57-28-3-14/33

The Piezomodulus of Polycrystalline $BaTiO_3$ as Dependent on Unidirectional Pressure

the sample with 36 kg/cm^2. The piezomodulus was determined according to the load produced in the faces of the sample on removal of the additional load (in contrast to the usual method of References 5, 6 and 7, where the piezoelectric polarization caused by the entire applied pressure is measured). The obtained data show that the piezomodulus of barium titanate decreases on a rise of pressure, as it follows from the assumption of an orientating action of the pressure upon the spontaneous polarization. Due to this orientation the polar moment of the domain of spontaneous polarization decreases along the pressure axis and increases at right angles to it. A decrease in the spontaneous polarization along the pressure axis according to the above-given formula (1) leads to a decrease in d_{33}. An additional polarizing field orientates the spontaneous domains in the direction of the field and thus diminishes the effect caused by the unidirectional pressure. It is further shown that the reciprocal value of d_{33} is linearly dependent on pressure. A deviation from the linearity is observed at pressures above 350 kg/cm^2. In the domain where the linear dependence is preserved, the relation can be expressed by an empirical

Card 2/4

57-28-3-14/33

The Piezomodulus of Polycrystalline $BaTiO_3$ as Dependent on Unidirectional Pressure

ASSOCIATION: Dnepropetrovskiy gosudarstvennyy universitet (Dnepropetrovsk State University)

SUBMITTED: August 10, 1957

1. Barium titanate---Electrical properties 2. Barium titanate---Pressure 3. Pressure---Electrical effects 4. Piezoelectric materials---Properties

Card 4/4

KOLOMOYTSEV, F.I.; IZHAK, I.A.

Depolarization discharge in barium titanate and its relation to the piezo effect. Fiz.tver.tela 1 no.12:1791-1793 D '59.
(MIRA 13:5)

1. Dnepropetrovskiy gosudarstvennyy universitet.
(Barium titanate crystals)
(Biezoelectricity)

ACCESSION NR: AR4034480 S/0058/64/000/003/E049/E050

SOURCE: Ref. zh. Fiz., Abs. 3E385

AUTHOR: Izhak, I. A.

TITLE: Effect of pressure on the dielectric losses of a ferroelectric ceramic

CITED SOURCE: Nauchn. zap. Dnepropetr. un-t, v. 61, 1963, 49-51

TOPIC TAGS: ferroelectric ceramic, dielectric loss, pressure effect, dielectric loss pressure variation, orienting effect of pressure, nonpolar effect of pressure, polar action of field, orienting action of field.

TRANSLATION: The effect of unilateral pressure on the dielectric losses of ferroelectric ceramics of different compositions is investigated. The electrodes were deposited on a surface perpendicular

Card 1/2

ACCESSION NR: AR4034480

to the compression axis on some ceramics and parallel to the compression axis on others. In the former case the dielectric losses decreased, up to a certain ac field intensity, following application of pressure (500 atmospheres), and in larger fields they increase following application of pressure. The field at which the pressure effect reverses sign depends on the pressure and on the composition of the ceramic. In measurements in a perpendicular direction the loss increases upon application of pressure in relatively weak fields and decreases in stronger fields. A qualitative explanation of the observed effects is based on the orienting non-polar effect of unilateral pressure and on the orienting polar action of the electric field. L. Kholodenko.

DATE ACQ: 10Apr64 SUB CODE: PH ENCL: 00

IZHAK, I.G.; KEL'MANZON, S.K.; IZOTOVA, N.V.

Determination of the total fat by the trilonometric method, and analysis for excess alkalinity in diluted soaps. Zav.lab. no.11: 1299-1300 '59. (MIRA 13:4)

1.Kombinat "Apatit".
(Soap-- Analysis)

IZHAK, I.G.

Determination of total neutral substances and organic acids from the combined alkali. Zav.lab. 27 no.2:162-163 '61.
(MIRA 14:3)

1. Kombinat "Apatit".
(Soap—Analysis)

IZHAK, I.G.

Method for determining fluorine in apatite-nepheline ores and apatites. Zav.lab. 28 no.8:907 '62. (MIRA 15:11)

1. Kombinat "Apatit".
(Apatite) (Fluorine--Analysis)

IZHAK, I.G.

Determination of strontium and phosphates in apatite-nepheline products. Zav.lab. 29 no.5:547 '63. (MIRA 16:5)

1. Kombinat "Apatit".
(Strontium--Analysis) (Phosphates) (Nepheline)

IZHAK, I.G.

Colorimetric determination of potassium by dilituric acid. Zav. lab. 29 no.9:1060 '63. (MIRA 17:1)

1. Kombinat "Apatit."

IZHAK, I.G.

Complexometric determination of aluminum oxide with thiosalicylic acid in nephelina concentrates. Zav. lab. 30 no.12:1449 '64. (MIRA 18:1)

1. Kombinat "Apatit".

LIBA, [illegible] - "[illegible]" [illegible]
MOSCOW ORDER OF LABOR RED BANNER [illegible] (DISSERTATION [illegible]
DEGREE OF CANDIDATE IN TECHNICAL SCIENCES)

SO: VECHERNAYA MOSKVA, JANUARY-DECEMBER 19[illegible]

IZHAK,N.

Device for straightening automobile frames. Avt.transp.33 no.7:34 J1'55. (MLRA 8:12)

(Automobiles--Frames)

IZHAK, N.

The electric spark method of repairing automobile parts. Avt. transp.33 no.10:21-22 O '55. (MLRA 9:1)
(Electric spark) (Automobiles--Repairing)

IZHBOLDINA, A. M., Cand Agr Sci -- (diss) "Cultivation of Corn under Conditions of Udmurtiya." Mos, 1957. 20 pp (Mos Order of Lenin Agricultural Acad im K. A. Timiryazov), 110 copies (KL, 47-57, 89)

19

L 24194-66 EWT(m)/EWP(t) IJP(c) JD/JG

ACC NR: AP6013284 SOURCE CODE: UR/0413/66/000/008/0080/0080

INVENTOR: Epshteyn, A. L.; Izhvanov, L. A.; Korolev, Yu. M.; Stolyarov, V. I.; Pobedash, N. V.

35

B

ORG: none

TITLE: Method of extracting molybdenum from the gaseous phase. Class 40, No. 180800

18 18 27

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 8, 1966, 80

TOPIC TAGS: molybdenum, molybdenum extraction

ABSTRACT: This Author Certificate introduces a method of extracting molybdenum from the gaseous phase with deposition of compact molybdenum on a heated substrate. To reduce the cost of extraction, molybdenum hexafluoride is used as the initial material. [ND]

SUB CODE: 13, 11/ SUBM DATE: 17Aug64/ ATD PRESS: 4245

2

Card 1/1

UDC: 669.283

[illegible]

USSR / Cultivated Plants. Cereals.

Abs Jour : Ref Zhur - Biol., No 8, 1958, No 34654

Author : Izhboldina, A. M.
Inst : Moskow Agriculture Academy imeni K. A. Timiryazeva.
Title : Technical Agronomy Methods of Raising Corn in Udmurtin.

Orig Pub : Dokl. Mosk. s.-kh. akad. im. K. A. Timiryazeva, 1957, vyp. 28, 196-202.

Abstract : No abstract given.

Card 1/1

43

SHOSTAKOVSKIY, M.F.; KALABINA, A.V.; TRUFANOVA, A.I.; IZHBOLDINA, A.T.

Synthesis and transformations of vinyl aryl ethers. Report No.5: Chemical transformations of vinyl ethers of o-, m-, p-cresols and p-tert-amyl phenol. Izv. Fiz.-khim. nauch.-issl. inst. Irk. un. 5 no.1:101-110 '61. (MIRA 16:8)

(Ethers) (Phenol) (Cresol)

KOZHOV, M.M.; IZHBOLDINA, L.A.; KAPLINA, G.S.; SHAPOVALOVA, I.M.;
CHERENKOVA, V.I.

Littoral and sublittoral benthos of Lake Baikal along the southeastern shore. Gidrobiol. zhur. 1 no.4:3-11 '65.
(MIRA 18:10)

1. Baykal'skaya biologicheskaya stantsiya Irkutskogo gosudarstvennogo universiteta.

AVDEYEV, B.S.; SMAGORINSKIY, B.S., red.; IZHBOLDINA, S.I., tekhn.
red.

[Use of natural gas in plants] Prirodnyi gaz na zavode.
Volgograd, Volgogradskoe knizhnoe izd-vo, 1961. 83 p.
(MIRA 17:3)

1. Glavnyy spetsialist tekhnicheskogo otdela Volgorodskogo
sovnarkhoza (for Avdeyev).

32-7-42/49

AUTHORS: Mazurek, A.A., Izhedorova, A.G.

TITLE: The Application of Infrared Lamps in Analytical Practice
(Primeneniye infrakrasnoy lampy v analiticheskoy praktike)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 7, pp. 878 - 878 (USSR)

ABSTRACT: On the occasion of the analysis of many anorganic compounds the necessity arises to evaporate a solution until it is completely dry, as, for instance, when determining the alkali metal content in zinc salts, cobalt, manganese, etc. - For this purpose a solution is dried out under an infrared lamp. The device concerned consists of a aluminum body and the infrared lamp. By increasing or reducing the distance between the lamp and the vessel it is possible to regulate temperature ad libitum. There is 1 table.

Card 1/2

1. USHKOV, F. V.; <u>IZHEVSKAĬA, G. M.</u>
2. USSR (600)
4. Hollow Brick, Tile, etc.
7. Hollow ceramic stone blocks for walls. Biul. stroi. tekh. 9 no. 23 1952.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Unc..

1. USHKOV, F. V., IZHEVSKAYA, G. M.

2. USSR (600)

4. Tile Construction

7. Hollow ceramics and their use in the construction of building walls, Stek. i ker., 10, No. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified.

ANTONOV, K.K., chlen-korrespondent; IZHEVSKAYA, G.M., kandidat tekhnicheskikh nauk.

Wall construction in many-storied framed buildings. Gor.khoz.Mosk. 27 no.8: 20-23 Ag '53. (MLRA 6:8)

1. Akademiya arkhitektury SSSR (for Antonov). (Walls)

KASHIRSKIY, A.A.; USHKOV, F.V.; IZHEVSKAYA, G.M.

On the heat insulation qualities of hollow ceramic bricks. Gor.khoz. Mosk. 28 no.4:9-15 Ap '54. (MLRA 7:6)
(Hollow bricks)

IZHEVSKAYA, V.M.

1ZHEVSKAYA, V.M., kandidat tekhnicheskikh nauk.

Air conditioning of the proofing chamber in commercial bakeries.
Trudy Stroi.inst. Mosgorispolkoma no.4:40-47 '53. (MIRA 8:3)
(Bakers and bakeries--Air conditioning)

COVERAGE: The book presents design methods and bases of calculation for common pressure-measuring instruments used in aircraft (altimeter, speed indicator, Mach-number indicator). Calculation sequence and methodical directions for designing instruments are given. Problems treated in the existing literature are not considered. Problems treated insufficiently in the literature are discussed in more detail, for certain problems in engineering calculations of instruments, new solutions are presented. The recommendations given regarding the general sequence of design calculations of instruments and the details of their construction represent possible variants of solutions which may be supplemented and modified. Ch. I was written by T.P. Medvedevaya-Orlovaya and V.M. Izhevskaya, Ch. II by N. Ya. Vovchenko; Ch. III by T.P. Medvedevaya-Orlovaya, Ch. IV by V.M. Izhevskaya; and Ch. V by A.P. Turkevich and Z.T. Chistyakovaya. No personalities are mentioned. There are 18 references, all Soviet.

TABLE OF CONTENTS:

Card 2/7

Textbook on the Design of Aviation Instruments (Cont.) SOV/4599

Card 4/6

Card 6/[illegible]

Izhevskiy G.

