

MIKHAYLOV, N.V.; MAYBORODA, V.I.; KARGIN, V.A.; MIRONOVA, Ye.A.; BALANDINA, I.N.

New data on the kinetics of the ripening of viscose. Colloid.J. (U.S.S.R.)  
14, 61-9 '52 [in English].  
(CA 47 no.19:10221 '53)

МАХБОРИДА, VI

15 16 17 4220  
Dyeing polyacrylonitrile fibers with vat dyes. N. V. Mikhailov, E. I. Melchrode, E. A. Kurilchikov, G. I. Solov'eva, and Z. V. Okhanova. U.S.S.R. 112,350, Mar. 25, 1958. To a spinning soln. acrylonitrile-hydroxyethylcellulose dyed with vat dyes is added to give the desired intensity of color. This is obtained by mixing it with the corresponding lauci compd. soln. followed by oxidation in an acid medium. M. Hosh...

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*MAYBORODA, V.I.*

MIKHAYLOV, N.V.; MAYBORODA, V.I.; KARGIN, V.A., akademik.

New method for the production of viscose fibers. Dokl. AN  
SSSR 111 no.3:656-658 N '56. (MLRA 10:2)

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

(Rayon) (Textile fibers, Synthetic)

MAYBORODA, V. I., and MIKHAYLOV, N. V.

"Alkaline Hydrolysis of cellulose xanthate," a paper presented at the 9th Congress on the Chemistry and Physics of High Polymers, 28 Jan-2 Feb 57, Moscow, Textile Research Inst.

B-3,084,395

Михайлов, Н. В.,  
MIKHAYLOV, N. V., MAYBORODA, V. I., and KARGIN, V. A.

"The New Production Methods for Viscous Fibers."

TITLE: General Meeting of the Department of Chemical  
Sciences of the AN USSR Held in May 30-31, and  
June 28, 1957.

PERIODICAL: Izvestiya AN SSSR, Otdel. Khim. Nauk, 1957, Nr 11,  
pp. 1416-1419 (USSR)

5(4)

SOV/69-21-2-21/22

AUTHORS: Mikhaylov, N.V., Mayboroda, V.I., Nikolayeva, S.S.

TITLE: On the Preparation and Some Qualities of Lyophobic Colloids of Fiber-Forming Polymers (K voprosu polucheniya i nekotorykh svoystv liofobnykh kolloidov voloknoobrazuyushchikh polimerov)

PERIODICAL: Kolloidnyy zhurnal, 1959, Nr 2, pp 246-247 (USSR)

ABSTRACT: The authors describe an experiment, by means of which colloid solutions of polyethyleneterphthalate (with a concentration of 4.5%) and polycaprolactam (with a concentration of 2%), were prepared for the first time. The solutions were obtained according to the following methods. One to two g of a powderized polycaprolactam crumb were dissolved in 50 ml of glycerine previously warmed to 200°C. Under intensive mixing and cooling the obtained solution was poured in a fine stream into an equal volume of a carbosoline C (0.5%) water solution, which had been previously cooled to 5°C. 3.5 g of a powderized polyethyleneterphthalate crumb were dissolved at 190°C in 40 ml of dimethylformamide. Under intensive

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' On the Preparation and Some Qualities of Lyophobic Colloids of Fiber-Forming Polymers

mixing and at room temperature, the obtained solution was poured in a fine stream into an equal volume of a water solution of preparation OC-20 (2%). The authors also examined some physical and chemical qualities of the obtained sols. The results are specified in a special table. There are 2 photos and 5 references, 3 of which are Soviet and 2 English.

ASSOCIATION: Nauchno-issledovatel'skiy institut iskusstvennogo volckna, Mytishchi (Scientific Research Institute of Synthetic Fiber, Mytishchi)

SUBMITTED: January 2, 1959

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MAY BORDDA, V. I.

307/1962

International symposium on macromolecular chemistry, Moscow, 1960.   
 Nebudimskiy simpozium po makromolekulyarnoy khimii SSSR, Moskva, 14-18   
 iyunya 1960 g.; doklady i referaty. Sotkiyev, I. (International Symposi-   
 um on Macromolecular Chemistry Held in Moscow, June 14-18, 1960). Papers and   
 Summaries. Section I.) [Moscow, Izd-vo AN SSSR, 1960] 316 p. 5,500 copies   
 printed.

Sponsoring Agency: The International Union of Pure and Applied Chemistry,   
 Commission on Macromolecular Chemistry

Auth. M. I. V. V. Polymers.

PURPOSE: This collection of articles is intended for chemists and researchers   
 interested in macromolecular chemistry.

CONTENTS: This is Section I of a multivolume work containing scientific papers   
 on macromolecular chemistry in Moscow. The material includes data on the   
 synthesis and properties of polymers, and on the processes of polymerization,   
 copolymerization, polycondensation, and polycombination. Each text is   
 presented in full or summarized in French, English, and Russian. There are   
 47 papers, 28 of which were presented by Soviet, Rumanian, Hungarian, and   
 Czechoslovakian scientists. No personalities are mentioned. References   
 accompany individual articles.

Суровый, В. С., Шу, Л. Емурза, В. П. Егизинко, В. Л. Прохорова и Л. П. Болотова (USSR). Polycondensation of the $\alpha$ -Amino Acids Esters in the Presence of Carbon Dioxide	210
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Канлер, Л., L. Матрала, and Ya. Поллак (Czechoslovakia). Thermal Aging of Polychloroprene	328
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S/190/60/002/007/002/017  
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15.5540

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**AUTHORS:** Mikhaylov, N. V., Mayboroda, V. I., Nikolayeva, S. S.

**TITLE:** Fiber Formation in the Process of Interfacial Polycondensation of Polyamides

**PERIODICAL:** Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 7, pp. 989-993

**TEXT:** The experimental results obtained by applying for the first time the methods of fiber formation in polycondensation (Ref. 5), are discussed here. Fiber formation of the following monomer systems was performed: sebacic acid chloride and hexamethylene diamine, terephthalic acid chloride and hexamethylene diamine. Fig. 1 shows the fiber formation scheme in interfacial polycondensation. The investigations show that every monomer system has its own characteristics in the fiber formation. The results of the present paper hold for the system sebacic acid chloride - hexamethylene diamine, in which the solution of the one component was pressed through a spinneret in the widened part of a vertical tube, and the solution of the other component was pressed through the

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Fiber Formation in the Process of Interfacial  
Polycondensation of Polyamides

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tube. The effects of a change in the concentration of the initial monomers and the diameter of the spinneret on the specific viscosity and yield of the developing polymer, were studied. The results are given in Table 1. Fig. 2 shows the dependence of the yield and specific viscosity of the polymer during the fiber formation on the hexamethylene diamine concentration with a sebacic acid dichloride concentration of 0.43 mole/l. Fig. 3 gives the effect of the reaction temperature on the yield and specific viscosity of the polymer developing during the fiber formation. The dependence of the specific viscosity of the developed polymer on the purity of the initial sebacic acid chloride is given in Fig. 4. A temperature rise from 20 to 50°C practically has no effect on the specific viscosity, but deteriorates yield and fiber formation conditions. With a purity of sebacic acid chloride lower than 98%, fiber formation does not take place. Data on the effect of the solvent on the yield and specific viscosity of the developing polymer are given in Table 2. Table 3 gives the effect of hydrodynamic and static reaction conditions on the yield and specific viscosity of the polymer. The results show that the yields of the polymer and its specific viscosity are high, when the production is conducted at the boundary of mobile monomer solutions. The crystalline

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structure of polymers is shown in the X-ray picture of Fig. 5. Fig. 6 gives the electron microscopic pictures of polyhexasebacic amide, and Fig. 7 the cross section of the polyhexasebacic amide fiber produced by interfacial polycondensation, and having the characteristic shape of hollow tubes. Investigations on this subject are being continued at the institute mentioned in the Association. V. O. Gorbacheva and V. P. Kovaleva are mentioned. There are 7 figures, 3 tables, and 5 references: 1 Soviet, 1 German, and 3 US.

