

"APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001962910014-8

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YERHOVA, H.M., inzh. [translator]

~~Shaft sinking at Free State Saaiplaas Gold Mining Company~~  
(from "Journal of the South African Institute of Mining and  
Metallurgy" no.11, 1958). Shakht.stroi. no.10:27-32 '58.  
(MIRA 11:11)

1. Institut gornogo dela AN SSSR.  
(South Africa, Union of--Gold mines and mining) (Shaft sinking)

37937

S/089/62/013/001/002/012  
B102/B104

21.1000

AUTHORS: Kochenov, I. S., Voinov, N. L., Yershova, N. N.

TITLE: Calculation and analysis of the thermodynamic cycle in an atomic power plant

PERIODICAL: Atomnaya energiya, v. 13, no. 1, 1962, 38-46

TEXT: As existing methods of calculating the optimum reactor parameters for atomic power plants are still defective a new method has been developed as here described. The parameters and the absolute internal efficiency of the thermodynamic cycle of an atomic power plant which includes two coolant loops, a gas-cooled CO<sub>2</sub> reactor and two vapor-pressure stages in the second circuit, are calculated. The efficiency is determined as a function of the coolant temperature at the vapor generator inlet and outlet (T<sub>1</sub>, T<sub>7</sub>), the temperature drops at the individual stages ( $\Delta_j$ ), the design of the regenerative preheater and the feed water temperature, the pressure in the condenser turbine, the humidity content of the vapor and the relative internal efficiency of the turbine unit. Relations for the

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X

Calculation and analysis of the...

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quantity  $(G\eta_1/D)(I_{in}-I_{out})$  are arrived at each of the six sections (see Fig. 1),  $G$  and  $D$  being flow rates of the coolant and the working substance, whilst  $\eta_1$  takes account of the heat losses and  $I$  are the coolant enthalpies. For  $I(T)$  it is assumed that  $I = k_0 + k_1T + k_2T^2$ . The equations of the  $i$ - $s$  diagram and those describing the pressure drops are formulated. The required efficiency is calculated from the equation  $\eta_i = H_i(1 - \alpha_j y_j)/q_i$ , where  $H_i$  is the temperature drop,  $q_i$  the heat consumption per kg of vapor,  $\alpha_j$  are the vapor losses and  $y_j$  is the corresponding underproduction of energy. In addition, formulas are derived for the thermodynamic properties of water and water vapor which are well suited for numerical computations with electron computers. The dependences of  $\eta_1$  on various parameters have been calculated by this means and the results are represented graphically; e.g.,  $\eta_1(\Delta_j)$ ,  $\eta_1$  as a function of the condenser pressure, feed water temperature and gas temperatures  $T_1$  and  $T_7$ . The method and programming have been developed at

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Calculation and analysis of the...

S/089/62/013/001/002/012  
B102/B104

the Institut atomnoy energii im. I. V. Kurchatova (Institute of Atomic Energy imeni I. V. Kurchatov). There are 9 figures.

SUBMITTED: December 6, 1961

Fig. 1: schematic drawing of the vapor generator

Legend: 4HB -high-pressure circulation pump; 4HH -low-pressure circulation pump

Fig. 2: temperature distribution in the vapor generator; T-coolant temperature, t - water or water vapor temperature ( $^{\circ}\text{C}$ )

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YERSHOVA, N. F.

"Contributions To The Genetics Of The Silk Worm (*Bombyx Mori L.*) XIX. New Data On The "Recessive Multalunar" Character." (p. 813) by Kosminskii, P. A. Institute Of Zoology, Moscow State University, Ershova, N. F. and Guseva, M. I. Voronezh State University.

SO: PREDECESSOR OF JOURNAL OF GENERAL BIOLOGY. (Biologicheskii Zhurnal) Vol. VII, 1938 No. 4

YERShOVA, N.P.

PANCHENKOV, G.M.; SEMIOKHIN, I.A.; MAURINA, A.G.; YERShOVA, N.P.

Separation of the stable hydrocarbon isotopes by counter current chemical exchange in the gaseous phase. Part.1 [with English summary in insert].Zhur.fiz.khim. 30 no.9:2070-2076 S '56. (MLBA 9:12)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.  
(Carbon--Isotopes)

SEMIOKHIN, I.A.; PANCHENKOV, G.M.; YERSHOVA, N.P.

Separation of carbon isotopes by countercurrent chemical exchange in the gas phase. Part 2: Effect of nitrogen and oxygen. Zhur. fiz. khim. 37 no.6:1409-1411 (1961).

(MIRA 16:7)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.  
(Carbon isotopes) (Nitrogen) (Oxygen)



YERCHOVA. O. A.

Kozin. N. I. and Yershova. O. A. "Development of a method for determining the toxicity of kernels of grain (millet) which have passed the winter under snow," Nauch. trudy In-ta pitaniya (Akad. med. nauk SSSR), Moscow, 1948, p. 35-48

So: U-3566, 15 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 13, 1949)

YERSHOVA, O.A.

USSR

"Modification of Certain Edible Fats During  
Their Storage Due to the Kind of Packing  
Materials." Thesis for degree of Cand.  
Technical Sci. Sub 8 Dec 50, Moscow Inst  
of National Economy imeni G.V. Plekhanov

Summary 71, 4 Sep 52, Dissertation Presented  
for Degrees in Science and Engineering in Moscow  
in 1950. From Vechernyaya Moskva. Jan-Dec 1950/

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CIA-RDP86-00513R001962910014-8"

KOZIN, N.I.; YERSHOVA, O.A.

Iron content of red and yellow marrow and its fat fractions.  
Izv.vys.ucheb.zav.; pishch.tekh. no.1:135-137 '60. (MIRA 13:6)

1. Moskovskiy institut narodnogo khozyaystva imeni G.V.Plekhanova.  
(Marrow--Analysis) (Iron -Analysis)

YERSHOVA, O. L.

Yershova, O. L. - "Study of the physico-chemical properties of mycogenic fat,"  
Nauch. trudy In-ta pitaniya (Akad. med. nauk SSR), Moscow,  
1948, p. 122-30 -- Bibliog: 8 items

So: U-3566, 15 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 13, 1949)

YERSHOVA, R.I.

Work of the textile laboratory attached to the Clothing Industry  
Administration. Shvein.prcm. no.2:32-33 Mr-Ap '62. (MIRA 15:4)  
(Clothing industry) (Testing laboratories)

KRAPUKHIN, V.V.; POVEDSKAYA, L.G.; YERGINOVA, S.A.

Deep purification of zinc by distillation. TSvet. net. 34  
no.6:23-27 Je '61. (MIRA 14:6)

1. Institut tsvetnykh metallov imeni M. I. Kalinina.  
(Zinc--Metallurgy)



YERSHOVA, S.A.; POVEDSKAYA, L.G.; CHERNYAYEV, V.N.

Wettability of graphite and quartz by zinc and antimony. TSvet.  
met. 37 no.6:83 Ja '64. (MIRA 17:9)

s/0119/64/000/001/0076/0083

ACCESSION NR: AP4017565

AUTHORS: Chernyayev, V. N.; Yershova, S. A.

