S/076/62/036/008/010/011
B101/B144

AUTHOR: Zharkova, L. A.

TITLE: Determination of thermodynamic functions for titanates and silicates by comparative calculation

PERIODICAL: Zhurnal fizicheskoy khimii, v. 36, no. 8, 1962, 1819 - 1821

TEXT: Thermodynamic data for carbonates, meta- and orthosilicates, meta- and orthotitanates were calculated on the basis of equations suggested by M. Kh. Karapet'yants (Zh. fiz. khimii, 28, 353, 1954) establishing a relationship between the thermodynamic functions of these compounds, and were compared with published data. For carbonates, metasilicates, and metatitanates: $\Delta Z^0_{298} = 0.993 \Delta H^0_{298} + 17.92$ with an accuracy of ± 0.6 kcal/mole. For orthotitanates: $\Delta Z^0_{298} = 0.996 \Delta H^0_{298} + 25.3$. The following relation exists between the thermodynamic functions of metatitanates and carbonates: $\Delta Z^0_{298}(\Delta H^0_{298})_{MeTiO_3} = 1.002 \Delta Z^0_{298}(\Delta H^0_{298})_{MeCO_3} - 106.3$. Further:

Card 1/3

S/076/62/036/008/010/011
B101/B144

Determination of thermodynamic...

$\Delta Z^{o}_{298}(\Delta H^{o}_{298})_{MeSiO_3} = 1.001\Delta Z^{o}_{298}(\Delta H^{o}_{298})_{MeCO_3} - 90.8$; $\Delta Z^{o}_{298}(\Delta H^{o}_{298})_{MeTiO_3} = 1.001\Delta Z^{o}_{298}(\Delta H^{o}_{298})_{MeSiO_3} - 16.8$. For calculating the functions of orthotitanates and orthosilicates the following is suggested: $\Delta Z^{o}_{298}(\Delta H^{o}_{298})_{Me_2TiO_4} = 1.01\Delta Z^{o}_{298}(\Delta H^{o}_{298})_{Me_2SiO_4} - 24.2$. ΔZ^{o}_{298} and ΔH^{o}_{298} were calculated for 23 titanates and silicates not yet studied by experiment (Table 4). There are 3 figures and 4 tables.

ASSOCIATION: Moskovskiy gosudarstvennyy pedagogicheskiy institut im. V. I. Lenina (Moscow State Pedagogical Institute imeni V. I. Lenin)

SUBMITTED: January 6, 1962

Table 4. Thermodynamic data of some meta- and orthotitanates, meta- and orthosilicates not yet studied by experiment. Legend: (1) compound; (2) kcal/mole.

Card 2/3

Determination of thermodynamic...

S/076/62/036/008/010/011
B101/B144

① Соединение	ΔH°_{298}, ккал/моль ①	ΔZ°_{298}, ккал/моль ①	① Соединение	ΔH°_{298}, ккал/моль ①	ΔZ°_{298}, ккал/моль ①
Li_2TiO_3	−397,0	−377,2	Li_2SiO_3	−381,5	−360,8
Na_2TiO_3	−376,9	−356,9	K_2SiO_3	−365,0	−342,5
K_2TiO_3	−380,5	−359,6	Cs_2SiO_3	−358,5	−336,0
Cs_2TiO_3	−374,0	−353,1	$SrSiO_3$	−380,8	−362,3
$ZnTiO_3$	−300,7	−281,2	$BaSiO_3$	−381,4	−363,3
$CuTiO_3$	−248,6	−230,2	$CuSiO_3$	−233,1	−214,7
$NiTiO_3$	−273,4	−253,2	$FeSiO_3$	−269,6	−252,1
$CoTiO_3$	−279,1	−259,0	$CoSiO_3$	−263,6	−243,6
$MnTiO_3$	−320,4	−301,8	$NiSiO_3$	−277,2	−257,3
$PbTiO_3$	−273,7	−256,1	Sr_2SiO_4	−516,3	−488,8
Fe_2TiO_4	−371,3	−347,4	Ba_2SiO_4	−508,7	−482,0
Pb_2TiO_4	−340,1	−312,7			

Table 4

Card 3/3

ZHARKOVA, L.A.

Determination of the thermodynamic functions of titanates and silicates by the comparative calculation method. Zhur.fiz.khim. 36 no.8:1819-1821 Ag '62. (MIRA 15:8)

1. Moskovskiy gosudarstvennyy pedagogicheskiy institut imeni Lenina.

(Titanates) (Silicates)

ZHARKOVA, L.A.

Solution of the direct and inverse problem of gravimetry for bodies close in form to the morphological elements of sedimentary formation and basement. Izv. Kazan. fil. AN SSSR. Ser. geol. nauk no.10:27-31 '63. (MIRA 18:6)

66183

SOV/20-128-5-37/67

5(4) 5.4700

AUTHORS: Zharkova, L. A., Gerasimov, Ya. I., Corresponding Member, AS USSR, Rezukhina, T. N., Simanov, Yu. P.

TITLE: The Equilibrium Between Zinc Tungstate and Hydrogen and the Thermodynamic Characteristics of $ZnWO_4$

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 5, pp 992-994 (USSR)

ABSTRACT: The thermodynamic characteristics of tungstates and molybdates of bivalent metals have been investigated at the laboratory of the authors since 1944. The method of circulation applied so far was not applicable here as zinc evaporates and is carried away from the reaction zone. The method devised by J.A.Kitchener and S. Ignatowicz (Ref 10, Fig 1) was therefore employed, yet not the quantity of the volatile product but the hydrogen content of the gas mixture in equilibrium was determined, i.e. by measuring the electromotive force between two hydrogen electrodes, one being saturated with pure hydrogen and the other with a mixture of hydrogen and argon. In order to check the precision of the apparatus, the authors measured the temperature dependence of the equilibrium constant of zinc-oxide reduction (Fig 2, I). Herefrom

Card 1/2

4

The Equilibrium Between Zinc Tungstate and Hydrogen and the Thermodynamic Characteristics of $ZnWO_4$

66183
SOV/20-128-5-37/67

it resulted that it was in good agreement with the values obtained by Kitchener and Ignatowicz. For the reaction $ZnWO_4 + 4H_2 = Zn_{gas} + W + 4H_2O$, the authors calculated the reaction constant K_p and determined the phase composition of the reaction products with the help of radiography. Experimental results are listed in table 1, and figure 2,II indicates the dependence of $\lg K_p$ on 1/T. $\Delta H^o_{298} = -327.0$ kcal/mol, $\Delta S^o_{298} = -110.66$ cal/mol.degree, $\Delta Z^o_{298} = -285.1$ kcal/mol were computed by a method developed by M. I. Temkin and L. A. Shvartsman (Ref 16). There are 2 figures, 1 table, and 16 references, 10 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: July 2, 1959

Card 2/2

SALIKHOV, A.G.; ZHARKOVA, L.A.

Calculating the gravitational effect of the upper layers of a sedimentary formation. Geofiz. razv. no. 15:86-99 '64.
(MIRA 17:7)

5(4), 24(8)

AUTHORS: Zharkova, L. A., Rezukhina, T. N. SOV/76-32-10-1/39

[redacted]

TITLE: The Specific Heat of the Nickel, Strontium and Zinc Tungstates and the Barium and Strontium Molybdates at High Temperatures (Teployemkost' vol'framatov nikelya, strontsiya i tsinka i molibdatov bariya i strontsiya pri vysokikh temperaturakh)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol 32, Nr 10, pp 2233-2235 (USSR)

ABSTRACT: The determinations mentioned in the title were carried out in the molar calorimeter within the temperature ranges of 683,2-293,2^{o}K to 1125,2-293,2^{o}K. The scheme, the method employed as well as other details were already described (Ref 1). Data on the technique of preparation and analysis are given. The results obtained are given in a table. In the table the mean values of the specific heat are given for each temperature range, and so are the comparative values of parallel experiments. Equations for the calculation of the mean specific heat as well as the data obtained using them are mentioned. The mean specific heat ($\overline{C}_p$) of all investigated salts varies linearly with the temperature within the ranges investigated. The specific heat C_p was

Card 1/2

The Specific Heat of the Nickel, Strontium and Zinc Tungstates and the Barium and Strontium Molybdates at High Temperatures

calculated from the mean specific heat according to the equation

$$c_p = \frac{d\left[\bar{c}_p\,(T - 293,2)\right]}{dT}$$

The function $c_p(T)$ is given individually for the chemical compounds investigated. The authors thank Professor S. M. Skuratov for his advice. There are 1 table and 2 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: January 30, 1957

Card 2/2

ZHARKOVA, L.A.; REZUKHINA, T.N.

The heat capacities of lead and cadmium tungstates at high temperatures.[with summary in English]. Zhur. fiz. khim. 31 no.10:2278-2280 O '57. (MIRA 11:3)

1.Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
(Lead tungstate) (Cadmium tungstates)
(Heat capacity)

ZHARKOVA, L.A.

76-10-15/34

AUTHORS: Zharkova, L.A., Rezukhina, T.N.

TITLE: Specific Heat of Lead and Cadmium Tungstate at High Temperatures (Teployemkosti vol'framatov svintsa i kadmiya pri vysokikh temperaturakh)

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1957, Vol. 31, Nr 10, pp. 2278-2280 (USSR)

ABSTRACT: Data for the specific heat within the range of from 800 - 20°C are given here. The specific heat was determined according to the method for mixing in a massive calorimeter. The description of the device is found in M.M. Popov's "Termometriya i kalorimetriya", 1954, publishing house MGU. The mean specific heat of KCl and KBr was measured as a control of the absolute accuracy of measuring. It amounted to 0,1800, 0,1131 cal/gram-degree resp. The mean specific heat $\overline{C}_p$ within the investigated temperature range amounts to:

$$\overline{C}_{p,\ PbWO_4} = 0{,}06566 + 1{,}034 \cdot 10^{-5}\ T \text{ (accuracy } \pm 0{,}03\ \%)$$

$$\overline{C}_{p,\ CdWO_4} = 0{,}07754 + 1{,}9041 \cdot 10^{-5}\ T \text{ (accuracy } \pm 0{,}10\ \%)$$

Card 1/2

Specific Heat of Lead and Cadmium Tungstate at High Temperatures 76-10-15/34

The real specific heat can be expressed by following equations:

$$C_{p,\ PbWO_4} = 0,06263 + 2,068 \cdot 10^{-5}\ T$$

$$C_{p,\ CdWO_4} = 0,07195 + 3,8082 \cdot 10^{-5}\ T$$

T - is the absolute temperature. There are 1 table and 3 Slavic references.

