05796

Some Remarks on Goncharov's Paper "From the Domain of Combinatorics" SOV/52-4-4-7/13

The matrix of the second moments for $(\nu_1,\ldots,\nu_k)$ is determined.

Possible extensions for a number of states greater than two are also considered. In special cases there result the results of [Ref 1]. The authors mention Gikhman.
There are 5 references, 4 of which are Soviet, and 1 American.

SUBMITTED: May 23, 1959

Card 2/2

PASHKOV, Aleksandr Nikolayevich; KORSAKOV, Vladimir Petrovich. Prinimali uchastiye: DEM'YANOV, F.M.; MALYUTIN, S.S.; BABKIN, V.I., inzh., retsenzent; KAPOTOV, A.P., red.; KRASAVINA, A.M., tekhn. red.

[Manual for checkers of radio measurement devices]Poveriteliu radioizmeritel'nykh priborov. Pod obshchei red. F.M.Dem'ianova. Moskva, Voenizdat, 1962. 453 p. (MIRA 15:8)
(Radio measurements--Handbooks, manuals, etc.)

BABKIN, V.I. (Moscow)

Distribution of the points of maximum in a diffusion process with a variable parameter. Teor. veroiat. i ee prim. 9 no.2: 373-378 '64 (MIRA 17:7)

ERCHANOV, V.I.; BASKIN, V.K., veterinarnyy vrach

Practices in a large-scale treatment of young cattle with polymyxin and antibiotics. Veterinariia 41 no.11:60-62 N '64. (MIRA 18:11)

1. Veterinarnyy otdel Krasnodarskogo kraevogo upravleniya proizvodstva i zagotovok nel'skokhozyaystvennykh produktov. 2. Zaveduyushchiy otdelom bolezney molodnyaka Krasnodarskoy nauchno-issledovatel'skoy veterinarnoy stantsii (for Erchanov).

SOV/129-59-2-10/16

AUTHOR: Babkin, V.M., Engineer

TITLE: Influence of Tempering on the Structure and the Mechanical Properties of the Alloy ML5-T4 (Vliyaniye otpuska na strukturu i mekhanicheskiye svoystva splava ML5-T4)

PERIODICAL: Metallovedeniye i Termicheskaya Obrabotka Metallov, 1959, Nr 2, pp 45 - 49 (USSR)

ABSTRACT: The alloy ML5 possesses the best properties after hardening in air from 415 °C. In the hardened state, the alloy has the following strength indices:

$\sigma_b$ = 25 kg/mm$^2$, $\delta$ = 8 - 10% .

In a number of cases, it was not possible to attain these properties in the finished component. For instance, some of the components are impregnated with varnishes and enamels and are dried for 2 to 3 hours in electric furnaces at 200-250 °C. Such additional heat treatment changes the mechanical properties. The author of this paper studied the influence of repeated heating on the structure and the mechanical properties of the

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Influence of Tempering on the Structure and the Mechanical Properties of the Alloy ML5-T4

alloy ML5 in the hardened state. The specimens were preliminarily heat-treated according to the regime T4 (heating for 12 hours at 415 °C, followed by cooling in air) and then subjected to various repeated heatings. On the machined specimens, the mechanical properties were determined and the structure studied. On the basis of the obtained data, properties-tempering regime curves were plotted. The tests were made on sand-mould cast, 60 mm long, 12 mm dia specimens. The alloy was manufactured in accordance with the currently used technology and poured at 720 °C. The chemical composition of the alloy was 8.3% Al, 0.5% Zn, 0.3% Mn and 0.001% Be. The properties-tempering regime curves were plotted on the basis of the data from a series of experiments carried out at different times. 15 tempering regimes were studied with heating temperatures of 175, 200, 225, 250, 300, 350 and 400 °C. The heating duration for each temperature was 1, 2, 4 hours. It can be seen from the data graphed in Figure 1 that tempering has a considerable influence on the mechanical properties of this alloy and

there is a tempering temperature regime as a result of which the properties of the alloy will become poorer. In Figure 2, microphotos are reproduced of specimens treated according to various heat-treatment regimes. The following conclusions are arrived at:
1) tempering at 200-350 °C for 4 hours and also tempering for 1 hour at 275 - 350 °C leads to a sharp reduction in the mechanical properties of the preliminarily hardened alloy ML5. Components of the alloy ML5-T4 which are heated in accordance with either of these 2 regimes have to be hardened again so as to re-establish the original properties;
2) heating for 4 hours at 20-175 and at 400-415 °C as well as short-duration (1 hour) heating in the range 0-225 and 400-415 °C does not bring about any appreciable change in the mechanical properties of the alloy ML5-T4.

Influence of Tempering on the Structure and the Mechanical Properties of the Alloy ML5-T4

Components which are worked in accordance with such regimes have properties which equal those after hardening and do not require additional heat treatment.
There are 2 figures and 3 references, 1 of which is Soviet, 1 English and 1 German.

S/908/62/000/000/007/008
B163/B180

AUTHORS: Babkin, V. M., Bozin, G. M., Gagin, Ye. N., Yeremin, L. V., Metal'nikov, Yu. N., Orlovskiy, G. N., Petukhov, V. A., Pisarev, V. Ye., Sedov, N. G., Shorin, K. N.

TITLE: Some starting-up and operating problems of the 680 Mev synchrotron

SOURCE: Uskoritel' elektronov na 680 Mev; sbornik statey. Ed. by Z. D. Andreyenko. Moscow, Gosatomizdat, 1962. 64-74

TEXT: The momentary particle orbit during the first revolutions is distorted due to a number of uncontrollable deviations from the ideal magnetic field configuration. This must be corrected in order to capture a sufficient part of the injected electrons. Indicating devices measuring deviations help to find the initial conditions, e.g., the correct injection angle and timing for which the free oscillations about the equilibrium orbit become minimal during the first revolutions. Similar methods were used to correct for deviations of the median surface of the magnetic field from the geometrical symmetry plane. For these measurements

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Some starting-up and operating ...

a chopper was used, consisting of an electric deflector immediately behind the 60° magnetic sector field in the injection line, by which short pulses of 1-2 μsec duration could be selected from the injected beam. The signalling devices were flags and grids coated with luminescent paint, sometimes in connection with photomultipliers. In this way the orbit deviations could be reduced to 2-3 cm in radial in 1-2 cm in vertical direction. In the quasibetatron and the synchrotron acceleration stages the envelope of all oscillating orbits was measured by movable vanes, three or four in each sector. In the first stage, about 15 μsec, the accelerating field is disconnected but the magnetic field is growing. When the momentary particle orbit has been reduced, at 0.2 to 0.3 mm per revolution, from the inflector to the central chamber radius, the accelerating electric field is switched on. Under optimal conditions, the capture coefficient is 2%, which corresponds to $2.5 \cdot 10^9$ electrons per cycle. To avoid undesirable resonance effects from the passing electron beam in the resonator during the first stage the resonator is detuned, and the second stage is performed at a smaller orbit radius. When the field is switched off at the end of the accelerating cycle, the magnetic field is still rising and the electrons hit the target, a tungsten wire 1 mm

Some starting-up and operating ...

diam, inside the acceleration orbit. The intensity of the γ radiation produced was measured in a thick-walled graphite ionization chamber. A total γ energy per cycle of $2 \cdot 10^9$ Mev could be achieved, and the number of accelerated electrons per cycle was of the order of $10^8$. There are 6 figures.

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L 18914-63 EWP(q)/EWT(m)/BDS AFFTC/ASD JD/JG

ACCESSION NR: AP3006608 S/0129/63/000/009/0056/0057

AUTHOR: Babkin, V. M.

TITLE: Effect of zirconium upon the grain size of a magnesium alloy containing 4.5% Zn

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 9, 1963, 56-57

TOPIC TAGS: metal teening, casting temperature, Zn, Zr, magnesium, alloy, metal alloy, alloy structure, ML12 alloy, zinc, zirconium, Mg

ABSTRACT: Author studied the effect of zirconium upon the structure of a magnesium alloy containing 4.5% Zn. A series of alloys was prepared for testing. They contained varying content of zirconium with identical zinc content. Remainder was magnesium. Author found that zirconium has to be introduced into the alloy at high temperatures so that maximum saturation of the molten alloy with Zr would be assured. Teeming should be done at sufficiently high temperatures so that zirconium losses would be prevented while cooling the alloy down to casting temperature. The alloy should be cooled down to casting temperature rapidly, immediately prior to pouring into molds. In order to obtain

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L 18914-63

ACCESSION NR: AP3006608

a stable fine grain content in ML12 alloy castings, the minimum zirconium content in the alloy should consist of 0.6 to 0.75%. Orig. art. has: 2 figures.

ASSOCIATION: none

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| SUBMITTED: 00 | DATE ACQ: 030ct63 | ENCL: 00 |
| SUB CODE: ML | NO REF SOV: 001 | OTHER: 001 |

2/2

Card

BABKIN, Vladimir Mikhaylovich; GRITSMAN, Yu.Ya., red.; PRONINA, N.D., tekhn. red.

