107-57-4-23/54

AUTHOR: Kuritsyn, N.

TITLE: Khabarovsk Ultrashort-wave Amateurs on the Air (V efire -- ul'trakorotkovolnoviki Khabarovska)

PERIODICAL: Radio, 1957, Nr 4, p 27 (USSR)

ABSTRACT: An ultrashort-wave amateur section has been organized at the Khabarovsk Institute of Railroad Engineers (Khabarovskiy institut inzhenerov zheleznodorozhnogo transporta). On October 7, 1956, Valeriy Kobzev established contact with Novosibirsk (065507), using his 10-watt transmitter, a vertical radiator, and a superregenerative 1-V-1 receiver. Kuritsyn, Kobzev, Labko, Lyskov, and Lesovoy, receive regularly with RSM 585-565 radio stations of Kemerovo (059510), Kirov (UA4NE, 060001), Shuya, Ivanovo Oblast (057016), Taganrog (068065), Gor'kiy (056013), Dzerzhinsk, Gor'kiy Oblast (UA3KAF), Krasnoyarsk (050001), and Barnaul (049001, 049009). The above stations are received from 9 to 11 a.m., Moscow time. Unavailability of tube and radio parts in local stores is noted.

Card 1/1

KURITSYN, N.

Utilization of fusarium-infected grain. Muk.-elev.prom. 25 no.3:20 Mr '59. (MIRA 12:6)

1. Glavnoye upravleniye khlebofurazhnogo snabzheniya Ministerstva khleboproduktov RSFSR.
(Grain--Diseases and pests) (Fusarium)

GRUDEV, D., doktor sel'skokhoz. nauk; KURITSYN, N.; PANOVA, N.

Modification of the system for the receiving of cattle by the meat combines and pyaments for cattle based on the weight and quality of meat. Mias. ind. SSSR 34 no.4:37-39 '63. (MIRA 16:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut myasnoy promyshlennosti.

MIROLYUBOV, I.N.; ALMAMETOV, F.Z.; YENGALYCHEV, [illegible]; [illegible], [illegible];
YASHINA, L.V.; KOROBKIN, S.M. [deceased]

Effect of specific pressure and pressing temperature on the mechanical properties of K-18-42 plastics. Plast. massy no.12:29-31 '64. (MIRA 18:3)

KURITSYN, N.A. (g.Vinnitsa)

Constructing mathematical apparatus. Politekh.obuch. no.5:61-63 My '59. (MIRA 12:7)
(Mathematical instruments)

KURITSYN, N.A. (Vinnitsa)

Plotting the curve of a quadratic function. Mat. v shkole no.6: 68-70 N-D '59. (MIRA 13:3)
(Graphic methods)

MIROLYUBOV, Igor' Nikolayevich; YENGALICHEV, Sergey Aleksandrovich; SERGIYEVSKIY, Nikolay Dmitriyevich; ALMAMETOV, Fotyakh Zaynulovich; KURITSYN, Nikolay Aleksandrovich; SMIRNOV-VASIL'YEV, Konstantin Gennad'yevich; YASHINA, Lyudmila Vasil'yevna; KHRUSTALEVA, N.I., red.; GOROKHOVA, S.S., tekhn. red.

[Textbook for the solution of problems concerning the strength of materials] Posobie k resheniiu zadach po soprotivleniiu materialov. Moskva, Vysshaia shkola, 1962. 487 p. (MIRA 16:5)

(Strength of materials)

MIROLYUBOV, I.N.; ALMAMETOV, F.Z.; YENGALYCHEV, S.A.; KURITSYN, N.A.; YASHINA, L.V.

Effect of the nature of deformation and of the state of the surface of the sample on the elastic constants of the plastic monolith No.1. Plast. massy no.6:40-43 '63. (MIRA 16:10)

KURITSYN, N.I., starshiy nauchnyy sotrudnik

Effect of molasses stillage on the meat quality of beef cattle. Trudy VNIIMP no.15:7-13 '63. (MIRA 17:5) [illegible], [illegible]

"Problems of Automation of Large Capacity Classification Humps." Cand Tech Sci, Moscow Order of Lenin and Order of Labor Red Banner Inst of Railroad Transport Engineers imeni I. V. Stalin, Min Transportation USSR, Moscow, 1955. (KL, No 10, Mar 55)

SO: Sum. No. 670, 29 Sep 55-Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16)

KURITSYN,N.S., inzhener

New circuit for connecting municipal dial telephone exchange lines to small capacity institutional dial exchanges. Trudy Khab. IIT no.8:102-107 '55. (MLRA 9:1)

(Telephone, Automatic)

KURITSYN, N.S., dotsent

Graduation of communication engineers by the Khabarovsk Railroad Transportation Institute. Avtom., telem. i sviaz' 7 no.1:40-41 Ja '63.
(MIRA 16:2)

1. Zaveduyushchiy kafedroy "Avtomatika, telemekhanika i svyaz'" Khavarovskogo instituta inzhenerov zheleznodorozhnogo transporta.
(Khabarovsk—Railroad engineering)

New materials and technology of molded plastics. P. V. Kurytsin. *Org. Chem. Ind.* (U. S. S. R.) 6, 201-2 (1939).—A discussion. Chas. Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

KURITSYN, P. V.

"The Glavkhimsnab," Khimicheskaya Promyshlennost, April, 1947. Abstrated in TI 10517.

KURITSYN, P.V.

Timely tasks in the consumees's goods industry in 1947. Khim.prom. no.3:70-71 Mr'47. (MLRA 8:12)

1. Nachal'nik otdela shirpotreba Ministerstva khimicheskoy promyshlennosti SSSR.
(Russia--Manufactures) (Chemical industries)

KURITSYN, P.V., inzhener

More attention to packaging and containers. Khim.prom. no.4:112 Ap '47. (MIRA 8:12)

1. Otdel shirpotreba Ministerstva khimicheskoy promyshlennosti SSSR.

(Container industry)

KURITSYN, P. V.

PA 58T18

USSR/Chemistry - Chemical Industry
Chemistry - Tar, Derivatives

Apr 1947

"It Is Important to Pay Attention to the Tar Economy," P. V. Kuritsyn, Engr, Commodities Sec, MKhP, SSSR, 1 p

"Khim Prom" No 4

Brief description of general organization of work dealing with tar derivatives. Most organizing in plants under jurisdiction of Main Administration of GlavKhim Plast. Author recommends even better organization of work to cut down waste.

FDD

58T18

MATALASOV, S.F., kand. tekhn. nauk; NOSKOV, Yu.A., inzh.; Prinimali uchastiye: RAMODIN, V.N., inzh.; SUGAK, P.A., kand. tekhn. nauk; CHINAREV, S.S., inzh.; KURITSYN, V.I.; YAKUBOV, M.A.; VAVILOV, G.S., starshiy mekhanik; OVCHINNIKOV, Yu.P., starshiy mekhanik; DEVICHINSKIY, Yu.V., starshiy laborant; GOL'DENTUL, A.B., inzh.; VOROB'YEVA, T.M., starshiy tekhnik

[Transportation of goods subject to freezing; problem in the theory of freezing and the mechanization of loosening operations.] Perevozki smerzaiushchiksia gruzov; voprosy teorii smerzaniia i mekhanizatsii rykhleniia. Moskva, Transport, 1964, 132 p. (Moscow. Vsesoiuznyi nauchno-issledovatel'skii institut zheleznodorozhnogo transporta. Trudy, no.273). (MIRA 17:9)

S/057/60/030/007/015/018/XX
B006/B064

26.1410

AUTHOR: Kuritsyn, V. N.

TITLE: The Arbitrary Incident of a Plane Electromagnetic Wave on a Conductive Disk

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol. 30, No. 7, pp. 790 - 798

TEXT: The diffraction of electromagnetic waves from a conductive circular disk has been investigated several times, but the complexity of the method suggested for solving this problem allows only the treatment of the most simple fields, mainly the case of perpendicular incident. Here, a method for investigating the diffraction of electromagnetic plane waves on a conductive circular disk is developed for the case in which the waves (with the wave vector $k=\omega/c$) hit the disk obliquely; the disk be conductive, its radius equal to a. The method is based on another by G. A. Grinberg for the quick expansions in power series of (ka) of the current density induced in the disk by electromagnetic radiation. This method can be practically applied to the range $(ka) < 1$. In a

Card 1/2

The Arbitrary Incident of a Plane Electromagnetic Wave on a Conductive Disk

S/057/60/030/007/015/018/XX
B006/B064

cylindrical system of coordinates, whose origin lies in the center of the conductive disk, the expansions of the external field, of the scalar and vector potential are deduced, and finally, the expansion coefficients of the resulting current density in the disk are obtained. The quite comprehensive equations are all explicitly given. Finally, the author gives expression (22) for the diffraction cross section. He thanks Professor G. A. Grinberg for having suggested the subject and for advice given. There are 1 table and 3 references: 2 Soviet and 1 US.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN SSSR Leningrad (Physicotechnical Institute of the AS USSR, Leningrad)

SUBMITTED: December 14, 1959

27161
S/057/61/031/009/001/019
B109/B138

9.3700

AUTHORS: Grinberg, G. A., Kuritsyn, V. N.