USSR/Geography - Marine resources

Card 1/1 Pub. 86 - 8/36

Authors : Zenkevich, L. A., Mem. Corresp., Acad. Sc., USSR; Ishevskiy, G. K.; and Lednev, V. A.

Title : Researching the resources of seas and oceans

Periodical : Priroda 44/6, 63 -65, Jun 1955

Abstract : A sketch is presented of the history of the Permanent International Council for the Exploration of the Seas from its inception in 1902 to its 42nd session in Paris (3--12 October, 1954). The council was found to represent mainly countries of the Northwest of Europe although delegates from the Soviet Union and the USA attended as auditors. Twelve of the papers read dealt with herring. Some attention was also paid to the discovery of sea perch in the vicinity of Iceland.

Institution : .....

Submitted : .....

IZHEVSKIY, G. K.,

"Supplement to Moiseyev's Report," Oceanographic Research of the Northwestern Part of the Pacific Ocean, Moscow, Izd-vo AN USSR, 1958. (This is a supplement of Moiseyev's report on piscatology of the Northwest Pacific, but it is not clear from the text whether the author refers to the article by Moiseyev in this collection or to some other report. In this supplement the author complains that the fishing industry is insufficiently provided with recent hydrological and climatic data. It urges an improvement in sharing the results of investigations obtained by the Academy of Sciences with Soviet fishers. Trudy [illegible]

COVERAGE: This collection of articles reports are the results of observations made in the Pacific by the Institute of Oceanology of the Academy of Sciences, USSR. In 1949, the Institute launched a systematic five-year program of scientific exploration of certain hydrographic peculiarities of the Soviet Pacific area. The operations were carried out as a "Complex Oceanographic Expedition,' using the motorboat Vityaz' as its base. The Expedition worked in collaboration with the Hydrographic Institute of the Soviet Navy (VMS), the Pacific Institute of Piscatology and Oceanography and some 40 other institutes of the Academy of Sciences. Between 1949 and 1954, 18 trips were made, covering about 130,000 miles. Among the subjects of direct concern were: meteorology, hydrology, oceanography, hydrochemistry, sedimentation, geography ofthe littoral, geology and contours ofthe sea bottom, fauna plankton, microbiology, and gravimetry. Twenty-eight authors contributed to the collection which consists of 27 articles.

IZHEVSKIY, Georgiy Konstantinovich; DOBROVOL'SKIY,A.D., prof., doktor geogr. nauk, nauchnyy red.; KOSSOVA, O.N., red.; SOKOLOVA, I.A., tekhn. red.

[Oceanological principles relating to the fishery productivity of seas] Okeanologicheskie osnovy formirovaniia promyslovoi produktivnosti morei. Moskva, Pishchepromizdat, 1961. 215 p. (MIRA 14:5)

(Marine biology)

IZHEVSKIY, G.K.

[The system basis of forecasting oceanographic conditions and the reproduction of commercial fishes] Sistemnaia osnova prognozirovaniia okeanologicheskikh uslovii i vosproizvodstva promyslovykh ryb. Moskva, Vses. nauchno-issl. in-t morskogo rybnogo khoziaistva i okeanografii, 1964. 165 p. (MIRA 17:11)

SHOSTAKOVSKIY, Mikhail Fedorovich; VLASOV, Viktor Mikhaylovich;
SHOSTAKOVSKIY, Zakhariy Fedorovich; IZHEVSKIY, Konstantin
Mikhaylovich; NIKOLAYEV, V.K., red.

[Curative polymers] TSelebnye polimery. Moskva, Izd-vo
"Znanie," 1965. 43 p. (Novoe v zhizni, nauke, tekhnike.
VIII Seriia: Biologiia i meditsina, no.6) (MIRA 18:5)

1. Chlen-korrespondent AN SSSR (for Shostakovskiy).

IZHEVSKIY, K. M.

USSR/Medicine - Societies, Medical Jul/Aug 48
Medicine - Venereal Diseases

"Protocol of Meetings of the Moscow Dermato-Venereological Society," V. Ya. Artuyunov, K. M. Izhevskiy, 2½ pp

"Vest Venerol i Dermatol" No 4

Reports on session held 25 Mar 48. Work of Society during 1946 - 1947 was discussed.

54/49T68

[illegible]Y, K. M.

PA 34/49T35

USSR/Medicine - Venereal Diseases, Clinics Jul/Aug 48
Medicine - Clinics

"History of the Organization of the Kazan Dermato-Venereological Clinic," K. M. Izhevskiy, Clinic of Dermato-Venereol Diseases, Second Moscow Med Inst imeni I. V. Stalin, 5 pp

"Vest Venerol i Dermatol" No 4

Describes organization of subject clinic with special reference to the work of Prof A. G. Ge (died 1907).

34/49T85

IZHEVSKIY, K.M.; GURVICH, O.Ye.

Vesicular dermatitis caused by contact with plants. Pediatriia, no.5:86-87 S-O '55. (MIRA 9:2)

1. Iz detskogo otdeleniya statsionara po kozhnym boleznyam (zav. K.M. Izhevskiy) pri 5-m kozhno-venerologicheskom dispansere (glavny vrach G.A. Plotkin) Stalinskogo rayona Moskvy.
(DERMATITIS, CONTACT, etiol. and pathogen.
plants)

IZHEVSKIY, K. M. (Moskva)

"Vitreous body" in some skin diseases. Vest. derm. i ven. no.3: 51-54 '62. (MIRA 15:6)

1. Iz statsionara po kozhnym boleznyam pri dispansere No. 5 (glavnyy vrach G. A. Plotkin)

(SKIN—DISEASES) (VITREOUS HUMOR)

IZHEVSKIY, K.M.

Diagnosis and treatment of pruritic processes in the anus. Vest. derm. i ven. 38 no.5:87-90 My '64.

(MIRA 18:12)

1. Statsionar po kozhnym boleznyam pri 5-m Ob"yedinennom kozhno-urologicheskom dispansere (glavnyy vrach G.A.Plotkin), Moskva. Submitted Aug. 9, 1962.

IZHEVSKIY, M. N.

Izhevskiy, M. N. (Leningrad). Practice Calculating Dimension-chain Systems p. 45

Interchangeability, Accuracy and Measuring Methods in Machine Building, Moscow, Mashgiz, 1958, 251 pp. (Sbornik Nauchno-tekh. obshch. mashinostroitel'noy promyshlennosti, Leningradskoye oblast pravleniya, kn. 47).

This collection of articles deals with the topics discussed at the 3rd Leningrad Sci. and Engineering Conference on Interchangeability, accuracy and Inspection Methods in Machine-building and Instrument-making, held 18-22 Mar 1957.

IzHevsKiy, M. N.

9(6) PHASE I BOOK EXPLOITATION SOV/2557

Nauchno-tekhnicheskoye obshchestvo mashinostroitel'noy promyshlennosti. Leningradskoye oblastnoye pravleniye

Provolochnaya tenzometriya (Theory and Application of Wire Strain Gages) Moscow, Mashgiz, 1959. 138 p. (Series: Leningradskiy dom nauchno-tekhnicheskoy propagandy, kn. 51) 3,500 copies printed.

Sponsoring Agency: Nauchno-tekhnicheskoye obshchestvo priborostroitel'noy promyshlennosti.

Ed.: A.N. Turichin; Ed. of Publishing House: M.A. Chfas; Tech. Ed.: L.V. Shchetinina; Managing Ed. for Literature on the Technology of Machine Building (Leningrad Division, Mashgiz): Ye.P. Naumov.

PURPOSE: This collection of papers is intended for engineers, scientific workers, and technicians making calculations for strength in machinery.

COVERAGE: This is a third issue of the collection of scientific papers presented at the Leningrad Scientific and Technical Conference on the Theory and Use of Wire Strain Gages, held in May 1958. The papers describe the use of instruments with wire strain gages to investigate different parameters of machine parts and mechanisms during operation. No personalities are mentioned. References follow several of the papers.

AVAILABLE: Library of Congress

L 05080-67 EWT(d)/FSS-2

ACC NR: AP6013306 SOURCE CODE: UR/0413/66/000/008/0098/0098

AUTHORS: Izhin, M. I.; Alekseyev, L. A.; Babashkin, V. I.

49
B

ORG: none

TITLE: A method for discrete summation of signals. Class 42, No. 180858

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 8, 1966, 98

TOPIC TAGS: signal coding, signal processing

ABSTRACT: This Author Certificate presents a method for discrete summation of signals associated with the encoding of information with a fixed weight. The method increases the interference-free nature of the process. Binary symbols of the code group, which are accepted simultaneously on N channels, are linearly added with subsequent limitation of the sum to N levels by clippers of the sum. The solution in regards to the transmitted code group is taken by detecting the specific number of the largest (based on the number of ones) or smallest (based on the number of zeros) values of the sum.

SUB CODE: 09/ SUBM DATE: 10May65

Card 1/1 fv UDC: 681.142.621.374

IZHOGIN, V.M., inzh. (Chelyabinsk)

Fix precise time limits for clearing land for pipeline routes. Stroi. truboprov. 5 no.10:24 O'60.
(Pipelines)
(MIRA 13:10)

IZHIKOV, Aleksandr Andreyevich, inzhener; SEDOV, Aleksandr Pavlovich, inzhener; GURIN, A.V., redaktor; KUZ'MIN, D.G., tekhnicheskiy redaktor

[Bricklaying and facing work] Kamennye i oblitsovochnye raboty. Moskva, Vses. uchebno-pedagog. izd-vo Trudrezervizdat, 1956. 262 p.
(Bricklaying)
(MLRA 9:12)

IZHOKA, V., elektromekhanik

Improve the quality of the construction and operation of T-101 motorships. Rech.transp. 21 no.7:55 Jl '62. (MIRA 15:8)

1. Narymskoye prorabstvo Kolpashevskogo tekhnicheskogo uchastka Obskogo basseyna.

(Motorships)

[illegible] A. I. The speed of disintegration of petroleum products in water and soil Gigiena i Sanitariia, Moscow 1950, 1 (9-13)

If petroleum remains upon the surface of water for a period exceeding a few months it undergoes separation into two layers. The superficial layer is rich in bacterial flora and more rapid disintegration occurs due to the access of atmospheric air. In the deeper layer particles of petroleum which escape disintegration at the surface fall to the bottom. The bacterial flora there is considerably poorer than at the surfact and the rate of disintegration is at least ten times slower. Different soils show no substantial influence in producing different rates of disintegration of petroleum or its by-products. Sand and fertile soils both cause a fast rate of disintegration of petroleum or its by-products. Sand and fertile soils both cause a fast rate of disintegration, but it is at least two to three times slower than the rate occurring at the surface.

