TITLE: Experimental Test of the Influence of Crystallite Anisotropy on the Shape of the Debye Ring obtained from a Strained Sample (Eksperimental'naya pr. erka vliyaniya anisotropii kristallitov na formu debayevskogo kol'tsa ot napryazhennogo obraztsa)

of a polycrystallic substance at elastic deformations; within the elastic limits, the strain field of a polycrystal is non-homogeneous. The force field suffers a break in continuity during transitions from one crystallite to another, if their crystallographic orientations are different. In virtue of this, changes in Debye ring shape of strained samples are observed.

2. Complete agreement between theoretical calculations and experiments was not observed, because the interaction of adjacent crystallites had not been taken into account in the theoretical calculations.

3. The smearing of lines disappears as soon as a sample is released from strain, within the limits of elasticity. A residual smearing remains, if a sample was deformed beyond its limit of elasticity.

4. The measurement of strains by the X-ray method yields the most correct results only if the face and the azimuth of the Debye ring chosen are such as to

Card 3/4

TITLE: Experimental Test of the Influence of Crystallite Anisotropy on the Shape of the Debye Ring obtained from a Strained Sample (Eksperimental'naya proverka vliyaniya anisotropii kristallitov no formu debayevskogo kol'tsa ot napryazhennogo obraztsa)

result in maximum line shift.

5. The elasticity modulus determined by the X-ray method differs from that determined by a mechanical metnod. The latter is isotropic, but the X-ray elasticity modulus is anisotropic;

6. Beyond the limits of elasticity, a polycrystallic body behaves as an isotropic substance

4 figures and 1 table are given There are 4 references, all Slavic (Russian)

INSTITUTION: Department of Metal Study in the Gor kiy Polytechnic Institute im. Zhdanov

PRESENTED BY:

SUBMITTED: No date

AVAILABLE: At the Library of Congress

Card 4/4

SOV/126-7-6-7/24

AUTHORS: Aksenov, G. I. and Moshchanskiy, V. A.

TITLE: Crystallite Anisotropy and Debye Ring Structure in a Stressed Sample

PERIODICAL: Fizika metallov i metallovedeniye, 1959, Vol 7, Nr 6, pp 847-854 (USSR)

ABSTRACT: In 1929 one of the authors (Aksenov) analysed theoretically the reflection of monochromatic X-rays from atomic planes in a linearly stressed polycrystal. It was found that elastic deformation of the polycrystal should be accompanied by displacement of the Debye lines in X-ray diffraction patterns (Ref 1). In 1934 this theoretical analysis was extended by allowing for the anisotropy of the elastic properties of crystallites. It was then found that the Debye lines should be both displaced and broadened. The present paper is a continuation of the work just described. The authors calculate theoretically the conditions of reflection of monochromatic X-rays on the (112) and (310) faces of iron and the (511) face of aluminium, allowing for the anisotropy of the elastic properties of crystallites. This theoretical analysis led to the following conclusions.

Crystallite Anisotropy and Debye Ring Structure in a Stressed Sample

A) Extension of samples should be accompanied by the Debye line displacement and instead of a circle for an unstressed sample an ellipse should be obtained with semi-axes $a < b$. The axis b should lie along the direction of extension.
B) The Debye line displacement for the same direction of extension is different in the case of different faces. For example, for the (511) face the displacement is greater than for the (310) face and the (112) face lines are not displaced at all.
C) The Debye line displacement increases with increase of applied stress.
D) Broadening of the Debye lines should occur on elastic deformation and the degree of broadening may be greater or smaller than their displacement.
E) The broadening should be different for different faces.
The authors use an ionic X-ray tube with a special chamber to check experimentally their theoretical results. The chamber contained a device for producing pure bending of samples and a cassette which made it possible to record the whole Debye ring. Normalised 60S2 steel and duralumin

were used as samples. The elastic limit of steel was 40-45 kg/mm^2 and that of duralumin was 20 kg/mm^2. The applied stresses were measured by means of resistance strain gauges. For each face the following X-ray patterns were recorded: one for the unstressed state, three for different stresses within the elastic limit (each of these was recorded twice), two outside the elastic limit and one for the unloaded sample after it had been tested. It was found that the Debye lines of an elastically deformed sample fall on an ellipse with semi-axes $a < b$ (Fig 1). The numerical values of the Debye line displacements are given in Table 1. Broadening of the Debye lines was studied by means of a microphotometer. The results are shown in Figs 2,3 and 4 for the faces (112), (301) and (511) respectively. The curves marked with 0 denote the unstressed state, all the other curves were obtained on stressed samples. Agreement between theory and experiment shows that anisotropy of individual crystallites is fully retained in a polycrystalline aggregate. Each crystallite behaves as a monocrystal on deformation of the sample. Within the elastic limit

SOV/126-7-6-7/24

Crystallite Anisotropy and Debye Ring Structure in a Stressed Sample

the deformation field in a polycrystal is discontinuous on transition from one crystallite to another if these crystallites are orientated differently. This produces broadening of the Debye rings in a stressed sample. The experimental results do not agree completely with the theoretical predictions. This is because the authors assume in their theoretical calculations that free anisotropic deformations of crystallites are possible without interaction of the neighbouring crystallites; the effect of the substance filling the inter-crystallite space was not allowed for either. Outside the elastic limit the interaction between individual crystallites becomes so great and the crystallite deformation is such that the anisotropic properties of crystallites are averaged out and the polycrystal behaves as an isotropic body, both from the macroscopic and microscopic points of view. There are 4 figures, 2 tables and 7 references, 5 of which are Soviet, 1 English and 1 German.

Card 4/4

ASSOCIATION: Gor'kovskiy politekhnicheskiy institut imeni A.A.Zhdanova (Gor'kiy Polytechnical Institute imeni A.A.Zhdanov)

SUBMITTED: October 31, 1957

AKSENOV, G.I.; MOSHCHANSKIY, V.A.

Response to O.M. Shivrin concerning his article on the "anisotropy of crystallites." Fiz. met. i metalloved. 10 no.4:639-640 O '60. (MIRA 13:11)

(Metal crystals) (Anisotropy)
(Shivrin, O.M.)

MOSHCHANSKIY, V. A.

Device for demonstrating the law of conservation of moment of momentum. Izv. vys. ucheb. zav.; fiz. no.6:178 '62.
(MIRA 16:1)

1. Gor'kovskiy sel'skokhozyaystvennyy institut.

(Moments of inertia)
(Physics—Study and teaching)

L 14305-63 EWT(l)/EWP(q)/EWT(m)/BDS AFFTC/ASD JD

ACCESSION NR: AP3000094 S/0126/63/015/004/0518/0522

AUTHORS: Aksenov, G. I.; Moshchanskiy, V. A.

TITLE: Debye ring structure of a plane-stressed sample

SOURCE: Fizika metallov i metallovedeniye, v. 15, no. 4, 1963, 518-522

TOPIC TAGS: Debye ring structure, plane-stressed sample, linearly stressed sample

ABSTRACT: The present work is a continuation of an earlier investigation by the authors with the difference that in this case the X-ray crystal structures of plane-stressed instead of linearly stressed samples were analyzed. A general formula for the angular displacement magnitude of the Debye line (in radians) has been derived for a plane-stressed sample. The theoretical results have been verified experimentally. A comparison between the Debye line displacements in plane- and linearly stressed samples has been made and the results are tabulated. The authors conclude that the Debye line displacement of linearly stressed samples in the direction of XX and YY axes is such that the Debye ring acquires an elliptical form. The Debye ring of a plane-stressed sample is a circle the radius of which decreases gradually with an increase in stress, providing the principal normal stresses which create a plane-stressed state are equal. The Debye ring has a

Card 1/2

L 14305-63
ACCESSION NR: AP3000094

circular form when the stress exceeds the limit of elasticity and when the stress is removed. Orig. art. has: 5 formulas and 1 table.

ASSOCIATION: Kuyby*shevskiy aviatsionnyy institut (Kuyby*shev Institute of Aviation) Gor'kovskiy politekhnicheskiy institut im. A. A. Zhdanova (Gorkiy Polytechnic Institute)

SUBMITTED: 17Jul62 DATE ACQ: 12Jun63 ENCL: 00

SUB CODE: PH NO REF SOV: 005 OTHER: 000

Card 2/2

USSR/Geophysics - Sands of Karakum FD-1250

Card 1/1 : Pub. 129-12/25

Author : Moshchanskiy, V. A.

Title : Problem of the quicksand nature of sands

Periodical : Vest. Mosk. un., Ser. fizikomat. i yest. nauk, 9, No 1, 93-98, Feb 1954

Abstract : From laboratory experiments in connection with the engineering-geological and constructional use of sandy foundations, the author concludes that the typical sands of West Karakum are not genuine quicksands, as imagined by A. F. Lebedev; they acquire quicksand properties under the action of the hydrodynamic pressure of filtrating water. Also, the stability of sandy banks cannot be characterized by existing formulas. A laboratory procedure for determining the quicksand nature of sands is presented.

Institution :

Submitted : October 29, 1953

AUTHOR: Moshchanskiy, V.A., (Gor'kiy) 47-58-2-7/30

TITLE: From the Experience of Entrance Examinations for the Gor'kiy Agricultural Institute (Iz opyta vstupitel'nykh ekzamenov v Gor'kovskiy sel'skokhozyaystvennyy institut)

PERIODICAL: Fizika v Shkole, 1958, Nr 2, pp 47-49 (USSR)

ABSTRACT: The results of these examinations were in general good, but the author was not pleased with the formalistic, standardized answers of the pupils, who just learned the answers by heart without clearly understanding the meaning of the physical laws and phenomena.

AVAILABLE: Library of Congress

Card 1/1 1. Physics-Study and teaching

KOSHCHANSKIY, V.A.

New data on temperature conditions and the structure of ground frozen over a long period in Salekhard region. Nauch.dokl.vys. shkoly; geol.-geog.nauki no.2:175-179 '58. (MIRA 12:2)

1. Moskovskiy universitet, kafedra inzhenernoy geologii i gruntovedeniya.

(Salekhard region--Frozen ground)
(Climatology)

MOSHCHANSKIY, V. A., Cand Geol-Mineral Sci — (diss) "Engineering and geological characteristics and method of studying rocks of the Salemalsk series in the region of the Salekhardsk Hydroelectric station on the Oba River," Moscow, 1960, 18 pp, 110 cop. (Moscow State U im M. V. Lomonosov. Laboratory of Hydro-Geological Problems im F. P. Savarenskiy, AS USSR) (KL, 42-60, 112)

MOSHCHANSKIY, V.A., inzh.

Engineering-geological analysis of Salemal strata in the Salekhard region. Trudy Gidroproekta 3:149-162 '60. (MIRA 13:7)

1. Otdel geologicheskikh izyskaniy Vsesoyuznogo proyektno-izyskatel'skogo i nauchno-issledovatel'skogo instituta "Gidroproyekt" imeni S.Ya.Zhuka.

(Salekhard region--Soil mechanics)

MOSHCHANSKIY, V.A.; MULINA, A.V.

Some characteristics of the formation of temperature conditions in the river valleys of the Yakut A.S.S.R. Merzl.issl. no.2:96-114 '61. (MIRA 16:5)

(Yakutia--Frozen ground)

MOSHCHANSKIY, V.A.; MULINA, A.V.

Some data on the structure of the upper part of the permafrost layer within the Lena- Vilyuy watershed. Mersl.issl. no.2:115-128 '61. (MIRA 16:5)

(Lena Valley--Frozen ground) (Vilyuy Valley--Frozen ground)

MOSHCHANSKIY, V.N.