TITLE: Diffraction of a plane electromagnetic wave on an ideally conducting plane ring, and the electrostatic problem for such a ring

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 9, 1961, 1017-1025

TEXT: The authors give approximate solutions for the diffraction of a plane electromagnetic wave when the wavelength is appreciably larger than ring dimensions. They first solve the electrostatic problem, and then the diffraction problem from the former. (1) Solution of the electrostatic problem: Assumptions: (a) $\varepsilon = h/R$ small (R mean radius of the ring, h half ring width); (b) the external field can be expanded in a Fourier series in cylindrical coordinates. Determination of the Fourier coefficients gives the integral equation

$$U_{\nu}^{(m)}(r)=\int_{R-h}^{R+h}\sigma_{\nu}^{(m)}(\eta)\,\eta d\eta\int_{0}^{2\pi}\frac{\cos m\theta\, d\theta}{L},\quad L=(r^2+\eta^2-2r\eta\cos\theta)^{1/2}, \qquad (1)$$

(1),

$$R+h\geqslant r\geqslant R-h$$

Card 1/8

where $\sigma_{\nu}^{(m)}(\eta)$ is the required coefficient of the series expansion of charge density distribution, $U_{\nu}^{(m)}(r)$ is the coefficient, known for the ring surface, of the series expansion of the scalar potential of induced charges; if $r = R(1 + \varepsilon\cos\alpha)$ and $\eta = R(1 + \varepsilon\cos\beta)$, (1) is transformed to

$$U(\alpha) = \int_0^{\pi} u(\beta)\, d\beta\, R \int_0^{2\pi} \frac{\cos m\theta\, d\theta}{L(\alpha, \beta)}, \qquad (2),$$

where

$$\sigma(\alpha) = \frac{u(\alpha)}{R\varepsilon(1 + \varepsilon\cos\alpha)\sin\alpha}, \qquad (3).$$

If the required function $u(\varepsilon,\alpha) = \sum_{q=0} \varepsilon^{q} u_q(\ln\varepsilon, \alpha)$ (7) is expanded, and one restricts himself to terms up to the order ε^3 in the usual trigonometric series expansion for $U(\varepsilon,\alpha)$, then (7) together with

$$u_0 = \frac{1}{2\pi}\frac{U_0^{(0)}}{2S(m)}, \quad u_1 = \frac{1}{2\pi}\frac{1}{4}\left(U_0^{(0)} + 4U_1^{(1)}\right)\cos\alpha,$$

$$u_2 = \frac{1}{2\pi}\frac{1}{32}\left\{2\left[\left(U_0^{(0)} + 4U_1^{(1)}\right) - \frac{(4m^2+5)\,U_0^{(0)} - 16U_2^{(0)}}{2S(m)} + \frac{2U_0^{(0)}}{S^2(m)}\right] + \right.$$

$$\left. + \left[-(4m^2-1)\,U_0^{(0)} + 24U_1^{(1)} + 64_2^{(2)} + \frac{4m^2-3}{2S(m)}\,U_0^{(0)}\right]\cos 2\alpha\right\}, \qquad (13)$$

$$u_3 = \frac{1}{2\pi}\frac{1}{256}\left\{\left[4S(m)(4m^2-1)\left(U_0^{(0)} + 4U_1^{(1)}\right) - \right.\right.$$

$$- (20m^2-9)\,U_0^{(0)} - 4(4m^2-5)\,U_1^{(1)} + 64U_2^{(0)} + 192U_2^{(2)} + 256U_3^{(1)} +$$

$$\left. + 2(4m^2-3)\frac{U_0^{(0)}}{S(m)}\right]\cos\alpha + \left[(4m^2-1)\left(3U_0^{(0)} - 4U_1^{(1)}\right) + \right.$$

$$\left.\left. + 320U_2^{(2)} + 768U_3^{(3)} - 2(4m^2-3)\frac{U_0^{(0)}}{S(m)}\right]\cos 3\alpha\right\}. \qquad (13)$$

gives the solution of Eq. (2) for the electrostatic problem. (2) Solution of the diffraction problem: Assumptions: The wave $E_x^o = -H_y^o = \mathcal{E}_o e^{ikz}$ is normal to the ring. For the components of the surface currents, the authors give in cylindrical coordinates

$$j_r = [kj_{r01} + k^3 j_{r03} + O(k^4)]\cos\theta, \quad j_\theta = [kj_{\theta 01} + k^3 j_{\theta 03} + O(k^4)]\sin\theta, \qquad (32);$$

and by way of the vector potential and the scalar potential of induced currents, for which analogous equations hold as for the potential in the electrostatic case, they obtain the expressions

Diffraction of a plane ...

$$j_{rel} = \frac{ic\delta R \sin\alpha}{2\pi(1+\varepsilon\cos\alpha)}\left[2\varepsilon + \frac{\varepsilon^2}{2}\cos\alpha + O(\varepsilon^3)\right], \quad (28)$$

$$j_{\varphi 1} = -\frac{ic\delta R}{2\pi\varepsilon(1+\varepsilon\cos\alpha)\sin\alpha}\left\{\frac{1}{\ln\frac{16}{\varepsilon}-2} - \frac{\varepsilon}{2}\left(1-\frac{2}{\ln\frac{16}{\varepsilon}-2}\right)\cos\alpha + \right.$$

$$+\frac{\varepsilon^2}{32}\left\{\left[4-\frac{18}{\ln\frac{16}{\varepsilon}-2}+\frac{8}{\left(\ln\frac{16}{\varepsilon}-2\right)^2}\right]-\left[6-\frac{1}{\ln\frac{16}{\varepsilon}-2}\right]\cos 2\alpha\right\}+$$

$$+\frac{\varepsilon^3}{128}\left\{\left[84\left(\ln\frac{16}{\varepsilon}-2\right)+87-\frac{68}{\ln\frac{16}{\varepsilon}-2}+\frac{32}{\left(\ln\frac{16}{\varepsilon}-2\right)^2}\right]\times \quad (29),$$

$$\left.\times\cos\alpha - 29\cos 3\alpha\right\} + O(\varepsilon^4)\Bigg\}.$$

27161
S/057/61/031/009/001/019
B109/B138

$j_{rc3} = O(\varepsilon)$ (30),

$$+\varepsilon\left[3-\frac{8}{\ln\frac{16}{\varepsilon}-2}\right]\cos\alpha+O(\varepsilon^2)\Bigg\}.\quad (31)$$

which describe the radial and tangential components of current dens·ty up to orders of $(kR)^3$ (O denotes terms of the order ...). For the scattering cross section of the plane wave, the authors give the expression

Diffraction of a plane ...

$$t=\frac{\pi^2(kR)^4}{6\varepsilon}\left\{\left\{\frac{1}{\left(\ln\frac{16}{\varepsilon}-2\right)^2}+\frac{\varepsilon^2}{2}\left[\frac{\ldots}{\ln\ldots-2}-\frac{9}{\left(\ln\frac{16}{\varepsilon}-2\right)^{\ldots}}+\right.\right.\right.$$

$$\left.\left.+\frac{4}{\left(\ln\frac{16}{\varepsilon}-2\right)^3}\right]+O(\varepsilon^4)\right\}-\frac{(kR)^2}{5}\left\{\frac{9}{\left(\ln\frac{16}{\varepsilon}-\ldots\right)^2}+\frac{40}{\left(\ln\frac{16}{\varepsilon}-2\right)^3}+O(\varepsilon^2)\right\}+ \quad (33).$$

$$\left.+O[(kR)^4]\right\}. \qquad (33)$$

N. N. Lebedev (Techn. Phys. USSR, 4, 1,3, 1937) is mentioned. There are 6 Soviet references.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR Leningrad (Physicotechnical Institute imeni A. F. Ioffe AS USSR, Leningrad)

31725
S/057/61/031/012/012/013
B104/B112

24,7200 (1153, 1160, 1144)

AUTHOR: Kuritsyn, V. N.

TITLE: Solution of the problem of the "key" diffraction on an ideally conductive band

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 12, 1961, 1485 - 1490

TEXT: G. A. Grinberg (DAN, SSSR, 129, no. 2, 1959) reduced the "key" integral equation to the integral functional equation

$$I(x, y) = I^*(x, y) - \int_0^\infty I^*(1+t, y) I(1-x, t)\, dt, \qquad (1)$$

$$0 < x < 1, \quad 0 < y < \infty,$$

where

$$I^*(x, y) = -\frac{e^{-ik(x+y)}}{\pi(x+y)}\left(\frac{y}{x}\right)^{1/2}, \quad 0 < x < \infty, \quad 0 < y < \infty \qquad (2)$$

Card 1/3

21725
S/057/61/031/012/012/013
B104/B112

Solution of the problem of...

is the solution of the analogous "key" problem for a semi-bounded screen. Eq. (1) is replaced by the two integral equations

$$I^{\pm}(x, y) = I^{\circ}(x, y) \pm I^{\circ}(1-x, y) \mp \int_{0}^{\infty} I^{\circ}(1+t, y) I^{\pm}(x, t)\, dt. \qquad (4)$$

through introduction of the functions $I^{\pm}(x,y) = I(x,y) \pm I(1-x,y)$. Starting from Eq. (4), solutions of (4) and (1) are now derived by iteration:

$$I(x, y) = -\frac{e^{-ik(x+y)}}{\pi(x+y)}\left(\frac{y}{x}\right)^{1/2}[g_1(x) g_1(1+y) - g_2(x) g_2(1+y)] -$$
$$-\frac{e^{-ik(1-x+y)}}{\pi(x+y)}\left(\frac{y}{1-x}\right)^{1/2}[g_2(1-x) g_1(1+y) - g_1(1-x) g_2(1+y)], \qquad (17)$$
$$0 < x < 1, \quad 0 < y < \infty.$$

Thus, the problem is reduced to the determination of two functions g_1

Card 2/3

4

Solution of the problem of...

S/057/61/031/012/012/013
B104/B112

and g_2 of a variable x:

$$\left.\begin{aligned} g_1(x) &= 1 + \frac{e^{-ik}}{\pi}\int_0^\infty e^{-2ikt}\left(\frac{t}{1+t}\right)^{1/2}\frac{g_2(1+t)\,dt}{t+x}, \\ g_2(x) &= \frac{e^{-ik}}{\pi}\int_0^\infty e^{-2ikt}\left(\frac{t}{1+t}\right)^{1/2}\frac{g_1(1+t)\,dt}{t+x}, \quad 0<x<\infty, \end{aligned}\right\} \quad (18)$$

The asymptotic expansion of the functions $g_1(x)$ and $g_2(x)$ is dealt with in the appendix. There are 3 Soviet references.