[Lesions of the menisci of the knee joint] Povrezhdeniia meniskov kolennogo sustava. Moskva, Medgiz, 1963. 86 p. (MIRA 16:7)

(KNEE--WOUNDS AND INJURIES)

23464

S/114/61/000/007/003/003
E194/E455

26.2130

AUTHORS: Polyatskin, M.A., Candidate of Technical Sciences, Shatil', A.A., Khaynovskiy, Ya.S., Engineer and Babkin, V.N., Engineer

TITLE: Natural gas burners for gas-turbine combustion chambers

PERIODICAL: Energomashinostroyeniye, 1961, No.7, pp.34-36

TEXT: In designing the combustion chamber for a gas turbine type ГТУ-50-800 (GTU-50-800) burning natural gas, insufficient information was available about burner design. Accordingly, TsKTI and KhTGZ made a joint investigation of burners in an experimental combustion chamber which was described in an article by M.Polyatskin and Z.M.Svyatskiy in Teploenergetika, 1959, No.2. The main object was not so much to find the best burner for burning natural gas as to study the main features of certain very different types of burner. Accordingly, besides studying completeness of combustion, an attempt was made to study the influence of the burner design on flame structure. As the process of mixing gas with air governs burner operation, three types of burner, illustrated in Fig.2, were tested. The first of these (Fig.2a)

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Natural gas burners ...

uses a conical swirler, which allows preliminary mixing of gas and air in the actual burner. The second (Fig.2b) has a flat swirler with hollow blades, gas being delivered through holes in the blade; it allows only partial mixing of fuel and air in the burner. In the third type (Fig.2B) the gas and air are mixed in the actual combustion chamber. A number of variants on these basic designs were tested. The usual kinds of measurements were made and, in addition, gas samples were taken for analysis at various places in the flame tube and measurements were made of the gas temperature. Curves of completeness of combustion and of temperature distribution were plotted and the influence of various minor design modifications on the performance were studied with such curves. With natural gas, combustion was most complete with the burner with conical swirler but it could operate only over a narrow range of excess-air factor. The burner with flat swirler with the gas delivered through hollow blades was more stable, particularly when there was no preliminary mixing of gas and air. Studies of temperature distribution and gas analysis distribution were made with various design modifications and, in general, the following

Natural gas burners ...

conclusions are drawn. When burning liquid fuel, it is desirable to have a fairly strong axial return flow of hot combustion products to heat up the liquid fuel and to stabilize combustion. However, when burning natural gas, the axial return of a large quantity of heat to the root of the flame usually gives inadequate oxygen and can lead to soot formation. With natural gas, quite a small return flow, required to ensure stable ignition of the mixture, is sufficient. None of the burners tested was good in respect of completeness of combustion; the main reason for this was that methane was carried away along the walls of the flame tube where the temperature is lowest with high excess-air factor. If preliminary mixing of the fuel and air is reduced, the range of stable operation is widened. It is expected that the experimental data on flame structure will be useful in designing the distribution of air and fuel over the chamber section. There are 5 figures and 4 Soviet-bloc references.

POLYATSKIN, M.A., kand.tekhn.nauk; SHATIL', A.A., kand.tekhn.nauk; KHAYNOVSKIY, Ya.S., inzh.; BABKIN, V.N., inzh.

Certain data on heat exchange in the combustion chamber of a gas turbine system operating on natural gas. Teploenergetika 8 no.7: 68-72 Jl '61. (MIRA 14:9)

1. TSentral'nyy nauchno-issledovatel'skiy kotloturbinnyy institut imeni I.I. Polzunova i Khar'kovskiy turbogeneratornyy zavod.

(Gas turbines) (Heat—Transmission)

[redacted], Ye.M.

Use of reinforced concrete poles. Avtom., telem. i svyaz' 8 no.6:37-38 Je '64. (MIRA 17:6)

1. Proizvoditel' rabot spetsializirovannogo upravleniya No.676 tresta Transsignalstroy.

BABKIN, V.P

112-2-4809

TRANSLATION FROM: Referativnyy zhurnal, Elektrotekhnika, 1957, Nr 2, p. 334 (USSR)

AUTHORS: Sheyvekhman, B. Ye., Babkin, V.P., Glekin, G.V.

TITLE: Determining Average Threshold Magnitudes of Sound Intensities Perceptible to the Adult Human (Opredeleniye srednikh porogovykh velichin intensivnosti zvukov, vosprinimayemykh vzroslym chelovekom)

PERIODICAL: Probl. fiziol. akustiki. Z. Moscow-Leningrad, Izd-vo AN SSSR, 1955, pp. 75-80

ABSTRACT: The experimental determinations of the average threshold magnitudes of sound intensity perceptible to the adult human are given. Two thousand people in the 18 to 25 year age group and not suffering from hearing defects were studied. Tones of 100, 200, 450, 1,000, 1,500, 2,000, 4,000, 6,000, and 7,000 cps were used. The distribution of values obtained for threshold sound intensity levels expressed in db conforms well to the normal law. Results of measurements at various frequencies were scattered, with various degrees of dispersion. At medium frequencies (1,000 to 2,000 cps), the steep slope of the distribution curves is a characteristic which testifies to the small deviation

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Determining Average Threshold Magnitudes of Sound (Cont.)

of the data from the average value. [The dispersion increases as the distance from the medium frequencies changes in either direction] For example, at 1,500 cps the standard deviation is 4 db, and at 200 cps, 9 db. An averaged audiogram was made from the arithmetic means for the tones of all the frequencies investigated. The frequencies in cps were plotted along the abscissas, and the intensity levels of sound in db along the ordinates. 98 per cent of the measured threshold magnitudes of sound intensity fell in the same zone as 98 per cent of the measurements made by the Bell Laboratory and the U.S. Department of Health.

N.Ya.K.

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BABKIN, V. P.

SHEYVEKHMAN, B.Ye. [deceased]; BABKIN, V.P.

The problems of spectral analysis of strong auditory stimuli in laboratory biological experiments and under factory conditions. [with summary in English]. Biofizika 2 no.1:112-118 '57. (MLRA 10:3)

1. Institut biofiziki AN SSSR, Moskva
(HEARING)

BABKIN, V.P.; ROZEN, O.M.; TUMARKINA, L.N.; CHERNYAK, R.I.

Study of vibration sensitivity and factors affecting it. Biofizika 6 no. 1:61-67 '61. (MIRA 14:2)

1. Akusticheskiy institut AN SSSR, Moskva.
(VIBRATION—PHYSIOLOGICAL EFFECT)

BABKIN, V.P.; ROZEN, O.M.; TUMARKINA, L.N.; CHERNYAK, R.I.

Study of the mechanism of vibration frequency discrimination using models of the cochlea and the cutaneous receptor. Biofizika 6 no. 2:191-197 '61. (MIRA 14:4)

1. Akusticheskiy institut AN SSSR, Moskva.
(HEARING)

BABKIN, V.F., inzh.

Greater precision in the calculation of axial forces in hydrodynamic transmissions. Izv.vys.ucheb.zav.; gor.zhur. 8 no.11:119-123 '65.

(MIRA 19:1)

1. Karagandinskiy politekhnicheskiy institut. Rekomendovana kafedroy gornykh mashin. Submitted December 12, 1964.

30995
S/124/61/000/009/016/058
D234/D303

AUTHORS: Babkin, V.S. and Kozachenko, L.S.

TITLE: Rise of detonation in gases in rough pipes

PERIODICAL: Referativnyy zhurnal. Mekhanika, no. 9, 1961, 70, abstract 9 B512 (Zh. prikl. mekhan. i tekhn. fiz., 1960, no. 3, 165-174)

TEXT: By means of "Schlieren" frame photography, pre-detonation spreading of flame in a rough half-closed square pipe are investigated. Two opposite walls of the pipe were made from plane-parallel optical glass, on the other two walls roughness was formed by gluing on brass chips or porcelain fractions. Combustible mixture of H, O and air was fed into the pipe through a mixer, the composition of the mixture being controlled with the aid of Venturi tubes. Ignition of the mixture was caused by a weak electric spark at the closed end of the pipe. As a result of the experiments it was established that the curves of the increase of the velocity of

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Rise of detonation in gases...

flame spreading with time v(t) for mixtures of different composition have a point of inflexion, i.e. the flame is intensely accelerated twice: once at the beginning of spreading and once at some interval before the instant of detonation. Characteristic is the variation of the extension of the domain of combustion $\delta$ which corresponds to these two stages of flame acceleration. In the first stage $\delta$ increases together with the flame velocity v, then, in the vicinity of the point of inflexion of the curve v(t), there is a strong decrease of the extension of the domain of turbulent combustion. The second stage is again characterized by an increase of $\delta$ up to a certain maximum value $\delta_{max}$, and, although the velocity of flame spreading increases further, the dependence $\delta$ (t) becomes decreasing. From this the authors conclude that at some interval before detonation the dimension of the domain of turbulent combustion decreases instead of increasing as assumed in many papers on pre-detonation spreading of the flame. The flame spreading in the second stage is described as accompanied by the formation of a shock wave near the flame front. At a determined velocity of the

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Rise of detonation in gases...

shock wave which is reached in the process of acceleration, the mechanism of initial ignition of the mixture changes: The mixture begins to inflame with a very small period of induction on the rough surfaces immediately behind the shock wave which is followed by the gradual spreading of the flame towards the center of the section of the canal. A structure is formed which is called in the paper "the complex of turbulent flame with shock wave". The spreading of such a complex ends by detonation at its front. From an estimation of the state of gas in the interaction of the shock wave with artificial rough surfaces on the walls of the pipe and from the results of several complementary experiments, the conclusion is made that the principal part in the ignition of the mixture immediately behind the shock wave is played by the local rise of temperatures and pressure during reflection of this wave at the elements of roughness. In the first stages of flame spreading, roughness can, beside its part in the turbulization of the mixture, also retain volumes of fresh mixture in the layer at the walls, whose combustion behind the flame front increases the total surface of the flame and so

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Rise of detonation in gases...

leads to an increase of combustion velocity. It follows from the experimental results that in the last stage of the pre-detonation period the velocity of combustion is determined by the velocity of the shock wave at the front of the complex, which realizes, as it were, a continuous forced ignition of the mixture on the rough surfaces. The new domain of turbulent flame, so formed, develops and reinforces the shock wave to an intensity which is sufficient for detonation ignition. 20 references. [Abstracter's note: Complete translation]

Card 4/4

BABKIN, V.S.; KUZNETSOV, I.L.; KOZACHENKO, L.S.