TITLE: Fluid-vapor phase equilibrium in Zn-Cd system in the region of low zinc and cadmium concentrations

SOURCE: IVUZ. Tsvetnaya metallurgiya, no. 1, 1964, 76-83

TOPIC TAGS: phase equilibrium, boiling temperature, alloy composition, ebulliometer, vapor saturation pressure, separation coefficient

ABSTRACT: The dependence of vapor saturation pressure on temperature and composition for zinc, cadmium, and their alloys in regions adjacent to the pure components was determined. A Sventoslavskiy ebulliometer was used to determine the boiling points below 1200G. The data obtained was then used to calculate the separation coefficient for limiting concentration regions in the Zn-Cd system. This yielded values of 14 and 16.2 at 813C and 9.0 to 9.3 at 905C. The separation coefficient is defined by.

$$\alpha_p = \frac{p_1^0}{p_2^0} \cdot \frac{\gamma_1}{\gamma_2}$$

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ACCESSION NR: AP4017565

where  $P_1^0$  and  $P_2^0$  - vapor pressure of base component and mixture respectively, and  $\delta_1$  and  $\delta_2$  - activation coefficient of solution components. Orig. art. has: 6 figures, 5 equations, and 2 tables.

ASSOCIATION: Moskovskiy institut stali i splavov. Laboratoriya chistykh metallov i poluprovodnikov soyedineniy (Moscow Institute for Steels and Alloys. Laboratory of Pure Metals and Semiconductor Compounds)

SUBMITTED: 28Mar63

DATE ACQ: 23Mar64

ENCL: 00

SUB CODE: ML

NO REF SOV: 009

OTHER: 008

Card 2/2

L 31993-66 EWT(m)/EWP(t)/ETV IJP(c) JD

ACC NR: AP6019565

SOURCE CODE: UR/0080/66/039/006/1259/1266

AUTHOR: Chernyayev, V. N.; Zernov, V. B.; Povedskaya, L. G.; Yershova, S. A.;  
Klofach, I. I.

51  
50  
8

ORG: none

TITLE: Deep purification of cadmium and zinc by rectification and zone refining

16

SOURCE: Zhurnal prikladnoy khimii, v. 39, no. 6, 1966, 1259-1266

TOPIC TAGS: cadmium, zinc, metal purification, metal zone refining, electric resistance, cadmium compound, zinc oxide

ABSTRACT: Deep purification of CdO commercial-grade cadmium and ZnO commercial-grade zinc by rectification and subsequent zone refining is described. Rectification was done in a h-f induction heated, graphite, shelf-type column with 26 plates, or in a quartz bubbling-type column with 10 and 20 plates. A single charge of metal was 9-11 kg. The purity of the metal fractions obtained with rectification was determined by measurement of the residual electric resistance at 4.2 K. Rectification alone lowered the total content of Al, Ni, Sn, Sb, Pb, Bi, Co, Mn, Ca, Ga and other impurities in cadmium to less than  $1 \cdot 10^{-5}$  wt %. The yield was 60% of the charge. The lowest values of the residual electric resistance obtained with rectification was  $0.9 \cdot 10^{-10}$  ohm-cm for zinc and  $0.6 \cdot 10^{-10}$  ohm-cm for cadmium. Additional purification was done by 20-pass zone refining with a molten metal zone 4.5 cm wide

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UDC: 621.915.592:546.47'48

L 31993-66

ACC NR: AP6019565

and a zone speed of 4.5 mm/hr. With zone refining the residual electric resistance in zinc and cadmium decreased to  $0.6 \cdot 10^{-10}$  and  $0.48 \cdot 10^{-10}$  ohm·cm, respectively (the respective purity 99.99998%). From the data on cadmium rectification the coefficient of the separation for the Cd-Zn system with a low concentration ( $1 \cdot 10^{-3}$ — $10^{-4}$  wt%) of the second component was calculated and found to be  $2.0 \pm 0.3$ .  
Orig. art. has: 6 figures and 4 tables. [MS]

SUB CODE: 11, 13/ SUBM DATE: 06May65/ ORIG REF: 015/ ATD PRESS: 5021

Card 2/2 LC









VANSHEYDT, A.A.; SKOROKHODOV, S.S.; YERSHOVA, S.G.; NIKHAYLOVA, N.V.

Chemical nature of "N-vinylacetamide" described by Bacskai and  
Halmos. Vysokom. soed. 3 no.2:320 F '60. (MIRA 14:5)  
(Acetamide)

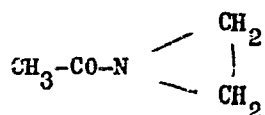
S/079/81/031/011/007/015  
D202/D305AUTHORS: Skorokhodov, S. S., Yershova, S. G., Mikhaylova, N. V.,  
Vansheydt, A. A.TITLE: Dehydrohalogenation of N- $\beta$ -chloroethyl acetamide

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 11, 1961, 3626-3631

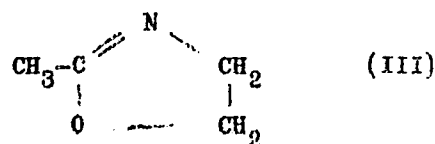
TEXT: The authors, on theoretical and experimental grounds, criticize the works of Hungarian scientists R. Bácskai and L. Halmos, published in Magyar Kémiai Folyóirat in 1954, in which the latter claimed the preparation of secondary N-vinyl amides by dehydrohalogenation of the corresponding  $\beta$ -chloro alkylamides. To substantiate their objections, the present authors repeated the Hungarian experiments. The Hungarians stated that, by means of removing HCl from  $\text{CH}_3\text{CO}\cdot\text{NH}\cdot\text{CH}_2\text{CH}_2\text{Cl}$ , they obtained a vinyl derivative  $\text{CH}_3\text{CO}\cdot\text{NH}\cdot\text{CH}=\text{CH}_2$  (I). In the present authors' opinion, 2 other compounds could be formed:

Card 1/3

Dehydrohalogenation of...

S/079/61/031/011/007/015  
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and



Only the compound III was found in the present investigation. The chemical structure of III was checked by the corresponding picrate; the infra-red absorption spectrum was determined in  $\text{CCl}_4$  solution on WGC (IVS) and MKC-14 (IKS-14) spectrometers, using L & F and NaCl prisms; the combined light dispersion spectrum--on the spectrograph WJH 51 (ISP-51) with a photo-electric recorder. The spectra of the obtained dehydrochlorination product and those of a sample of known 2-methyl-2-oxazoline (cpd. III) being identical. The authors checked the formation of cpd. IV by dehydrochlorination of  $\beta$ -chloroethyl acetamide with sodium methoxide. They also synthesized cpd. II; N-acetoethylene imine by the action of acetyl chloride on ethylene imine and determined its chemical composition

Card 2/3

Dehydrohalogenation of

S/079/61/C31/011/007/015  
D202/D305

and physical indices. The product was unstable and underwent partial isomerisation when distilled at atm. pressure at 150°C into cpd III. There are 2 figures and 22 references: 7 Soviet-bloc and 15 non Soviet-bloc. The 4 most recent references to the English-language publications read as follows: R. Hart, J. Polym. Sci., 29, 629 (1958); H. W. Heine, J. Am. Chem. Soc., 78, 3708 (1956); H. W. Heine, J. Am. Chem. Soc., 79, 907 (1957); P. Fanta, A. Deutch, J. Org. Chem., 23, 72, (1958).

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy, Akademiya Nauk SSSR (Institute of High Molecular Weight Compounds, AS USSR)

SUBMITTED: December 3, 1960

Card 3/3

BEREZKIN, V.G.; ALISHOYEV, V.R.; YERSHOVA, S.N.; TUTORSKIY, I.A.