SUBMITTED: November 21, 1960

Card 3/3

KURITSYN, V.N., aspirant

Experimental unit for studying elementary lumber sawing at temperatures below freezing. Trudy STI no.32:3-11 '62. (MIRA 16:12)

KURITSYN, V.N., aspirant

Elementary sawing of pine wood in transverse direction at temperatures below freezing. Trudy STI no.32:120-127 '62. (MIRA 16:12)

KURITSYN, V.N., assistent

Effect of temperatures below freezing points on the value of the coefficient of friction of wood against steel and the Poisson coefficient. Trudy STI 37:78-84 '64.

(MIRA 18:5)

KURITSYN, V.N., assistent; KONDRAT'YEV, V.M., student

Process of the formation of wood shavings during the cutting of wood under various temperature conditions. Trudy STI 37: 164-168 '64. (MIRA 18:5)

KURITSYNA, A.

A Q

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

9a-17. A Method for Hardness Testing of Very Small Structural Parts. (In Russian.) A. D. Kuritsyna, E. S. Berkovich, and M. M. Khrushchov. Zavodskaya Laboratoriya (Factory Laboratory), v. 13, Oct. 1947, p. 1227-1233.

Use of a Russian microhardness testing apparatus for items such as parts of watches or precision instruments. Hardness numbers are obtained in Vickers or Brinell units.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

MATERIALS INDEX

AUTHOR INDEX

3RD AND 4TH ORDERS

1ST AND 2ND LETTERS

USSR/Metals
USSR/Analysis (Contd)
Test Techniques

Jul 49

"Device for Selecting Samples of Metals for Microchemical Analysis," Ye. S. Berkovich, A. D. Kuritayna, Inst of Mach Instruction, Acad Sci USSR, 2 pp

"Zavod Lab" Vol 15, No 7 pp 868 - 869

Notes difficulties in determining nature of phases in alloys, especially where they are present in small amounts, by usual methods (X-rays, microscopy, hardness tests, etc). Proposes instrument for removing micro-samples for chemical analyses from any part of surface.

62/49T86

USSR/Metals (Contd) Jul 49

Makes possible accurate analysis of hard-surface impurities (whose composition remains disputable). Instrument is modification of PMT-2 apparatus used in testing microhardness (shaft with diamond point added). Includes photograph and sketch.

62/49T86

PA 160T37

USSR/Engineering - Tests, Micro-hardness Salt — Apr 50

"Employment of Common Salt as a Standard Material in Microhardness Testing," A. D. Kuritsyna, Inst of Mach Studies, Acad Sci USSR, 2 pp

"Zavod Lab" Vol XVI, No 4

Numerous investigations conducted to prove independence of hardness of common salt crystals from such factors as length of storage in laboratory, method of preparing sample, and size of crystal. As result, established that crystals

160T37

[redacted]

USSR/Engineering - Tests, Micro-hardness (Contd) — Apr 50

of common salt may be used as standard in microhardness measuring. Microhardness method may be successfully applied to recognizing precipitates in process of microchemical analysis.

[redacted]

160T37

KURITSYNA, A. D.

KURINSYNA, A.D.

RT-1039 (Soviet conference on microhardness) Extracted from: Soveshchanie po mikrotverdosti
VESTNIK AKADEMII NAUK SSSR, 21(4): 77-79, 1951

KHRUSHCHOV, M. M. PROF.; KURITSINA, A. D.

Machinery

"Wear resistance of machine parts.", B. I. Kostetskiy. Reviewed by Prof. M. M. Khrushchov, A. D. Kuritsyna, Vest. mash., 32, no. 1, 1952

Monthly List of Russian Accessions. Library of Congress. October 1952. UNCLASSIFIED.

KURITSYNA, A.D.

Investigating the effect of the microrelief of a contact surface on the wearability of a bearing alloy. Tren.i izn.mash. no.7:41-55 '53. (Mechanical wear) (Bearing (Machinery)) (MLRA 9:9)

KURITSYNA, A.D.

"Investigation of the Structures, and Mechanical, Antifriction and Casting Properties of Aluminum Alloys Containing Antimony"

Inst Mashinovedeniya, Akad Nauk SSR
Izdatel'stvo AN, SSSR (Moscow, 1954) pp 24/50

B-82959, 21 Feb 55

KURITSYNA, A. D.

"Investigation of the Antifriction & Corrosion-Ressistant Properties of Some Wrought Aluminum Alloys Containing Antimony"

Inst Mashinovedeniya, Akad Nauk SSSR;
Izdatel Akad Nauk SSSR, Moscow, 1954 pp 51/61

B-82959, 21 Feb 55

KURITSYNA, A. D.

"Investigation of the Behaviour on Heating of Aluminum-Alloy Inserts Pressed in a Steel Backing"

Inst Mashinovedeniya, AN SSSR
Izdatel'stvo AN SSSR, Moscow, 1954 pp 62/67

abs

KURITSYNA, A. D.

"Development of Casting Methods of Producint Bimetallic Bushings with a Layer of Aluminum Bearing Alloy"

Inst Mashinovedeniya, AKad Nauk SSSR;

Izdatel'stvo AN SSSR, Moscow, 1954, pp68/73

B-82959, 21 Feb 55

KURITSYNA, A. D.; GANIN, N. P.; BURKHANOV, S. F.

"Development of The Fundamentals of a Commercial Method of Producing Rolled Bimetallic Strip: Ductile Aluminum Alloy-Duraluminum

Inst Mashino, AN SSSR: Izdatel'.AN SSSR, Moscow, 1954, pp 74/90

B-82959, 21 Feb 55

KURITSYNA, A. D.

"Mechanical Properties of Rolled Bimetallic Strip (AM Alloy-Duraluminum) and of the Constituent Alloys"

Inst Mashin. AN SSSR; Izdatel'stvo Akad Nauk SSSR, Moscow 1954, pp 91/97

B-82959, 21 Feb 55

KURITSYNA, A.D., kandidat tekhnicheskikh nauk; KOROVCHINSKIY, M.V., kandidat tekhnicheskikh nauk.

"Antifriction materials and sliding bearings". V.K.Petrichenko.Reviewed by A.D.Kuritsyna, Korovchinskii.Vest.mash.35 no.11: 85-87 N '55. (Bearings (Machinery)) (Petrichenko, V.K.) (MLRA 9:2)

KURITSYNA, A.D.

Origin of the "white phase" on friction surface. Tren.i izn.mash. no.11: 182-203 '56. (MIRA 9:9)
(Mechanical wear) (Surfaces (Technology))

PHASE I BOOK EXPLOITATION SOV/3697

Kuritsyna, Anna Dmitriyevna, Candidate of Technical Sciences

Alyuminiyevyye antifriktsionnyye splavy i tekhnologiya ikh polucheniya (Aluminum Bearing Alloys and Their Production) Leningrad, 1958. 18 p. (Series: Informatsionno-tekhnicheskiy listok, No. 56, Liteynoye proizvodstvo) 6,200 copies printed.

Sponsoring Agencies: Nauchno-tekhnicheskoye obshchestvo Mashproma. Leningradskoye otdeleniye. Sektsiya liteynogo proizvodstva; Leningrad. Dom nauchno-tekhnicheskoy propagandy; Obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy RSFSR.

Ed.: I.M. Slitskaya; Tech. Ed.: D.P. Freger.

PURPOSE: This booklet is intended for foundry workers.

COVERAGE: The book discusses aluminum-base alloys, their production and use in the production of sliding bearings. Chemical composition of aluminum bearing alloys is presented. No personalities are mentioned. There are 5 references, all Soviet.

Card 1/ 2

Aluminum Bearing Alloys and Their Production SOV/3697

TABLE OF CONTENTS: None given [book is divided as follows]

AVAILABLE: Library of Congress

VK/mas
6-7-60

Card 2/2

KURITSYNA, A.D., kand. tekhn.nauk

Aluminum alloys for bearings. Stroi. i dor. mashinostr. 3 no. 8:32-34 Ag '58. (MIRA 11:8)

(Bearing metals)
(Aluminum alloys)

KUKITSYN N

PHASE I BOOK EXPLOITATION SOV/3505

Spravochnik po mashinostroitel'nym materialam v chetyrekh tomakh, tom 2: Tsvetnyye metally i ikh splavy (Handbook on Machine-Building Materials in 4 volumes, v. 2: Nonferrous Metals and Alloys) Moscow, Mashgiz, 1959. 639 p. Errata slip inserted. 25,000 copies printed.

Ed.: G. I. Pogodin-Alekseyev, Doctor of Technical Sciences, Professor; Ed. of this vol.: M. A. Bochvar, Engineer; Ed. of Publishing House: V. I. Rybakova, Engineer; Managing Ed. for Information Literature: I. M. Monastyrskiy, Engineer; Tech. Eds.: T. F. Sokolova and B. I. Model'.

PURPOSE: This book is intended for machine designers and metallurgists.

COVERAGE: The book presents comprehensive tabular and textual data on the chemical composition, physical and mechanical properties, microstructure, heat treatment, applications, etc., of various nonferrous metals and alloys used in machinery manufacture. Metals dealt with are aluminum, magnesium, copper, nickel, cobalt, titanium, zinc, and cadmium, together with certain precious and rare metals. Special materials considered are hard alloys (including sintered carbides), cermets, and ply metals. Special alloys, such as bearing, ...

Card 1/22

casting, corrosion-resistant, heat-resistant, electrical resistance, and fusible alloys, as well as solders, are treated. Authors of articles are listed in the table of contents. Various references, both Soviet and non-Soviet, are scattered throughout the book.