Effect of curvature on the rate of propagation of a laminar flame in a poor propane-air mixture. Dokl. AN SSSR 146 no.3:625-627 S '62. (MIRA 15:10)

1. Institut khimicheskoy kinetiki i goreniya Sibirskogo otdeleniya AN SSSR. Predstavleno akademikom S.A.Khristianovichem.
(Flame) (Propane)

BABKIN, V.S.; KOZACHENKO, L.S.; KUZNETSOV, I.L. (Novosibirsk)

Effect of pressure on the normal flame velocity of a methane-air mixture. PMTF no.3:145-149 My-Je '64. (MIRA 17:6)

BABKIN, V.S. (Novosibirsk); KOZACHENKO, L.S. (Novosibirsk); KUZNETSOV, I.L. (Novosibirsk)

Use of the constant-volume bomb technique in measuring flame velocity. PMTF no. 6:128-131 N-D '63. (MIRA 17:7)

L 10613-65 EPA/EPA(e)-2/EWT(m)/EPF(c)/EPR Pr-4/Ps-4/Pt-10 AEDC(b)/RAEM(i)/
ASD(a)-5/BSD/AEDC(a) WW/JW/EM

ACCESSION NR: AP4041204 S/0207/64/000/003/0145/0149

AUTHORS: Babkin, V. S. (Novosibirsk); Kozachenko, L. S. (Novosibirsk); Kuznetsov, I. L. (Novosibirsk)

TITLE: The effect of pressure on the normal burning velocity of a methane and air mixture

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 3, 1964, 145-149

TOPIC TAGS: methane, methane burning velocity, combustible hydrocarbon, pressure effect, gas expansion coefficient, flame propagation, constant pressure bomb, schlieren system

ABSTRACT: The effect of pressure and temperature on the normal burning speed of a methane-air mixture was investigated for pressures from 1 to 60 atm and temperatures from 16 to 220C. High-speed motion picture photography aided by an optical schlieren system was used to determine an apparent combustion velocity. The normal velocity was then computed as the quotient of the apparent velocity divided by the computed coefficient of expansion. In the pressure range of 3-60 atm, the normal velocity was found to be the -0.5 power ($p^{-0.5}$) of the pressure. The

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L 10633-65
ACCESSION NR: AP4041204

constant pressure bomb, a thick-walled spherical chamber equipped with observation windows, was used in the experiments. Results include plots of normal speed versus percent methane concentration for parametric values of pressure and temperature; an additional plot relates normal velocity and temperature on logarithmic axes. Below 3 atmospheres pressure n was found to be slightly less than $\frac{1}{2}$ in the relationship $S_u = \text{const } p^{-n}$. At atmospheric pressure the maximum burning speed is equal to $30^{cm}/sec$. Deviations in normal velocity may result from deviations in calculated expansion coefficients, hence the authors give values of apparent velocity corresponding to calculated normal velocities. Orig. art. has: 5 figures.

ASSOCIATION: none

SUBMITTED: 15Jul63 ENCL: 00

SUB CODE: FP NO REF SOV: 003 OTHER: 011

Card 2/2

KOCHKAREV, A.Ya.; BABKIN, V.F.

Effect of the ribbing of the pump disk on the axial forces of a hydraulic torque converter. Trudy LPI no.246:73-76 '65.
(MIRA 18:6)

L 6422-66 EWT(d)/EPA/EWT(m)/EPF(c)/EWP(f)/EWP(j)/T/EWA(c)/ETC(m) RPL

ACC NR: AP5026076 WW/JW/WE/RM SOURCE CODE: UR/0405/65/000/002/0114/0117

AUTHOR: Babkin, V. S.; Kozachenko, L. S.

ORG: None

TITLE: Energy losses during explosions in a spherical bomb

SOURCE: Nauchno-tekhnicheskiye problemy goreniya i vzryva, no. 2, 1965, 114-117

TOPIC TAGS: bomb, combustion, combustion theory, combustion kinetics, gas pressure, explosive charge

ABSTRACT: In the past, explosions within spherical bombs were used for the determination of various chemical and physical quantities such as heat capacity and dissociative heat). Recently, however, the combustion process proper became the subject of intensive theoretical research. A survey of numerous experimental data led V. F. Baybuz and V. A. Medvedev to the conclusions (ZhFKh, 1962, 36, 6; Tr. GIPKh, Vyp. 49, Raboty po termodinamike i kinetike khimicheskikh protsessov, Goskhimizdat, L., 1962.) that energy losses caused by the incomplete combustion of the mixture in the boundary layers may be quite significant. Assuming that this viewpoint is correct, the authors of the present article derive simple formulas for the determination of the correction for the experimentally observed finite pressures within the bombs. The constant entering the basic formula can be obtained from a series of comparative tests. Orig. art. has: 13 formulas.

UDC: 541.126

Card 1/1 SUB CODE: WA, FP, ME / SUBM DATE: 12Jan65 / ORIG REF: 006 / OTH REF: 002

L 08107-67 EWP(j)/EWT(l)/EWT(m)/FSS-2 RM/WE

ACC NR: AP6029755 (A) SOURCE CODE: UR/0414/66/000/002/0052/0060

AUTHOR: Babkin, V. S. (Novosibirsk); V'yun, A. V. (Novosibirsk); Kozachenko, L. S. (Novosibirsk)

65

ORG: none

TITLE: Study of the effect of pressure on the normal burning velocity by the method of the initial section in a constant pressure bomb

SOURCE: Fizika goreniya i vzryva, no. 2, 1966, 52-60

TOPIC TAGS: combustion, flame, burning velocity, hydrocarbon fuel, PRESSURE EFFECT

ABSTRACT: Experiments in a constant volume bomb were made of the effect of pressure on the normal burning velocity of stoichiometric mixtures of benzene, n-heptane, and isooctane with air at 1—16 atm and an initial temperature of 150C. It was found that a linear relationship exists between the expansion coefficient of the combustion products and the terminal explosion pressure. This relationship can be expressed by the approximate formula

$$E_1 = 0{,}85\,\frac{p_e}{p_1}\,.$$

Card 1/2 UDC: 536.46

L 08107-67

ACC NR: AP0629755 O

(pi = initial pressure, pe = terminal pressure). This formula permits the calculation of the normal burning velocity from the experimentally determined apparent flame speed and the terminal pressure. In all fuels tested, the normal burning velocity decreased with increasing pressure. The exponents in the relationship $S = p^n$ (S = normal burning velocity, p = pressure) ranged from -0.17 to -0.35 an for different fuels and pressure ranges. Orig. art. has: 11 formulas, 3 figures, and 1 table. [PV]

SUB CODE: 21/ SUBM DATE: 08Aug65/ ORIG REF: 008/ OTH REF: 008

Card 2/2 mle

ACC NR: AP7000644 SOURCE CODE: UR/0414/66/000/003/0077/0086

AUTHOR: Babkin, V. S. (Novosibirsk); Kozachenko, L. S. (Moscow)

ORG: none

TITLE: A study of the normal burning velocity of methane-air mixtures at high pressures

SOURCE: Fizika goreniya i vzryva, no.3, 1966, 77-86

TOPIC TAGS: combustion, gas combustion, methane, burning velocity, combustion pressure effect, HIGH PRESSURE

ABSTRACT: An experimental study was made of the burning velocities of methane-air mixtures at pressures of 1---70 atm, initial temperatures of 50-- 200C, and composition of 6-- 13% methane. The experiments were conducted in a spherical steel bomb 183 mm in diameter. The mixture was spark ignited, and the velocity was determined in the initial section. Some of the results are shown in Figures 1 and 2.

Card 1/4 UDC: 536.468

ACC NR: AP7000644

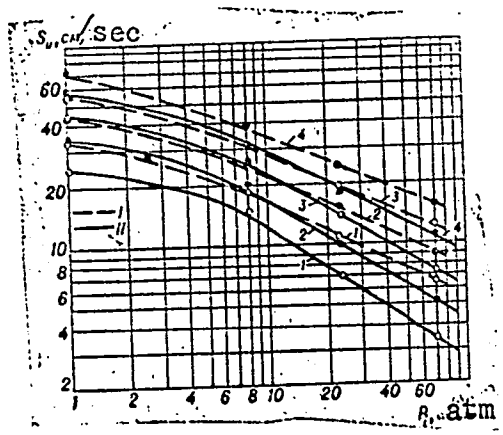


Fig.1. Dependence of the normal burning velocity $S_u$ on the pressure and the temperature with mixtures containing 9.5% (I) and 8% (II) methane. 1- 50°; 2- 100°; 3- 150°; 4- 200°C.

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ACC NR: AP7000644

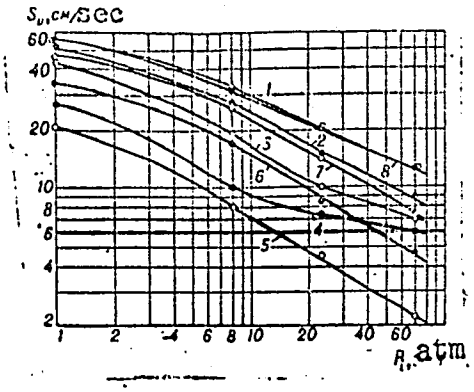


Fig.2. Dependence of $S_u$ on the pressure and the methane content in the mixture at an initial temperature $T_1$=150C.: 1- 1%; 2- 11%; 3- 12%; 4- 13%; 5- 6%; 6- 7%; 7- 8%; 8- 9.5% methane.

The pressure and temperature exponents in the correlations for the burning velocity were calculated on the basis of the thermal theory of flame propagation as a chain reaction with one active center. It was shown that the pressure exponent n is a function of the mixture composition, temperature, and pressure. In the 1--8 atm range, n decreases and in the 8 -- 70 atm range, it is practically constant. The exponent n has a maximum close to the stoichiometric composition. The tempera-

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ACC NR: AP7000644

ture exponent m is a function of the composition and pressure. The exponent m has a maximum of about 2 at a stoichiometric composition. Orig.art.has: 3 formulas and 5 figures. [WA-68]

SUB CODE: 21/ SUBM DATE: 05Mar66/ ORIG REF: 006/ OTH REF: 002

Card 4/4

AUTHOR: Babkin, V.Ya., Engineer (Sverdlovsk) 28-4-28/35

TITLE: GOST 8032-56 is in Effect (GOST 8032-56 v deystvii)

PERIODICAL: Standartizatsiya, 1957, # 4, p 79 (USSR)

ABSTRACT: The author of this short note points out that the presently used norms for the chemical industry do not conform with the preference numbers standard, ГОСТ 8032-56, and suggests a revision. The normalized series for container bottoms and jackets have shown that this standard results in a reduction of the variety of designs, in an increased serial production and reduced raw material consumption.

AVAILABLE: Library of Congress

Card 1/1

. Бабкин, В. Я.

BABKIN, V.Ya., inzhener (Sverdlovsk).

