

BUYEV, P.D., prof. (Kazan')

Effect of the treatment of chronic tonsillitis on the course of
rheumatic fever. Zhur. ush., nos. igorl. bol. 22 no.1:76-77 Ja-
F '62. (MIRA 15:5)

(TONSILS--DISEASES) (RHEUMATIC FEVER)

KORSHIKOV, G.V., inzh.; VORONOV, Yu.G., inzh.; TSEYTLIN, M.A., inzh.;
KIYASHKO, Yu.M., inzh.; GOROKHOV, A.S., inzh.; SEKACHEV, M.A.,
inzh; Prinsipalni uchastiye: ARSHINOV, G.P.; GRIGOR'YEV, Ye.I.;
KUVARIN, Yu.N.; RUDAKOV, N.V.; BUYEV, V.Ye.; IOGL'NITSYN,
A.N.

Investigating the oxidizing zone of a blast furnace working
under oxygen-enriched blowing (35% oxygen) and using natural
gas. Stal' 25 no.8:781-790 S '65. (MIRA 18:9)

BUYEVEROVA, YE. M., SIDYAKIN, G. P., TURULOV, A. V.

Wine and Wine Making - Uzbekistan

Bentonites and clays of Uzbekistan. Vin. SSSR 12 no. 3, 1952.

Monthly List of Russian Accessions, Library of Congress, June 1952. Unclassified.

BUYEVEROVA, Ye. M.


ZARUBIN, Vasilii Andreyevich; GERASIMOV, M.A., prof., retsenzent;
~~BUYEVEROVA, Ye.M.~~, inzhener, retsenzent; KRUGLOVA, G.I., red.;
KISINA, Ye.I., tekhn.red.

[Primary wine making] Pervichnoe vinodelie. Moskva, Pishchepromizdat,
1957. 102 p. (MIRA 10:12)

(Wine and wine making)

ZARUBIN, V.A.; BUYEVEROVA, Ye.M., retsenzent; CHERNOV, N.N., retsenzent;
KOVALEVSKAYA, A.I., red.; SOKOLOVA, I.A., tekhn. red.

[Care of young wine; secondary processes of wine making] Ukhod za
malodym vinom; vtorichnoe vinodelie. Izd.2. Moskva, Pishcheprom-
izdat, 1961. 78 p. (MIRA 14:8)
(Wine and wine making)


BUYEVICH, A.

The party organization in the struggle for mastering jet-propelled
aircraft. Grazhd. no. 14 no. 7.7-8 31 '57. (MLRA 10:9)

1. Naznachenie komandira podrazdeleniya po politicheskoy chasti.
(Jet planes) (Communist Part of the Soviet Union--Party work)

BUYEVICH, A.

Portrait of a pilot. Grazhd. av. 22 no. 11:6-7 N '65.
(MIRA 18:12)

007-66 ENT(m)/ENT(j)/T RM

ACC NR: AP6012442

(A)

SOURCE CODE: UR/0359/65/000/005/0127/0132

AUTHOR: Nepenin, Yu. N. (Docent, Candidate of technical sciences); Buyevskaya, A. D.
(Junior research associate)

ORG: Leningrad Forestry Engineering Academy (Leningradskaya lesotekhnicheskaya aka-
demiya) ¹⁹ ₃

TITLE: Investigating the composition of depleted liquors from hot purification of
cellulose

SOURCE: IVUZ. Lesnoy zhurnal, no. 5, 1965, 127-132

TOPIC TAGS: cellulose, wood chemical product, sodium hydroxide, alkali

ABSTRACT: The authors study the possibility of using depleted liquors from cellulose purification for making sulfite digestion acid. In studying the composition of these liquors, particular attention was devoted to determination of Na₂O which may combine with SO₂. The experimental procedure is briefly described and the properties of the cellulose produced by purification are tabulated together with data from an analysis of the depleted liquors. It is found that the composition of the liquors depends to a greater degree on the conditions of purification (consumption of NaOH and temperature) than on the derivation of the cellulose. A comparison of the results of conductometric and potentiometric titration shows that part of the alkali is bound in the

UDC: 676.1.022.168 : 547.458.81

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I. 25117-86

ACC NR: AP6012442

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form of salts of relatively weak organic acids and that part is bound with stronger organic acids. The principal fraction (at least 80%) of the organic material contained in the liquors is made up of products from decomposition of hydrocarbons--hemicellulose and cellulose (chiefly hydroxy acid). The remaining portion is made up of resinous materials, chlorolignin and its decomposition products. Acidification of the solution (in preparation of digestion acid) produces precipitates or colloidal suspensions consisting almost entirely of resinous materials. Orig. art. has: 3 figures, 4 tables.

SUB CODE: 07/

SUBM DATE: 12Nov64/

ORIG REF: 000/

OTH REF: 000

Card 2/2

BUYEVICH, A.V.

Labor successes of Irkutsk tree tappers. Gidroliz.i lesokhin.prom.
12 no.2:21-22 '59. (MIRA 12:3)

1. Trest Irkutkhimles.
(Irkutsk Province--Tree tapping)

BUYEVICH, A.V.

For a further improvement of the new technology of tree tapping.
Gidroliz i lesokhim.prom. 13 no.2:18-19 '60. (MIRA 13:6)

1. Irkutskiy sovmarkhoz.
(Irkutsk Province--Tree tapping)

BUYEVICH, A.V.

Results of a three-year tapping of pine with wide faces. *Gidroliz.*
i lesokhim.prom. 14 no.2:23-24 '61. (MIRA 14:3)

1. Irkutskiy sovnarkhoz.
(Irkutsk Province--Tree tapping)

BUYEVICH, Arkadiy Vitol'dovich; VARANVA, G.I., red.; YELAGIN, A.S.,
tekhn. red.

[Propagande of progressive experience in clubs] Propaganda pe-
redovogo opyta v klubakh. Moskva, Sovetskaia Rossiia, 1962.
95 p. (Bibliotechka sel'skogo klubnogo rabotnika, no.5)
(MIRA 15:11)

(Agriculture)

BUYEVICH, A.V.

Mechanize bark stripping operations in tree tapping. Gidroliz.
i lesokhim.prom. 16 no.3:29 '63. (MIRA 16:5)

1. Vostochno-Sibirskiy sovet narodnogo khozyaystva.
(Turpening)

BUYEVICH, A.V.

Striving to obtain one kilogram of rosin from one face in the
forests of Western Siberia. *Gidroliz. i lesokhim.prom.* 17
no.1:29 '64. (MIRA 17:4)

1. Vostochno-Sibirskiy sovet narodnogo khozyaystva.

ZHUKHIN, V.A., prof., zasluzhennyi deyatel' nauki BASSR; BUYEVICH, L.V.,
kand.med.nauk

Work of the Ufa Society of Pathoanatomists and Legal Medical Experts
for 1957-1958. Arkh.pat. 21 no.9:83-85 '59. (MIRA 14:8)

1. Predsedatel' Nauchnogo meditsinskogo obshchestva patologoanatomov
i sudebnykh medikov Ufy (for Zhukhin) 2. Sekretar' Nauchnogo
meditsinskogo obshchestva patologoanatomov i sudebnykh medikov
Ufy (for Buyevich).

(UFA--PATHOANATOMICAL SOCIETIES)

(UFA--MEDICAL JURISPRUDENCE)

SOLOV'YEV, V.; BUYEVICH, N.; METREVELI, P.

Standardizing the expenditures of institutions financed through
the budget. Fin. SSSR 17 no.9:37-41 8 '56. (MLRA 9:10)

(Finance)

DASHKEVICH, L.B.; BUYEVICH, V.A.; KUVAYEV, B.Ye.

Carbon suboxide and some of its properties. Part 6: Pyrolytic
preparation of carbon suboxide. Zhur.ob.khim. 30 no.6:1946-1950
Je '60. (MIRA 13:6)

1. Leningradskiy khimiko-farmatsevticheskiy institut.
(Carbon oxide)

S/124/63/000/003/021/065
D234/D308

AUTHORS: Zhivotovskiy, L. S., Karlin, B. I., Lopatin, N. A.,
Platonov, V. A., Sochilov, V. V. and Buyevich, V. A.