SOV/129-59-2-1/16

AUTHORS: Kuritsyna, A.D., Candidate of Technical Sciences, Korolev, F. V. and Korsunskaya, K.N., Engineers

TITLE: Diffusion Processes in the Bimetal "Steel-Aluminium Alloys" During Heat Treatment (Diffuzionnyye protsessy v bimetalle "stal'-alyuminiyevyye splavy" pri termicheskoy obrabotke)

PERIODICAL: Metallovedeniye i Termicheskaya Obrabotka Metallov, 1959, Nr 2, pp 2-7 (USSR)

ABSTRACT: Anti-friction bimetal, used for producing liners of bearings of I.C. engines, is manufactured by rolling with high rates of reduction (50-60 to 80%) at room temperature and also at 250-300°C, i.e. at temperatures below the hot working temperature of steel. As a result of this technological process the steel base of this bimetal strip becomes considerably hardened and, as can be seen from the graph, Fig 1, assumes a high anisotropy of its mechanical properties. This complicates considerably processes of stamping of bearing liners from such strip. Experience has shown that in order to re-establish the normal stamping properties of the liners, the bimetal strip should be annealed at a

SOV/129-59-2-1/16

Diffusion Processes in the Bimetal "Steel-Aluminium Alloys" During Heat Treatment

temperature which ensures full recrystallization of the steel and complete re-establishment of its mechanical properties. However, such heat treatment would result in a loss of the adhesion between the steel and the aluminium alloy. Therefore, it is necessary to select the chemical composition of the sub-layer in such a way that annealing of the bimetallic strip is practicable. The authors investigated the progress of diffusion at the boundary between the steel and the aluminium alloy and its dependence on external factors, i.e. temperature and duration of holding at a given temperature and also the composition of the metals in contact. These studies were carried out at junction zones of Steel 08 with the alloy ASS-6-5 and of Steel 08 coated with aluminium AV00 and the alloy ASS-6-5, the latter being a new aluminium base anti-friction alloy. In the second case the diffusion processes were studied at the boundary between the steel and the aluminium as well as at the boundary of the aluminium and the alloy ASS-6-5. The latter

Card2/8

SOV/129-59-2-1/16

Diffusion Processes in the Bimetal "Steel-Aluminium Alloys" During Heat Treatment

studies were necessary for establishing the minimum permissible thickness of the intermediate aluminium layer. Furthermore, the possibility was studied of applying high speed heat treatment regimes which exclude the second stage of diffusion, namely, volume diffusion; the first stage being surface diffusion. It was thereby assumed that the forming, very thin intermediate layer of iron aluminides, which are located on a plastic base, will not affect appreciably the flaking off of the aluminium alloy from the steel. On the basis of the carried out experiments, it was concluded that the processes of diffusion at the area of contact of the bimetallic strip and the aluminium alloy ASS-6-5 depends on the temperature and the heating time and consists of various stages. During the first (low temperature) stage an intermediate layer forms as a result of very small displacements of atoms of iron and aluminium, caused by the transition from the random distribution of the atoms along the surface of contact towards an ordered distribution.

Card3/8

Diffusion Processes in the Bimetal "Steel-Aluminium Alloys" During Heat Treatment

This results in the formation of an intermediate point-shaped layer of the reaction phase of a small thickness which depends on the non-uniformity of the real processes of plastic deformation. The second stage is characterized by the formation of additional interaction zones, which form as a result of an increase in the holding time or the temperature and a consequent slightly larger displacement of the atoms than in the first stage; this brings about formation of phases of iron aluminides in the form of a thin layer covering almost the entire surface of contact between the steel and the alloy (Fig 4). A further increase in temperature (550 to 600 °C for the Steel 08-alloy ASS-6-5 and for Steel 08-pure aluminium) brings about the third stage of the process, which is associated with the higher speed of diffusion of aluminium in the layer of the new intermediate phase, whereby, in the aluminium layer there will be a relatively wide zone of loosened sections caused by unilateral diffusion and

SOV/129-59-2-1/16

Diffusion Processes in the Bimetal "Steel-Aluminium Alloys" During Heat Treatment

it is this which produces the separation of the aluminium alloy from the iron aluminides which form as a result of diffusion. The fourth stage of the diffusion phenomena at the boundary steel-aluminium takes place at temperatures of 650°C and higher; at these temperatures there is a mutual diffusion between aluminium and iron but the diffusion of the aluminium is higher than the diffusion of the iron and the growing phase penetrates deep into the steel. The authors of this paper established experimentally that the speed of "reactive" diffusion at the contact zone iron-aluminium is influenced by silicon and antimony; antimony speeds up the reaction by reducing the initial temperature of the process to 510°C, whilst Si slows down the process. The authors also studied the influence on the speed of the diffusion processes of metals of the transient group (Ni, Mn, Co etc.), i.e. metals with variable valency in the alloys. In selecting alloying elements for increasing the critical temperature of formation of aluminides at the boundary of the two-phase region, the hypothesis of A. A. Bochvar (Ref 8) was taken into

Card5/8

SOV/129-59-2-1/16

Diffusion Processes in the Bimetal "Steel-Aluminium Alloys" During Heat Treatment

consideration, according to which diffusion processes will be the slower the more complex the composition and the structure of the rejected phases and the more these differ in composition and structure from the initial solid solution. For studying the relations governing diffusion the following additions to the aluminium were chosen: Mn, Mg, Cu, Ni, Fe, Si and the combinations of Si + Mn and Si + Co in various quantity ratios. These materials were cast, chemically analysed and following that, the ingots were rolled into strip. Strip made of the Steel 08 was clad with these alloys and the cladded metals were heat treated. During heating to 525°C for a duration of 30 mins flaking off of the aluminium layer occurred in the case of it being alloyed with Mn, Mg, Cu, Ni and Fe. If the heat treatment was effected at 575°C for 30 mins, flaking off was observed only for the alloys containing Si. Heat treatment at 575°C for four hours led to the formation of a layer in the case of the alloys Al-Si-Mn and, to a very slight

Card6/8

SOV/129-59-2-1/16

Diffusion Processes in the Bimetal "Steel-Aluminium Alloys" During Heat Treatment

extent, in the case of alloys of aluminium with Si and Co. During 1956-1958 the authors repeatedly verified the influence of heat treatment on bimetal consisting of steel with a base of the following chemical composition: 0.5% Mn, 0.5% Si, rest Al. This bimetal strip was produced by cladding a strip of 10 + 0.1 mm thick ASS-6-5- alloy on one side with a 1 mm thick (steel) layer. This combination of a total thickness of 11 mm was rolled to obtain a final combined thickness of 2 and 2.5 mm respectively. The first pass, with a reduction of 40% was effected in the cold state, the subsequent second and third passes down to the final dimension were effected after a re-heat to 250°C. The bimetallic strip produced by this method was investigated from the point of view of presence of an intermediate layer and of a hard and brittle phase of iron aluminides. Metallographic investigation of the zone of contact and of the sub-zone at an amplification of 1250 times showed complete absence of aluminides ; diffusion of antimony into the sub-layer could not be detected either. Results

Card7/8

SOV/129-59-2-1/16

Diffusion Processes in the Bimetal "Steel-Aluminium Alloys" During Heat Treatment

obtained in testing the strength of the joint between the steel and the alloy after annealing confirmed the high quality of the strip produced by this method. There are 7 figures and 8 references, 7 of which are Soviet, 1 English.

ASSOCIATION: Institut Mashinovedeniya AN SSSR (Institute of Mechanical Engineering, Ac.Sc., USSR) and Moskovskiy metalloprokatnyy zavod (Moscow Metal Rolling Works)

Card 8/8

PHASE I BOOK EXPLOITATION SOV/5291

Soveshchaniye po kompleksnoy mekhanizatsii i avtomatizatsii tekhnologicheskikh protsessov v mashinostroyenii. 2d, Moscow, 1956

Avtomatizatsiya mashinostroitel'nykh protsessov. t. III: Obrabotka rezaniyem i obshchiye voprosy avtomatizatsii (Automation of Machine-Building Processes. v. 3: Metal Cutting and General Automation Problems) Moscow, Izd-vo AN SSSR, 1960. 295 p. (Series: Its: Trudy, t. 3) 4,700 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Komissiya po tekhnologii mashinostroyeniya.

Resp. Ed.: V. I. Dikushin, Academician; Ed. of Publishing House: V. A. Kotov; Tech. Ed.: I. F. Kuz'min.

PURPOSE: This collection of articles is intended for technical personnel concerned with the automation of the machine industry.

COVERAGE: This is Volume III of the transactions of the Second Conference on the Full Mechanization and Automation of Manufacturing Processes in the Machine Industry, held September 25-29, 1956. The transactions have been published in three volumes. Volume I deals with the hot pressworking of metals, and volume II, with the actuation and control of machines. The present volume deals with the automation of metal machining and work-hardening, and with general problems encountered in automation. The transactions on the automation of metal-machining processes were published under the supervision of F. S. Dem'yanok and A. M. Karatygin, and those on the automation of work hardening processes, under the supervision of E. A. Satel' and M. O. Yakobson. No personalities are mentioned. There are no references.

Automation of Machine-Building Processes (Cont.) SOV/5291

Card 2/7

PHASE I BOOK EXPLOITATION SOV/5053

Vsesoyuznaya konferentsiya po treniyu i iznosu v mashinakh. 3d, 1958.

Iznos i iznosostoykost'. Antifriktsionnyye materialy (Wear and Wear Resistance. Antifriction Materials) Moscow, Izd-vo AN SSSR, 1960. 273 p. Errata slip inserted. 3,500 copies printed. (Series: Its: Trudy, v. 1)

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Resp. Ed.: M. M. Khrushchov, Professor; Eds. of Publishing House: M. Ya. Klebanov, and S. L. Orpik; Tech. Ed.: T. V. Polyakova.

PURPOSE: This collection of articles is intended for practicing engineers and research scientists.

