

DOMIN, N.A.; IVANOVA, L.P.; CHERKASOVA, V.A.

Interaction of asymm-diethylhydrazine with some aliphatic  
ketones. Zhur. ob. khim. 34 no.7:2116-2118 JI '64  
(MIRA 17:8)

1. Leningradskiy gosudarstvennyy universitet.

SVANOVK, L. I.; YAKOVLEV, A. K.

Metasomatic zoning in the excontactts of gabbro-dioritic veins.  
Dokl. AN SSSR 158 no. 6:1113-1-5 0 16%. (MIRA 17:12)

1. Ural'skoye geologicheskoye upravleniye. Predstavleno  
akademikom I. I. Korshinskiy.

YEVANS, A.A.; NARVA, L.P.

Olivine rocks containing oxstatite of the Iscvaik granite body  
(Kytlyk massif, the Northern Urals). Trudy Inst. geol. UFAI SSSR  
no.70:51-53 '65. (MIRA 18:12)

MATSKEVICH, Ye.S. [Matskevych, IE.S.]; IVANOVA, L.S.

Rate of exchange of ions of the same sign in the state of  
adsorption equilibrium of the system carbon-electrolyte.  
Dop. AN URSSR no.2:218-222 '65. (MIRA 18:2)

1. Institut fizicheskoy khimii AN UkrSSR.

DUBYANSKAYA, Yelena Andreyevna; RADTSIG, Natal'ya Tikhonovna; IVANOVA,  
L.R., red.; BUL'DYAYEV, N.A., tekhn.red.

[Botany; textbook for pharmaceutical schools] Botanika;  
uchebnik dlia farmatsevticheskikh uchilishch. Izd.7, perer.  
Moskva, Gos.izd-vo med.lit-ry Medgiz, 1961. 310 p.  
(Botany) (MIRA 14:4)

1953, . . .

Mycobacterium

Methods of disinfection of laboratory containers from Mycobacterium tuberculosis.  
Probl. tub. No. 3, 1952.

9. Monthly List of Russian Accessions, Library of Congress, November 1953, Uncl.

2

IYANOVA, L.S.

Bilateral dislocation of the patellae. Ortop.travm.i protes. 20  
no.4:92 Ap '59. (MIRA 13:4)

1. Iz kafedry rentgenologii i radiologii (zav. - prof. A.I. Dombrovskiy) i kafedry detskikh bolezney (zav. - prof. P.D. Davydov) Rostovskogo meditsinskogo instituta.  
(PATELLA--DISLOCATION)

3(8)

SOV/10-59-4-15/29

AUTHOR: Ivanova, L.S.

TITLE: Use of Aerial Photographic Surveys for Subsoil Water Prospecting in Semi-Deserts

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geograficheskaya, 1959, Nr 4, pp 117-118 (USSR)

ABSTRACT: The article deals with prospecting for subsoil water in semi-desert areas of the Caspian region by aerial photography. According to the studies conducted by Gayel, Viktorov, Vostokova, and other scientists, subsoil water occurrence in deflation-caused, sandy hollows and other depressions in semi-desert areas is rather common. The best method to draw a subsoil water map of a given semi-desert area is by aerial photography since it reveals geomorphological and geobotanical features in the most satisfactory way. The subsoil water favors the growth of such phreatophytes as Glycyrrhiza glabra and Artemisia procera indicating

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Use of Aerial Photographic Surveys for Subsoil Water Prospecting  
in Semi-Deserts

fresh water, whereas the so called "Grey Artemisia", a certain species of Salsola, the Statice, etc. point to a water with a high content of mineral salts. The first-mentioned plant group is characterized during spring, summer, and autumn, with the semi-desert flora withering away, by its bright green color which appears as dark spots on aerial photographs (Figures 1, 2, and 3). The second plant group, indicating high content of mineral salts in subsoil water, can be easily spotted from the aircraft in autumn by their bright crimson or orange coloration. There are 3 photographs.

ASSOCIATION: Vsesoyuznyy aerologicheskiy trest (All-Union  
Aerological Trust)

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PLATE I BOOK EXPLANATION 509/4418

Smallsthorpe elektropodvodnyy; abornik statyi No 1 (Afr-  
mnyy, inzheneriye) Collection of articles No. 1.  
Moscow, Oborongiz, 1960. 106 p. Errata slip inserted.  
3,000 copies printed.

General Ed.: A. P. Fedoseyev, Candidate of Technical Sciences,  
Ed. of Publishing House: K. I. Grlgorian; Tech Ed.: V. P.  
Khimik; Managing Ed.: A. S. Zayornyya, Engineer.

PURPOSE: This book is intended for engineers engaged in de-  
signing and operating electric equipment. It  
contains a number of articles on the use of electrical  
industry and for teachers, instructors and students of  
electrical engineering schools of higher and secondary  
education.

COVERAGE: The book is a collection of 9 articles dealing with  
problems in designing, calculating and operating aircraft  
electric equipment, and electric motors, regulators, in-  
struments, etc. The work of heat-resistant coatings and  
resistors, etc.

REZNER, A. V., and V. I. Kuznetsov. A method for construct-  
ing an automatic control system with almost optimal transient  
conditions 61

FRANZ, K. A., and A. V. Yermolkin. Instrument for measuring  
quantity of electricity, energy and acting period 70

GOZD, E. K., A. I. and D. R. Yasin. Experience gained in  
the use of chemical heat-insulating 79

SERENKO, A. D., and S. P. Shalay. Use of Epsolide Resins as  
sealing and impregnating compounds 83

YANINA, I. S., and A. P. Yevl'yeva. Determination of  
maximum allowed operational temperatures for glass tubes 92

AVAILABILITY: Library of Congress  
Card 3/3  
10-18-60

IVANOVA, L.S.; VASIL'YEVA, A.P.

Determining maximum working temperatures for glass textolites.  
Sam.elekt. no.1:92-104 '60. (MIRA 14:3)  
(Glass reinforced plastics)

LASHKEVICH, A.M.; TEREENT'YEVA, A.A.; IVANOVA, L.S.; BORODULINA, M.A.;  
VELICHENKO, I.N.; NIKULENKO, V.S.; KONSHINA, T.I.; SHAKHOVA, T.P.;  
NYASHINA, A.A.; YASINSKAYA, Z.A.; AGAL'TSEVA, N.B.; SEL'MENSKAYA,  
Ye.G.; KRETSMER, V.L.; KONONOVICH, L.K.; FEDORAYEVA, A.M.; TKACHUK,  
L.Ya.; VYATKINA, G.A.; SLOUSHCH, V.S.; RACHINSKAYA, L.N.; PORTNAYA,  
R.Yu.; KARAKOVSKAYA, E.M.; POKROVSKAYA, M.A.; KORNEVA, A.I.;  
YERSHOVA, K.F., *otv. red.*; Primal uchastiye KAMANOV, M.I., *red.*;  
LAGAREVA, A.P., *otv. za vypusk*; NIKITINA, I.P., *tekh. red.*

[Economy of Novosibirsk Province; collection of statistics] Narodnoe  
khoziaistvo Novosibirskoi oblasti; statisticheskii sbornik. Novo-  
sibirsk, Gosstatizdat TsSU SSSR, 1961. 331 p. (MIRA 15:6)

1. Novosibirsk. Oblastnoye statisticheskoye upravleniye. 2. Na-  
chal'nik Statisticheskogo Upravleniya Novosibirskoy oblasti (for  
Yershov). 3. Zamestitel' nachal'nika Statisticheskogo Upravleniya  
Novosibirskoy oblasti (for Kamanov).

(Novosibirsk Province--Economic conditions)

ИВАНОВА, Л. С.  
IVANOV, L. S.

Mathematical Reviews  
Vol. 15 No. 4  
Apr. 1954  
Mechanics

①  
Ivanova, L. S. The added mass of a fluid filling an open rectangular basin. Akad. Nauk SSSR. Prikl. Mat. Meh. 17, 491-495 (1953). (Russian)

Dans le plan  $Oxy$ , considérons le domaine:  $-l_1/2 \leq x \leq l_1/2$ ;  $0 \leq y \leq l_2$ ; ce sera la section longitudinale d'un vase, ouvert, parallélépipédique, rempli d'un liquide parfait, non pesant, au repos pour  $t \leq 0$ . La surface  $y=l_2$  est libre. A l'instant initial  $t=0$ , le vase prend un mouvement de translation de vitesse  $v_0$ , parallèle à  $Ox$ . L'auteur détermine le champ initial des vitesses du liquide, en déduit l'impulsion subie par le vase et discute les résultats. J. Kravtchenko.

124-58-9-9822

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 9, p 50 (USSR)

AUTHOR: Ivanova, L. S.

TITLE: The Distribution of Impact Pressures During the Impact of a Liquid on the Walls of an Open Rectangular Vessel (Rasprede-  
leniye impul'sivnykh davleniy pri udare zhidkosti o stenki otk-  
rytogo pryamougol'nogo sosuda)

PERIODICAL: Tr. Mosk. tekhn. in-ta rybn. prom-sti i kh-va, 1957, Nr 8.  
pp 229-234

ABSTRACT: An ideal liquid is imagined to fill an open, rectangular vessel which, suddenly, acquires a horizontal velocity. The problem is plane. Issuing from the solution previously found by the author for the hydrodynamic problem (Prikl. matem. i mekhan., 1953, Vol 17, Nr 4, pp 491-495; RzhMekh, 1953, Nr 3, abstract 1135) the distribution of the impact pressures on a vertical wall is computed. With a change in the ratio between the length  $l_1$  of the vessel and the height  $l_2$  from zero to infinity, the position of the center of pressure along the vertical wall varies from  $0.5 l_2$  to  $0.37 l_2$ .