Interconnection of general education with mechanical engineering and practical work. Politekh. obuch. no.7:37-40 Jl '59.
(MIRA 12:9)

1.Siverskaya srednyaya shkola No.1, Leningradskaya oblast'.
(Technical education)

L 36977-66

ACC NR: AP6008521 SOURCE CODE: UR/0280/66/000/001/0070/0078

AUTHOR: Moshchenskiy, V. A. (Minsk) 3

ORG: none

TITLE: A problem in the theory of finite automatons

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kirbernetika, no. 1, 1966, 70-78

TOPIC TAGS: finite automaton, discrete automaton, circuit design, computer theory

ABSTRACT: The Ginsburg method for the synthesis of finite automatons from a finite number of experiments (S. Ginsburg, IRE Trans., v. EC-8, No 1) allows the design of finite automatons with a minimum number of states, but if the overall length of the experiments is not larger than 60, almost a week's time is needed to establish the automaton. The complexity of the method appears to be due to the simultaneous introduction of symbols and determination, by means of propositions, of the transition and exit functions of the sought automaton. The present paper outlines a method in which the synthesis of automatons from a finite number of experiments is based on the specification of the automaton by the contiguity matrix of the graph G = (N, U), where the set N comprises all the experiments of length 1 of the given automaton, whereas the set U of directed arcs is determined by the transition functions. For simplicity, the derivations deal only with finite automatons with two inputs and two outputs and the established theory is then illustrated by the

Card 1/2

L 36977-66
ACC NR: AP6008521

synthesis of an automaton with three inputs. Using the new method with experiments the overall length of which did not exceed two, the author was able to establish by manual means in a single day a finite automaton whose number of states, though not a true minimum, is extremely close to it. In addition, the discovery of more powerful criteria for the joining of rows allows transformations of the contiguity matrix by computers securing the establishment of finite automatons with a minimal number of states. Orig. art. has: 13 formulas and 4 tables.

SUB CODE: 09/ SUBM DATE: 17Jul64/ ORIG REF: 002/ OTH REF: 002

Card 2/2

ACC NR: AP6002211 (A) SOURCE CODE: UR/0153/65/008/005/0840/0845 14 13

AUTHOR: Moshchinskaya, N. K.; Vasil'yev, N. N.

ORG: Department of Plastic Technology, Dnepropetrovsk Chemical-Technological Institute im. F. E. Dzerzhinskiy (Kafedra tekhnologii plastmass Dnepropetrovskogo khimiko-tekhnologicheskogo instituta)

TITLE: Plasticizing of poly(vinyl chloride) by plasticizers of different chemical nature. II. Compatibility and efficiency of plasticizers

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 8, no. 5, 1965, 840-845

TOPIC TAGS: polyvinyl chloride, plasticizer, molecular weight

ABSTRACT: The plasticizing activity and compatibility of diphenylmethane, ditolylmethane (mixture of isomers), ditolyl ketone (excess of 2,4'-isomer), toluene-formaldehyde resin (containing 6% O_2), benzylphenol, toluene-phenol-formaldehyde resins (molecular weight 375 and 286), benzylphenyl glycidate, xylylphenyl glycidate, epoxidized toluene-phenol-formaldehyde resins (molecular weight 515 and 348) were studied with respect to plasticizing poly(vinylchloride), using dibutyl phthalate, phenol, and epoxy resin as the standards. In a series of chemically related plasticizers, a reverse dependence was observed between their compatibility and their molecular weights. There was, however, no definite relation between the activity and the molecular weight of the plasticizers. Plasticizers of 10^8-10^{10} ohm·cm specific

Card 1/2 UDC: 678.049 : 678.743.22

L 39476-65

ACC NR: AP6002211

volume resistivity were the most effective. The polarity of plasticizers erratically affected their activity. The more polar ditolyl ketone as well as the less polar diaryls had a lower activity. Benzylphenyl glycidate, xylylphenyl glycidate, and benzylphenol were the most efficient plasticizers among the compounds investigated. The products obtained had better mechanical and dielectric properties than those obtained with dibutyl phthalate. Orig. art. has: 2 figs. and 3 tables.

SUB CODE: 07/ SUBM DATE: 26Mar64/ ORIG REF: 014/ OTH REF: 002

Card 2/2 mlp

L 36176-66 EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NR: AP6014266 (A) SOURCE CODE: UR/0153/66/009/001/0121/0125

AUTHOR: Vasil'yev, N. N.; Voshchinskaya, N. K.

ORG: Plastics Technology Department, Dnepropetrovsk Chemical Engineering Institute im. F. E. Dzerzhinskiy (Kafedra tekhnologii plasticheskikh mass, Dnepropetrovskiy khimiko-tekhnologicheskiy institut)

TITLE: On the plasticization of polyvinyl chloride by plasticizers of diverse chemical nature. Part 3: Effect of plasticizers on the thermal stability and thermal degradation of polyvinyl chloride

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 9, no. 1, 1966, 121-125

TOPIC TAGS: polyvinyl chloride, plasticizer, thermal stability, thermal degradation

ABSTRACT: The effect of the following compounds on the thermal stability and thermal degradation of polyvinyl chloride (PVC) was studied: ditolylmethane (DTM), tolylnaphthylmethane (TNM), ditolyl ketone (DTK), toluene-formaldehyde resin (TF), phenol, benzylphenol (BP), toluene-phenol-formaldehyde resin (TPF), benzylphenol glycidyl ester (BPE), ETFF-3 and ED-6 epoxy resins, and dibutyl phthalate (DBP). The thermal stability of PVC was found to be affected both by the chemical structure of the plasticizers and the mere dilution of the polymer by the plasticizer, irrespective of its chemical nature. The rate of HCl evolution is markedly decreased by compounds containing epoxy groups and by TF resin. Thermal degradation is strongly accelerated by

Card 1/2

UDC: 678.66.092:678.049:678.743.22

L 36176-66
ACC NR: AP6014266

phenols and polyphenols, including BP and TPF. DTK occupies an intermediate position. The mechanism of action of these compounds on the thermal stability of PVC is discussed, and recommendations for the use of some new plasticizers are given. Orig. art. has: 3 figures and 2 tables.

SUB CODE: 07, 11/ SUBM DATE: 26Mar64/ ORIG REF: 004

Card 2/2 nlp

AFONOVA, V.N.; MOSHCHENKO, A.I.

Amino nitrogen of the blood serum in lead poisoning. Nauch. trudy Riaz. med. inst. 15:3-5 '62. (MIRA 17:6)

1. Kafedra biologicheskoy khimii (zav. kafedroy - prof. G.A.Uzbekov) Ryazanskogo meditsinskogo instituta imeni Pavlova.

GAVRILENKO, D.M.; KRYUGER, T.P.; MOSHCHENKO, V.Ya.

Organization and some results of reserach in the Golodnaya Steppe. Mat. po proizv. sil. Uzb. no.15:463-475 '60. (MIRA 14:8)

1. Sovet po izucheniyu proizvoditel'nykh sil AN Uzbekskoy SSR. (Golodnaya Steppe--Research)

MIKHALKEVICH, M.P., polkovnik meditsinskoy sluzhby; SHARIN, V.N., polkovnik meditsinskoy sluzhby, zasluzhennyy vrach RSFSR; MOSHCHENKO, V.A., podpolkovnik meditsinskoy sluzhby

Experience in organizing gratuitous blood donorship. Voen.-med. zhur. no.9:55-57 '64. (MIRA 18:5)

ZINDEL', L.A.; SIMONENKO, I.A.; PETROV, N.P., kand. geol.-miner. nauk, otv. red.; MOSHCHENKO, Z.V., red.; KARABAYEVA, Kh.U., tekhn. red.

[Mineralogical and geochemical characteristics of clays and the petroleum and gas bearing potential in the Jurassic sediments of the Fergana] Mineralogo-geokhimicheskaia kharakteristika glin i nekotorye voprosy neftegazonosnosti iurskikh otlozhenii Fergany. Tashkent, Izd-vo AN Uzb.SSR, 1963. 112 p. (MIRA 17:1)
(Fergana--Petroleum geology)

ZAKHIDOV, A.Z.; CHERNOVA, A.F.; SHUL'TS, V.L., doktor geogr. nauk, prof., otv. red.; MOSHCHENKO, Z.V., red.; GOR'KOVAYA, Z.P., tekhn. red.

[Water-power resources of the rivers of the Uzbek S.S.R.] Vodnoenergeticheskie resursy rek Uzbekskoi SSR. Tashkent, Izd-vo AN UzSSR, 1963. 282 p. (MIRA 17:1)
(Uzbekistan—Water power)

KHUDAYBERDYYEV, R.; SAIDOV, D.K., otv. red.; MOSHCHENKO, Z.V., red.; YENGALYCHEVA, D., red.

[Fossil trees of the Turgay type] Iskopaemye drevesiny turgaiskogo tipa. Tashkent, Nauka, 1964. 102 p. (MIRA 18:8)

1. Chlen-korrespondent AN UzbekSSR (for Saidov).

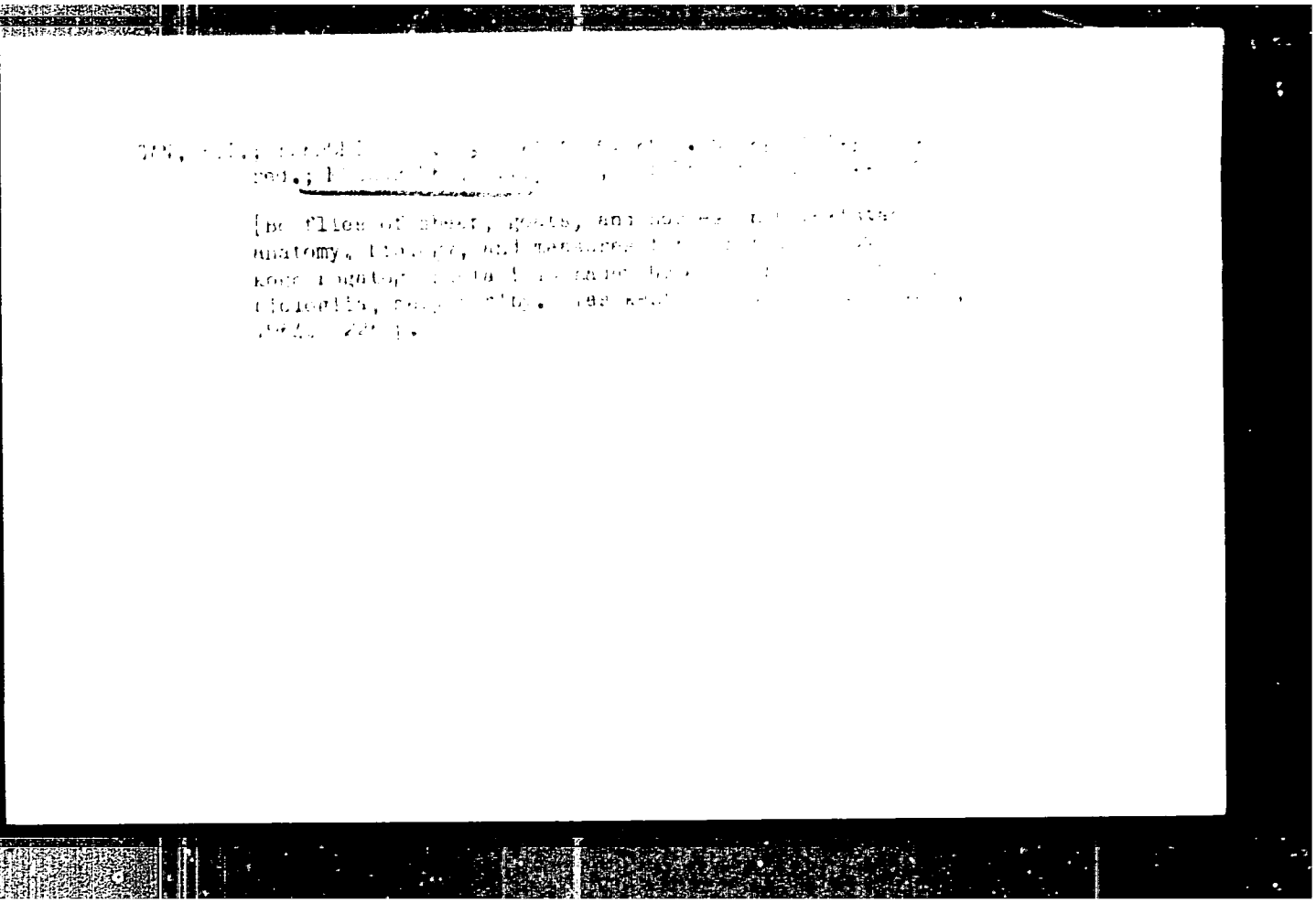
CHAVLI, S.G., doktor geol.-miner. nauk, prof., otv. red.; MOLCHENKO, Z.V., red.