Effect of the viscosity of stationary liquid phase on the  
broadening of chromatographic zone. Izv. AN SSSR. Ser. khim.  
no.9:1711-1712 '65. (MIRA 18:9)

1. Institut neftekhimicheskogo sinteza imeni A.V. Topchiyeva  
AN SSSR.

VANEVSKIY, V.L.; PANASHCHENKO, A.D.; YERSHOVA, T.G.; FEL'DMAN, I.Kh.;  
KHEYFITS, G.M.

Chemical and pharmacological study of hemithiamine, a new  
hypnotic preparation. *Farm. i toks.* 25 no.6:657-662 M.D '62.

(MIRA 17:8)

1. Kafedra torakal'noy khirurgii i anesteziologii (zav. - prof.  
S.A. Gadzhiyev) Leningradskogo gosudarstvennogo ordena Lenina  
instituta usovershenstvovaniya vrachey imeni S.M. Kirova i  
kafedra khimii i tekhnologii lekarstvennykh preparatov (zav. -  
prof. I.Kh. Fel'dman) Leningradskogo khimiko-farmatsevticheskogo  
instituta.

YERSHOVA, T.G.

Some characteristics of intravenous steroid anesthesia. Vest.khir.  
no.5:94-99 '61. (MIRA 15:1)

1. Iz kafedry torakal'noy khirurgii i anesteziologii (zav. kafedroy -  
doktor med.nauk S.A. Gadzhiyev, rukovod. anesteziologicheskogo  
otdeleniya - V.L. Vanevskiy) Leningradskogo instituta usovershenst-  
vovaniya vrachey im. S.M. Kirova.  
(INTRAVENOUS ANESTHESIA) (STEROIDS)

188310

1138 1573

21155  
S/032/61/027/004/014/028  
B103/B201

AUTHORS: Timonova, M. A. and Yershova, T. I.

TITLE: Corrosion test methods for light metal samples under bending stress

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 4, 1961, 446-448

TEXT: A critical survey is given of corrosion test methods on light metals. The simplest and most accurate of all bending tests is proved to be such on arched samples with two supports in the center. The authors have derived for the first time a formula for calculating effective stresses. Thus, their method is suited for studying corrosion under stress as a function of the magnitude of effective stresses. The strength of metals is markedly reduced by corrosion under stress, especially high-strength light metals due to crack formation. Test machines recommended in the literature, performing the breaking test only, are too clumsy and their operation is too cumbersome. The deficiencies found in the test types recommended both in the literature and by ГОСТ (GOST) are enumerated. No quantitative characteristics can be determined on either

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S/032/61/027/004/014, 026  
B103/B201 X

Corrosion test methods for ...

loop, fork, or mesh. The authors recommend samples with a variable cross section, with stresses provided by a Shopper machine. A much simpler test, in the authors' opinion, is a textolite device. Insert and screw consist of steel of the type 20 and are protected by resistant putty against aggressive media. Putty by Mendeleyev [Abstracter's note: not described in the text] is used for tests in natural atmosphere. The screw with insert effects a uniform distribution of stresses and counteracts a too great restriction of the regions of maximum stress (Fig. 3 6), as compared with stress in the absence of an insert (Fig. 3 a). Bending through is calculated by Vereshchagin [Abstracter's note: not described in the text], and the following formula is derived from the

given stresses:  $f = \frac{\sigma'_S (1 + 2b)a}{3 Eh}$  (4), where  $a = \frac{l - b}{2}$ .  $\sigma'_S$  denotes the yield point on bending,  $b$  is the sample width at a distance  $l$  from the point at which stress is applied,  $E$  is the modulus of elasticity, and  $h$  the sample thickness. When the authors' method is applied in the practice,  $\sigma'_S$  is calculated by formulas:  $\sigma'_S = \frac{3}{2} \sigma_S \left(1 - \frac{1}{3} A^2\right)$ ;

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S/032/61/027/004/014/028  
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Corrosion test methods for ...

$$A = \frac{\sigma_S}{\sigma_S + \delta_S \epsilon} ; \delta_S = 0.002 \quad (2), \text{ with } \sigma_S \text{ being the yield point.}$$

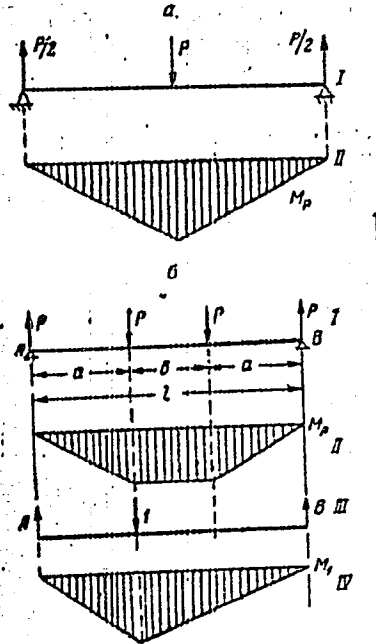
Apart from the sample shape and the character of the stresses, it is also necessary to know their magnitude. As a rule, the material is in the practice subjected to stresses that amount to 50-70% of the yield point. Since the magnitude of stresses cannot be precisely known in every concrete case, the curve is indicated as an example, to represent the dependence of the timespan until cracking due to corrosion of magnesium alloy MA2-I (MA2-I) (Fig. 4). A curve of this kind must be set up for every new alloy. To clarify the effect of various factors upon the cracking due to corrosion, the testing of maximum elastic stresses within the range of 80-90% of the yield point is recommended. There are 4 figures and 7 references: 3 Soviet-bloc. X

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Corrosion test methods for ...

Fig. 3. Stress diagram of a sample. Legend: (a) stress in the center, (б) with an insert. I) Stress diagram of sample, II) diagram of moments of given stress; III) imaginary carrier with single stress; IV) diagram of moments of single stress.

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B103/B201

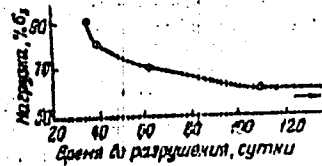


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Corrosion test methods for ...

S/032/61/027/004/014/028  
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Fig. 4. Effect of stresses upon the rate of cracking due to corrosion in alloy sheet MA2-1 in natural atmosphere. Abscissae: time until destruction, 24 hr, ordinates: stress %  $\sigma_s$ .



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S/790/62/000/000/005/005

**AUTHORS:** Zaretskiy, Ye.M., Yershova, T.I., Kabanova, T.S.

**TITLE:** Study of the corrosion resistance of sheets of the alloy MA3 with metallic protective cladding.

**SOURCE:** Korroziya i zashchita metallov; sbornik statey. Ed. by V.P. Batrakov. Moscow, Oborongiz, 1962, 180-194.

**TEXT:** The paper describes an investigation of means for the protection of the stress-corrosion-cracking-prone Mg-alloy sheet metal MA3 which contains appx. 6% Al, 1% Zn, and 0.3% Mn and which cannot be rendered stress-corrosion-cracking-resistant by any of the heat treatments that are effective with most of the Al alloys. The present tests prove that protective cladding with MA1 alloy (appx. 1.5% Mn, remainder Mg), having a thickness of appx. 10% of the core thickness, affords satisfactory corrosion protection under stress in a 0.5M NaCl + 0.05M  $K_2Cr_2O_7$  solution, in fresh-water spray, and in atmospheric conditions (see also Logan, Hugh L., and Hessing H., NBS, J. Res., v. 44, no. 3, 1950, 233; Siebel, G., Jahrbuch d. dtsh. Luftfahrtforschung, v.1, 1937, 528; Symposium of Stress-Corrosion Cracking, ASTM, 1944). The tests with the MA1-cladded MA3 materials were paralleled by like tests with MA3 covered with a layer of electrolytically deposited Zn. Photographs of etched microsections of the cladded materials are accompanied by an explanation of the peculiar difficulties encountered in etching, attributable to the protective action of the MA1 cladding. Test results (hours to stress-corrosion-cracking inception) are Card 1/2

Study of the corrosion resistance of sheets ...