ASSOCIATION: Moscow State University imeni M.V. Lomonosov
(Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova)

SUBMITTED: July 18, 1956

AVAILABLE: Library of Congress

Card 2/2

ZHARKOVA, L. A., Cand Chem Sci (diss) -- "Thermodynamic investigation of certain wolframates and molybdates". Moscow, 1960. 13 pp (Moscow State U im M. V. Lomonosov, Chem Faculty, Chair of Phys Chem), 120 copies (KL, No 14, 1960, 127)

ZHARKOVA, L.A.; GERASIMOV, Ya.I. (Moscow)

Approximate calculation of the thermodynamic characteristics of divalent metal tungstates and molybdates. Zhur.fiz.khim. 35 no.10:2291-2296 O '61. (MIRA 14:11)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.
(Tungstates) (Molybdates)

SALIKHOV, A.G.; ZHARKOVA, L.A.; KUZNETSOV, G.Ye.

Fast method for the determination of the elements of occurrence and the gravity effect of disturbing masses having the form of a bench. Izv. Kazan. fil. AN SSSR. Ser. geol. nauk no.10:18-26 '63.

Interpretation of the materials of detailed gravimetric surveying in Tatarstan. Ibid.:144-150

(MIRA 18:6)

SALIKHOV, A.G.; ZHARKOVA, L.A.

Methods for the calculation of the gravity effect of the nonuniform structure of the upper layers of sedimentary formation. Izv. Kazan. fil. AN SSSR. Ser. geol. nauk no.10: 39-45 '63. (MIRA 18:6)

KORDYUM, V.A.; LAZURKEVICH, Z.V.; ZHAROVA, L.G. [Zharova, L.H.]

Simple method for checking bacteriological purity of cultures of unicellular algae and detecting bacterial mutants. Mikrobiol. zhur. 24. no.4: 61-63 '62. (MIRA 16:5)

(ALGAE—CULTURES AND CULTURE MEDIA)
(BACTERIOLOGY—TECHNIQUE)

KOPYLOV, V.T.; ZHARKOVA, L.I.

Optical pocket angle gauge. Mashinostroitel' no.1:30 Ja '62.
(MIRA 15:1)

(Gauges)

27566
S/183/61/000/005/002/C03
B101/B110

15 5560

AUTHORS: Zharkova, M. A., Rassolova, E. A., Kudryavtsev, G. I., Klimenkov, V. S.

TITLE: Copolymerization of acrylonitrile and 2-methyl-5-vinyl pyridine in aqueous sodium thiocyanate solution

PERIODICAL: Khimicheskiye volokna, no. 5, 1961, 13 - 17

TEXT: The authors attempted to improve the quality of acrylonitrile fibers by means of pyridine derivatives. Previous papers (Khim. volokna, no. 3, 15 (1960); ibid., no. 6, 15 (1960)) dealt with the copolymerization of acrylonitrile (AN) and α-vinyl pyridine (α-VP). In the present paper, the system AN - 2-methyl-5-vinyl pyridine (MVP) was studied, since a simple method of producing MVP has been developed in the Soviet Union. 50% sodium thiocyanate proved to be an optimum solution for copolymerization. Experiments at room temperature and 70°C showed that the formation of sufficiently concentrated homogeneous spinning solutions (12 - 15%) with a maximum ratio AN:MVP = 85:15 is limited due to the poor solubility of MVP. Copolymerization of AN and MVP is analogous to that of AN and

X

Card 1/4

α-VP. The yield after 60 min is 60 - 65%. The reaction rate drops linearly with the time of polymerization. Fig. 4 shows that the pH of the medium exerts a considerable effect upon the yield. These data are not in agreement with those obtained by Yamamoto (see below). Only in acid media does the specific viscosity depend on pH; in alkaline media it is constant. The initiator used in copolymerization was azodiisobutyric acid dinitrile. The polymerization rate was found to be a linear function of the square root of the initiator concentration. With 0.05% initiator (optimum concentration), the polymer yield after 1.5 hr is 75 - 80%. A rise in temperature (from 60 to 80°C) accelerates the process. 70°C is optimum for a 7% monomer solution, since the polymerization rate is not high enough as to cause overheating. The activation energy is 14.5 kcal/mole. To obtain optimum spinning solutions, the specific viscosity should not exceed 1.0 - 1.2. Therefore, experiments were made with various regulators: monoethanol amine, thiourea, thymol, lauryl mercaptan, diproxide (= dipropyl xanthogenatedisulfide), thiourea dioxide. Monoethanol amine was the only substance to affect the molecular weight of the polymer. 0.7% of monoethanol amine (with α-VP only 0.2%) was required to obtain AN-MVP copolymers of the desired viscosity. The effect of the ratio

27566

Copolymerization of... S/183/61/000/005/002/003
B101/B110

of components was studied with a 7% monomer concentration, at 70°C, pH = 7, 0.5% initiator, and without a regulator. Results: (1) the copolymerization constants of Ref. 5 (see below) were confirmed; (2) with 5% MVP, yield: 86%, with 30% MVP, only 52%; (3) the specific viscosity dropped from 4.86 to 1.8 as the MVP content increased. There are 11 figures, 2 tables, and 5 references: 2 Soviet and 3 non-Soviet. The three most important references to English-language publications read as follows: British Patent 732135, 22/VI, 1955; USA Patent 2847389, 12/VIII 1958; Ref. 5: Yamamoto, Ind. Chem. Soc., 62, no. 3, 476 (1959).

X

ASSOCIATION: VNIIV

Card 3/4

ZHARKOVA, L.P.; MOVSHOVICH, I.Kh.; FROLOVA, L.G.; ROZITIS, T.Ya.; GOLUBTSOV, I.Ya., otv. red.; BOGACHEVA, G.V., red.; ROMANOVA, S.F., tekhn. red.

[Rural K-40/80 crossbar automatic telephone exchanges] Sel'skie koordinatnye ATC K-40/80; informatsionnyi sbornik. Moskva, Sviaz'izdat, 1963. 109 p. (MIRA 16:10)

1. Nauchno-issledovatel'skiy institut gorodskoy i sel'skoy telefonnoy svyazi Ministerstva svyazi SSSR (for Zharkova, Movshovich, Frolova). 2. Gosudarstvennaya elektrotekhnicheskaya fabrika, Riga (for Rudzitis).
(Telephone)

ZHARKOVA, M.A.; KUDRYAVTSEV, G.I.

Copolymerization of acrylonitrile and α-vinylpyridine in an aqueous solution of sodium thiocyanate. Khim.volok. no.3:15-18 '60. (MIRA 13:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.
(Acrylonitrile) (Pyridine) (Sodium thiocyanate)

S/183/63/000/002/001/003
A051/A126

AUTHORS: Zharkova, M.A., Rassolova, E.A., Kudryavtsev, G.I., Klimenkov, V.S.

TITLE: Production of fibers based on acrylonitrile (AN) and 2-methyl-5-vinylpyridine (MVP) copolymer

PERIODICAL: Khimicheskiye volokna, no. 2, 1963, 8 - 12

TEXT: This is the fourth article in a series of reports on the production of fibers based on AN copolymer in aqueous solutions of sodium thiocyanate. Studies were conducted on the properties of concentrated solutions of AN and MVP copolymer, in a 5% aqueous solution of sodium thiocyanate, based on previous data obtained by the authors to find the main law sequence of the copolymerization process. Conditions of the fiber [illegible] of a given composition were investigated. The results of the [illegible] investigation of the copolymerization process of [illegible] certain differences to that of the acrylonitrile [illegible] AN and MVP copolymer has certain technological [illegible] concentrated solutions of these copolymer solutions make it possible [illegible]

Card 1/2

Production of fibers based on acrylonitrile S/183/63/000/002/001/003
A051/A126

or polymers of a higher molecular weight. The AN-MVP system allows for a wider range of the polymer concentration change than the AN-a-VP system. The fibrous solution shows a tendency to structuralizing, especially when using copolymers with a specific viscosity above 2. Experiments showed the optimum specific viscosity to be 1.25 - 1.5. A slight temperature elevation of the solution reduces the latter. Investigated solutions of 0.8, 1.25, 1.48 initial specific viscosity, left to stand, did not gelatinize at 25°C, 70°C, even when left for 1,000 h. The homogeneity of the fibrous solutions, after the end of the dehydration process, remained constant. There are 5 figures and 1 table.

ASSOCIATION: VNIIV

SUBMITTED: June 12, 1962

Card 2/2

BUNAREVA, Z.S.; DIURNBAUM, V.S.; DOROKHINA, I.S.; ZHARKOVA, M.A.; KLIMENKOV, V.S.

Fibers based on mixtures of acrylonitrile polymers. Khim.volok no.6:10-13 '63.
(MIRA 17:1)

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

ZHARKOVA, M.A.; KUDRYAVTSEV, G.I.; KLIMENKOV, V.S.

Conditions for the preparation of an acrylonitrile-α-vinylpridine copolymer suitable for the production of fiber. Khim. volok. no. 6:15-19 '60.
(MIRA 13:12)

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

(Acrylonitrile) (Pyridine)

ZHARKOVA, M.A.

S/183/60/000/03/06/007
B020/B054
82064

15.5560

AUTHORS: Zharkova, M. A., Kudryavtsev, G. I.