ASSOCIATION: Nauchno-issledovatel'skiy institut iskusstvennogo volokna  
(Scientific Research Institute of Synthetic Fibers)

SUBMITTED: February 17, 1960

Card 3/3

15.5540

S/183/60/000/006/002/005  
B020/B058

AUTHORS: Mikhaylov, N. V., Mayboroda, V. I., Nikolayeva, S. S.

TITLE: Some Rules Governing the Fibration of Polyamides at the Interface

PERIODICAL: Khimicheskiye volokna, 1960, No. 6, pp. 10-15

TEXT: In their study of some rules governing the interfacial polycondensation of monomer solutions, V. V. Korshak and collaborators (Refs. 2, 3) pointed to the non-equilibrium character of this reaction basing on the example of the interaction of adipic dichloride with hexamethylene diamine. The aim of the study under review was the elaboration of a shaping method for fibers and the study of some rules governing the interfacial polycondensation of polyamides. According to the method proposed (Fig. 1), one of the monomers (sebacic chloride solution in dichloro methane, for example) is pressed through a spinneret into the enlarged part of a tube at a rate of 90 to 100 m/min, while the solution of the other monomer (an aqueous hexamethylene diamine solution, for example), enters the tube through another opening at a rate of 10 to 20 m/min. A filament is formed at room

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Some Rules Governing the Fibration of Polyamides S/183/60/000/006/002/005  
at the Interface B020/B058

temperature on the contact of these two monomer flows; it is wound on the bobbin after stretching by 20 to 30% and washing. After drying, the fiber is stretched by 4 to 5 times on a heated surface at a temperature close to the melting point of the polymer. The results mentioned refer to the monomer system sebacic chloride-hexamethylene diamine and adipic chloride-hexamethylene diamine. The intrinsic viscosity of the polymer and the fibration greatly depend on the purity of the initial monomers (Table 1). The change of concentration of the hexamethylene diamine has a considerable influence on the yield of polyhexamethylene sebacic amide. An increase of the component ratio influences the properties of the fiber, makes it more brittle and reduces its strength (Tables 2, 3). At surface tensions lower than 7-8 erg/cm<sup>2</sup> at the interface of the monomers, no filament is formed. Depending on the flow velocity of the monomers, the polymer develops in the form of a continuous filament or individual flakes (Table 4). Mentioned are the effect of various thickening agents added on fibration, properties of the polymer (Table 5) (ethyl cellulose being selected as the most suitable agent), as well as the corresponding effect of ethyl cellulose (Table 6). The effect of the polymeric thickening agents (starch, carboxymethyl cellulose, polyvinyl alcohol and oxy-ethyl cellulose) is mentioned

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Some Rules Governing the Fibration of Polyamides at the Interface

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B020/B058

in Table 7. Tables 6 and 7 show that the addition of some thickening agents to the aqueous and organic phase increases the yield of polymer and improves fibration. At a ratio hexamethylene diamine : sebacic chloride of from 1 : 1 to 2 : 1, a fiber develops with a ribbon-shaped cross section and almost agglutinated inner walls (Fig. 2), while at a ratio of 3 : 1 and more, the cross section is rather round and the inner walls are not agglutinated (Fig. 3). On the basis of the X-ray structural analysis, it was shown that the crystallinity of the fiber is increased through elongation, but its strength is not raised greatly (Fig. 4). The fiber obtained by interface polycondensation can be reinforced by stretching over a heated surface at 200 to 205°C which points to a condensation of its structure (Figs. 5, 6). The orientation of the fiber by elongation can be seen on the X-ray pictures (Figs. 7, 8). There are 8 figures, 7 tables, and 9 references: 4 Soviet, 4 US, and 1 German. X

ASSOCIATION: VNIIV (All-Union Scientific Research Institute of Synthetic Fibers)

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5C 15.5550

69465

S/069/60/022/02/013/024  
D034/D002

AUTHORS: Mikhaylov, N.V., Mayboroda, V.I., Nikolayeva, S.S.

TITLE: Preparation and Properties of Lyophobic Colloids of Fiber Polymers

PERIODICAL: Kolloidnyy zhurnal, 1960, Vol XXII, Nr 2, pp 223-228 (USSR)

ABSTRACT: The authors report on the search of methods to prepare colloidal solutions of fiber-forming polymers (polycaprolactam and polyethyleneterephthalate) and on the study of some physico-chemical properties of these solutions. The authors have shown that aqueous colloidal solutions can be obtained with the ordinary method of condensation precipitation from true solutions of polycaprolactam in formic acid, sulphuric acid and glycerine (the authors obtained colloidal solutions of a polymer concentration of 0.09-0.12,

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Preparation and Properties of Lyophobic Colloids of Fiber Polymers

0.5 and 2% respectively) and of polyethyleneterephthalate in dimethylformamide (4.5% polymer concentration in the obtained solution). The developed methods (for further particulars see article) hold only for laboratorial practice. It was further established that the colloidal sol of polyethyleneterephthalate is stable for several weeks. The particles are negatively charged, the  $\zeta$ -potential having a value of 10.8 mV. The isoelectric state sets in at pH 3.8. The polycaprolactam sol has a stability of five to six days. The charge is positive; the  $\zeta$ -potential equals 33.3 mV. The sol particles of polycaprolactam and polyethyleneterephthalate have an amorphous structure and the shape of regular globules. The size of such globules is equal to 500-1000 Å. The authors mention a number of scientists. In their

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introductory notes they refer to B.A. Dogadkin, S.S. Voyutskiy, Panich, B.V. Shtarkh, D. Sandomirskiy and others for the study of the properties and the processing of latexes of synthetic and natural rubber [Ref 2]. Dogadkin studied the process of preparing aqueous dispersions of rubber by means of solvent exchange [Ref. 2]. S.A. Glikman and L.V. Komarova [Ref. 3] devoted works to the study of the mechanism of the formation of lyophobic polymer sols in organic solvents. During their investigation the authors determined the sign of the charge and the value of the  $\zeta$ -potential of the colloidal particles with the device designed by A.I. Rabinovich and Ye. F. Fadimen [Ref. 6]. The authors further refer to P. A. Rebinder, who underlined the important structural-mechanical effect of stabilizers. V.P. Kovaleva

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Preparation and Properties of Lyophobic Colloids of Fiber Polymers

helped the authors by carrying out the investigation on the structure of the colloidal particles. For this part of the study V.P. Kovaleva used the EM-3, electron microscope with a resolving capacity of 50  $\mu$ . The authors finally mention Z.Ya. Berestneva, T.A. Koretskaya and V.A. Kargin [Ref. 8], who explain the presence of chain structures in colloidal systems with the assumption of highly active linkage-favoring sections on the surface of globular particles. There are 2 tables and 16 references, 12 of which are Soviet and 4 English.