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tabulated for the intensively corrosive  $K_2Cr_2O_7$  solution, a 0.001M NaCl solution buffered to pH 6.8 by a mixture of Na monophosphate and diphosphate, fresh-water spray, and an industrial-district atmosphere. Tests were made to determine the effect of accidental damage to the cladding layer on the corrosion resistance of the whole. For that purpose 15-mm-long gaps, 0.5, 1, and 3 mm wide, were produced in the cladding by exposure to 10%  $HNO_3$ , with the remainder of the specimen protected by an AK-20 glue layer. Tests of such specimens in fresh-water spray showed that the exposure of the core material reduces the stress-corrosion resistance of the cladded material noticeably (test results tabulated). The result is appreciable even with the narrowest cladding gap; it grows with gap width. Work-hardened specimens are more sensitive than annealed specimens. Longitudinally-cut rolled specimens are more corrosion-resistant than transversely-cut specimens. An electrolytically deposited and subsequently passivated Zn facing of MA3 does not exert any effect on the stress-corrosion cracking of the alloy in either the highly corrosive solution or the fresh-water spray tested. There are 6 figures, 7 tables, and 7 references (3 Russian-language Soviet, 1 Russian-language translation of a German book, 2 German, one of which also is available in English, and 1 English-language USA cited in the text of the abstract).

ASSOCIATION: None given.

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ACCESSION NR: AP4024769

S/0080/64/037/003/0590/0595

AUTHOR: Timonova, M. A.; Yershova, T. I.

TITLE: Corrosion behavior of certain binary and ternary magnesium alloys alloyed with rare earth and other elements

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 3, 1964, 590-595

TOPIC TAGS: alloy corrosion resistance, alloy corrosion behavior, alloy corrosion, magnesium alloy, magnesium gallium alloy, magnesium neodymium gallium alloy, magnesium indium alloy, magnesium aluminum indium alloy, magnesium zinc indium alloy, magnesium neodymium cobalt alloy

ABSTRACT: The corrosion resistance of magnesium alloys containing rare earth additives is of interest since the latter increase the heat resistance of the alloys. Addition of 0.5, 1, 3, and 6% Ga to Mg or to Mg-Nd alloy shows that for both alloys the corrosion in a humid atmosphere is minimum at about 1% addition and increases thereafter (Fig.1 of the Enclosure). The change in potential in both systems containing up to 1% Ga is explained by increased cathodic rization. The microstructure of Mg-Ga shows a solid solution

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ACCESSION NR: AP4024769

with a eutectic (containing an intermetallic compound of unknown composition) distributed along the grain boundaries. With more than 1% Ga in Mg, the amount of eutectic phase, which is cathodic, increases; this leads to a rise at the potential and the intensification of dissolution of anodic components. The increase of corrosion in the Mg-Nd-Ga system containing more than 1% Ga is explained by a drop of potential. Indium in 1, 2, 3, 6, and 12% was added to Mg and to Mg-Al and Mg-Zn alloys. The corrosion resistance in 0.5% NaCl solution, especially of the Mg-Al-In system, is greatly lowered (Fig. 2) and the electrode potential (Fig. 3) changes accordingly. In a moist atmosphere the increase in corrosion of the Mg-Al-In system is continuous with increase in In content; in Mg-Zn-In the increase is rapid with increase in In content to 3%, then it levels off (Fig. 4). The addition of 0.1-0.5% Co to Mg-Nd alloy was investigated (Fig. 5). More than 0.2% Co lowers the corrosion resistance of the alloy. Orig. art. has: 6 figures and 3 tables.

ASSOCIATION: none

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ACCESSION NR: AP4024769

SUBMITTED: 02Jul62

ATD PRESS: 3046

ENCL: 05

SUB CODE: MM

NO REF SOV: 002

OTHER: 001

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ACCESSION NR: AP4024769

ENCLOSURE: 01

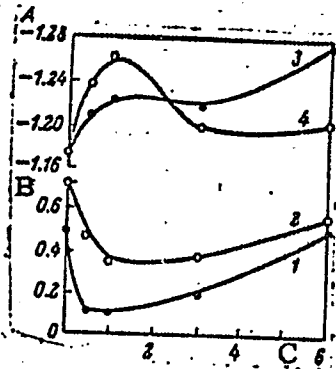


Fig. 1. Effect of adding gallium to magnesium and to Mg-Nd alloy on corrosion and electrode potential

A - Potential (V); B - weight increase (mg/cm<sup>2</sup>); C - Ga content (wt%); 1 - corrosion of Mg-Nd-Ga; 2 - corrosion of Mg-Nd; 3 - electrode potential of Mg-Nd-Ga; 4 - electrode potential of Mg-Ga.

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Card

ACCESSION NR: AP4024769

ENCLOSURE: 02

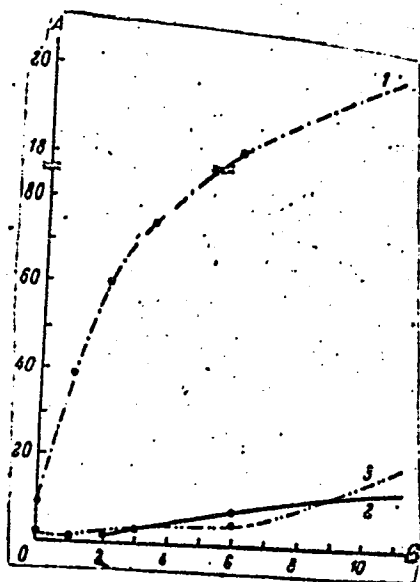


Fig. 2. Effect of indium on corrosion resistance of magnesium and its alloys in 0.5% NaCl solution

A - Corrosion resistance ( $\text{cm}^3/\text{cm}^2$ );  
B - In (Z) content; 1 - Mg-Al-In;  
2 - Mg-Zn-In; 3 - Mg-In.

Card: 5/8

ACCESSION NR: AP4024769

ENCLOSURE: 03

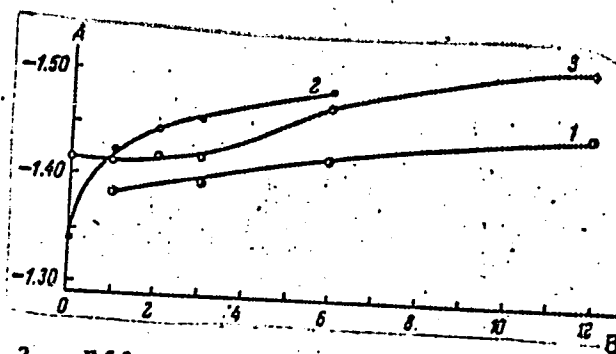


Fig. 3. Effect of indium on the electrode potential of alloys in 0.5% NaCl solution

A - Potential (V); B - In (%) content; 1 - Mg-In;  
2 - Mg-Al-In; 3 - Mg-Zn-In.