TITLE: Copolymerization of Acrylonitrile and α-Vinyl Pyridine in Aqueous Sodium Thiocyanate Solution

PERIODICAL: Khimicheskiye volokna, 1960, No. 3, pp. 15-18

TEXT: As no publication data are available on the copolymerization of acrylonitrile (AN) with α-vinyl pyridine (α-VP) in aqueous sodium thiocyanate solutions, the present paper studies the principal rules governing the process of producing a thread-forming copolymer with low vinyl pyridine content. Table 1 shows the change in composition of the copolymer from the initial ratio of monomers in copolymerization; it was found that, in agreement with theoretical calculations, the copolymer obtained always exhibits an increased α-VP content. Fig. 1 shows the dependence of the copolymer yield on the initial concentration of monomers in the solution, Fig. 2 the dependence of the initial rate of polymerization on the monomer concentration in the solution, Fig. 3 the dependence of the monomer consumption on time at different concentrations of the initiator

Card 1/2

Copolymerization of Acrylonitrile and α-Vinyl Pyridine in Aqueous Sodium Thiocyanate Solution

S/183/60/000/03/06/007
B020/B054

82064

at a ratio AN : α-VP = 95 : 5 % by weight, and Fig. 4 the same dependence at a ratio AN : α-VP = 90 : 10 % by weight. The influence of temperature on the polymerization rate of AN with α-VP is indicated in Table 2. Table 3 shows the influence of regulators (lauryl mercaptan, thiourea, dipropyl xanthogenate disulfite) on copolymerization, and Table 4 the influence of the monoethanol amine amount on the copolymer yield. It is shown that the reaction rate is proportional to the initial concentration of the monomer mixture and the square root of the initial concentration of the initiator. The authors describe the reagents used, the methods of investigation, and the determination of copolymer composition. E. A. Rassolova cooperated in working out the methods. There are 5 figures, 4 tables, and 5 references: 2 Soviet, 2 German, 3 British, and 2 French.

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

Card 2/2

[illegible]

KUDRYAVTSEV, G.I.; ZHARKOVA, M.A.

Acid hydrolysis of copolymers based on acrylonitrile. Zhur.prikl. khim. 29 no.7:1103-1108 Jl '57. (MIRA 10:10)
(Hydrolysis) (Acrylonitrile) (Polymers)

ACC NR: AP7000329 (A) SOURCE CODE: UR/0413/66/000/022/0077/0077

INVENTOR: Kudryavtsev, G. I.; Zharkova, M. A.; Romanova, T. A.; Klimenkov, V. S.

ORG: none

TITLE: Method of preparing modified polyacrylonitrile fiber. [announced by the All-Union Scientific Research Institute of Synthetic Fiber (Vsesoyuznyy nauchno-issledovatel'skiy institut iskustvennogo volokna)] Class 29, No. 188617

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 22, 1966, 77

TOPIC TAGS: polyacrylonitrile, hydrazine, synthetic material

ABSTRACT: A method of preparing modified polyacrylonitrile fiber is introduced. To raise the chemical and thermal resistance of the fiber, it is treated in a hydrazine solution and heat treated in an inert-gas medium at 150—200C. [Translation] [KP]

SUB CODE: 11/SUBM DATE: 17Sep64/

Card 1/1 UDC: 677.494.745.32:546.171.5

87478
S/183/60/000/006/003/005
B020/B058

15.5560

AUTHORS: Zharkova, M. A., Kudryavtsev, G. I., Klimenkov, V. S.

TITLE: Study of the Conditions of Copolymer Production From Acrylonitrile With Alpha Vinyl Pyridine, Suitable for Fibration

PERIODICAL: Khimicheskiye volokna, 1960, No. 6, pp. 15-19

TEXT: The paper reports on the results of studies concerning: a) copolymerization of acrylonitrile (AN) with α-vinyl pyridine (α-VP) for the purpose of producing a copolymer with predetermined molecular weight and the determination of the optimum concentration of the spinning solution, b) the determination of the optimum concentration of the salt solution, c) the conditions for the production of suitable spinning solutions, and d) the trial formation in precipitating baths with aqueous salt solutions and the study of the physical and mechanical properties of the fiber obtained. In copolymerization, the molecular weight of the copolymer is influenced by the amount of the initiator (azo-diisobutyric acid-dinitrile), the temperature, type of solvent and amount of the regulator (monoethanol amine). Copolymers with a ratio AN : α-VP of 85 : 15 and 90 : 10 weight%
Card 1/3

87478

Study of the Conditions of Copolymer Production S/183/60/000/006/003/005
From Acrylonitrile With Alpha Vinyl Pyridine, B020/B058
Suitable for Fibration

were studied. The influence of the amount of regulator on the change in time of the intrinsic viscosity (Fig. 1), and the dependence of the intrinsic viscosity on the regulator concentration (Fig. 2) are determined. The change of the intrinsic viscosity of the solution in dependence on the amount of initiator used is mentioned in Figs. 3 and 4. It can be seen from Fig. 5 that with rising temperature, the intrinsic viscosity of the copolymer produced drops from 2.5 at 60°C to 1.3 at 75°C. The dependence of the intrinsic viscosity of the copolymer on the initial concentration of the monomer mixture (Fig. 6) shows that the probability of a chain rupture through the solvent increases with sinking concentration of the monomers in the solution. As may be seen from the tabulated data concerning the conditions of the copolymerization of AN with α-VP in the production of spinning solutions, the rate of polymerization in 45 to 50% sodium thiocyanate, under otherwise equal conditions, is always the same and the copolymers have the same intrinsic viscosity (1.39 to 1.4). Fig. 7 shows the dependence of the viscosity of a concentrated sodium thiocyanate solution on the intrinsic viscosity of the copolymer. It can be seen from Fig. 8 that at an intrinsic viscosity of 1.38, 10.5% to 11.2%

X

Card 2/3

87478

Study of the Conditions of Copolymer Production S/183/60/000/006/003/005
From Acrylonitrile With Alpha Vinyl Pyridine, B020/B058
Suitable for Fibration

solutions are suitable for the shaping of the fiber, and at an intrinsic viscosity of 0.97, 15% solutions. The fiber produced under the optimum conditions determined had the following values: metric number 3970, breaking length 25.6 km, elongation 32%; the fiber can be dyed well with acid, acetate and alkaline dyes. There are 8 figures, 1 table, and 4 references: 2 Soviet and 2 US.

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

X

Card 3/3

ZHARKOVA, M.A.; RASSOLOVA, E.A.; KUDRYAVTSEV, G.I.; KLIMENKOV, V.S.

Copolymerization of acrylonitrile and 2-methyl-5-vinylpyridine in an aqueous solution of sodium thiocyanate. Khim.volok. no.5:13-17 '61. (MIRA 14:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.
(Acrylonitrile) (Pyridine) (Polymerization)

L 9625-66 EWT(m)/EWP(j)/T RM

ACC NR: AP6000277 SOURCE CODE: UR/0183/65/000/005/0013/0015

AUTHORS: Kudryavtsev, G. I.; Romanova, T. A.; Zharkova, M. A.; Klimenkov, V. S.

44

43

B

ORG: VNIIV

TITLE: Some chemical properties of cross-linked PAN (polyacrylonitrile) fibers

SOURCE: Khimicheskiye volokna, no. 5, 1965, 13-15

TOPIC TAGS: fiber, acrylonitrile, acrylonitrile polymer, acrylic resin, polymer, plastic, synthetic fiber

ABSTRACT: The paper presents results of a study on the change in reactivity towards saponification of chemically cross-linked PAN-fibers (polyacrylonitrile fibers). The study was undertaken to extend the presently available literature data on the physical properties of cross-linked PAN-fiber, as compiled by G. I. Kudryavtsev, T. A. Matyash, M. A. Zharkova, and V. S. Klimenkov (Khim. volokna, No. 4, 13, 1961). The saponification kinetics at 100C of nitrile and other nitrogen-containing saponifiable groups in PAN-fiber cross-linked by hydrazine hydrate, hydroxylamine, and ammonium sulfide was studied. The degree of saponification was determined by measuring the amount of ammonia released by the fibers after treatment with 40% NaOH solution. The experimental results are presented in tables and graphs (see Fig. 1). It was found that these results did not agree with the usual kinetic expressions.

Card 1/3 UDC: 677.494.745.32:061.3

Z

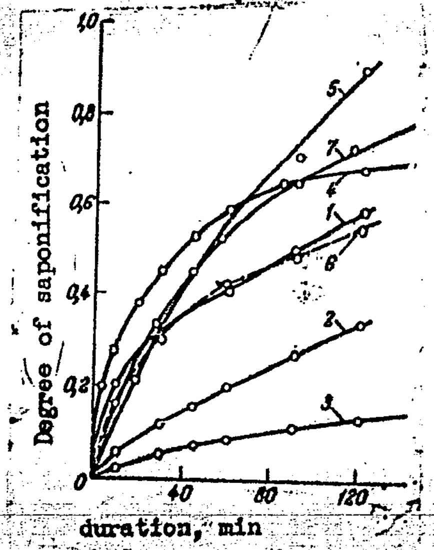


Fig. 1. Reaction kinetics of saponification of chemically cross-linked fibers: 1 - noncross-linked fiber; 2 - fiber cross-linked with hydrazine hydrate (weakly); 3 - the same (strongly cross-linked); 4 - fiber cross-linked with ammonium sulfide (optimum); 5 - the same (weakly); 6 - fiber cross-linked with hydroxylamine (strongly); 7 - the same (weakly).

The experimental results were processed according to the diffusion equation of Krenk

$$\frac{M_t}{M_\infty} = \frac{4}{r}\sqrt{\frac{D}{\pi}}\sqrt{t} = K\sqrt{t},$$

L 9625-66

ACC NR: AP6000277

where M_t is the amount of reagent diffused into the cylindrical fiber in time t, M_∞ - the same for $t \rightarrow \infty$, r - the radius of fiber, and D - the coefficient of diffusion in cm^2/sec. From this expression, values for diffusion coefficient D were calculated. The results are tabulated. It is concluded that cross-linkage of fibers may lead to a change in the chemical properties of the fibers. The formation of a different polymeric layer on the fiber surface may give rise in some cases (hydrazineation) to an armoring effect, i.e., to a protection of the fibers against the action of corrosive agents (concentrated alkali). The authors thank Ye. A. Vasil'yeva-Sokolova for the fiber specimens cross-linked with ammonium sulfide. Orig. art. has: 2 tables, 1 graph, 1 photograph, and 2 equations.

SUB CODE: 07, 11/ SUBM DATE: 23Apr65/ ORIG REF: 009/ OTH REF: 003

Card 3/3

ZHARKOVA, M.A.; ROMANOVA, T.A.

Chemical-resistant fibers with a base of acrylonitrile. Khim. volok. no.5:77 '65. (MIRA 18:10)

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

L 46147-66 EWT(m)/EWP(j)/T IJP(c) WW/RM
ACC NR: AP6026735 (A) SOURCE CODE: UR/0183/66/000/003/0012/0015
35

AUTHOR: Kudryavtsev, G. I.; Rassolova, E. A.; Romanova, T. A.; Zharkova, M. A.; B
Vasil'yeva-Sokolova, Ye. A.