TITLE: Calculation of head loss due to friction in a hori-
zontal pulp duct

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 3, 1963, 111, ab-
stract 3B691 (Gidrotekhn. str-vo, 1962, no. 10, 45-49)

TEXT: Different results obtained in calculating the head loss of
a suspension of solids in water from different formulas induced
the authors to make field tests using pulp ducts 405-610 mm in.
diameter. The solid phase is represented by sands containing se-
veral size-fractions, and by fine gravel. Empirical constructions
are based on Dyuran's parameters. The authors use these parameters
for soils containing a range of grain sizes. [Abstracter's note:
Complete translation.]

Card 1/1

BUYEVICH, V.A., inzh.

Dredging of the roads. Mekh. i avtom. profitv. 18 no. 6421
Je '64. (MIRA 1759)

BUYEVICH, V. I.

"The Effect of Sensitizing an Organism in the Course of Experimental Ocular Diphtheria." Cand Med Sci, Ryazan Medical Inst, Ryazan 1954. (RZhBiol, No. 3, Feb. 55)

SO: Sup. No. 631, 26 Aug. 55 - Survey of Scientific and Technical Dissertation Defended at USSR Higher Educational Institutions. (14)

~~BUYEVICH, V. I.~~

Testing the value of the "Oblique column" culture medium for
identifying coli bacteria. Lab.delo 3 no.3:43-44 Mv-Je '57.
(MLRA 10:9)

1. Iz Klinicheskoy bol'nitsy No.6 i bakteriologicheskoy laboratorii
TSentral'noy polikliniki No.3 Ministerstva zdravookhraneniya SSSR,
Moskva
(ESCHERICHIA COLI) (BACTERIOLOGY--CULTURES AND CULTURE MEDIA)

Buyevich, V.I.
BUYEVICH, V.I.

Specificity of the hemagglutination reaction in so-called non-specific infectious arthritis. Lab.delo 3 no.5:23 S-0 '57.
(MIRA 11:2)

1. Iz bakteriologicheskoy laboratorii (zav. V.I.Buyevich) 6-y klinicheskoy bol'nitsy i Tsentral'noy polikliniki No.3 Ministerstva zdravookhraneniya SSSR, Moskva.
(BLOOD--AGGLUTINATION) (ARTHRITIS)

BUYEVICH, V.V.

Prospects for increasing the stability of electric power
systems with regulatory action of steam turbines. Sbor. rab.
po vop. elektromekh. no.10:128-136 '63. (MIRA 17:8)

BUYEVICH, V.V.

SOV/4172

* Collected Papers (Cont.)

Buyevich, V.V. Simulating Prime Movers for Electrodynamic Models of Power Systems

63

As a model for the prime mover and its regulator in a power system, the author used a d-c motor controlled by a setup consisting of two parts: a special circuit supplying a voltage proportional to the turbine torque and a power amplifier. The experiments with the simulator setup were made at the IEM, Academy of Sciences USSR. The author examines requirements for quick action of the power amplifier which were determined by this method and which should be taken into account in models of the prime movers.

Glebov, I.A. Electronic Self-excitation of Hydro- and Turbogenerators Without the Use of Series Booster Transformers

70

The author describes various systems and operating conditions of simplified excitation systems. He illustrates them with examples drawn from measurements of the Volzhskaya GES imeni V.I. Lenin, the Volzhskaya GES-Moscow electric transmission line and the Bratskaya GES.

* Sbornik rabot po voprosam elektromekhaniki, vyp. 3: Energeticheskiye sistemy, elektromashinostroyeniye, elektricheskaya tyaga, avtomatizirovannyy elektroprivod, avtomaticheskiye i telemekhanicheskiye sistemy, elektrosvarochnoye oborudovaniye, Moscow, Izd-vo An SSSR, 1960, 314pp. publ. from Akad. nauk SSSR, Institut elektromekhaniki

16.9560 (1024, 1031 only)

85062
S/024/60/000/005/008/017
E194/E484

AUTHOR: Buyevich, V.V. (Leningrad)

TITLE: A Speed Controller for Electrodynamic Models of Power Systems

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Energetika i avtomatika, 1960, No.5, pp.135-139

TEXT: This article describes a universal speed controller that can model governor systems of water or steam turbines. A simple schematic diagram of the model is shown in Fig.1, the model generator is driven by a d.c. motor controlled from the armature side. A constant voltage generator provides the model no-load conditions and a boosting generator is provided to alter the load on the set and its speed under working conditions. In the circuit of Fig.1 this voltage boosting generator is excited by a cross-field amplidyne the control windings of which are connected in the anode circuits of a balanced two-tube amplifier. Both the amplidyne and the electronic amplifier are provided with negative feed-back according to the amplidyne voltage to raise the operating speed and stabilize the characteristics. Fig.2 shows an oscillogram of the amplifier transient characteristics. Fig.1 shows only one of the
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A Speed Controller for Electrodynamic Models of Power Systems

simplest variants of model circuit, for example the speed governor is modelled by only one operating amplifier. A more detailed model may contain several such amplifiers. The conditions of similarity for the circuit of Fig.1 are discussed. Various steps that are taken to improve the conditions of similarity are stated and the equation relating the speed of the set to the output voltage of the controller is given in Eq.(4). For a steam turbine the relationship between the turbine torque and the position of the governor valve at constant set speed depends on the steam volume equation for the turbine or on the pipe-line equation for a water turbine. If it is considered that the steam volume is concentrated directly beyond the governor valve, the equation of the steam volume is given by Eq.(5) and this can be modelled by making the time-constant of the field of the voltage boosting generator equal to that of the steam volume. The conditions of similarity are further discussed. Modelling of speed governors is then considered. The diagram of the model of a speed governor contains either one or several operating amplifiers. The procedure for modelling the speed governor of a water turbine has been discussed elsewhere and, accordingly, this article considers
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E194/E484

A Speed Controller for Electrodynamic Models of Power Systems

only governor systems of steam turbines which, however, present greater variety. Therefore, no typical control circuit can be presented. However, all steam turbine governors have certain features in common, the governor system is usually composed of several aperiodic links connected in series. Other common characteristics are discussed. The governor usually combines two signals, one proportional to the deviation of the speed from the standard and another corresponding to the acceleration. The speed difference is differentiated by a device having a transmission function of the form of Eq.(8) and after appropriate conversion, the signal is summated with one proportional to the deviation of speed. A typical non-linear characteristic of a differentiator is shown in Fig.3. In order to restrict overspeed when load is thrown off, the differentiator has very short time constant. The circuit used to model a governor device of this kind is shown in Fig.4 and the conditions of similarity are discussed. It is of interest to use passive links to model the links of the structural control circuit. The circuit is then very simple and reliable. Such a circuit is shown in Fig.5 which is a model of a speed

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A Speed Controller for Electrodynamic Models of Power Systems

governor for a turbine type BK-50 (VK-50). The characteristics of the circuit are described. A special operational amplifier was developed for the model regulator. Its amplification factor is considerably less than in usual amplifiers of electronic models. However, this does not reduce the accuracy of the model and the amplifier is cheap and simple. A circuit diagram of the operational amplifier is given in Fig.6, its operation is described and the errors are assessed. Performance data of the amplifier are given. There are 6 figures and 7 references: 6 Soviet and 1 French.

SUBMITTED: May 14, 1960



Card 4/4

BUYEVICH, V.V.; GNEDIN, L.P.; KOVALENKO, V.P.

High-speed networks for compensating the brake action of excess losses and moment of inertia in a synchronous model generator.
Sber.rab.po vop.elektromekh.no.8:318-326 '63.

(MIRA 16:5)

(Electric generators) (Rotating amplifiers)

BUYEVICH, V.V. (Leningrad); ODTROUMOV, E.Ye. (Leningrad);
~~FOMINA, Ye.N.~~ (Leningrad); YUREVICH, Ye.I. (Leningrad)

Simulation of a turbine with intermediate steam superheating
as an element of the electrodynamic model in an electric
power system. Izv. AN SSSR. Otd. tekhn. nauk. Energ. i
transp. no.3:340-344 My-Je '63. (MIRA 16:8)

1. KOSOBRUYKHOV, A., KABYSH, A., BUYEVICH, YE.
2. SSSR (600)
4. Milk-Analysis and Examination
7. High titratable acidity of fresh milk.
Mol. prom. 13 No. 11, 1952

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

BUYEVICH, Yu.A.