[Minerals of Uzbekistan and problems of their genesis] Poleznye iskopaemye Uzbekistana i voprosy ikh genezisa. Tashkent, Izd-vo "Nauka Uzbekskoi SSR," 1964. 163 p. (MIRA 17:7)

1. Akademiya nauk Uzbekskoy SSR, Tashkent. Otdeleniye geologicheskikh nauk.

VERNIK, R.S.; MAYLIBA, Z.A.; MOMOTOV, I.F.; TROFIMOV, I.I., doktor biol. nauk, prof., otv. red.; MOSHCHENKO, Z.V., red.

[Vegetation of the lower part of the Amu Darya River and its efficient use] Pastitel'nost' nizov'ev Amu-Dar'i i puti ee ratsional'nogo ispol'zovaniia. Tashkent, Izd-vo "Nauka" Uzbekskoi SSR, 196[illegible] 210 p. (MIRA 18:1)



BONDARENKO, O.N.; VVEDENSKIY, A.I., kand. biol. nauk, otv. red.; MOSHCHENKO, E.V., red.

[Key for identification of the higher plants of the Karakalpak A.S.S.R.] Opredelitel' vysshikh rastenii Karakalpakii. Tashkent, Izd-vo "Nauka" Uz.SSR, 1964. 302 p. (MIRA 18:1)

MUZAFAROV, A.M., prof, akademik, otv. red.; MOSHCHENKO, Z.V., red.

[Sporiferous plants of Central Asia and Kazakhstan; materials] Sporovye rasteniia Srednei Azii i Kazakhstana; materialy. Tashkent, Izd-vo "Nauka" Uzbekskoi SSR, 1965. 229 p. (MIRA 18:12)

1. Koordinatsionnoye soveshchaniye spetsialistov po sporovym rasteniyam respublik Sredney Azii i Kazakhstana, Tashkent, 1961. 2. Akademiya nauk Uzbekskoy SSR (for Muzafarov).

MOSHCHENNIKOV, N.

PA22/49T104

USSR/Radio Stations Oct 48
Radio Frequencies

"Sverdlovsk Competition," N. Moshchennikov, ½ p

"Radio" No 10

Describes test performed in Sverdlovsk 10-11 Jun 48 to determine best frequency range for summer intra Union communication at various times of day and night. Radio stations of regions 2,3,4,5,6,8 and 9 were most active. First, Seventh, and Zero regions were represented by single stations.

LC 22/49T104

1. GEYZER, I.; MALISHKEVICH, M. ; MOSHCHENNIKOV, N.; SHPILEVOY, V.; AKHEND, A.; GOLOVANENKO, V. V.

2. USSR (600)

4. Radio - Exhibitions

7. Radio amateurs are getting ready for the Eleventh All-Union Radio Exhibition. Radio. No. 10, 1952

9. Monthly List of Russian Accessions, Library of Congress, _____1953. Unclassified.

MOSCHENNIKOV, N.

Radio - Exhibitions

Sverdlovak radio amateurs are preparing for an exhibition.
Radio, 29, No. 3, 1952.

9. Monthly List of Russian Accessions, Library of Congress, June 1952. UNCLASSIFIED.

MOSHCHEV, Rafail

Photometric determination of silicon in cast iron. Rafail Moshchev. *Compt. rend. acad. bulgare sci.* 8, No. 2, [illegible] (1955) (in Russian, English summary).—An improved method is given for precise photometric detn. of Si in cast iron by using $N_2H_4.HCl$. A 0.1-g. sample of cast iron (0.5-3% Si) is dissolved on a water bath in a volumetric flask with 10 ml. $4N$ H_2SO_4 previously heated to 80-90°. After soln. 5 ml. $4.2N$ HNO_3 is added and heating continued for another 2-3 min. The soln. is then cooled, filled to mark, and used as base soln. Base soln. (0.5 ml.) is added to a 50-ml. volumetric flask, 8 ml. $0.15N$ H_2SO_4 and 5 ml. 5% NH_4MoO_4 are added, the soln. is mixed thoroughly and allowed to stand 3-4 min. to full development of Si-Mo complex. H_2SO_4 (12 ml. of $8N$) is added to destroy the P-Mo complex, then 4 ml. 0.30% $N_2H_4.HCl$ soln., the soln. is mixed and heated 5 min. on a boiling water bath. It is then cooled, filled to the mark, and tested photometrically with S72 red filter. The color remains unchanged for several hrs. A blank run is made with an Fe^{+++} soln. The calibration curve is constructed from standard samples or by the perchlorate and HF method. Beer's law holds for concn. from 0.20 to 2.00 γ Si/ml. V. N. Bednarski

4000

Moshchevitin, Antonin, Savvich

PHASE I BOOK EXPLOITATION 411

Moshchevitin, Antonin Savvich; Engineer-Colonel

Elektrotekhnika (Electrical Engineering) Moscow, Voyen. Izd-vo Min-va obor. SSR, 1957. 511 p.

Ed.: Boykov, M. A.; Engineer-Colonel; Tech. Ed.: Strel'nikova, M. A.

PURPOSE: The monograph is an elementary text-book for general readers.

COVERAGE: The theoretical bases of electrical engineering and the practical uses of electrical energy comprise the subject matter of this book. The basic problems of d-c and a-c current theory are examined and the author reviews the chemical sources of electrical energy, electrical machines, rectifiers and electric measurements. Special attention is paid to the physical aspects of the phenomena and processes involved. The book starts with a historical review of the development of electrical engineering, stress being laid on the achievements of Russian scientists of the 18th and 19th centuries. The following Soviet Scientists are praised for their part in Lenin's electrification plan, GOELRO :

Card 1/17

G. M. Krzhyzhanovskiy, M. A. Shatelen, R. E. Klisson, L. B. Krasin, and Professors G. F. Malmar'yev, B. Ye. Vedeneyev, G. O. Graftio, K. A. Krug, S. I. Kurbatov, V. F. Mitkevich, and K. I. Shenfer. The following Soviet scientists are also mentioned: V. I. Vologdin, the inventor of powerful mercury-arc rectifiers and the author of a method for casehardening steel products by means of HF currents; S. I. Vavilov, whose theories permitted the creation of daylight lamps; A. A. Smurov, A. F. Ioffe and A. M. Zalesskiy, who investigated high-voltage problems; M. P. Kostenko, K. I. Shenfer, and Ye. A. Alekseyev, whose studies constitute the basis of modern electrical machinery design; L. I. Mandel'shtam, and N. D. Papaleksi, who investigated oscillation theory and radio wave propagation; B. R. Lozarenko, and N. I. Lozarenko, the discoverers of the electric-spark metal processing method. There are no references.

TABLE OF CONTENTS:

PHASE I BOOK EXPLOITATION SOV/4277

Moshchevitin, Anton Savvich, Engineer-Lt. Colonel

Elektrotekhnika (Electrical Engineering) 2nd ed., rev. and enl. Moscow, Voyenizdat, 1960. 535 p. No. of copies printed not given.

Ed.: A.V. Vrublevskiy, Engineer-Lt. Colonel; Tech. Ed.: R.F. Anikina.

PURPOSE: This textbook is intended for military personnel with basic education in physics and mathematics. It may also be useful to the general reader interested in electrical engineering.

COVERAGE: The book describes the theoretical principles of electrical engineering and practical problems of the use of electric power. Basic questions of d-c and a-c theory are discussed. Information is given on the chemical sources of electrical energy, electric machines, semiconductors, rectifiers, electrical measuring instruments and magnetic amplifiers. Special attention is paid to the physical essence of the examined phenomena and processes. No personalities are mentioned. There are no references.

Card 1/15

AKSEL'ROD, I., kand. tekhn. nauk; MOSHCHEVITIN, G., inzh.

Efficient methods for earthwork operations to be carried out under winter conditions. Na stroi. Mosk. 2 no.9:4-5 S '59. (MIRA 13:2)
(Earthwork--Cold weather conditions)

MOSHCHEVITIN, G.T., inzh.; SAKHAROV, V.M., kand.tekhn.nauk

Crack resistance of pressureless reinforced concrete pipes.
Bet.i zhel.-bet. no.1:42-46 Ja '60. (MIRA 13:5)
(Pipe, Concrete--Testing)

MOSHCHEVITIN, G.T., kand. tekhn. nauk

Study of the crack resistance and deformability of thin-walled elements of reinforced concrete structures. Nauch. trudy NIIMos-atrola no.1:64-94 '64. (MIRA 18:1)

MOSHCHICH, P.S.

Conditioned and unconditioned bascular reflexes in children in tuberculous meningitis. Ped., akush. i gin. 19 no.2:20-23 '57. (MIRA 13:1)

1. Kafedra fakul'tetskoy pediatrii (zav. - prof. V.G. Balaban) Kiyevskogo ordena Trudovogo Krasnogo Znameni meditsinskogo instituta im. akad. A.A. Bogomol'tsa (dir. - dots. I.P. Alekseyenko).
(BLOOD VESSELS) (MENINGES--TUBERCULOSIS)

MOSHCHICH, P.S., Cand Med Sci -- (diss) "Peculiarities of the clinic and cerebrospiral fluid in the complex treatment of tubercular meningitis in children." Kiev, 1958, 19 pp (Kiev Order of Labor Red Banner Med Inst im Academician A.A. Bogomolets) 200 copies (KL, 28-58, 110)

MOSHCHICH, P.S. [Moshchych, P.S.], assistent; KOKAREVA, T.B.

Changes in the fundus oculi in children under combined therapy for tuberculous meningitis. Ped., akush. i gin. 20 no.6:21-25 '58. (MIRA 13:1)

1. Kafedra fakul'tetskoy pediatrii (zav. - prof. V.G. Balaban) Kiyevskogo ordena Trudovogo Krasnogo Znameni meditsinskogo instituta im. akad. A.A. Bogomol'tsa (direktor - dots. I.P. Alekseyenko).

(EYE) (MENINGES--TUBERCULOSIS) (ISONICOTINIC ACID)

MOSHCHICH, P.S., kand.med.nauk

Epidemiology and prevention of infectious and diseases of staphylococcal etiology (form "Pediatria polska," no.3-4, 1959). Ped., akush. i gin. 22 no.4:3 of cover '60. (MIRA 14:5)
(STAPHYLOCOCCAL DISEASE)

MOSHCHICH, P.S.

Review of "Possibilities of using enzyme analysis in identifying rheumatism". A.Rafalowicz and others. Reviewed by P.S.Rafalowicz. Ped., akush. i gin. 22 no.6:3 of cover. '60. (MIRA 14:10)
(ENZYMES) (RHEUMATIC FEVER--DIAGNOSIS)
(RAFALOWICZ, A.)

MOSHCHICH, P.S., kand.med.nauk; KUZ'MENKO, N.D., aspirant; BLINKMAN, R.S., ~~starshiy~~ laborant

Serological indexes (antistreptolysin-O titer, antistreptohyaluronidase and C-reactive protein) in rheumatic fever and chronic tonsillitis in children. Vop. okh. mat. i det. 6 no.5:38-43 38-43 My '61. (MIRA 14:10)

1. Iz kafedry fakul'tetskoy pediatrii (zaveduyushchiy - prof. V.G. Balaban) Kiyevskogo ordena Trudovogo Krasnogo Znameni meditsinskogo instituta imeni akad. A.A.Bogomol'tsa (direktor - dotsent V.D.Bratus').

(RHEUMATIC FEVER) (TONSILS--DISEASE)
(ANTIGENS AND ANTIBODIES) (BLOOD PROTEINS)

BALABAN, V.G., prof.; MOSHCHICH, P.S., dotsent

Some problems of differential diagnosis of tonsillogenic intoxication and a sluggish course of rheumatic fever in children. Vop. revm. 3 no.4:61-67 O-D '63.