The All-Union State Standard No.8032-56 is in operation. Standartizatsiia no.4:79 Je-Ag '57. (MLRA 10:9)

(Chemical apparatus--Standards)

1. BABKIN, Ya. L.

2. USSR (600)

4. Evaporating Appliances

7. Lengthening the life of steel pipes in evaporating apparatus. Sakh. prom. 27 No. 5, 1953.

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

SOV/80-32-5-45/52

5(2)

AUTHORS: Titov, V.A., Babkin, Yu.A., Balandin, I.M.

TITLE: The Corrosion of Metals in Thionylchloride

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 5, pp 1167-1169 (USSR)

ABSTRACT: Thionylchloride is the raw material for dyestuffs, moving picture films, pharmaceutical products, etc. With the moisture of the air $SOCl_2$ forms $SO_2$ and HCl. Its corrosion activity is not yet investigated. Experiments were made therefore under laboratory and industrial conditions. In the first case the pure substance was used, in the second case a mixture of 80% $SOCl_2$, 2.7% dissolved gases and 17.3% chlorides. It has been shown that the resistance of copper and titanium is very low, being 11.5 mm/year and 6.8 mm/year, respectively. The corrosion of the steel of EI-461 and 1Kh18N9T grades was 0.01 and 0.02 mm/year, respectively. Both steels have also a high ductility, toughness and good welding properties. EI-461 is very expensive and can be used only for a small number of apparatus parts.

Card 1/2

SOV/80-32-5-45/52

The Corrosion of Metals in Thionylchloride

There are 2 graphs and 1 table.

ASSOCIATION: Moskovskiy institut stali (Moscow Institute of Steel)

SUBMITTED: May 30, 1958

Card 2/2

Babkin, Yu.A.

82445

S/149/60/000/004/009/009

18.1200

AUTHORS: Babkin, Yu.A., Tomashov, N.D., Titov, V.A., Konstantinov, V.I.

TITLE: Corrosion Resistance of Tantalum-Niobium Alloys in Sulfurous Acid

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Tsvetnaya metallurgiya, 1960, No. 4, pp. 153-156

4

TEXT: The authors investigated the corrosion resistance of tantalum-niobium alloys in sulfurous acid at various temperatures. The alloys were prepared of electrolytic powders by the metalloceramic method and subsequently rolled into sheets. Specimens were cut out of the unannealed sheets. The tests were performed with specimens of pure tantalum and niobium and their alloys with a Ta content of 21.6; 34; 48.9; 51.1; 67.3 and 70.8 atomic %. The amount of admixture in the alloys did not exceed 0.1%. Prior to the tests the specimens were polished, washed and degreased. Corrosion tests were performed at 20 and 60°C with flasks with ground stoppers. At 110 and 150°C the experiments were carried out with soldered glass ampoules placed in metal cylinders with screwed-on stoppers. To prevent the destruction of ampoules by internal pressure, the cylinders were filled with water whose vapors produced the necessary counter-pressure. The flasks and cylinders were kept in a thermostat for 20 hours. During the tests, measurements

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Corrosion Resistance of Tantalum-Niobium Alloys in Sulfurous Acid

were taken of the corrosion rate (in $g/m^2$ hr); proneness to crystallite corrosion; changes in the mechanical properties, and electrode potential. The irreversible electrode potential was measured every 5-10 minutes during 3-4 hours by the conventional potentiometric circuit. A calomel electrode served as a comparison electrode. The following results were obtained: Corrosion of pure niobium and niobium alloys with 21.6; 34 and 48.9 atomic % Ta was observed in 90% $H_2SO_4$ at 110°C. An increased Ta content made the alloys corrosion resistant in the same degree as pure Ta. Proneness to crystallite corrosion was not observed. During the corrosion process changes in the mechanical properties of niobium and the alloy with 21.6% Ta took place as a result of hydrogenization. In 90% $H_2SO_4$ at 60°C, niobium corrosion depended linearly on the holding time at a mean rate of 0.354 $g/m^2$.hour. The niobium alloy with 21.6% Ta corroded noticeably after 100 hrs. Maximum hydrogenization of niobium at 110°C was observed in 60% $H_2SO_4$. Niobium and its alloy with 21.6% Ta corroded, depending on the temperature, according to the exponential equation

$$K = Ae^{-\frac{Q}{RT}},$$

where A is the constant; Q is the activation energy of the process in cal/mole;

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S/149/60/000/004/009/009

Corrosion Resistance of Tantalum-Niobium Alloys in Sulfurous Acid

R is the gas constant, and T is the temperature in K scale. The activation energy of niobium is 5440 cal/mole and 15,000 cal/mole for the alloy. It was established that Ta-Nb alloys, beginning with a Ta content of over 30%, were almost fully corrosion resistant in 90% $H_2SO_4$ at 110°C. This approaches the resistance of pure Ta. The alloys can be recommended to be used as structural and coating materials for equipment and structures operating under similar conditions. There are 4 graphs, 1 photo and 4 Soviet references.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute) Kafedra korrozii i zashchity metallov (Department of Corrosion and Protection of Metals)

SUBMITTED: August 20, 1959

Card 3/3

L 34691-65 EPF(c)/EPR/EWG(i)/EWP(i)/EWP(k)/EWT(d)/EWT(m)/EWP(h)/EWG(m)/EWP(b)/EWA(d)/EWP(l)/EWP(e)/EWP(v) Pc-4/Pf-4/Pr-4/Ps-4 RM/WH/WW/GS

S/0000/62/000/000/0025/0030

ACCESSION NR: AT5004083

49
47
B+1

AUTHOR: Babkin, Yu. I.

TITLE: Plastic electrokinetic pressure gauge with ion exchange stabilization

SOURCE: Vsesoyuznaya nauchno-tekhnicheskaya konferentsiya po probleme vibratsionnogo i pul'satsionnogo goreniya. 1st, 1961. Trudy. Moscow, Sektor nauchno-tekhn. inform. GIAP, 1962, 25-30

TOPIC TAGS: pressure sensor, pressure measurement, precision instrument design, ion exchange resin

ABSTRACT: Electrokinetic pressure gauges make use of the phenomenon of flow potential which arises when a polar liquid passes through a system of capillaries or a porous membrane made of insulating material. With regard to this:

$$E = P \cdot \frac{\varepsilon \cdot \zeta}{4\pi\eta\sigma},$$

where E and P are the potential and pressure differences with respect to both sides of the membrane; $\zeta$ is the zeta potential determined by the properties of the membrane and the liquid; $\varepsilon$, $\eta$ and $\sigma$ are the permittivity, viscosity and conductivity

Card 1/5

L 34691-65

ACCESSION NR: AT5004083

of the liquid. An electrokinetic pickup (see Fig. 1 of the Enclosure) consists of a body *1* and a porous membrane *2* both made from a good dielectric, end membranes *3* and current-collecting electrodes *4*. If the membranes are only interfaces between the ambient medium and the working fluid and do not introduce any forces of elastic resistance into the system, the sensitivity of the unit E/P remains constant within an extremely wide range of pressures and frequencies with almost total absence of phase and frequency distortions. This property, combined with the fact that the internal resistance is practically free of reactance, makes the electrokinetic gauge indispensible for quantitative measurements of the broad spectra of pressure oscillations. The sensitivity of an electrokinetic gauge for a given membrane-liquid pair is inversely proportional to the electrical conductivity of the liquid. Previously designed gauges of this type have not been widely used because of low pressure sensitivity, non-linear characteristics due to the use of metallic elastic membranes and time instability of the sensitivity due to the change in conductivity of the liquid as soluble components are leached from the material in contact with the liquid, including the oxide film on the surface of the metal parts. These disadvantages are eliminated to a considerable degree in an instrument developed for special measurements in pulsating flows (see Fig. 2 of the Enclosure). All parts of the gauge which are in contact with the liquid are made from plastic; the body

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L 34691-65

ACCESSION NR: AT5004083

of the gauge and the porous membrane from plexiglass, the end membranes from a thin polyethylene film 0.05-0.03 mm thick. There are no metallic electrodes in the gauge. The secondary pulses are taken off by coating the inner surface and ends of the gauge with graphite. The working fluid is pure water. In order to maintain the conductivity of the water at a minimum and constant level, ion exchange stabilization is used: H and OH ion exchange resins are introduced into both cavities of the gauge. A detailed description of the construction, operation and characteristics of the gauge is given. The sensitivity of the instrument is 50 v/atm, the potential difference at $P = 6$ kg/cm$^2$ is 300 v, the internal resistance is about 1.5-2.5 mΩ, and the sensitivity of the instrument remains constant within a temperature range from 1 to 60°C. The gauge breaks down above 60°C when the ion exchange resins begin to decompose. Orig. art. has: 3 figures, 5 formulas.

ASSOCIATION: none

SUBMITTED: 29Dec62 ENCL: 02 SUB CODE: IE, ME

NO REF SOV: 003 OTHER: 001

Card 3/5

L 34691-65

ACCESSION NR: AT5004083

ENCLOSURE: 01

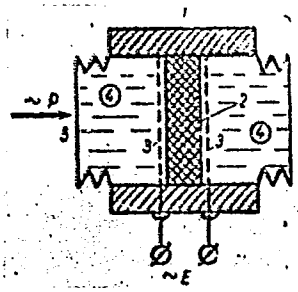


Fig. 1. Diagram of electrokinetic pressure gauge: 1--body; 2--porous membrane; 3--end membranes; 4--current-collecting electrodes

Card 4/5

L 34691-65

ACCESSION NR: AT5004083

ENCLOSURE: 02

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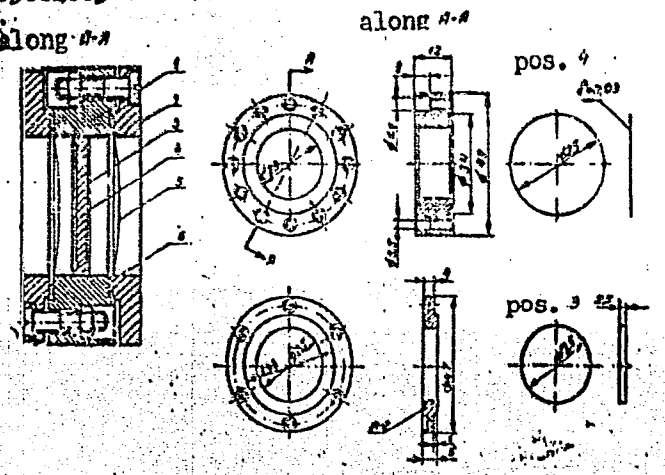



Fig. 2. VoFVTI electrokinetic gauge for measuring oscillatory motions in pulsating flows.