Collis - (World Medical Abstracts)

So: Medical Microbiology & Hygiene Section IV, Vol. 3, No. 7-12 was flushed several times with argon and before reduction was started the furnace was filled with this gas ($O_2 \leqslant 0.01\%$, $N_2 \leqslant 0.01\%$, $CO_2 \leqslant 0.01\%$) to a pressure of 200-300 mm Hg. The furnace temperature was measured with a type OPPIR-09 optical pyrometer and adjusted to reach 800-850°C in about 10 minutes and 1500-1550° in about 80 minutes after starting (Fig 1). The reduction occurred mainly at 850-900°C in 5-10 minutes. The higher-temperature treatment was to melt the metal and separate it from slag. The product containing 1% calcium, was remelted at 1500-1550°C in argon at 100-150 mm Hg to reduce the calcium content. The author gives an analysis with 98.85% yttrium and 0.035% calcium. The outer layers of the yttrium ingots were more heavily contaminated with tantalum than the centre (Fig 2). Normal recoveries of yttrium in reduction with a 20% excess of calcium were 70-75%, but sometimes rose to 80-85%. Best results were obtained when the charge in the crucible was compressed at about 10 kg/cm^2 and when its depth exceeded 50 mm (crucible diameter 40 mm, height 150 mm). Yttrium was

2

L 59401-65 EWP(e)/EWT(m)/EWP(w)/[illegible](d)/T/[illegible](t)/[illegible](t)/EWP(z)/EWP(b) Pf-4 IJP(c)

ACCESSION NR: AP5016933 JD/JG [illegible]/0089/65/018/006/0608/0616

546.45.001.2

AUTHOR: [illegible], N. N. (Deceased); [illegible], B. A.; Shestopalov, L. M.; Mironov, N. F.; [illegible], N. N.; [illegible], L. A.; [illegible], S. D. 44 42 B

TITLE: Investigation of the mechanical properties of beryllium 27 16

SOURCE: Atomnaya energiya, v. 18, no. 6, 1965, 608-616

TOPIC TAGS: beryllium, sintered beryllium, cast beryllium, extruded beryllium, beryllium mechanical property 16

ABSTRACT: Beryllium powders, 99.02—99.59% pure, with a particle size of -500 or -50 μ, obtained by reduction of beryllium fluoride with magnesium, vacuum distillation, or electrolysis of beryllium chloride, were consolidated by cold compacting and vacuum sintering, hot compacting in air or in a vacuum, or by melting and centrifugal casting. A part of the specimens was additionally extruded at 450—500C with a reduction of 75%. The density of metal varied from 1.75—1.82 g/cm^2 for cold-compacted and sintered specimens to almost the theoretical for hot-compacted or extruded specimens. It was found that at 20C the elongation and reduction of area did not exceed 5%. The ductility of sintered beryllium increased sharply with increasing temperature to a maximum at 400—500C, and then decreased. The strength and ductility of hot-compacted beryllium powders increased with decreasing particle

Card 1/2

L 58404-65

ACCESSION NR: AP5016930 2

size. Electrolytic and distilled beryllium is more ductile than that obtained by reduction with magnesium. Beryllium extruded from hot-compacted powders with a grain size of -50 μ (the mean grain size 20—25 μ) had the highest strength and ductility at both room and elevated temperatures (up to 600C). For example, at room temperature the tensile strength was 45 kg/mm^2, the true tensile strength—48 kg/mm^2, the elongation—3.6% and the reduction in area—4.0%; at the temperature of maximum ductility, the elongation and reduction of area was 60 and 66%, respectively. Mechanical properties of sintered and of hot-compacted beryllium differed only slightly. But, generally, nonextruded, sintered and hot-compacted beryllium had comparatively low strength and ductility. However, after extrusion, the strength and ductility increased by 2—3 times; the yield strength increase was less pronounced. Cast beryllium was more brittle than beryllium prepared by the powder-metallurgy method; it remained brittle even with heating to 400C. The values of the strength and ductility obtained in compression tests were noticeably higher than those obtained in tension tests. Orig. art. has: 14 figures and 2 tables.

[MS]

ASSOCIATION: none

SUBMITTED: 12Jun64 ENCL: 00 SUB CODE: MM, IC

NO REF SOV: 003 OTHER: 006 ATD PRESS: 4042

Card 2/2

L 01798-66 EWT(m)/EPF(n)-2/EWP(t)/EWP(b) IJP(c) JD/WW/JG

ACCESSION NR: AP5021497 UR/0370/65/000/004/0097/0104
669.2/.8.049.6.296.297

31
B

AUTHOR: Nisel'son, L. A. 44,55 (Moscow); Stolyarov, V. I. 44,55 (Moscow); Kzhvanov, L. A. 44,55 (Moscow); Korolev, Yu. M. 44,55 (Moscow)

TITLE: Separating zirconium 21 44,55 and hafnium 27 44,55 by fractionating their tetrachlorides

SOURCE: AN SSSR. Izvestiya. Metally, no. 4, 1965, 97-104 27

TOPIC TAGS: hafnium, zirconium, fractional distillation, metal purification

ABSTRACT: Mixtures of $ZrCl_4$ and $HfCl_4$ are experimentally separated by fractionation in metal columns with kilogram charges. The experimental equipment is shown in fig. 1 of the Enclosure. The results are tabulated and graphed. It was found that direct fractionation of the tetrachloride mixture is highly effective as a means for separating hafnium and zirconium. When the initial tetrachloride mixture contains 1.5-2.5% Hf, fractionation produces more than 50% Zr containing about 0.05% Hf. Up to 40% of the Hf in the original charge is concentrated in the head fractions with an average hafnium content of 20-25%. With initial hafnium contents of 16.6 and 13.5%, the maximum concentration of Hf in the head fractions of the

Card 1/3

L 01798-66

ACCESSION NR: AP5021497

O

distillate is 85.6 and 70.8% respectively. The experimental conditions produced a yield of 30-40 g/cm^2·hr. Orig. art. has: 4 figures, 5 tables.

ASSOCIATION: none

SUBMITTED: 25Jul64 ENCL: 01 SUB CODE: GC, MM

NO REF SOV: 007 OTHER: 002

Card 2/3

L 01798-66

ACCESSION NR: AP5021497 ENCLOSURE: 01

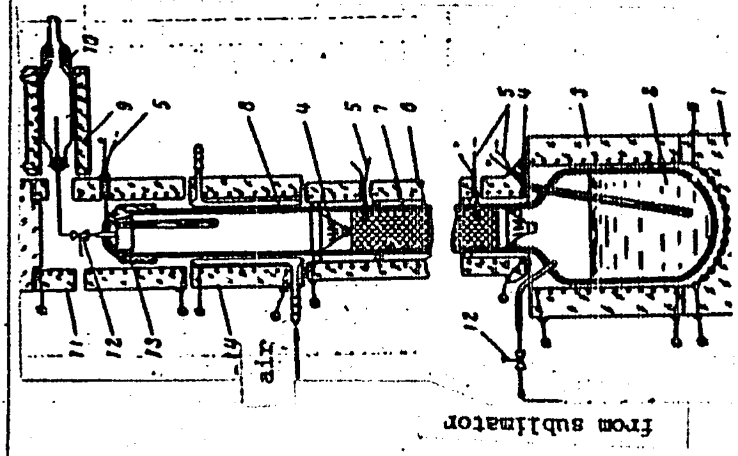

Fig. 1. Diagram of the fractionation column for separating a $ZrCl_4$-$HfCl_4$ mixture: 1--main electric heater for the still; 2--column still; 3--auxiliary electric heater for the still; 4--cone holding the packing; 5--thermocouples; 6--heat insulation for the column; 7--packing; 8--air-cooled sleeve for the fractionating column; 9--electric heater for the fraction receiver; 10--receiver for the hafnium fractions; 11--electric heater for the head section of the column; 12--needle valve; 13--head section of the fractionating column; 14--electric heater for the fractionating column

Card 3/3

DAVIDENKOV, N.N. [deceased]; SIDOROV B.A.; SHESTOPALOV, L.M.; MIRONOV, N.F.;
BOGORAD, N.M.; IZHVANOV, L.A., KOSTOGAROV, S.B.

Mechanical properties of beryllium. Atom. energ. 18 no.6:608-616 Je '65.
(MIRA 18:7)

GASKAROV, N.; PETRAKOV, D.; IZIBAYEV, I.

Results of cooperation. Pozh.delo 8 no.2:14 F '62. (MIRA 15:2)
(Coke industry—Fires and fire prevention)

[illegible] 0

31806
S/020/60/133/02/40/068
B004/B064

5.4600

AUTHORS: Izidinov, S. U., Borisova, T. I., Veselovskaya, V. I.

TITLE: Electrochemical and Photoelectrochemical Behavior of the Silicon Electrode 7

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 2, pp. 392 - 395

TEXT: The authors investigated monocrystalline silicon of the n- and p-type with p = 1 ohm.cm and crystallographic (111) orientation of the surface. A cinematographic incandescent lamp served as light source ($\sim 10^{-1}$ cal/cm^2.sec). The silicon surface was etched in hot KOH or in HF + HNO_3, or ground. Fig. 1 shows the dissolution of Si under hydrogen separation in KOH solutions of 0.1 - 10 N. The time change in potential occurring at the same time is the same for n- and p-Si, and depends on how the surface has been treated. Fig. 2 shows the curves of the anodic polarization for both types immediately after plunging into the solution and after the stable state has been reached. There is no essential

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Electrochemical and Photoelectrochemical
Behavior of the Silicon Electrode

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difference between the two types of silicon apart from the fact that the maximum potential of the anodic curve is 200 mv more positive for the p-type than for n-Si. The photogalvanic activity ΔV_c of the system is changed by etching. In the case of p-Si ΔV_c rises from zero to the constant value of 600 mv; in the case of n-Si ΔV_c becomes not more than 10-15 mv (Fig. 3). Oxidation of the surface both by means of anodic polarization and by chemical etching or introduction of oxygen into the solution exerts an influence upon the photoelectric effect; in the case of n-Si ΔV_c is increased to 50-100 mv and ΔV_c reduced in p-Si to 200-400 mv. After the dissolution of the oxide film the photoelectric effect is increased in p-Si and decreases with n-Si (Fig. 4). The difference of ΔV_c for p- and n-Si in the presence of an electric field is caused by the fact that in the dissolution the surface of p-Si approaches the n-type, whereas oxidation acts in the opposite direction. Though the measured static potentials are the same for both types, the distribution of the change in potential is different at the interface of silicon - solution. The etching off of the mechanically defective layer leads to the increase of ΔV_c in p-Si. Light acts mainly upon the space charge which can be also seen from the practically unchanged

81966

Electrochemical and Photoelectrochemical Behavior of the Silicon Electrode

S/020/60/133/02/40/068
B004/B064

hydrogen separation in the case of an exposure to light. The independence of the rate of irreversible dissolution of silicon in alkali of its type is due to the action of two conjugate reactions of oxidation and reduction. There are 4 figures and 7 references: 1 Soviet, 5 British, and 1 German.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Institute of Physical Chemistry imeni L. Ya. Karpov)

PRESENTED: March 18, 1960, by A. N. Frumkin, Academician

SUBMITTED: March 16, 1960

Card 3/3

27883

S/020/61/140/001/022/024
B130/B101

24.7700

AUTHORS: Lazorenko-Manevich, R. M., and Izidinov, S. O.

TITLE: Kinetics of cathodic processes on semiconductor electrodes with the participation of valence electrons

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 140, no. 1, 1961, 172-175

TEXT: Starting from M. Green's paper (Ref. 1, see below) on the theory of cathodic processes on semiconductors, the authors study the effect of the participation of valence electrons on the form of kinetic equations. The case where the portion of valence electrons is equal to unity, is considered first. For the sake of simplicity, it is assumed that no surface states (Ref. 1) occur and that the potential ψ_1 is zero. η_h is the potential shift in the Helmholtz part of the double layer on the passage of a current of the density i; $\Delta\varphi_{v.ch.}$ is the potential shift in the volume charge layer on the semiconductor; Δq is the change in charge on the ion sheath during the passage of current. If η is the measured overvoltage, then $\eta = \eta_h + \Delta\varphi_{v.ch.}$ (1) $i = i_o (C/C_o)\exp(-\alpha\eta_h F/RT)$ (2) will be valid. Here.

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27883
S/020/61/140/001/022/024
B130/B101

Kinetics of cathodic processes ...

i_o is the exchange-current density, C is the electron concentration on the semiconductor surface on polarization, and C_o is the same at $i = o$. For the sake of simplicity, it is assumed that current passage does not disturb the electron equilibrium in the semiconductor: $C \cong C_o$. $\frac{RT}{\alpha F}\ln\frac{i_o}{i} = \eta_h$ (3) is obtained from Eq. (2). After substitution in (1) one obtains $\eta - \Delta\psi_{v.ch.} = \frac{RT}{\alpha F}\ln\frac{i_o}{i}$ (4). $\eta + \frac{1-\alpha}{\alpha}\Delta\psi_{v.ch.} = \frac{RT}{\alpha F}\ln\frac{i_o}{i}$ (5) is derived from (2). i_o is not identical in Eqs. (4) and (5), since the concentrations of the electrons participating in the reactions are not equal at $\eta = 0$.