1. Hydrodynamics--USSR 2. Liquids--Theory 3. Pressure--Theory  
2. Mathematics--Applications M. I. Gurevich

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AUTHOR: Ivanova, L.S. (Moscow)

40-22-2-14/21

TITLE:

On the Liquid Shock on an Inclined Wall in an Infinitely Wide, Partially Covered Receptacle (Ob udare zhidkosti o naklonnuyu stenku beskonечно dlinnogo chastichno zakrytogo sosuda)

PERIODICAL:

Prikladnaya matematika i mekhanika, 1958, Vol 22, Nr 2, pp 254-256 (USSR)

ABSTRACT:

The author investigates a problem important for shipbuilding: the impact of an incompressible liquid against an inclined wall. The vessel which is enclosed by the inclined wall is partially closed on the upper side. For the calculation of the problem it is assumed that the receptacle is infinitely long, and that the whole problem can be considered to be plane. Up to a certain depth the receptacle is filled with an incompressible and inviscid fluid. The lower side and the partially covered upper side of the receptacle are horizontal and connected with each other by an inclined wall (wall of a ship). The problem is treated with the aid of complex-analytic methods, whereby the cross section of the partially covered receptacle is mapped onto the upper semiplane with the aid of a conformal mapping. The problem is to find a velocity potential  $\varphi$  which is connected with the pressure  $p$  and the density  $\rho$  of the

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On the Liquid Shock on an Inclined Wall in an Infinitely Wide, Partially Covered Receptacle 40-22-2-14/21

liquid by the relation :

$$p = - \rho \varphi$$

Of course the boundary conditions must be particularly taken into consideration.

The calculation leads to a velocity potential in integral form which can be simply numerically evaluated for given measurements of the system. The author carried out the evaluation for two cases: 1. for a receptacle which is open on the upper side and 2. for a receptacle which is partially closed on the upper side. Here it appears, that essentially higher pressures occur under partial cover of the receptacle during the impact of the liquid against the inclined wall.

There are 5 figures, and 5 references, 4 of which are Soviet.

SUBMITTED: June 28, 1957

1. Impact shock--Mathematical analysis 2. Ship plates--Stresses

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AUTHOR: Ivanova, L.S.

SOV-5-58-3-34/39

TITLE: ~~Testing the Hydrochemical Characteristics of "Il'meni"~~ Testing the Hydrochemical Characteristics of "Il'meni" (Inundated Areas) of the Volga Region (Opyt gidrokhimicheskoy kharakteristiki landshafta volzhskikh il'meny)

PERIODICAL: Byulleten' Moskovskogo obshchestva ispytateley prirody, Otdel geologicheskoy, 1958, <sup>3</sup> Nr 3, p 160 (USSR)

ABSTRACT: This is a resume of a lecture given on Feb 4, 1958. As a member of the Caspian expedition of Moscow State University, the author conducted hydrochemical research on inundated areas along the Volga river. As a result of the research, the water of the "ilmen" was subdivided into 5 groups according to their salinity, and the ilmen proper into 3 groups according to the degree of salinity. Salinity tests are of importance for the future use of the ilmen, whether for water reservoirs or as irrigated farm land.

1. Water--Chemical properties    2. Salinity--Measurement

Card 1/1

IVANOVA, L.S.

Underground components of the water and salt balance of the  
Caspian Sea. Trudy GOIN no.68:94-102 '62. (MIRA 16:7)  
(Caspian Sea--Seawater--Composition)

5

IVANOVA, L.S.; SHERGINA, N.I.; SIDOROV, R.I.

Composition of phenols of mean temperature Cherekhovo coal tar investigated by the methods of spectrophotometric analysis and gas-liquid chromatography. Izv. SO AN SSSR no.11 Ser.khim.nauk no.3: 108-113 '63. (MIRA 17:3)

1. Institut nefte- i uglekhimicheskogo sinteza Sibirskogo otdeleniya AN SSSR, Angarsk.

RUDAKOV, G.A.; SHESTAYEVA, M.M.; IVANOVA, L.S.

Influence of the carriers on the course of the acid catalytic isomerization of pinene. Dokl. AN SSSR 162 no.6:1320-1322 Ja '65. (MIRA 18:7)

1. Institut nefte- i uglekhimicheskogo sinteza Irkutskogo gosudarstvennogo universiteta im. A.A.Zhdanova. Submitted December 9, 1964.

IVANOVA, I.S.; RUDAKOV, G.A.

Influence of the porous structure of catalysts on the acidic heterogeneous isomerization of  $\alpha$ -pinene. Dokl. AN SSSR 163 no.1:113-115 J1 '65. (MIRA 18:7)

1. Institut nefte- i uglekhimicheskogo sinteza Irkutskogo gosudarstvennogo universiteta im. A.A.Zhdanova. Submitted December 9, 1964.

AL'TSHULER, M.A.; MATKOVICH, Ye.S.; IVANOVA, L.S.

Absorption of dissolved substances by porous materials in  
the process of their capillary imbibition. Koll. zhur. 27  
no. 485-488 JI-Ag '65. (MIRA 18:12)

I. Institut fizicheskoy khimii AN UkrSSR imeni L.V. Pisarchev-  
skogo, Kiev, Ukrainskiy nauchno-issledovatel'skiy i proyektnyy  
Institut neftyanoy i neftekhimicheskoy promyshlennosti.  
Submitted February 27, 1964.

IVANOVA, L.S.; PASHEL'KO, G.M.; BURAKOVA, A.I.; FEDOROVSKAYA, L.V.;  
VISHNEVSKIY, V.M.

Study of sorption purification of florimycin by means of  
ion-exchange resins. Antibiotiki 10 no.10:872-877 O '65.  
(MIRA 18:12)

1. Laboratoriya ionnogo obmena i adsorbtsii (zav. - prof.  
D.N. Strazhesko) Instituta fizicheskoy khimii imeni L.V. Pisar-  
zhevskogo AN UkrSSR i Kiyevskiy zavod meditsinskikh preparatov.  
Submitted Jan. 4, 1965.

"APPROVED FOR RELEASE: 08/10/2001

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CIA-RDP86-00513R000619220009-2"



5 (3)

SOV/21-59-8-13/26

AUTHORS: Ivanova, L. S., Strazhesko, D. M. (Strazhesko, D. N.)

TITLE: Investigation of the Mechanism of Base Adsorption by Active Carbon from Aqueous Solutions

PERIODICAL: Dopovidi Akademii nauk Ukrain's'koi RSR, 1959, Nr 8, pp 869 - 873 (USSR)

ABSTRACT: This article deals with investigations based upon the method of P. B. Bruns and O. H. Frumkin [Ref. 5] which were conducted by the authors for studying the mechanism of sorption of various inorganic and organic bases by means of active carbon. Ash-free carbon of phenolaldehyde tar activated at a temperature of 900 - 1000°C was used as an adsorber. Some strong (LiOH, NaOH, KOH, RbOH, Ba (OH)<sub>2</sub>) and weak (NH<sub>4</sub>OH) inorganic bases as well as a number of capilar-active organic bases with a various ability of disassociation such as piperidine, diethylamine, benzylamine, codeine, aniline, methyl aniline and dimethylaniline served as objects of this investigation. It was established that in the case of acids, electro-chemical exchange of ions of the outer coating of a double carbon layer

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Investigation of the Mechanism of Base Adsorption by Active Carbon  
from Aqueous Solutions

acting as a gas electrode on ions with the same charge of the dissolved electrolyte does not only completely determine the adsorptive behavior of hydroxides of alkaline and alkaline-earth metals, but also plays an essential role in the mechanism of sorption of the weak inorganic bases as piperidine, diethylamine, etc. Such weak surface-active bases as aniline and its derivatives are adsorbed by carbon in the form of whole molecules. The basic results of this investigation are shown by the table and by the diagram (1-3). There is 1 table, 3 diagrams and 18 references, 11 of which are Soviet, 1 German, 2 French and 4 American.

ASSOCIATION: Institut fizicheskoy khimii imeni L. V. Pizarzhevskogo  
AN USSR (Institute of Physical Chemistry imeni L. V.  
Pizarzhevskiy of the AS of UkrSSR)  
(A.I. Brodskiy),  
PRESENTED: By O. I. Brodskyy/ Member of the AS UkrSSR  
SUBMITTED: April 10, 1959  
Card 2/2

83846

S/138/60/000/003/001/007  
A051/A029

15-9200 also 2209

AUTHORS: Reykh, V.N.; Samoletova, V.V.; Ivanova, L.S.; Feringer, D.P.;  
Korner, V.A.

TITLE: The Properties of CRM-3 (SKI-3), a New Synthetic Isoprene Rubber

PERIODICAL: Kauchuk i Rezina, 1960, No. 3, pp. 1 - 5

TEXT: The author states that in the last decade synthetic rubber of high elasticity was produced both by the USSR and the USA. A list of some of the types which were synthesized is submitted (Refs. 1 - 7). It is pointed out that all isoprene rubbers correspond to some degree to natural rubber, depending on the nature of the catalyst and the polymerization method. SKI-3 was synthesized in the USSR in 1957 - 1958. SKI-3 obtained with a complex modified catalysts was shown not to differ significantly in its microstructure from natural rubber and SN Ameripol. It is quite similar to these in its technological and physico-mechanical properties. The structure of the rubber was determined by the infrared spectroscopy method. A detailed description of the structure is given and Table 1 shows the data of its comparison with natural rubber and Ameripol SN. Its physico-mechanical properties are discussed. It was found that the SKI-3

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The Properties of CRM-3 (SKI-3), a New Synthetic Isoprene Rubber

rubber at a given composition vulcanizes at about the same rate as natural rubber and in this way differs from the quickly-vulcanizing lithium-isoprene rubber. The elevated rate of vulcanization in the former is probably explained by the presence of residual catalyst. SKI-3 is close to natural rubber in its temperature resistance (at 100°C). It was also found that rubbers produced with complex catalysts have a more uniform structure, better technological properties and a higher temperature resistance, but their elastic dynamic properties are inferior to the high-molecular lithium-isoprene rubber. The authors think that SKI-3 due to its many valuable properties is of great significance to the tire and rubber industries. There are 4 tables, 1 figure and 9 references: 4 Soviet and 5 English.