Card 5/5

1. BABKIN, Yu. L.; VAYSMAN, M.L.

2. USSR (600)

4. Steam Boilers

7. Operation of a steam compressor installation at the Elan'-Kolenovskii sugar factory. Sakh. prom., 26, No. 12, 1952

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

HABKIN, Yu.L.

Steam jet starter. Sakh.prom. 29 no.2:28-30 '55.
(MLRA 8:6)

1. Kupyanskiy sakharnyy zavod.
(Steam jets) (Steam boilers)

BABKIN, Yu.L.

Valveless priming of centrifugal pumps. Sakh.prom. 29 no.7: 34 '55. (MLRA 9:1)

1.Kupyanskiy sakharnyy zavod.
(Centrifugal pumps)

AUTHOR: Babkin, Yu.L., Engineer. 104-4-27/40

TITLE: An indicator of the load on drum type ball mills. (Ukazatel zagruzki barabannosharovykh mel'nits.)

PERIODICAL: "Elektricheskie Stantsii" (Power Stations), 1957, Vol. 28, No.4, pp. 81 - 82 (U.S.S.R.)

ABSTRACT: The efficiency of operation of drum type ball mills depends to a very large extent on their being correctly loaded. However, there is as yet no instrument by which the loading of mills can be measured under operating conditions, particularly when working without an intermediate bunker. The widely used system of estimating the load on the mill from its resistance can only be used on a system with intermediate bunkers when the resistance of the entire dust tract remains reasonably constant. The method of regulating the load on ball mills used on imported machines (for example Foster-Wheeler) is unreliable when milling wet coals and is applicable only to short mills fed from both ends. Experienced operators with good hearing are able to regulate the load on the mill by ear. This is because when the mills run empty they have a characteristic metallic noise and when overloaded they have a weak soft noise without distinguishable metallic note. Hence the optimum conditions of operation should correspond to a

1/3

An indicator of the load on drum type ball mills. (Cont.) 104-4-27/40

definite level of metallic noise. Although experienced men can judge the operation of a mill by the sound with success they tire after a time and lose their sensitivity. An instrument was therefore developed and tested to indicate the load on the mill on an arbitrary scale. The instrument consisted of a microphone, an audio-frequency filter which passes high frequencies and suppresses low frequencies, an audio-frequency amplifier with an undistorted sound output of not less than 2 W and an indicating galvanometer with a tuned thermo-electric rectifier supplying the galvanometer. Details of the equipment are described including protection against dust and the circuit is given. Thermo-electric rectification of the audio-frequency current was found to be most satisfactory for although other rectifiers require less amplification they do not give a steady reading. The method of adjusting the equipment is described. The instrument is more sensitive to underloading than to overloading but it always reacts sooner than the most experienced man to changes in conditions of fuel supply. The instrument requires adjustment about every 4 - 600 hours of working, it costs about 800 - 1 000 Roubles excluding the galvanometer. The instrument was tested for more than 6 months in the boiler house of a sugar factory and

2/3

L 30088-65 EWT(m)/EPA/EPA(s)-2/EPF(c)/EWP(f)/EPR Paa-4/Pr-4/Ps-4/Pt-10
WW/JW/GS

ACCESSION NR: AT5004092 S/0000/62/000/000/0088/0094

AUTHOR: Babkin, Yu. L.

TITLE: Pulsed combustion of liquid fuels

SOURCE: Vsesoyuznaya nauchno-tekhnicheskaya konferentsiya po probleme vibratsionnogo i pul'satsionnogo goreniya. 1st, 1961. Trudy. Moscow, Sektor nauchno-tekhn. inform, GIAP, 1962, 88-94

TOPIC TAGS: combustion, pulsed combustion, high power combustion, pulsed combustion chamber, pulsed combustion boiler, boiler design

ABSTRACT: In view of the need for a sharp reduction in size of power-producing boiler aggregates, the Eastern Affiliate of the VTI in Chelyabinsk has conducted investigations, since 1958, in connection with the design of industrial equipment using the intensive vibrating combustion of gas and fuel oil. The approach was motivated by the known data in the scientific literature which indicated that one should be able to: a. create very intensive gas and fuel oil combustion in small-size chambers; b. achieve external flares with approximately even low luminance during gas and fuel oil combustion; c. achieve large heat generation densities without any significant increase in blast; and d. increase the convective heat exchange at the expense of oscillatory accelerations and utilize the vibration

Card 1/2

L 30088-65

ACCESSION NR: AT5004093

self-blowout of the heating surface. The article describes tests carried out in special chambers for pulsed combustion with and without aerodynamic valves as well as in a counter-phase chamber (which proved unstable). The results show that pulsed combustion chambers cannot be designed as a kind of adapter to the existing equipment. This type of combustion requires the development of special small-size chamberless boilers. Their construction, lining, and insulation must be resistant to vibrations, and their outer air ducts must be sound absorbent. A special bureau of the Taganrogskiy kotel'nyy zavod (Taganrog Boiler Factory) is presently designing such a special boiler to satisfy the above-mentioned requirements. Orig art. has: 4 figures.

ASSOCIATION: none

SUBMITTED: 29Dec62 ENCL: 00 SUB CODE: FP

NO REF SOV: 000 OTHER: 000

Card 2/2

L 27072-66

ACC NR: AP6017465 SOURCE CODE: UR/0096/65/000/009/0023/0027

AUTHOR: Babkin, Yu. L. (Engineer)

23
B

ORG: VoFVTI

TITLE: Pulsed-burning chambers as steam boiler heating devices

SOURCE: Teploenergetika, no. 9, 1965, 23-27

TOPIC TAGS: steam boiler, electric power plant

ABSTRACT: In regard to increasing the specific capacity of the heating elements of steam boilers, the pulse-burning phenomenon is of interest. It promises: increased specific heat transfer; self-intake as in pulse-jet motors; very high forcing of the vibrating tubes, up to $100 \cdot 10^6$ w/m$^2$; a fuel oil flame with radiation characteristics similar to those of a gas flame; and use of the pulsation of the gas flame for cleaning the burning surfaces of external contaminants. One principle problem in the development of a pulsed burner has been the development of valves to insure one-way "traffic" of burning mass in the chamber. Plastic will not withstand the heated input air and metal "flapping" valves fatigue too quickly. A rotor valve requires continuous control of speed, to synchronize it with the instantaneous resonant frequency of the system. The answer is an aerodynamic valve with no moving parts, in which the incoming inert air mass acts as a "plug" against reverse

2

Card 1/2 UDC: 621.43.056:621.182.9.001.3

L 27072-66

ACC NR: AP6017465

flow. With a refinement of this device, plus a preliminary resonant chamber where the fuel is atomized, an experimental model achieved the goals desired. A description and diagrams are presented for a heating unit installed in 1963 under a medium pressure boiler producing 70 t/hr, at the Ufimskaya Heat and Electric Power Station. Experience with this unit indicates that the major areas for future development are those of mixing and heat treatment of the fuel. Orig. art. has: 6 figures. /JPRS/

SUB CODE: 10, 13 / SUBM DATE: none / ORIG REF: 008 / OTH REF: 011

Card 2/2

BABKIN, Yu.M.

The operation of the speedometers has been improved. Elek. i tepl. tiaga 7 no.4:10 Ap '63. (MIRA 16:5)

1. Neosvobozhdennyy brigadir tsekha po remontu skorostemerov depo Samarkand Tashkentskoy dorogi.
(Railroads—Equipment and supplies) (Speedometers)

KOZHEVNIKOV, Ye.N., veterinarnyy vrach; BABKINA, A.A., veterinarnyy vrach; DMITRIYEVA, P.M., veterinarnyy vrach; MAKAROV, I.I.

Erysipelatous septicemia of turkeys. Veterinariia 40 no.8:54-55 Ag '63. (MIRA 17:10)

1. Voronezhskaya veterinarnaya laboratoriya (for Kozhevnikov, Babkina, Dmitriyeva). 2. Glavnyy veterinarnyy vrach Sovkhoza "II pyatiletka" Voronezhskoy oblasti (for Makarov).

KOZHEVNIKOV, Ye.M., veterinarnyy vrach po boleznyam ptits; GOLYSHKIN, I.M., veterinarnyy vrach po boleznyam ptits; DMITRIYEVA, P.M., veterinarnyy vrach po boleznyam ptits; BABKINA, A.A., veterinarnyy vrach po boleznyam ptits; TAYTLER, Ya.N., veterinarnyy vrach; TACHANOV, A.T., veterinarnyy fel'dsher

Eliminating pasteurellosis in poultry. Veterinariia 42 no.8:8-10 Ag '65. (MIRA 18:11)

1. Voronezhskaya oblastnaya veterinarnaya laboratoriya (for Khozhevnikov, Golyshkin, Dmitriyeva, Babkina). 2. Sovkhoz "Buda-Koshelevskiy" Gomel'skoy oblasti (for Taytler, Tachanov).