$\eta = \frac{RT}{nFi_o}i$ (6) is found for $i \to 0$. If the valence electrons participate in the reactions, this relation exists not between η and i, but between η_h and i. Accordingly, $\eta - \Delta\psi_{v.ch.} = -RTi/nFi_o$ (7). The ratio between η_h and $\Delta\psi_{v.ch.}$ depends on whether or not the semiconductor surface is degenerate. For a non-degenerate surface, $\Delta\psi_{v.ch.}$ is much greater than η_h.

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S/020/61/140/001/022/024
B130/B101

and is the major part of overvoltage. Therefore, polarizability is very high in this case. If the surface is degenerate, $\Delta\varphi_{v.ch.}$ and η_h are commensurable. Polarizability is much lower here. Eq. (2) is also valid in the case of joint participation of valence and conduction electrons. The determination of the concentration of electrons entering the reaction from the two zones is, however, difficult. The proportion of valence electrons is calculated from a kinetic equation containing an experimentally measurable quantity. i_v is the current of valence electrons; i_c is the current of conduction electrons. $i_v + i_c = i$ (8), $i_v/i = x$ (9). If $i \ll i_o$, $-\frac{RT}{nF}\frac{i_v}{i_{ov}} = \eta_h$ and $-\frac{RT}{nF}\frac{i_c}{i_{oc}} = \eta$ (10), where i_{ov} is the exchange current of the reaction with the participation of valence electrons and i_{oc} with the participation of conduction electrons. $i_{ov} + i_{oc} = i_o$ (11). $-\frac{RT}{nF}\frac{i}{i_o} = \frac{\eta(\eta - \Delta\varphi_{v.ch.})}{\eta - \Delta\varphi_{v.ch.}(1 - x)}$ (12) is obtained from Eqs. (6), (10), (11),

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Kinetics of cathodic processes ...

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B130/B101

and (9). Similarly, the following expression is obtained for $i \gg i_o$, using Eqs. (4) and (5): $i = \left[i_0 \exp(-F\Delta\varphi_{v.ch.}/RT) \exp(-i\alpha F\eta_{||}/RT\right]/(1-x) \left[1 - \exp(-F\Delta\varphi_{v.ch.}/RT)\right]$ (14). These results are only correct in the absence of diffusion, and are most obvious in the polarization of silicon in alkaline solutions. Professor V. I. Veselovskiy, N. A. Aladzhalova, T. I. Borisova, and B. M Novakovskiy are thanked for discussions. There are 7 references: 4 Soviet and 3 non-Soviet. The reference to the English-language publication reads as follows: Ref. 1: M. Green, Modern Aspects of Electrochem., 2, 6, London, 1959.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-chemical Institute imeni L. Ya. Karpov)

PRESENTED: April 10, 1961, by A. N. Frumkin, Academician

SUBMITTED: April 4, 1961

Card 4/4

IZIDINOV, S.C.; BORISOVA, T.I.; VESELOVSKIY, V.I.

Electrochemical and photoelectrochemical behavior of the silicon electrode in acid and alkaline solutions. Zhur. fiz. khim. 36, no.6:1246-1254 Je'62 (MIRA [illegible])

1. Fiziko-khimicheskiy institut imeni Karpova, Moskva.

5.4500

39579
S/020/62/145/003/011/013
B101/B144

AUTHORS: Izidinov, S. O., Borisova, T. I., and Veselovskiy, V. I.

TITLE: Characteristics of the photochemical behavior of the silicon-alkali interface

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 145, no. 3, 1962, 598-601

TEXT: Exposure of the Si - KOH interface to light showed passivation of the Si electrode and activation of the passive electrode. Passivation occurred only with anodic currents $i_a < i_{a\ max}$ at all KOH concentrations (10^{-3} - 20 N). In n-Si, the potential φ becomes more negative, in p-Si more positive. The rate of passivation is inversely proportional to the time of exposure and increases as the potential and light intensity increase. $Z = k_2 \exp(i_{a\ max} - i_a)$, where $i_{a\ max} = k_3 i_{s-d}$ (i_{s-d} = self-dissolution current) holds for the number Z of absorbed light quanta. Complete photoactivation occurs only at the beginning of the passive state at φ = 100-300 mv. At φ = 400-600 mv, activation is incomplete. The potential range of complete activation is broadened in 10 N KOH by a rise of

Card 1/3

Characteristics of the photochemical ... S/020/62/145/003/011/013
B101/B144

PRESENTED: April 4, 1962, by A. N. Frumkin, Academician

SUBMITTED: March 3, 1962

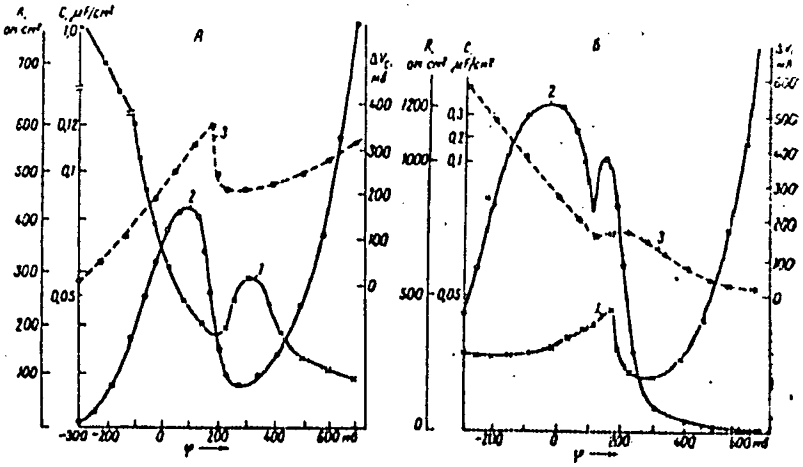


Fig. 3: (1) $C=f(\varphi)$, ($\mu F/cm^2$); (2) $R=f(\varphi)$, ($ohm \cdot cm^2$); (3) $\Delta V_c = \Delta V_p = f(\varphi)$, (mv). (A) for n-Si; (Б) for p-Si.

Card 3/3

VESKLOVSKIY, V.I.; BORISOVA, T.I.; YAKOVLEVA, A.A.; IZIDINOV, S.O.

"Some Specific Features of the Double Layer Structure and Electrode Process on Elemental and Oxide Semiconductors Ge, Si, Ag_2O, Ta_2O_5, TiO_2."

Report presented at the 14th meeting CITCE, Intl. Comm. of Electrochemical Thermodynamics and Kinetics, Moscow, 19-25 Aug 63.

Karpov Physico-Chemical Institute, Moscow, U.S.S.R.

IZIMBETOV, T.

Dissertation defended for the degree of Candidate of Philosophical Sciences
at the Institute of Philosophy 1962

"Criticism of the Ideology of Modern Islam."

Vestnik Akad. Nauk, No. 4, 1963, pp 119-145

MARTON, Tibor, dr.; IZINGER, Endre, dr.

Cancer of the common bile duct causing obstruction of the colon and stomach. Magy. sebesz. 17 no.2:102-104 Ap'64.

1. A Kozponti Allami Korhaz (igazgato: Fenyvesi, Jozsef, dr.) Sebeszeti Osztalyanak (foorvos: Marton, Tibor, dr.) kozlemenye.

*

IZINGER, E.F., akusherka

Work of a maternity home on a collective farm. Zdrav. Turk.
7 no.3:43-45 Mr'63. (MIRA 16:6)

1. Kolkhoz "Kommunism" Bayram-Aliyskogo rayona.
(MATERNITY HOMES)

HUNGARY

[illegible], Gyula, [illegible], Vera, [illegible], Jozsef, [illegible], Judit; Health Service of the Hungarian People's Army (Magyar Nephadsereg Egeszsegugyi Szolgalata).

"The Role of Experimental Thyroid Deficiency in Some Post-Operative Reactions."

Budapest, Kiserletes Orvostudomany, Vol 15, No 1, Feb 63, pp [illegible].

Abstract: [Authors' Hungarian summary] The authors conclude that the post-operative traumatic reactions are not identical upon surgical and chemical thyroidectomy. Resistance against post-operative trauma is lowered upon complete thyroid removal but it is not affected by the hypofunction obtained by treatment with methylthiouracil. Surgically thyroidectomized animals show no blood sugar elevation during post-operative trauma. The serum cholesterol level a dogs treated with methylthiouracil drops instead of rising. Thyroidectomized animals show a great delay in the recovery of original serum albumin levels. Of ten references, three are Eastern European, the rest is Western.

1/1

IZINGER, Endre, dr.

Gallbladder papilloma causing intermittent jaundice. Magy. sebesz. 17 no.1:59-63 F'64

1. A Kozponti Allami **Korhaz** (igazgato: Fenyvesi, Jozsef, dr.) Sebeszeti osztalyanak (foorvos: Marton, Tibor, dr.)kozlemenye.

*

IZINGER, F.

IZINGER, F. Let us be ready in time for the tasks of summer's end. P. 1.

Vol. 8, No 7, July 1956
ALLAMI GAZDASAG
AGRICULTURE
Budapest, Hungary

So: East European Accession, Vol. 6, No. 2, Feb. 1957

IZINGER, P.

Good work in harvesting. p. 10.
(ALLAMI GAZDASAG, Vol. 9, no. 6, June 1957. Budapest, Hungary)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 9, Sep. 1957. Uncl.

IZINGER, P.

The significance of early sowing. p. 4.

(Allami Gazdasag. Vol. 9, no. 7, July 1957. Budapest, Hungary)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 10, October 1957. Uncl.

Country : HUNGARY
Category : Cultivated Plants. Cereals. Leguminous Plants.
Tropical Cereals. M

Abs Jour : RZhBiol., No 6, 1959, No 24813

Author : Izinger, P.
Inst : -
Title : Sowing Periods of Winter Wheat (in Hungary).

Orig Pub : Magyar mezogazd., 1958, 13, No. 14, 3-4

Abstract : No abstract.

Card : 1/1

IZYUMOVA, N.A.

On parasitic diseases in fish dangerous to man in the zone of water supply. Wiadomosci parazyt., Warsz. 5 no.4-5:445-451 1959.
(PARASITIC DISEASES, transm.) (FISH, parasitol)

EXCERPTA MEDICA Sec 16 Vol 7/11 Cancer November 59

4955. **Osteogenic sarcoma of the patella (Russian text)** Izko D. A. Inst. of Oncol., AMS, Leningrad *Vopr. Onkol.* 1959, 5/4 (485-488) Illus. 2

In the literature 23 cases were found, and 2 new cases are reported: (1) In a man of 42 a metastasis in the region of the 8th-10th rib had to be removed one year and 3 months after removal of the patella; 10 months later he died, and at autopsy metastases were found in vertebrae, dura mater, right lung, right kidney, region of the 8th-9th right ribs. (2) A woman of 58 who was given a course of roentgen therapy; no late results could be obtained.

IZLEGOSHCHIN, A.

Progressive features in Stalingrad. Prof.-tekh. obr. 17 no.7:6 Jl '60. (MIRA 13:8)

1. Zamestitel' direktora po uchebno-proizvodstvennoy rabote remeslennogo uchilishcha No.1.
(Stalingrad--Vocational education)

RODYAKIN, N.F.; CHERNYAK, E.N.; IZMAILOV, A.M.; ABRAMYAN, A.A.

Possible poisoning by toxic chemicals used in agriculture.
Zdrav. Turk. 8 no.2:28-30 F'64 (MIRA 17:4)

1. Iz Turkmenskogo nauchno-issledovatel'skogo instituta kozhnykh bolezney (direktor - M.E. Ereshov, nauchnyy rukovoditel' prof. N.F. Rodyakin).

IZMAILOV, I. A. (Assistant Professor) and MAROSHKIN, B. F. (Doctor of Veterinary Sciences, L'vov Zooveterinary Institute)

"Etiology and pathogenesis of Stachybotrys toxicosis in horned cattle"

Veterinariya, vol. 39, no. 4, April 1962 p. 27

IZMAILOV, T.U.