Card 6/8

ACCESSION NR: AP4024769

ENCLOSURE: 04

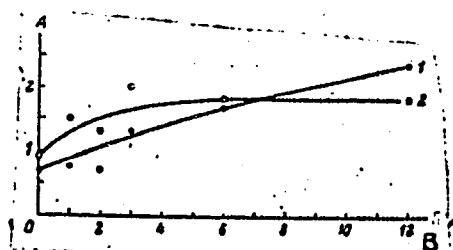


Fig. 4. Effect of indium on corrosion resistance of alloys in moist atmosphere

A - Wt increase (mg/cm<sup>2</sup>); B - In content (X);  
1 - Mg-Al-In; 2 - Mg-Zn-In.

Card

7/8

ACCESSION NR: AP4024769

ENCLOSURE: 05

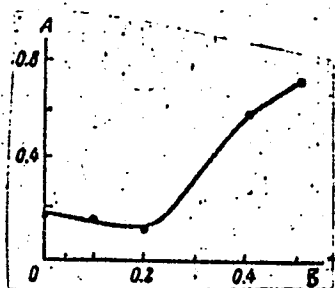


Fig. 5. Effect of adding Co to Mg-Nd alloy on its corrosion resistance

A - Weight loss (mg/cm<sup>2</sup>); B - Co (%) content.

Card

8/8



ACCESSION NR: AP3004597

established that hydrostatic pressure causes a four- to six-fold increase in the electrical resistivity of the material. The results are compared with the electrical resistivity measurement and, in general, agree with the results obtained by other investigators. Orig. art. has: 6 figures.

ASSOCIATION: Institut metalovedeniya i fiziki metallov TSNIIChM (Institute of Metallurgy and Metal Physics, TSNIIChM)

SUBMITTED: 06Aug62

DATE ACQ: 27Aug63

ENCL: 1

SUB CODE: ML

NO REF SOV: 001

YRREP: 63

Cera 2/2



YERSHOVA, T.P.; PONYATOVSKIY, Ye.G.

Effect of high pressure on the phase equilibrium line of the eutectoid part of the iron-carbon diagram. Fiz. ust. i metalloved. 17 no.4:584-591 Ap '64. (MIRA 17:8)

1. Institut metallofiziki Tsentral'nogo nauchnoissledovatel'skogo instituta Chernoy metallurgii.

ACC NR: AR6013662

SOURCE CODE: UR/0058/65/000/010/E027/E027

AUTHOR: Yershova, T. P.; Ponyatovskiy, Ye. G.

TITLE: Effect of high pressures on phase equilibrium in an iron-carbon system

SOURCE: Ref. zh. Fizika, Abs. 10Ye228

REF SOURCE: Sb. tr. In-t metalloved. i fiz. metallov Tsent. n.-i. in-ta chernoy metallurgii, vyp. 36, 1964, 144-168

TOPIC TAGS: martensitic transformation, phase equilibrium, high pressure research

TRANSLATION: A thermodynamic analysis was made of the effect of high pressure on the phase equilibrium line on the eutectoid portion of the Fe-C diagram. It showed that the Fe-Fe<sub>3</sub>C becomes stable at high pressures while the Fe-C<sub>gr</sub> becomes metastable; the solubility of C<sub>gr</sub> increases and the solubility of Fe<sub>3</sub>C strongly decreases in austenite; the eutectoid temperature drops and the eutectic composition is strongly displaced toward lower carbon concentrations. A P vs T diagram was made on the basis of thermodynamic considerations for an Fe-C alloy of eutectic composition. It showed that the equilibrium pressure of C<sub>gr</sub>-Fe<sub>3</sub>C in the γ-region is 2-5 katm and only slightly temperature dependent; equilibrium pressure in the α-region is strongly tempera-

Card 1/2

ACC NR: AR6013662

ture dependent and increases from ~5 katm at 1000°C to ~60 katm at room temperature. The calculation for the  $\gamma$ -region was supported experimentally. It was shown that annealing under pressure of eutectic gray iron results in its "whitening" (transformation of  $C_{gr}$  into  $Fe_3C$ ), i. e., a process that is thermodynamically disadvantageous at atmospheric pressure.

SUB CODE: 20,11

Card 2/2

YERSHOVA, T.P.; PONYATOVSKIY, Ye.G.

Effect of pressure on the phase equilibrium of graphite - cementite  
in the iron - carbon system. Dokl. AN SSSR 151 no.6:1364-1367 Ag  
'63. (MIRA 16:10)

1. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy  
metallurgii im. I.P.Bardina. Predstavleno akademikom  
G.V.Kurdyumovym.

YERSHOVA, T.P.

Effect of high pressure on eutectoid transformations in steel. Fiz.  
met. i metalloved. 17 no.1:144-145. Ja '64. (MIRA 17:2)

1. Institut metallofiziki Tsentral'nogo nauchno-issledovatel'skogo  
instituta chernoy metallurgii im. I.P.Bardina.

YERSHOVA, T.P.; PONYATOVSKIY, Ya.G.

Effect of high pressure on phase equilibrium in the system iron - carbon.  
Probl. metalloved. i fiz. met. no. 8:144-168 '64. (MIRA 18:7)

S/0126/64/017/001/0114/0115

ACCESSION NR: AP4013102

AUTHOR: Yershova, T. P.

TITLE: Effect of high pressures on eutectoid transformation in steel

SOURCE: Fizika metallov i metalloved., v. 17, no. 1, 1964, 114-115

TOPIC TAGS: phase transformation, hysteresis, pressure effect, eutectic point, steel U8

ABSTRACT: The effect of isotropic pressure on the eutectoid transformation of carbon steel was studied with an ultrahigh pressure multiplier. Pyrophyllite served as a pressure-transferring medium. The device was calibrated according to the phase transitions of bismuth at 25 900 and 27 700 kg/cm<sup>2</sup>. The pressure was evaluated from the "pressure-load" calibration curve with an accuracy of ± 1000 kg/cm<sup>2</sup>. The samples were of U8 steel (composition (%): 0.83 C; 0.19 Si; 0.16 Mn; 0.0095 S; and 0.0075 P). The results obtained show that the transformation proceeds with a large hysteresis Δt° which at atmospheric pressure equals 55°C. The temperature determined as a mean value between the direct (α + Fe<sub>3</sub>C → γ) and reverse (γ → α + Fe<sub>3</sub>C) transformations coincided with the commonly accepted

Card 1/2

ACCESSION NR: APh013102

eutectoid transformation value of 7270. It was observed that the hysteresis increased with the increase in pressure and reached 1100 at 30 000 kg/cm<sup>2</sup>. Furthermore, increase in pressure resulted in the lowering of the direct and reverse transformation temperatures. "The author expresses her appreciation to Ye. G. Ponyatovskiy for valuable remarks during the planning and the execution of this work and to A. N. Kryukov for his participation in the preparation and execution of the experiments." Orig. art. has: 1 figure.

ASSOCIATION: Institut metallofiziki TsNIICHERMET (Institute of Physics of Metals TsNIICHERMET)

SUBMITTED: 08Mar63

ENCL: 00

SUB CODE: MM

NO REF SOV: 001

OTHER: 003

Card 2/2



S/0126/64/017/004/0584/0591

ACCESSION NR: AP4034056

AUTHORS: Yershova, T. P.; Ponyatovskiy, Ye. G.