L 19351-66 EWT(1)/T JK

ACC NR: AP5023727 (A) SOURCE CODE: UR/0346/65/000/008/0008/0009

AUTHOR: Kozhevnikov, Ye. M.; Golyshkin, I. M.; Dmitriyeva, P. M.; Babkina, A. A. (Veterinary Doctors of the Bird Disease Department) 23 B

ORG: Voronezh Oblast Veterinary Laboratory (Voronezhskaya oblastnaya veterinarnaya laboratoriya)

TITLE: Experimental control of poultry pasteurellosis 6,45 55

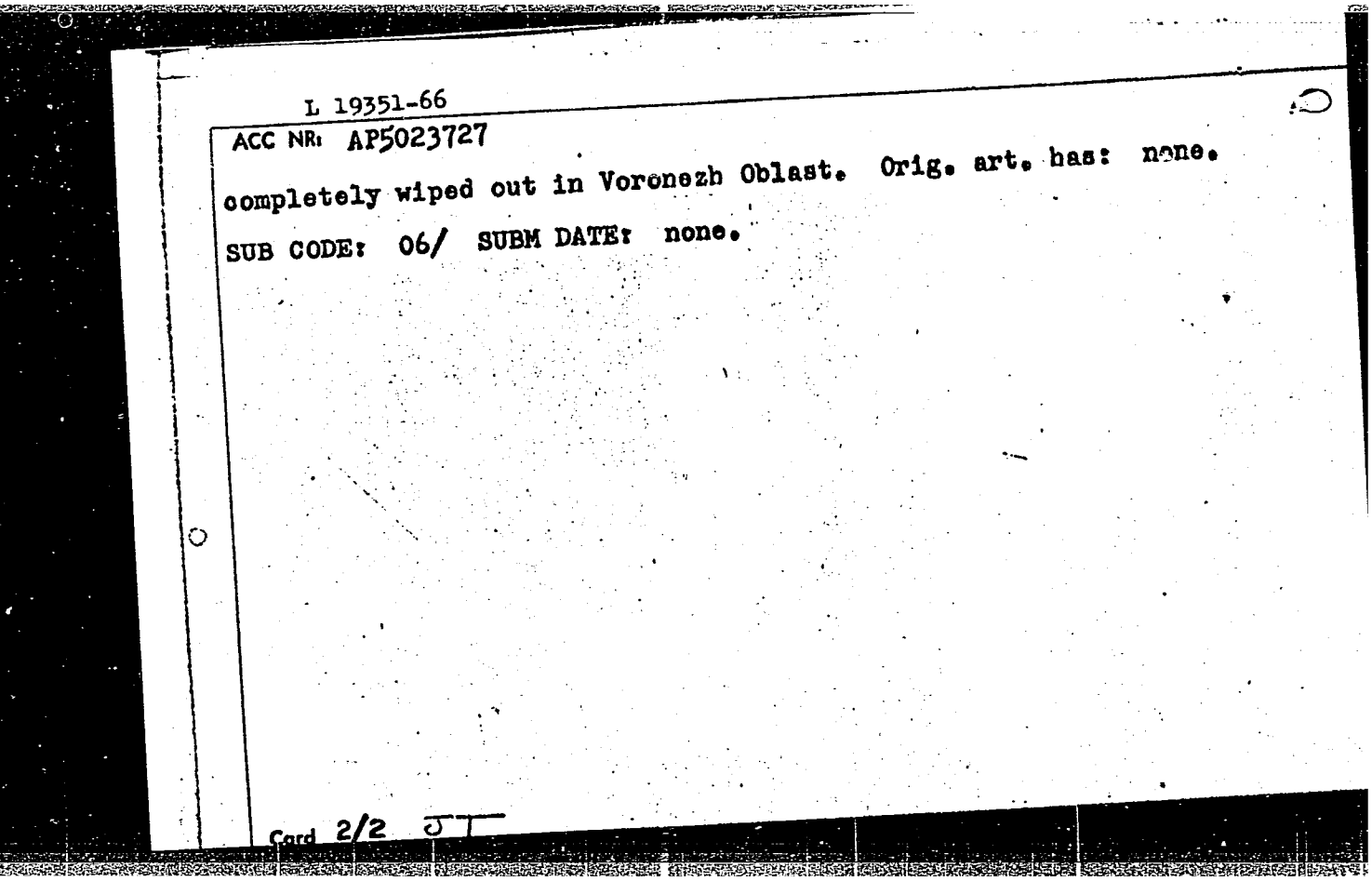
SOURCE: Veterinariya, no. 8, 1965, 8-9

TOPIC TAGS: experiment animal, animal disease, animal disease therapeutics

ABSTRACT: With control of poultry pasteurellosis by vaccination proving to be ineffective, new control measures were initiated in Voronezh Oblast in 1963. Sanitation of poultry farms was greatly improved and infected birds were killed. Vaccinations were used in some cases, mostly on small isolated farms. On large poultry farms the killing of infected birds was found to be the only effective means of controlling poultry pasteurellosis and has proven to be more economical than other methods. Healthy poultry from other farms was brought in to replace the infected birds. Within 18 months poultry pasteurellosis was

Card 1/2 2

UDC: None



L 19351-66
ACC NR: AP5023727

completely wiped out in Voronezh Oblast. Orig. art. has: none.

SUB CODE: 06/ SUBM DATE: none.

Card 2/2

LYAKOVSKIY, M.S., podpolkovnik meditsinskoy sluzhby; BABKINA, A.S.

Change in the time of simple motor reaction in students. Voen.-med. zhur. no.3:34-35 Mr '60. (MIRA 14:1)
(MOVEMENT (PHYSIOLOGY))

L 18271-65 EWT(m)/EPF(c)/EWP(j) Pc-4/Pr-4 RM
ACCESSION NR: AP5002984 S/0079/64/034/009/2897/2902

AUTHOR: Gladshteyn, B. M.; Bebkina, E. I.; Fedotova, V. V.; Soborovskiy, L. Z.

TITLE: Investigation in the series of organic sulfur compounds. VIII. Behavior of alkane- and alkenesulfonyl fluorides, as well as their halo derivatives, towards esters of trivalent phosphorus

SOURCE: Zhurnal obshchey khimii, v. 34, no. 9, 1964, 2897-2902

TOPIC TAGS: organic sulfur compound, fluoride, ester, organic phosphorus compound

Abstract: The behavior of alkane- and alkenesulfonyl fluorides, as well as their halo derivatives, toward highly reactive esters of methylphosphinous acid was studied. The reactions of methane-, ethane-, vinyl-, beta-chloroethane-, and beta-chlorovinylsulfonyl fluorides with the diethyl ester of methylphosphinous acid were investigated. Methane- and ethanesulfonyl fluorides did not react with diethyl methylphosphinite under the conditions used. Vinyl-sulfonyl fluoride added diethyl methylphosphinite in the 1,4-position. Beta-chlorovinylsulfonyl fluoride reacted with diethyl methylphosphinite at the beta-carbon atom according to the Arbuzov rearrangement at equimolar ratios of the substances. Beta-chlorovinylsulfonyl fluoride reacted in steps with 2 moles of diethyl methylphosphinite, forming ethyl-

Card 1/2

L 18271-65
ACCESSION NR: AP5002984

(beta-fluorosulfovinyl)methylphosphinite, which reacted with the second mole of diethyl methylphosphinite similar to the reaction of diethyl methylphosphinite with vinylsulfonyl fluoride. Beta-chloroethanesulfonyl fluoride reacted with diethyl methylphosphite in two ways: by forming the Arbuzov rearrangement products, and at the alpha-carbon atom, eliminating vinylsulfonyl fluoride. Orig. art. has 15 formulas and 1 graph.

ASSOCIATION: none

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|---|---|---|
| SUBMITTED: 05Apr63 | ENCL: 00 | SUB CODE: OC, GC |
| NO REF SOV: 012 | OTHER: 013 | JPRS |

Card 2/2

L 3389-66 EWT(1)/EWA(j)/EWA(b)-2 RO

ACCESSION NR: AP5021650 UR/0218/65/030/004/0705/0712

577.155.2

AUTHOR: Vasilenko, S. K.; Babkina, G. T.

TITLE: Isolation and properties of ribonuclease from cobra venom

SOURCE: Biokhimiya, v. 30, no. 4, 1965, 705-712

TOPIC TAGS: toxicology, ribonucleic acid, chemical kinetics, enzyme, magnesium, hydrolysis

ABSTRACT: Ribonuclease from the venom of the cobra (Naja oxiana) was isolated by chromatography on sulfoethylcellulose, filtered on Sefadekse G-25, and then isolated again by chromatography on DEAE cellulose. In all tests, the chromatography was carried out at 2C and the albumen concentration was determined by growth in the optical density of the ribonuclease during hydrolysis. The kinetics of the enzyme hydrolysis of the ribonuclease were studied by potentiometric titration. 100 fold purification of the enzyme was achieved by three chromatographic treatments. With phosphodiester hydrolysis of the products of ribonuclease hydrolysis the products are mononucleotides, while with alkali hydrolysis they are

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L 3389-66
ACCESSION NR: AP5021650

nucleosides, mononucleotides, and nucleoside diphosphates. It can therefore be assumed that nuclease from cobra venom catalyzes the breaking of the bond between the phosphorous and the third hydroxyl group of the ribose precipitate. The enzyme is specific only to ribonuclease, is activated by magnesium ions, and has an optimum pH of 7.6-7.8. 100% thermal inactivation of the enzyme is achieved by incubating it at 70C for 5 min. "The authors express their deep thanks to D. G. Knorr for his valuable advice in carrying out the work." Orig. art. has: 7 figures and 2 tables

ASSOCIATION: Institut organisheskoy khimii Sibirskogo otdeleniya Akademii nauk SSSR, Novosibirsk (Institute of Organic Chemistry of the Siberian Branch of the AN SSSR) 55

SUBMITTED: 27Jul64 ENCL: 00 SUB CODE: LS

NR REF SOV: 005 OTHER: 002

Card 2/2

L 64324-65 EWP(e)/EPA(s)-2/EWT(m)/EWP(i)/EPA(w)-2/EWP(b) WW/WH
ACCESSION NR: AP5022277 UR/0363/65/001/007/1229/1233
666.1:542.65

AUTHOR: Goykhman, V. Yu.; Babkina, L. K.; Stativa, V. P.