Change in the butterfat content of milk in relation to the biochemical processes in the rumen. Preliminary report. Trudy Inst.fiziol. AN Kazakh.SSR 2:117-119 '59. (MIRA 13:7)
(RUMEN) (COWS--PHYSIOLOGY)
(DAIRY CATTLE--FEEDING AND FEEDING STUFFS) (BUTTERFAT)

IZMAILOV, T.U.

Parietal digestion in the rumen of cattle. Izv. AN Kazakh. SSR. Ser. biol. nauk 3 no.5:84-87 S-O '65. (MIRA 18:11)

BAZANOVA, N.U.; IZMAILOV, T.U.

Effect of acidophilic and lactic paste from corn on the fermentation processes in rumen. Trudy Inst. mikrobiol. i virus. AN Kazakh. SSR 5:58-62 '61. (MIRA 15:4)
(Lactic acid bacteria) (Rumen--Microbiology)
(Milk--Composition)

IZMAILOV, T.U.; URAZGALIYEV, A.

Digestibility of cellulose in the rumen of ruminants in connection with their age. Izv. AN Kazakh. SSR. Ser. biol. nauk 3 no.1:103-105 Ja-F '65.

(MIRA 18:5)

[illegible], V., kand.tekhn.nauk

The economics of large-panel housing construction. Bud.mat.i konstr. no.5:11-12 S-0 '62. (MIRA 15:11)
(Construction industry) (Kiev--Apartment houses)

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

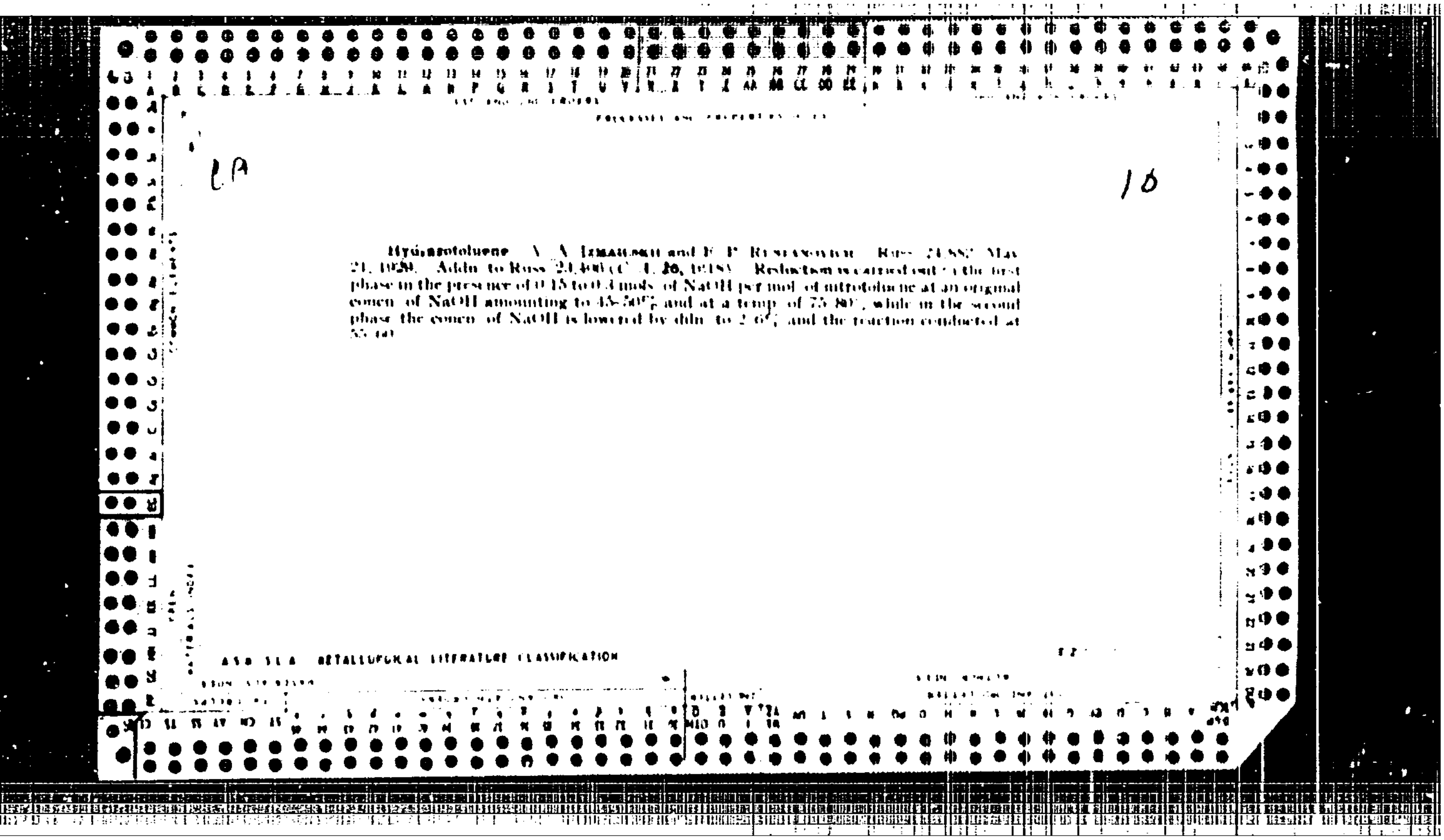
In the prepara-
Benzidine bases. V. A. Izmailskii. Russ. 110, Apr. 22, 1921. In the prepara
tion of bases of benzidine, toluidine or bianisidine series and azo compds. are reduced
by Zn or Fe in the presence of indifferent hydrocarbons as solvents and the hydroxy
compds. are rearranged in the presence of a mineral acid, particularly H_2SO_4.

Alkyl nitrophenyl ethers. V. A. Izmailskii and B. A. Razorenov. Russ. 591,
Sept. 30, 1925. Alkyl esters of aromatic sulfonic acids are acted upon with nitro-
phenols in the presence of aq. solns. of alkali or alk. earth hydroxides.

Insoluble bismuth compositions. V. A. Izmailskii. Russ. 24,881, Jan. 14,
1926. A freshly prepd. paste or suspension of complex bismuth acids with hydroxy
acids of the fatty series, such as tartaric or citric acids, is treated in cold or with the
application of heat with freshly prepd. bismuth hydroxide in an amount that corresponds
to the number of carboxyl groups of the complex acid.

Trinitro- and triamino-4-arylaminobenzenearsonic acids. V. A. Izmailskii and
A. M. Simonov. Russ. 28,217, Nov. 22, 1928. Substances which do not contain car-
boxylic groups, such as primary aromatic amines or di- p-diamines of the diphenyl series
or their nucleus-substituted derivs. are made to act, in the presence of substances able
to split off HCl, on 3-nitro-4-chlorobenzenearsonic acid. The [illegible] compds. obtained
are reduced to amines in the usual manner.

A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION



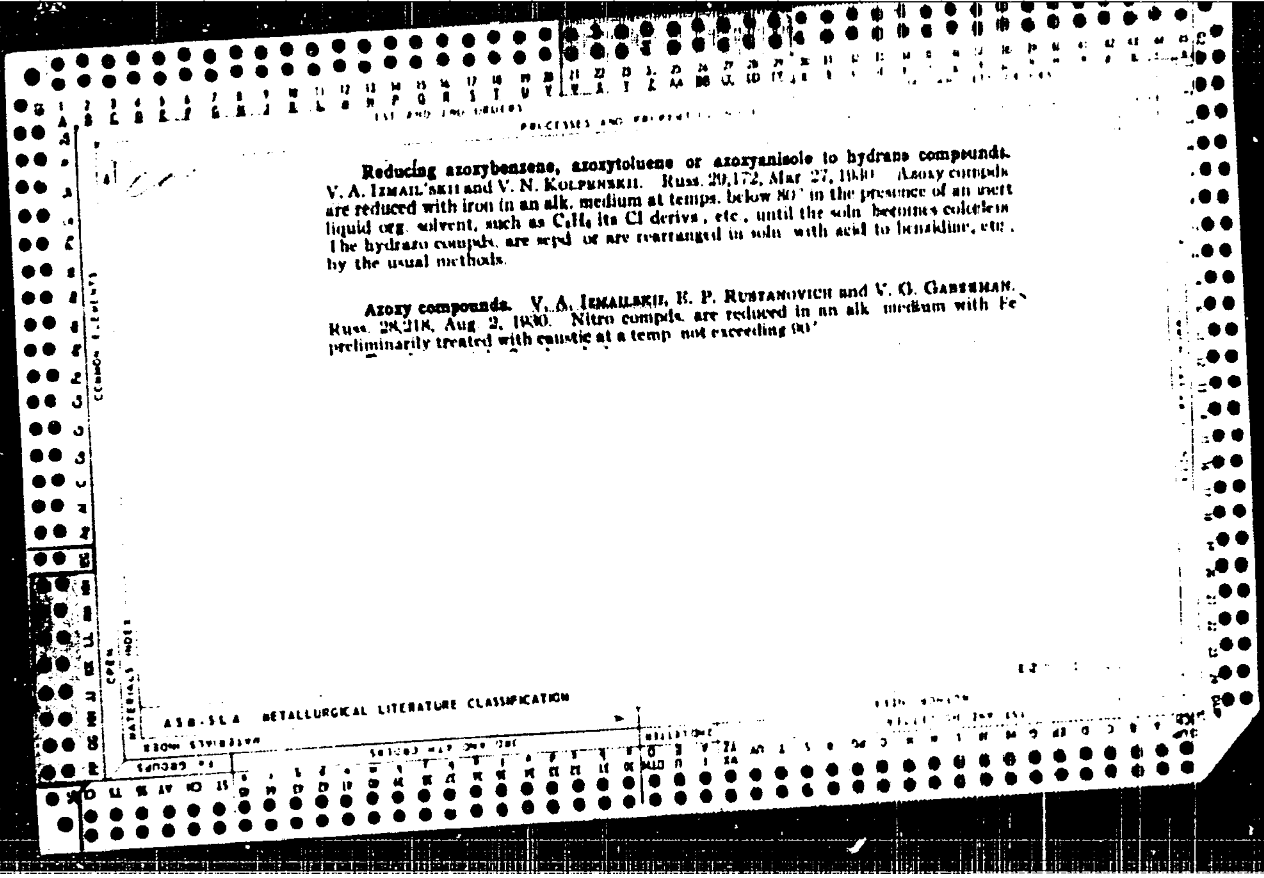
PROCESSES AND PROPERTIES INDEX

1A

1b

Hydrazotoluene. A. A. Izmailskii and F. P. Rusyanovich. Russ. 21,882, May 21, 1929. Addn. to Russ. 21,400 (C. A. 26, 1618). Reduction is carried out in the first phase in the presence of 0.15 to 0.3 mols. of NaOH per mol. of nitrotoluene at an original concn. of NaOH amounting to 45-50%, and at a temp. of 75-80°, while in the second phase the concn. of NaOH is lowered by diln. to 2-6%, and the reaction conducted at 55-60.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Reducing azoxybenzene, azoxytoluene or azoxyanisole to hydrazo compounds. V. A. Izmail'skii and V. N. Kolpenskii. Russ. 20,172, Mar 27, 1930. Azoxy compds. are reduced with iron in an alk. medium at temps. below 80° in the presence of an inert liquid org. solvent, such as C_6H_6 its Cl derivs., etc., until the soln. becomes colorless. The hydrazo compds. are sepd. or are rearranged in soln. with acid to benzidine, etc., by the usual methods.

Azoxy compounds. V. A. Izmail'skii, R. P. Rustanovich and V. G. Gabershan. Russ. 28,218, Aug. 2, 1930. Nitro compds. are reduced in an alk. medium with Fe preliminarily treated with caustic at a temp. not exceeding 80°.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

10

Polybismuth compounds of hydroxy fatty acids. V. A. Izmail'skii. Russ. 23,398, Oct. 31, 1931. A soln. of an alkali salt of mono- or di-bismuth compd. of a hydroxy fatty acid is treated with an alk. soln. with one of more mols. of $Bi(OH)_3$ in a polyatomic alc. such as glycerol and the reaction product is sepd. from the soln. by the action of acid.