ASSOCIATION: Nauchno-issledovatel'skiy institut iskusstvennogo volokna, Mytishchi (Scientific Research Institute of Synthetic Fibers, Mytishchi)

SUBMITTED: December 7, 1958

Card 4/4

MIKHAYLOV, N.V.; NIKOLAYEVA, S.S.; MAYBORODA, V.I.

Effect of surface tension on interfacial condensation. Vysokom.  
soed. 3 no.7:991-994 J1 '61. (MIRA 14:6)

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

(Polymerization) (Surface tension)

SOLOV'YEVA, G.I.; MAYBORODA, V.I.; OSTROUMOV, A.P.; KOVGAN, T.S.

Preparation of a water-soluble green sulfur dye and the engine  
dyeing of viscose staple fibers. Khim.volok no.4:45-47 '62.  
(MIRA 15:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo  
volokna (for Solov'yeva, Mayboroda). 2. Butyrskiy khimicheskiy  
zavod (for Ostroumov, Kovgan).  
(Dyes and dyeing--Rayon)

MAYBORODA, V.I.; PANINA, L.D.; VANIFAT'YEVA, K.P.; NIKITINA, A.M.;  
CHUDAKOVA, N.I.

Mass coloration of capron. Khim.volok. no.5:52-55 '62.  
(MIRA 15:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut  
iskusstvennogo volokna (for Mayboroda, Panina, Vanifat'yeva).
2. Klin'skiy kombinat iskusstvennogo i sinteticheskogo  
volokna (for Nikitina, Chudakova).  
(Dyes and dyeing--Nylon)

8/183/63/000/002/002/003  
A051/A126

AUTHORS: Mikhaylov, N.V., Mayboroda, V.I., Vorob'yeva, T.V., Bilik, I.M.

TITLE: Polymer production by the interphase polycondensation method

PERIODICAL: Khimicheskiye volokna, no. 2, 1963, 19 - 22

TEXT: A study was conducted to establish production conditions of high-melting polymers and the possibility of a direct film formation from the corresponding monomers (with subsequent fiber formation) during the polycondensation process at the phase interphase. Fiber formation during polycondensation would result in high-melting fibers obtained by a simple and more effective method. A high-melting polyether capable of forming film on the phase interphase was produced. The effect of the concentration of the initial monomers, of their ratio and the nature of the organic solvents used, on yield, specific viscosity and film formation was established. The monomers investigated were: dichloroanhydrides of sebacic, adipic and terephthalic acids, and also hydroquinone and *o*-*o*'-dicydiphenylpropane (Dian). The melting point was determined according to the differential-thermal analysis method (N.S. Kurnakov). The ability of the

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## Polymer production by the interphase ....

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$\alpha$ -monomers to form film during the polycondensation process on the phase interphase was tested at different concentrations, temperatures and solvents. Optimum conditions for the polymer production were found to be: reaction temperature 20°C, concentration (of the triethylbenzyl ammonium hydroxide) 0.2%. The polymer obtained under these conditions had a viscosity of 0.43, a yield of 90% of the theoretical value, melting range 345 - 350°C. A firm and elastic film was produced. These properties and the rate of formation of the film on the phase interphase were found to depend on the nature of the organic solvent used to dissolve the dichloroanhydrides. Of various other solvents tested, cumol (isopropylbenzene) was found to yield the highest rate of film formation. The obtained polymers were tested by x-ray and thermographic methods at the VNIIV. The synthesized polymers were found to have a crystalline structure. The highest degree of crystallinity was found in the polymer produced from dichloroanhydride of adipic acid and hydroquinone. X-ray structural analysis showed that heating and cooling of the investigated polymers results in phase shifting connected with melting and polymer crystallization. The highest melting point (345 - 350°C) was obtained for the polymer produced from Dian and dichloroanhydride of terephthalic acid. There are 6 figures and 3 tables.

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Polymer production by the interphase . . . .

S/183/63/000/002/002/003  
A051/A126

ASSOCIATION: VNIV and IRYeA (Bilik)

SUBMITTED: May 18, 1962

REVISED

Card 3/3

BARANOVA, Z.D.; ZARINA, E.Ya.; FILICHEVA, T.B.; SOLOV'YEVA, G.I.; MAYBORODA, V.I.

Use of surface-active agents in the production of raw-stock dyed viscose silk. Khim.volok no.6:66-67 '63. (MIRA 17:1)

1. Klinskiy kombinat (for Baranova, Zarina, Filicheva). 2. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (for Solov'yeva, Mayboroda).

MAYBORODA, V.I.; FINKEL'SHTEYN, T.A.; GORYACHKO, L.P.

Effect of the derivatives of dithiocarbamic acid on the  
formation process and properties of viscose cord fibers.

Khim, volok. no.2:49-51 '64.

(MIRA 17:5)

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

MAYBORODA, V.I.; MIKHAYLOV, N.V.; PAPKOV, S.P.

Action of modifiers in the formation of viscose. Khim. volok.  
no.6:46-50 '64. (MIFA 18:1)

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

MAYBORODA, V.I.; SOLOV'YEVA, G.I.; EGLIT, L.V.; FODIMAN, I.V.; SHILOVA, G.I.;  
ZARINA, E.Ya.; CHAMOVA, L.P.; FILICHEVA, T.B.

Highly dispersed pigments for stock dyeing of viscose fibers. Khim.  
volok. no.3:60-62 '65. (MIRA 18:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy iskusstvennogo volokna (for Mayboroda, Solov'yeva, Eglit).
2. Nauchno-issledovatel'skiy institut organicheskikh poluproduktov i krasiteley (for Fodiman, Shilova).
3. Klinskiy kombinat iskusstvennogo i sinteticheskogo volokna (for Zarina, Chamova, Filicheva).

L 38119-66 EWT(m)/EWP(j)/T RM

ACC NR:

AP6012414

(A)

SOURCE CODE: UR/0183/65/000/006/0003/0009

AUTHOR: Mikhaylov, N. V.; Mogilevskiy, Ye. M.; Nikolayeva, N. S.; Surov, N. A.; Mayboroda, V. I.; Lin'kova, Z. K.; Bochkina, V. S.

ORG: VNIIV

TITLE: Properties and methods of making rayon filaments

SOURCE: Khimicheskiye volokna, no. 6, 1965, 3-9

TOPIC TAGS: synthetic fiber, organic synthetic process, textile, textile engineering, textile industry machinery

ABSTRACT: Various patented processes for obtaining viscose fibers similar to cotton were evaluated. Basic technological parameters were worked out for a 1-bath and 2-bath method of forming and drawing xanthogenate filaments. Requirements for construction of spinning equipment were determined. Viscose filaments whose physical-mechanical properties compared to those of foreign rayon filaments of average strength were obtained on pilot equipment. Orig. art. has: 5 tables.

SUB CODE: 11, 13/ SUBM DATE: 02Mar65/ ORIG REF: 003/ OTH REF: 022

UDC: 677.463

Card 1/1

MAYBORODA, V.I.; MIKHAYLOV, N.V.; PAPKOV, S.P.

More about the action of modifiers in the forming of viscose  
fibers. Khim. volok. no.6:37-38 '65. (MIRA 18:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo  
volokna. Submitted August 26, 1965.