Solution of Stefan's first, second, and third boundary value problems in semi-infinite space with constant boundary conditions and uniform or linear distribution of temperature. Izv. AN SSSR. Ser. geofiz. no.1:98-104 Ja'64. (MIRA 17:2)

BUYEVICH, Yu.A. (Moscow)

Diffusion processes at mobile surfaces of the interfacial
boundary. Part 1. Zhur. fiz. khim. 38 no.3:658-663 Mr '64.
(MIRA 17:7)

L 43182-65 EWT(1)/EWT(m)/EPF(c)/EPF(n)-2/ENG(m)/EPR Pr-4/PS-4/PJ-4 WW/RM

ACCESSION NR: AP5009772

AUTHOR: Buyevich, Yu. A.

TITLE: Diffusional and thermal relaxation on the plane surface of an evaporating liquid

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 8, no. 3, 1965, 341-348

TOPIC TAGS: heat transfer; evaporation, thermal conduction, temperature distribution unsteady heat flow

ABSTRACT: The unsteady-state evaporation-diffusion process with heat conduction is studied analytically over a plane liquid surface. A one-dimensional problem is assumed, and the governing differential equations are given by

$$\frac{\partial q}{\partial t} = D \frac{\partial^2 c}{\partial x^2}, \quad \frac{\partial u}{\partial t} = a^2 \frac{\partial^2 u}{\partial x^2} \quad (i = 1, 2),$$

where $q(t, x)$ is the vapor concentration, $c(t, x)$ is the liquid concentration, $u_1(t, x)$ at $x \leq 0$ is the liquid temperature, and $u_2(t, x)$ at $x \geq 0$ is the temperature of the vapor-gas medium. The boundary and initial conditions are given as

$$\lim_{x \rightarrow -\infty} c = T_0, \quad \lim_{x \rightarrow -\infty} u_1 = T_0, \quad \lim_{x \rightarrow -\infty} q = q_0, \quad q(0, x) = q_0, \quad u_1(0, x) = T_0, \quad u_2(0, x) = T_0,$$

and the

temperature and concentration jump conditions at the liquid vapor interface are

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ACCESSION NR: AP5009772

evaluated. The solution of the governing equations is then obtained using Laplace transformations, and the liquid-vapor interface temperature is given by

$$T_{s(t)} = T_0 + k_1 + (k_2 + k_3 + k_4) \frac{1}{\sqrt{\pi t}} + \sigma_1 k_3 \exp(\sigma_1^2 t) \operatorname{erfc}(-\sigma_1 \sqrt{t}) +$$

$+ \sigma_2 k_4 \exp(\sigma_2^2 t) \operatorname{erfc}(-\sigma_2 \sqrt{t})$. After neglecting the temperature and concentration jump conditions, the expressions for q and the u_i are simplified to

$$u_{1(t,x)} = T_0 + k_1 \operatorname{erfc}\left(-\frac{x}{2\sigma_1 \sqrt{t}}\right); \quad u_{2(t,x)} = T_0 + (T_0 - T_\infty + k_1) \operatorname{erfc}\left(\frac{x}{2\sigma_2 \sqrt{t}}\right);$$

$$q = q_\infty + (q_0 - q_\infty + \beta k_1) \operatorname{erfc}\left(\frac{x}{2\sqrt{D_1 t}}\right); \quad T_{s(t)} = T_0 + k_1. \quad \text{As illustrations, the saturated}$$

vapor concentrations for water and benzene are calculated. It is shown that only 64% of the temperature drop in water is due to evaporation, whereas 99.7% of the temperature drop in benzene is caused by evaporative cooling. Orig. art. has 11 equations and 1 table.

ASSOCIATION: Institut fitopatologii g. Moskva (Institute of Phytopathology)

SUBMITTED: 11 May 64

ENCL: 00

SUB CODE: ME, TD

NC REF SOV: 004

OTHER: 006

Cord 2/2
200

BUYEVICH, Yu.A.

Certain class of solutions of the first Stefan boundary-value problem
in an infinite space in cases of plane, axial and spherical symmetry.
Inzh.-fiz. zhur. 8 no.6:801-806 Je '65. (MIRA 18:7)

I. 9379-66 EWT(l)/EWP(m)/EWT(m)/EWA(d)/EWP(t)/FCS(k)/EWP(b)/EWA(l) JD

ACC NR: AP5026926

SOURCE CODE: UR/0373/65/000/005/0011/0013

AUTHORS: Buyevich, Yu. A. (Moscow); Gupalo, Yu. P. (Moscow) 72

ORG: none 55 B

TITLE: Flow around a body covered by a thin film 14

SOURCE: AN SSSR. Izvestiya. Mekhanika, no. 5, 1965, 11-13

TOPIC TAGS: flow around cylinder, flow around sphere, flow kinetics, fluid mechanics, friction, drag force, thin film, Reynolds number, Euler constant 1, 55

ABSTRACT: A study was conducted of flow around a sphere or cylinder of radius a' , covered by a liquid film of uniform thickness $a - a'$. The flow is that of a fluid whose velocity at an infinite distance from the body is $U = \text{constant}$. The axis of the cylinder is normal to the direction of flow at infinity. Both fluids are considered to be incompressible, and Reynolds number $R = Ua/v$ (where v is the coefficient of kinematic viscosity of the outer fluid) is considered small. Velocity components of the outer flow (v_r, v_θ) and for the flow in the film (v_r', v_θ') are, in the case of a spherical body, given by

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I. 9379-66

ACC NR: AP5026926

$$\begin{aligned} v_r &= (1 + a_3 ar^{-1} + a_4 a^2 r^{-2}) U \cos \theta \\ v_\theta &= (-1 - \frac{1}{2} a_3 a r^{-1} + \frac{1}{2} a_4 a^2 r^{-2}) U \sin \theta \\ v_r' &= (a_1' a^{-2} r^2 + a_2' + a_3' a r^{-1} + a_4' a^2 r^{-2}) U \cos \theta \\ v_\theta' &= (-2a_1' a^{-2} r^2 - a_2' - \frac{1}{2} a_3' a r^{-1} + \frac{1}{2} a_4' a^2 r^{-2}) U \sin \theta, \end{aligned}$$

and in the case of a cylinder are given by

$$\begin{aligned} v_r &= [1 + a_2 \ln(\frac{1}{4} \gamma R r a^{-1}) - a_3 + a_4 a^2 r^{-2}] U \cos \theta + (a_0 - 2R^{-1} a_2) a r^{-1} U \\ v_\theta &= [-1 - a_2 \ln(\frac{1}{4} \gamma R r a^{-1}) + a_4 a^2 r^{-2}] U \sin \theta \\ v_r' &= [a_1' a^{-2} r^2 + a_2' \ln(a^{-1} r) - \frac{1}{2} a_3' + a_3' + a_4' a^2 r^{-2}] U \cos \theta \\ v_\theta' &= [-3a_1' a^{-2} r^2 - a_2' \ln(a^{-1} r) - \frac{1}{2} a_3' - a_3' + a_4' a^2 r^{-2}] U \sin \theta. \end{aligned}$$

In these equations $\gamma = \exp C$, where C is Euler's constant, and the parameters a_1 and a_1' are determined from boundary conditions. Resistance force is derived as

$$F = 4\pi a \mu U [1 + \frac{1}{2} K(\lambda, \kappa)]$$

for the sphere, and as

$$F = \frac{8\pi a \mu U}{1 - 2 \ln(\frac{1}{4} \gamma R)} \times \left[1 - \frac{1}{2} \frac{1 - K(\lambda, \kappa)}{1 - \ln(\frac{1}{4} \gamma R)} \right]$$

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ACC NR: AP5026926

for the cylinder. The derivation is that of Stokes for the sphere, while the cylinder solution is that of G. Lamb (Gidrodinamika. Gostekhizdat, 1947). The equations point out that within the fluid film there occurs an intensive circulating motion, as is exemplified in Fig. 1

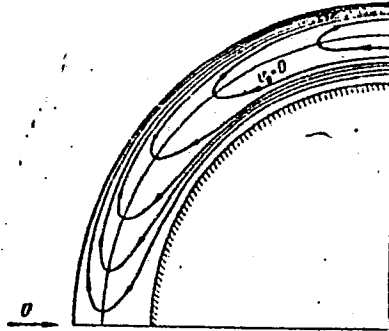


Fig. 1.

for flow around a sphere with $\lambda = 3/4$. Special consideration is given to the fact that the film, while reducing skin friction, also increases the resistance area of the body. Plots were made (see Figs. 2 and 3)

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ACC NR: AP5026926

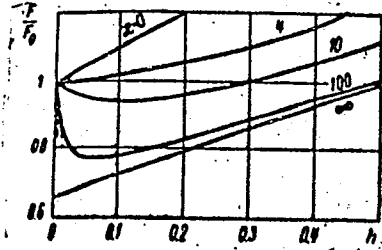


Fig. 2.