ORG: VNIIV

TITLE: Preparation and modification of fiber-forming polymers made of vinyllactam-units containing acrylonitrile

SOURCE: Khimicheskiye volokna, no. 3, 1966, 12-15

TOPIC TAGS: polyacrylonitrile, synthetic fiber, copolymerization, catalytic polymerization, polymerization kinetics, copolymer

ABSTRACT: The kinetics of the hydrolysis of polyvinylcaprolactam and acrylonitrile-
vinylcaprolactam copolymer was studied. The object of the work was to prepare readi-
ly colorable and hydrophylic fibers. The hydrolysis constants were measured at 100°C
using aqueous and alcohol solutions of the title polymers (0.007 mols polymer per li-
er) and 0.1-5.0 mols/liter concentration of KOH, NaOH, HCl, H_2SO_4, or p-toluolsulfonic
acid. The acrylonitrile-vinylcaprolactam copolymers were synthesized by holding mix-
tures of 86.0-99.0 mol % acrylonitrile and 1-14% vinylcaprolactam for 2 hrs at 60°C.
The potassium persulfate concentration was 0.3% and the monoethanolamine concentration
was 0.1 wt % based on solution. It was found that for a given catalyst concentration

UDC: 677.494.745.32

Card 1/2

ACC NR: AP6026735

the rate of hydrolysis was identical regardless of the nature of the catalyst used. In general, the hydrolysis rates in the alcohol solvent were twice as great as those in water. For polymers containing 5-7 vinyllactam groups, the rate of hydrolysis was found to be independent of the number of these groups. It was found that saponification (treatment with 1% acqueous KOH at 70°C) of the vinyllactam units containing copolymers yields fiber-forming polymers with excellent mechanical properties, good colorability, and improved hydrophic ability. Orig. art. has: 6 tables, 2 formulas.

SUB CODE: 07/11/ SUBM DATE: 23Jun65/ ORIG REF: 006/ OTH REF: 00[illegible]

Card 2/2

YELISEYEVA, V.I.; ZHARKOVA, N.G.; CHUBAROVA, A.V.; ZUBOV, P.I.

Emulsion polymerization of lower alkyl acrylates. Vysokom.soed. 7 no.1:156-162 Ja '65.
(MIRA 18:5)

1. Institut fizicheskoy khimii AN SSSR.

L 13291-66 EWT(m)/EWP(j) RM

ACC NR: AP6000324 (A) SOURCE CODE: UR/0286/65/000/021/0011/0011

INVENTOR: Zharkova, N. I.; Zamarayev, A. P.; Koroleva, Ye. S. 23 B

ORG: none

TITLE: A method for preparation of a catalyst to produce vinyl benzene. 7,44,55 Class 12, No. 175927 15

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 21, 1965, 11

TOPIC TAGS: vinyl plastic, polymerization catalyst, aromatic hydrocarbon

ABSTRACT: This Author's Certificate introduces a method for preparing a catalyst to produce vinyl benzene. Diethyl benzene is dehydrated by mixing and preforming the active components. The product yield is increased and a stable catalyst 7 is produced by preparing it from two layers with the following composition: upper layer--68.3 %, 15 % magnesium oxide, 4.4 % copper oxide, 12.3 % sodium carbonate, lower layer--72.7 % iron oxide, 16 % magnesium oxide, 4.8 % copper oxide, 6.6 % potassium carbonate.

SUB CODE: 07/ SUBM DATE: 30Nov62/ ORIG REF: 000/ OTH REF: 000 JW

Card 1/1

UDC: 66.097.3 : 547.538.1.07

2

KLEYNOVSKAYA, M.A.; SOBOLEVSKIY, M.V.; ZHARKOVA, N.M.

Composition and properties of liquid polyorganosiloxanes as dependent on the method of synthesis employed. Report No.1: Composition and properties of polymethylphenylsiloxanes obtained by cohydrolysis method. Plast.massy no.7:27-31 '62. (MIRA 15:7)
(Silicon organic compounds)

38719
S/191/62/000/007/006/011
B124/B144

15.8170

AUTHORS: Kleynovskaya, M. A., Sobolevskiy, M. V., Zharkova, N. M.

TITLE: Investigation of composition and properties of liquid polyorganosiloxanes as depending on the method of synthesis. Communication I. Investigation of composition and properties of polymethyl phenyl siloxanes produced by cohydrolysis

PERIODICAL: Plasticheskiye massy, no. 7, 1962, 27-31

TEXT: The authors made the first attempt to determine the composition of polyorganosiloxanes resulting from various methods of synthesis, by means of combined molecular and vacuum rectification in spray and packed towers. An apparatus developed by F. W. Melpolder et al. was used. Separation is conducted under high vacuum. The apparatus may work either intermittently or continuously. With infinite reflux the efficiency of the stills is 0.75. The composition of polymethyl phenyl siloxanes got by cohydrolysis of a methyl phenyl dichlorosilane-trichlorosilane mixture (3:2.2) at 96-100°C in acid solution is investigated. The product was thermally

Card 1/3

X

Investigation of composition and ...

S/191/62/000/007/006/011
B124/B144

stabilized in nitrogen flow, distilled at 0.1-0.3 mm Hg, and collected in four fractions. Apart from the distillation residue disregarded, the reaction product is mainly a mixture of linear polymethyl phenyl siloxanes having the composition $(CH_3)_3Si[OSiCH_3C_6H_5]_nOSi(CH_3)_3$ (n = 1-5). Fraction I is a mixture of low-boiling linear polymethyl phenyl siloxanes with 3-4 Si atoms per molecule, fraction II consists mainly of linear methyl phenyl tetrasiloxane with small amounts of methyl phenyl tri- and methyl phenyl pentasiloxane, fraction III of linear methyl phenyl siloxane with 5 Si atoms per molecule, and fraction IV of linear methyl phenyl siloxanes mixed with 6 and 7 Si atoms per molecule besides small amounts (3-9%) of cyclic methyl phenyl siloxanes. Four linear polymethyl phenyl siloxanes were isolated and characterized, the first three of which have not previously been described in publications: 1,1,1,3,5,7,7,7-octamethyl-3,5-diphenyl tetrasiloxane; 1,1,1,3,5,7,9,9,9-nonamethyl-3,5,7-triphenyl pentasiloxane; 1,1,1,3,5,7,9,11,11,11-decamethyl-3,5,7,9-tetraphenyl hexasiloxane, and 1,1,1,3,5,5,5-heptamethyl-3-phenyl trisiloxane. There are 1 figure and 3 tables.

X

Card 2/3

Investigation of composition and ...

S/191/62/000/007/006/011
B124/B144

The most important English-language references are: F. W. Melpolder et al., Anal. Chem. 27, No.6, 974 (1955); B. Okawara et al., Bull. Chem. Soc. Japan 30, 608 (1957); H. I. Waterman et al., J. Appl. Chem. 8, No. 10, 625 (1958).

Card 3/3

X

40204

15.8170

S/191/62/000/009/005/012
B101/B144

AUTHORS: Kleynovskaya, M. A., Sobolevskiy, M. V., Krasovskaya, T. A., Zharkova, N. M.

TITLE: Dependence of the composition and properties of liquid polyorganosiloxanes on their mode of production

PERIODICAL: Plasticheskiye massy, no. 9, 1962, 19 - 24

TEXT: The composition and properties of polymethyl-phenyl siloxanes got by cohydrolysis and subsequent catalytic regrouping in the presence of Kil clay were studied as follows: Aqueous solutions of methyl-phenyl dichlorosilane, dimethyl dichlorosilane and trimethyl chlorosilane in the molar ratio 3:1:2.2 were cohydrolyzed at 60-65°C. The cyclic byproducts developed were regrouped with 8% Kil clay as catalyst at 50°C (6 hr) into linear compounds. The reaction product was fractionated and investigated. Predominantly linear polymers having the general formula: $(CH_3)_3Si\left[OSiCH_3C_6H_5\right]_n\left[OSi(CH_3)_2\right]_mOSi(CH_3)_3$ resulted. In the products distilled within the limits of 380°C/0.1-0.5 mm Hg, n was 0,1,...6; m was 0,1,2; n + m was 0,1,...7. The content of cyclic compounds did not exceed

Card 1/2

Dependence of the composition... S/191/62/000/009/005/012
B101/B144

4%. The product contained 1.2% hexamethyl disiloxane, 1.8% α,ω-hexamethyl-polydimethyl siloxanes, 26% α,ω-hexamethyl-polymethyl-phenyl siloxanes, 45% α,ω-hexamethyl-polydimethyl-polymethyl-phenyl siloxanes. The ~23% of nondistillable residues seem to be composed of high-boiling polymers of the latter type. For 11 compounds of the given general formula, 10 of which were synthetized for the first time, b.p. (°C/mm Hg), softening point (°C), n_D^{20}, d_4^{20} and η_{20} (centistokes) are given respectively as follows: n = 1, m = 0: 78-79/0.5, -, 1.4470, 0.9118, 2.55; n = m = 1: 87-88/0.5, -75, 1.4393, 0.9244, 3,75; n = 1, m = 2: 105/0.5, -95, 1.4363, 0.9355, 3.85; n = 2, m = 0: 130-132/0.5, -75, 1.4775, 0.9761, 7.05; n = 2, m = 1: 147-149/0.5, -70, 1.4670, 0.9786, 7.77; n = m = 2: 162/1.0, -60, 1.4605, 0.9807, 8.50; n = 3, m = 0: 180/0.5, -60, 1.4950, 1.0132, 15.71; n = 3, m = 1: --*), -55, 1.4858, 1.0132, 15.90; n = 4, m = 1: --*), -60, 1.4985, 1.0331, 29.17; n = 4, m = 2: --*), -60, 1.4930, 1.0327, 27.55; n = 5, m = 2: --*), -55, 1.4987, 1.0472, 43.86. *) = molecular distillation. Thus, a regular connection exists between the physicochemical properties and the content of dimethyl- and methyl-phenyl siloxane links. There are 5 figures and 4 tables.

Card 2/2

ANDRIANOV, K.A.; MAKAROVA, L.I.; ZHARKOVA, N.M.