L 32680-66 EWT(m)/EWP(j)/T RM

ACC NR: AP6013745

(A)

SOURCE CODE: UR/0063/65/010/006/0712/0714

AUTHORS: Strashnova, T. F.; Mikhaylov, N. V.; Mayboroda, V. I.28  
BORG: All-Union Scientific Research Institute for Synthetic Fibers and Experimental Plant VNIIV (Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna i opytnyy zavod VNIIV)TITLE: Preparation of cross-linked capron fiber<sup>5</sup>

SOURCE: Vsesoyuznoye khimicheskoye obshchestvo. Zhurnal, v. 10, no. 6, 1965, 712-714

TOPIC TAGS: polyester plastic, synthetic fiber, polymer cross linking

ABSTRACT: Cross-linking in capron fibers introduced by means of reaction with thionyl chloride has been investigated. The morphological properties of the produced fiber were studied by means of light microscopy according to the method described by W. Bobeth (Textil. ind., 62, No. 21, 905, 1960). The effects of the thionyl chloride concentration in the solution and time and temperature of the treatment upon the degree of cross-linking were investigated. Increase of all of these variables results in a considerable increase of the sulfur content in the fiber and a decrease of its solubility in monohydrate and cresol. It also was shown that the cross linkages are not uniformly distributed throughout the fiber but are localized close to the fiber surface. Orig. art. has: 2 figures and 1 table.

SUB CODE: 07/

SUBM DATE: 27Mar65/

ORIG REF: 002/

OTH REF: 004

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BLG

UDC: 677.46/49



L 32966-66 EWT(m)/EWP(j)/T RM

ACC NR: AP6017601

(A)

SOURCE CODE: UR/0183/66/000/001/0022/0026

AUTHOR: Strashnova, T. T.; Mikhaylov, N. V.; Mayboroda, V. I.

ORG: VNIIV

TITLE: Using sulfur chloride solutions for cross-linking capron fibers<sup>15</sup>

SOURCE: Khimicheskiye volokna, no. 1, 1966, 22-26

TOPIC TAGS: sulfur compound, chloride, polymer cross linking, synthetic fiber, nylon, pyridine, solubility, polyamide, mechanical heat treatment

ABSTRACT: The authors study the interaction between polyamide fiber and sulfur chloride. The fibers were treated in xylol solutions of sulfur chloride in the presence of pyridine (for binding the precipitated hydrochloric acid) at a temperature held constant within  $\pm 2^{\circ}\text{C}$ . The fibers were treated in the free state and under tension to prevent shrinkage. Curves are given showing the effect of the type of solvent, temperature, concentration of hydrochloric acid and length of treatment on the amount of bound sulfur in the fiber. It is shown that a chemically twisted fiber may be produced by treating polyamide fiber in sulfur chloride solutions. Data are tabulated on the solubility of the cross-linked polyamide fiber in cresol and monohydrate as a function of the amount of bound sulfur fiber. It is shown that the solubility of the fiber decreases in general as the bound sulfur concentration increases. The experimental

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UDC: 677.494.675

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ACC NR: AP6017601.

data show that the bonds are broken in all cases where capron fiber with sulfide cross linking is subjected to heat treatment. There is also a reduction in the quantity of bound sulfur in the fiber. A reduction in fiber strength with increased temperature and bound sulfur concentration is apparently the combined result of destruction of the amide bond by the HCl precipitated during the reaction and disorientation processes. Orig. art. has: 6 figures, 4 tables.

SUB CODE: 11/ SUBM DATE: 11Mar65/ ORIG REF: 005/ OTH REF: 008

Card 2/2

MAYBORODA, V. S., RADKEVICH, P. E., MAMCHENKO, B. I. and TKALICH, A. I.

"Poisoning of cattle with merkaptofos and kinds of prophylaxis."

Veterinariya, Vol. 37, No. 7, 1960, p. 65

*Mayboroda -*

*Chief, Sanitary Section, Republic Sanitary - Epidemiol. Station*

*Tadzhik SSR*

KLEYNERMAN, Z.J., inzh.; MAYBORODA, V.V., inzh.

Conveying semifinished products at the spinning mills. Mekh.  
i avtom. proizv. 19 no.8:19-21 Ag '65. (MIRA 18:9)

GEYCHENKO, V.V. [Heichenko, V.V.]; ZHMUDSKIY, A.Z. [Zhmuds'kiy, O.Z.],  
doktor fiziko-matemat.nauk; KUZ'MENKO, P.P.; MAYBORODA, Ye.D.  
[Maiboroda, I.E.D.]; MOGILA, A.P. [Mohila, A.P.], kand.filolog.  
nauk, red.-leksikograf; LABINOVA, E.M., red.izd-va; MATVIYCHUK,  
O.O., tekhn.red.

[Russian-Ukrainian physics dictionary] Russko-ukrainskii fizicheskii  
slovar'; 16000 terminov. Sost.V.V.Heichenko i dr. Kiev, 1959.  
212 p. (MIRA 13:6)

1. Akademiya nauk USSR, Kiyev.  
(Russian language--Dictionaries--Ukrainian)  
(Physics--Dictionaries)

MAYBORODA, Ye. S.

MAYBORODA, Ye. S.: "The effect of growth conditions on the rubber accumulation of kok-sagyz". Khar'kov, 1955. Min Higher Education Ukrainian SSR. Khar'kov Order of Labor Red Banner Agricultural Inst imeni V. V. Dokuchayev. (Dissertations for the Degree of Candidate of Agricultural Sciences)

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

LEYBOVICH, F.; MAYCHAK, A.

Changes in the bioelectrical activity of the cerebral cortex in schizophrenia under the influence of single administrations of small doses of stelazine. Zhur. nevr. i psikh. 62 no.4:585 '62.

(MIRA 15:5)

1. Akademicheskaya gruppa chlena-korrespondenta AMN SSSR prof. A.V. Snezhnevskogo, klinicheskoye otdeleniya elektroentsefalograficheskoy laboratorii (zav. - prof. M.N.Livanov) Instituta vysshey nervnoy deyatel'nosti AN SSSR, Moskva.

(STELAZINE) (SCHIZOPHRENIA) (ELECTROENCEPHALOGRAPHY)

*Maichenko, E.G.*

USSR / Cultivated Plants. Technical. Oleaginous. L-5  
Sugar-bearing.

Abs Jour : Ref Zhur - Biol., No 6, March 1957, No 22789

Author : Maichenko, E.G.

Inst : Not given

Title : Selection and Seed Cultivation of Essential Oil Plants and Fuller's Teazel.

Orig Pub : V kn.: Kratkii otchet o nauch.-issled. rabote za 1954 g. Vses. n.-i. in-ta maslich. i efiromaslich. kultur, Krasnodar, 1955, 123-130

Abstract : A brief account is given of data obtained in the study conducted in 1954 by the Crimean zonal experimental-selecting station of the All-Union Scientific-Experimental Institute of Fatty and Essential Oil Plants. A competitive test on essential oil-yielding roses was conducted. The new varieties: Novinka (C-473/26), Pionerka (C-472/24), Kooperator-

Card : 1/2



USSR / Cultivated Plants. Technical. Oleaginous.  
Sugar-Bearing

L-5

Abs Jour : Ref Zhur - Biol., No 6, March 1957, No 22789

Abstract : Kooperatorka (C-463/11), in a 5-year average yield of essential oil exceed that of the pink and red rose by more than twice. The oil of these varieties was rated as excellent. A detailed description of the varieties Lavanda C-417, C-203/35, and C-165/29 are described. These varieties possess high winter- and drought-resistant qualities and are easily propagated by grafting. A description of new varieties of muscatel sage C-24 and C-28 which exceed the standard variety B-1 in yield of essential oil by 25-35% is given. New varieties of Fuller's teazel cultivated by individual and mass selection are described. These varieties are less affected by diseases than the industrially prevalent varieties.