(MIRA 17:2)

1. Iz kafedry fakul'tetskoy pediatrii (zav.- prof. V.G. Balaban) Kiyevskogo ordena Trudovogo Krasnogo Znameni meditsinskogo instituta imeni A.A. Bogomol'tsa.

ADRIANOV, P.K.; ANDRIANOV, S.M.; BEREZIKOV, B.S.; GOLOVKO, V.G. [Holovko, V.H.]; DOBROVOL'SKIY, A.V. [Dobrovol's'kyi, A.V.]; DOVGAL', M.F. [Dovhal', M.F.]; YELIZAROV, V.D. [Elizarov, V.D.]; ZHIZDRINSKIY, V.M. [Zhyzdryns'kyi, V.M.]; ZVENIGORODSKIY, O.M. [Zvenigorods'kyi, O.M.]; ZAYCHENKO, R.M. [Zaichenko, R.M.]; IVANENKO, Ye.I. [Ivanenko, Ye.I.]; KOMAR, A.M.; KOS'YANOV, O.M.; KAZAKOV, O.I.; KOSENKO, S.K.; KLIMENKO, T.A.; KIR'YAKOV, O.P.; KALISHUK, O.L.; LELICHENKO, M.T.; LEBEDICH, M.V.; MIKHAYLOV, V.O. [Mykhailov, V.O.]; MOROZ, I.I.; MOSHCHIL', V.Yu. [Moshchil', V.IU.]; NEPOROZHNIY, P.S. [Neporozhnii, P.S.]; [illegible]NIY, S.M. [Nezdatnyi, S.M.]; NOVIKOV, V.I.; POLEVOY, S.K. [Polevoi, S.K.]; PERSHKREST, M.S.; PUZIK, O.Ye. [Puzik, O.E.]; RADIN, K.S.; SLIVINSKIY, O.I. [Slivins'kyi, O.I.]; STANISLAVSKIY, A.I. [Stanislavs'kyi, A.I.]; USPENSKIY, V.P. [Uspens'kyi, V.P.]; KHORKHOT, O.Ya.; KHILYUK, F.P.; TSAPENKO, M.P.; SHVETS, V.I.; MAL'CHEVSKIY, V. [Mal'cheva'kyi, V.], red.; ZELENKOVA, Ye. [Zelenkova, E.], tekhn.red.

[The Ukraine builds] Ukraina buduie. Kyiv, Derzh.vyd-vo lit-ry z budivnytstva i arkhit., 1957. 221 p. (MIRA 11:5)
(Ukraine--Construction industry)

KOSHCHIL', V. Yu., arkhitektor

Using hollow blocks in constructing ceilings. Sil'. bud. 7 no.5:6-7 My '57. (MIRA13:6)
(Building blocks) (Farm buildings)

MOSHCHIL', V., arkhitektor

Rural construction in the Bulgarian People's Republic. Stil', bud. 7 no.12:15-17 D '57. (MIRA 13:5)
(Bulgaria--Farm buildings)

MOSHCHIL', V.

Efficient precast reinforced concrete buildings. Sil'. bud. 10 no.9:9-11 S '60. (MIRA 13:8)

1. Zamestitel nachal'nika Glavnogo upravleniya stroitel'stva Ministerstva sel'skogo khozyaystva USSR.
(Precast concrete construction) (Farm buildings)

MOSHCHIL', V., arkhitektor

A good example. Sil'. but. 11 no.5:10-11 My '61.
(MIRA 14:6)
(Krasnoarmeyskiy District--Swine houses and equipment)

MOSHCHIN, I., instruktor-aviamodelist (Rzhev, Kalininskoy obl.); BLINOV, B., inzh.-konstruktor (Moskva); PATRUSHEV, A.; GROMOV, V., instruktor aviamodel'noy laboratorii (Penza); TIMOFEYEV, A., obshchestvennyy instruktor (Leningrad); POPOV, M.

The new direction in airplane modeling. Kryl. rod. 15 no.12:26 D '64. (MIRA 18:3)

1. Rukovoditel' aviamodel'nogo kruzhka Doma pionerov, Sovetsk, Kirovskoy oblast (for Patrushev). 2. Predsedatel' aviamodel'nogo komiteta Federatsii aviatsionnogo sporta Ukrainy, Kiyev (for Povov).

PROCESSES AND PROPERTIES INDEX

CA

10

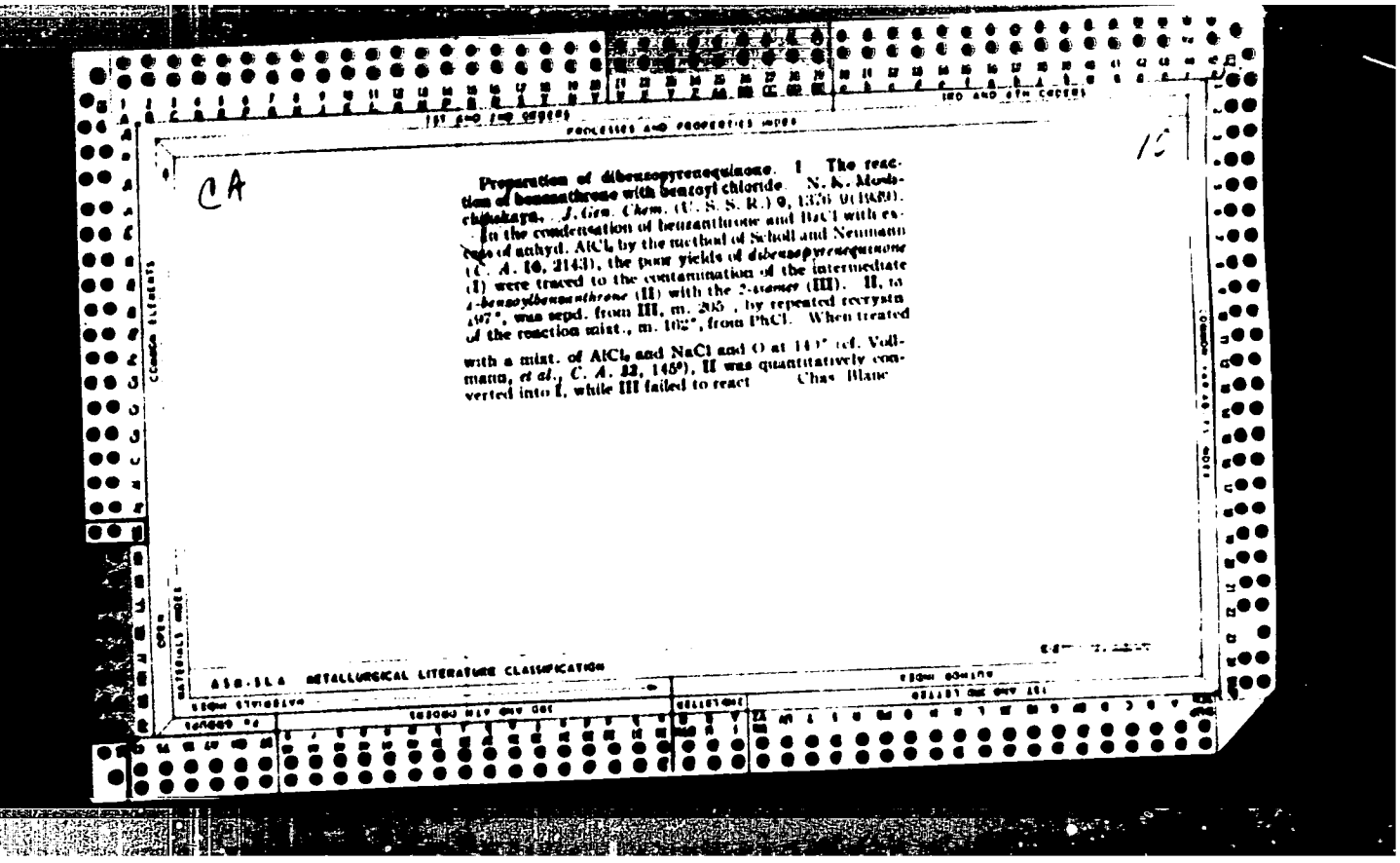
The Kolbe and Schmitt synthesis (of hydroxy carboxylic acids). I. The mechanism of the reaction of formation of 2,3-hydroxynaphthoic acid N. P. Shin and N. K. Mukhitdinova. *J. Gen. Chem.* (U. S. S. R.) 8, 810-22 (in English 822-3)(1938). — The sep. reaction stages in the carbonation of dry β-$C_{10}H_7ONa$ (I) to *2,3-HOC$_{10}$H$_6$CO$_2$H* (II) (Schmitt and Burkard, *Ber.* 20, 2701(1887)) were studied. I reacts with CO_2 at lower temps. (40-60°), forming *$C_{10}H_7OCO_2Na$* (III). The reaction is completed at 10 atm. in 1-1.5 hrs. At higher temps. the reversible reaction III ⇌ I + CO_2 is shifted to the right with a corresponding increase of the reaction pressure. The next stage is the rearrangement of III to *2,1-hydroxynaphthoic acid* (IV). This is effected at 120° by the intermediate cleavage of CO_2 and the formation of *2,1-NaOC$_{10}$H$_6$CO$_2$H* (V) (and not 2,1-$HOC_{10}H_6CO_2Na$). Contrary to Tijmstra and Eggink (*Ber.* 39, 14(1906)), the carbonation at the temp. of the IV formation (120°) also proceeds with the intermediate formation of III. It is evident that the continuous formation and decompn. of III with the liberation of active CO_2 mol. is a primary cause of the IV formation in the synthesis of II. This reaction explains the impossibility of obtaining HO carboxylic acids (II and salicylic acid) by carbonation of free phenols. Exptl. evidence shows that at 145-60° (long before the 2nd rearrangement to II) 0.5 of the entire V (formed in 92-4% yield) is converted into *2,1-NaOC$_{10}$H$_6$CO$_2$Na* (VI) and another half is decompd. into $C_{10}H_7OH$ and CO_2. This conversion of V to VI could not be inhibited by raising the CO_2 pressure to 45 atm. The result of this complex reaction is that the theoretical yield of II is 50% based on $C_{10}H_7OH$, while in practice 30-3% II is obtained. On further heating of the reaction mixt. to 200° VI is rearranged into the di-Na salt of II. The mechanism of the latter reaction is being investigated. The carbonation at 150-60° (instead of 40-60°) gives directly VI, which in this case is formed by the interaction of the intermediately formed V with I: V ⇌ I + CO_2, V + I → VI + $C_{10}H_7OH$. In this case only 0.5 of the amt. of CO_2 is absorbed as compared with the carbonation in the cold. In the carbonation directly to II at above 200° the reaction proceeds also with the intermediate formation of III, V and VI, but all these stages proceed simultaneously and the periods of the existence of III and V are extremely short. The presence of considerable Na_2CO_3 in the melt is traced to the formation of resinous decompn. products in the 2nd rearrangement to II. If β-$C_{10}H_7OK$ instead of I is used, 47.8% II, 34.8% $C_{10}H_7OH$ and 12% resinous products are obtained. The conversion of the mono-K to the di-K salt of IV takes place in this case at the temp. close to the II formation and cannot be completed without reducing the pressure from 17 to 3-4 atm. Twenty references. Chas. Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

MOSHCHINSKAYA, N.K.

"Research on the Process of Obtaining Dibenzo-pyrene-quinone", Part I. "The Reaction of Benzantrone with Benzoyl Chloride", Zhur. Obshch. Khim., 9, No. 15, 1939. Central Laboratory, Rubezhandkiy Chemical Combine. Received 3 Feb 1939.

Report U-1614, 3 Jan 1952.