ASSOCIATION: Vsesoyuznyy institut sinteticheskogo kauchuka im. S.V. Lebedeva  
(All-Union Institute for Synthetic Rubber imeni S.V. Lebedev)

Card 2/2

IVANOVA, L.S.; SVINTSOVA, L.G. [Svyntsova, L.H.]; STRAZHESKO, D.N. [Strazhesko, D.M.]

Separating acid mixtures on the basis of the difference in the mechanism of their sorption on activated charcoal. Dop.AN URSR no.9:2151-1254 '60. (HIRA 13:10)

1. Institut fizicheskoy khimii im. L.V.Pisarshevskogo AN USSR.  
Predstavleno akademikom AN USSR A.I.Brodskim.  
(Acids) (Sorption)

S/138/60/000/010/001/008  
A051/A029

15.9300

AUTHORS: Reykh, V.N., Samoletova, V.V., Baranova, G.P., Ivanova, L.S.

TITLE: Properties of Divinyl Rubbers With a Regular Structure and That of Their Vulcanizates

PERIODICAL: Kauchuk i Rezina, 1960, <sup>19</sup>No. 10, pp. 6-12

TEXT: In 1956, in the USSR the following polymer was synthesized using complex catalysts: cis-1,4-divinyl rubber, having a structure of: cis-1,4-links 70%, trans-1,4-links 25% and 1,2-links 2-5% (Ref. 12) and the following properties: vitrification temperature of the polymer -102°C, molecular weight 350000, unsaturation 94-100%. Later  $\alpha$  divinyl polymers containing cis-1,4-links up to 95% were produced. In 1958 the possibility of obtaining regularly-constructed divinyl rubbers using lithium as catalyst was proven. The 1,4-link content in this polymer was as high as 85%, the vitrification temperature fluctuated within the range of -100 to -105°. In the present article the authors deal with the properties of cis-1,4-divinyl rubber obtained by the polymerization of a 99% divinyl rubber using complex catalysts, and also with the properties of lithium-divinyl rubber. The properties of the regularly-constructed divinyl rubbers are compared to that of the industrial types of

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Properties of Divinyl Rubbers With a Regular Structure and That of Their Vulcanizates

natural and divinyl rubber. The polymers synthesized with complex catalysts (СКД-SKD) were found to have a more regular structure than those of the lithium-divinyl type (СКЛД-SKLD). Table 2 gives an indication of these structures and the respective vitrification temperatures. An outstanding feature of the investigated divinyl rubbers is their high resistance to oxidation destruction. The introduction of 1% phenyl- $\beta$ -naphthalamine insures a satisfactory stability of this rubber in its processing and storage. Rubbers of various molecular weight were obtained when using complex catalysts depending on the conditions of polymerization and, accordingly, different plasticity (the plasticity varied from 0.10 to 0.70). The lithium-divinyl rubber under the given conditions of polymerization was obtained with a high molecular weight only (plasticity 0.05-0.10). The SKD-rubber can be satisfactorily processed on laboratory equipment. During the rolling process it acquires a dense coating and is comparatively easily mixed with the ingredients. The SKLD-rubber crumbles in the rolling process and without preliminary mastication cannot be applied to the production of rubber mixtures. The mastication of divinyl rubbers can be accomplished using chemical plasticizers. In the case of the

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Properties of Divinyl Rubbers With a Regular Structure and That of Their  
Vulcanizates

SKLD-rubber the best plasticizer among those being tested proved to be an oxidation-reduction system, consisting of "galipot" (boiled pine resin ГОСТ 840-41 - GOST 840-41) and iron naphthanate. The indicated system (at moderate temperature (130°C) and in a relatively short period of time, viz., 20-30 min) was able to raise the plasticity of the rubber from 0.05-0.10 to 0.50-0.70. It is further pointed out that the investigated rubbers, SKD and SKLD, have no adhesive properties. The technological properties of filled divinyl rubbers were found to be unsatisfactory. The introduction of channel carbon black caused the plasticity to drop, which is explained by the fact that divinyl rubbers do not destructuralize during the mechanical processing, contrary to natural or isoprene rubbers. The type of carbon black used was also found to have an effect on the mixture. Mixtures containing Filbreck "O" carbon black have a much better surface in calendering and atomizing than those filled with gaseous carbon black. Large quantities of softener or plasticizer are suggested to improve the technological properties of filled divinyl rubber mixtures. The vulcanizate properties of divinyl rubbers were studied by comparing them to that of the industrial type divinyl rubbers: CK5 (SKB), CKB (SKV-potassium-divinyl

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Properties of Divinyl Rubbers With a Regular Structure and That of Their Vulcanizates

rubber) and CK5M (SKBM-lithium-divinyl rubber) having the same plasticity as well as with natural rubber and divinyl-styrene rubber, CKC-30A (SKS-30A). Carbon black-filled vulcanizates were chosen for the investigation with respect to the industrial type divinyl rubbers and SKLD. The tear-resistance of the non-filled more regularly constructed SKD polymers (cis-1,4-links 92-95%) was found to be higher and equal to 80 kg/cm<sup>2</sup>. Table 4 presents the comparative figures of the physico-mechanical properties of the carbon black vulcanizates of the divinyl rubbers and that of natural rubber. It can be seen that the indicated divinyl rubbers are close to natural rubber in their elastic-dynamic properties and are superior in their wear-, frost-, and heat-resistance. The residual elongation of the divinyl rubbers decreases with an increase of the cis-1,4-link content, which is assumed to be connected with the relaxation phenomena. The temperature stability of all divinyl rubbers including that of SKD is lower than that of natural rubber. The figures are actually misleading since the testing of the divinyl rubber as compared to natural rubber is conducted at higher temperatures, if the zero point is taken at the vitrification temperature. The highest frost-resistance was found to be in SKD and

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Properties of Divinyl Rubbers With a Regular Structure and That of Their Vulcanizates

SKLD rubbers, which corresponds to their lower vitrification temperature. At a temperature of 20°C the elasticity of the SKD rubber is much higher than that of the natural rubber with the same carbon black content in the mixture. The SKD and SKLD rubbers have a higher elasticity than the SKS-30A. Since the elasticity of SKD, SKLD and natural rubber at elevated temperatures is almost the same, the heat formation and mechanical losses of the vulcanizates of these rubbers are close. The vulcanizates of the SKD and SKLD rubbers retain their elastic and resistance properties well after heat aging. (Table 6), which is a great advantage of the divinyl rubber as compared to the natural rubber. One of the greatest advantages of the regularly-constructed divinyl rubbers is their high wear-resistance, which, in turn, is higher in SKD than in SKLD. Finally, the SKD rubber has a high resistance to crack growth, determined according to the method of H.E. Railsbeck. Concluding, the author emphasizes again all the valuable properties of the regularly-constructed divinyl polymers, stating that these properties of the cis-divinyl rubber make it applicable as a rubber for general use by itself or in a mixture with natural rubber primarily for the tire industry or for frost-resistant articles. The authors

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Properties of Divinyl Rubbers With a Regular Structure and That of Their Vulcanizates

think that this rubber has a great future due to the presence of a large raw material base of the initial monomer (divinyl) and its comparatively low price. There are 6 tables, 4 graphs and 12 references: 1 Soviet, 10 English, 1 German.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S.V. Lebedeva (All-Union Scientific-Research Institute of the Synthetic Rubber Industry im. S.V. Lebedev).

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Properties of Divinyl Rubbers With a Regular Structure and That of Their  
Vulcanizates

Table 2

The Structure of Divinyl Rubbers

Type of rubber	Catalyst	link content, %				Vitrification temp. °C
		1,4	cis-1,4	trans-1,4	1,2	
SKD	Complex	92-96	80-95	1-12	4-8	-105 - 110
SKLD	Lithium	85	40	45	15	-100 - 105

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89059

S/138/60/000/010/001/008  
A051/A029

X

Properties of Divinyl Rubbers With a Regular Structure and That of Their Vulcanizates

Table 6

Heat-resistance of divinyl rubber vulcanizates and natural rubber (aging period 96 hrs. at 100°C)						
Indices	Type of rubber					
	SKD		SKLD		Natural rubber	
	before aging	after aging	before aging	after aging	before aging	after aging
Tear-resistance kg/cm <sup>2</sup>	236	137	185	130	320	54
recoil elasticity at 20°, at	50-55	53-59	50	50	--	--
Card 8/9 100°	55	60-62	52	57	--	--

89059

S/138/60/000/010/001/003

A051/A029

## Properties of Divinyl Rubbers With a Regular Structure and That of Their Vulcanizates

Table 4

Physico-mechanical properties of carbon black vulcanizates of divinyl rubbers and natural rubber (temperature of vulcanization 143°0)

Properties	type of rubber						
	SKD	SKLD	SKBM	SKV	SKB	SKB-30A	NR
Plasticity of the rubber	0,50	0,50-0,60	0,50	0,50	0,50	0,50	--
Modulus at 300% elongation, kg/cm <sup>2</sup>	60-75	60-75	60-75	60-75	60-75	70	75
Tear resistance kg/cm <sup>2</sup>	220-270	150-190	150-170	150-170	150	280	320
Relative elongat. %	500-700	500-190	600	600	600	650	640
Residual elongation, %	10-15	10-20	20-30	20-30	30-50	25	40

Card 9/9

LIVSHITS, I.A.; REYKH, V.N.; RYAZANTSEV, K.P.; SALNIS, K.Yu.; SAMOLITOVA,  
V.V.; STEPANOVA, V.I.; SHLIFER, D.I.; Priniimila uchastiye  
IVANOVA, L.S.

Properties of ethylene - propylene copolymers. Kauch. i rez.  
19 no. 11:1-5 N '60. (MIRA 13:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo  
kauchuka im. S.V. Lebedeva.  
(Ethylene) (Propene) (Rubber, Synthetic)

S/073/60/026/001/009/021  
B004/B054

AUTHORS: Iyanova, L. S. and Svintsova, L. G.

