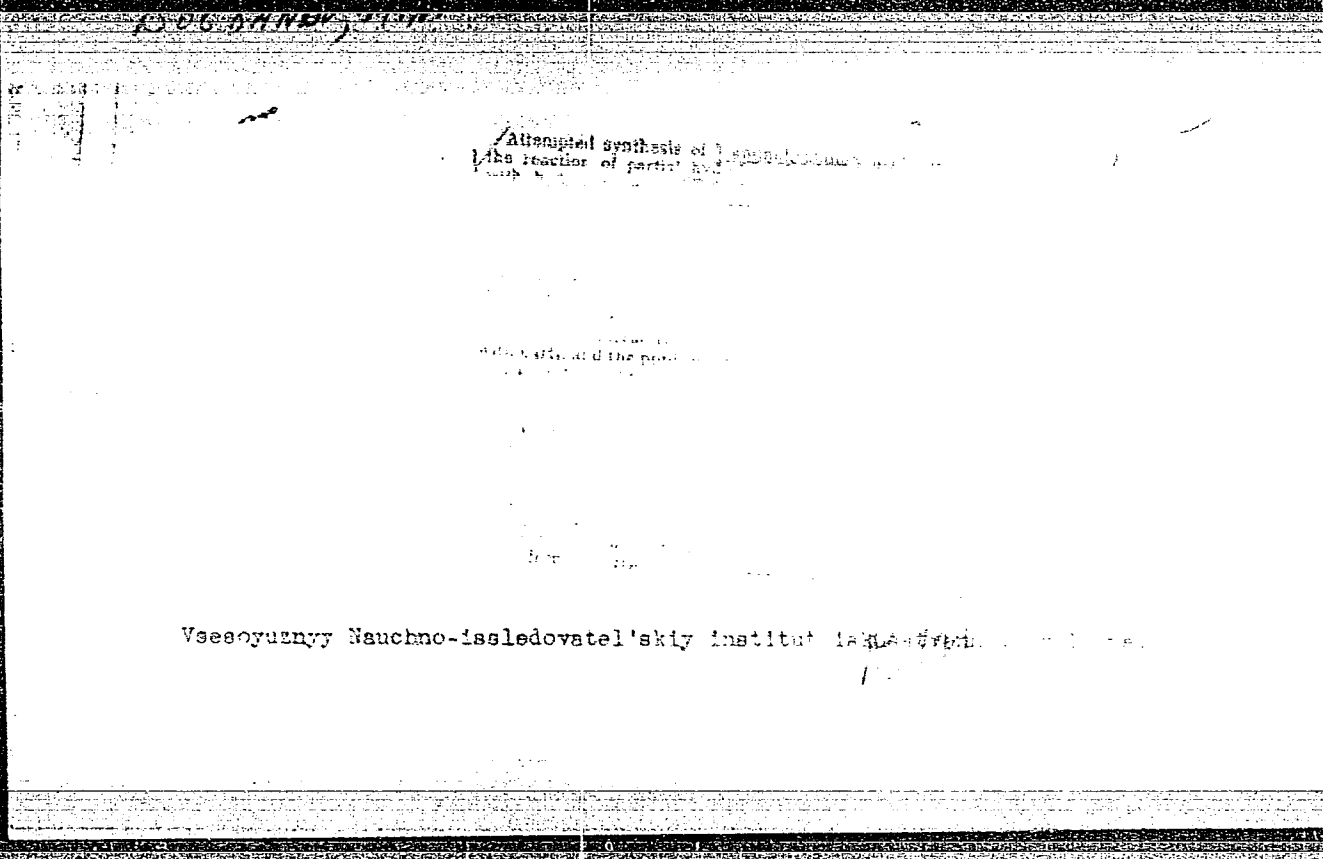
USSR/Chemistry - Tracer elements 1 Sep 53

"Mechanism of Rearrangements of Aromatic Salts  
Amino and Oxy-sulfonic Acids," Ye. A. Shilov, Act  
Mem Acad of Sci Ukr SSR; M. N. Bogdanov, and A. Ye.  
Shilov, Inst of Org Chem Acad of Sci Ukr SSR

DAN SSSR, Vol 92, No 1, pp 93-96

Used radioactive S35 in the clarification of the  
mechanism of the migration of the sulfonic acid  
group in the salts of aminic naphthylsulfonic and  
hydroxynaphthylsulfonic acids. Presented 30 Jun 53.