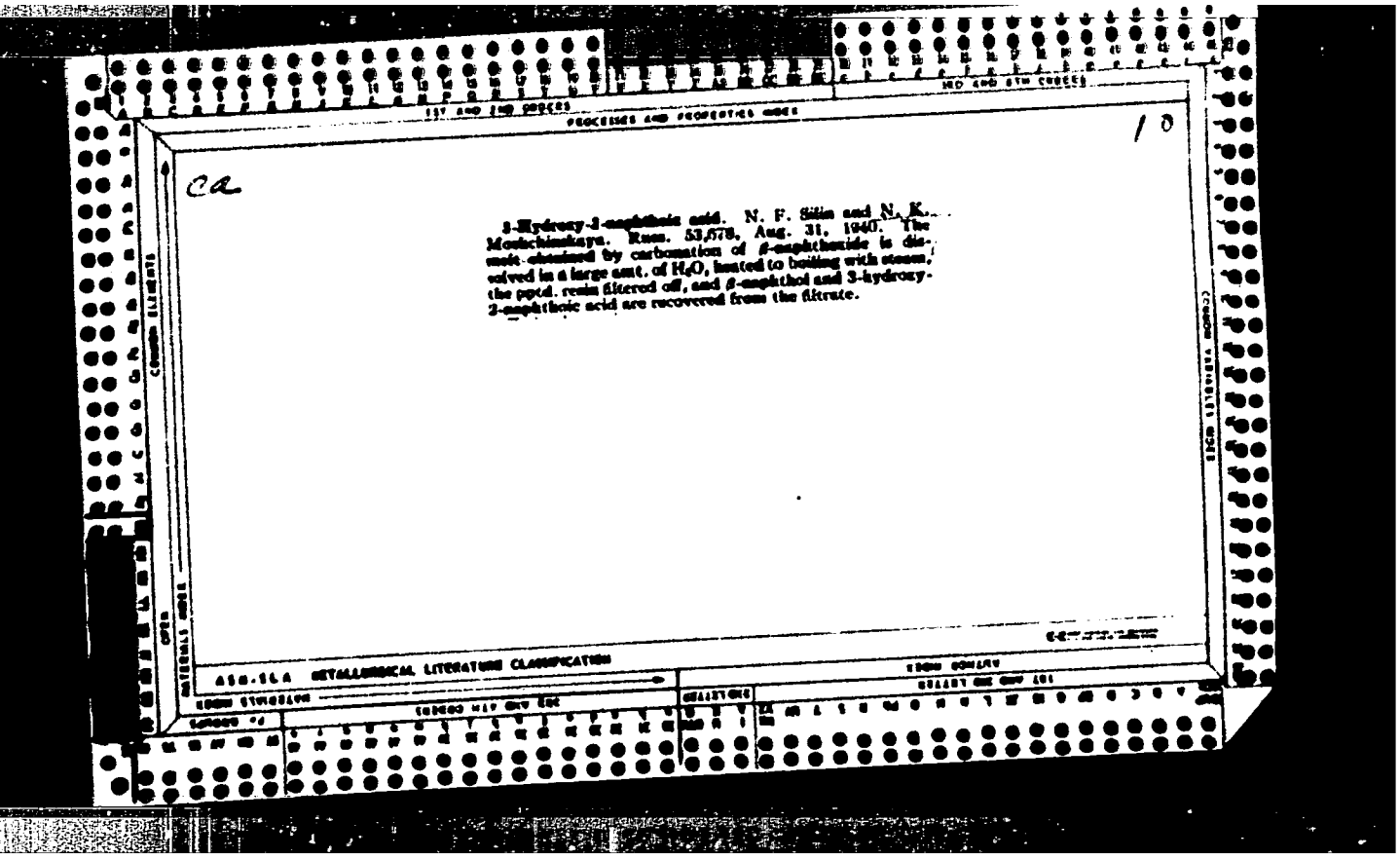


CA

15

Preparation of dibenzopyrenequinone. I. The reaction of benzanthrone with benzoyl chloride. N. A. Mordchaikaya. *J. Gen. Chem.* (U. S. S. R.) 9, 1350 (1939). In the condensation of benzanthrone and BzCl with exclusion of anhyd. $AlCl_3$ by the method of Scholl and Neumann (*C. A.* **10**, 2143), the poor yields of *dibenzopyrenequinone* (I) were traced to the contamination of the intermediate *4-benzoylbenzanthrone* (II) with the *2-isomer* (III). II, m. 197°, was sepd. from III, m. 205°, by repeated recrystn. of the reaction mixt., m. 182°, from PhCl. When treated with a mixt. of $AlCl_3$ and NaCl and O at 140° (cf. Vollmann, *et al.*, *C. A.* **32**, 1450), II was quantitatively converted into I, while III failed to react. Chas. Blanc

A50-5L4 METALLURGICAL LITERATURE CLASSIFICATION



ca

1-Hydroxy-2-naphthoic acid. N. F. Silin and N. K. Moshchinskaya. Russ. 53,578, Aug. 31, 1940. The naphthoic acid obtained by carbonation of β-naphtholate is dissolved in a large amt. of H_2O, heated to boiling with steam, the ppted. resin filtered off, and β-naphthol and 3-hydroxy-2-naphthoic acid are recovered from the filtrate.

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

25

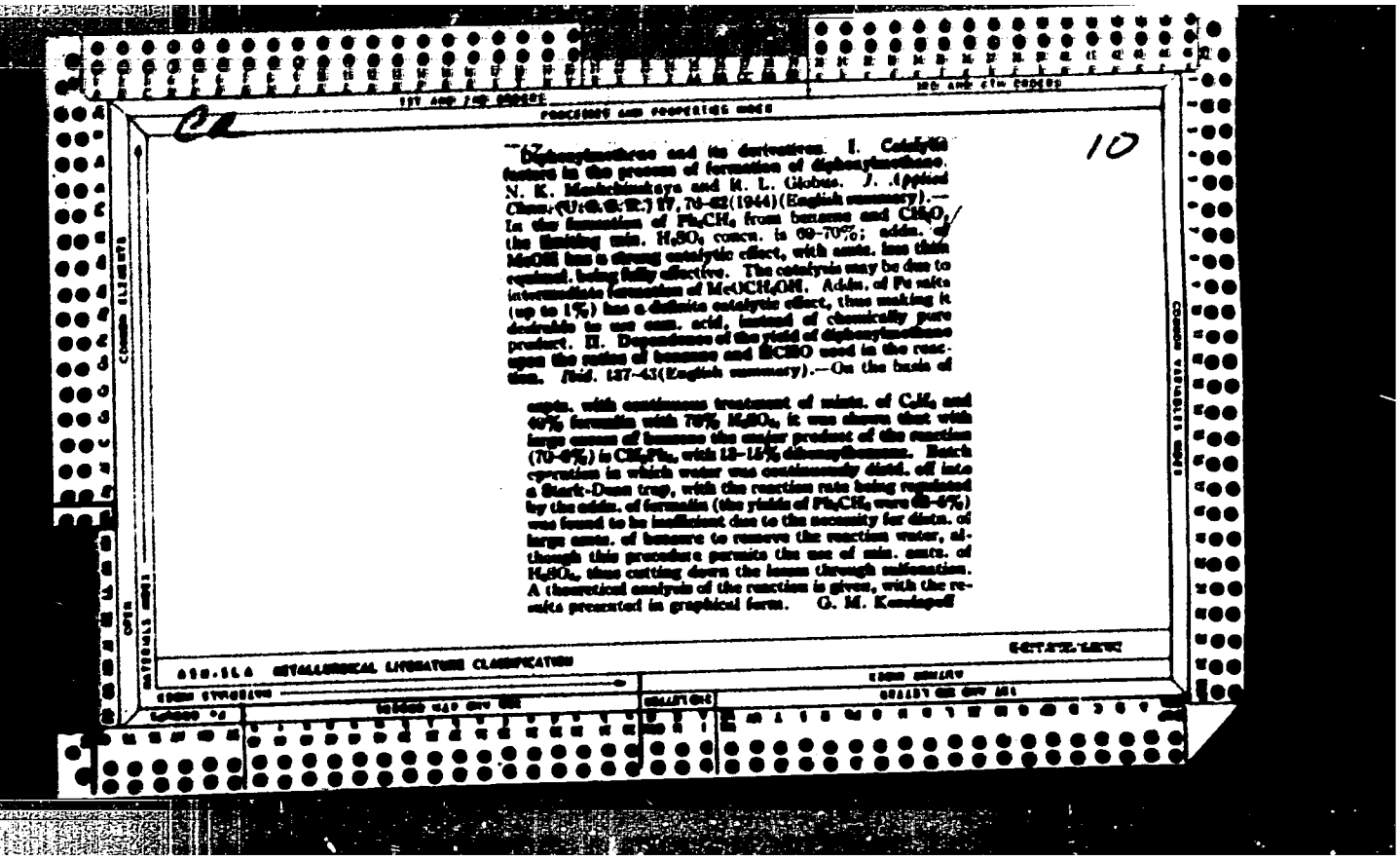
Vat dyes. N. K. Moshchinskaya. Russ. 58,691, Jan. 31, 1941. A melt of benzanthrone and $AlCl_3$, with or without NaCl, is treated with $COCl_2$, and the formed dibenzanthranyl ketones formed are sepd. by means of PhCl and oxidized in known manner.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

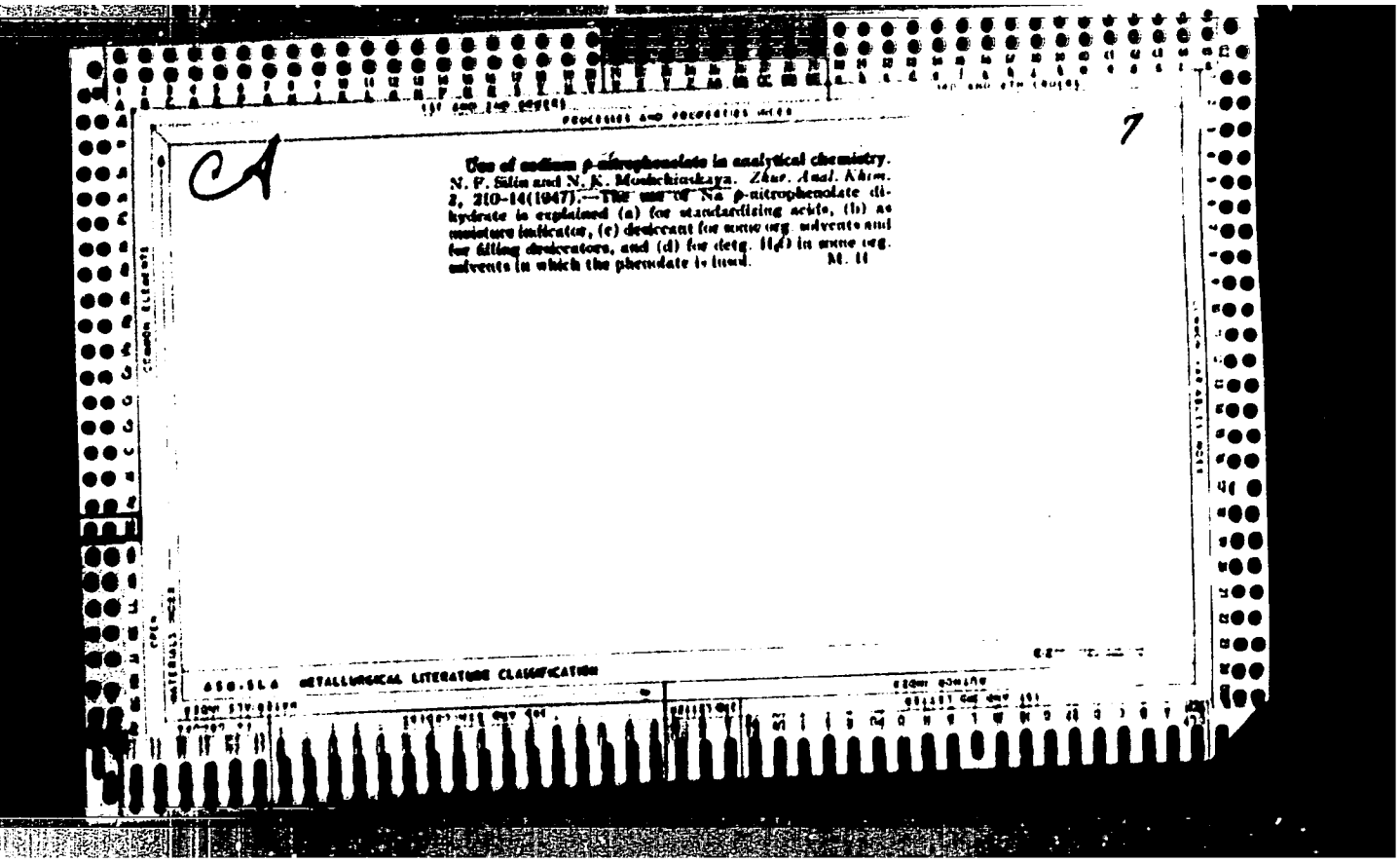
APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320001-5"