TITLE: Study of the Mechanism of Adsorption of Electrolytes by Activated Carbon. 1. Mechanism of Adsorption of Acids From Aqueous Solutions

PERIODICAL: Ukrainskiy khimicheskii zhurnal, 1960, Vol. 26, No. 1, pp. 58-65

TEXT: The authors describe a study of the adsorption of acids on activated carbon prepared by carbonizing phenol aldehyde resin, and activated by heating to 850-1000°C in a CO<sub>2</sub> flow. 0.25% of platinum was applied to the carbon by the method of B. P. Bruns and A. N. Frumkin (Ref. 6). The authors studied A) the adsorption of inorganic, poorly surface-active acids in air and in hydrogen atmosphere, namely H<sub>2</sub>SO<sub>4</sub>, HCl, HBr, HI, H<sub>3</sub>PO<sub>4</sub>, HF, H<sub>3</sub>BO<sub>3</sub>, H<sub>3</sub>AsO<sub>3</sub>. Figs. 1 and 2 show adsorption isotherms. It was found that the adsorption of inorganic acids, also of

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Study of the Mechanism of Adsorption of  
Electrolytes by Activated Carbon. 1. Mechanism  
of Adsorption of Acids From Aqueous Solutions

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B004/B054

poorly dissociated ones, is mainly performed by electrochemical ion exchange. The latter is, however, superimposed by specific anion sorption (HI) and, in the case of weak acids ( $H_3BO_3$ ,  $H_3AsO_3$ ), sorption of complete molecules.

In the case of HF in dilute solution, electrochemical sorption prevails, whereas at high concentration molecular sorption occurs in addition (sorption in hydrogen atmosphere). B) The adsorption of organic acids: formic, acetic, propionic, butyric, caproic, oxalic, malonic, succinic, glutaric, adipic, monochloro acetic, trichloro acetic, benzoic, phthalic, salicylic, sulfosalicylic, and sulfanilic acid, as well as phenol. In the case of weak organic acids, molecular sorption prevails. In more dissociated, surface-active acids (e.g., sulfosalicylic acid) ion exchange occurs in addition. The authors thank Professor D. N. Strazhesko for supervising the work. There are 6 figures, 2 tables, and 23 references: 17 Soviet, 2 US, 3 German, and 1 French.

ASSOCIATION: Institut fizicheskoy khimii im. L.V. Pisarchevskogo AN USSR  
(Institute of Physical Chemistry imeni L.V. Pisarchevskoy  
AS UkrSSR)

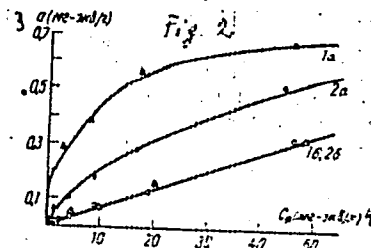
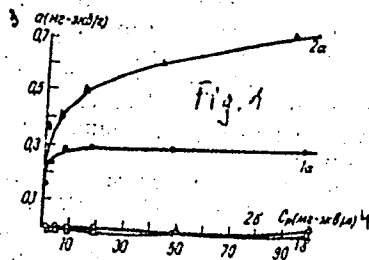
Card 2/3

Study of the Mechanism of Adsorption of Electrolytes by Activated Carbon. 1. Mechanism of Adsorption of Acids From Aqueous Solutions

S/073/60/026/001/009/021  
B004/B054

SUBMITTED: November 11, 1958

Legend to Fig. 1: Adsorption isotherms for sulfuric acid (1) and phosphoric acid (2) in air (a) and in hydrogen (b); 3: amount of adsorption in mg-equ/g; 4: equilibrium concentration of the solution (mg-equ/l).  
Legend to Fig. 2: Adsorption isotherms for hydrofluoric acid (1) and boric acid (2) in air (a) and in hydrogen (b); 3: amount of adsorption (mg-equ/g); 4: equilibrium concentration of the solution (mg-equ/l)



Card 3/3

S/062/61/000/001/002/016  
B101/B220

**AUTHORS:** Dubinin, M. M., Zaverina, Ye. D., Ivanova, L. S., Kaverov, A. T., and Kasatochkin, V. I.

**TITLE:** Study of the nature of the micropore structure of activated carbons. Communication 1. Activated carbons from phenol-aldehyde resins

**PERIODICAL:** Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, no. 1, 1961, 17-28

**TEXT:** The aim of the authors was to characterize the micropore structure of activated carbons by adsorption of molecules whose dimensions are comparable to those of the micropores. The present report deals with activated carbons from phenyl-aldehyde resin, whose structure has been modified considerably by treatment at various temperatures. The method of obtaining the carbon has been described previously (Refs. 11, 12). The product obtained by carbonization of the resin has been activated in a rotating quartz retort at 950°C till the loss in weight amounted to about

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Study of the nature of the micropore...

S/062/61/000/001/002/016  
B101/B220

50%. This specimen was termed A-950. Its heating in nitrogen to 1750, 2000, and 2300°C resulted in the specimens A-1750, A-2000, A-2300. A-3000 was obtained by heating in an electric resistance furnace of the type PC-100 (RS-100). Reduction in weight was 3.21% at 1750°C, 3.50% at 2000°C, 5.53% at 2300°C, and 5.57% at 3000°C. Debye-Scherrer patterns were taken by means of a BPC-3 (VRS-3) camera; the parameters  $L_a$  and  $L_c$  of the carbon crystallites were determined according to R. E. Warren (Ref. 13) and the radiographic density  $\rho$  was calculated from equation  $\rho = zAm/abc$  ( $Z=4$ , number of C atoms in the unit cell;  $A=12$ , atomic weight of C;  $m=1.66 \cdot 10^{-24}$ g, mass of the H atom;  $a=b=2.456$  Å, constants of the graphite crystal lattice in the basal surface;  $c=2d_{002}$ , dimension of the unit cell along axis  $c$ ). Table 1 indicates the data obtained. The adsorption properties of the specimens were determined in a wide range of relative pressure by means of a sorption balance for benzene, cyclohexane, and water at 20°C (Table 2). The constants of the isothermal lines of adsorption were calculated from Eq. (4) of the potential theory of adsorption:  $a = a'_0 \exp \left[ (-B(T^2/\beta^2)(\log p_g/p)^2) \right]$ , where  $a'_0 = W_0/v$  (5)

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Study of the nature of the micropore...

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corresponds to the maximum occupation of the adsorption volume  $W_0$  and  $v$  is the volume of 1 millimole of the adsorbed substance (Table 3). This carbon has a mixed structural type with two kinds of micropores as shown in Fig. 5 for benzene and A-1750. In the micropores of the first type, which correspond to  $a'_0$ , there occurs an increase of the adsorption potential. This effect is absent in large micropores of the second type ( $a''_0$ ). The following relation has been obtained:  $a'_0 + a''_0 = a^0$  (6).

$a^0$  is the adsorption occurring at the beginning of hysteresis and capillary condensation of the vapor in the intermediate pores. This value is represented in Fig. 5 by a broken vertical line:  $(p/p_s)_0 = 0.175$ . Based on the sorption isotherm, the volumes of the different types of pores were evaluated:  $v_{mi} = v'_{mi} + v''_{mi}$  are the volumes of the two types of micropores;

$v_i$  is the volume of the intermediate pores; and  $v_p$  is the total volume of pores (Table 4). Tables 6 and 7 indicate the values found for the adsorption of organic substances and electrolytes. The crystallite surfaces (cylindrical lateral surface  $S_l$ , basal surfaces  $S_b$ ) which were obtained from radiographical data do not coincide with calculations

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Study of the nature of the micropores...

S/062/61/000/001/002/016  
B101/B220

according to Brunauer, Emmett and Teller, and Langmuir (Table 8). An attempt has been made to explain the structure by the example of A-950. It is assumed that binary micropores are formed by the combustion of two superposed crystallites when the carbon is heated.  $\alpha$  is assumed to be the specific surface of the micropores composed of the surface  $\alpha$  of the single micropores and of  $1-\alpha$  of the "binary" ones. In the single micropores,  $n_1$  molecules of one vapor and  $n_2$  molecules of another vapor are assumed to be adsorbed. Correspondingly,  $n_1''$ ,  $n_2''$  molecules are adsorbed in the binary pores.  $\omega_1$ ,  $\omega_2$  are assumed to be the areas occupied by the adsorbed molecules. The following relations have been obtained:

$$\alpha s n_1 / 2\omega_1 + (1-\alpha) s n_1'' / 2\omega_1 = a_0' \quad (11) \quad \text{and} \quad \alpha s n_2 / 2\omega_2 + (1-\alpha) s n_2'' / 2\omega_2 = a_0'' \quad (12)$$

$$\text{resulting in } \alpha = (A n_2'' - n_1'') / [(A n_2'' - n_1'') - (A n_1' - n_1')] \quad (13), \text{ where}$$

$$A = a_0' \omega_1 / a_0'' \omega_2 \quad (14) \quad \text{and} \quad s = 2 a_0' \omega_1 / [a n_1 + (1-\alpha) n_1'] \quad (15). \quad \text{For A-950}$$

one obtains  $\alpha = 0.256$  and  $s = 568 \text{ m}^2/\text{g}$ . Thus, binary pores are formed for the major part (74%). This approximative model of micropores agrees with radiographic data and reproduces the measurements of adsorption correctly. D. N. Strazhesko, S. G. Tolkachev, and I. V. Uspenskiy are thanked for

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S/062/61/000/001/002/016  
B101/B220

Study of the nature of the micropore...

assistance. There are 5 figures, 8 tables, and 25 references: 15 Soviet-bloc and 9 non-Soviet-bloc.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry, Academy of Sciences USSR). Institut goryuchikh iskopayemykh Akademii nauk SSSR (Institute of Mineral Fuels, Academy of Sciences USSR). Institut fizicheskoy khimii Akademii nauk USSR (Institute of Physical Chemistry, Academy of Sciences UkrSSR)

SUBMITTED: October 13, 1959

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Study of the nature of the micropore...

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Legend to Table 1:  
a) carbon.