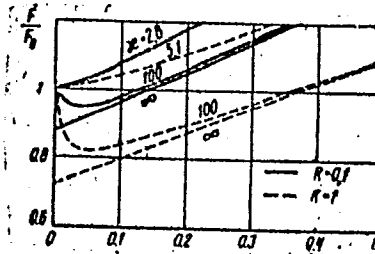


Fig. 3.

of the relationship of the resistance force F of the body covered by a film, and the force F of the uncovered body relative to the parameter $h = (a - a')/a'$. A discussion of the simple case $h \ll 1$ is presented. Orig. art. has: 3 figures and 11 equations.

SUB CODE: 20/ SUBM DATE: 03Jul65/ ORIG REF: 001

Card *[Signature]*

BUYEVICH, Yu.A. (Moskva)

Diffusion and sedimentation of particles suspended in a
one-dimensional flow of a continuous medium. Koll. zhur.
27 no.6:797-805 N-D '65. (MIRA 18:12)

1. Submitted April 24, 1964.

BUYEVICH, Yu.A.

Diffusion processes in mobile surfaces of the interface.
Part 2. Zhur. fiz. khim. 39 no.4:829-835 Ap '65.

1. Submitted May 30, 1963.

(MIRA 19:1)

L 13906-66 EWT(m)/EWP(j)/T DJ/RM
ACC NR: AP6002360 SOURCE CODE: UR/0207/65/000/006/0077/0083

AUTHOR: Buyevich, Yu. A. (Moscow); Leonov, A. I. (Moscow)

45

ORG: none

B

TITLE: Theory of dry friction of rubberlike materials

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 6, 1965, 77-83

TOPIC TAGS: friction, rubber, polymer

ABSTRACT: Previous experimental facts indicated that when one, or even two, contacting body is a highly elastic material (polymer, rubber etc.) the friction characteristics quite markedly differ from those for the case of slipping of ordinary elastic bodies. The present authors attempt to determine the cause and these pronounced and frequently observed differences and to construct a simple model to describe them. An examination is made of a somewhat idealized problem of dry friction with steady slipping of a rubberlike body along the surface of a crystalline elastic body. The dependence of the friction force on the rate of slip and on the physical parameters characterizing these bodies are determined. The surfaces of both bodies are considered to be smooth and clean, and the bodies themselves, homogeneous. Particular attention is devoted to the fundamental features of the phenomenon; therefore the authors when constructing and using the model make various simplifying assumptions which are nonessential from a qualitative point of view. Authors are indebted to G. I. Barenblatt

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I. 13906-66

ACC NR: AP6002360

for a discussion of the work. Orig. art. has: 4 figures and 12 formulas. 0

SUB CODE: 11 / SUBM DATE: 15Jun65 / ORIG REF: 003 / OTH REF: 002

TS

Card 2/2

L 29815-66 EWT(1)/EWP(m) WW

ACC NR: AP6013204

SOURCE CODE: UR/0421/66/000/002/0099/0101

AUTHOR: Buyevich, Yu. A. (Moscow); Gupalo, Yu. P. (Moscow)

46
B

ORG: none

TITLE: The effect of hydrodynamic friction on the stability of the boundary layer in annular two phase flow

SOURCE: AN SSSR. Izvestiya. Mekhanika zhidkosti i gaza, no. 2, 1966, 99-101

TOPIC TAGS: fluid friction, boundary layer theory, fluid flow

ABSTRACT: The article considers the problem of annular flow in a vertical tube, when the gas flow in the central portion of the tube is separated from the walls of the tube by an annular layer of liquid. Friction at the interface can be considered as either a stabilizing or unstabilizing influence on the stability of such a flow regime, with respect to small disturbances of the interface. The thickness of the liquid layer is assumed to be small, which permits the results of the work to be used directly in an investigation of the stability. The mathematical results arrived at in the article are applicable to cases of both laminar and fully developed turbulent movement of a gas; the

Card 1/2

L 29815-66

ACC NR: AP6013204

movement of the liquid forming the layer is assumed to be laminar in both cases. Orig. art. has: 8 formulas and 2 figures.

SUB CODE: 20/ SUBM DATE: 11Sep65/ ORIG REF: 001

Card 2/2 *fv*

L 34093-66 EWT(1) WW

ACC NR: AP6009048

SOURCE CODE: UR/0207/66/000/001/0050/0057

AUTHOR: Buyevich, Yu. A. (Moscow)

ORG: None

48
B

TITLE: The kinetics of mass exchange of a polydispersed system of particles with the surrounding medium

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 1, 1966, 50-57

TOPIC TAGS: gas kinetics, mass exchange, particle physics

ABSTRACT: The author studies processes in which the determining role is played by the kinetics of the heat and mass exchange of some polydispersed system of particles with the surrounding medium. The main attention is devoted to accounting correctly for the polydispersity and to the elimination of difficulties related to the nonlinearity. The article investigates the simplest problem of such a kind, i. e., the vaporization of a system of drops in a turbulent gas medium, in the case when the investigation of the vaporization kinetics of one drop in a boundary-free gas may be reduced to the solution of a unified parabolic equation. This problem also presents considerable independent interest; it may be applied, e. g., to investigations such as that of the physics of clouds and the vaporization of various artificial fogs created in the chemical industry and laboratories. The problem of the vaporization of a polydispersed system of drops was solved in an earlier work (Ispareniye polidispersnogo tumana. Kolloidn. zh., 1962, v. 24, No. 4, p. 390), where the author derived an equation, a generalization of

Card 1/2

L 34093-66

ACC NR: AP6009048

which appears in the present article. The statement of the problem is extremely close to that of the earlier work. Orig. art. has: 30 formulas.

SUB CODE: 20 / SUBM DATE: 09Nov65 / ORIG REF: 006

Card 2/2 vmb

L 32645-66 EWT(1)/EWP(m) WW

ACC NR: AP6010847

SOURCE CODE: UR/0421/66/000/001/0105/0112

AUTHOR: Buyevich, Yu. A. (Moscow); Gupalo, Yu. P. (Moscow)

ORG: none

48
B

TITLE: Stability of laminar flow of a liquid layer

SOURCE: AN SSSR. Izvestiya. Mekhanika zhidkosti i gaza, no. 1, 1966, 105-112

TOPIC TAGS: laminar flow, Navier Stokes equation, flow stability equation

ABSTRACT: The problem of a stable flow of a layer of liquid on an inclined plane is studied with the help of Navier-Stokes equations. The problem is cast in dimensionless form and equations for small deviations from the stable configuration are derived. The derived equations are approximation, which is given as

$$s \sim n_1 + T \left(m^2 - \frac{1}{r^2} \right) > 0$$

It follows from this criterion that both transverse and longitudinal excitations have the same effect on the stability of flow. However, the stability criterion is more complicated when second order approximation is used and regions of instability occur. An example of the flow with gravitational force alone is considered and its stability regions are given in graphic form. Orig. art. has: 4 figures, 28 formulas.

SUB CODE: 20/

SUBM DATE: 20Sep65/

ORIG REF: 004/

OTH REF: 004

Card 1/1

L 17049-63

EWT(m)/BDS/ES(j) AFFTC/

S/205/63/003/002/007/024

ASD/AFWL AR/K

AUTHORS: Buvavich, Yu. A., Karabayev, E. M., and Korogodin, V. I. 59TITLE: The choice of a model which describes restoration of vitality of yeast cells damaged by gamma radiation 9

PERIODICAL: Radiobiologiya, v. 3, no. 2, 1963, 197-203

TEXT: The objects of the investigation were Saccharomyces vini, Megri-139-B strain and Zygosaccharomyces Bailii. Two possible models of postradiation restoration of damaged yeast cells were considered -- the model of "cellular" or "spontaneous" restoration and "gradual" restoration model. It was shown that postradiation restoration of Saccharomyces vini occurs gradually by slow decrease in the degree of damage. There are 2 tables, 4 figures and a 10-item bibliography.