274T10



80623  
SOV/81-59-5-16377

53200

Translation from: Referativnyy zhurnal, Khimiya, 1959, Nr 5, p 376 (USSR)

AUTHORS: Bondarenko, A.V., Bogdanov, M.N., Farberov, M.I.

TITLE: The Industrial Synthesis of Vinyl Toluene <sup>1</sup>

PERIODICAL: Uch. zap. Yaroslavsk. tekhnol. in-ta, 1957, Vol 2, pp 33 - 46

ABSTRACT: The process of catalytic dehydrogenation of ethyl toluene (I) to vinyl toluene (II) was investigated at 540 to 600°C with a volumetric rate of 200 - 800 ml per 1 liter of the catalyst per hour and with dilution by H<sub>2</sub>O vapors in the molar ratio of 1:8 - 1:16. With an increase in the temperature to > 580°C and a drop in the volumetric rate to < 400, the yield of II is reduced considerably. The optimum conditions of the dehydrogenation process are: temperature 560 - 580°C, volumetric rate 400 - 800 ml per 1 liter of catalyst per hour, dilution with H<sub>2</sub>O vapors 1:12 - 1:16. The standard catalyst for dehydrogenation K<sub>2</sub>-12 was used as catalyst. A thermodynamic calculation of the dehydrogenation reaction was made. The equilibrium constants and the equilibrium composition were computed at 427 - 727°C, and also

Card 1/2



30623

The Industrial Synthesis of Vinyl Toluene

SOV/81-59-5-16377

the apparent energy of activation of the dehydrogenation reaction, being 32,700 cal on the average. It is shown that, in addition to I and II, toluene, xylene, ethyl benzene and styrene are part of the catalysate composition. A circuit diagram of the contact installation is submitted. *H*

L. Volkova

Card 2/2

SHILOV, Ye.A.; BOGDANOV, M.N.

Rearrangement of salts of aromatic sulfonic acids. Ukr. khim.  
shur. 24 no. 2:232-235 '58. (MIRA 11:6)

(Sulfonic acids)  
(Rearrangements(Chemistry))

AUTHOR: Bogdanov, M. N.

SOV/79-28-6-42/63

TITLE: The Chloromethylation of  $\alpha, \omega$ -Phenylalkane Acids (Khlormetilirovaniye  $\alpha, \omega$ -fenilalkanovykh kislot)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 6, pp. 1621-1623 (USSR)

ABSTRACT: The chloromethylation of the  $\alpha, \omega$ -phenylalkane acids is of interest as it is connected with the work on the synthesis of monomers usable for the production of new fiber-forming polyamides and polyesters. The chloromethylphenylalkane acids can serve as initial compounds for the synthesis of different  $\alpha, \omega$ -amines and  $\alpha, \omega$ -oxycarboxylic acids which contain benzene nuclei in the methylene chains. In the present paper the hitherto not described chloromethylation of phenylacetoacetic-,  $\beta$ -phenylpropionic-,  $\gamma$ -phenylbutyric- and  $\delta$ -phenylvaleric acid of normal structure is realized. This reaction was carried out by means of conducting a flow of hydrogen chloride through the heated mixture consisting of the compound destined for the chloromethylation plus zinc chloride solution in 40 % formalin, which had to be careful-

Card 1/3

The Chloromethylation of  $\alpha,\omega$ -Phenylalkane Acids

SOV/79-28-6-42/63

ly stirred; this reaction is conducted in a similar way in the case of alkyl benzenes (Ref 1). By the chloromethylation of phenylalkane acids a mixture of ortho- and para-isomers formed. However, only the para-isomers were of interest as fiber-forming properties show clearest in the polymers with p-phenyl groups. The p-chloromethylphenylalkane acids were separated by crystallization of the final products from various solvents, and then were purified. The use of vacuum distillation was not possible as in that case a polycondensation of the products took place under the formation of hydrogen chloride and formation of a yellow, viscous resin. The synthesized p-chloromethylphenylacetic-, p-chloromethylphenylpropionic-, p-chloromethylphenylbutyric- and p-chloromethylphenylvaleric acid are titrated with alkali liquors in aqueous alcohol, they quantitatively split off chlorine on their boiling with an alcohol solution of silver nitrate and they are oxidized under pressure with 25 % nitric acid in terephthalic acid (80 - 90 %). There are 2 references, 2 of which are Soviet.