Таблица 1

Данные рентгенографического исследования углей

Уголь	$L_c, \text{Å}$		$L_a, \text{Å}$		$d_{\text{из}}, \text{Å}$	$\rho, \text{г/см}^3$
	по (002)	по (004)	по (10)	по (11)		
A-950	8	8	21	22	3,99	1,91
A-1750	10	11	31	34	3,73	2,04
A-2000	12	13	39	40	3,58	2,13
A-2300	15	15	43	45	3,48	2,19
A-3000	22	23	51	52	3,40	2,21

Legend to Table 2:  
a) carbon.

Предельные величины сорбции и сорбционные объемы

Уголь	$C_2H_6$		$C_4H_{10}$		$H_2O$	
	$\alpha_s, \text{мм/г}$	$\sigma_s, \text{см}^3/\text{г}$	$\alpha_s, \text{мм/г}$	$\sigma_s, \text{см}^3/\text{г}$	$\alpha_s, \text{мм/г}$	$\sigma_s, \text{см}^3/\text{г}$
A-950	5,84	0,519	4,79	0,518	27,1	0,488
A-1750	3,36	0,299	2,03	0,240	16,8	0,302
A-2000	1,27	0,113	0,711	0,077	4,45	0,080
A-2300	0,198	0,018	0,165	0,018	0,189	0,0034
A-3000	0,11	0,010	—	—	—	—

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Study of the nature of the micropore...

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Константы уравнения изотерм адсорбции

Legend to Table 3:  
a) vapor; b) carbon;  
c) range of validity.

a) Пар	b) Уголь	$a_0'$ мм/в	$W_0$ см <sup>3</sup> /в	$P \cdot 10^4$	$\beta$	c) Интервал применимости P/P <sub>0</sub>
C <sub>6</sub> H <sub>6</sub>	A-950	4,02	0,410	0,773	1,00	1,0 · 10 <sup>-6</sup> — 2 · 10 <sup>-5</sup>
	A-1750	1,59	0,141	0,873	1,00	5 · 10 <sup>-6</sup> — 2 · 10 <sup>-5</sup>
	A-2000	0,57	0,051	2,07	1,00	2 · 10 <sup>-4</sup> — 4 · 10 <sup>-3</sup>
C <sub>6</sub> H <sub>12</sub>	A-950	3,80	0,410	0,773	1,00	7 · 10 <sup>-6</sup> — 2 · 10 <sup>-5</sup>
	A-1750	0,91	0,098	0,873	0,995	3 · 10 <sup>-6</sup> — 7 · 10 <sup>-4</sup>
	A-2000	0,30	0,033	2,07	1,02	1,5 · 10 <sup>-6</sup> — 1 · 10 <sup>-3</sup>

Legend to Table 4:  
a) carbon; b) components  
v<sub>mi</sub>; c) intermediate pores  
v<sub>i</sub>.

Объемы различных разновидностей пор углей в см<sup>3</sup>/г

a) Уголь	v <sub>mi</sub>	b) Составляющие v <sub>mi</sub>		c) v <sub>i</sub>	v <sub>0</sub>
		v' <sub>mi</sub>	v'' <sub>mi</sub>		
A-950	0,474	0,410	0,064	0,065	0,519
A-1750	0,253	0,141	0,112	0,040	0,299
A-2000	0,060	0,051	0,009	0,053	0,113
A-2300	0,002			0,016	0,018
A-3000	0,000			0,010	0,010

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Study of the nature of the micropore...

Legend to Table 6:

a) adsorbed substance; b) relative amount of adsorption; 1) formic acid; 2) acetic acid; 3) propionic acid; 4) butyric acid; 5) caproic acid; 6) phenol; 7) methylene blue; 8) Congo red.

а) Адсорбируемое вещество	а. мг/г			б) Относительные величины адсорбции		
	A-950	A-1750	A-2000	A-950	A-1750	A-2000
1 Муравьиная кислота	0,555	0,218	0,050	1,00	0,39	0,090
2 Уксусная кислота	0,805	0,315	0,075	1,00	0,39	0,093
3 Пропионовая кислота	1,297	0,488	0,118	1,00	0,38	0,091
4 Масляная кислота	1,705	0,667	0,190	1,00	0,41	0,111
5 Капроновая кислота	2,387	1,332	0,400	1,00	0,56	0,169
6 Фенол	2,035	1,280	0,285	1,00	0,63	0,140
7 Метиленовый голубой	1,015	0,243	0,055	1,00	0,24	0,054
8 Конго красный	0,088	0,0044	0,000	1,00	0,05	0,00

Legend to Table 7:

a) carbon.

Адсорбция электролитов из водных растворов в мг/г

а) Уголь	HCl		NaOH	NaCl	
	H+	Cl-		г	OH-
A-950	0,307	0,303	0,001	0,034	0,030
A-1750	0,079	0,075	0,000	0,013	0,013
A-2000	0,008	0,007	0,001	0,000	0,001
A-2300	0	0	0,001		0,000

Card 8/9

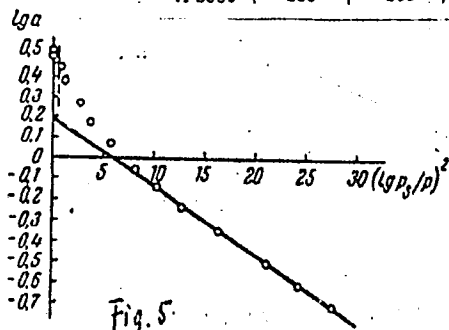
Study of the nature of the micropore...

S/062/61/000/001/002/016  
 B101/B220      Таблица 8

Legend to Table 8:  
 a) carbon; b) X-ray surfaces; c) BET; d) Langmuir; e) lateral surfaces; f) basal surfaces.

Удельные поверхности в м<sup>2</sup>/г

Уголь	б) Рентгеновские поверхности			в) BET, C <sub>6</sub> H <sub>6</sub>		д) Ленгмуа, C <sub>6</sub> H <sub>6</sub>		е) BET, C <sub>6</sub> H <sub>6</sub>	
	S <sub>B</sub> е)	S <sub>T</sub> д)	S	a <sub>м</sub>	S	a <sub>м</sub>	S	a <sub>м</sub>	S
A-050	970	1310	2280	4,58	1130	5,12	1270	3,71	850
A-1750	610	940	1550	2,48	610	2,67	660	1,45	330
A-2000	480	750	1230	0,514	130	0,483	119	0,289	66
A-2300	420	610	1030	0,024	6			0,013	3
A-3000	350	390	740						



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33605

S/678/61/000/038/005/009

A057/A126

11.0120

AUTHORS: Sidorov, R.I., Nedel', M.M., Khvostikova, A.A., Ivanova, L.S.  
Kositsyna, E.I.

TITLE: Investigation of the composition of industrial liquid-phase hydrogenation products. Report 6. Investigation of the composition of the gasoline fraction in the hydrogenation product of petroleum residues

PERIODICAL: Akademiya nauk SSSR. Vostochno-Sibirskiy filial. Trudy. Seriya khimicheskaya, no. 38, Moscow, 1961. Prevrashcheniya aromatischeskikh uglevodorodov v protsesse destruktivnoy gidrogenizatsii., 77 - 86

TEXT: The composition of the gasoline fraction obtained from a liquid-phase hydrogenation product from mazout of Ramashkin and Andizhan petroleum was investigated in order to improve the efficiency of hydrogenation plants. The amount of the gasoline fraction, separated by fractional distillation in a laboratory-scale column, was 26.1% of neutral oil, 0.67% (2.7% of the methanenaphthenic fraction) of which were hydrocarbons boiling at 20 - 50°C. The

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Investigation of the composition of.....

latter contain 1.01% 2-methylbutane, 0.93% n-pentane, and 0.75% non-saturated hydrocarbons, or a small quantity of cyclopentane. Determinations by the GROZNI1 method [Abstracter's note: not described here] showed the following composition of the investigated gasoline: 8% non-saturated, 25% aromatic, 17.5% naphthenic, and 49.2% paraffinic hydrocarbons. The high content of aromatic hydrocarbons indicates the usefulness of this gasoline as automobile fuel. The single components in the methane-naphthenic fractions were separated also chromatographically on MCM (ShSM) 60 - 150 mesh silica gel, with 12 activity units. The final identification of each component was carried out by means of Raman spectra. 117 compounds, i.e. about 77% of the methane-naphthenic concentrate were identified and some regularities observed. It was observed that naphthenes contain only 12% compounds with quaternary carbon atoms, while paraffinic contain 29.0%. Naphthenes with quaternary atoms are apparently less stable in liquid-phase hydrogenations. Aromatic hydrocarbons were separated in the present study chromatographically and then by fractional distillation into 34 fractions. 14 compounds were identified by means of Raman spectra [on a ИСП-51 (ISP-51) device] and ultraviolet spectra [on a СФ-4 (SF-4) device]. The composition of the aromatic fraction indicates

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S/678/61/000/038/005/009

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Investigation of the composition of.....

the uselessness of the investigated gasoline fraction for the chemical industry. The high content of aromatic compounds and the composition of the methane-naphthenic fraction demonstrates on the other hand that the investigated gasoline fraction could be a suitable automobile fuel. There are 1 figure and 5 tables.

X

Card 3/3

33606

S/678/61/000/038/006/009

A057/A126

5.3300  
AUTHORS:

Sidorov, R.I., Nedel', M.M., Khvoštikova, A.A., Ivanova, L.S.