Card : 2/2

USSR/Cultivated Plants - Medicinal. Essential Oil-Bearing.  
Toxins.

M

Abs Jour : Ref Zhur Biol., No 12, 1958, 53883

Author : Maychenko, Z.G.

Inst :

Title : Essential Oil Rose, the Novinka

Orig Pub : Seletsiya i semenovodstvo, 1957, No 4, 47

Abstract : The rose variety Novinka developed by the Crimean zonal experimental-selection station of essential oil cultures, is distinguished by valuable characteristics: high winter resistance, slight susceptibility to parasitic fungus (*Erysiphe graminis*) and to rust, and resistance against the attacks of asphodel and spider mite. During the 1950-1956 competitive variety trials Novinka took the first place with regard to the chief economic characteristics. Its yield of essential oil is twice that of the Rose rose and three times the yield of the Red rose. During the

Card 1/2

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MAYCHENKO, Z.G.

New varieties of clary (*Salvia sclarea*). Masl.-zhir.prom.  
25 no.8:35-36 '59. (MIRA 12:12)

1. Krymskaya zonal'naya opytно-selektsionnaya stantsiya  
Vsesoyuznogo nauchno-issledovatel'skogo instituta maslichnykh  
i efiromaslichnykh kul'tur.  
(Clary)

MAYCHENKO, Z.G.

The "Michurinka" aromatic rose. Masl.-zhir.prom. 28 no.11:27  
N '62. (MIRA 15:12)

1. Krymskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta  
maslichnykh i efiromaslichnykh kul'tur.  
(Crimea--Roses) (Attar of roses)

ALEKSEYEVA, Ye.I., kand. sel'khoz. nauk; BUZINOV, P.A., kand. sel'khoz. nauk; VODLAGIN, V.D.; VOLKHOVSKAYA, U.V.; GLUSHCHENKO, N.N., kand. biol. nauk; GURVICH, N.L., doktor biol. nauk; ZHELEZNOV, P.A., kand. sel'khoz. nauk; KSENDZ, A.T.; LESHCHUK, T.Ya.; LUK'YANOV, I.A., kand. sel'khoz. nauk; MAYCHENKO, Z.G., kand. sel'khoz. nauk; TANASIYENKO, F.S., kand. khim. nauk; ZNAMENSKIY, M.P.; PERSIDSKAYA, K.G.; PODLESNOVA, A.F.; ROGOCHIY, I.Ya.; REZNIKOV, A.R.; SHUL'GIN, G.T.; KHOTIN, A.A., doktor sel'khoz. nauk; LAPSHINA, O.V., red.; MINENKOVA, V.R., red.; MAKHOVA, N.N., tekhn. red.; BALLOD, A.I., tekhn. red.

[Aromatic plants] Efiromaslichnye kul'tury. Moskva, Sel'-khozizdat, 1963. 358 p. (MIRA 16:12)  
(Ukraine--Aromatic plants)

GLUSHCHENKO, N.N., kand. sel'khoz. nauk; ALEKSEYEVA, Ye.I., kand. sel'khoz. nauk; VOROB'YEVA, G.V.; LUZINA, L.V., kand. biol. nauk; MAYCHENKO, Z.G., CHIKALOV, B.M., kand. sel'khoz. nauk; KRYLATOVA, S.A., red.

[Recommendations for the production of aromatic plant seeds]  
Rekomendatsii po semonovodstvu efiromaslichnykh kul'tur. Moskva, Sel'khozizdat, 1963. 27 p. (MIRA 17:6)

1. Russia (1923- U.S.S.R.) Ministerstvo sel'skogo khozyaystva. Upravleniye nauki, propagandy i vnedreniya peredovogo opyta. 2. Nauchnyye sotrudniki Vsesoyuznogo nauchno-issledovatel'skogo instituta maslichnykh i efiromaslichnykh kul'tur. (for all except Krylatova).

MAYCHUK, Yu. F.

"Data on the Morphology of the Iris of the Human Eye in Relation to Age." Cand Med Sci, L'vov State Medical Inst, L'vov, 1955.  
(KL, No 10, Mar 55)

SO: Sum. No. 670, 29 Sep 55--Survey of Scientific and Technical  
Dissertations Defended at USSR Higher Educational Institutions (15)

USSR / Human and Animal Morphology. Sensory Organs. S-4

Abs Jour: Ref Zhur-Biol., No 14,1958, 64865.

Author : Maychuk, Yu. F.  
Inst : Chuvash Scientific Research Institute of Trachoma.  
Title : Muscular System of the Iris of the Human Eye and  
its Changes with Age.

Orig Pub: Sb. Nauchn. tr. Chuvashsk. n-i. Trakhomatozu.  
in-t, 1957, vyp. 2, 247-256.

Abstract: A histological study was made of the iris of the eyes of 56 human cadavers of various ages. It was found that in the newly born the sphincter of the pupil is at its functional optimum, and is as large as in the adult, but thinner and pigmented. The dilator muscle of the pupil in the newly born has an embryonic type of structure and ends its development only at 1-1/2 to 2 years

Card 1/2



USSR / Human and Animal Morphology - Sense Organs.

S

Abs Jour : Ref. Zhur. - Biol., No. 22, 1958, No. 101515

Author : ~~Maychuk, Yu. F.~~  
Inst : Chuvash Scientific Research Trachoma Institute  
Title : Morphologic Peculiarities of the Iris in Children.

Orig Pub : Sb. nauchn. tr. Chuvashsk, n.-i. trakhomatozn.  
in-t, 1957, No. 2, 274-282

Abstract : In histologic studies of the eyes of 32 cadavers of children it was shown that the iris (I) of newborn infants has a smooth anterior surface, is poor in pigment, has a conical shape, with straight vessels, and is separated from the cornea by a narrow slit. In the course of the first year of life there is a deepening of the anterior chamber, an accumulation of pigment in the I, and a loss of vessels in the trabeculae of the ora

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USSR / Human and Animal Morphology - Sense Organs.

S

Abs Jour : Ref. Zhur. - Biol., No. 22, 1958, No. 101515

serrata. By 7½ months the pupillary crypts and the clefts and fissures of contraction become much deeper. The pigmented pupillary border acquires its definitive form by the 7th year. By 1-1½ years the I thickens by 1.5 times. With further aging there is a reduction in the number of endothelial cells on the anterior surface of the I, and the anterior limiting layer gradually becomes thinner, while the vascular layer, on the other hand, quickly thickens. Particularly significant changes occur in the vessels of the I with increasing growth of the child. In the newborn they retain their undifferentiated embryonic type of structure; by 3-4½ months isolated muscle cells appear about the endothelium. By 7½ months the adventitia becomes more clearly noticeable. There are no elas-

Card 2/3

~~MAKAROV~~  
MAYCHUK, Yu.F., starshiy nauchnyy sotrudnik

Characteristics of the structure and changes with age of the  
argyrophil fibrinous skeleton of the human iris. Oft.zhur. 12  
no.3:169-173 '57. (MIRA 10:11)

1. Iz filiala Nauchno-issledovatel'skogo instituta glaznykh  
bolezney in. Gel'mgol'tsa (dir. - dotsent P.A.Shishkin)  
(IRIS (EYE))

MAYCHUK, Yu.F

USSR/Morphology of Man and Animals (Normal and Pathologic).  
Sense Organs.