ASSOCIATION: Institut meditsinskoy radiologii AMN SSSR (Institute of Medical Radiology of the Academy of Medical Sciences of the USSR), Obninsk; Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova Biologo-pochvennyy fakul'tet (Moscow State University im. M. V. Lomonosov, Department of Biology and Soils)

SUBMITTED: March 2, 1962

Card 1/1

NEPENIN, Yu.N.; BUYEVSKAYA, A.D.

Using white sulfate liquor for refining viscose cellulose.
Trudy LTA no.8 pt.2:19-28 . '58. (MIRA 13:4)
(Cellulose)

NEPENIN, Yu.N.; BUYEVSKAYA, A.D.; GALAKHOVA, V.Ye.; YEFREMENKO, k.Z.

Cooking sulfite pulp in acid with sodium base. Bum. prom. 36 no.9:
23-26 S '61. (MIRA 15:1)

1. Lesotekhnicheskaya akademiya im. S.M.Kirova (for Nepenin, Buyevskaya). 2. Nauchno-issledovatel'skiy institut gidroliznoy i sul'fitno-spirovoy promyshlennosti (for Galakhova). 3. Glavnyy inzh. Slokskogo kombinata Latviyskogo sovnarkhoza (for Yefremenko).
(Cellulose)

LIST AND INDEX OF PROCESSES AND PROPERTIES INDEX

3

Ca

Continuous neutralization of sulfite liquors with milk of lime. A. V. Bucyskol. *Bumazhaya Prom.* 17, No. 2, 31-4 (1939).--It is shown that sulfite liquors for alc. fermentation can be best neutralized with CaO instead of the commonly used mixts. of CaO and limestone. If an excess of CaO is avoided and the reaction is carried out at room temp. with energetic stirring (2000 r./min.), the decompn. of sugars is reduced to 1% and a yield of 92.8% alc. of the available sugars is obtained. The results of potentiometric titration showed that the neutralization is an instantaneous reaction, making the process of continuous neutralization with Ca(OH)₂ practicable. A scheme for continuous neutralization is illustrated and described. Chas. Blanc

METALLURGICAL LITERATURE CLASSIFICATION

GROUPS: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

GROUPS: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

23

CA

Depolymerization of cellulose and its hydrolysis. I. A. Buevskoi. *J. Applied Chem.* (U. S. S. R.) 13, 1049-50 (in French; 1950)(1940).—Cellulose was depolymerized with 50-80% H_2SO_4 , yielding fractions sol. in 48% alc. 29.31, sol. in 30% alc. 10.25 and sol. in cold water 63.77%. The products were divided into 3 groups: hydrocellulose, "amyloid" and dextrin. The partial soln. of cellulose by depolymerization cannot be explained by the removal of some substituents of low mol. wt. The hydrolysis of products of depolymerization produced a lower yield of glucose than did hydrolysis of the initial cellulose, but only in case of the products obtained in treating cellulose with concd. H_2SO_4 . The mol. wt. of hydrolyzed polysaccharide did not affect the velocity of hydrolysis until a sharp decrease of mol. wt. caused soln. of the product. II. Kinetics of hydrolysis of cellulose in relation to the conditions of reaction. A. Buevskoi and V. Vedeneva. *Ibid.* 1950 (in French; 1950).—Cellulose glycolate, cotton hydrocellulose and cellobiose were hydrolyzed with NH_4SO_4 in a water bath by refluxing for 5 hrs. The extents of hydrolysis were 71.5, 25.1, 20.1 and 99.8%, resp. The av. consts. of hydrolysis (which followed the unimol. reaction) were 2.56, 0.77, 0.62 and 4.00×10^{-2} . The character of reaction (reacting bonds) was the main factor affecting the velocity of hydrolysis, whereas the degree of polymerization had a functional relation to the soln. of polysaccharides, forming the conditions of the reaction. A. A. P.

COMMON SUBJECTS INDEX

ASSOCIATED METALLURGICAL LITERATURE CLASSIFICATION

STANDARD CODES

STANDARD CODES

Buyevskiy, A. 23

QA

Sulfite pulping of wood which has been freed from hemicelluloses. A. Buyevskiy and A. Podgornych. *Bumashnaya Prom.* 10, No. 11, 49-54(1940); *Chem. Zentr.* 1941, II, 2273-4. — To obtain further insight into the sulfite process, the purpose of which is to remove the lignin from wood and to hydrolyze the hemicelluloses, the sulfite pulping of material freed from hemicelluloses by acid hydrolysis was investigated. Pine wood was hydrolyzed with 1.5% H₃PO₄; the cooking acid contained 4.8% SO₂ and 1% CaO. In the normal cooking operation, the lignin is removed slowly at the beginning of the cook and becomes rapid only at 140°; however, with the hydrolyzed wood the solution of the lignin proceeds at about the same rate through the entire process (11 hrs.). The resulting pulp contains 12.2% lignin instead of 1.42% found in the normal cook; less SO₂ is consumed, the waste liquor contg 14.8 g./l. of SO₂ as compared with 6.4 g./l. for the usual liquor. The yield of reducing sugar is only 2.10% (ordinary cook, 13%). On pulping material hydrolyzed with 2.5% H₂SO₄, 15.1% of the lignin remained in the pulp. Thus, a preliminary hydrolysis decreases the rate of lignin removal from the wood. The amount of lignin removed is not materially increased by extending the pulping time from 11 to 14 hrs. In an expt. in which the wood was hydrolyzed with H₂SO₄ for 2.5 hrs. at 125° (concn. not given), not only the hemicelluloses but 7.2% of the lignin was removed; corresponding results were obtained in a hydrolysis at 110-20° for 4 hrs. It was not possible completely to remove the lignin from the wood by extending the time of the sulfite cook; this indicates that, in the acid hydrolysis of the hemicelluloses, the nature of the lignin is changed markedly. C. J. West

COMMON ELEMENTS

MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

EDONI STRIBZIV

EDONI DOMINY

EDONI STRIBZIV

EDONI DOMINY

BUYEVSKOY, A.V.; GALAKHOVA, V.Ye.

~~Blowing steam through sulfite liquor.~~ Gidreliz. i lesokhim.prem. 8
no.7:12-13 '55. (MLRA 9:4)

1.Vsesoyuznyy nauchno-issledovatel'skiy institut gidreliznoy i sul'-
fitno-spirtevoy promyshlennosti.
(Sulfite liquor)

BUYEVSKIY, A.V.

USSR/Chemical Technology - Chemical Products and Their Application. Wood Chemistry
Products. Cellulose and Its Manufacture. Paper, I-23

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 63353

Author: Buyevskiy, A. V., Galakhova, V. Ye., Andreyev, A. A., Ivanova, Ye. A.

Institution: None

Title: Combined Withdrawal of Liquor from Cooking Vessels and Decanters

Original

Periodical: Gidroliznaya i lesokhim. prom-st', 1956, No 2, 18-19

Abstract: On combined withdrawal of liquor (drawing off a portion of concentrated liquor from cooking vessels and the remainder from decanters) yield of alcohol per one t of cellulose was 70 l in lieu of 54-58 l. At the same time duration of liquor removal from cooking vessels has been decreased from 2 to 1.5 hours. Total volume of liquor is 9 m³ per ton of cellulose with average sugar concentration of 2.1%. These results were attained on partial effectuation of the scheme of combined draw off procedure and operation schedule.

Card 1/1

BUYEVSKOY, A.V.

SAPOTNITSKIY, S.A.; BUYEVSKOY, A.V.; GALAKHOVA, V.Ye.

Neutralization of extra vapors of sulfite waste liquor. (MLRA 10:2)
Gidroliz. i lesokhim. prom. 9 no.8:20-21 '56.

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidroliznoy
i sul'fitno-spirtovoy promyshlennosti.
(Sulfite liquor) (Vapors)

BUYEVSKOY, A.V.; SAPOTNITSKIY, S.A.