TITLE:

Investigation of the composition of industrial liquid-phase hydrogenation products. Report 7. Investigation of the composition of the hydrogenation product obtained from petroleum residues

PERIODICAL:

Akademiya nauk SSSR. Vostochno-Sibirskiy filial. Trudy. Seriya khimicheskaya, no. 38, Moscow, 1961. Prevrashcheniya aromati-cheskikh uglevodorodov v protsesse destruktivnoy gidrogenizatsii., 87 - 94

TEXT:

Detailed investigations of liquid-phase hydrogenation products obtained under industrial conditions from petroleum residues are important for studying the chemism of these processes and for the exploitation of the products. Results obtained with hydrogenation products of a petroleum residue are presented and discussed in the present paper. By comparison of the present results with those obtained earlier with coal hydrogenation products, some conclusions can be drawn on the effect of the raw material composition

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Investigation of .....

on the yields. A wide fraction of the following composition was used: 91.9% neutral oil, 1.1% bases, 0.3% compounds extractable with 10% NaOH solution, 1.8% tarry compounds separated by treatment with acid and alkali, 1.5% sulphur, and 3.4% water losses. Only the composition of the neutral oil was investigated in the present experiments. The oil was separated by a laboratory-scale fractional distillation column, and the fractions were treated chromatographically on  $\text{MCM}$  (ShSM) silica gel. The obtained results demonstrate the considerable effect of the raw material on the yield. The aromatic fractions were investigated in details. The number of carbon atoms in side chains of the molecule of the aromatic hydrocarbons was calculated in an analogous way as suggested by N.R. Hazelwood [Ref. 6: *Analyt. Chem.*, 26, 1073 (1954)]. Calculations made by the Van Nes - Van Westen method gave contradictory results. Crystalline carbazole was found in the wide fraction of the petroleum residue hydrogenation product. A separation of the gasoline fraction is recommended. Another test, related to the effect of the composition of the raw material on the hydrogenation product, was made by chromatographic analysis (using ShSM silica gel) of a mazout obtained from Romashkin petroleum. The following conclusions can be drawn: An almost complete hydrogenation of

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A057/A126

Investigation of.....

nonsaturated hydrocarbons, conversion of nonhydrocarbons into hydrocarbons, cracking of hydrocarbons with long side chains, hydrogenation of aromatic polycyclic hydrocarbons to hydroaromatic ones with subsequent splitting of naphthenic rings, are resulting in the final product: hydrocarbons with one aromatic ring. These processes occur simultaneously and the relation in the quantity of final products corresponds to the composition of the raw material. There are 5 tables.

X

Card 3/3

BABOSHIN, B.K.; SIDOROV, R.I.; RUDAKOV, G.A.; NIKOLAYEVA, Z.K.;  
IVANOVA, L.S.

Investigating the composition of terpene carbohydrate mixtures  
by the method of gas-liquid chromatography. Gidroliz. i  
lesokhim. prom. 16 no.4:14-15 '63. (MIRA 16:7)

1. Institut nefte- i uglekhimicheskogo sinteza Sibirskogo  
otdeleniya AN SSSR.  
(Gas chromatography) (Terpenes--Analysis)

IVANOVA, L.S. (Moskva)

Fluid impact against the vertical wall of an infinitely-  
long partially-open vessel. Izv. AN SSSR, Mekh. i mashinostr.  
no.6:108-110 N-D '63. (MIRA 17:1)

"APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000619220009-2

APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000619220009-2"

"APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000619220009-2

APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000619220009-2"

BELYAYEV, V.I.; ANNENKOVA, V.Z.; IVANOVA, I.I.; UGHEUMOVA, G.S.  
KURYAYEV, B.S. (deceased)

Polymerization of  $\alpha$ -chloroacrolein. Izv. SO AN SSSR no. 3  
Ser. khim. nauk no. 1:144-145 '65. (MIRA 13:8)

1. Irkutskiy institut organicheskoy khimii Sibirskogo  
otdeleniya AN SSSR.

KRISTIN, K.A.; IVANOVA, L.T.

Determining the dimensions of the oversize lumps of ore. Trudy.

Inst.gor.dela.Sib.otd.AN SSSR no.1:122-128 '58.

(Mining engineering) (Ore dressing) (MIRA 12:11)

DUBYNIN, N.G.; SHAPOSHNIKOV, V.D.; IVANOVA, L.T.; SALISHCHEV, D.S.

Cutoff stoping. Trudy Inst. gor. dela Sib. otd. AN SSSR  
no.3:155-175 '60. (MIRA 14:4)  
(Stoping (Mining))



DUBYNIN, N.G.; IVANOVA, L.T.; MAKSIMOV, P.I.

Breaking ore with deep vertical blastholes. Trudy Inst. gor.  
dela Sib. otd. AN SSSR no.3:188-199 '60. (MIRA 14:4)  
(Gornaya Shoriya—Iron mines and mining)  
(Blasting)

DUBYNIN, N.G.; IVANOVA, L.T.; SKVORTSOV, A.G.

Breaking off the ore through deep vertical boreholes. Trudy  
Inst.gor.dela Sib.otd.AN SSSR no.2:167-174 '59.

(MIRA 13:5)

(Mining engineering)

IVANOVA, Lilyana T.

Psychoses of puerperal and lactation periods. Zhur. nevr. i psikh.  
60 no.3:343-347 '60. (MIRA 14:5)

1. Nauchno-issledovatel'skiy psikhonevrologicheskiy institut (dir. -  
G.G.Ganev) Ministerstva narodnogo zdravookhraneniya i sotsial'nogo  
obespecheniya Narodnoy Respubliki Bolgarii.  
(PSYCHOSES) (PUERPERIUM) (LACTATION)

IVANOVA, L.T.; IVANOV, VL.R.

Changes in the higher nervous activity under the effect of the  
reproductive cycle. Zhur.vys.nerv.diat. 14 no.6:984-991 N D '64.  
(MIRA 1966)

1. Chair of Psychiatry, Higher Medical Institute, Varna, Bulgaria

MOKRONOSOV, A.T.; IVAKOVA, L.V.; ZOL'NIKOVA, V.P.

Amino acid synthesis in potato tubers at various times during  
a 24-hour period and under different photoperiodic conditions.  
Fiziol.rast. 6 no.2:158-164 Mr-Apr '59. (MIRA 12:5)

1. Department of Plant Physiology, A.M. Gorkiy Ural State University,  
Sverdlovsk.

(Potatoes) (Amino acid metabolism)

IVANOVA, I.V.; PICHUGIN, A.P., red.

[Use of waste products of oil processing, practices of Baku petroleum refineries] Ispol'zovanie otkhodov ot pererabotki nefiti; opyt bakinskikh neftezavodov. Moskva, Gos.nauchno-tekhn.izd-vo nefi.i gorno-toplivnoy lit-ry, 1951. 71 p. (MIRA 10:12)  
(Petroleum industry--Waste products)

ATLAS, Mark Iosifovich, dotsent, kand.tekhn.nauk, LITVISHKOV, Nikolay Moiseyevich,  
TOCHILOV, V.I., dotsent, kand.tekhn.nauk, red.; IVANOVA, L.V., red.;  
GONCHAROV, I.A., red.izd-va.

[Reference manual on water supply and sewer systems for petroleum  
industry plants]. Spravochnik po vodosnabzhenliu i kanalizatsii  
predpriyatii neftianoi promyshlennosti. Baku, Azerbaidzhanakoe gos.  
izd-vo neft. i nauchno-tekhn. lit-ry, 1958. 716 p. (MIRA 11:9)  
(Petroleum industry)  
(Water-supply engineering)  
(Sewerage)

KURITSYNA, D.A.; YEKHILEVSKAYA, Ye.L.; IVANOVA, L.V.; CHZHAN KHUN-SHUN' [Chang  
Hung-shun]

Problem of shortening the quarantine period in measles.  
Trudy LSGMI 32:30-34 '57. (MIRA 12:8)

1. Kafedra epidemiologii sanitarno-gigiyanicheskogo meditsin-  
skogo instituta (zav.kafedroy - prof. V.A.Bashenin) i Gorodskaya  
sanitarno-epidemiologicheskaya stantsiya g. Leningrada (glavnyy  
vrach - A.I.Kyupar).

(MEASLES, prev. & control  
quarantine, problems in shortening period  
(Rus))





20-111-6-21/54

AUTHORS: Vompe, A. F., Monich, N. V.,  
Turitsyna, N. F., Ivanova, L. V.

TITLE: New Conversions of Pyridine Salts and the Synthesis of  
 $\gamma$ -Substituted Pyridines (Novyye prevrashcheniya piridiniyevykh  
soley i sintez  $\gamma$ -aminozameshchennykh piridinov).

PERIODICAL: Doklady AN SSSR, 1957, Vol. 114, Nr 6, pp. 1235-1238 (USSR)

ABSTRACT: The authors earlier made the attempt of cleaving the  
pyriding ring in  $\alpha$ -alkoxy-, phenoxy- and methylmercapto-  
substituted pyridines by the influence of aromatic amines  
upon chloro- (2,4-dinitrophenylate) of the pyridine bases (I).  
It became evident that the ring cannot be cleft, but that a  
replacement of the alkoxy- (or of the methyl-mercapto- or  
phenoxy-)group by the residue of the aromatic amine under  
formation of chloro- (2,4-dinitrophenolates) of  $\gamma$ -arylamino-  
pyridines (II) takes place (reference 1). In their further  
work the authors succeeded in cleaving the pyridine ring  
by acting upon  $\gamma$ -alkoxy (methylmercapto-, phenoxy-) pyridines  
with bromocyanogen and aromatic amines (reference 2). Thus  
they obtained dialkyl-salts of the  $\beta$ -alkoxy (merhylmercapto-,  
phenoxy-)substituted glutacon - aldehydes (III). These and

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New Conversions of Pyridine Salts and the Synthesis of  $\gamma$ -Substituted Pyridines 20-114-6-27/54

further conversions may be considered a special case of the general replacement reactions of the  $\gamma$ -alkoxy (phenoxy)-groups by the residues of aromatic amines in pyridine salts which contain electronegative radicals ( $C_6H_3(NO_2)_2 \rightarrow C_6H_5 -$ ) at the cyclic nitrogen (reference 1). By conjugation of the r-electrons of the oxygen atom in the group  $-OAlk(-OC_6H_5)$  with the residual part of the pyridine-salt molecule these compounds are given the property of oxonium salts (reference 5). The authors became interested in the problem of the mobility of the alkoxy group in the  $\gamma$ -alkoxy pyridine-haloidalkylates. It was found that in interactions of  $\gamma$ -methoxypyridine-iodomethylate with aniline (in an alcohol solution in the water bath) methyl iodide is split off and N-methyl- $\gamma$ -pyridone is produced. Thus the transition of the cyclic nitrogen atom into the tetravalent state alone is not enough to impart the capability of substitution to the alkoxy group. Besides, an electronegative radical must exist at this atom. Furthermore the capability of substitution of the phenoxy groups toward residues of the aromatic amines in  $\gamma$ -phenoxy pyridine-iodomethylate were also investigated. This

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New Conversions of Pyridine Salts and the Synthesis of  
 $\gamma$ -Substituted Pyridines

20-111-6-27/54

ASSOCIATION: Allunion Scientific Research Institute for Motion-Picture  
and Photography (Vsesoyuznyy nauchno-issledovatel'skiy  
kinofotoinstitut).  
Institute for Organic Chemistry AS USSR imeni N. D. Zelinskiy  
(Institut organicheskoy khimii im. N. D. Zelinskogo Akademii  
nauk SSSR).