TITLE: The effect of high pressures on the phase equilibrium lines of the eutectoid part of the iron-carbon diagram

SOURCE: Fizika metallov i metallovedeniye, v. 17, no. 4, 1964, 584-591

TOPIC TAGS: iron, carbon, phase equilibrium, eutectic, austenite, cementite, ferrite, compressibility, alpha phase, gamma line

ABSTRACT: The position of the phase equilibrium lines in the eutectoid part of the Fe-C<sub>gr</sub> (graphite) diagram at a pressure of 30 kiloatmospheres and in the Fe-Fe<sub>3</sub> diagram at 30 and 50 kiloatmospheres was calculated on the basis of thermodynamic data. The following assumptions were made in the calculations: 1) solubility of the carbide in the  $\alpha$ -iron could be neglected; 2) the compressibilities of  $\alpha$  and  $\gamma$  phases were equal (i.e., the volume effects of the transformation did not depend on the pressure); and 3) the activities of carbon and iron in austenite did not depend on the pressure. Calculations on the equilibrium curve (G-S line) for austenite  $\rightleftharpoons$  austenite + ferrite gave the relation

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ACCESSION NR: AP4034056

$$P = \frac{1}{23.4} \frac{\Delta G_{Fe}^{a-\gamma}(T)}{\Delta V_{Fe}^{a-\gamma}(T)}$$

where G is the Gibbs potential and U the specific molar volume. Expressions  $\Delta G$  and  $\Delta U$  obtained by I. C. Fisher (J. Metals, 1949, 1, 688) and by G. H. Cockott and G. D. Davis (Acta meta. 1962, 10, 974) are

$$-0.874 \frac{\Delta G_{Fe}^{a-\gamma}(T)}{T} + 20,459P \frac{\Delta V_{Fe}^{a-\gamma}(T)}{T} = \lg \frac{1-5x}{1-x} \quad \Delta V_{Fe}^{a-\gamma}(T) = 0,268 - 1,62 \cdot 10^{-4} T \text{ cm}^3/\text{mol.}$$

where  $\chi$  is the concentration. These expressions together give the temperature as a function of the pressure. For the E'S'-line, for austenite  $\rightleftharpoons$  austenite + graphite, the expression

$$6,709 \frac{P}{T} - 0,0005P - \lg \frac{1-5N_C^{gr}(T)}{N_C^{gr}(T)} = \lg \frac{x}{1-5x}$$

was obtained, where  $N_C^{gr}(T)$  is the limiting solubility of graphite in austenite at temperature T. For the ES line for austenite  $\rightleftharpoons$  austenite + cementite

$$-0.874 \frac{\Delta G_{Fe+3C}^0(T)}{T} + 4 \lg \frac{1-5N_C^{gr}(T)}{N_C^{gr}(T)} + 21,768 \frac{P}{T} + 0,0173P = \lg \frac{(1-x)^3(1-5x)}{x^4}$$

Card 2/3

ACCESSION NR: AP4034056

From these expressions it was established that uniform pressure increased the solubility of graphite and strongly reduced the solubility of cementite in austenite. The eutectoid points of the Fe-C<sub>gr</sub> and Fe-Fe<sub>3</sub>C systems were shifted under the influence of pressure in the direction of higher temperature and lower carbon content. At high pressures, the Fe-Fe<sub>3</sub>C system became stable while the Fe-C<sub>gr</sub> system became metastable. The authors thank L. A. Shvartsman and I. A. Tomilin for the consultations and constant help with thermodynamic calculations, Z. M. Vlasova and K. A. Peresada for conducting the metallographic analysis, and A. N. Kryukov for collaborating in the experiments. Orig. art. has: 27 equations and 3 figures.

ASSOCIATION: Institut metallofiziki, TsNIICM (Institute of Metal Physics, TsNIICM)

SUBMITTED: 25Jul63

ENCL: 00

SUB CODE: MM

NO REF SOV: 005

OTHER: 011

Card 3/3

NABOKOV, V.A.; SADOVNIKOV, A.I.; USPENSKIY, I.V. Prinsipialni uchastviye;  
LARYUKHIN, M.A.; KRIVTSOVA, Ye.N.; YERSHOVA, T.S.; KISH, S.S.;  
ORLOVA, G.N.

Use of a helicopter for spraying forest of tick encephalitis in  
forests. Med. paraz. i paraz. bol. 33 no.1:64-68 Jan' 64  
(MIRA 18:1)

1. Otdeleniye toksikologii i bor'by s chlenistonogimi (zav. --  
prof. V.A. Nabokov) Instituta meditsinskoy parazitologii i  
tropicheskoy meditsiny imeni Ye.I. Martsinovskogo (direktor --  
prof. P.G. Sergiyev) i Gosudarstvennyy nauchno-issledovatel'skiy  
institut Grazhdanskogo Vozdushnogo Flota, Moskva. 2. In-  
stitut meditsinskoy parazitologii imeni Ye.I. Martsinovskogo  
(for Laryukhin, Krivtsova, Yershov). 3. Gosudarstvennyy  
nauchno-issledovatel'skiy institut Grazhdanskogo Vozdushnogo  
Flota (for Kish, Orlova).

RAFIKOV, S.R.; CHELNOKOVA, G.N.; YERGEBEKOV, M.Ye.; YERSHOVA, T.V.

Synthesis and study of polyalkylenephosphinic acids. Vysokom.soed.  
7 no.1:65-69 Ja '65. (MIRA 18:5)

1. Institut elementoorganicheskikh soedineniy AN SSSR.

RAFIKOV, S.R.; YERGEBEKOV, M.Ye.; CHELNOKOVA, G.N.; YERSHOVA, T.V.

Synthesis of oligomeric polymethylenephosphinic acids. Izv. AN  
SSSR. Ser. khim. no.3:526-527 '65. (MIRA 18:5)

1. Institut elementoorganicheskikh soedineniy AN SSSR i In-  
stitut khimicheskikh nauk AN KazSSR.

BEBIKH, G.F.; YERSHOVA, T.V.; KUSKOV, V.K. [deceased]

Breaking of the C - P bond in arylphosphinic acids by hydrolysis.  
Vest. Mosk. un. Ser. 2:Khim. 19 no.1:56-59 Jan '64.

(MIRA 17:6)

1. Kafedra khimicheskoy tekhnologii Moskovskogo universiteta.







PERVEYEV, F.Ya.; YERSHOVA, V.

Reactions of hydrazine hydrate and dimethylhydrazine with some  
oxides of the acetylene series. Zhur. ob. khim. 30 no.11:  
3554-3558 N'60. (MIRA 13:11)

1. Leningradskiy gosudarstvennyy universitet.  
(Hydrazine) (Pyrrole) (Acetylene compounds)

YERSHOVA, V. A.

Increasing the coefficient of removal of argon from air  
 N. S. Fomchinskoy and V. A. Yershova. *J. Chem. Ind.*  
 (U. S. S. R.) 17, No. 2, 30-31 (1949). The liquid gas equal  
 for mixts. of A, N and O is detd. at 100.1°K and 1.5, 2.5,  
 5.0 and 10 kg. per sq. cm. The system does not obey the  
 ideal gas laws. At 5 kg. per sq. cm. and 0.8% O, 25-27% A  
 and 5-8% N, the concn. of A in the gas, liquid and original  
 mixt. is the same. Below 5 kg. per sq. cm. more A is found  
 in the gas than in the liquid phase. In industrial app. the  
 A should be collected from the gas phase. H. M. I.

ASB SLR METALLURGICAL LITERATURE CLASSIFICATION

SLONIMSKIY, G.L.; YERSHOVA, V.A.

Dependence of the deformation of crystalline polymers on  
temperature. Vysokom. soed. 1 no.2:240-243 1959.  
(MIRA 12:10)

1. Institut elementoorganicheskikh soedineniy AN SSSR.  
(Polymers)

S/190/60/002/006/004/012  
B015/B064

AUTHORS: Slonimskiy, G. L., Yershova, V. A.