Sulfuric acid precipitation of lignosul'fonates in the presence
of some components of sulfite liquor. Trudy IFA no.80 pt.2:
29-36 '58. (MIRA 13:4)
(Lignosulfonic acids) (Sulfite liquor)

KRYLOVA, T.B.; BUYEVSKOY, A.V. [deceased]; DMITRIYEVA, O.A.

Effect of the concentration of lignin sulfonate on the frothing capacity of a solution during flotation of distiller's yeasts. *Gidroliz. i lesokhim. prom.* 17 no.3:5-7 '64.

(MIRA 17:9)

1. Leningradskaya lesotekhnicheskaya akademiya im. S.M. Kirova.

KRYLOVA, T.B.; BUYEVSKOY A.V. [deceased]; DMITRIYEVA, O.A.

Effect of lignosulfonates on the biochemical processing of
sulfite liquor. *Gidroliz. i lesokhim. prom.* 17 no.6:3-4 '64.
(MIRA 17:12)

1. Leningradskaya lesotekhnicheskaya akademiya im. S.M. Kirova.

SLAVYANSKIY, Aleksey Konstantinovich, prof.; SHARKOV, Vasilii Ivanovich, prof.; LIVEROVSKIY, Aleksey Alekseyevich, dots.; BUYEVSKOY, Anatolii Vasil'yavich, dots.; MEDNIKOV, Fedor Alekseyevich, dots.; LYAMIN, Vladimir Aleksandrovich, dots.; SOLODKIY, Fedor Timofeyevich, dots.; TSATSKA, Elio Mat' Iudovich, dots.; DMITRIYEVA, Ol'ga Andreyevna, assistent; NIKANDOROV, Boris Fedorovich, inzh.; GORDON, L.V., kand. tekhn. nauk, retsenzent; SUKHANOVSKIY, S.I., red.; KHOT'KOVA, Ye.S., red.izd-va; SHIBKOVA, R.Ye., tekhn. red.

[Chemical technology of wood] Khimicheskaya tekhnologiya drevesiny. Moskva, Goslesbumizdat, 1962. 574 p. (MIRA 16:4)
(Wood—Chemistry)

BUYKEVICH, L. M.

"Transfusions of Belen'kiy's Medical Serum under existing Conditions of a
Rayon Hospital," Zdravookhraneniye Belorussii, 1956, No. 11

BUYKIS, I. [Buikis, I.]

Distribution of succinic dehydrogenase, nucleic acids, and glycogen in the neurons of the spinal ganglia and motoneurons of the spinal cord in the embryos and fetuses of sheep. Izv. AN Latv.SSR no.2:105-113 '63. (MIRA 16:4)

1. Institut eksperimental'noy i klinicheskoy meditsiny AN Latvyskoy SSR.

(Succinic dehydrogenase)
(Nucleic acids)

(Nerves, Spinal)
(Glycogen)

USSR/Farm Animals. Horses.

Abstr Jour: Ref Zhur-Biol., No 20, 1958, 92547.

Author : Buyko. A.

Inst :

Title : Problem of Early Diagnosis of Pregnancy in Horses.

Orig Pub:Konevodstvo, 1958, No 2, 26-31.

Abstract: Characteristic changes are described which occur in the genital organs of mares during $3\frac{1}{2}$ months of pregnancy. It was established that in mares, in contrast with females of other farm animals, during the first $2-2\frac{1}{2}$ months of pregnancy the embryo sac does not attach itself to the mucous membrane of the uterus. The connection between the chorion and mucosa of the uterus occurs around the $3-3\frac{1}{2}$ month, but is weak and remains so up to the

Card : 1/2

BUYKO-ROGALEVICH, A.N., starshiy nauchnyy sotrudnik

Increasing the load on stallions in controlled mating. Trudy VNIK no.17:
113-122 '49. (MIRA 16:3)

(Horse breeding)

30

PROCESSES AND PROPERTIES INDEX

Selenium in rubber mixtures containing synthetic and natural rubbers. B. Fabritziev, G. Bulko and I. Skuba. *J. Rubber Ind.* (U. S. S. R.) 12, 1101-5 (1935); 1936. No. 1, 57-63.—Tables show the effect of Se on the mech. qualities of rubber mixts. of synthetic rubber alone and with different proportions of natural rubber. Seventeen references. A. Pestoff

ASAP-55A METALLURGICAL LITERATURE CLASSIFICATION

E2

PROCESSES AND PROPERTIES INDEX

30

ca

Rubber solvents and substances which lower the viscosity of rubber cement. R. V. Fabritsiev, G. N. Buiko and E. A. Pakhomova. *Koskorenno-Obersaya Prum.* 14, 514-18(1935). — Expts. show that the viscosities of rubber solns. are lowered most by alc., the effects increasing in the order: iso-PrOH, BuOH, EtOH, PrOH, iso-AmOH and MeOH. HOAc, Ac, C₂H₅N and Me₂CO also lower considerably the viscosity of rubber solns., though not so much as do alc. (CH₃OH), and ethylene chloride lower the viscosity insignificantly. Water (1.5%) increases the viscosity considerably. There is a certain max. lowering of the viscosity, which for alc. is at 2-3% concn.; an excess of alc. has no effect on the viscosity. The degree of lowering of the viscosity depends on the preliminary treatment and the concn. of the rubber cement, i. e., the higher the concn. and the less preliminary treatment of the rubber cement, the greater the lowering of the viscosity. The viscosities of cements increase during storage, independent of the introduction of alc.; the viscosities remain unchanged for 24 hrs. after addn. of alc., but they have a tendency to increase on prolonged storage, particularly when HCHO is added. The velocity of gel formation in self-vulcanizing cements depends on the nature of the viscosity-depressing ingredient; e. g., HCHO gives gels more rapidly than does EtOH. It is recommended to add 3% (by wt.) of EtOH to self-vulcanizing rubber cements. A. A. Bochtling

AS 0-31A METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

49

The tackiness of synthetic sodium butadiene rubber. H. Fabritziev and G. Bulku. *J. Rubber Ind. (U.S.S.R.)* 1936, 141-62. - Ten % of *p*-nitrosodimethylamine (I) was added to Na butadiene rubber and the mixt. was subjected to a thermal treatment of 2-3 hrs. at 100°. Addn. of 3 parts by wt. of paraffin oil before thermal treatment decreased the treatment to 1 hr. Vulcanizates with treated synthetic rubber had less elasticity than did those with untreated rubber. The disadvantages of using I are its toxicity, staining and accelerating action on vulcanization. This thermal treatment of synthetic rubber with I is a process of depolymerization, which produces rubber with greater tackiness and plasticity. A. Pestoff

METALLURGICAL LITERATURE CLASSIFICATION

SIGNATURE

SIGNATURE

BC

B-2-9

Use of stearic acid in rubber mixtures the rubber content of which is wholly synthetic rubber. (A) A. Makarenko. (B) G. Bulko. *J. Rubber Ind. U.S.S.R.*, 1938, 831, 832.—(A) Stearic acid (B) did not activate synthetic rubber mixtures, and the latter prepared without (B) had better mechanical properties.
(B) A crit. discussion. Cit. Abs. (c)

ASTM-SLA METALLURGICAL LITERATURE CLASSIFICATION

GROUPS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

LIST AND INDEX ORDERS PROCESSES AND EQUIPMENT IS INDEXED

30

CA

The use of cement made of 100% synthetic rubber for impregnating cloth. B. V. Falvitsiev, G. Bulko and E. Pakhomova. *J. Rubber Ind.* (U. S. S. R.) 1936, No. 8 9, 880-92.—The general technic is described. A. P.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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120989

1336 Mechanism of fatigue of vulcanized rub

5

...tion, changes the swellability of rubbers, their

...ted with the occurrence in the deloified polymer
... free radicals, which set off chemical processes such

Buyko, G.N.