PRESENTED: June 19, 1957, by A. N. Nesmeyanov, Academician

SUBMITTED: June 18, 1957

Card 4/4

[VINITI], L. V.

AUTHORS: Morachevskiy, Yu. V., Belyayeva, A. I., Ivanova, L. V. SOV/75-13-5-11/24

TITLE: Separation of Uranium and Vanadium (K voprosu o razdelenii urana i vanadiya)

PERIODICAL: Zhurnal analiticheskoy khimii, 1958, Vol 13, Nr 5, pp 570-575 (USSR)

ABSTRACT: For the separation of uranium and vanadium various methods are known (Refs 1-4). Many of them, however, give but an incomplete separation; especially in nearly neutral solutions the separation does not proceed completely. This fact leads to the conclusion that uranium and vanadium react with one another under these conditions. This conception is confirmed by the existence of uranovanadates in natural minerals and by the smoothly proceeding synthesis of uranovanadates in aqueous solutions. In a previous paper (Ref 5) the authors had proved that pentavalent vanadium forms with hexavalent uranium in aqueous solution the complex uranovanadate-anion. The corresponding acid is as well as its salts but little dissociated in water and precipitates already in concentrations of  $5 \cdot 10^{-5}$  g-ion/l. The composition of this precipitate varies with the

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## Separation of Uranium and Vanadium

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change of the concentration ratio U:V in the solution. In order to attain a complete formation of the complex anion the precipitates were analyzed not before 24 hours after the combination. Since it is possible to synthesize compounds with a small ratio U:V whereat the share of vanadium is not an integer it can be concluded that one by one all OH-groups in the complex are substituted by metavanadate-anions  $\text{VO}_3^-$ . In

dependence on the ratio U:V in the initial solution the precipitate is formed from one of the three following complex anions: Uranyl trimetavanadate  $[\text{UO}_2(\text{VO}_3)_3]^-$ ; uranyl hydroxodimetavanadate  $[\text{UO}_2(\text{OH})(\text{VO}_3)_2]^-$ ; uranyl dihydroxometavanadate  $[\text{UO}_2(\text{OH})_2\text{VO}_3]^-$ . This assumption is in good accord with the composition of the natural uranovanadates. It is important when searching methods for the separation of uranium and vanadium to know the values for the solubility of these uranovanadates and the limits of the pH-values within which they remain stable. The present paper deals with these questions. Since it is practically impossible to separate the free complex acids from

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## Separation of Uranium and Vanadium

S.V/75-13-5-11/24

the solutions in which they are formed, their ammonium salts were isolated for the investigation of the solubility. It was found that the uranovanadic acids precipitate at pH 2,2-6,5. In this pH-range the composition of the precipitate does not depend on the  $H^+$ -ion concentration. It was seen that the formation of the ammonium uranyl trimetavanadate proceeds very slowly. With uranium concentrations of  $5 \cdot 10^{-4}$  g-atom/l and a threefold excess of vanadium this process is terminated at room temperature only after 3 months. Heating the solutions up to boiling this increases the formation velocity of the uranyl trimetavanadate to a considerable degree. The solubilities of  $NH_4[UO_2(OH)_2VO_3]$ ,  $NH_4[UO_2(OH)(VO_3)_2] \cdot 1,5 H_2O$  and  $NH_4[UO_2(VO_3)_3] \cdot 3,5 H_2O$  were determined and are given. They are within the magnitude of the solubility of the silverhalogenides. Conditions are given under which the best separation of U(VI) and V(V) is to be expected. There are 8 tables and 6 references, 5 of which are Soviet.

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Separation of Uranium and Vanadium

SOV/75-13-5-11/24

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova  
(Leningrad State University imeni A. A. Zhdanov)

SUBMITTED: July 1, 1957

Card 4/4



NIKANDROVA, L. I.; GERASIMOVA, N. I.; IVANOVA, L. V.; KONDRATOVICH, G. A.;  
KRUGLOVA, Ye. G., red.; ERLIKH, Ye. Ya., tekhn. red.

[Analysis of electrolytes and solutions for electroplates and  
chemical coatings] Analiz elektrolitov i rastvorov; dlia gal'-  
vanicheskikh i khimicheskikh pokrytii. Leningrad, Goskhimizdat,  
1963. 310 p. (MIRA 16:3)  
(Electrolytes--Analysis) (Electroplating)

GRYAZNOV, N.S.; LAZOVSKIY, I.M.; FEL'DBRIN, M.G.; KAUFMAN, A.A.;  
KOMAROVSKAYA, G.H.; LASKAYA, M.P.; IVANOVA, L.V.

Peculiarities of the process of coking coal with oil additions.  
Koks i khim. no.16:17-22 '61. (MIRA 15:2)

1. Vostochnyy uglekhimicheskiy institut.  
(Coke industry)

ISMAILOV, R.G.; IVANOVA, L.V.

Prospects for improving the quality of oils produced in Baku petroleum plants. Khim. i tekhn. topl. i masel. 6 no.10:1-5 0 '61.

(MIRA 14:11)

1. Azerbaydzhanskiy Sovnarkhoz.  
(Baku--Mineral oils)

24,4200  
15 8510

25479  
S/Q20/61/39/CG1/CTT/018  
B122/B231

AUTHORS: Ivanova, L. V., Chuvayev, V. F., and Rebinder, P. A.  
Academician

TITLE: Kinetics of conditionally instantaneous elastic deformation  
of polymers in elastic state

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 139, no. 1, 1961, 83-86

TEXT: It has been demonstrated in a previous work (Rebinder et al., DAN, 81,  
239, (1951)) that the development rate of elastic deformations of such  
polymers as cannot be determined by the Kelvin relation  $d\varepsilon/dt = (\varepsilon_m - \varepsilon)/\theta$  (1)  
depends upon the equation  $d\varepsilon/dt = aP(\varepsilon_m - \varepsilon)/\varepsilon$  (2). The present study deals  
with kinetics of the development of a conditionally instantaneous elastic  
deformation of elastic polymers which are subjected to a constant pressure P.  
It is shown that the deformation develops according to (2), and that compared  
to slow elastic deformations there is a difference only so far as the constant  
a is 8 - 10 times bigger. The device used for the investigations trans-  
formed the pure displacement deformation in the test specimen (15 by 7 by  
1.5 mm) into an electric signal which was subsequently transmitted to an  
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Kinetics of conditionally ...

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B104/B231

oscilloscope. The presented oscillograms show that the deformation develops in the same way as it would in case of a slow deformation, only much more rapidly. This permits the relation

$$\frac{\left(x_m \ln \frac{x_m - x}{x_m} + x\right)^2}{\tau} = a_1 P, \quad (3)$$

already established in the previous work, to be used for the calculation.  $x_m$  stands here for the absolute limiting displacement value,  $x$  denotes the absolute displacement,  $b$  the thickness of the displaced layer, and  $a_1$  is a constant. The computed values for polyisobutylene are collected in Table 1. As to fractionated polyisobutylene (molecular weight  $6.4 \cdot 10^5$  at  $30^\circ \text{C}$ ,  $P = 200 \text{ g/cm}^2$ ) the following is obtained for  $a_1$ :  $a_1 = 0.67 \cdot 10^{-4} \text{ cm}^2/\text{dyn sec}$ . Increasing the temperature causes the time of development of the deformation to be reduced, and at  $80^\circ \text{C}$  it is fully within such period of time as - due to the inertia of the test arrangement - is necessary for the displacement  
Card 2/7

Kinetics of conditionally...

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S/O20/61/139/001/011/018  
B104/B226

to attain  $x_m = 66 \cdot 10^{-4}$  cm. Instead of the characteristic monotone asymptotic development of the deformation, an oscillation occurs about a position of equilibrium (Fig. 3). Relations

$$x_t = [x_m (1 - e^{-\gamma t} \cos \delta t)], \quad \gamma = \frac{B}{2m}, \quad \delta t = \sqrt{\frac{B^2}{4m^2} - \frac{k}{m}}. \quad (7)$$

are derived which describe the curve shown in Fig. 3. The required characteristic  $\eta \approx 1/a_1$  is determined from the amplitude damping (Table 2).

Moreover, a linear relation between  $\log(1/a_1)$  and  $1/T$  was established. (Fig. 4). There are 4 figures and 2 references: 1 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry Academy of Sciences USSR)

SUBMITTED: March 28, 1961

Card 3/7

STRASHININ, A.I. (Leningrad, Lanskoye shosse, d. 61, kv.36); IVANOVA, L.V.  
(Leningrad, Varshavskaya, d.110, kv.6)

Radioactive iodine therapy in cancer of the thyroid gland.  
Vop.onk. 9 no.2:109-118'63. (MIRA 16:9)

1. Iz radiokhirurgicheskoy kliniki Tsentral'nogo nauchno-is-  
sledovatel'skogo instituta meditsinskoy radiologii Minister-  
stva zdravookhraneniya SSSR.

(THYROID GLAND—CANCER)  
(IODINE ISOTOPES—THERAPEUTIC USE)

GRYAZNOV, N.S.; LAZOVSKIY, I.M.; FEL'DERIN, M.G.; IVANOVA, L.V.;  
KOMAROVSKAYA, G.M.