TITLE: Volume changes caused by heat treatment in heat-resistant pyrocerams

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 7, 1965, 1229-1233

TOPIC TAGS: glass, glass product, glass property, glass mechanical property, heat resistant glass, glass crystallization, pyroceram, sitall, heat resistant sitall, high strength sitall, glass ceramic, heat treatment

ABSTRACT: The density, absolute shrinkage, closed porosity, transverse strength, and coefficient of thermal expansion have been determined in cordierite type Pyrocerams (sitalls) which were heat treated at temperatures varying in the 1000—1300C range (end temperature). This complex study of the properties of sitalls was necessary for organizing the production of new high-strength and heat-resistant (low thermal expansion) microcrystalline glass materials (sitalls) and glassware. Density was taken as the most sensitive indicator of phase transformations occurring during heat-treatment of the glass material. The proportion of the glassy phase,

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L 64324-65

ACCESSION NR: AP5022277

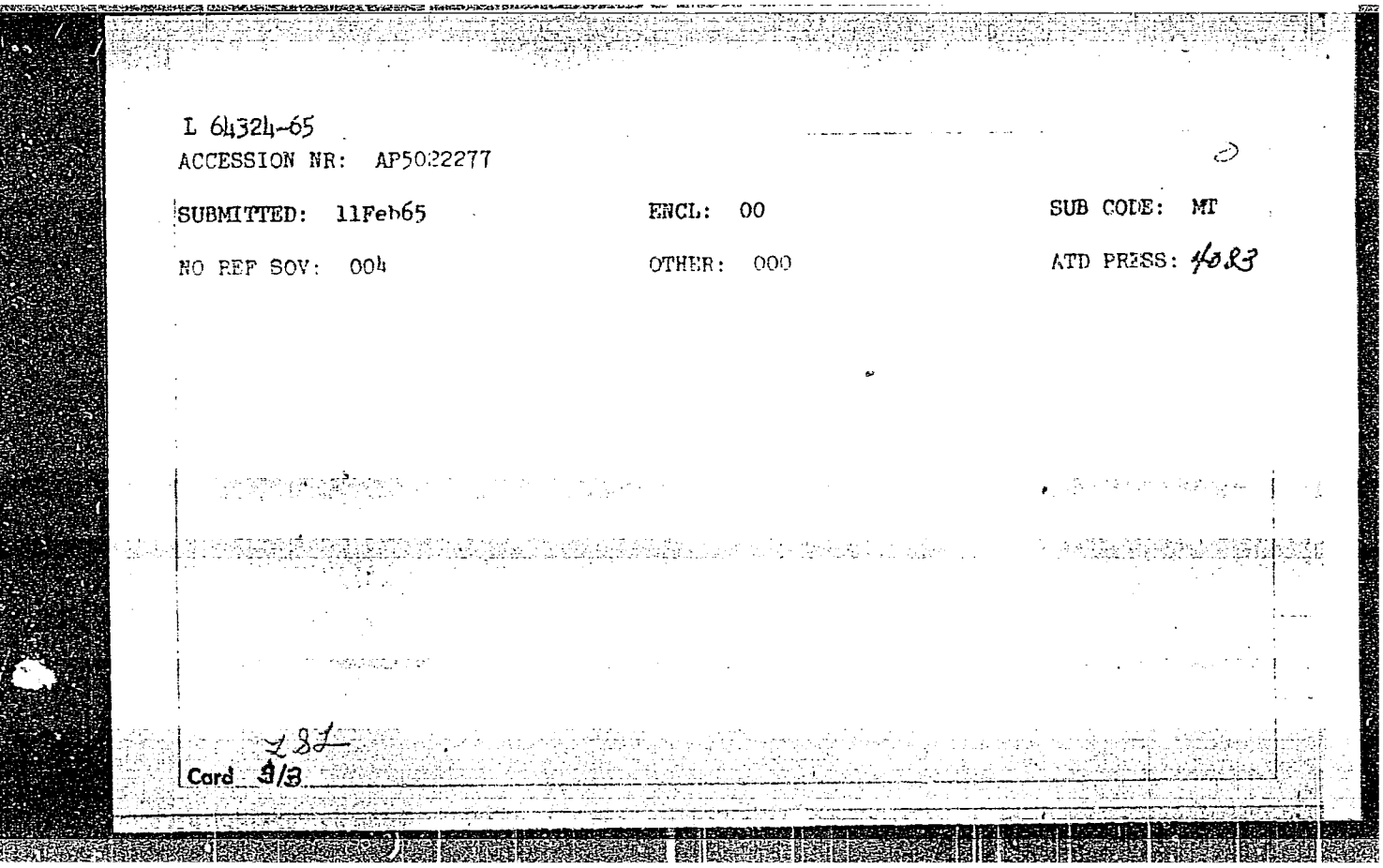
2

in the material i.e., its degree of crystallization, is directly related to the density and some other properties of the material. The temperature-dependence of the true density, excluding the effect of closed macroporosity, indicated two temperature zones, one of shrinkage and another of expansion, which coincided with the predominance of either the "heavy" (mullite, sapphirine, rutile) or cordierite phase. The transition point between the two density zones was near 1050C. Temperature dependence of absolute shrinkage calculated from the densities of crystalline and glassy materials followed the same pattern as that of density but the expansion started at 1135C only. These changes in the dimensions of the samples are considered to be of great practical importance, since the changes in mechanical strength are associated with crystallization shrinkage. Transverse strength was found to be maximum (40.7 kg/mm$^2$) at 1050C, which was also the temperature of the maximum closed porosity. High mechanical strength in this case is attributed to the formation of fine crystals associated with the high strength of thin glassy interlayers. In conclusion, a decrease in the amount of work connected with final adjustment of glassware dimensions to specifications was made possible by correcting the dimensions in the processes of extrusion, casting, etc., followed by heat treatment. This paper was presented at the Seminar on Heat-resistant Sitalls held in Leningrad on 26-27 October 1964. Orig. art. has: 5 figures and 3 tables. [JK]

44 III

ASSOCAITION: none

Card 2/3



L 64324-65
ACCESSION NR: AP5022277

SUBMITTED: 11Feb65 ENCL: 00 SUB CODE: MT

NO REF SOV: 004 OTHER: 000 ATD PRESS: 4083

Card 1/3

BABKINA, I. N.

27184 BABKINA, I. N. , BYUSHGENS, ... S. - Novye Shelkovye Tkani. Tekstil. Prom-St: 1949, No. 8, s. 17-19.

SO: Letopis' Zhurnal'nykh Statey, Vol. 36, 1949.

BABKINA, I.N., inzh.; BYUSHGENS, S.S., inzh.; DMITRIYEVA, I.A., inzh.

Using synthetic fibers in standard silk fabrics. Tekst. prom. 18 no.8:15-17 Ag '58. (MIRA 11:10)
(Textile fibers, Synthetic) (Silk manufacture)

SOROKIN, M.F.; BABKINA, M.M.

Composition of tricopolymers and the copolymerization constants of butyl methacrylate, glycidyl methacrylate, and methacrylic acid. Vysokom. soed. 7 no.4:737-740 Ap '65.

(MIRA 18:6)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleyeva.

ACC NR: AR6031252 (A) SOURCE CODE: UR/0081/66/000/011/S020/S020

AUTHOR: Sorokin, M. F.; Babkina, M. M.

TITLE: Synthesis and study of butylmethacrylate copolymers with glycidylmethacrylate and methacrylic acid

SOURCE: Ref. zh. Khimiya, Part II, Abs. 11S121

REF SOURCE: Tr. Mosk. khim.-tekhnol., in-ta im. D. I. Mendeleyeva, vyp. 48, 1965, 201-207

TOPIC TAGS: copolymer, methacrylic acid, butylmethacrylate, glycidylmethacrylate, thermosetting copolymers

ABSTRACT: The synthesis of butylmethacrylate copolymers (I) with glycidylmethacrylate (II) and methacrylic acid (III) was carried out in cyclohexanone (IV) and dioxane (V) at 70, 80, and 90C. Benzoyl peroxide (IV) and dinitrile of azodi-isobutyric acid (VII) in amounts of 0.1, 0.2, 0.4 and 0.8 mol % were used as initiators. The monomer concentration in the reaction mixture amounted to 20, 30, and 40% and the molecular ratios varied over a wide range. The copolymerization rate (CR) increased with an increase in (II) concentration, while (III) in concentration of less

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than 25 mol % was found to retard CR. However, an acceleration of CR was observed with an increase in the mole fraction of III, accompanied by an increase in viscosity of the solution, which gelatinizes on reaching a 70% conversion of the monomer. Such a phenomenon is explained by the capacity of III to form an H-bond with compounds containing carbonylic oxygen, which is also true for II, IV and III. An increase in reaction temperature and in VI and VII concentrations causes an increase of the rate of copolymerization and a decrease in the molecular weight of the copolymers. The CR, the molecular weight, and the yield of copolymers increase with an increase in concentration of the monomers in the solution. IV and V do not substantially affect CR. The polydispersion of copolymers increases with an increase of I content and also with increases in the reaction temperature and concentrations of VI and VII. VI and V do not affect the polydispersion. The triple thermosetting copolymers obtained are capable of self setting at higher temperatures. Some properties of the copolymers were determined. V. Agasandyan. [Translation of abstract]

SUB CODE: 07/

Card 2/2

L 18416-66 EWT(m)/EWP(j)/T (A) IW/RM
ACC NR: AP6003422 SOURCE CODE: UR/0190/66/008/001/0115/0119

AUTHORS: Sorokin, M. F.; Babkina, M. M.

ORG: Moscow Institute of Chemical Engineering im. D. I. Mendeleyev (Moskovskiy khimiko-tekhnologicheskiy institut)

TITLE: Fractionation of a triple copolymer of butyl methacrylate, glycidyl methacrylate, and methacrylic acid

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 1, 1966, 115-119

TOPIC TAGS: copolymer, methacrylate plastic, polymerization degree

ABSTRACT: Molecular weight distribution of a triple copolymer of butyl methacrylate (I), glycidyl methacrylate (II), and methacrylic acid (III) was investigated by means of fractionation and examination of properties of the obtained fractions. Composition of the copolymer in mole % is: I:II:III = 74.10 : 9.65 : 16.25. Synthesis followed that described previously by the authors (Tr. Mosk. khim.-tekhnol. in-ta im. D. I. Mendeleyeva, vyp. 48, 1965). Fractionation was achieved by means of a repeated fractional precipitation with water from 2% solution in dioxane at 20C. Molecular weight, composition, and specific viscosity of the

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copolymer were determined in each fraction. Molecular weight distribution curves are shown in Fig. 1. Viscosity $\eta$ as function of concentration was determined according to the Schulz-Blaschke equation. Constant K' = 0.95 was calculated which permitted determination of $\eta$ at certain copolymer concentrations in acetone solution. The empirical relation between $\eta$ and molecular weight is given by the equation $[\eta] = 5{,}25 \cdot 10^{-3} M^{0{,}78}$.