Polycondensation of bis (β-hydroxyethoxymethyl) tetramethyldisiloxane with dicarboxylic acids. Vysokom. soed. 2 no.9:1378-1382 S '60.
(MIRA 13:9)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Siloxanes) (Polymerization) (Acids, Organic)

83479
S/190/60/002/009/010/019
B004/B060

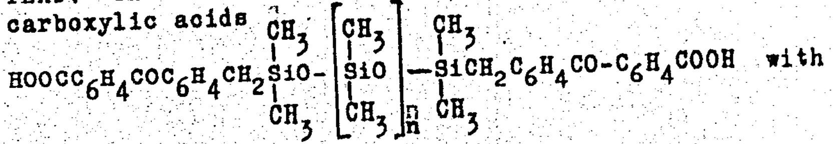
5.3700c also 2109, 2209

AUTHORS: Andrianov, K. A., Makarova, L. I., Zharkova, N. M.

TITLE: Polycondensation of Bis-(β-hydroxy-ethoxy-methyl)-tetramethyl Disiloxane With Dicarboxylic Acids

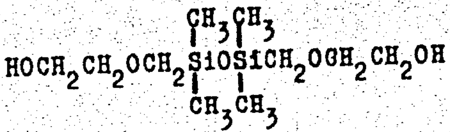
PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 9, pp. 1378-1382

TEXT: The authors studied the condensation of organosilicon diketo- dicarboxylic acids



$$HOOCC_6H_4COC_6H_4CH_2\overset{CH_3}{\underset{CH_3}{Si}}O-\left[\overset{CH_3}{\underset{CH_3}{Si}}O\right]_n-\overset{CH_3}{\underset{CH_3}{Si}}CH_2C_6H_4CO-C_6H_4COOH$$

with



$$HOCH_2CH_2OCH_2\overset{CH_3}{\underset{CH_3}{Si}}O\overset{CH_3}{\underset{CH_3}{Si}}CH_2OCH_2CH_2OH$$

at 220°C. Unlike the reaction with ethylene glycol, no cyclic polydimethyl siloxanes were formed. A table shows the

Card 1/3

83479

Polycondensation of Bis-(β-hydroxy-ethoxy-methyl)- S/190/60/002/009/010/019
tetramethyl Disiloxane With Dicarboxylic Acids B004/B060

silicon content of the condensates. There occurred neither a cleavage of the siloxane bond in the diketo-dicarboxylic acid nor a cleavage of the Si-C bond in organosilicon glycol. As is shown in Fig. 1, the acid number drops during polycondensation while the ester number rises. The polyesters obtained are high-viscous, dark-colored substances well soluble in benzene - alcohol mixture. As is shown by Fig. 2, the viscosity of polyesters rises with the number of dimethyl siloxane groups in diketo dicarboxylic acid. On the reaction of the polyester obtained from diketo dicarboxylic acid (n=5) with hexamethylene diisocyanate, the authors obtained an elastic, rubber-like, cresol-soluble product. The change (increase) in viscosity as dependent on the reaction period is illustrated in Fig. 3. Bis-(β-hydroxy-ethoxy-methyl)-tetramethyl disiloxane also condenses with adipic acid without a cleavage of the Si-C bond to form a polyester. Fig. 4 shows the change in the acid number and ester number during the reaction. There are 4 figures, 1 table, and 3 references: 2 Soviet and 1 US.

83479

Polycondensation of Bis-(β-hydroxy-ethoxymethyl)-tetramethyl Disiloxane With Dicarboxylic Acids

S/190/60/002/009/010/019
B004/B060

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR (Institute of Elemental-organic Compounds of the AS USSR)

SUBMITTED: April 11, 1960

X

Card 3/3

TOPIC TAGS: zirconium, [illegible]
sulfuric acid, nitric acid

[illegible] different solubility of Zr, ZrC, and ZrO_2 in hydrofluoric, sulfuric, [illegible] Zr, ZrC, and

[illegible] heated 20-30 minutes (without boiling) [illegible] dense white vapor [illegible]

[illegible]

ZHARKOVA, R.A.

Correlation characteristics of the terrigenous components of Upper Jurassic and Lower Cretaceous sediments in a new oil potential area of the trans-Ural region. Trudy Inst. geol. UFAN SSSR no.63: 161-185 '62. (MIRA 16:12)

ZHARKOVA, R. A.

New location in the distribution of Upper Jurassic and Lower Cretaceous continental sediments in the central trans-Ural region. Trudy Gor.-geol. inst. UFAN SSSR no.61:101-105 '61.
(MIRA 15:10)

(Ural Mountain region—Palynology)

on the O_2 concentration [illegible] during thermal [illegible] were observed [illegible]

[illegible]

SUBMITTED: [illegible]

ZHARKOVA, T.M.

Carnallite in the rock salt of the Cambrian sediments of the Siberian Platform. Dokl. AN SSSR 164 no.1:177-178 S '65. (MIRA 18:9)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR. Submitted May 24, 1965.

ZHARKOVA, T.M.

Petrography and mineralogy of rock salts in the southwestern part of the Siberian Platform in connection with their potassium potential. Geol. i geofiz. no.12:29-37 '64. (MIRA 18:6)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR, Novosibirsk.

L 16372-65

ACCESSION NR: AP4049146

SAMUSEVA, R.G.; ZHARKOVA, R.M.; PLYUSHCHEV, V. Ye.

System Na_2MoO_4 - Cs_2MoO_4. Zhur. neorg. khim. 9 no.11:2678-2679 N '64. (MIRA 18:1)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni M.V. Lomonosova.

SKLOKIN, N.F.; ZHARKOVA, V.A.; MAKHON'KO, Yu.A.; SHAPOVALOV, Yu.S.

Prospective consolidated standards for the consumption of raw materials, fuel, electric power, and other materials in the production of ferrous metals in the U.S.S.R. Sbor. trud. TSNIICHM no.45:172-181 '65. (MIRA 18:9)

ZUSMAN, L.I.; DUSHAK, A.A.; ZHARKOVA, V.A.; ZHELTOVSKAYA, A.A.

Methods of determining the volume and the composition of the U.S.S.R. metal stock by Union Republics and economic regions. Sbor. trud. TSNIICHM no.45:57-67 '65. (MIRA 18:9)

YAKOVLEV, Boris Vladimirovich, kand. sel'khoz. nauk; ZHARKOVA, V.G., red.

[Role of cultivation practices in the control of farm crop pests] Rol' agrotekhniki v bor'be s vrediteliami sel'skokhoziaistvennykh kul'tur. Moskva, Izd-vo M-va sel'khoz. RSFSR. 1963. 79 p. (MIRA 17:4)

ILYALETDINOV, A.N.; ZHAROKOVA, R.G.

Effect of herbicides on the microflora of dark Chestnut soils in Alma-Ata Province. Trudy Inst. mikrobiol. i virus. AN Kazakh. SSR 7:163-167 '63 (MIRA 16:12)

PROCESSES AND PROPERTIES INDEX

Chemical equilibria of reactions of hydrocarbons. I. Constants of equilibrium of the reaction $C_6H_6 + 3H_2 = C_6H_{12}$. V. R. Zharkova and A. V. Frost. *J. Gen. Chem.* (U. S. S. R.) 2, 534-41(1932).—The values of the consts. of equilibria in the reactions of hydrogenation of aromatic hydrocarbons were studied in the reaction $C_6H_6 + 3H_2 = C_6H_{12}$. The work of Burrows and Lucarini (*C. A.* 21, 2213) was generally followed, which conducted within the narrow range of 200-80° produced one-sided equilibria requiring rechecking. The app. was modified to make the temp. of reaction const. and exact measurements possible. The consts. were detd. at 230°, 250° and 275°. The relation of lg K_p to temp. is: lg K_p = $(9500/T) - 0.9194 \lg T + 0.0122857T - 10.500 \pm 0.184$. The exptl. data fully agree with the calcn. based on the 3rd heat theorem. **II. Chemical equilibria of the reaction between hydrocarbons.** A. A. Vvedenskii and A. V. Frost. *Ibid* 543-53.—The consts. of equilibria of the reaction $2C_6H_6 \rightleftharpoons C_6H_5C_6H_5 + H_2$ were detd. at 845°, 900° and 930° with accuracy of ±0.14 in the value of lg K_p. From the exptl. data and calcns. according to the 3rd law of thermodynamics lg K_p of the reaction at 300-950° was computed. The Nernst formula gave very inaccurate results, the difference reaching 1.0 in the value of lg K_p. The value of lg K_p in the reaction $C_6H_5C_6H_5 + C_6H_6 \rightleftharpoons C_6H_5C_6H_4C_6H_5 + H_2$ at 845-930° is about 0.5, indicating that thermodynamically a more complex condensation of cycles is as probable as the condensation of 2 cycles. The processes of condensation at cracking temps. (400-500°) without H_2 are very complex, and the extent of condensation can be computed from the table. At the cracking temps. lg K_p = 1.15 (approx.). Small pressure of H_2 (10-50 atms.) markedly shifts the equil. in the direction of C_6H_6, actively checking complex condensation, which should be observed in the process of destructive hydrogenation.