Card 2/3

The Chloromethylation of  $\alpha,\omega$ -Phenylalkane Acids

SOV/79-28-6-42/63

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna  
(All-Union Scientific Research Institute for Synthetic Fibers)

SUBMITTED: May 12, 1957

1. Diphenylmethanes--Chemical reactions    2. Methyl chlorides  
--Chemical reactions

Card 3/3

BOGDANOV, M.N.; KUDRYAVTSEV, G.I.

Ways of synthesizing new fiber-forming polymers. Khim.volok.  
no.3:3-10 '59. (MIRA 12:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo  
volokna (VNIIV).  
(Textile fibers, Synthetic) (Polymerization)

15(4)

AUTHORS:

Bogdanov, M. N., Petukhov, B. V.,  
Kondrashova, S. M.

S/183/59/000/06/006/027  
B004/B007

TITLE:

New Fibers on the Basis of Co-polyesters<sup>15</sup>

PERIODICAL:

Khimicheskiy volokna, 1959, Nr 6, pp 21-24 (USSR)

ABSTRACT:

The authors mention the disadvantages of the polyethylene-terephthalate fiber Lavsan: bad colorability, stiffness of the fiber produced herefrom. According to Western publications (Refs 2, 3) co-polyesters made from dimethyl-terephthalate (DMT), ethylene glycol and small additions of glycols, dicarboxyl acids or oxyacids do not have these disadvantages. The authors investigated co-polyesters of DMT with p-oxy-ethoxy benzoic acid (OAB). The synthesis of the methyl ester of this acid from p-oxybenzoic acid (Ref 4) worked out by M. N. Bogdanov in cooperation with A. A. Strepikheyev (Deceased) is briefly described. It was carried out in the presence of 0.1% LiOH + Al<sub>2</sub>O<sub>3</sub> in the following stages: Reaction of DMT and the methyl ester of OEB with ethylene glycol at 160 to 190°, dis-

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New Fibers on the Basis of Co-polyesters

S/183/59/000/06/006/027  
B004/B007

tilling of the excess ethylene glycol at 200 - 250°, polycondensation at 260-275°. Figure 1 shows the influence exerted by the additions of OEB to DMT upon the melting point of the co-polymer. The most favorable effect was produced by additions of up to 10%. The authors investigated such co-polymers with 5 and 10% OEB which they denote as oxon-5 and oxon-10. Synthesis was carried out in the presence of 0.02% zinc acetate. Figure 2 shows that the reaction with ethylene glycol is quicker in the case of oxon-5 and oxon-10 than in that of pure DMT. Table 1 shows the melting temperature and the specific viscosity of the solution of oxon-5 and oxon-10. Both co-polymers were thermographically investigated according to V. O. Gorbacheva and N. V. Mikhaylov (Ref 6) (Table 2) and showed a lower vitrification temperature than Lavsan, but they are less refractory. The fibers produced from oxon-5 and oxon-10 were investigated with respect to the breaking length (32-35 km), breaking elongation (30-41.5%), bending strength (Fig 3) and elastic deformation (Fig 4). The rayon fibers had a softer feel than Lavsan but higher shrinkage (15 to 23%). An inves-

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New Fibers on the Basis of Co-polyesters

S/183/59/000/06/006/027  
B004/B007

tigation carried out with a mercury lamp of the type PRK-2 showed a better stability to light, coloring tests with acetate dyes showed better colorability than Lavan (Fig 5). There are 5 figures, 2 tables, and 6 references, 3 of which are Soviet.

ASSOCIATION: VNIIV - Vsesoyuznyy nauchno-issledovatel'skiy institut  
iskusstvennogo volokna  
(All-Union Scientific Research Institute for Synthetic Fibers)

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5 (3)

AUTHORS:

Bogdanov, M. N., Kudryavtsev, G. I.