COVERAGE: The collection, published by the Institut mashinovedeniya, AN SSSR (Institute of Science of Machines, Academy of Sciences USSR) contains papers presented at the III Vsesoyuznaya Konferentsiya po treniyu i iznosu v mashinakh (Third All-Union Conference on Friction and Wear in Machines) which was held April 9-15, 1958. Problems discussed were in 5 main areas: 1) Hydrodynamic Theory of Lubrication and Friction Bearings (Chairmen: Ye. M. Gut'yar, Doctor of Technical Sciences, and A. K. D'yachkov, Doctor of Technical Sciences); 2) Lubrication and Lubricant Materials (Chairman: G. V. Vinogradov, Doctor of Chemical Sciences); 3) Dry and Boundary Friction (Chairmen: B. V. Deryagin, Corresponding Member of the Academy of Sciences USSR, and I. V. Kragel'skiy, Doctor of Technical Sciences); 4) Wear and Wear Resistance (Chairman: M. M. Krushchov, Doctor of Technical Sciences); and 5) Friction and Antifriction Materials (Chairmen: I. V. Kragel'skiy, Doctor of Technical Sciences, and M. M. Krushchov, Doctor of Technical Sciences). Chairman of the general assembly (on the first and last day of the conference) was Academician A. A. Blagonravov. L. Yu. Pruzhanskiy, Candidate of Technical Sciences, was scientific secretary. The transactions of the conference were published in 3 volumes, of which the present volume is the first. This volume contains articles concerning the wear and wear resistance of antifriction materials. Among the topics covered are: modern developments in the theory and experimental science of wear resistance of materials, specific data on the wear resistance of various combinations of materials, methods for increasing the wear resistance of certain materials, the effects of friction and wear on the structure of materials, the mechanism of the seizing of metals, the effect of various types of lubricating materials on seizing, abrasive wear of a wide variety of materials and components under many different conditions, modern developments in antifriction materials, and the effects of finish machining on wear resistance. Many personalities are mentioned in the text. References accompany most

ANTIFRICTION MATERIALS

Card 10/13

6

S/122/60/000/012/008/018
A161/A130

AUTHORS: [illegible], N. M., [illegible], A. D., Candidates of Technical Sciences; [illegible], F. V. and [illegible], K. N., Engineers

TITLE: Investigation of [illegible] alloy [illegible]

PERIODICAL: Vestnik mashinostroyeniya, no. 12, 1960, 33 - 3[illegible]

TEXT: The aluminum-base bearing alloy mastered in the USSR is ACM(ASM) that, like other of this kind, is comparatively cheap, has high resistance to fatigue pitting and corrosion, but can only be used for lower [illegible] shafts because of scoring at insufficient lubrication. The ACM is used for tractor engine crankshaft bearings with 2,000 rpm, but was a failure in automobile crankshafts. The authors point out that the problem can be solved by coating aluminum alloy with a special "work-in" 15 - 20 micron layer of an alloy of lead with tin or with indium, or simply pure tin, as is practiced by General Motors, U.S.A. Bearings with bushings coated with aluminum alloy with 20 and 30% Sn had been tested in 1959 on "Pobeda" cars, and wear of crankshaft journals was same as in work with babbitt-lined bearings, but the bond of lining with the base was poor and the coating layer separated after 20 - 40 thousand km, despite an interlayer of AMK(AMK) al-

Card 1/3

S/129/60/000/012/006/018
A161/A130

Investigation of steel - high-Sn aluminum alloy bimetal

loy. The AMK alloy contains (%): 0.5 - 1.[illegible] Si; 0.5 - 1.0 Mn, the rest is Al. It was stated in experiments that rolling with 6[illegible]% reduction practically did not have any effect on the bond, and rolling with higher reduction destroyed bimetal; annealing of bimetal with Sn in aluminum antifriction alloy weakened bond. Raised Sn content in antifriction alloy had a strong negative effect on the bond. The experimental data demonstrated that bond between high-Sn aluminum and base can be considerably improved by reducing the Sn content in the surface of blanks preliminarily to rolling together with base. The authors have developed a method for squeesing liquid Sn out of about 1 mm deep surface layer of high-Sn aluminum alloy at 300 - 400°C. The result is Sn content in the surface reduced from 20 - 30% to 2 - 3%, and Sn distribution in metal as shown in Fig. 3. This alloy contained 20% Sn, the curve shows Sn distribution in 1 mm depth on the surface. Annealing at 550°C needed for recrystallization of steel band improved bond very much when the high-Sn layer was so treated, and mechanical strength in the joint was higher than of the antifriction alloy. Blanks of high-Sn aluminum alloy with a layer of AMK coated on were onnealed at 350°C and rolled together with armco iron with about 60% reduction. Bimetal bands were subsequently finally rollei to gage and annealed at 500 - 570° to recrystallize steel. It is expected that the method will make aluminum antifriction alloys applicable for a wider range of friction couples.

Card 2/3

S/122/60/000/012/008/018
A161/A130

Investigation of steel - high-Sn aluminum alloy bimetal

Addition of other metals (e.g., copper) is suggested for applications where the fatigue resistance of binary Al-Sn alloys is not sufficient. There are 3 figures and 1 Soviet-bloc reference..

Fig. 3.

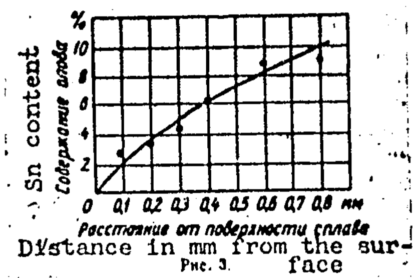

Рис. 3.

Card 3/3

S/663/61/000/000/001/009
D040/D112

AUTHORS: Kuritsyna, A.D.; Meynster, P.G.

TITLE: Investigation of the hardness of plastics

SOURCE: Plastmassy kak antifriktsionnyye materialy. Inst. mashinoved. AN SSSR. Moscow, Izd-vo AN SSSR, 1961, 5-14

TEXT: The Brinell hardness, spring-back capacity, and the water and oil absorption of the following polyamide- and polyethylene-type plastics were investigated: caprone, polycaprolactam, АК7 (AK7), АГ4 (AG4), Р 49 (R49), М 7 (M7), ЭД 6М (ED6M), НД (ND) polyethylene, plexiglas, alkyd-sterene resin, teflon, П 68 (P68) and П 54 (P54). The obtained data are presented in graphs and tables and include the variations of hardness and spring-back caused by absorption of different quantities of water and oil. The Rockwell-Superficial hardness tester was used for measurements. The fluid absorption was determined in accordance with the ГОСТ 4650-49 (GOST 4650-49) standard requirements. Specimens were soaked in water and oil at room temperature and 100°C, and the quantity of absorbed water or oil determined by weighing on

Card 1/2

S/663/61/000/000/001/009
D040/D112

Investigation of the ...

analytic scales. The hardness of polyamide plastics in an absolutely dry state and after elimination of the monomer products by leaching, proved to be 16 kg/mm^2 as against 4.0 kg/mm^2 for HD polyethylene which corresponds to the difference in their molecular bond forces, i.e. 8 kcal/mol and 2 kcal/mol. Absolutely dry specimens soaked in oil at room temperature for 24 hours scarcely changed in weight (by fractions of one per cent only), but soaking in oil at a temperature of 100°C increased their weight by 0.5 to 2.7%. Conclusions: (1) Determination of the Brinell hardness of high polymers with the use of the Rockwell-Superficial tester proved expedient; (2) the method of hardness determination accompanied by estimation of the relative spring-back is a sensitive method of examining the swelling, caused by absorption of water and oil. The hardness as well as the elasticity of polyamide-type plastics vary as the result of absorption of water or oil: the hardness is reduced, and the spring-back increases, which corresponds to the structural changes of high polymers. There are 9 figures and 6 tables.

Card 2/2

S/663/61/000/000/002/009
D040/D112

AUTHORS: Kuritsyna, A.D.; Meynster, P.G.

TITLE: Determination of the contact angle of wettening on plastics

SOURCE: Plastmassy kak antifriktsionnyye materialy. Inst. mashinoved. AN SSSR. Moscow, Izd-vo AN SSSR, 1961, 15-21

TEXT: The article presents the results of measurements of the contact angles forming on the metal-fluid-air and plastics-fluid-air boundaries. The measurements were made by the "inclined-plate method" suggested by Adam and Jesson (Dzhesson) (Ref. 4: N.K. Adam, Fizika i khimiya poverkhnostey [The physics and chemistry of surfaces], OGIZ, 1947, str. 241) and theoretically developed by P.A. Rebinder for studies of flotation processes (Ref. 5: P.A. Rebinder, M.Ye. Lipets, M.M. Rimskaya, A.B. Gaubman, Fiziko-khimiya flotatsionnykh yavleniy [The physical chemistry of the flotation phenomena], Izd-vo AN SSSR, 1933). The special test device designed at the laboratoriya iznosostoykosti (Wear-Resistance Laboratory) for the tests is described in

Card 1/6

S/663/61/000/000/002/009
D040/D112

Determination of the contact ...

detail and illustrated. Tests were conducted on specimens of pure metals (copper, nickel, tin, aluminum, zinc, and lead alloy with 2.5% antimony) and high-polymers, i.e. caprone, AK7 (AK7), П 68 (P68), teflon, high-pressure and low-pressure polyethylenes, АГ4 (AG4), М 7 (M7), Р 49 (R49) and ЭД 6 М (ED6M). Glass coated with paraffin was used as a reference unit for comparison of the contact angle (θ); the θ angle of 105° obtained on it upon equilibrium of the water-air-paraffin surface tensions has been obtained by the majority of investigators. The fluids used in the tests were: distilled water, tap water, АВТОЛ -4 (avtol-4) oil, Д -1 (D-1) oil, and D-1 oil with 0.1% stearic acid. The effect of different surface preparation methods and the surface roughness on the θ angle was determined. Conclusions: (1) The tested materials may be classified by polarity as follows, for the polarity of a solid surface increases with the decrease of the contact angle:

Card 2/6

S/663/61/000/000/002/009
D040/D112

Determination of the contact ...

	Θ
Paraffin	105
teflon	105
metals	90-95
high-pressure and low-pressure polyethylene, K7, R49, ED6M ...	85-86
P68	78
AG4	68
caprone, AK7	65

(NOTE: The polarity of the metals was considerably reduced by insufficient cleaning).