Chas. Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

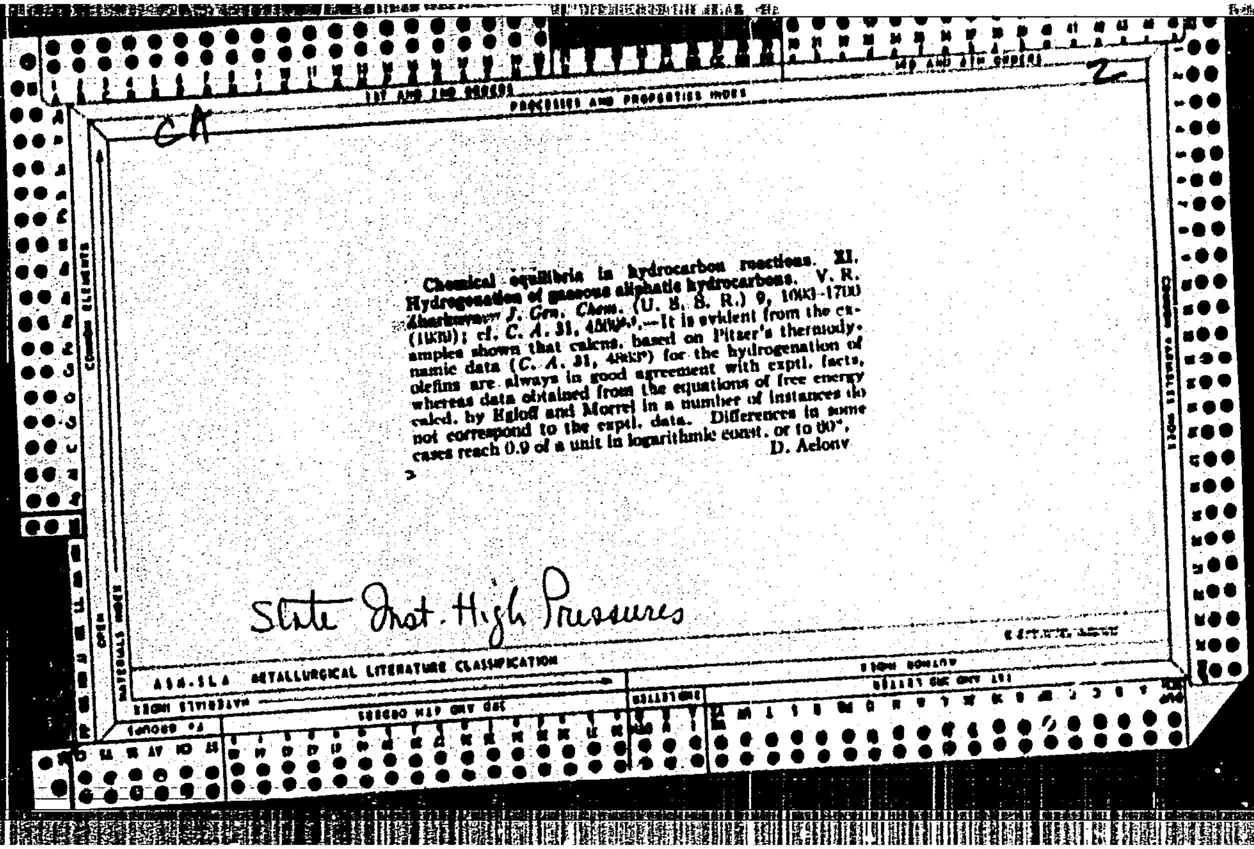
1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Kinetics and mechanism of decomposition of hydrocarbons. IV. Effect of pressure on rate and direction of decomposition of ethane. A. I. Dintses, V. R. Zharkova, A. V. Zherko and A. V. Frost. *J. Gen. Chem.* (U. S. S. R.) 7, 1063-70(1937); cf. *C. A.* 30, 4745⁴.—Expts. on the decompn. of C_2H_6 were made at 635° under pressures varying from 1 to 26 atm. The reactions occurring are (1) $C_2H_6 \rightarrow C_2H_4 + H_2$ and (2) $2C_2H_6 \rightarrow 2CH_4 + C_2H_4$. Reaction (1) decreases and reaction (2) increases with increase of pressure. Both reactions are self-retarding at the above temp. and pressures.

S. L. Madorsky

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

2

Chemical equilibria in hydrocarbon reactions. XI. Hydrogenation of gaseous aliphatic hydrocarbons. V. R. Zharkov. *J. Gen. Chem.* (U. S. S. R.) 9, 1693-1700 (1939); cf. *C. A.* 31, 4880.—It is evident from the examples shown that calcns. based on Pitzer's thermodynamic data (*C. A.* 31, 4883) for the hydrogenation of olefins are always in good agreement with exptl. facts, whereas data obtained from the equations of free energy calcd. by Egloff and Morrel in a number of instances do not correspond to the exptl. data. Differences in some cases reach 0.9 of a unit in logarithmic const. or to 00°. D. Aelony

State Inst. High Pressures

PROCESSES AND PROPERTIES INDEX

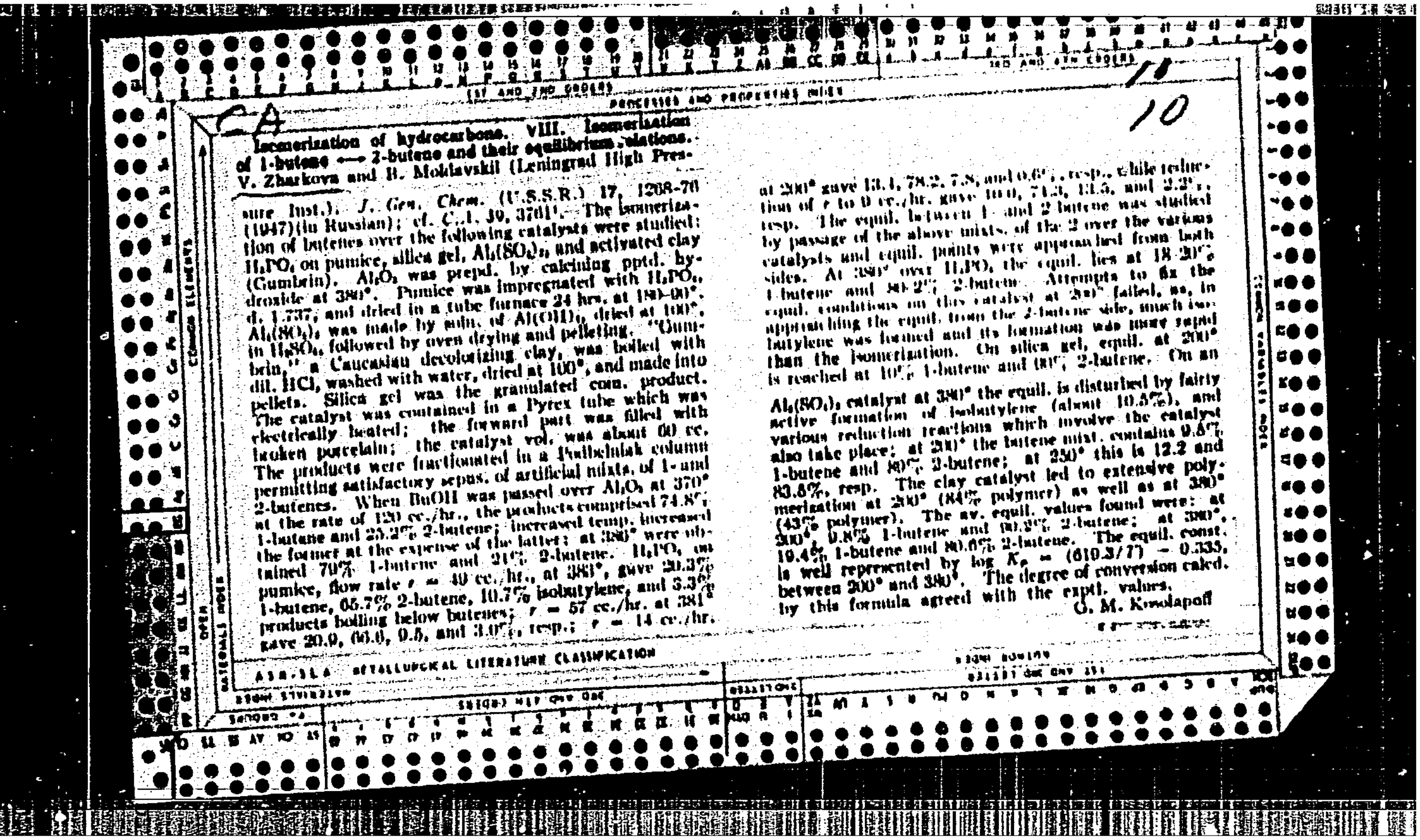
C-A

7

Isomerization of hydrocarbons. VII. Analysis of mixtures of isomeric pentenes. B. Moldavskii and V. Zharkova. *J. Gen. Chem.* (U.S.S.R.) 14, 358-64(1944) (English summary); cf. *C.A.* 39, 3783^{1}.—For detg. isomeric pentenes a method is proposed based essentially on the procedure of McMillan (*C.A.* 32, 2792^{2}). It consists of detg. 3-methyl-1-butene, detn. of total unsatn. in the residue and the amt. of unsatd. hydrocarbons with a double bond at the tertiary C atom, adding HCl, and titrating with Br. The method is suitable for detn. of other hydrocarbons having double bonds at the tertiary C atom and can be used for pure compds. as well as in mixts. with paraffins, naphthenes, and aromatic hydrocarbons.

G. M. Kosolapoff

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Isomerization of hydrocarbons. VIII. Isomerization of 1-butene ⟷ 2-butene and their equilibrium relations. V. Zharkova and B. Moldavskii (Leningrad High Pressure Inst.). *J. Gen. Chem.* (U.S.S.R.) 17, 1268-70 (1947)(in Russian); cf. *C.A.* 40, 3701¹.—The isomerization of butenes over the following catalysts were studied: H_3PO_4 on pumice, silica gel, $Al_2(SO_4)_3$, and activated clay (Gumbrin). Al_2O_3 was prepd. by calcining pptd. hydroxide at 380°. Pumice was impregnated with H_3PO_4, d. 1.737, and dried in a tube furnace 24 hrs. at 180-90°. $Al_2(SO_4)_3$ was made by soln. of $Al(OH)_3$, dried at 100°, in H_2SO_4, followed by oven drying and pelleting. "Gumbrin," a Caucasian decolorizing clay, was boiled with dil. HCl, washed with water, dried at 100°, and made into pellets. Silica gel was the granulated com. product. The catalyst was contained in a Pyrex tube which was electrically heated; the forward part was filled with broken porcelain; the catalyst vol. was about 60 cc. The products were fractionated in a Podbielniak column permitting satisfactory sepns. of artificial mixts. of 1- and 2-butenes. When BuOH was passed over Al_2O_3 at 370° at the rate of 120 cc./hr., the products comprised 74.8% 1-butane and 25.2% 2-butene; increased temp. increased the former at the expense of the latter; at 380° were obtained 79% 1-butene and 21% 2-butene. H_3PO_4 on pumice, flow rate r = 40 cc./hr., at 380°, gave 20.3% 1-butene, 65.7% 2-butene, 10.7% isobutylene, and 3.3% products boiling below butenes; r = 57 cc./hr. at 381° gave 20.0, 66.6, 9.5, and 3.0%, resp.; r = 14 cc./hr. at 200° gave 13.4, 78.2, 7.8, and 0.6%, resp., while reduction of r to 9 cc./hr. gave 10.0, 74.3, 13.5, and 2.2%, resp. The equil. between 1- and 2-butene was studied by passage of the above mixts. of the 2 over the various catalysts and equil. points were approached from both sides. At 380° over H_3PO_4 the equil. lies at 18.8% 1-butene and 81.2% 2-butene. Attempts to fix the equil. conditions on this catalyst at 200° failed, as, in approaching the equil. from the 2-butene side, much isobutylene was formed and its formation was more rapid than the isomerization. On silica gel, equil. at 200° is reached at 10% 1-butene and 90% 2-butene. On an $Al_2(SO_4)_3$ catalyst at 380° the equil. is disturbed by fairly active formation of isobutylene (about 10.5%), and various reduction reactions which involve the catalyst also take place; at 200° the butene mixt. contains 9.6% 1-butene and 80% 2-butene; at 250° this is 12.2 and 83.6%, resp. The clay catalyst led to extensive polymerization at 200° (84% polymer) as well as at 380° (43% polymer). The av. equil. values found were: at 200°, 9.8% 1-butene and 90.2% 2-butene; at 380°, 19.4% 1-butene and 80.6% 2-butene. The equil. const. is well represented by log K_p = (610.3/T) − 0.335, between 200° and 380°. The degree of conversion calcd. by this formula agreed with the exptl. values.