SOV/79-29-3-50/61

TITLE:

Synthesis and Polycondensation of the n-Amino-Methyl-Phenyl-Alkane-Carboxylic Acids (Sintez i polikondensatsiya n-amino-metilfenilalkankarbonovykh kislot)

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 3, pp 986-989 (USSR)

ABSTRACT:

The compounds which are most suitable for the synthesis of the high-melting synthetic fibers are the polyamides of the homopolycondensation type of unbranched  $\alpha,\omega$ -amino acids which have n-phenyl groups in their methylene chains in contrast to the less thermostable heteropolycondensation polyamides. In the present paper the following acids were synthesized: n-amino-methyl-phenyl-acetic-(I), n-amino-methyl-phenyl-propionic-(II), n-amino-methyl-phenyl-butyric-(III), and n-amino-methyl-phenyl-valeric acid (IV)  $[NH_2CH_2C_6H_4(CH_2)_nCOOH(n=1-4)]$ . The corresponding n-chloromethyl-phenyl-alkane-carboxylic acids (Ref 3) served as initial products. Since it is not possible to aminate the chloromethyl group of these compounds immediately with ammonia, this amination was carried out by the decomposition of the complexes of Urotropin with

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Synthesis and Polycondensation of the n-Amino-  
Methyl-Phenyl-Alkane-Carboxylic Acids

SOV/79-29-3-50/61

the n-halogen-methyl-phenyl-alkane-carboxylic acids. The synthesis of the Urotropin complexes was not carried out according to reference 4 (i.e. it proceeded from the above mentioned acids in which iodine substituted Cl), but the above mentioned substituted compounds were used directly and quantitative yields and cleavage products without iodine admixtures were obtained. The chlorine hydrates of the amino acids obtained by the cleavage of the Urotropin complexes were converted into free amino acids by the evaporation of their ammonia solution. The dry residue consisted in a mixture of ammonium chloride and free amino acid which was liberated from its mineral ingredient by the recrystallization from water. The synthesized amino acids have no distinctly marked melting point and are not easily soluble in water. In the case of heating they are transformed into high-molecular polyamides. These polyamides are produced not only in the case of a melted state of the initial products, but already at temperatures below their melting point, i.e. in dry state which is very important for the production of the thermolabile polymers. The polyamides from (III) and (IV) are stable, horny compounds

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Methyl-Phenyl-Alkane-Carboxylic Acids

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which yield in the case of further treatment stable fibers which are easily extensible in cold state. The polyamides (I) and (II) decompose on melting and can therefore not be used for the above mentioned purpose. There are 1 table and 4 references, 1 of which is Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (All-Union Scientific Research Institute of Synthetic Fibers)

SUBMITTED: January 28, 1958

Card 3/3

VOLOKHINA, A.V.; BOGDANOV, M.N.; KUDRYAVTSEV, G.I.

Polycondensation reactions in the solid phase. Part 3: Polycondensation of n-aminoalkylphenylalkanecarboxylic acids in the solid phase. Vysokom.soed. 2 no.1:92-96 Ja '60.  
(MIRA 13:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.  
(Condensation products) (Acids, Organic)

BOGDANOV, M.N.; PETUKHOV, B.V.; KONDRASHOVA, S.M.

New fibers based on copolyesters. Khim.volok. no.6:21-24 '59.

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

(Textile fibers, Synthetic) (Esters)

BOGDANOV, M. N.

5.3831  
15.5560S/190/60/002/01/11/021  
B004/B06:  
82080AUTHORS: Volokhina, A. V., Bogdanov, M. N., Kudryavtsev, G. I.TITLE: Polycondensation Reactions in the Solid Phase. III.  
Polycondensation of p-Aminoalkyl-phenyl Alkane Carboxylic  
Acids in the Solid PhasePERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 1,  
pp. 92-96

TEXT: The authors previously described the synthesis of carboxylic acids of the general formula  $H_2N(CH_2)_m(C_6H_4)_n(CH_2)_nCOOH$  ( $m = 1, 2$ ,  $n = 1, 2, 3, 4$ ) and their polycondensation (Refs. 1, 2). The kinetics of the polycondensation of the following  $\alpha, \omega$ -amino acids is examined here: p-aminomethyl-phenyl propionic acid (I); p-aminomethyl-phenyl valeric acid (II); p-aminoethyl-phenyl acetic acid (III); p-aminoethyl-phenyl propionic acid (IV); p-aminoethyl-phenyl butyric acid (V); and p-aminoethyl-phenyl valeric acid (VI). The kinetics of the polycondensation were

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Polycondensation Reactions in the Solid Phase.  
III. Polycondensation of p-Aminoalkyl-phenyl  
Alkene Carboxylic Acids in the Solid Phase