(2) Tests on paraffin-coated surfaces proved that the test results are reproducible. The accuracy of the tests is confirmed by the fact that the data

Card 3/6

coincide with the data of other authors, e.g. the teflon-water contact angle obtained in the tests is 108° - close to that obtained by A.Y.G. Allan (Ref. 7: A.Y.G. Allan. Wettability and friction of Polytetrafluoroethylene film: Effect of Prebonding Treatments. J. of Polymer Science, vol XXIV, 1957, p 461). (3) Chemical cleaning of metal surfaces is not efficient, and small contact angles are only possible after scraping. For instance, the contact angle on scraped lead (lead-water-air) is only 26°. The cleaning of metals is difficult due to their very high polarity (activity), which causes contamination of the surfaces by adsorption films. The contact angles did not change when thin oil films from a gasoline solution were applied to the surface. The sensitivity of the contact angle to the state of the surface of zinc and copper was studied in Ref. 8 (A. Pockels, Physikalische Zs. XV, 1914, S.39), in which flame treatment was found to be the best cleaning method to ensure the maximum polarity of the metals. The authors found that seasoning after grinding affects the polarity of metals; this effect may be estimated by the variation of the contact angle. The contact angle values determined by the capillarity method (Ref. 2: Dallwitz, R. Wegner. Zs. für technische Physik, Band 5, No. 9, 1924, S. 378) for tap water and copper

(62°10'), tap water and iron (81°20'), turbine oil and iron (42°20') and turbine oil and copper (42°25') are relatively near the analogous values given in a table in the article. (4) The determined contact angles for oils have lower values, which correspond to the lower surface tension of oils (72-74 dyn/cm for water, and 20-25 dyn/cm for various hydrocarbonous fluids). The positions of the tested materials in order of polarity in respect to oils vary considerably. Teflon proved the most inert to all oils. (5) When 0.1% stearic acid was added to D-1 oil, the polarity of the materials, characterized by a decrease of the contact angle, did not exceed 10-12°. (6) Increasing the roughness of copper specimens did not result in considerable variation of the contact angle between water and the copper. In the case of avtol-4 oil, the polarity of a ground surface was lower than that of a rolled surface, and the contact angle increased by 14°. (7) The polarity of plastics in relation to water rises with increasing water content in the plastics. The contact angles of AK7 and caprone in the humid initial state were up to 20° lower than in the absolutely dry state. B.V. Deryagin is mentioned. There are 4 figures, 3 tables, and 8 references: 3 Soviet and 5 non-Soviet-bloc. The two references to English language publications read as

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Determination of the contact ... S/065/[illegible]/000/000/002/002
D040/D112

follows: C.H. Bosanquet and H. Hartrey. Notes on the Angle of Contact. Philosophical magazine and journal of science, 1921, p 456; A.Y.G. Allan. Wettability and friction of Polytetrafluoroethylene film: Effect of Pre-bonding Treatments. J. of Polymer Science, vol. XXIV, 1957, p 461.

Card 6/6

89421

18 1200

S/136/61/000/002/002/006
E021/E335

AUTHORS: Kuritsyna, A.D., Korolev, F.V., Korsunskaya, K.N. and Rudnitskiy, N.M.

TITLE: The Technology of the Production of a Bimetal of Aluminium Antifriction Alloys and Steel

PERIODICAL: Tsvetnyye metally, 1961, No. 2, pp. 66 - 68

TEXT: The technology of the process of producing bimetals of steel and high-tin aluminium alloys was investigated and a comparison of the technological properties of antifriction aluminium and intermediate alloys was given.
A semicontinuous method of casting was tried. The table gives the compositions and conditions used. Melting was carried out in a high-frequency furnace. The weight of the melt was 70 - 80 kg and billets 70 x 260 mm were cast. The rate of casting was 10 - 13 m/h except for pure aluminium which had a rate of 3 m/h. The billets were water-cooled. Pouring was carried out through a funnel with a 12 mm diameter hole.
From the results it was shown that the high-tin alloys and the Moren 400 alloys had good casting properties and a low

Card 1/4

89421

temperature of casting. The billets were rolled to 10 mm strip. The surface had no porosity or cracks before rolling. Alloys with 20 and 30% tin were cold-rolled. Reduction of the first pass was 10% and on subsequent passes - 15%. The remaining alloys were hot-rolled after holding at 450 °C for two hours. Moren 400 alloy exhibited hot shortness during hot rolling, and deep cracks when cold-rolled. It was shown that to produce a good joint in the bimetal, the tin content on the surface of the high-tin alloys should be decreased. The alloys were hot-rolled with AMK alloy with reduction of 70% on the first pass and 28% on the second pass to give a good joint, and subsequently rolled to 2 mm. The strength of the joint between the alloy and AMK alloy was tested before forming a bimetal with steel by heating to 550 °C for 30 minutes. Steel strip 6 mm thick was used for the bimetal. The joint between the steel and the AMK alloy was produced by a first pass in the cold state with 60% reduction, a second pass with 30% reduction, and then it was cold-rolled to 1.9 mm. The joint was tested by heating

to 550-570 °C for 10-30 minutes. The strip produced in this way was used for the production of bushings for bearings in experimental ГАЗ (GAZ) and ЗИЛ (ZIL) motors.
There are 1 table and 2 Soviet references.

Table: The Composition of Alloys and the Regime of Casting of Aluminium Alloys

Name of Alloy	Chemical Composition		Casting tempera-ture, °C	Rate of drop of billet, m/h	Pressure of cooling water, atm.
	Charge	Billet			
Pure Al АВ000 (AV000)	-	Cu-0.0016 Fe-0.04 Si-0.04 Al- rest	800	3	0.8
High-tin alloy	Sn-20 Al-rest	Sn-17.32 Al-rest	740	13	0.8

89421

The Technology of ....

S/136/61/000/002/002/006
E021/E335

High-tin alloy	Sn-30 Al-rest	Sn-26.3 Al-rest	740	10	0.8
Moren 400	Si-4 Cd-0.5 Al-rest	Si-4.26 Sn-0.13 Cd-0.50 Al-rest	800	10	0.8
AMK	Mn-0.5 Si-0.5 Al-rest	Mn-0.5 Si-0.8 Al-rest	780	9-10	0.8
АСС 6-5 (ASS 6-5)	Sb-6 Pb-5 Mg-0.5 Al-rest	Sb-4.57 Pb-4.52 Mg-0.94 Al-rest	920*	9-10	0.9
Морен 400 (Moren 400)	Si-4 Al-rest	Si-3.8 Al-rest	800	10	0.9

* Antimony added to aluminium heated to 1 000 °C.

Card 4/4

26391

15.8510

S/032/61/027/008/016/020
B124/B215

AUTHORS: Kuritsyna, A. D., and Meynster, P. G.

TITLE: Methods of determining the hardness and the elastic recovery coefficient of plastics

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 8, 1961, 1030 - 1033

TEXT: The authors determined the hardness of high polymers by means of a Rockwell superficial device and a steel ball 3.175 mm in diameter. The ball is pressed into the sample under the action of the initial load P_o. The indentation depth is not recorded by the device. The load is then increased up to the effective quantity $P = P_o + P_1$, and the full indentation depth h_1 of the ball, which is due to the additional load P_1, is measured. The residual depth h_2 is obtained when this load is removed. The elastic part (h_{el}) of the indentation depth of the ball in the sample can be determined from the difference $h_1 - h_2$. In the present paper, two factors were determined: a) hardness in kg/mm^2, and

Card 1/6

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26391

Methods of determining... S/032/61/027/008/016/020
B124/B215

b) elastic shape recovery of indentation, expressed as the ratio between recovered (elastic) depth of indentation and total depth in %. The hardness was determined from the relation between load and area of the impressed spherical segment. The hardness of high polymers, unlike that of metals, was determined, not from the indentation diameter, but only from the depth of indentation. The load was always chosen such as to yield a ratio of d (indentation diameter) to D (diameter of the ball) = 0.2 to 0.5, which gives an indentation depth of 32 to 222μ. For determining the indentation depth, a previously determined correction factor was taken into account for the proper elasticity of the device. For plastics, the time of loading is 2 - 5 min. Before the tests, the surfaces of the plastic samples were first ground with water-resistant ПЗ-230 (PZ-230) emery paper, and then with ultrafine M-14 (M-14) emery paper, both times in water. The hardness of most thermoplasts is independent of the load, whereas the hardness of thermoreactive plastics increases somewhat as the load increases. In plastics, the elastic deformation depends on the type of material rather than on the load. Table 1 gives the hardness values of the tested materials; they are comparatively low and vary between 3 and 30 Brinell units, i. e., they

Card 2/6

hardly differ from the hardness of plastic metals. As to the elastic recovery of the indentation depth, there is a great difference between plastics and metals (Fig. 4). Humidity and oil absorption have a strong effect upon the mechanical properties of high polymers. The hardness of polyamides depends mainly on the content of moisture and unreacted monomers. Experiments showed that swelling of samples which had first been dried at 100°C until constancy of weight was reached, was very small after 24 hr, namely, several tenth % by weight. With П-68 (P-68), AK-7 (AK-7), polycaprolactam, and П-54 (P-54), swelling at 100°C in the same oil after 11 hr is 2.1, 0.82, 2.7, and 1.24 %, respectively; if the change in the linear dimensions of the samples is very small, the corresponding values are 0.2, 2, 0.5, and 0.8 %, respectively. As compared to the absolutely dry materials concerned, the hardness of the polymers is reduced by 67 % for P-68, by 50 % for AK-7, by 55 % for polycaprolactam, and by 62.5 % for P-54. Oil absorption increases elasticity by 3 - 4 %. There are 4 figures and 2 tables.

ASSOCIATION: Institut mashinovedeniya Akademii nauk SSSR (Institute of Sciences of Machines of the Academy of Sciences USSR)

Card 3/6

KURITSYNA, A.D.; KOROLEV, F.V.; KORSUNSKAYA, K.N.; RUDNITSKIY, N.M.