Hydrazo compounds. V. A. Izmail'skii and V. N. Kolpenskii. Russ. 23,406, Oct. 31, 1931. Hydrazo compounds are prepd. from nitro compds. which do not contain any amine groups by reduction with Zn dust in an alk. medium in two phases. In the first phase an amt. of Zn insufficient for the production of hydrazo compds is gradually introduced at 75-100°; after the complete disappearance of NO_2 compds. the temp. of the reaction mixt. is lowered by 15-35° and there is rapidly added enough Zn dust to bring the reaction to an end.

ASA-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

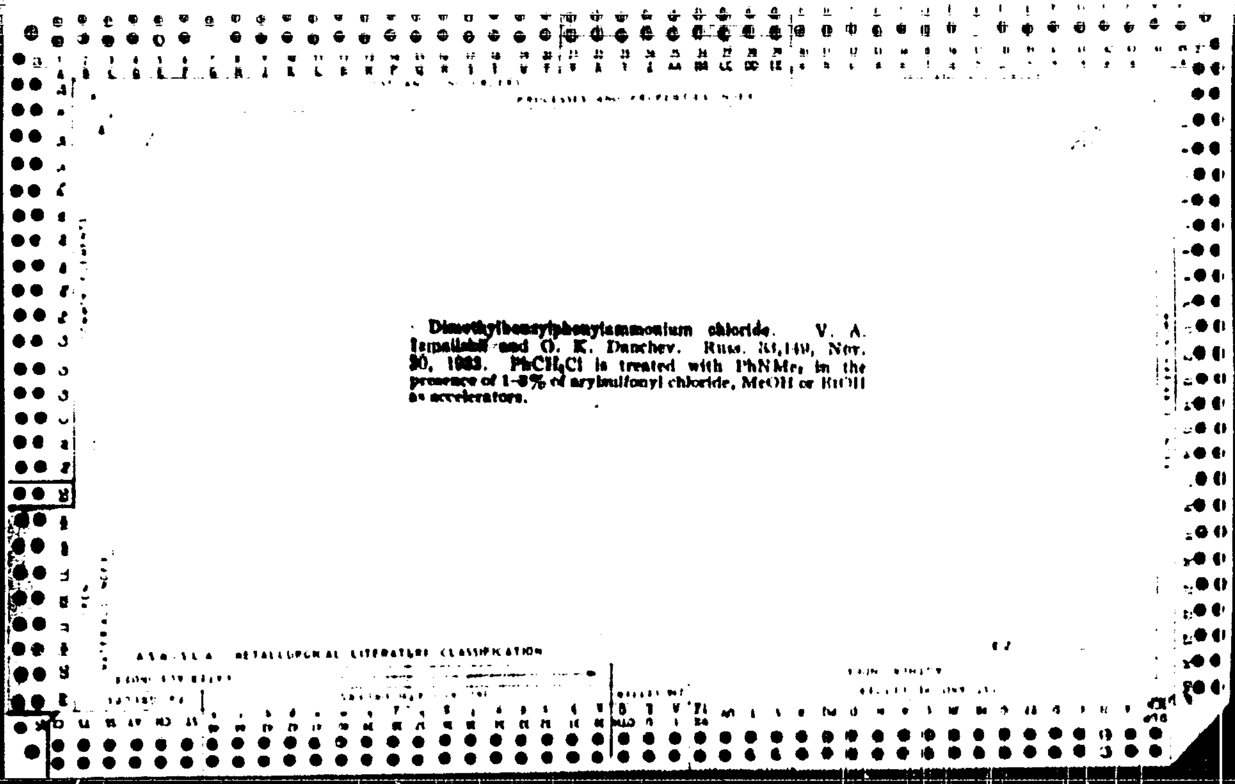
PROCESSES AND PROPERTIES INDEX

22

Losses in the production of benzidine bases and the reductive cleavage of aromatic hydrazo compounds during rearrangement. III. V. A. Izmailskii, R. P. Rustanovich and P. T. Shpuntenok. *Anilinokrasochnaya Prom.* 2, No. 3, 10-16(1933); cf. I. and Kolpenskii, *C. A.* 30, 223, 2323; I. and Arbuzov, *J. Chem. Ind.* (*Moscow*) 3, No. 5-6, 25(1926).—The losses in the production of benzidine (I) here considered are those caused principally in reworking of the hydrazo compd. (II) by extn. and in the process of rearrangement. The sharp difference in the action of HCl and H_2SO_4 was also studied. First of all, in the prepn. of II the formation of $PhNH_2$ is considerably decreased by carrying out the process in 2 stages: 1st, the reduction of $PhNO_2$ to azoxybenzene with Zn dust in an alk. medium, and 2nd, the reduction of azoxybenzene to II at 57-65° at low alk. concn., the best results (1-2% of $PhNH_2$ or 2-3% of o-$C_6H_4(NH_2)Me$) being obtained by reduction of the azoxy compd. with Fe at 3-4% concn. (cf. I. and Kolpinskii, U. S. S. R. pat. 2176(1926)). In the extn. of II from the reduction sludge at 100° or over, a considerable part of II is decompd. with formation of amines: $2RNHNHR \longrightarrow 2RNH_2 + RN{:}NR$ (Wieland, *C. A.* 6, 1296), and in the case of $(PhNH)_2$ at 85° is negligible. On refluxing $(PhNH)_2$ in xylene 2 hrs. at 100° and with the subsequent rearrangement under normal conditions, the yield of I was reduced from 80.2 to 75.8% with formation of 4.5% of azo compd. and 8% of $PhNH_2$. Amines are formed in the process of rearrangement; the reaction can begin at about 0° and progresses rapidly with increase in temp. This reductive decompn. is greater with HCl than with H_2SO_4. Conclusions: The extn. of II from the sludge should be made at lower temp., and the rearrangement procedure carried out without the sepn. of II from its soln. in hydrocarbon. The best solvents for II are PhCl and the liquid fraction of $C_6H_4Cl_2$, in which 7% of II is sol. at 70°, but only 1.6% in petroleum hydrocarbons at 80° (8.4% at 95°). The work is being continued.

Chas Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

Dimethylbenzylphenylammonium chloride. V. A. Izmail'skii and O. K. Danchev. Russ. 34,149, Nov. 30, 1933. PhCH$_2$Cl is treated with PhNMe$_2$ in the presence of 1-3% of arylsulfonyl chloride, MeOH or EtOH as accelerators.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

CA

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3-Nitro-4-hydroxybenzenearsonic acid from p-chloroaniline [and from 2-nitrodiphenylamine-4-arsonic acid]. V. A. Izmailskii and A. M. Simonov. *Khim. Farm. Prom.* 1933, 317-20.—p-Chloroaniline is the most economical starting material; it is made from p-$ClC_6H_4NO_2$ by neutral reduction with Fe and NaCl (2 hrs. boiling) or with Fe and HCl, steam-distd. and transformed into p-$ClC_6H_4AsO_3H_2$ according to Bart-Schmidt, with about 50% yields. 4,3-$Cl(O_2N)C_6H_3AsO_3H_2$ is made by nitrating p-$ClC_6H_4AsO_3H_2$ with H_2SO_4 and an excess of KNO_3 at 100°. Fourteen g. of the nitro acid is dissolved in 50 g. of 40% NaOH and stirred at 85° for 10 hrs. Thirty cc. of H_2O and 25 cc. of HCl are added, the soln. is filtered with charcoal at 80°, acidified with another 16 cc. of HCl and set to crystallize; the yield of 4,3-$HO(O_2N)C_6H_3AsO_3H_2$ is 64%. These conditions were found best in 14 different expts. In the 2nd method 3,4-$O_2N(PhNH)C_6H_3AsO_3H_2$ is made from the 4-Cl acid by boiling for 10 hrs. with *N* NaOH and fresh aniline. The excess of aniline is distd. with steam, and the ppt. washed, dried and sapond. for 8 hrs. with 25% NaOH. The aniline is sepd. and 4,3-$HO(O_2N)C_6H_3AsO_3H_2$ is crystd. as before.

L. Nasarevich

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Determination of diphenylene in benzidine. V. A. Izmail'skii and R. B. Roshal. *Anilinokrasochnaya Prom.* 4, 407-12(1934). —The absorbed diphenylene in benzidine can be best detd. by converting the sulfates into the chlorides with $BaCl_2$ and HCl at 85°, then twice pptg. the benzidine in the filtrate with H_2SO_4 at 80°, distg. off any $PhNH_2$ from the alk. filtrate and detg. as $(PhNH_2)_2 \cdot H_2SO_4$. Diphenylene is detd. by the difference or by titration of the HCl filtrate with $NaNO_2$. C. B.

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3RD AND 4TH ORDERS

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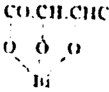
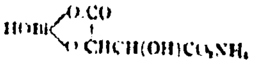
Bismuth-tartaric acid compounds. VII. Action of ammonia on bismuth-tartaric acid. V. A. Ismailskii and S. S. Kaganova. *Ber.* 68B, 415-21(1935); cf. *Soviet Vestnik Venerologii i Dermatologii* 1934.—Rosenheim and Vogelsang (*Z. anorg. Chem.* 48, 212(1906)), as confirmed by R. *et al.* (*C. A.* 20, 1871), obtained from "Bi bitartrate" and excess of 25% aq. NH_3 an NH_4 compd. which after long standing and evapn. seps. as a cryst. water-insol. powder which they formulate as NH_4 anhydrobismuth-tartrate (I). The fact that it seps. from and is insol. in water raised doubts as to the correctness of such a structure, and the action of NH_3 on bismuth-tartaric acid



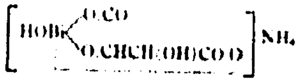
$\mathrm{CO.CH.CHCO_2NH_4}$ / $\mathrm{O\;\;O\;\;O}$ / Bi

(I)



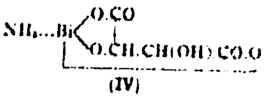
$\mathrm{HOBi}\begin{matrix}\mathrm{O.CO}\\ \mathrm{O.CHCH(OH)CO_2NH_4}\end{matrix}$

(II)



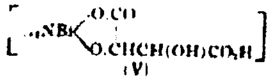
$\left[\mathrm{HOBi}\begin{matrix}\mathrm{O.CO}\\ \mathrm{O.CHCH(OH)CO.O}\end{matrix}\right]\mathrm{NH_4}$

(III)



$\mathrm{NH_3...Bi}\begin{matrix}\mathrm{O.CO}\\ \mathrm{O.CH.CH(OH).CO.O}\end{matrix}$

(IV)



$\left[\mathrm{...NBi}\begin{matrix}\mathrm{O.CO}\\ \mathrm{O.CHCH(OH)CO_2H}\end{matrix}\right]$

(V)