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S/190/60/002/01/11/021  
B004/B061

observed during the reaction by continuous weighing, and the degree of polymerization was established by determination of the separated water. Fig. 1 shows the kinetics of the polycondensation of the above compounds, and Table 1 gives the experimental data. It follows from this that the initial temperature of polycondensation falls with sinking melting point of the amino acid and with increasing content of methylene groups. As regards p-aminoethyl compounds, the temperature range between the initial temperature of the polycondensation and the melting point of the acid decreases with increasing content of methylene groups and with decreasing melting point of the acid. This connection was not observed in methyl-substituted compounds. With increasing content of methylene groups, the polycondensation reaction rate increases. Fig. 2 shows the change with time of the degree of polymerization of compound (I), which is not linear. Table 2 gives the activation energies for the polycondensation of compounds (I) to (VI). There are 2 figures, 2 tables, and 4 references: 3 Soviet and 1 US.

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Polycondensation Reactions in the Solid Phase: S/190/60/002/01/11/021  
III. Polycondensation of p-Aminoalkyl-phenyl B004/B061  
Alkane Carboxylic Acids in the Solid Phase 82080

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut  
iskusstvennogo volokna (All-Union Scientific Research  
Institute of Synthetic Fibers)

SUBMITTED: October 9, 1959

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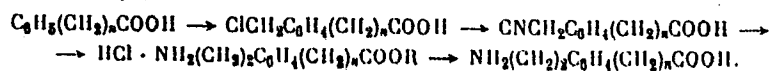
SOV/79-30-1-58/78

AUTHORS: Bogdanov, M. N., Kudryavtseva, G. I., Spirina, I. A.

TITLE: Synthesis and Polycondensation of p(Aminoethyl)phenylalkane-carboxylic Acids

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 1, pp 263-267 (USSR)

ABSTRACT: A series of new p-aminoethylphenylalkanecarboxylic acids was prepared and condensed to polyamides. This is a continuation of the authors' previously reported work (ZhOKh, 29, 986, 1959). The synthesis was made according to the following scheme:



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Synthesis and Polycondensation of p(Aminothyl)  
phenylalkanecarboxylic Acids

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Chloromethylation of the phenylalkanecarboxylic acids was made according to previously described procedure (M. N. Bogdanov, ZhOKh, 28, 1621, 1958). Hydrogenation of the p-cyanomethylphenylalkanecarboxylic acids was conducted according to the procedure described in: P. Ruggli, A. Businger, Helv. Chim. Acta, 25, 39 (1942). The following four acids were prepared for the first time: p-aminoethylphenylacetic acid (I), p-aminoethylphenylpropionic acid (II), p-aminoethylphenylbutyric acid (III), and p-aminoethylphenylvaleric acid (IV). The yields, compositions, and properties of the acids obtained are listed in Table 3. Some conditions of the polycondensation of the aminoacids and the properties of the polyamides are given in Table 4. There are 4 tables; and 4 references, 3 Soviet, 1 Swiss.

ASSOCIATION: All-Union Scientific Research Institute of Synthetic Fibers (Vsesoyuznyy nauchno issledovatel'skiy institut iskusstvennogo volokna)

SUBMITTED: January 2, 1959

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Synthesis and Polycondensation of p(Aminoethyl) 77397  
phenylalkanecarboxylic Acids

SOV/79-30-1-58/78

Table 3. p-Aminoethylphenylalkanecarboxylic acids  
 $\text{NH}_2(\text{CH}_2)_2\text{C}_6\text{H}_4(\text{CH}_2)_n\text{COOH}$

Compound	n	Yield (%)	mp	Content (in %)					
				found			calculated		
				C	H	N	C	H	N
(I)	1	53	—	67.29, 67.24	7.17, 7.21	7.96, 7.68	67.02	7.37	7.82
(II)	2	68***	—	68.44, 68.06	8.12, 7.84	7.24, 7.18	68.37	7.82	7.24
(III)	3	50	—	69.56, 69.70	8.32, 8.15	6.95, 7.00	69.62	8.20	6.75
(IV)	4	53	199.0-199.5°	70.72, 70.49	8.47, 8.30	6.32, 6.27	70.60	8.59	6.33

\*\* Since the temperature, at which polycondensation of (I), (II), and (III) in the solid phase begins is lower than their mp the latter cannot be determined.

\*\*\* The acid is readily soluble in aqueous alcohols; therefore, aqueous acetone was used for its crystallization.

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