62 ✓ Discussion of fatigue in rubber. G. I. Slonimskii, V. A. Kargin, G. N. Buiko, E. V. Reztsova, and M. L'yuis-Riera. *Doklady Akad. Nauk S.S.S.R.* 93, 523-6(1953).— The fatigue of rubber is a complex phenomenon of interrelated chem. and phys. changes. Deformation causes a rupture of chain mols., with the formation of free chem. active radicals. Chem. reactions which proceed because of the existence of reactive groups and free radicals are accelerated by deformation because of the lowering of the activation energy and by increasing the possible no. of collisions. Chem. structure changes affect the mech. and rupture mechanisms of the material. Mech. forces bring about a reorientation of the vulcanization structure and produce anisotropy in the mech. properties of the material. Relaxation processes are superimposed upon this whole complex of processes. Gradual changes in the rubber properties during fatigue finally end in destruction of the material, which is not discussed in the article. W. M. S.

(4)

"APPROVED FOR RELEASE: 06/09/2000

CIA-RDP86-00513R000307810017-4

APPROVED FOR RELEASE: 06/09/2000

CIA-RDP86-00513R000307810017-4"

BUYER GIN

Category : Buyko, G.N. USSR/Atomic and Molecular Physics - Physics of high-molecular substance D-9

Abs Jour : Ref Zhur. - Fizika, No 1, 1957, No 1005

Author : Slonimskiy. G.L., Kargin.V.A., Buyko, G.N., Reztsova, Ye.V., L'yuis-Riyera. M.
Title : Concerning the Problem of the Mechanism of Rubber Fatigue

Orig Pub : Stareniye i utomleniye kauchukov i rezin i povysheniye ikh stoykosti. L.,
Goskhimizdat, 1955, 100-118

Abstract : See Ref. Zhur. Khim. 1956, 48630

Card : 1/1

SUYKO, G.N.; SHVARTS, A.G.; TUMANOVA, A.I.

Tires made from synthetic polyisoprene rubber. Kauch. i rez.
16 no.5:1-11 My '57. (MLRA 10:7)

1. Nauchno-issledovatel'skiy institut shinnoy promushlennosti.
(Automobiles--Tires) (Isoprene)

YEVSTRATOV, V.F.; BEERIS, K.D.; BIDERMAN, V.L.; BUYKO, G.N.; DESIDLEY, L.V.
ZHEREBTSOV, A.N.; YASHUNSKAYA, F.I.

Development of the tire industry in the U.S.S.R. during the last
forty years. Kauch. i rez. 16 no.10:13-26 0 '57. (MIRA 11:1)
(Tires, Rubber--History)

SOV/63-4-1-3/31

15(9)

AUTHORS: Yevstratov, V.F., Buyko, G.N., Candidates of Technical Sciences, Desidley, L.V.

TITLE: Truck Tires Made of Synthetic Rubber and Methods for Improving Their Quality (Avtomobil'nyye gruzovyye shiny iz sinteticheskogo kauchuka i puti povysheniya ikh kachestva)

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1959, Vol 4, Nr 1, pp 15-26 (USSR)

ABSTRACT: For the description of the elastic properties of rubbers a correlation of the shear module and the module of elasticity has been developed in [Ref 10]. Hysteresis and dynamic fatigue are the factors which especially influence the life and the operation properties of tires. Fatigue changes the structure and the properties of the materials [Ref 14-16]. If in the tire carcass and in the tread synthetic rubbers are employed, the elasticity module of the tread rubber should be lower than the module of the breaker rubber. Heat formation in the tire tread has a considerable effect on its resistance. A reduction of the stress by 10 - 15% decreases the temperature of the tire appreciably (Figures 7 and 8). If the rigidity of the carcass

Card 1/3

SOV/63-4-1-3/31

Truck Tires Made of Synthetic Rubber and Methods for Improving Their Quality

rubber is increased, the stress on the cord threads increases, too (Figure 9). Reduction of the thickness of the rubber-coated cord cannot be recommended, therefore. The following principles have been elaborated for the designing of tires made of synthetic rubber: 1) the elasticity of the tread should be increased by using a dissected pattern of the tread; 2) in the zones of greatest heat formation notches should be made in the tire tread; 3) the stress on the tire should be reduced by increasing its profile; 4) use of a more resistant cord; 5) the thickness of the rubber-coated cord should be increased. The operation properties of tires made of synthetic rubber according to the mentioned principles were not lower than those containing 47% natural rubber (Table 5). About 60% of the tires get out of service due to wear of the tread (Table 6). The use of polyamide cord increases the resistance of tires made of synthetic rubber (Figure 7). Active carbon blacks and additions of dispersed mineral fillers have also a considerable effect on the resistance of tires (Figure 14). The rubber type SKS-3OAM-15 has shown good test results in the laboratory regarding heat formation and resistance (Table 8).

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Truck Tires Made of Synthetic Rubber and Methods for Improving Their Quality

The synthesis of new polyurethane rubbers offers new possibilities of improving the quality of the tires.
There are 10 tables, 14 graphs, and 34 references, 23 of which are Soviet, 9 English, 1 German and 1 Canadian.

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5(1)

AUTHORS:

Shvarts, A. G., Buyko, G. N.

SOV/20-125-2-36/64

TITLE:

Some Problems Concerning the Effect of Vulcanization Temperature on the Strength of Rubbers Made of Synthetic Polyisoprene SKI Caoutchouc (Nekotoryye voprosy vliyaniya temperatury vulkanizatsii na prochnostnyye svoystva rezin iz sinteticheskogo poliizoprenovogo kauchuka SKI)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 2, pp 366-368 (USSR)

ABSTRACT:

The increase of vulcanization temperature, leads, due to oxidative and thermal processes, to decreasing strength primarily in the case of rubber kinds made of natural rubber (Refs 1-3). The aforesaid rubber is similar to the latter with respect to its structure and properties (Refs 4,5). In some cases, however, the strength of SKI rubber increases with rising temperature. This problem forms the subject of the present communication. Figure 1 shows the dependence of specific elongation and tensile strength in the case of empty vulcanizates and rubber with 50 parts by weight of gas black on the concentration of the vulcanization cross connections, which were determined by the method of swelling (Ref 6). The

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Some Problems Concerning the Effect of Vulcanization SOV/20-125-2-36/64
Temperature on the Strength of Rubbers Made of Synthetic
Polyisoprene. SKI Caoutchouc

vulcanization took 30 mins. at 143°. The rubber kinds under investigation contained variable doses of sulphur and accelerators: tetramethyl thiuram disulphide, benzothiazole sulphene diethylamine and diphenyl guanidine. Application of various vulcanization accelerators does not alter the nature of the regularities under investigation but leads to a certain scattering of indices (Ref 7). The data of figure 1 (right) show that an increase of the number of vulcanization cross connections favors, up to a certain extent, the orientation of rubber molecules under elongation. The strength of vulcanizates increases accordingly. In samples with a specific elongation of 1000 - 1200 % a crystalline phase is formed by elongation, whereby the tensile strength of SKI vulcanizates approaches that of natural rubber. With further increase of the cross connections, however, the conditions of orientation vary during the deformation of rubber. The experimental results obtained show (Tables 1,2) that the strength of rubber kinds in which the concentration of vulcanization cross connections is higher at the respective temperature than the

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S/138/59/000/012/001/006

AUTHORS: Shvarts, A. G., Buykov, G. N. ^b

TITLE: On Certain Aspects of Vulcanization of Rubber From Synthetic Isoprene ^bSKI Raw Material at High Temperatures

PERIODICAL: Kauchuk i Rezina, 1959, No. 12, pp. 1-4

TEXT: The authors point out the possibilities of increasing the production output of the rubber industry by vulcanizing automobile tires and casings at temperatures above 143°C (without decreasing the rubber quality). It was shown that the decay process and the regrouping of the sulfur bonds of the vulcanizates play a significant part in the destruction of the latter (Refs. 1-3, 4, 5). It was also shown that the properties of synthetic isoprene SKI rubber are similar to those of natural rubber. An increase in temperature during the vulcanization process brought about a drop in the strength of the SKI rubber and a general decline of the physico-mechanical properties of the vulcanizates. The vulcanization possibilities of rubber on a SKI base and at temperatures above 143°C without decreasing the hardness indices in spite of the presence of destruction processes was studied. Filled and non-filled SKI