G. M. Kosolapoff

Methylation of hydrocarbons of the olefin series. B. L. Moldavskii, T. V. Nizovkina, and V. R. Zharkova (Leningrad High Pres. Inst.). J. Gen Chem (U.S.S.R.) 16, 427-34(1946)—In a study of El'tekov's methylation reaction (J. Russ. Phys. Chem. Soc. 10, 86(1878) of olefins by Mel in the presence of PbO, it was found that PbO causes side reactions of oxidative type with reduction of the oxide to Pb. It was also found that MgO may be substituted for PbO and MeCl for Mel. 2-Methyl-2-butene (60 g.) 51 g. MeCl. and 120g. PbO were heated in an autoclave 8 hrs. at 280-90°; this resulted in the formation of 55 g. Pb and 26g. $PbCl_2$, while the org. products were composed of 65g. amylenes, 11.6g. hexeneheptenes,, and 16% diamylenes. Distn. through a Podbielniak column indicated the presence of isomeric amylenes in the 1st fraction, due to isomerization, while in thehigher fractions there were indications of the presence of 2,3-dimethyl-2-butene, b. 73°; 2,3,3-trimethyl-1-butene, b. 78°; and 2,3-dimethyl-1-butene, b. 55-8°. Repetition of the expt. at 265° for 10 hrs., using 71 g. 2-methyl-2-butene, 252 g. MeCl, and 80 g. MgO, gave similarly 23% amylenes, 27.5% hexenes, and 31% heptylenes, with 14.3g. undistd. residue; fractionation of the products gave the same distribution as above. Use of mixed butenes instead of 2-methyl-2-butene (the mixt. used consisted of 1-butene 25%, 2-butene 69%, and isobutylene 6%), gave 54.5% C_5-C_7, olefins, which contained 3-methyl-1-butene and 2-methyl-2-butene, besides the products listed above; quant. sepn. was not performed. G. M. Kosolanoff

PA 30/49T23

USSR/Chemistry - Isomerization, Pentenes Sep 48
Chemistry - Pentenes, Isomerization

"Isomerization of Hydrocarbons: IX, Study of the Isomerization of Amylenes and Their Equilibrium Ratios," V. Zharkova, B. Moldavskiy, Leningrad Inst of High Pressures, $6\frac{1}{2}$ pp

"Zhur Obshch Khimii" Vol XVIII, No 9.

Reports data for isomerization of pentenes obtained at 200° and at 380° over silica gel. On basis of tabulated distribution of products, following equations have been derived for above interval. 1-pentene + 2-pentene $\rightleftarrows$ 2-methyl-1-butene + 2-methyl-2-butene: $\log Kp_1 = 432.7/T -$

[redacted] 30/49T23

USSR/Chemistry - Isomerization, Pentenes (Contd) Sep 48

0.302; for 3-methyl-1-butene $\rightleftarrows$ 1-pentene + 2-pentene: $\log Kp_2 = 277.6/T + 0.174$; for 3-methyl-1-butene $\rightleftarrows$ 2-methyl-1-butene + 2-methyl-2-butene: $\log Kp_3 = 708.6/T - 0.125$. Submitted 8 Feb 47.

[redacted] 30/49T23

ZHARKOVA, V.

FROST, Andrey Vladimirovich, prof. [deceased]. Prinimali uchastiye: BUSHMAKIN, I.N.; VVEDENSKIY, A.A.; GRYAZNOV, V.M.; DEMENT'YEVA, M.I.; DINTSES, A.I.; DOBRONRAVOV, R.K.; ZHARKOVA, V.R.; ZHERKO, A.V.; IPAT'YEV, V.N.; KVYATKOVSKIY, D.A.; KOROBOV, V.V.; MOOR, V.G.; NEMTSOV, M.S.; RAKOVSKIY, A.V.; REMIZ, Ye.K.; RUDKOVSKIY, D.M.; RYSAKOV, M.V.; SEREBRYAKOVA, Ye.K.; STEPUKHOVICH, A.D.; STRIGALEVA, N.V.; TATEVSKIY, V.M.; TILICHEYEV, M.D.; TRIFEL', A.G.; FROST, O.I.; SHILYAYEVA, L.V.; SHCHEKIN, V.V.. DOLGOPOLOV, N.N., sostavitel'; GERASIMOV, Ya.I., otv.red.; SMIRNOVA, I.V., red.; TOPCHIYEVA, K.V.; YASTREBOV, V.V., red.; KONDRASHKOVA, S.F., red. izd-va; LAZAREVA, L.V., tekhn.red.

[Selected scientific works] Izbrannye nauchnye trudy. Moskva, Izd-vo Mosk.univ., 1960. 512 p. (MIRA 13:5)

1. Chlen-korrespondent AN SSSR (for Gerasimov).
(Chemistry, Physical and theoretical)

ZHARKOVA, Yu.V.; SADIKOV, B.A.; GORBATOV, Yu.B., retsenzent;
SHCHERBAKOVA, Ye.A., retsenzent

[Problems in physics] Zadachnik po fizike. Moskva, Pt.2.
1963. 130 p. (MIRA 18:2)

1. Moscow. Energeticheskiy institut. 2. Kafedra fiziki Moskovskogo energeticheskogo instituta (for Gorbatov, Shcherbakova).

butylacrylate, acrylate/ STEK emulsifier, [illegible] emulsifier [illegible] agent

ORLOV, N.V.; ZHARKOVA, A.K.

Fangotherapy in compound treatment of inflammatory diseases of the spinal cord. Vop. kur., fizioter. i lech. fiz. kul't. 29 no.1:3-6 '64. (MIRA 17:9)

1. Nervnoye otdeleniye (nauchnyy rukovoditel' - prof. D.G. Shefer) Sverdlovskogo instituta kurortologii i fizioterapii (dir.- kand. med. nauk N.V. Orlov).

BROUNSHTEYN, B.I.; ZHARKOVA, V.R.

Absolute viscosimeter for measuring viscosity under pressure.
Trudy VNIIneftekhim no.5:20-39 '62. (MIRA 15:7)
(Viscosimeter)

BROUNSHTEYN, B.I.; ZHARKOVA, V.R.

Comparative evaluation of the bicalorimeter and plate methods for measuring the heat conduction of liquids. Trudy VNII-neftekhim no.5:39-52 '62. (MIRA 15:7)

(Calorimetry)
(Liquids—Thermal properties)

ZHARKOVA, YU. V.

USSR/Physics - Resonance Radiation (Cadmium Vapor) 11 Nov 51

"Resonance Radiation of Discharges in Cadmium Vapors," Yu. V. Zharkova, G. N. Rokhlin, All-Union Elec Eng Inst imeni Lenin

"Dok Ak Nauk SSSR" Vol LXXXI, No 2, pp 175-177

Investigates the intensity of the resonance lines of cadmium as a function of pressure for various current strengths; also studies the influence of pressure on electron temp T_e, concn of electrons N_e, and potential gradient G of cadmium discharge for various current strengths and diams of the

199T103

USSR/Physics - Resonance Radiation (Cadmium Vapor) (Contd) 11 Nov 51

discharge tube. Authors acknowledge the guidance of Prof V. A. Fubrikant. Submitted 11 Sep 51 by Acad G. S. Landsberg.

199T103

ZHARKOVA, Yu. V.

ZHARKOVA, Yu. V. --"Effect of Conditions of Decomposition on the Resonant Radiation of Cadmium." Sub 25 Apr 52, Moscow Order of Lenin Power Engineering Inst imeni V. M. Molotov (Dissertation for the Degree of Candidate in the Technical Science)

SO: VECHERNAYA MOSKVA, JANUARY-DECEMBER 1952

L 32754-66 EWP(j)/EWT(m)/T IJP(c) RM

ACC NR: AP6012706 SOURCE CODE: UR/0190/66/008/004/0569/0572

42

AUTHOR: Zharikova, Z. F.; Reztsova, Ye. V.; Berestneva, Z. Ya.; Kargin, V. A. B

ORG: Physicochemical Institute im. L. Ya. Karpov (Fiziko-khimicheskiy institut)

TITLE: The effect of supramolecular structure in rubbers on their mechanical properties

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 4, 1966, 569-572

TOPIC TAGS: natural rubber, synthetic rubber, vulcanization, molecular structure

ABSTRACT: The dependence of the mechanical properties of structures in thiuram vulcanizates with natural rubber and synthetic polyisoprene, polybutadiene, and sodium butadiene rubbers, on its supramolecular structures was investigated. Vulcanized rubber with more ordered structure was found to possess superior mechanical properties. Change in mixing temperature (in the range of 25—70C) does not significantly affect the structure and properties of the rubber. Structure formation in thiuram polyisopreme vulcanized rubber subjected to stretching was investigated by electron microscopy. Ribbon-like structures were found to be perpendicular to the applied force during stretching of vulcanized rubbers. Orig. art. has: 4 figures and 1 table. [NT]

SUB CODE: 11/ SUBM DATE: 05Feb65/ ORIG REF: 007/

Card 1/1 UDC: 678.0[illegible]3+678.43

L 30088-66 EWT(1) IJP(c) GG

ACC NR: AP6011484 SOURCE CODE: UR/0053/66/088/003/0419/0438

66
B

AUTHOR: Zharkov, G. F.