Preparation of dibenzopyrenequinone. II. Structure of the isomeric benzoylbenzanthrone. N. K. Moshchinskaya. *J. Gen. Chem.* (U. S. S. R.) 11, 45-50(1941); cf. *C. A.* 34, 1662[9].—M. previously reported that in the reaction of benzanthrone with BzCl in the presence of $AlCl_3$, there is formed, besides *bz*-1-benzoylbenzanthrone, an isomeric substance (I), m. 305°, which was thought to be *bz-2-benzoylbenzanthrone* (II), reported as m. 306° by Schaarschmidt (*C. A.* 11, 2707). II was prepd. according to S. from 1,3-(o-$HO_2CC_6H_4$)$C_{10}H_6CO_2H$ (III). In the prepn. of III a modification of S.'s procedure was used by employing the K salt of [illegible]carboxylic acid, rather than the free acid, thus obtaining a purer product. II was obtained by dehydration of III with H_2SO_4, followed by PCl_5 treatment and by Friedel-Crafts reaction with C_6H_6. II, yellow needles, m. 237.8°, was not identical with I and had a considerably higher m. p. than the product reported by S. By considering benzanthrone as a naphthalene derivative, the logical remaining structures of I are the 6- and 8-Bz compds. The chem. behavior of I favors the former, I showing properties of a β-anthraquinonyl ketone. To establish the structure of I, 1 g. of it in 100 cc. AcOH was heated with 2.5 g. CrO_3 in 50 cc. 80% AcOH to 90°, followed by boiling for 0.5 hr. The acid was isolated as a difficultly sol. Na salt, yellowish needles (0.6 g.), m. 340°. Oxidation of the crude reaction mixt. of benzanthrone, BzCl and $AlCl_3$ yielded the same acid. Free acid (IV), yellowish powder, m. 280.6°, sol. in H_2SO_4 with yellow color, unchanged by addn. of Cu powder. IV was shown to be a benzoylanthraquinonecarboxylic acid. Decarboxylation of IV by boiling with quinoline and Cu powder yielded *2-benzoylanthraquinone*, m. 218.8° (from AcOH), which was identical with an authentic sample prepd. by Friedel-Crafts reaction of 2-anthraquinonecarboxylic anhydride and benzene. Thus, IV is shown to be *6-benzoyl-1-anthraquinonecarboxylic acid*, and I is shown to be *6-benzoyl-1,9-*[illegible]. G. M. Kosolapoff

ASM-SLA METALLURGICAL LITERATURE C



Diphenylmethane and its derivatives. I. Catalytic factors in the process of formation of diphenylmethane. N. K. Moshchinskaya and M. L. Globus. J. Applied Chem. (U.S.S.R.) 17, 70-82 (1944) (English summary).—In the formation of Ph_2CH_2 from benzene and CH_2O, the limiting stage is H_2SO_4 concn. is 69-70%; addn. of MeOH has a strong catalytic effect, with amts. less than required, being fully effective. The catalysis may be due to intermediate formation of $MeOCH_2OH$. Addn. of Fe salts (up to 1%) has a definite catalytic effect, thus making it desirable to use conc. acid, instead of chemically pure product. II. Dependence of the yield of diphenylmethane upon the ratios of benzene and HCHO used in the reaction. Ibid. 127-43 (English summary).—On the basis of expts. with continuous treatment of mixts. of C_6H_6 and 40% formalin with 70% H_2SO_4, it was shown that with large excess of benzene the major product of the reaction (70-6%) is CH_2Ph_2, with 15-18% dibenzylbenzene. Batch operation in which water was continuously distd. off into a Stark-Dean trap, with the reaction rate being regulated by the addn. of formalin (the yields of Ph_2CH_2 were 68-6%) was found to be inefficient due to the necessity for distn. of large amts. of benzene to remove the reaction water, although this procedure permits the use of min. amts. of H_2SO_4, thus cutting down the losses through sulfonation. A theoretical analysis of the reaction is given, with the results presented in graphical form. G. M. Kosolapoff



CA

7

Use of sodium p-nitrophenolate in analytical chemistry. N. P. Silin and N. K. Moskchiavkaya. *Zhur. Anal. Khim.* 2, 210-14(1947).—The use of Na p-nitrophenolate dihydrate is explained (a) for standardizing acids, (b) as moisture indicator, (c) desiccant for nonaq. solvents and for filling desiccators, and (d) for detg. H_2O in nonaq. solvents in which the phenolate is insol. M. H.

650-SL6 METALLURGICAL LITERATURE CLASSIFICATION

MOSHCHINSKAYA, N. K.

"Investigation of a Series of Diarylmethanes and Their Derivates." Dr Chem Sci, Moscow Order of Lenin Chemical Technological Inst imeni D. I. Mendeleyev, Moscow, 1954. (KL, No 2, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (13)
SO: Sum. No. 598, 29 Jul 55

Name:	MOSHCHINSKAYA, Nina Konstantinovna
Dissertation:	Studies ina number of Diaryl Methanes and their Derivatives
Degree:	Doc Chem Sci
Affiliation:	Dneprepetrovsk Chemical-Engineering Inst
Defense Date, Place:	6 Apr 55, Council of Moscow Order of Lenin Chemical-Engineering Inst imeni Mendeleyev
Certification Date:	29 Sep 56
Source:	BMVO 5/57

73-3-12/24

AUTHOR: Moshchinskaya, N. K. and Krukovskaya, Z. E.

TITLE: Investigations in the Diarylmethane Series and Their Derivatives. 5. Synthesis of Phenylnaphtylmethanes by Condensing Formaldehyde with Benzene and Naphthalene. (Issledovaniya v Ryadu Diarilmetanov i ikh Proizvodnykh 5. Sintez Fenilnaftilmetanov Kondensatsiyey Formal'degida s Benzolom i Naftalinom).

PERIODICAL: Ukrainskiy Khimicheskiy Zhurnal, 1957, Vol. 23, No.3, pp. 353-357 (USSR).

ABSTRACT: Phenylnaphthylmethanes were prepared in mixtures with diphenylmethane and dinaphthylmethane by condensing formaldehyde with benzene and naphthalene in the presence of sulphuric acid. The three compounds could be separated easily (by fractional distillation. This experiment was first carried out in 1948-1949 (Ref. 10). The authors have investigated the quantitative synthesis of the compound as well as the isomerisation of phenylnaphtyl-methanes by using catalysts. The solidification points of mixtures of isomeric phenylnaphtylmethanes in relation to their structure was determined as well as the isomeric structure of phenylnaphthylmethanes which are formed when using various synthesis methods. The investigations

Card 1/2 proved also that zinc chloride and sulphuric acid do not

73-3-12/24

Investigations in the Diarylmethane Series and Their Derivatives. 5. Synthesis of Phenylnaphtylmethanes by Condensing Formaldehyde With Benzene and Naphthalene.

cause the isomerisation of either α- or β-phenylnaphthylmethane. However, in the presence of aluminium chloride the isomers are alkylated and naphthaline, a mixture of isomeric phenylnaphthylmethanes (containing a larger amount of the β- component) and 2,6-dibenzylnaphthaline as well as other condensation products are formed. Grabowski's (Ref. 14) synthesis was used for preparing 1,1'-diphenylmethane but the method was modified slightly in order to achieve higher yields. A quantity of 1,2'-dinaphthylmethane was also obtained. Experimental details of the various methods of synthesis and the isomerisation of phenylnaphthylmethanes are given. A table gives the percentage composition of the isomeric mixture, a second table the dependence of the isomeric structure of phenylnaphthylmethane on the synthesis method and on the catalyst. There are 2 tables and 17 references, 10 of which are Slavic.

SUBMITTED: November, 9, 1956.
AVAILABLE: Library of Congress.
Card 2/2

MOSHCHINSKAYA, N.K., doktor khim. nauk; KISLITSYNA, V.G., kand.tekhn. nauk; KRUKOVSKIY, S.P.; MASHKEVICH, O.I.; POTIYEVSKAYA, S.A.; KRAVTSOV, V.S.; KUTSYGINA, V.V.; ZEMLYANSKAYA, L.K.

New binders in the production of particle boards. Bum. i der. prom. no.2:14-15 Ap-Je '64. (MIRA 17:9)

PHASE I BOOK EXPLOITATION SOV/3678

Moshchyns'ka, N. K., Doctor of Chemical Sciences

Naynovishi dosyahnennya v haluzi syntetychnykh polimernykh materialiv (Recent Developments in the Field of Synthetic Polymer Materials) Kyyiv, 1959. 39 p. (Series: Tovarystvo dlya poshyrennya politychnykh i naukovykh znan' Ukrayins'koyi RSR [Vydannya] Seriya 5, No. 20) 26,300 copies printed.

General Ed.: V. E. Hel'ts; Ed. of Publishing House: A. S. Teplyakova.

PURPOSE: This booklet is intended for the general reader interested in synthetic polymer materials.

COVERAGE: This booklet is a popular treatment of high-molecular and synthetic polymer materials and is based on recently published literature in the field. The author briefly reviews the present state of research in the chemistry of high-molecular compounds and traces the main trends in the development of high-polymer materials. No personalities are mentioned. There are 16 references, all Soviet.

TABLE OF CONTENTS:

Card 1/2

Recent Developments (Cont.) SOV/3678

AVAILABLE: Library of Congress

Card 2/2 TM/ec 6-9-60

MOSHCHINSKAYA, N.K.; BOYDEN, B.S.; KRUKOVSKIY, S.P.; LAKHMANCHUK, L.S.; MOLOSHOVA, V.P.; CHERTOK, Ye.R.

Synthesis of starting materials for the production of polycondensation resins. Izv.vys.ucheb.zav.; khim.i khim.tekh. 2 no.5:790-796 '59. (MIRA 13:8)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut.
(Phenol condensation products)
(Chemistry, Organic--Synthesis)

31737

15-8090

S/081/61/000/021/077/094
B144/B110

AUTHORS: Moshchinskaya, N. K., Kislitsina, Z. G.

TITLE: Hydrocarbon resins. Communication I. Synthesis of hydrocarbon resins by condensation of formaldehyde with benzene homologs and naphthalene

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 21, 1961, 449, abstract 21P34 (Tr. Dnepropetr. khim.-tekhnol. in-t, no. 12, part 1, 1959, 109 - 116)

TEXT: Oxygen-containing liquid resins (6 - 12% of oxygen) with molecular weights of 200 - 550 were obtained by condensation of CH_2O with aromatics (toluene, xylene, ethyl benzene, and naphthalene-toluene mixture) in the presence of H_2SO_4. The properties of the resins were investigated as to their dependence on the ratio of the initial components, the H_2SO_4 concentration and quantity, and the heating time. It has been found that m-xylene is the most active of the hydrocarbons studied. The optimum H_2SO_4 concentration in the initial mixture for the

Card 1/2

Hydrocarbon resins...

condensation of m-xylene was 30%, of commercial xylene, 40%, and of ethyl benzene and toluene, 50%. The oxygen content of the resins depends mainly on the concentration and quantity of H_2SO_4. Oxygen-free resins were obtained by using 70% H_2SO_4. The yield in resins increases with increasing CH_2O excess. The condensation was performed in a boiling water bath while stirring for 2 - 12 hr. The resulting resin solution was separated from the acid, neutralized with soda, and the unreacted hydrocarbon was distilled off. [Abstracter's note: Complete translation.]

Card 2/2

S/073/60/026/001/0·3/02·
B004/B054

AUTHORS: Moshchinskaya, N. K., Budinskaya, N. N., and Lakhmanchuk, L. S.