Procedure for producing the bimetal "Aluminum antifriction alloy - steel." TSvet. met. 34 no.2:66-68 F '61. (MIRA 14:6)
(Metal cladding)

S/129/62/000/010/001/006
E193/E383

AUTHORS: Kuritsyna, A.D., Candidate of Technical Sciences, Rudnitskiy, N.M., Korolev, F.V. and Korsunskaya, K.N., Engineers

TITLE: Influence of the treatment of certain bimetallic materials on the bond strength

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, no. 10, 1962, 8 - 11

TEXT: The object of the present investigation was to study the effect of annealing on the strength of bond between the components of various bimetallic strips fabricated by the usual pressure-welding (cold-rolling) method. The following were included in the experimental materials: pure aluminium; alloy AMK (Al-0.5% Si-0.5% Mn); Al-20% Sn alloy: Moren-400 (Al-4% Si); [illegible]-6-5 (ASS-6-5) alloy (Al-6% Sb-5% Pb-0.5% Mg). In the first series of experiments the Al/Al, Al/Al-20% Sn and Al-20% Sn/AMK bimetal strips were studied, the last of these being fabricated with and without a treatment which entailed tinning of the Al-20% Sn alloy surface with tin squeezed out of the alloy itself.

Card 1/3

Wedge-shaped sandwiches were used in every case so that the reduction in the first rolling-pass varied from 40% at one end of the strip to 80% at the other, a uniform reduction of 36% being given in the second pass. Shear-strength tests were carried out on suitably prepared bimetal specimens, both in the as-rolled condition and after 30 min annealing at 350, 450 and 550 °C. The shear strength of each individual metal given similar treatment was also determined. The results can be summarized as follows: 1) the shear-strength of cold-worked pure aluminium was not affected by the annealing, that of the AMK alloy increased from 8.3 kg/mm^2 after rolling, to 11 kg/mm^2 after annealing at 550 °C, the corresponding figures for the Al-20% Sn alloy being 7 and 5 kg/mm^2; 2) the shear strength of the bond in bimetal specimens after any given treatment corresponded to the strength of the weaker component given similar treatment; the AMK/Al-20% Sn bimetal strip prepared without surface-tinning treatment was an exception, its strength falling rapidly with increasing annealing temperature (8.4 kg/mm^2 after rolling, 2.8 kg/mm^2 after annealing at 550 °C); 3) the bond strength of the bimetal specimens was not affected by the degree of reduction in the first rolling operation. In the second series of experiments bimetal strips, consisting of mild steel on the one hand and AMK, Moren-400, aluminium and ASS-6-5 on the other, were studied (it was not possible to fabricate steel/Al-20% Sn bimetal strip under the conditions employed). In this case, the sandwich comprised metal strips of uniform thickness, pressure-welding being attained by cold-rolling each sandwich to 36% reduction. The shear strength of each combination was measured after rolling and after annealing at 350, 450, 500, 520, 540, 560, 600 and 620-640 °C. The following results were obtained: immediately after rolling the shear strength of the bond was similar to that of the appropriate Al-base alloy; all the bimetal specimens could be annealed at temperatures up to 450 °C without affecting the strength of the bond; the shear strength of the steel/ASS-6-5 bimetal decreased to nil after annealing at temperatures higher than 500 °C, the corresponding critical annealing temperatures for other bimetals being 560 for steel/Al, 600 °C for steel/Moren-400 and 620-640 °C for steel/AMK. There are 2 tables and 1 figure.

KURITSYNA, A.D.

Investigating changes in structure and characteristics of the surface layers of bearing metals caused by friction. Tren.i izn. mash. no.15:198-210 '62. (MIRA 15:4)
(Bearing metals--Testing)

S/032/62/028/004/016/026
B124/B101

AUTHORS: Kuritsyna, A. D., and Meynster, P. G.

TITLE: Determination of elastoplastic properties of polymers on compression .

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 4, 1962, 485 - 488

TEXT: Constant static compression load was applied to cylindrical samples and the change of deformation with time measured at about 20°C using a Rockwell Superficial device, in order to determine the modulus of elasticity of polymers. Deformation versus time loading and unloading curves are either completely reversible, when stress applied is below the limit of elasticity of the polymer, or exhibit a continuous increase in residual deformation and transition to steady flow. The following characteristics were calculated from the experimental data obtained: (A) initial (conventional instantaneous) normal modulus of elasticity $E_1 = \frac{P}{\varepsilon_0}(h/S)$, where P is load, ε_0 initial strain, h the height of the original sample, and S the cross-sectional area; (B) modulus of high

Card 1/3

elasticity $E_2 = \frac{P}{\varepsilon_{max} - \varepsilon_o}$ (h/S); (C) steady modulus of elasticity E_3 calculated with respect to both elastic and highly elastic deformation; (D) true (relaxation) viscosity $\eta_1 = \frac{Ph}{S} / \left(\frac{d\varepsilon}{dt}\right)_{resid.}$, where $d\varepsilon$ is the change of deformation, P/S effective flow-supporting stress, and t time; (E) relative viscosity η_2 determined from tan α - tan β. The following values are given: Ftoroplast-4 (fluoroethylene): E_1 = 11650 - 13800 (kg/cm^2); E_2 = 26220 - 27600 (kg/cm^2); E_3 = 7800 - 10,000 (kg/cm^2); $\eta_1 = (0.30 - 0.98)\cdot 10^{12}$ (g/cm·sec); $\eta_2 = (0.11 - 0.7)\cdot 10^{10}$ (g/cm·sec). Caprone: E_1 = 17600; E_2 = 35200 - 44000; E_3 = 10300 - 12360; $\eta_1 = (1.0 - 5.4)\cdot 10^{12}$; $\eta_2 = (0.12 - 0.30)\cdot 10^{11}$; П-54 (P-54) : E_1 = 8090; E_2 = 22900 - 36000; E_3 = 6148 - 6500; $\eta_1 = 0.46\cdot 10^{12}$; $\eta_2 = (0.17 - 0.58)\cdot 10^{10}$. П-68 (P-68) : E_1 = 16700; E_2 = 34300; E_3 = 119400; $\eta_1 = 0.30\cdot 10^{12}$;

$\eta_2 = 0.83\cdot 10^{10}$. Anid: $E_1 = 26100$; $E_2 = 12500$; $E_3 = 21700$; $\eta_1 = \infty$; $\eta_2 = 6\cdot 10^{11}$. P-49 (R-49) : $E_1 = 30900$; $E_2 = 300910$; $E_3 = 22500$; $\eta_1 = \infty$; $\eta_2 = 1.12\cdot 10^{10} - 6\cdot 10^{11}$. Mixture of 80% caprone, 3% graphite, and 17% bakelite: $E_1 = 30000$; $E_2 = 90000$; $E_3 = 21300$; $\eta_1 = 1.6\cdot 10^{12}$; $\eta_2 = 10^{10}$. It was found that (1) change of the size of Ftoroplast samples has a substantial effect on E_2 and a weak effect on the other parameters; (2) E_2 and η_2 of P-54 and caprone samples increase if the tests are repeated. There are 2 figures and 1 table.

ASSOCIATION: Institut mashinovedeniya (Institute of the Science of Machines)

S/032/62/028/004/018/026
B124/B101

AUTHORS: Kuritsyna, A. D., and Moynster, P. G.

TITLE: Determination of hardness of polymers at high temperatures

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 4, 1962, 491 - 493

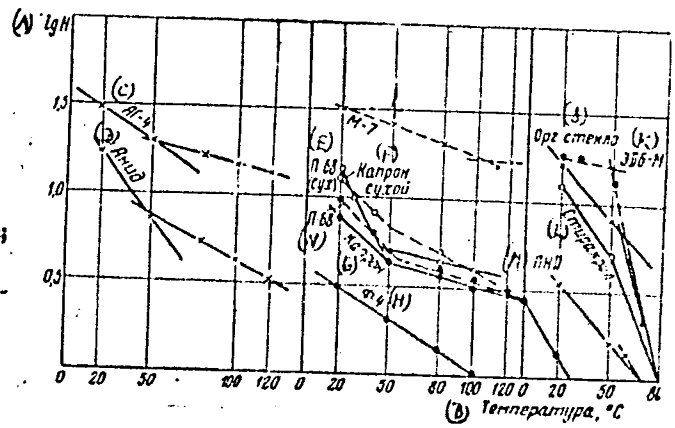
TEXT: A Rockwell Superficial setup equipped with an electrically heated table and indenter was used to measure the hardness and elastic recovery (ratio of the indentation depth after removal of load to that obtained with full load) of polymers at temperatures between 20 and 150°C. When the logarithms of the measured hardness numbers are plotted against temperature (Fig. 3), critical points of transition from the amorphous to the highly elastic, and from the highly elastic to the viscous region of the polymer can be determined, the angles of the curve sections indicating the changes of mechanical properties with temperature. The elastic recovery-versus-temperature curves show a slight decrease of elastic recovery with increasing temperature. There are 4 figures.

ASSOCIATION: Institut mashinovedeniya (Institute of the Science of Machines)

Card 1/2

S/032/62/028/004/018/026
B124/B101

Fig. 3. Dependence of the logarithm of hardness on temperature for plastics. Legend: (A) log H; (B) temperature, °C; (C) AG-4; (D) Anid; (E) P-68 (dry); (F) caprone, dry; (G) caprone; (H) F-4; (J) glass-like plastic; (K) ED6-M (epoxy resin); (L) styracryl; (M) LDP = low-density polyethylene; (N) P-68.



Card 2/2

ACCESSION NR: AP4005832 S/0129/63/000/012/0039/0041

AUTHOR: Kuritsy*na, A. D.; Rudnitskiy, N. M.; Korolev, F. V.; Korsunskaya, K. N.