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ACC NR: AP6003422

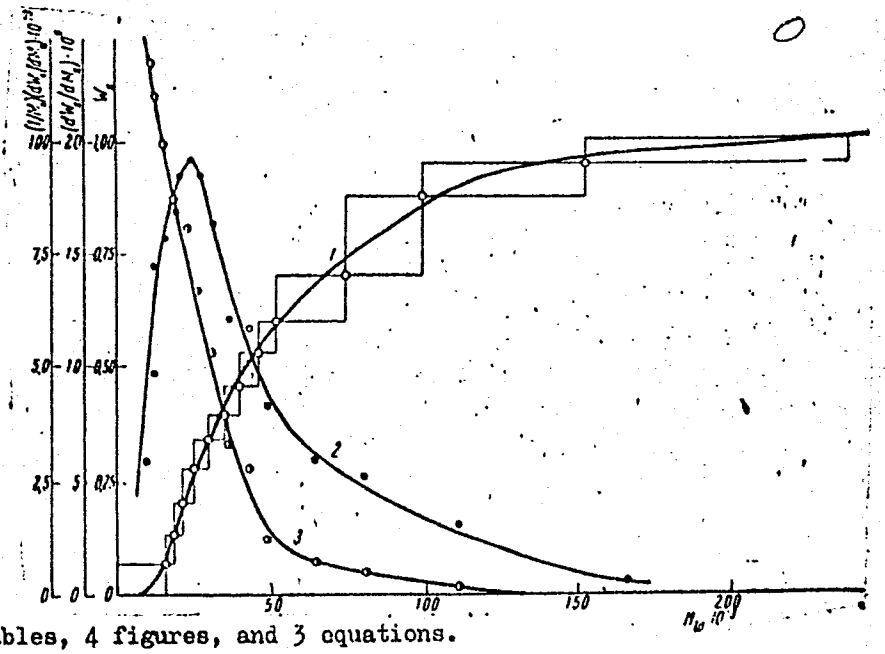


Fig. 1. Molecular weight distribution curves for copolymer I, II, and III: 1 - weight integral distribution; 2 - weight differential distribution; 3 - number distribution.

Orig. art. has: 3 tables, 4 figures, and 3 equations.

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L 18013-66 EWT(m)/EWP(j)/T WW/RM
ACC NR: AP6004313 SOURCE CODE: UR/0303/65/000/005/0012/0014

AUTHOR: Sorokin, M. F.; Babkina, M. N. 23 B

ORG: none

TITLE: Film-forming properties of ternary copolymers of butyl methacrylate, glycidyl methacrylate, and methacrylic acid

SOURCE: Lakokrasochnyye materialy i ikh primeneniye, no. 5, 1965, 12-14

TOPIC TAGS: methacrylate plastic, copolymer, thermosetting material

ABSTRACT: The film-forming properties of ternary copolymers of butyl methacrylate (BMA), glycidyl methacrylate (GMA), and methacrylic acid (MAA) were investigated with the aim of developing new thermosetting methacrylic copolymers. 20% lacquers were prepared from these copolymers in a mixture of solvents of the following composition: toluene, 30%; cyclohexanone, 30%; butyl acetate, 14%; acetone, 26%. Epoxy resins E-40 and E-181 were used to modify the lacquer films. The films were deposited on metal surfaces. The measured film-forming properties are tabulated. The composition of the copolymer was found to affect the properties of the lacquer films: as the content of reactive groups increases in the copolymer, the flexibi-

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ACC NR: AP6004313

lity declines, and the hardness and chemical stability increase. The films are transparent, have a good luster, and are capable of self-curing at high temperatures. Their drawback is the lack of impact strength. When the plasticizers tricresyl phosphate (TCP) and dibutyl phthalate (DBP) are used, the impact strength improves, the other properties remaining the same. Orig. art. has: 1 figure, 2 tables.

SUB CODE: 07/11/ SUBM DATE: 00/ ORIG REF: 000/ OTH REF: 000

Card 2/2 mgs

GOROVITS, Sh.Kh.; BABKINA, M.S., red.

[Planning of a local economy in a region; collection of problems] Planirovanie mestnogo khoziaistva v raione; sbornik zadach. [n.p.] Vysshaia shkola, 1964. 72 p. (MIRA 17:6)

GORYUNOV, Nikolay Andreyevich; BABKINA, N.G., redaktor; GUREVICH, M.M., tekhnicheskiy redaktor

[Raising ducks] Razvedenie utok. Izd. 2-oe, perer. i dop. Moskva, Gos. izd-vo selkhoz. lit-ry, 1955. 159 p. (MLRA 9:8)
(Ducks)

VOLKOV, A.A.; SHKUDOVA, R.I., metodist; TIKHOMIROV, V.N., otvetstvennyy redaktor; BABKINA, N.G., redaktor; PEVZNER, V.I., tekhnicheskiy redaktor

[Poultry breeding and pond fish culture" pavilion; a guidebook] Pavil'on "Ptitsevodstvo i prudovoe khozialstvo"; putevoditel'. Moskva, Gos. izd-vo selkhoz. lit-ry, 1956. 27 p. (MLRA 9:12)

1. Moscow. Vsesoyuznaya sel'skokhozyaystvennaya vystavka, 1954-
2. Direktor pavil'ona (for Volkov)
(Poultry) (Fish culture)
(Moscow--Agricultural exhibitions)

PANSKIKH, Konstantin Georgiyevich, kandidat sel'skokhozyaystvennykh nauk; BABKINA, N.G., redaktor; PEVZNER, V.I., tekhnicheskiy redaktor

[How we achieve high poultry production] Kak my dobivaemsia vysokoi produktivnosti ptitsy. Moskva, Gos. izd-vo sel'khoz. lit-ry, 1956. 70 p. (MLRA 10:2)

1. Direktor ptitsesovkhoza "Arzhenka" (for Panskikh)
(Poultry)

D'YACHKOV, Nikolay Aleksandrovich, dots.; BABKINA, N.G., red.; GOR'KOVA, Z.D., tekhn.red.

[Hogging off potato and sugar beet fields] Past'ba svinei na posevakh kartofelia i sakharnoi svekly. Moskva, Gos. izd-vo sel'khoz. lit-ry, 1957. 42 p. (MIRA 11:5)

1. Altayskiy sel'skokhozyaystvennyy institut (for D'yachkov)
(Swine--Feeding and feeding stuffs)

KRISHCHUNAS, I.V., akademik, redaktor; BABKINA, N.G., redaktor; GOR'KOVA, Z.D., tekhnicheskiy redaktor

[Pollination of greenhouse and hotbed plants by bees] Pcheloopylenie teplichnykh i parnikovykh kul'tur. Pod red. I.V.Krishchunas. Moskva, Gos. izd-vo sel'khoz.lit-ry, 1957. 62 p. (MLRA 10:9)

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk imeni I.V. Lenina. 2. Deystvitel'nyy chlen Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk imeni V.I.Lenina (for Krishchunas)
(Fertilization of plants) (Bees)

VASIL'YEV, A.V., doktor sel'skokhozyaystvennykh nauk, redaktor; LITOVCHENKO, G.R., kandidat sel'skokhozyaystvennykh nauk, redaktor; RABKINA, N.G., redaktor; SOKOLOVA, N.N., tekhnicheskiy redaktor

[Sheep breeding] Ovtsevodstvo. Izd. 5-oe, ispr. i dop. Moskva, Gos. izd-vo sel'khoz. lit-ry, 1957. 295 p. (MLRA 10:10)
(Sheep)

BABKINA, N.G., redaktor

[Progressive practices of stockbreeding in Kazakhstan] Peredovoi opyt v zhivotnovodstve Kazakhstana. Moskva, Gos. izd-vo sel'khoz. lit-ry, 1957. 302 p. (MLRA 10:9)
(Kazakhstan--Stock and stockbreeding)

ROGALEVICH, M.I., kand.sel'skokhozyaystvennykh nauk, red.; BABKINA, N.G., red.; ZUBRILINA, Z.P., tekhn.red.

[Horse breeding] Konevodstvo. Izd.3-e. Moskva, Gos.izd-vo sel'khoz.lit-ry, [illegible]7. 340 p. (MIRA 11:1)
(Horses)

GERD, M.A.; IN'KOV, N.M.; MAZOVER, A.P.; NAZAROV, V.P.; ORLOV, A.P.; SAKHAROV, N.A.; BABKINA, N.G., red.; GOR'KOVA, Z.D., tekhn.red.

[Principles of the raising of working dogs] Osnovy sluzhebnogo sobakovodstva. Moskva, Gos.izd-vo sol'khoz. lit-ry, 1958. 367 p. (MIRA 11:12)

(Dogs)

ANDREYEV, Konstantin Pavlovich, doktor veterin.nauk; BABKINA, N.G., red.; MAKHOVA, N.N., tekhn.red.; DEYEVA, V.M., tekhn.red.

[Protection of animals against flying bloodsucking insects and warble flies] Zashchita zhivotnykh ot krovososushchikh letaiushchikh nasekomykh i kozhnykh ovodov. Izd.2., ispr. i dop. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1959. 43 p. (MIRA 13:8)
(Agricultural pests) (Diptera)

MARTYSHEV, F.G., prof., doktor sel'skokhoz.nauk; LYAYMAN, E.M., prof., doktor biolog.nauk; GRINEVSKIY, A.M., kand.ekonom.nauk; VAVILKIN, A.S., kand.biolog.nauk; KARPANIN, D.P., kand.biolog.nauk; BARKINA, N.G., red.; ZUBRILINA, Z.P., tekhn.red.

[Raising fish in ponds] Prudovoe rybovodstvo. Moskva, Gos. izd-vo sel'khoz.lit-ry, 1959. 347 p. (MIRA 13:8)
(Fish culture)

VOROTILOV, Mikhail Aleksandrovich; BABKINA, N.G., red.; TRUKHINA, O.N., tekhn.red.

[Pasture and feedlot fattening of cattle] Nagul i otkorm krupnogo skota. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1960. 90 p. (MIRA 14:2)
(Cattle--Feeding and feeds)