S-4

Abs Jour : Ref Zhur - Biol., No 4, 1958, 17068

Author : Maychuk, Yu.F.

Inst : -

Title : Peculiarities of Structure and the Age Alterations of the  
Argyrophile Fiber Stroma in the Iris of Man.

Orig Pub : Oftal'mol zh., 1957, No 3, 169-173

Abstract : The argyrophile fibers of the iris from an anterior and a  
posterior network. The anterior network is located in the  
anterior boundary layer, the posterior network, which is  
more dense, near the dilator muscle. Argyrophile fibers  
are also contained in the sphincter pupillae muscle. In  
the newborn, the argyrophile fibers are more numerous than  
the collagenous fibers; they are also found in the blood-  
vessels of the iris. After birth, the number of argyrophile  
fibers is diminished whereas there is a simultaneous

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Card 2/2

APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001033020015-6

USSR/Human and Animal Morphology - Normal and Pathological.  
Organs of the Senses.

S

Abs Jour : Ref Zhur Biol., No 23, 1958, 106012

Author : Maychuk, Yu.F.

Inst : -

Title : On the Problem of Demonstration of Argyrophil Fibers  
in the Tissues of the Eyeball

Orig Pub : Oftalmol. zh., 1958, No 3, 186-188

Abstract : A description of the technique based on Bil'shevskiy's  
method of impregnation with silver ammonium is given.  
This method entails preliminary depigmentation and two-  
fold sensitization by potassium permanganate and ammo-  
nium ferric alun. The method is simple, gives constant  
and clear results, does not demand any special immer-  
sion of the fragments, and allows the use of celloidin  
sections which are used in routine staining. The appli-  
cation of this method allowed to detect and to study

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USSR/Human and Animal Morphology - Normal and Pathological.  
Organs of the Senses.

S

Abs Jour : Ref Zhur Biol., No 23, 1958, 106012

the properties of the architectonic of the argyrophil  
fibers in various membranes of man and animals (rabbit,  
cat) eyeball.

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- 25 -

MAYCHUK, Yu.F., kand.med.nauk

Operation for correction of trabisums where there is congenital  
absence of three rectus oculi muscles. Vest.oft. 71 no.6:44-46  
N-D '58 (MIRA 11:11)

1. Filia Nauchno-issledovatel'skogo inatituta glaznykh bolezney  
imeni Gel'ngol'tsa (dir. - dotsent P.A. Shishkin).  
(STRABISMUS, etiol. & pathogen.  
congen. absence of three rectus oculi musc., surg.  
(Rus))

MAYCHUK, Yu.F.

Experimental study in the use of monomycin in ophthalmological  
practice. Antibiotiki 7 no.2:174-179 F '62. (MIRA 15:2)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut glaznykh  
bolezney imeni Gel'mgol'tsa. (OPHTHALMOLOGY) (ANTIBIOTICS)



MAYCHUK, Yu.F.

Changes in the eyes as a result of old age. Trudy MOIP.Otd.  
biol.6:119-123'62. (MIRA 16:7)

1. State Research Institute of Eye Diseases named Helmholtz,  
Moscow.

(EYE--AGING)

MAYCHUK, Yu.F.

Experimental studies on erythromycin ascorbate. Antibiotiki 9  
no.7:622-624 J1 '64. (MIRA 18:3)

1. Nauchno-issledovatel'skiy institut glaznykh bolezney imeni  
Gel'mgol'tsa, Moskva.

L 11252-66 PWP(1)/T JK

ACC NR: AR6022386 (N) SOURCE CODE: UR/0397/65/000/024/0055/0056

AUTHOR: Lenkevich, M. M.; Purshev, F. I.; Meychuk, Yu. F.; Galkina, L. G.TITLE: Polyvinyl alcohol -- a new drug base for antibiotics <sup>6 22</sup>

SOURCE: Ref. zh. Farmakologiya. Toksikologiya, Abs. 24.54.431

REF SOURCE: Sb. Materialy Nauchn. konferentsii, posvyashch. 30-letiyu  
Fil. Gos. n.-i. in-ta glazn. bolezney, 1963. Cheboksary, 1965, 69-75

TOPIC TAGS: polyvinyl alcohol, tetracycline, erythromycin, antibiotic

ABSTRACT: In preparing antibiotic solutions with a polyvinyl alcohol base, antibiotics were added on the basis of 10,000 units/ml to a 10% polyvinyl alcohol solution. It was established that antibiotic activity in a polyvinyl alcohol solution lasted 2 to 4 times longer than in aqueous solutions. Polyvinyl alcohol solutions did not cause irritations of eye tissues. Following the administration of tetracycline hydrochloride (aqueous solution and polyvinyl alcohol solution) in experiments on 44 rabbits, a higher content of the antibiotic was found in the conjunctival sac with a polyvinyl alcohol solution than with an aqueous solution or antibiotic in the form of an ointment. Similar

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UDC: 615.779.9

L 11252-66

ACC NR: AR6022386

results were established in determining tetracycline hydrochloride levels in conjunctival cavity lavages and conjunctival cell scrapings; and, also with the use of other antibiotic solutions (erythromycin ascorbate and erythromycin). Treatment (1% solution of tetracycline hydrochloride embedded 2 to 3 times daily) of 104 trachoma patients (adults and children) produced good results. Mean number of bed days was 57.1%. Treatment (1% polyvinyl alcohol solution of erythromycin was imbedded once daily) for 6 mos. prevented any recurrence of trachoma cases during a one year observation period. N. S. /Translation of abstract/.

SUB CODE: 06

Card 2/24NT

MAYDA, A. [Majda, A.]; MAYOREK, Ye. [Majorek, E.]; KOTEL'BA-VITKOVSKAYA,  
B. [Kotelba Witkowska, B.]

Characteristics of blood preservation in relation to the blood taking  
system. Probl. gemat. i perel. Krovi 8 no.9:44-45 S '63.  
(MIRA 17:9)

1. Iz otdeleniya konservirovaniya krovi (zav. A.Mayda)  
Varshavskogo gematologicheskogo instituta (dir. - dotsent A.  
Troyanovskiy [A.Trojanowski]).

LASHCHEVSKIY, I.M.; MAYDAKOV, L.N.

Formation of rectifiers using the self-needs transformer. Elek.  
i tepl. tiaga 6 no.12:17 D '62. (MIRA 16:2)

1. Remontno-revisionnyy tsakh energouchastka No.3 Otktyabr'skoy  
dorogi.  
(Electric railroads—Current supply) (Electric railroads—Substations)

MAYDAN, Dmitriy Semenovich; KOBEVNIK, Vasiliy Fedorovich;  
NESTERENKO, Vladimir Vasil'yevich; ZABOLOTNYI, Ivan  
Prokof'yevich; HESKLEPCHENKO, Fedor Markovich; KUCHENOV,  
Dmitriy Mikhaylovich; FEYGIN, L.M., otv. red.; BOGOPOL'SKIY,  
B.Kh., otv. red.; SILINA, L.A., red.izd-va; MAKSIMOVA, V.V.,  
tekhn. red.; BOLDYREVA, Z.A., tekhn. red.

[Mechanization and automation of production processes in  
mining]Mekhanizatsiia i avtomatizatsiia proizvodstvennykh  
protseessov na rudnikakh. Moskva, Gosgortekhnizdat, 1962. 320 p.