TITLE: The Comparison of the Characteristics of Polymers  
Determined by Means of Different Devices ✓

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 6,  
pp. 871-874

TEXT: The problem arising from the fact that dynamometers of different design do not supply the same deformation conditions even when the rate of letting down the lower holding is strictly constant, is for the time being not sufficiently being investigated. To explain this, the present paper compares the operation conditions of a dynamometer designed by Polyani and one by Shopper (type ФМ-3 ~~FM-3~~) (Ref. 6). Commercial caprone was used for experimenting. ✓  
ON the basis of the statements made in the introduction it is found that it is possible to calculate in first approximation the elongation of a sample with a certain cross section with the curve "conditional stress - deformation" after having determined the rigidity of the dynamometer. Thus, in the case of dynamic.

Card 1/2

The Comparison of the Characteristics of Polymers Determined by Means of Different Devices

S/190/60/002/006/004/012  
B015/B064

meters with varying rigidity also the rate of deformation of the sample will differ even if the same rates of letting down the lower holding are adjusted. Results of measurement made on the two above dynamometers are shown to illustrate the statements made (Table). Considering the spring deflection (of the Polyani device) and the displacement of the arm of the pendulum (of the FM-3 device) it is possible to prove the essential difference between the real rate of length increase of the sample and the speed of motion of the lower holding. In the present investigation, far more exact values of measurement were obtained with the Polyani device since its deviations in the rate of deformation were less high. There are 2 figures, 1 table, and 7 Soviet references.

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

SUBMITTED: February 11, 1960

Card 2/2

KOLESNIKOV, G.S.; SUPRUN, A.P.; SOBOLEVA, T.A.; YERSHOVA, V.A.

Carbochain polymers and copolymers. Part 26: Polymerization  
and copolymerization of 1,1,2-trichloro-1,3-butadiene.  
Vysokom. soed. 2 no.8:1266-1269 Ag '60. (MIRA 13:9)

1. Institut elementoorganicheskikh soedineniy AN SSSR.  
(Butadiene) (Polymerization)

37142

S/190/62/004/005/019/026  
B110/B108

15.92.01

AUTHORS: Kolesnikov, G. S., Suprun, A. P., Soboleva, T. A., Yershova, V. A., Bondarev, V. B.

TITLE: Carbochain polymers and copolymers. XXXIX. Copolymerization of 1,1,2-trichlorobuta-1,3-diene with other unsaturated compounds

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 5, 1962, 743-748

TEXT: Determinations were made of the relative activities of 1,1,2-trichlorobuta-1,3-diene and styrene (10:90; 25:75; 50:50; 75:25; and 90:10) and of the composition of their copolymers at low degrees of conversion (5 - 7%). On the basis of the relative activities  $r_1 = 0.07 \pm 0.03$  (styrene) and  $r_2 = 1.18 \pm 0.08$  (trichlorobutadiene), the composition of the copolymer was plotted versus the composition of the monomer mixture. In order to raise the softening point ( $\sim 50^\circ\text{C}$ ) of polytrichlorobutadiene, 1,1,2-tri-

Card 1/3



Carbochain polymers and copolymers...

S/190/62/004/005/019/026  
B110/B108

chlorobuta-1,3-diene was copolymerized with acrylonitrile, vinyl chloride, and bicyclo-(2,2,1)-hepta-2,5-diene. During bulk copolymerization with acrylonitrile at a ratio of 50:50, only 10 mole% of acrylonitrile radicals was added to the copolymer. Thereupon, copolymerization was also carried out in a water-oil emulsion (1.8:1) with mersolate as an emulsifier, and benzoyl peroxide and ammonium persulfate as initiators. With the use of ammonium persulfate, only trichlorobutadiene homopolymers could be obtained from mixtures of 10 - 80 mole% of trichlorobutadiene and benzoyl peroxide. With acrylonitrile radicals of less than 40 mole%, the copolymer was completely soluble in toluene, while with more than 40 mole%, it was only partially soluble. Extraction of a partially soluble copolymer with toluene gave two fractions: (1) 88% by weight of a white, powder, soluble in toluene and containing 39 mole% of acrylonitrile radicals; (2) a yellow powder, soluble only in dimethyl formamide and containing 65 mole% of acrylonitrile radicals. Either powder possessed a low softening point, but their thermomechanical curves differed considerably. The copolymerization of 1,1,2-trichlorobuta-1,3-diene with vinyl chloride was also carried out in an emulsion, whereby solid lumps and lattices were obtained at the

Card 2/3

Carbochain polymers and copolymers ...

S/190/62/004/005/019/026  
B110/B108

same time. Their softening point is 50°C. The copolymerization of 1,1,2-trichlorobuta-1,3-diene with bicyclo-(2,2,1)-hepta-2,5-diene was carried out both in bulk and emulsion. Bulk polymerization was done with 0.1 mole% of benzoyl peroxide. Polymerization in emulsion lasted 15 hrs at room temperature and, in addition, 10 hrs at 50°C, resulting in light-yellow to dark-brown polymers. At a ratio of 36.5 mole% of trichlorobutadiene to 63.5 mole% of bicycloheptadiene, the softening point of this copolymer was 130 - 140°C. It was soluble in toluene and dichloroethane. There are 2 figures and 5 tables.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR  
(Institute of Elemental Organic Compounds AS USSR)

SUBMITTED: April 17, 1961

Card 3/3

AUTHOR: Slonimskiy, G. L.; Yershova, V. A.

TITLE: Effect of phase transitions on the mechanical properties of crystalline polymers

SOURCE: Vy\*sokomolekulyarny\*ye soyedineniya, v. 5, no. 6, 1965, 831-835

TOPIC TAGS: phase transition, mechanical properties, crystalline polymers, poly-tetrafluoroethylene, deformation of polymers

ABSTRACT: Studies were conducted on the rate of deformation of technical poly-tetrafluoroethylene films in relation to temperature within a -90 to +220C range. It was found that the curves of stretch elongation generally conformed to the laws of gradual transition from the original crystalline state to that of a melt. Some anomalies were, however, noticed at the 19-20C and 28-30C temperature range. A thermogram of the polytetrafluoroethylene, taken by means of Kurnakov's pyrometer revealed the existence of two distinct endothermic effects at about 20 and 28C which is in agreement with the well known fact of the occurrence in polytetrafluoroethylene of two phase transformations at 19-20C and 28-30C. Using a specially thermostated dynamometer, the authors obtained force-stretch-elongation curves.

Card 1/2

L 12435-63  
ACCESSION NR: AP3001152

for every degree of the 15-32C range and were able to demonstrate the existence at 19-20C and 28-30C of peaks in the forced elasticity limit curve. Orig. art. no. 1 chart.

ASSOCIATION: Institut elementoorganicheskikh sovedineniy AN SSSR (Institute of Elemento-organic Compounds, Academy of Sciences USSR)

SUBMITTED: 16Nov61

DATE ACQ: 01Jul63

INCL: 00

SUB CODE: 00

NO REF SOV: 010

OTHER: 008

Card 2/2

KORSAK, V.V. [Korshak, V.V.] (Moskva); VIROGRADOVA, S.V. (Moskva);  
VALECKIJ, P.M. [Valetskiy, P.M.] (Moskva); JERSOVA, V.A.  
[Yershova, V.A.] (Moskva); PANKRATOV, V.M. (Moskva)

Copolyarylates of isophthalic acid with dihydroxy-diphenyl-  
propane and polyfunctional aliphatic alcohols. Chem prum  
13 no.5:Supplement:Makromolekularni latky 13 no.5:265-270  
'63.