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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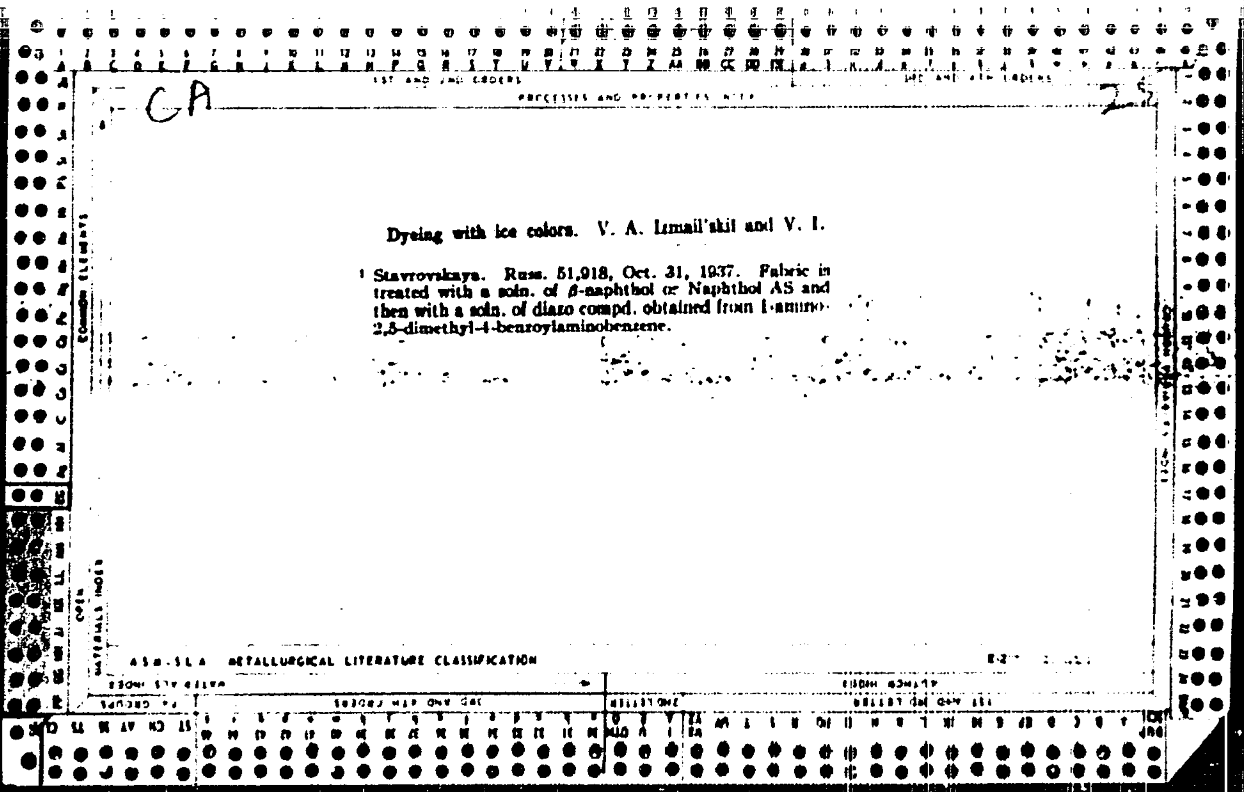
2-3

Decomposition of methoxymethyl salicylate. Prismatic crystals of salicylic acid. V. A. IZMAILSKI and B. M. BOGOSLOVSKI (J. Gen. Chem. Russ., 1936, 6, 1193—1197).—A sample of methoxymethyl salicylate (I) had undergone decomp. after remaining for 8 years in a stoppered bottle, at room temp., to yield a mixture of products, of which salicylic acid (II), 2-hydroxy-3-aldehydobenzoic acid, 2-hydroxyisophthalic acid, and 3-hydroxymethylsalicylic acid (III) were identified. The probable reactions are: (I) + $H_2O \rightarrow$ (II) + CH_2O + MeOH; (II) + $CH_2O \rightarrow$ (III). The (II) crystallises from the reaction mixture in the form of rectangular prisms.

R. T.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

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3RD AND 4TH ORDERS

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Dyeing with ice colors. V. A. Izmail'skii and V. I. Stavrovskaya. Russ. 51,918, Oct. 31, 1937. Fabric is treated with a soln. of β-naphthol or Naphthol AS and then with a soln. of diazo compd. obtained from 1-amino-2,5-dimethyl-4-benzoylaminobenzene.

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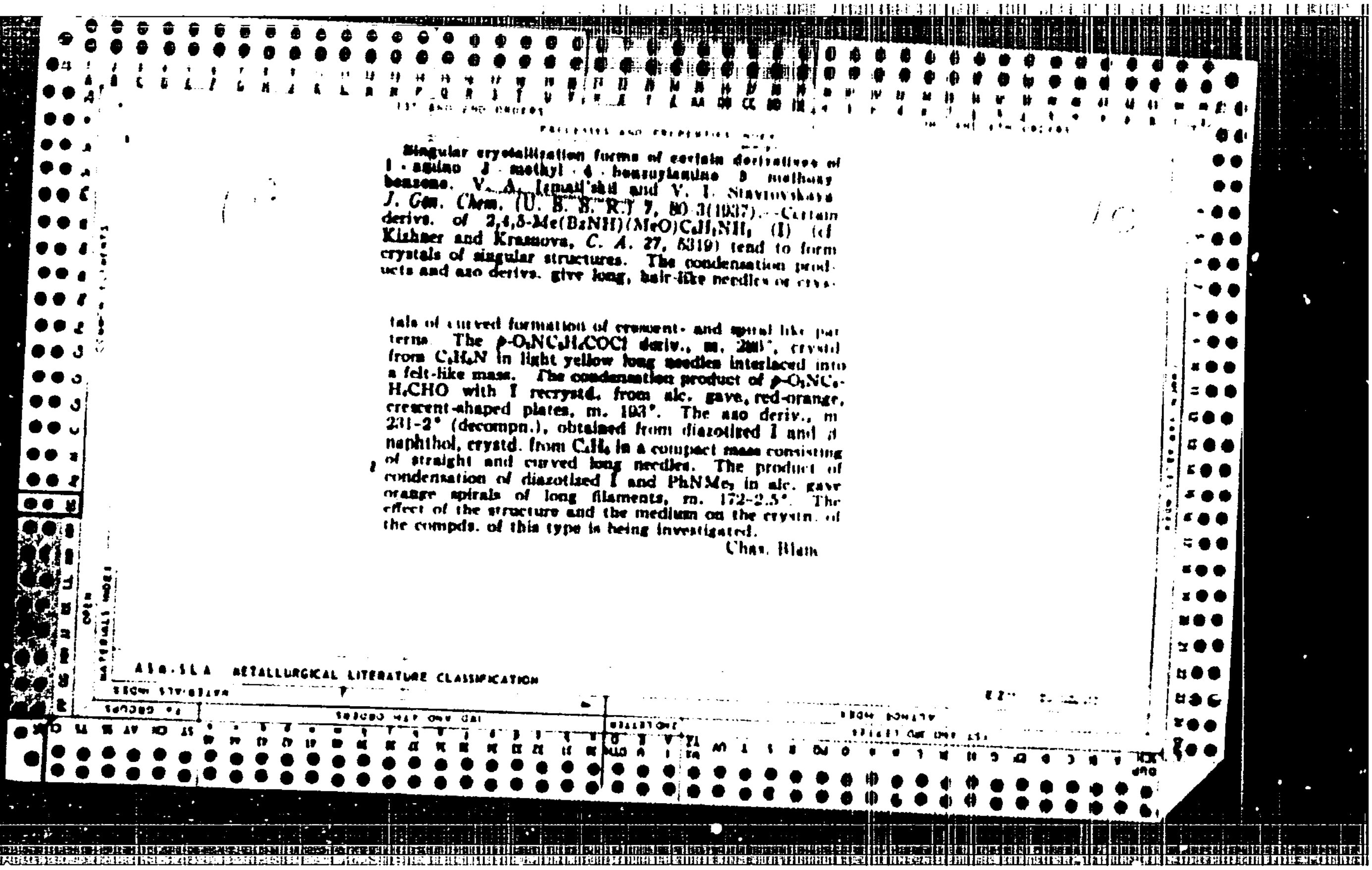
Separated auxo-enoid systems II. The color of the nitrobenzoyl derivatives of the aromatic amines. V. A. Izmail'skii and E. A. Smirnov. *Bull. soc. chim.* [5] 4, 81-94(1937); cf. *C. A.* 30, 8184°.—The general study of compds. of the type $O_2NC_6H_4QC_6H_4$(auxo) where "auxo" represents an auxochrome group and Q a group contg. a double bond (—CH:CH—, —CH:N—, —N:N—) is extended to compds. in which Q is —CONH— and —CO.NR— and the continuity of the conjugated chain is thus destroyed. However, the color remains which perhaps results from the possible tautomerization —CONH— ⇄ —C(OH):N— which would restore the conjugated chain. In the absence of either the —NO_2 or auxo group the compd. is colorless while —NMe_2 produces a stronger effect than —OH as an auxo group. The intense color ranging from yellow to dark red is close to that of the corresponding conjugated chain systems. New compds. prepd. are 3-[3-nitrobenzamino]phenol, m. 219°, light yellow, 4-[3-nitrobenzamino]phenol, m. 224°, light yellow, 4-[N-methyl-3-nitrobenzamino]phenol, m. 224°, pale yellow, 4-[N-methyl-4-nitrobenzamino]phenol, m. 214°, yellow, *N,N*-dimethyl-*N'*-[4-nitrobenzoyl]-*m*-phenylenediamine, m. 188°, orange-red, *N,N*-dimethyl-*N'*-[3-nitrobenzoyl]-*m*-phenylenediamine, m. 176°, orange, *N,N*-dimethyl-*N'*-[3-nitrobenzoyl]-*p*-phenylenediamine, m. 173°, dark red, *N,N*-dimethyl-*N'*-[4-nitrobenzoyl]-*p*-phenylenediamine, m. 258.5°, dark red. **III. The influence of the position of the nitro and auxo groups on the color of the nitrobenzoylarylamides.** *Ibid.* 94-111.—The influence on the color of the simultaneous presence in the mol. $O_2NC_6H_4CONHC_6H_4$(auxo) of 2 chromophoric groups, one corresponding to the type of the acichromophoric group (the terms *acichromophore* or *aciphore* are proposed to indicate the polar chromophoric groups of the type NO_2, CO and quinone group instead of the unjustified term "anti-auxochrome"), *m*- or *p*-$O_2NC_6H_4CO$-, and the other corresponding to the auxo-enoid chromophoric system *m*- or *p*-(auxo)C_6H_4NHCO is studied spectrographically. The introduction of the *p*-NO_2 group in the benzoylated part of the mol. exercises approximately the same bathochromic effect as the *p*-NMe_2 group. The simultaneous effect of the NO_2 group and the auxo group is to accentuate their bathochromic effect which is greatest for the *p,p'* relationship and least for the *m,m'* relationship with the *m,p'*- and the *p,m'*-relationships intermediate. The cause of the strongly chromophoric properties of the *p*-di-auxo and *p*-di-aciphore systems is to be sought in their contra-inductive natures due to their occupying the even positions in the enoid structure while the weaker chromophoric properties of the *m*-isomers result from their syn-inductive nature due to their occupying the odd positions in the enoid structure.

A. P. Sachs

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Singular crystallization forms of certain derivatives of 1-amino-2-methyl-4-benzoylamino-5-methoxybenzene. V. A. Izmail'skii and V. I. Slavinskaya. *J. Gen. Chem.* (U. S. S. R.) 7, 803(1937).—Certain derivs. of 2,4,5-Me(BzNH)(MeO)$C_6H_2NH_2$ (I) (cf. Kishner and Krasnova, *C. A.* 27, 5319) tend to form crystals of singular structures. The condensation products and azo derivs. give long, hair-like needles or crystals of curved formation of crescent- and spiral-like patterns. The p-$O_2NC_6H_4COCl$ deriv., m. 205°, crystd. from C_5H_5N in light yellow long needles interlaced into a felt-like mass. The condensation product of p-$O_2NC_6H_4CHO$ with I recrystd. from alc. gave, red-orange, crescent-shaped plates, m. 193°. The azo deriv., m. 231-2° (decompn.), obtained from diazotized I and β-naphthol, crystd. from C_6H_6 in a compact mass consisting of straight and curved long needles. The product of condensation of diazotized I and $PhNMe_2$ in alc. gave orange spirals of long filaments, m. 172-2.5°. The effect of the structure and the medium on the crystn. of the compds. of this type is being investigated.

Chas. Blanc

"Sur la formation de l'ether ethylique pendant L'ethylation au moyen du chlorure d'ethyle Certaines analogies theoriques. Communication V." Izmailskii, W. A. et Popow, B. W. (p. 111)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii). 1937, Volume 7, No. 1.