ORG: Physics Institute im. P. N. Lebedev, AN SSSR (Fizicheskiy institut AN SSSR)

TITLE: The Josephson tunneling effect[2] in superconductors[2]

SOURCE: Uspekhi fizicheskikh nauk, v. 88, no. 3, 1966, 419-438

TOPIC TAGS: superconductivity, tunnel effect, wave function, tunnel current, nuclear binding energy

ABSTRACT: This is a review paper dealing the the tunneling of coupled electron pairs from the ground state (Fermi surface) of one superconductor to the Fermi surface of another through a thin insulating layer, first reported by B. Josephson (Phys. Letts. v. 1, 251, 1962). The treatment in the article is restricted to bulk superconductors. Subjects treated are the general nature of the Josephson effect, a phenomenological description of the effect and the role played by the wave function of the superconductor in this description, derivation of the equations for the relation between the Josephson current and the binding energy, the influence of the presence of magnetic and electric fields, the influence of the transverse dimensions of the barrier, the Josephson current in barriers connected

Card 1/2 UDC: 537.312.62

L 30088-66
ACC NR: AP6011484

0

in parallel and other interference effects, and the nonstationary Josephson effect. In addition to reviewing briefly the contents of many published and unpublished papers dealing with the foregoing topics, mentions is made of papers dealing with other aspects such as the interpretaion of the Josephson effect from the point of view of the Ginzburg-Landau theory, of the quasi-spin approach or of paramagnetic impurities in the superconductor, and some possible practical applications of the effect. Orig. art. has: 14 figures and 39 formulas.

SUB CODE: 20/ SUBM DATE: 00/ ORIG REF: 017/ OTH REF: 046

Card 2/2 CC

SOV/137-57-6-11190

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 6, p 257 (USSR)

AUTHORS: Zharkova, Z.P., Zhacheva, Ye.I.

TITLE: A Method for the Analytical Precipitation of Gold With Hydrazine Hydrochloride in Gold Electrolytes (Analiticheskiy metod osazhdeniya zolota solyanokislym gidrazinom v zolotykh elektrolitakh)

PERIODICAL: Nauch.-issled. tr. Tsentr. n.-i. in-t vspomogat. izdeliy i zapas. detaley k tekstil'n. oborud., 1956, Nr 4, pp 44-47

ABSTRACT: A 10-cc test sample is taken for the determination of Au in cyanide electrolytes that contain 3-4 g/l of the metal. For concentrated electrolytes containing 17-36 g/l Au, a 10-cc test sample is diluted to 500 cc with water and a 20-50 cc aliquot is used for the analysis. The test sample is neutralized with HCl to phenolphthalein and heated to boiling. 50 cc of 10% hydrazine hydrochloride are added to the boiling solution and the boiling is continued to the complete reduction of Au according to the following reaction: $4KAu(CN)_2 + N_2H_4 \cdot 2HCl = 4Au + N_2 + 2KCl + 6HCN + 2KCN$. The brown Au precipitate is filtered off and calcined in a porcelain crucible at 800°C. The Au in the

Card 1/2

A Method for the Analytical Precipitation of Gold (cont.) SOV/137-57-6-11190

crucible is dissolved in 5 cc aqua regia and evaporated three times on a water bath with 1:3 HCl. Then 3 cc of 1:50 HCl and 2-3 drops of Br water are added to oxidize the monovalent Au. The contents of the crucible are evaporated to 1.5 volume (sic!). The remaining solution is filtered, the paper is washed until the total volume of the filtrate attains 30-40 cc, whereupon 0.1 g of K bifluoride are added. 2-3 drops of orthodianizidine solution are then added to the filtrate which after five minutes is titrated with a solution of hydroquinone to discoloration or to the appearance of a light blue color of dispersed Au. The Au content of the solution is calculated according to the following reaction:
$2AuCl_3 + 3C_6H_6O_2 = 2Au + 3C_6H_4O_2 + 6HCl$.

V.N.

Card 2/2

ZHARKOVA, Z. P.

Category: USSR/Analytical Chemistry - Analysis of inorganic substances.

G-2

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 30966

Author : Zharkova Z. P., Zhacheva Ye. I.
Inst : Central Scientific Research Institute of Textile Accessories and Spare Parts
Title : Analytical Method of Gold Precipitation with Hydrazine Hydrochloride from Gold Electrolytes.

Orig Pub: Nauch.-issled. tr. Tsentr. n.-i. in-t vspomogat. izdeliy i zapas. detaley k tekstil n. oborud., 1956, sb. 4, 44-47

Abstract: The method of NIGRIZoloto for determining the Au content of cyanide extracts of ore, has been modified to permit determination of Au in gold-plating electrolytes. A sample of the electrolyte (0.05-0.005 g Au) is neutralized, to phenolphthalein, with hydrochloric acid, heated to a boil, 50 ml of 10% solution of $N_2H_4.2HCl$ are added and the mixture is boiled while maintaining the volume of the solution at a constant

Card : 1/2

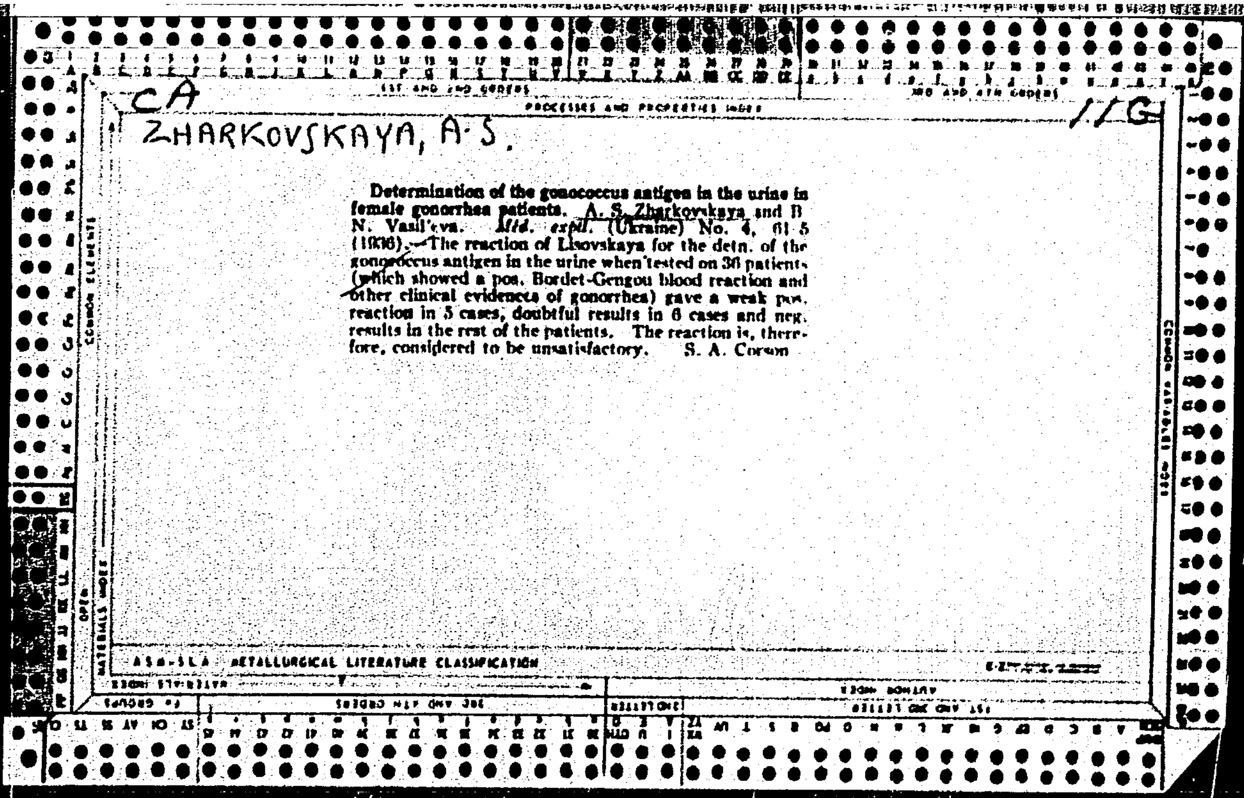
-5-

Category: USSR/Analytical Chemistry - Analysis of inorganic substances. G-2

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 30966

level. The Au precipitate is filtered off, washed with hot water, dried and calcined at 800°. To the filtrate are added 25 ml of 10% solution of $N_2H_4 \cdot 2HCl$ and the mixture is boiled to check completeness of precipitation. The calcined precipitate is dissolved in 5 ml of aqua regia, evaporated, and the residue is evaporated to dryness, 3 times, with 1-2 ml dilute HCl (1:3). 3 ml of dilute HCl (1:50) are added, followed by 2-3 drops of a hydrochloric acid solution of Br_2, and the mixture is evaporated to dryness. The residue is diluted to 30-40 ml, combined with 0.1 g K-bifluoride, 2-3 drops of o-dianisidine solution (10 mg in 10 ml HCl, 1:300) and titrated, after 5 minutes, with a solution of hydroquinone (0.4180 g dissolved in 500 ml water, acidified with 10 ml concentrated HCl, and diluted with dilute hydrochloric acid, 1:300, at a ratio of 1:100) until a colorless or faintly bluish solution is obtained ($2AuCl_3 + 3C_6H_6O_2 \longrightarrow 3C_6H_4O_2 + 2Au + 6HCl$).

ZHARKOVICH, S.S.



CA

11G

ZHARKOVSKAYA, A.S.

Determination of the gonococcus antigen in the urine in female gonorrhea patients. A. S. Zharkovskaya and B. N. Vasil'eva. *Med. exptl.* (Ukraine) No. 4, 61-5 (1936).—The reaction of Lisovskaya for the detn. of the gonococcus antigen in the urine when tested on 36 patients (which showed a pos. Bordet-Gengou blood reaction and other clinical evidences of gonorrhea) gave a weak pos. reaction in 5 cases, doubtful results in 6 cases and neg. results in the rest of the patients. The reaction is, therefore, considered to be unsatisfactory. S. A. Corson