Standardization of methods of coal preparation for coking.  
Koks i khim. no.4:3-9 '62. (MIRA 16:8)

1. Vostochnyy uglekhimicheskiy institut.  
(Coal preparation)



KRUCHININ, Yu.D.; SEMENOV, P.S.; IVANOVA, L.V.

Effect of some factors on the expansion of fused slag. Trudy  
Ural. polite'kh. inst. no.118:96-103 '62. (MIRA 16:6)

(Slag—Testing)

CHERNOZHUKOV, N.I., doktor tekhn. nauk, prof., nauchnyy red.;  
ZHERDEVA, L.G., red.; IVANOVA, L.V., red.; ISAGULYANTS, V.I.,  
red.; ISMAILOV, R.G., red.; KREYN, S.E., red.; KULIYEV, A.M.,  
red.; MAMEDOV, M.A., red.; PAPOK, K.K., red.; SPEKTOR, Sh.Sh.,  
red.; FEDOTOVA, A.F., red.; SHKHIYAN, S.Kh., red.; LEVINA,  
Ye.S., ved. red.; POLOSINA, A.S., tekhn. red.

[Improvement of the quality and the production of lubricating  
oils] Uluchshenie kachestva i sovershenstvovanie proizvodstva  
smazochnykh masel; trudy. Moskva, Gostoptekhsdat, 1963. 255 p.  
(MIRA 16:6)

1. Vsesoyuznoye soveshchaniye po uluchsheniyu kachestva bakin-  
skikh smazochnykh masel i usovershenstvovaniyu tekhnologii ikh  
proizvodstva, Baku, 1961.

(Lubrication and lubricants)

VOMPE, A. F.; LEVKOYEV, I. I.; TURITSYNA, N. F.; DURMASHKINA, V. V.;  
IVANOVA, L. V.

Reactions of pyridinium salts. Part 3: Interaction of bromocyanides  
of pyridinium bases with amines. Zhur. ob. Khim. 34 no.6:1758-  
1771 Je '64. (MIRA 17:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut i  
Institut organicheskoy khimii AN SSSR.

IVANOVA, L.V.

Early diagnosis of pregnancy by means of biological reactions in  
male lake frogs. Trudy LSGMI 45:249-299 '58 (MIRA 11:11)

1. Kafedra akusherstva i ginekologii Leningradskogo sanitarno-  
gigiyenicheskogo meditsinskogo instituta (zav. - kafedroy- prof.  
M.A. Petrov-Maslakov).  
(PREGNANCY--SIGNS AND DIAGNOSIS)

STROYKOVA, N.G.; IVANOVA, L.V.; FEDOROVA, G.F.

Method of determining the content of total lipids and cholesterol in the aorta of rabbits. Trudy Inst. klin. i eksper. kard. AN Gruz. SSR 8:137-139 '63. (MIRA 17:7)

1. Institut eksperimental'noy meditsiny AMN SSSR, Leningrad.

L 14428-66 EWP(m)/EWP(w)/T/EWP(t)/EWP(b) IJP(c) ID/JG/WP  
ACC NR: AP6002110 SOURCE CODE: UR/0369/65/001/000/0648/0653

AUTHOR: Summ, B.D.; Ivanova, L.V.; Goryunov, Yu. V.

ORG: Moscow State University im. M.V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Influence of metals dissolved in mercury on the adsorptive decrease in the strength of zinc

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 1, no. 6, 1965, 648-653

TOPIC TAGS: zinc, mercury, gallium, bismuth, lead, indium, thallium, cadmium, tin, tensile strength, adsorption, nonferrous liquid metal

ABSTRACT: The adsorptive decrease in the strength of polycrystalline zinc during its deformation was studied in the presence of various two-component mercury solutions. The metals added to mercury were cadmium, gallium, indium, lead, thallium, tin, and bismuth, which do not form chemical compounds with mercury or zinc at room temperature. When small amounts of these metals dissolve in mercury, the adsorption activity of the melt relative to zinc increases, causing an additional adsorptive decrease in the strength of zinc. At high concentrations of indium or thallium, the adsorption

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L 14428-66  
ACC NR: AP6002110

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activity of the melt drops substantially. The length of macroscopic failure cracks formed during bending of zinc plates in the presence of a locally deposited drop of an adsorption-active melt increases when gallium, bismuth, lead, and small amounts of indium or thallium dissolve in the mercury; when cadmium, tin, and large amounts of indium or thallium are dissolved, however, the length of such cracks decreases. Thus, the dissolution of various amounts of metals in adsorption-active melts constitutes an effective method of modifying the mechanical properties of a solid metal deformed in contact with such a melt. Authors are deeply grateful to V. N. Pertsov and Ye. D. Shchukin for valuable suggestions during the discussion of the results. Orig. art. has: 3 figures and 2 tables.

SUB CODE: 07, 11 / SUBM DATE: 10Feb65 / ORIG REF: 010 / OTH REF: 001

brittle failure 18, 44, 55  
liquid metals corrosion 12, 44, 55  
liquid metal 12

SB

Card 2/2

IVANOVA, L.V.

Effect of humic substances on the growth of isolated corn roots. Dokl. AN BSSR 9 no. 4:255-257 Ap '65 (MIRA 19:1)

1. Kafedra fiziologii rasteniy Belorusskoy sel'skokhozyaystvennoy akademii. Submitted March 13, 1964.



KRUCHININ, Yu.D. (Sverdlovsk); IVANOVA, L.V. (Sverdlovsk); RUMBAKH, V.E.  
(Sverdlovsk)

Crystallization properties of Ural blast furnace slags.

Izv. AN SSSR. Met. no.6:14-23 N-D '65.

(MIRA 19:1)

1. Submitted June 29, 1964.

L 18741-66 ENT(m)/EMP(t) IJP(c) JD/WB

ACC NR: AP6005133

SOURCE CODE: UR/0126/66/021/001/0028/0032

AUTHOR: Sumin, B. D.; Ivanova, L. V.; Goryunov, Yu. V.; Debartov, A. P. 61  
52  
BORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosuniversitet)TITLE: Effect of mercury<sup>27</sup> soluble metals on the diffusion<sup>18</sup> rate of mercury over the surface of polycrystalline zinc<sup>27</sup>

SOURCE: Fizika metallov i metallovedeniya, v. 21, no. 1, 1966, 28-32

TOPIC TAGS: metal diffusion, mercury, zinc, activation energy

ABSTRACT: The processes of the propagation of various metals over the surface of solids play an important role in semiconductor engineering, radioelectronics, powder metallurgy and many other fields of industry and science. Hence the study of methods of altering at will the rate of surface diffusion of metals is of major interest. In this connection the authors applied a new method of influencing surface diffusion, namely, the dissolution of a second component in the diffusion metal. The Hg-Zn pair was used for this purpose, because many metals dissolve in mercury at room temperature; moreover, at room temperature, Hg migrates fairly rapidly over the surface of Zn. The effect of the following metals soluble in mercury was investigated: Cd, Ga, In, Tl, Sn, Pb, and Bi (at room temperature they do not form chemical compounds with Hg or Zn). Droplets of Hg or Hg solution (mass 5 mg) were deposited in the center area of plates

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UDC: 539.219.3

L 18741-66

ACC NR: AP6005133

9  
of pure (99.9%) polycrystalline Zn measuring 5x100 mm, with a thickness of 1 um, and their dimensions and appearance were investigated. It was found that within no little as 1 min the droplet would spread and cover the entire width of the plate. Experiments performed with the Hg solutions of the metals named above, on varying the concentration of each component from zero to its limiting solubility, showed that all the metals with a low solubility limit (Ga, <sup>208</sup>Pb, <sup>119</sup>Sn, <sup>209</sup>Bi) accelerate the diffusion of Hg over the surface of Zn. A similar effect is produced by metals with a high solubility (Cd, In, Tl) if their concentration is low. Subsequent investigations of the mechanism of this effect by means of the  $\beta$ -active isotope In<sup>114</sup> showed that the diffusion of the Hg-dissolved metal occurs simultaneously with the surface migration of Hg. The acceleration of diffusion in the presence of small (0.1-3.0 at.%) concentration of Hg-soluble metals is apparently due to the decrease in the activation energy of elementary acts of surface diffusion. It was also found, by contrast, that increasing the concentration of Hg-soluble metals above 3-4 at.% retards the rate of surface diffusion; the mechanism of this effect is as yet unclarified but it may be assumed that the presence of too many atoms of Hg-soluble metal may impede the diffusion migration of the adjacent Hg atoms. Thus, the dissolution of selected concentrations of certain selected metals in Hg affords an extremely effective method of regulating the rate of the surface diffusion of Hg over Zn. "The authors wish to express their profound gratitude to N. V. Pertsov and Ye. D. Shchukin for their valuable counsel given during discussion of the findings of this study." Orig. art. has: 1 table, 3 figures.

SUB CODE: 11, 13, 20/ SUBM DATE: 03Feb65/ ORIG REF: 009/ OTH REF: 001

Card 2/25/IV

mercury corrosion

44, 55, 18

16-1957-10-13619

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 10,  
p 27 (USSR)

AUTHOR: Ivanova, L. V.

TITLE: Description of the Foraminifera of the Polyanitskaya Series and the Lower Vorotyshchenskaya Group (K kharakteristike foraminifer polyanitskoy serii i nizhevorotyshchenskoy svity)

PERIODICAL: Geol. sb. L'vovsk. geol. o-vo pri un-te, 1956, Nr 2-3,  
pp 325-328

ABSTRACT: The Polyanitskaya series (upper Oligocene) of the Predkarpat'ye (Eis-Carpathian region) consists of alternating clays and sandstones. The Lower Vorotyshchenskaya group (lower Miocene) and the overlying group are composed of massive clays, with isolated layers of sandstone; gypsum and salt occur approximately in the middle of the Lower Vorotyshchenskaya group. The foraminifera in both groups are similar. Pelagic Globigerina, Globorotalina, and Gumbelina predominate. Benthonic foraminifera

Card 1/2

*Inst. Geol. Useful Minerals, A.S. USSR, Lvov*