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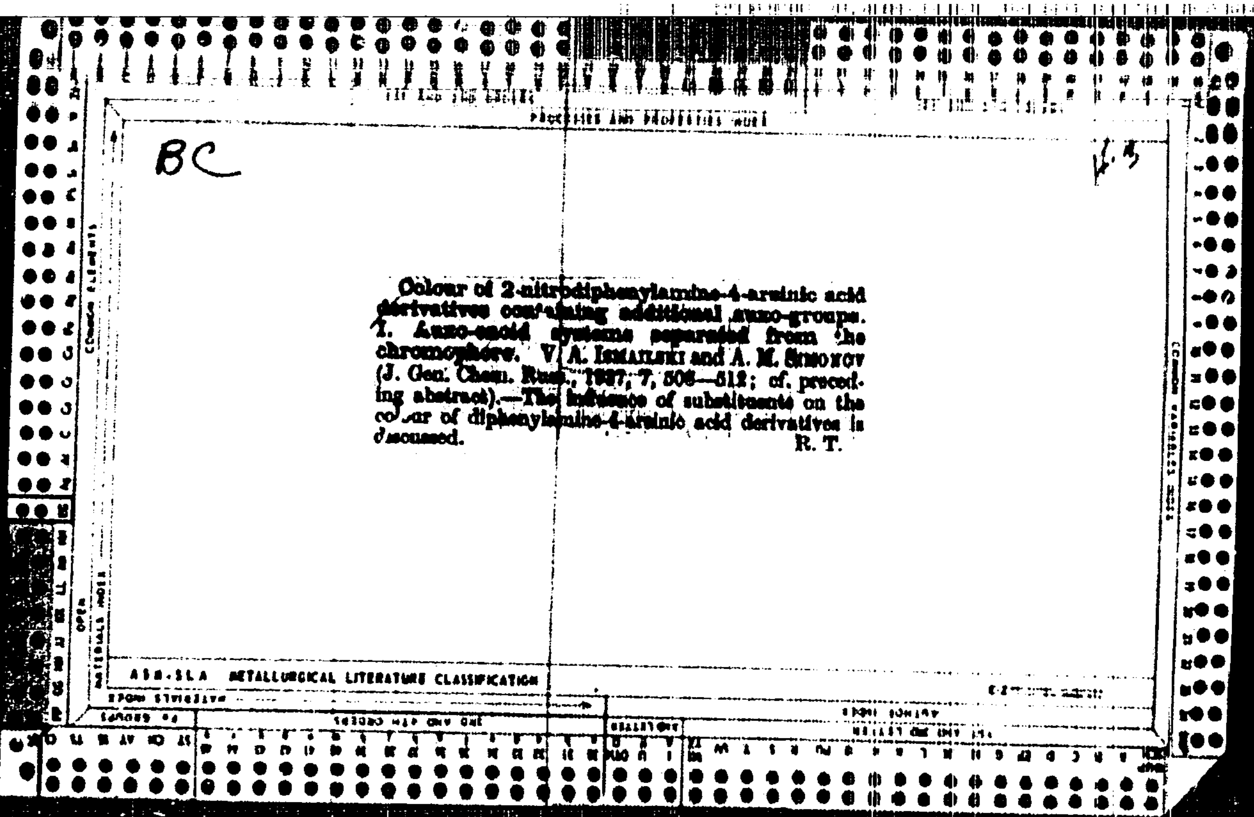
The structure and toxicity of arsinic acids of the diphenylamine series. V. A. Izmail'skii and A. M. Simonov. *J. Gen. Chem.* (U. S. S. R.) 7, 400-507(1937); *Bull. soc. chim.* [5], 3, 1730-31(1936).—4,3-Cl(O_2N)-$C_6H_3AsO_3H_2$ condenses with substituted $PhNH_2$ to form $RNHC_6H_3(NO_2)AsO_3H_2$. Reduction of the NO_2 group gives the corresponding amino acids. Introduction of OH or NHCOMe in the ring which does not contain As lowers the toxicity of these acids. The order of min. lethal dose is *m*-OH > *p*-OH and *m*-NHCOMe > *p*-NHCOMe. Etherification of the OH group raises the toxicity, but all the acids have relatively low toxicities in spite of the presence of the toxic NO_2 group. The inductive effect of the auxo groups on the As is evident, since the *m*- and *p*-compds. have different toxicities. The oxidizability of the compds. is probably also a factor. Attempts to prep. *o*-substituted compds. were unsuccessful. Toxicities are reported for the following diphenylamine-4-arsonic acids: 2-nitro, 3'- and 4'-acetamino-2-nitro, 4'-hydroxy-2-nitro and its Et ether, 3'-hydroxy-2-nitro and its Me ether, 2-amino and its 4'-hydroxy, acetamino and ethoxy and 3'-acetamino derivs., and 4-benzidine-3-nitrophenylarsonic acid. H. M. Leicester

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



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v. 5

PROCESSES AND PROPERTIES INDEX

Colour of 2-nitrodiphenylamine-4-arsinic acid derivatives containing additional auxo-groups. I. Auxo-enoid systems separated from the chromophore. V. A. Izmailski and A. M. Simonov (J. Gen. Chem. Russ., 1937, 7, 506—512; cf. preceding abstract).—The influence of substituents on the colour of diphenylamine-4-arsinic acid derivatives is discussed.

R. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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Colour of 2-nitrodiphenylamine-4-arsinic acid derivatives, containing additional auxo-groups. II. Colour of nitrobenzoyl derivatives of aromatic amines. III. Influence of position of nitro- and auxo-groups on colour of nitrobenzoylarylamines. V. A. Izmailski and E. A. Smirnov (J. Gen. Chem. Russ., 1937, 7, 513—522, 523—537; cf. this vol., 237).—II. The CO·NH group is shown to act as a chromophore in a no. of m- and p-nitrobenzoyl derivatives of substituted anilines, the intensity of coloration depending on the nature and position of the auxochrome groups. The N-p-*nitrobenzoyl* derivatives of m-*aminophenol*, m.p. 212°, p-*anisidine*, m.p. 197°, m-, m.p. 188°, and p-*dimethylaminoaniline*, m.p. 259·5°, and the m-*nitrobenzoyl* derivatives of m-*aminophenol*, m.p. 219°, p-*anisidine*, m.p. 174·5°, p-N-*methylaminophenol*, m.p. 224°, m-, m.p. 176°, and p-*dimethylaminoaniline*, m.p. 173°, are described.

III. The absorption spectra of the above compounds are given, and the causes of differences in absorption for m- and p-substituted compounds are discussed.

R. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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The color of the nitrobenzoyl derivatives of the aromatic amines. IV. Auxo-enoid systems separated by the chromophore. V. A. Izmail'skii and B. M. Bogoslovskii. *Compt. rend. acad. sci. U. R. S. S.* 14, 17-22(1937)(in German); cf. *C. A.* 31, 2184^{8}.—Compds. of the type $O_2NC_6H_4QC_6H_4$(auxo), where Q is —CO.N(CH_2Ph)—, were prepd. to det. whether the deep color with compds. where Q is —CONH— is due to the tautomerization —CONH— ⇄ —C(OH):N—. In spite of the impossibility of tautomerization in —CO.N(CH_2Ph) the compd. $O_2NC_6H_4CON(CH_2Ph)C_6H_4NMe_2$ is intensely red and is due to the unbroken conjugated chain between auxo-NMe_2 and the acichromophore NO_2. *N*-Benzyl-*N*-(4-nitrobenzoyl)-*p*-aminophenol, m. 180-1°, pale yellow plates; *N*-benzyl-*N*-(4-nitrobenzoyl)-*p*-phenetidine, m. 101-2°, pale yellow needles; *N*-(*N*-dimethyl-*N'*-benzyl-*N'*) (4-nitrobenzoyl)-*p*-phenylenediamine, m. 118-19°, intensely red coarse prisms. A. P. S.

Diphenyl-*p*-tolylamine and phenyldi-*p*-tolylamine. Ralph J. B. Marsden. *J. Chem. Soc.* 1937, 627. Heating 8 g. Ph_2NH, 13 g. *p*-IC_6H_4Me, 8 g. K_2CO_3 and 2 g. Cu bronze in 50 cc. $PhNO_2$ for 9 hrs. gives 1.5 g. *diphenyl-p-tolylamine*, very pale yellowish white, m. 68-73° (m. pt. cor.). (*p*-MeC_6H_4)$_2$NH (10 g.), 10.3 g. PhI, 7 g. K_2CO_3 and 2 g. Cu bronze in 50 cc. $PhNO_2$, heated 11 hrs., give 4 g. *phenyldi-p-tolylamine*, pale yellow, m. 100°.

C. J. West

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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Separated auxo-enoid systems V. The color of nitrobenzoyl derivatives of aromatic amines V. A. Izmail'skii and E. A. Smirnov. *J. Gen. Chem.* (U. S. S. R.) 8, 1730-40 (in English, 1740-1)(1938); cf. *C. A.* 31, 4280^{4}; 33, 3353^{6-9}. The influence on the color of the simultaneous presence in the mol. $O_2NC_6H_4CONHC_6H_4$-(auxo) (I) of 2 chromophoric groups, one corresponding to the nitro-enoid system *m*- or *p*-$O_2NC_6H_4CO$- and the other corresponding to the auxo-enoid system *m*- or *p*-(auxo)C_6H_4NHCO- is studied by fusing or dissolving in hot alc. or C_5H_5N 2 compds., one of which contains the corresponding nitro-enoid system and the other contains the auxo-enoid system present in I. The resulting complex compds. in the melt or soln. have practically identical colors with the corresponding I derivs. Thus, the color of the fusion complex from *p*-$O_2NC_6H_4CO_2Me$ and *p*-$AcNHC_6H_4OH$ is identical with that of *N*-[4-nitrobenzoyl]-*p*-aminophenol and that from *p*-$O_2NC_6H_4CO_2Me$ and *p*-$AcNHC_6H_4NMe_2$ is identical in color with *N*,*N*-dimethyl-*N'*-[4-nitrobenzoyl]-*p*-phenylenediamine. It is therefore evident that the color of the complexes formed by fusion or soln. of nitro compds. with amines and phenols is conditioned by the interaction of the sep. systems, one of which contains the NO_2 group (nitro-enoid system) and the other contains the auxo group (auxo-enoid system). In I this interaction between the 2 systems takes place within the same mol.

Chas. Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Alkylation. VI. Saponification of ethyl chloride by the action of alkaline agents. V. A. Izmail'skii and B. V. Popov. *J. Gen. Chem.* (U. S. S. R.) 8, 695-7 (in French 698)(1938); cf. *C. A.* 31, 1768.—Previously it was shown that in the ethylation of m-$H_2NC_6H_4SO_3H$ in 96% alc. in the presence of NaOH 43.6% of the EtCl is sapond. in secondary reactions and that 80% of this amt. is transformed into Et_2O. The comparative sapong. action of NaOH, Na_2CO_3, MgO and CaO was studied as possible means for the reduction of the required excess of EtCl in the alkylation of amines and phenols. To this end, equimol. mixts. of EtCl and alkalies in 83.6-96% alc. were autoclaved at 125° for 3-12 hrs. The unaltered EtCl and Et_2O were driven off and the degree of EtCl sapon. was detd. by analyzing Cl^- in the distn. residue. NaOH sapond. 93.9% EtCl in 86% alc. (7.5 hrs.), Na_2CO_3 19.67% in 96% alc. and 41.34% in 84% alc., MgO 27.56% in 87.3% alc. and CaO 3.84% in 96% alc. and 28% in 87% alc. The reduction of the sapon. rate by the action of NaOH in the presence of NaCl (Teupel, Ger. pats. 408,348, 435,340) is ascribed to decreased soly. of EtCl and the dissocn. of NaOH. An analogous effect is produced by the use of higher concns. of NaOH. Chas. Blanc

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