TITLE: Studies in the Series of Diaryl Methanes and Their Derivatives
8. Synthesis of Aryl Naphthyl Methanes by Condensation of α-Chloro-methyl Naphthalene With Aromatic Hydrocarbons

PERIODICAL: Ukrainskiy khimicheskiy zhurnal, 1960, Vol 26, No 1, pp. 88-91

TEXT: The condensation of α-chloro-methyl naphthalene with benzene, toluene, mesitylene, and naphthalene had been studied in previous papers (Refs. 5-7). In the present paper, the authors attempted to extend this condensation to other substances to produce diaryl methanes A mixture of α-chloro-methyl naphthalene and a high excess of the corresponding hydrocarbon was heated in the presence of $ZnCl_2$ The resulting aryl naphthyl methanes are colorless liquids or crystalline, relatively low-melting, substances fluorescing violet in ultraviolet light Data are given for the following syntheses: benzyl chloride with naphthalene; α-chloro-methyl

Card 1/2

Studies in the Series of Diaryl Methanes and Their Derivatives. 8. Synthesis of Aryl Naphthyl Methanes by Condensation of α-Chloro-methyl Naphthalene With Aromatic Hydrocarbons

S/073/60/026/001/003/022
B004/B054

naphthalene with benzene, toluene, o-, m-, and p-xylene, ethyl benzene, mesitylene, diphenyl methane, naphthalene, chloro benzene; 2,5-dimethyl phenyl chloro methane with naphthalene; ethyl-phenyl chloro methane with naphthalene The authors obtained the hitherto undescribed 2,4-, 2,5-, and 3,4-dimethyl-phenyl-1-naphthyl methane, 4-ethyl-phenyl-1-naphthyl methane, 4-isopropyl-phenyl-1-naphthyl methane, as well as their picrates The activity of hydrocarbons in the reaction with α-chloro-methyl naphthalene increases in the order: chloro benzene < benzene < isopropyl benzene < ethyl benzene < p-xylene < toluene < o-xylene < naphthalene < m-xylene < diphenyl methane < mesitylene The students Ye. L. Romashko and V. N. Petrenko assisted in the investigation There are 3 tables and 8 Soviet references.

ASSOCIATION: Dnepropetrovskiy khimiko-tekhnologicheskiy institut im Dzerzhinskogo (Dnepropetrovsk Institute of Chemical Technology imeni Dzerzhinsky)

SUBMITTED: October 23, 1958

Card 2/2

S/073/60/026/005/018/[illegible]
B004/B063

AUTHORS: Moshchinskaya, N. K., Krukovskaya, Z. E.

TITLE: Composition of Mixtures of Tolyl-naphthyl Methane Isomers Obtained by Different Methods

PERIODICAL: Ukrainskiy khimicheskiy zhurnal, 1960, Vol. 26, No. 5, pp. 674 - 675

TEXT: The preceding paper (Ref.1) describes the synthesis of p-tolyl-α-naphthyl methane by: a) condensation of a mixture of toluene and naphthalene with formaldehyde; b) condensation of α-chloromethyl naphthalene with toluene. The present paper describes another method, c). condensation of a mixture of chloromethyl toluene isomers with naphthalene at 100 - 110°C in the presence of $ZnCl_2$. Furthermore, p-tolyl-α-naphthyl methane and the new compound o-tolyl-α-naphthyl methane were separated from the mixtures obtained by the three methods. This was achieved by crystallization of the picrates. The two compounds obtained were identified from infrared spectra. Method b) gives 65% p-isomer and 22% o-isomer, whereas methods a) and c)

Card 1/2

Composition of Mixtures of Tolyl-naphtnyl Methane Isomers Obtained by Different Methods

S/073/60/026/005/018/019
B004/B063

give 50% p-isomer and 23% o-isomer. The β-naphthyl derivatives could n[illegible] be isolated. There are 2 Soviet references.

ASSOCIATION: Dnepropetrovskiy khimiko-tekhnologicheskiy institut (Dnepropetrovsk Institute of Chemical Technology)

SUBMITTED: October 19, 1959

Card 2/2

S/081/62/000/018/042/059
B160/B186

AUTHOR: Moshchinskaya, N. K.

TITLE: Basic trends in the field of polymer synthesis

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 18, 1962, 497, abstract 18P4 (In collection: Plastmassy v mashinostr. i priborostr. Kiyev, Gostekhizdat USSR, 1961, 7-20)

TEXT: The dependence of the mechanical properties of synthetic polymers on their chemical structure, molecular weight, types of fillers and plasticizers and on the conditions under which articles are manufactured from polymers is discussed. The basic and most promising methods of making high-molecular compounds (polymerization, polycondensation, mechanochemistry and the radiation method) are described and the commonest polymers obtained by these methods are listed. [Abstracter's note: Complete translation.]

Card 1/1

24742
S/183/61/000/003/001/002
B101/B208

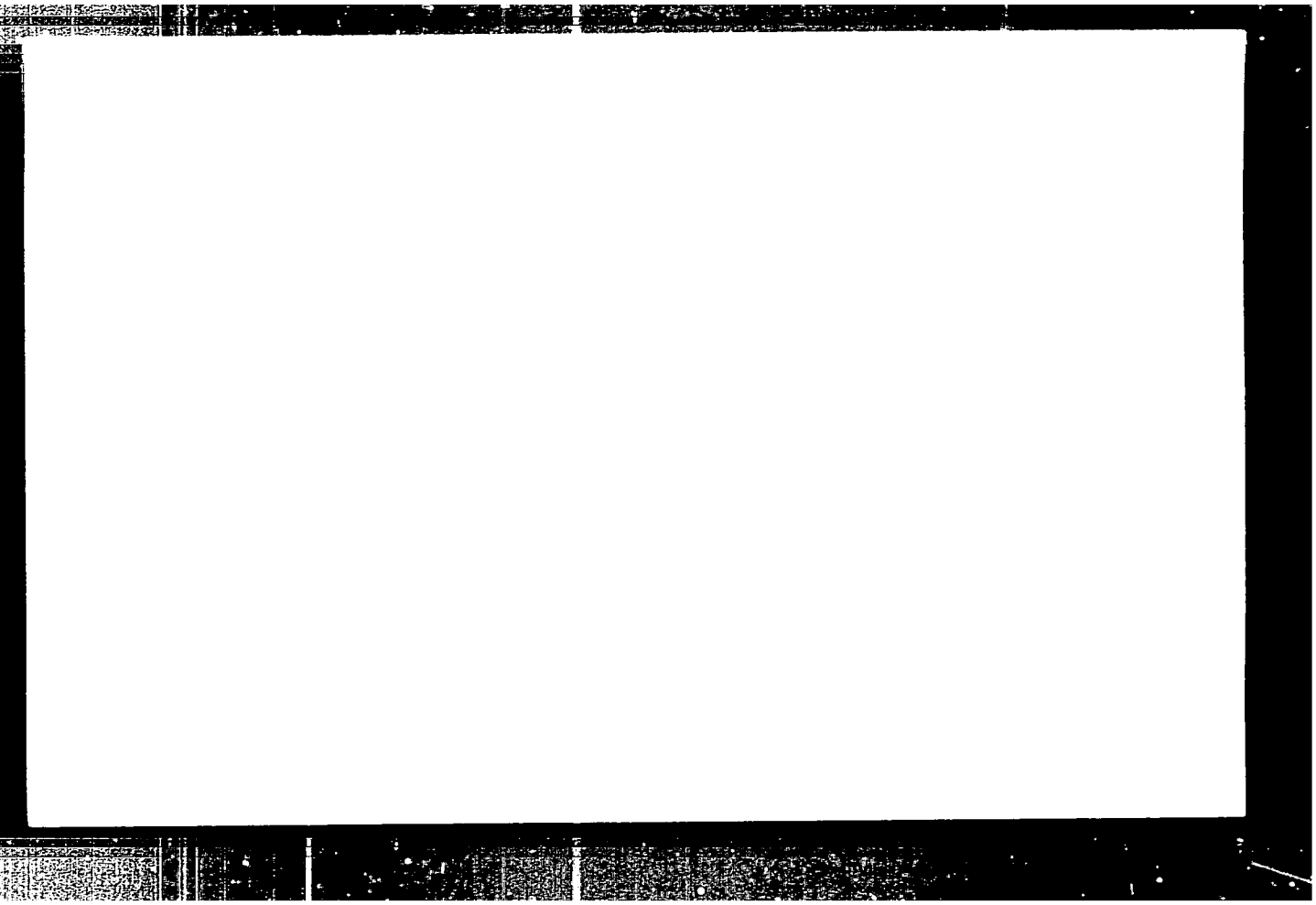
15.5550

AUTHORS: Moshchinskaya, N. K., Zhupiyev, I. I., Olifer, V. S.

TITLE: Study of the production process of polyethylene terephthalate

PERIODICAL: Khimicheskiye volokna, no. 3, 1961, 11-15

TEXT: The purpose of the present study was the development of a method of removing the glycol excess from the polycondensation product of ethylol terephthalate without using high vacuum. High-boiling solvents were applied for this purpose which form azeotropic mixtures with glycol and whose boiling point approaches the reaction temperature: diphenyl methane (boiling point 262°C), phenyl tolyl methane (279-282°C), ditolyl methane (293°C), dixylyl methane (308°C), and tolyl naphthyl methane (360°C). These compounds were synthesized by reacting formaldehyde with the corresponding hydrocarbons. Reaction temperature and the rate of distillation of glycol were regulated by bubbling oxygen-free nitrogen through the melt at different rates. The optimum temperature of polycondensation is 260-280°C. Lower temperature retards the reaction, higher temperature gives rise to destruction. Ditolyl methane and phenyl tolyl methane thus gave the best results. Tolyl naphthyl methane colors the product red. The



APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001135320001-5"

Study of the production...

solvent added plasticized the polymer reduced its melting point and the temperature of fiber formation The molecular weight was determined from the viscosity of the polymer freed of the plasticizer in tricresol The fiber forming property was, however tested without removing the plasticizer. Diethylol terephthalate was synthesized by heating equal parts by weight of dimethyl terephthalate and glycol to 160-190°C in nitrogen atmosphere after adding 0.02% zinc acetate (calculated for terephthalate). After distilling off the principal amount of the resulting methanol the temperature was gradually raised to 260°C. At this temperature the excess glycol was distilled off. The resultant mixture of polyethylol terephthalate and low polyesters was mixed with the triple weight of the solvent and heated during bubbling with N_2. The following was studied: (1) influence of temperature; (2) influence of the added amount of solvent; (2) influence of the rate of distillation of the solvent and glycol upon the properties of the polyester It was found: (1) optimum temperature 270-280°C. (2) If not the total amount of solvent is added immediately but only 10-30% (calculated for terephthalate), and if not so much solvent is added continuously that its concentration in the reaction mass remains constant, the reaction proceeds more rapidly and is completed within

Card 2/4

Study of the production...

3-4 hr. (3) The maximum intensity of polycondensation is attained by using phenyl tolyl methane instead of ditolyl methane, and by accelerating the distillation by intense bubbling or low vacuum. The Fig. shows the effect of the polycondensation time on the intrinsic viscosity of the polymer. The time being too much prolonged gives rise to thermal destruction and lowers the molecular weight. Plasticized polyethylene terephthalate was obtained with a molecular weight of 20,000-22,000, a melting point of 230-241°C, which contained 10-25% of the plasticizer. The molten mass was pressed by means of N_2 (0.5-2 atm) through a 0.6 mm spinneret. The best fiber formation was attained at a temperature which was 10-15°C higher than the melting point. Mention is made of A. A. Konkin, B. V. Petukhov, V. V. Korshak. There are 1 figure, 3 tables, and 12 references: 8 Soviet-bloc and 4 non-Soviet-bloc.

ASSOCIATION: Dnepropetrovskiy KhTI im. F. E. Dzerzhinskogo (Dnepropetrovsk Institute of Chemical Technology imeni F. E. Dzerzhinskiy)

Card 3/4

Study of the production...