(MIRA 16:4)

(Mining engineering--Equipment and supplies) (Automation)

KHIVRENKO, A.F.; MAYDAN, D.S.

Results of the miners' work in the Dzerzhinsk Mine Trust  
during five years of the seven-year plan. Gor. zhur. no. 1:  
16-20 Je '64. (MIRA 17:3)

1. Glavnyy inzh Dzerzhinskogo gosudarstvennogo tresta  
zhelezorudnoy promyshlennosti (for Khivrenko). 2. Nachal'nik  
tekhnicheskogo otdela Dzerzhinskogo gosudarstvennogo tresta  
zhelezorudnoy promyshlennosti (for Maydan).



MAYDAN, D.S., gornyy inzh.

Determining the permissible overburden ratio. Gor. zhur.  
no.9:17-18 S '64. (MIRA 17:12)

1. Trest Dzerzhinskruada, Krivoy Rog.

ZYMALEV, G.S.; MAYDAN, D.S.

Labor productivity and cost of ore in the Krivoy Rog Basin.  
Met. i gornorud. prom. no.2:59-63 Mr-Ap '65.

(MIRA 18:5)

ZYMALEV, G.S.; MAYDAN, D.S.

Possibilities of reducing losses and depletion of ores in the  
Krivoy Rog Basin. Met. i gornorud. prom. no.4:54-56 JI-Ag '65.  
(MIRA 18:10)

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S/182/60/000/003/005/007  
A161/A029

AUTHORS: Ganshtak, V.I.; Maydanchik, B.I.

TITLE: The Efficiency of Forging Shops

PERIODICAL: Kuznechno-shtampovochnoye proizvodstvo, 1960, No. 3, pp. 34 - 36

TEXT: Metalworking by pressure should be used on a broad scale in the USSR in accordance with government decisions. The authors discuss the situation using data of a study carried out in 1958 - 1959 by research institutes and planning organizations of Sverdlovsk sovnarkhoz in the Urals. About 60% of all forging shops are small, with an annual output of less than 1,000 tons. In the Sverlovsk region (Table 2) 90% of the forging shops are employing 51.2% of the labor and 73.3% of the equipment, and produce only 25% of the total forgings output. High costs are the result. Table 3 gives the prime costs per ton in thousand rubles at seven small Ural works (last column in table), ranging between 2.52 and 4.47 thousand per ton. The works are: Irbitkiy avtopritsepnny (Irbit Automobile Trailer Works); Uralgidromash; Artemovskiy mashinostroitel'nyy (Artemovskiy Machine Building); Krasnogvardeyskiy kranovyy (Krasnogvardeysk Crane Works); Karpinskiy mashinostroitel'nyy (Karpinsk Machine Building Works);

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## The Efficiency of Forging Shops

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Alapayevskiy mashinostroitel'nyy (Alapayevsk Machine Building) and Kyshtymkiy mekhanicheskiy (Kyshtym Mechanical Works). At one of the large forging shops the costs per one ton was only 1,350 rubles. The quantity of obsolete equipment is high. Over the entire Sverdlovsk sovnrarkhoz region by August 1, 1958, 31% of machines were 20 years old and older, 31% between 10 and 20, and only 34% less than 10 years old. The Uralmashzavod has 31.3% forging machines older than 20 years, the Turbomotornyy zavod (Turboengine Works) 36.4%, the Uralkhimashzavod 46.2%, the Verkhne-Serginskiy machine building works 45.3%, and at the forging shop of a pump works all 100% of equipment is obsolete. The organizational and technical level is low: free forging predominates, stamping with latest high-productive presses is scarcely used at all; 30% of forging shops have unsuitable buildings, more than 60% have no billeting departments, about a half of all shops have no heat treatment sections. There is no established method for evaluating the technical level. Attempts in this direction exist, as for instance by V.N. Glushkov and A.D. Bogdan (article "Evaluation of the Technical Level of the Work of Forging Shops", in "Kuznechno-shtampovochnoye proizvodstvo", No. 5, 1959) who analyzed the level of a group of similar shops. The authors point out that the basic criterion is a correct evaluation of ready production, and it must 1) reflect the actual volume of work done in the shops; 2) give in-

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The Efficiency of Forging Shops

centive for technical progress; 3) be stable and not depend on factors like the changing weight of forgings; 4) not be distorted when the complexity of forgings changes; 5) permit the work in different years to be compared; 6) make possible comparison of work of different shops. The presently practiced evaluation system does not fully satisfy any of these six conditions. Evaluation by weight does absolutely not stimulate production of light-weight complex forgings requiring more work time, and it does not help technical progress; production workers are not interested in reduced allowances and accurate billets. There are attempts to find better evaluation indices: some shops are planning and evaluating production in constant prices; at the Karpinskiy works and some others the plan prime costs are used for index; at the zavod im. Vorovskogo (imeni Vorovskiy Works), the work consumption in work-hours. Still, these methods have advantages comparing with evaluation by weight, but they have also serious disadvantages. The method suggested by A.S. Kats (in "Kuznechno-shtampovoye proizvodstvo" No. 6, 1959) - evaluation by "values of similar work consumption" - can be considered as the best, but it takes development of an All-Union specification. It is obviously proper to determine the production of a forging shop not by the planned production nomenclature only, but also in nomenclature that fits the shop best when it is specialized. The authors think that these two

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The Efficiency of Forging Shops

calculation methods will show the present and the latent capacity and reveal losses caused by wrong utilization of equipment.

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8/128/60/000/012/001/014  
A054/A030

**AUTHORS:** Ganshtak, V.I.; Maydanchik, B.I.

**TITLE:** Urgent Problems of Foundry Economics

**PERIODICAL:** Liteynoye proizvodstvo, 1960, No. 12, pp. 5 - 7

**TEXT:** It was evident upon analyzing the results of the inquiry carried out by the NIPTIMASH (Sverdlovsk) into the technological and economic efficiency of the foundries in the Sverdlovsk district that the foundries there were lagging behind, both from a technological and from an organizational-economic viewpoint. The foundry industry in this district is considerably scattered: 1959, 42% of steel foundries produced less than 500 tons, and one third less than 200 tons of castings annually. These foundries together produced 8.3% of the total castings production, while 79.1% of the annual output was produced by four large foundries. The following figures are available for the iron foundries: 40% of the foundries had an annual output of less than 500 tons, 33% between 500 and 2,000 tons, so that 75% of the foundries did not produce more than 16% of the total output, while 66% of the annual production is accounted for by those foundries having an output of over 6,000 tons/year. The figures for the foundries produc-

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Urgent Problems of Foundry Economics

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ing colored metals are even less favorable: only three foundries produced more than 500 tons, while the annual production of 70% of these foundries did not exceed 50 tons. Most foundries produced a wide range of steel and iron castings. Consequently the production programs of the foundries are not specialized sufficiently and only 2% of them come up to the standards set for up-to-date foundries. The inquiry also revealed that about 32% of the foundries were inadequately mechanized. In the foundry workshop of the up-to-date Gidromashin factory only 10% of the molding and casting operations was mechanized. The development of precision casting was not satisfactory either. In general it may be said that the forming and molding machines and the space available were not utilized efficiently. Moreover, most factories worked according to a "stepwise" production schedule, whereas by replacing this method of production by the "parallel" system, production could be raised by 60 - 70%. In 1958, in an iron foundry working according to the parallel production schedule, the output related to 1 m<sup>2</sup> of the foundry amounted to 2.45 tons/year, the labor required per 1 ton of product was 35.9 standard hours; while these figures for a similar foundry working according to the "stepwise" production scheme are: 0.96 tons/year and 113 standard hours. In spite of these striking facts the "stepwise" production method is still being applied even in new foundries. One of the reasons for