YE KRAVCHENKO, V.A.

2

L 41150-65 ENG(j)/EPA(e)-2/EXT(m)/EPP(e)/EPR/EMP(j)/T/EWA(h)/EWA(1) Po-4/  
Pr-4/Pc-4/Pt-10/Peb RPL WJ/GS/EM  
ACCESSION NR: AT5002110 8/0000/64/000/000/0042/0045

56  
49

AUTHOR: Froydlina, R. Kh.; Kolesnikov, G. S.; Slonimskiy, G. L.; Suprun, A. P.;  
Sokolova, T. A.; Polyavskiy, A. B.; Yerahova, V. A.

15

B+1

TITLE: New chlorinated monomers for the synthesis of noncombustible polymers

SOURCE: AN ESSR. Institut neftekhimicheskogo sinteza. Sintoz i svoystva monomerov  
(The synthesis and properties of monomers). Moscow, Izd-vo Nauka, 1964, 42-45

TOPIC TAGS: fire resistant polymer, polymer mechanical property, chlorinated polymer,  
chloroalkene polymerization, telomerization, dehydrohalogenation, radiation polymeriza-  
tion

ABSTRACT: 3,3,3-Trichloropropene and 1,1,2-trichloro-1,3-butadiene, which have been  
described in previously published studies, were prepared by a two-step reaction and their  
homo- and copolymerization was studied in an effort to obtain noncombustible polymers.  
3,3,3-Trichloropropene was synthesized via 1,1,1,3-tetrachloropropane by telomerization  
of ethylene with carbon tetrachloride (J. Am. Chem. Soc. 70, 2520 (1948)) and dehydro-  
halogenation of 1,1,1,3-tetrachloropropane with KOH in ethylcellulosic solution to give a  
53% yield of 3,3,3-trichloropropene and 1,1,3-trichloropropene as a by-product. The latter

Card 1/3

L 42159-65

ACCESSION NO: AT6092110

7

was also formed by isomerization during the block polymerization of 3,3,3-trichloropropene with benzoyl peroxide, and isomerization decreased the yield of solid polymer from 6.1% at 70C to 0.2% at 100C. A viscous, low-molecular, liquid polymer was also formed. Solid polymer was also formed in 37.3% yield in 160 hours under irradiation, and fractionated into soluble polymer and a fraction which was soluble only in tetrahydrofuran or hot benzene. Copolymers which are not described, were formed with methyl methacrylate, styrene, vinyl acetate and acrylonitrile. By a similar technique, 1,1,2-trichloro-1,3-butadiene was prepared via 1,1,2,4-tetrachloro-1-butene, formed in 20% yield with by-products by telomerization of ethylene with tetrachloroethylene, and by dehydrohalogenation. The copolymerization of 1,1,2-trichloro-1,3-butadiene has been described in published papers, and its homopolymerization under undefined optimal conditions yielded 99.9% block polymer (110,000 molecular weight), or 95.2% yields in emulsion polymerization with polymers of 3,500,000 molecular weight. The monomer was shown to have markedly higher activity than styrene, and the polymers showed good solubility, resistance to cold inorganic acids, high tensile strength, and adhesion to various materials. "The authors thank B. L. Tappin for carrying out the irradiation-polymerization tests." Orig. art. has: 1 table and 4 formulas.

Card 2/3

PERELYGIN, V.M.; YERSHOVA, V.I.

Amount of defoliants and desiccants in the dust of cotton-cleaning plants in Kirghizistan. Sov. sdrav. Kir. no.1:20-24, Ja-3 '62.

(MIRA 15:4)

1. Iz Kirgizskogo instituta epidemiologii, mikrobiologii i gigiyeny (direktor - kand.med.nauk V.M.Perelygin).

(KIRGHIZISTAN—COTTON GINS AND GINNING)

(AGRICULTURAL CHEMICALS)



YERSHOVA, V.P.

Morphology of living bladder receptors in the common frog (*Rana temporaria*). Vest.LGU 15 no.21:162-166 '60. (MIRA 14:4)  
(Receptors (Neurology))

YERSHOVA, V.P.

Comparative study of the morphology of the tigroid and the dimensions of neurons of the sympathetic trunk in vertebrates.  
Dokl. AN SSSR 162 no.6:1401-1403 Je '65. (MIRA 18:7)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova.  
Submitted September 12, 1964.

YERSHOVA, V.P.

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New methods and apparatus for the dressing of titanium-zirconium  
sands. Min.syr'e no.9:3-15 '63. (MIRA 17:10)

ACC NR: AP7002436 (A) SOURCE CODE: UR/0219/66/000/012/0037/0040

AUTHOR: Gavriilyuk, M.I.; Yershova, V.T.; Konstantinov, V.A/

ORG: none

TITLE: Reaction of tantalum with nitrogen and air

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 12, 1966, 37-40

TOPIC TAGS: metal surface impregnation, tantalum , air, nitrogen

ABSTRACT Vacuum arc-melted ingots of 99.51X-pure tantalum were homogenized and rolled into 1 mm thick sheets which were annealed in a vacuum of  $1 \cdot 10^{-4}$  mm Hg and then held in a nitrogen atmosphere at 800—1200C for 1.5 or 10 hr or in air at 300—600C for 1—15 hr. The depth of nitrogen penetration into tantalum was found to increase with increasing temperature and duration of the contact of tantalum with nitrogen (see Fig. 1). A

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UDC: 669.294:786'87

ACC NR: AP7002436

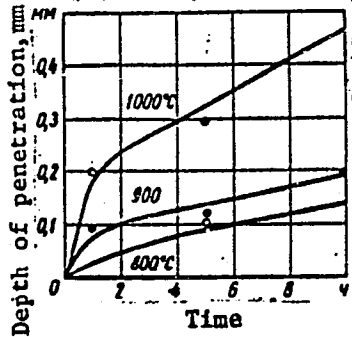


Fig. 1. Temperature and time dependence of the depth of nitrogen penetration into tantalum

particularly sharp increase in the penetration rate was observed at temperatures above 900C. In the reaction of tantalum with air, the increase in metal microhardness and in the depth of air penetration followed a similar pattern. However, the reaction of tantalum with air began at 300C, and the increase in the microhardness of tantalum, in this case, is attributed to the air oxygen. The nitrogen-contaminated surface layer

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ACC NR: AP7002436

consisted of four zones: a very thin outer zone of TaN followed by a zone consisting of  $TaN_2$ , a zone with a tetragonal lattice ( $a = 3.314 \text{ kX}$ ,  $c = 3.3715 \text{ kX}$ ,  $c/a = 1.0175$ ), and a zone with a bcc structure. Vacuum annealing of contaminated tantalum at temperatures up to 1600C brought about a diffusion of nitrogen and oxygen from the surface deep into the metal and metal contamination in the entire volume. The removal of nitrogen and oxygen from tantalum in vacuum began at 1800—2000C. Nitrogen and oxygen in the solid solution strongly inhibited the grain growth of tantalum.

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[MS]

SUB CODE: 11/ SUBM DATE: none/ OTH REF: 001/ ATD PRESS: 5113

Card 3/3

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Abatract : no abstract

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Author : Yershova Ye.M.

Inst : -

Title : The Development of Animal Husbandry in Uzbekistan

Orig Pub : Sots. s.-kh. Uzbekistana, 1957, No 11, 40-45

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