TITLE: Structure and properties of heat-treated aluminum-tin antifriction alloy

SOURCE: Metalloved. i termich. obrab. metallov, no. 12, 1963, 39-41

TOPIC TAGS: aluminum tin alloy, antifriction aluminum alloy, antifriction alloy, alloy structure, alloyproperty

ABSTRACT: Sully's study (A. Sully, "Journal of Institute of Metals", 1949, v. 76) pertaining to the structure and properties of heat-treated aluminum tin antifriction alloys which has applications in bearing for carburetor-type engines was reexamined. The microstructure examination showed that cast structure fails in proportion to increase in shrinkage which produced a very fine stannous eutectic. Obsertion with respect to sweating indicates that tin

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ACCESSION NR: AP4005832

sweating decreases parallel to the increase of shrinkage during annealing. A vigorous sweating of tin with large droplet formation can be observed with weakly deformed cast samples during annealing at 350C and holding time of 30 minutes. Alloys with 99% shrinkage can be annealed at 550-570C without high tin losses. Mechanical properties of alloys with 20 and 30% Sn have a high ductility after final shrinkage (99%) which increases after annealing at 350C (the aluminum grain recrystallization temperature). Application of high degrees of deformation (99%) for Al alloys containing more than 20% Sn assures a discrete distribution of the stannous phase after annealing at 550-570C with a holding time of 30 minutes. Orig. art. has: 2 figures.

ASSOCIATION: None

SUBMITTED: 00 DATE ACQ: 09Jan64 ENCL: 00

SUB CODE: ML, MA NO REF SOV: 000 OTHER: 001

Card 2/2

KURITSYNA, A.D., kand. tekhn. nauk

Antifriction aluminum alloys and the "Al'kusip" alloy. Mashinostroitel' no.4:39-40 Ap'64 (MIRA 17:7)

L 8549-66 EWT(m)/EWP(j)/T RM/DJ/WW

ACC NR: AP5012075 SOURCE CODE: UR/0380/65/000/001/0104/0109

AUTHOR: Istomin, N. P. (Moscow); Kuritsyna, A. D. (Moscow)

ORG: none

TITLE: Using the motion of a solitary hard slider block to study friction in plastics

SOURCE: Mashinovedeniye, no. 1, 1965, 104-109

TOPIC TAGS: Teflon, Nylon, polyethylene, polyamide, friction

ABSTRACT: The authors describe a special instrument developed to study friction of a metal against plastics, to determine the relative magnitudes of components of the force of friction and to find the relationship between these magnitudes and the physical properties of the plastic materials studied. The device is shown in figure 1. Plastic specimen *1* is fastened to carriage *2* which moves horizontally as the drive screw turns. Slide block *3* is fastened in holder *4*. Bar *8* of the four-bar mechanism is rigidly connected to cleat *5* which is suspended from bracket *7*. Changeable weights *6* are used for varying the load. Counterweight *9* is used for balancing the unloaded slider suspension. The force of the friction generated between the specimen and the slider is transmitted to cleat *5*, and from there through flexible coupling *11* to elastic sensing element *10*. Differential resistance strain gauges are used for pick-

UDC: 539.62:678.5

Card 1/2

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ACC NR: AP5012075

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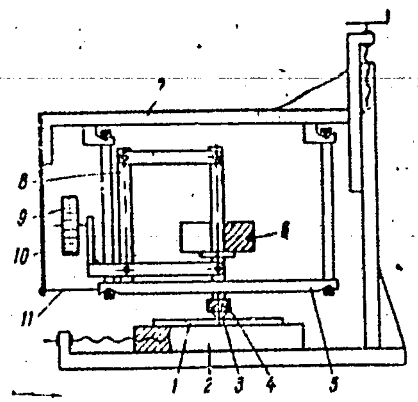

up and electrical conversion, and the signals are then amplifier and measured by a bridge circuit. Provision is made for heating the specimen and the slider for high temperature friction tests. It is shown that individual quantitative evaluation of the mechanical and adhesion components of the force of friction is possible with various materials. The relationship is found between these components and such physical properties of plastics as hardness and polarity evaluated by the contact angle. The experimental data show that the specific value of both the mechanical and adhesion components of the force of friction decreases with an increase in temperature for the polymer materials tested. The numerical value of the mechanical component for Teflon, capron and P68 polyamide is approximately equal to the hardness when the indentor is held under a load for 10 seconds. The numerical values of the adhesion component for Teflon, capron and ND polyethylene are inversely proportional to the respective contact angles. Orig. art. has: 7 figures, 1 table.

SUB CODE: MT,AS/ SUBM DATE: 17Oct64/ ORIG REF: 002/ OTH REF: 001

jw

Card 2/2

L 15317-66 EWT(m)/EWP(j)/T WW/GS/JXT(CZ)/RM

ACC NR: AT6003655 SOURCE CODE: UR/0000/65/000/000/0255/0259

59
54
B+1

AUTHOR: Kuritsyna, A. D.

ORG: none

TITLE: Application of the microhardness method to determining some properties of polymeric materials

SOURCE: Soveshchaniye po mikrotverdosti. 2d, 1963. Metody ispytaniya na mikrotverdost'. Pribory. (Methods and instruments for microhardness testing). Moscow, Izd-vo Nauka, 1965, 255-259

TOPIC TAGS: hardness, polymer, resin, polymer rheology, ~~PMT-3 hardness tester~~ pressure measuring instrument

ABSTRACT: The microhardness of a number of polymeric materials was determined with the microhardness testing apparatus PMT-3. The determinations involved measuring the diagonal of an indentation produced by a previously painted surface of the polymeric material. The object of applying a thin coating of paint to the surface to be tested was to preserve the original dimensions of the indentation. This procedure was necessary because it was found that measuring the dimensions of a regenerated indentation after removing the load produced erroneous (generally much higher) hardness readings. The microhardness of a number of prestressed polymers was determined, and the experimental results are presented in graphs and tables (see Fig. 1). It was found that the microhardness method may be successfully applied to investigating the properties of polymeric materials.

Card 1/2

L 15317-66
ACC NR: AT6003655

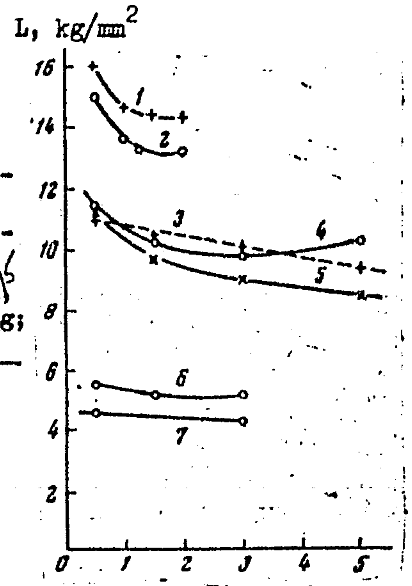

Fig. 1. Dependence of microhardness on the time of application of the load to the indentor. 1 - phenolformaldehyde resin; 2 - the same, (second specimen); 3 - capron load 10 g; 4 - the same, 100 g; 5 - the same, 5 g; 6 - polypropylene, load 5 g; 7 - PND, load 5 g.

Orig. art. has: 2 tables and 3 graphs.

SUB CODE: 13,11,20/SUBM DATE: 18Jun65

Card 2/2

L 39699-66 EWP(j)/EWT(m)/ETC(m)-6/T IJP(c) RM/WW/DJ/GG-2/GS

ACC NR: AT6008945 (A) SOURCE CODE: UR/0000/65/000/000/0057/0064

30 24 B+1

AUTHORS: Kuritsyna, A. D.; Meynster, P. G.

ORG: none

TITLE: Laboratory studies of physical and antifriction properties of plastics

SOURCE: Moscow. Institut mashinovedeniya. Plastmassy v podshipnikakh skol'zheniya; issledovaniya, opyt primeneniya (Plastics in friction bearings; research and experiment in application). Moscow, Izd-vo Nauka, 1965, 57-64

TOPIC TAGS: hardness, plastic, resin, polymer, polymer property, polymer deformation, heat effect, antifriction material, elasticity

ABSTRACT: The physical properties of polymer materials were studied by various methods. Hardness was tested by sphere pressing; the modulus of elasticity by compression of specimens under static loading; microhardness on testing machine PMT-3; the limiting angles of moistening by sloped plate method carried out on a special test device. The results of hardness testing at varying temperature are shown in Fig. 1. The hardness tests permitted qualitative evaluation of: 1) spherical indentor deformations as a combination of reversible elastic and residual deflections; 2) relative elasticity of polymer materials as manifested in form recovery after load release; 3) hardness at different temperatures. A logarithmic relationship is shown to exist between the applied pressure and spherical indentation for the polymers tested. Materials used in

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L 39699-66

ACC NR: AT6008945

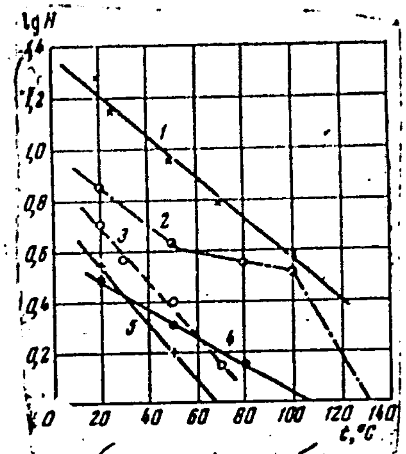

Fig. 1. Variation of hardness of polymer materials with temperature. 1 - polyformaldehyde; 2 - caprone; 3 - polypropylene; 4 - fluoroplastic; 4 and 5 - PND.

the tests include polyformaldehyde, caprone, polypropylene, fluoroplastic, PND resin, PVD resin, organic glass, resins M-7, P-49, P-68, and anide resin. Several filler materials in varying concentrations were added to selected resins. Additional plots are shown indicating the variation of modulus of elasticity with temperature and with compressive stress; data on microhardness and wettability are tabulated. Orig. art. has: 2 tables and 7 figures.

SUB CODE: 11/ SUBM DATE: 31Jul65/ ORIG REF: 006

Card 2/2

KURITSYNA, D. A.

Kuritsyna, D. A. "Prophylaxis after recent contracts with scarlet fever," in symposium : Skarlatina i streptokokkovyye infektsii, Leningrad, 1948, p. 137-48

SO: U-2888, Letopis Zhurnal'nykh Statey, No. 1, 1949