Fig.: Effect of the intensity of polycondensation on the molecular weight of the polyester.

Legend: (1) at 40 l/hr N_2; (2) at 10 l/hr N_2; (a) polycondensation time, hr; (b) intrinsic viscosity. The maximum intrinsic viscosity 0.32 corresponded to a molecular weight of 22,500.

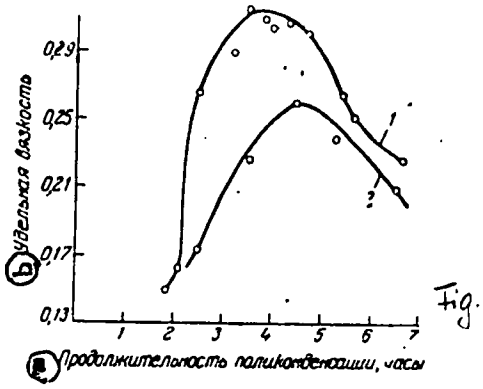


Fig.

Card 4/4

MOSHCHINSKAYA, N.K.; KISLITSYNA, Z.G.

Determining the activity of oxygen-containing condensation products of aromatic hydrocarbons with formaldehyde. Izv.vys.ucheb.zav.; khim.i khim.tekh. 4 no.4:668-671 '61. (MIRA 15:1)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut, kafedra tekhnologii plasticheskikh mass.

(Hydrocarbons) (Formaldehyde)

S/153/61/004/005/004/005
E134/E485

AUTHORS: Moshchinskaya, N.K., Ogiy, M.S.

TITLE: Synthesis of starting materials for polycondensation resins. II. Investigation into methods of preparation of dichlormethyl anthracene (9,10)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya. v.4, no.5, 1961, 843-846

TEXT: In a previous investigation (Ref.1: N.K.Moshchinskaya and his associates. Izv.VUZ SSSR. Khimiya i khim. tekhnologiya, v.2 790 (1959)), resins were obtained by combination of dichlormethyl aryl compounds with phenol

$$nClH_2C - Ar - CH_2Cl + (n + 1)\ C_6H_5OH \longrightarrow$$
$$\longrightarrow HOC_6H_4 - [CH_2 - Ar - CH_2C_6H_3(OH) -]_n - H + 2nHCl$$

Dichlormethyl xylol was originally used as the aryl compound. One of the other materials thought to be of interest in widening the range of this type of resin was dichlormethyl anthracene (9,10) and some of the methods of preparation given in the literature are checked in this study. A brief literature review is given and the authors conclude that on the basis of the available information it

is impossible to judge the true yield of product obtained. They therefore proceeded to estimate the chloromethyl groups by means of the abovementioned phenol reaction and showed that in preparations developed by M.W.Miller, R.W.Amidon, P.O.Towney (Ref.5 J.Amer.Chem Soc., v.77, 2845 (1955)) and E.Yu.Gudriniyetse, G.Ya.Vanag (Ref 6 Zh. obshchey khimii, v.24, 3123 (1956)), the technical produce contained no more than 60 to 65% of dichlormethyl anthracene which rose to 75 to 86% after recrystallization from ortho xylene Additional experiments using the method of Gudriniyets and Vanag with preliminary treatment of the chloromethyl mixture as proposed by A.A.Vansheydt et al (Ref.8: Khim. nauka i prom-st', v.3,287 (1958)) enabled them to increase the yield to 98%. Some of the observations made in the course of the study did not agree with those of previous workers in the field. The simple method of analysis of chloromethyl groups made it possible to determine optimum reaction times, and a curve showing the rate of reaction is given (Fig.). The technical product was found to give off hydrogen chloride slowly on storage but the purified product was more stable. Improved yields and purities were obtained solely by altering the reaction temperatures and rates of temperature rise. A detailed description of the experimental procedure for the best

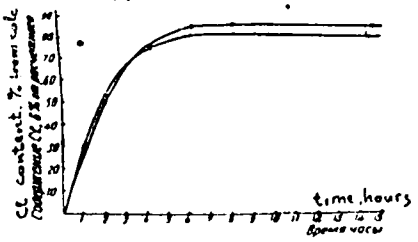
result is included. The analytical determination of chloromethyl groups is carried out by reaction with phenol and subsequent titration of the collected hydrogen chloride. The method has been checked with benzyl chloride, chloromethyl toluene and chloromethyl naphthalene. A table of experimental results is given. Unreacted anthracene was removed from the technical product by dissolving the low molecular weight condensation product of dichlormethyl anthracene and phenol in acetone and subsequent filtration. The separated material had a melting point identical with that of pure anthracene and was estimated gravimetrically. The resin itself is coloured and hardens in the presence of urotropine at 150°C similarly to Novolac type phenol-formaldehyde resins. It is intended to carry out more detailed work on the synthesis and resin properties. There are 1 figure, 2 tables and 11 references: 6 Soviet-bloc, 1 Russian translation from non-Soviet-bloc publication and 4 non-Soviet-bloc. The three references to English language publications read as follows: Ref.5: as quoted in text; Ref.7: O.Grummitt, A.C.Buck, J. Amer. Chem. Soc., v.2, 205 (1943); Ref.9: G.M.Badger, I.W.Cook, J. Chem. Soc., 802 (1939).

S/153/61/004/005/004/005
Synthesis of starting materials ... E134/E485

ASSOCIATION: Dnepropetrovskiy khimiko-tekhnologicheskiy institut im. F.E.Dzerzhinskogo. Kafedra tekhnologii plasticheskikh mass (Dnepropetrovsk Institute of Chemical Technology im. F.E.Dzerzhinskiy Department of Technology of Plastics)

SUBMITTED: February 13, 1960

Fig.



Card 4/4

S/081/62/000/022/061/088
B166/B144

AUTHORS: Moshinskaya, N. K., Budinskaya, M. N.

TITLE: Applicability of hydrocarbons in the diaryl methane series and their derivatives as plasticizers. I. The compatibility of certain polymers with diaryl methanes and their derivatives

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 22, 1962, 485, abstract 22P62 (Nauchn. tr. Dnepropetr. khim.-tekhnol. in-t, no. 12, part 2, 1961, 205-214)

TEXT: With the object of widening the choice of plasticizers (P) for polyvinyl chloride resin and other polymers a study was made of the compatibility of hydrocarbons of the diaryl methane series and their derivatives with polyvinyl chloride and vinyl perchloride resins. A quantitative method was developed for determining the maximum compatibility of the resins with P, based on the P content of compositions from which excess P has been removed by compression at 300 kg/cm^2 and 150°C. The P content was determined from the amount of HCl that separates on thermal decomposition of the resin. The physicochemical properties of the

Card 1/2

compounds studied are given, as well as their maximum compatibility with the resins. Tolyl naphthyl methane, ditolyl methane, monomethyl and dimethyl homologues of phenyl naphthyl methane have the best compatibility. [Abstracter's note: Complete translation.]

Card 2/2

S/081/62/000/023/070/120
B101/B186

AUTHORS: Bulinskaya, N. N., Moshchinskaya, N. K.

TITLE: Use of hydrocarbons of the diaryl methane series and their derivatives as plasticizers. 2. Mechanical properties of polyvinyl chloride plastics plasticized with diaryl methanes

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 23, 1962, 67[illegible] - 67[illegible], abstract 23P78 (Nauchn. tr. Dnepropetr. khim.-tekhnol. in-t, no. 12, part 2, 1961, 215 - 211)

TEXT: The physicomechanical and thermomechanical properties of non-filled and filled (with quartz sand) polyvinyl chloride materials plasticized with diaryl methanes have been studied. Comparison with materials plasticized by dibutyl phthalate showed them to have greater rigidity and mechanical strength, a higher vitrification temperature, and a higher specific gravity than the latter. This can be explained by more intense orientation of the polymer molecules in the first case, with consequently higher intermolecular interaction. For communication 1, see RZhKhim, 1962, 22P62. [Abstracter's note: Complete translation.]

Card 1/1

S/081/62/000/023/094/120
B101/B186

AUTHORS: Moshchinskaya, N. K., Kislitsyna, Z. G., Ogiy, A. S., Mamedov, A. A., Prasolova, V. P.

TITLE: Hydrocarbon resins. Communication 4. Syntheses of oxygen-containing products and resins of the polyoxyarylene methylene series starting from some polycyclic hydrocarbons and their mixtures with toluene

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 23, 1962, 679, abstract 23P103 (Nauchn. tr. Dnepropetr. khim.-tekhnol. in-t, no. 12, part 2, 1961, 229 - 239)

TEXT: Studies were made of the conditions for synthesizing oxygen-containing condensation products of CH_2O with phenanthrene and fluorene, and mixed resins (MR) by condensation of CH_2O with a mixture of phenanthrene and acenaphthene, and anthracene with toluene. The oxygen contents, the thermal effects of interaction with xylene in the presence of concentrated H_2SO_4 (as a characteristic of the MR activity), and the molecular weights

Card 1/2

Hydrocarbon resins. ...

3/001/62/000/023/004/120
B101/B186

for the resulting MR were determined. The conditions for curing the oxygen-containing MR with phenol formaldehyde novolac MR were developed. The products were used for molding powder compositions of the novolac type. Condensation of MR with phenol in the presence of acid catalysts yielded hydrocarbon phenol formaldehyde MR which reacted with urotropin like novolac phenol formaldehyde MR. An additional treatment of the novolac MR with paraform in the presence of alkali yielded resol-type MR which set when heated. Preliminary data are given on the method of producing molding powders and finished products from the resins obtained. For communication 3, see RZhKhim, 1962, 22P99. [Abstracter's note: Complete translation.]

Card 2/2

S/081/62/000/023/093/120
B101/B186

AUTHORS: Kislitsyna, Z. G., Moshchinskaya, N. K.

TITLE: Hydrocarbon resins. Communication 2. Some reactions of hydrocarbon resins

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 23, 1962, 679, abstract 23P102 (Nauchn. tr. Dnepropetr, khim.-tekhnol. in-t, no. 12, 4, 2, 1961, 23 - 31)

TEXT: To assess the industrial applicability of oxygen-containing resins (OCR) obtained by condensation of formaldehyde with aromatic hydrocarbons, the reactions of their thermal decomposition, oxidation, acetylation, and condensation with aromatic hydrocarbons and phenol have been investigated. OCR are shown to be usable as initial substances for producing aromatic carboxylic acids, hydrocarbons of the diaryl methane series, and resins of the polyarylene methylene series. All resins obtained react with phenol to form thermoplastic resins (TPR) of the polyoxymethylene arylene series. TPR with improved properties are obtained by additionally treating them with CH_2O in the presence of HCl. Emulsion resins of the resol type can be

Card 1/2

S/081/62/000/023/093/120
B101/B186

Hydrocarbon resins. ...

obtained from some TPR by treating them with CH_2O in the presence of alkaline catalysts. For communication 1, see RZhKhim, 1961, 21P34.
[Abstracter's note: Complete translation.]

Card 2/2

MOSHCHINSKAYA, N.K.; BUDINSKAYA, N.N.; Prinimali uchastiye: KOSTINA, S.K., student; KOSTYLEVA, I.P., student

Diarylmethanes and their derivatives. Part 9: Synthesis of homologs of dibenzylbenzenes, phenylnapthylmethanes, and dinaphthylmethanes. Ukr.khim.zhur. 27 no.3:361-365 '61. (MIRA 14:11)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut im. F.E.Dzerzhinskogo.
(Benzene)
(Methane)

MOSHCHINSKAYA, N. K.; SILIN, N. F.; DMITRENKO, Ye. Ye.; LIBERZON, V. A.; LOKSHIN, G. B.; KORCHAGINA, A. M.; Prinimali uchastiye: ZAL'TSMANOVICH, T. A.; MAMEDOV, A. A.; SAPSOVICH, L. V.; SOKOLENKO, V., student; ZEMLYANSKAYA, L., studentka

Preparation of aromatic dicarboxylic acids and their chlorides. Neftekhimia 2 no.4:541-549 Jl-Ag '62. (MIRA 15:10)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut imeni F. E. Dzerzhinskogo.

(Acids, Organic) (Chlorides)