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this unsatisfactory state of affairs is that technical-economic analysis of the foundry operation has been neglected. The technical progress in foundries lags behind that of engineering works. The foundry-equipment in the Sverdlovsk district only represents 3.8% of the total equipment of engineering works in the same area. After sizing up the situation, the District Economic Council took appropriate measures to raise the efficiency of foundries. By intensifying the cooperation between foundries and factories in the district, the foundry production programs could be put on a more specialized basis, as a result there was a considerable increase in production capacity. New, fully mechanized foundries have been planned. Wherever it seemed more economical, however, preference is given to the reconstruction and modernization of existing foundries. More attention is being paid to the time factor. The time required for building and reconstructing foundries will have to be shortened. The foundry of the Ural Factory of Hydraulic Machines has already been under construction for five years and is not yet ready. Construction and specialization of foundries to meet standard requirements are the main conditions for the future development of the foundry industry and this is unimaginable without mechanization, automatization and improved organization. Besides the reorganization of the large-capacity foundries due attention must also be paid to the smaller and medium sized

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foundries. The example of the Stromashina factory (annual output 2,000 tons, of which 500 tons are small castings) shows that by mechanizing operations and by specializing the production program as far as possible, the smaller foundries can also be made to operate efficiently. The above named factory took the initiative to borrow money from the Sovbank and mechanized its workshops, for which purpose 285,000 rubles were invested. The output of the factory was raised by 1,100 tons and the cost of 1 ton castings decreased by 234 rubles to 1,201 rubles. More attention will have to be paid in future to comparative analysis and productivity-evaluation of various foundries and radical alterations will have to be made in the planning methods, also. During the last 10 - 20 years, the technology of foundries changed considerably, whereas planning methods remained unchanged. Up till now productivity was planned based on the output per worker and on products referring to 1 m<sup>2</sup> of the foundry area, in tons. This principle inevitably results in chasing the tonnage and evading, as far as possible, the production of light castings which are labor consuming. In order to eliminate these drawbacks the production indices will in future be planned in such a way that they are related not only to the weight of the product, but also to its monetary value, to the degree of intricacy of its production and to the costs of labor in workshop and factory. By including these factors into the planning of indices, a more reliable picture will be obtained of the production volume of

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the factory than when the production is only indicated by weight. There are 4 tables.

Table 1: Comparison of foundry and engineering workshop in the factory imeni Vorovsk

Indices	Foundry	Engineering workshop
Relative number of workers employed for mechanized operations, in %	31	67
Technical equipment for 1 worker in thousand rubles	24	38
Technological equipment for 1 worker in thousand rubles	3.7	22



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45829-03  
ACCESSION NR: AP5005473

experimental set-up was designed with particular attention to elimination of heat losses. A detailed description of the equipment is included. Some 60 experiments were made and 300 experimental points obtained. The Reynolds numbers ranged from  $2 \times 10^4$  to  $2 \times 10^5$ . The temperature factor was varied between 1.1 and 3.6, with the inlet gas temperature ranging from 100 to 500K. The wall temperature reached 1500K. Heat balance was maintained within 5%. The results show that the variation of the gas temperature at the inlet to the tube does not exert any noticeable influence on the heat transfer even at large values of the temperature factor, and

has: 5 figures and 3 formulas.

ASSOCIATION: Moskovskiy energeticheskiy institut (Moscow Power Engineering Institute)

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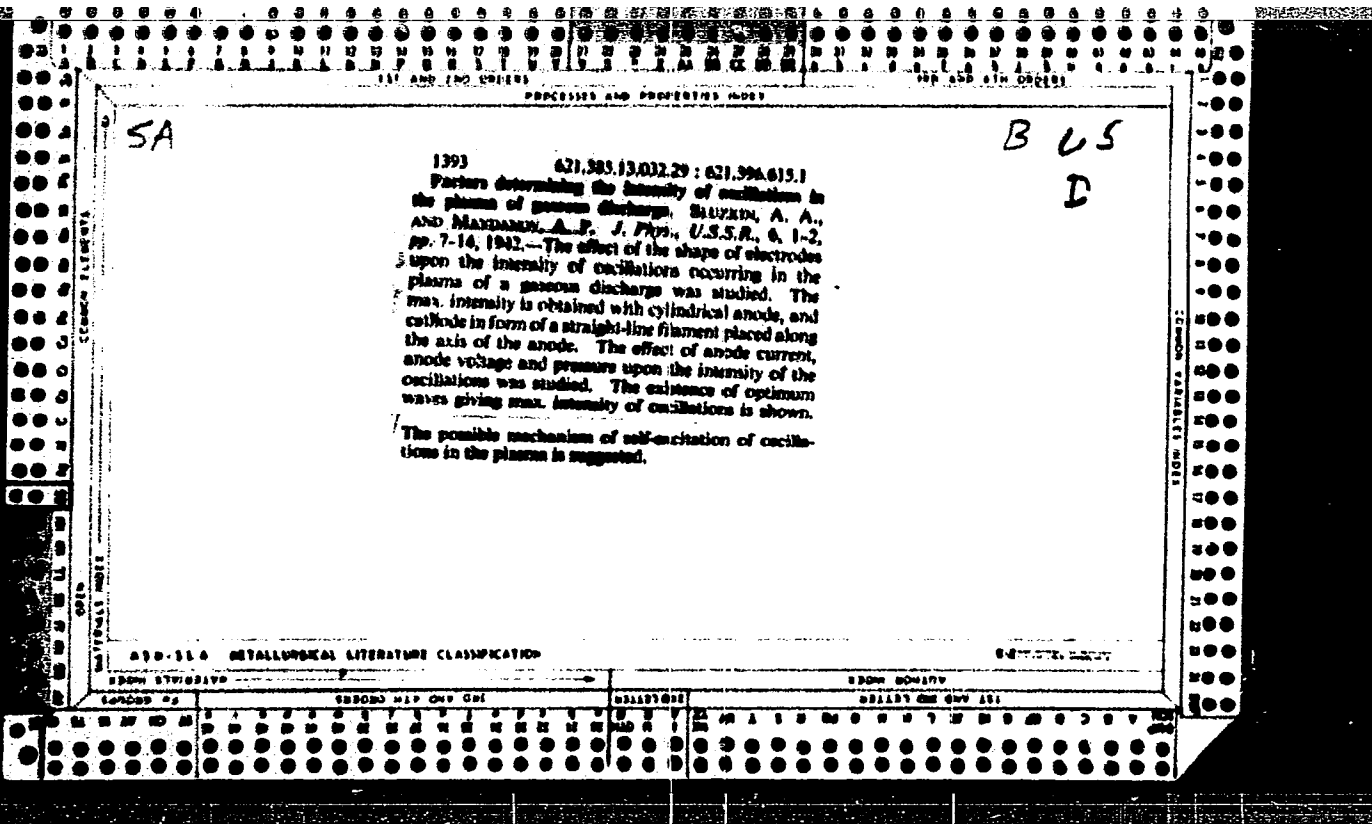
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