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S/138/59/000/012/001/006

On Certain Aspects of Vulcanization of Rubber From Synthetic Isoprene SKI
Raw Material at High Temperatures

vulcanizates (with 50 weight parts of channel carbon black) were investigated. These contained various amounts of sulfur and accelerator, 3.0 weight parts of zinc oxide and 2.0 weight parts of stearin. A description is given of the procedures undertaken and the component parts used. The main physico-mechanical indices and the concentration of the transverse vulcanization bonds were determined. The formula for the determination of the concentration is given. Fig. 1 and 2 show the relationship between the rupture-resistance and the relative expansion of the SKI vulcanizates, containing BT sulfonamide as accelerator, and between the similar NR vulcanizates and the degree of the transverse seam. Tables 1 and 2 give a listing of the test results performed on the filled and non-filled SKI rubbers with various vulcanizing groups, and vulcanized at various temperatures. The relationship obtained for the rubber stability and the degree of the transverse seam is the result of the insufficiently regular structure of the SKI rubber, which is further explained in Refs. 4 and 7. As a result of this phenomenon, the formation of the crystalline phase takes place only at certain degrees of expansion in the SKI vulcanizates. A special composition for the SKI tire rubber was developed by the chemico-

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On Certain Aspects of Vulcanization of Rubber From Synthetic Isoprene SKI Raw Material at High Temperatures S/138/59/000/012/001/006

technological department of the NIIShP, on the basis of the regularities concerning the changes of SKI rubber. The indices of the rubbers vulcanized at 163°C were not lower than that of the rubbers vulcanized at 138°C (see Table 3). The changes of the main indices of the protective rubber with an increase in the vulcanizing temperature are shown in Table 4. As a result of the experimental data obtained it was shown that the vulcanizing group should be intensified in the vulcanization of SKI-based rubber for automobile tires at high temperatures. The authors conclude that with an increase in the vulcanization temperature the value of the rupture-resistance of the SKI rubber changes depending on the initial thickness of the vulcanization lattice. They also proved that there is a possibility of producing SKI rubbers which, with an increase in vulcanization temperature would undergo an increase in their stability. There are 3 sets of graphs, 4 tables, 7 Soviet references. ✓

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti
(Scientific-Research Institute of the Tire Industry)

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S/138/60/000/004/006/008
A051/A029

AUTHORS:

Buyko, G.N., Zinchenko, N.P.

TITLE:

On the Dynamic Stability of Adhesion in Double-Rubber Systems
Depending on the Butadiene-Styrene Polymer Type and the Physi-
co-Mechanical Properties of the Rubber

PERIODICAL:

Kauchuk i Rezina, 1960, No. 4, pp. 27 - 37

TEXT:

Rubber separation from the latex, the effects on the dynamic stability of the adhesion in double-rubber systems, and the tire performance were investigated. Experimental samples of butadiene-styrene rubber of low-temperature polymerization were studied. The experimental procedure is outlined and the general characteristics of the butadiene-styrene copolymers coagulated with various electrolytes are given. The properties of the rubber mixtures and vulcanizates depending on the type of butadiene-styrene polymer, as well as the mechanical properties of the vulcanizates are discussed. As a result of extensive testing several conclusions were drawn:
1) The dynamic durability of the multi-layer systems, as well as other important technical properties of tire rubber, based on butadiene-styrene rub-
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On the Dynamic Stability of Adhesion in Double-Rubber Systems Depending on the Butadiene-Styrene Polymer Type and the Physico-Mechanical Properties of the Rubber

ber, depend to a great extent on the conditions of polymer separation from the latex, namely, on the nature of the coagulation agent. The CXC-30A (SKS-30A), CXC-30AM (SKS-30AM), and the CXC-30APM (SKS-30ARM) butadiene-styrene rubbers contain a large amount of calcium salts, precipitated by calcium chloride, which are not eliminated in the washing of the rubber. These admixtures are detrimental to the technical properties of the polymer. 2) The direct introduction of calcium and sodium salts of dibutyl-naphthalenesulfonic acid and stearic acid into the polymer not containing these admixtures has proved the negative effect of these salts on the properties of the polymer and its vulcanizates even when only 0.5 to 1% of these salts are introduced. 3) As a result of replacing calcium chloride as coagulating agent by sodium chloride a polymer is produced which does not contain harmful admixtures and surpasses butadiene-styrene rubber coagulated with calcium chloride. Depending on the conditions of the testing, the dynamic stability of the adhesion in rubber and rubber-cord systems is 2 to 5 times greater in systems based on rubber

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coagulated with sodium chloride. 4) The investigation of the dynamic stability of the adhesion in multi-layer systems carried out parallel to the study of the physico-mechanical and other properties of the butadiene-styrene rubbers and their vulcanizates shows that one of the deciding factors determining the dynamic stability is the fatigue process of the vulcanizates in the double layers and that lamination in the process of repeated deformations is determined by a complex of phenomena, which bring about a change in the physico-mechanical and physico-chemical properties of the material. 5) The positive role played by the sodium chloride was confirmed by the investigation results of the butadiene-styrene rubber obtained by coagulation with calcium chloride in the presence of BX (VKh) Nekal and samples of rubbers which were obtained using sodium chloride and VKh Nekal or colophony emulsifier. 6) The results of stationary and road tests of heavy truck tires manufactured solely from butadiene-styrene polymers have confirmed the conclusions of laboratory tests on the advantages of rubber coagulated with sodium chloride. In the stationary tests the resistance of the tires to peel-
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On the Dynamic Stability of Adhesion in Double-Rubber Systems Depending on the Butadiene-Styrene Polymer Type and the Physico-Mechanical Properties of the Rubber

ing of the protective layer increased twice compared to tires made of rubber coagulated with calcium chloride. By using the sodium chloride as the coagulator the performance of the truck tires had increased by 30%. 7) As a result of the tests and figures obtained, demands placed on the tire industry as to quality of the butadiene-styrene rubber have been determined and outlined. There are 6 tables, 9 sets of figures, 17 references: 11 Soviet, 3 English and 3 French. X

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti
(Scientific Research Institute of the Tire Industry)

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REYLSBEK, Kh.Ye. [Rallsbeck, H.H.]; BIARD, Ch.Ch., KHOZ, Dzh.R. [Hose, J.R.]
SHVARTS, A.G.; Buyko, G.N. [translators]

Compounding the compositions of mixtures based on cis-1, 4-polybutadiene. Kauch.i rez. 19 no.7:53-64 JI '60. (MIRA 13:7)
(Polymers) (Butadiene)

S/138/61/000/003/002/006
A051/A129

AUTHORS: Buyko, G. N.; Sakhnovskiy, N. L.; Yevstratov, V. F.; Smirnova, L. A.; Levitina, G. A., and Katkov, V. I.

TITLE: Certain features of carboxyl-containing butadiene-styrene SKS-30-1 rubber and its evaluation in tread rubbers

PERIODICAL: Kauchuk i rezina, ²⁰no. 3, 1961, 9-15

TEXT: The results of an investigation are given, which was conducted to develop a formulation and conditions for manufacturing wear-resistant tread rubber based on carboxyl containing butadiene-styrene C^KC-30-1 (SKS-30-1) rubber. The results of an evaluation of the properties of rubbers and tires using treads based on the above-mentioned rubber are given. In developing the formulation of the tire tread rubber based on SKS-30-1 the best fillers were found to be the active furnace XAΦ (KhAF)-type carbon blacks. The extract of phenol purification (PH-6, PN-6), 10 w.p., was the best softener used in the amount of 45 w.p. of the KhAF carbon black (Vulkan 3) and ensuring a plasticity of the mixture according to Carriere of about 0.50. Magnesium oxide was chosen as the main vulcanizing agent based on work of

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the VNIISK (Dolgoplosk, B. A., et al. - Ref. 1: Kauchuk i rezina, no. 3, 11, 1957; Ref. 2: Kauchuk i rezina, no. 6, 1, 1957). The vulcanizing group contained also thiuram and zinc oxide. The following vulcanizing group was selected (in w.p.): MgO - 2.0, ZnO - 1.0, sulfur - 0.8, thiuram - 1.0. The tire tread mixtures based on SKS-30-1 were prepared according to a double-stage process. It was noted that scorching depends to a great extent on the meteorological conditions during the period of the mixture preparation. It is assumed that the main reason for the scorching tendency of the SKS-30-1 mixtures in the fall and spring is apparently due to an elevated moisture content in the ingredients. It was shown that water has a significant effect on the scorching of the SKS-30-1 mixtures. The effect of the water increases with the content of metal oxides in the mixtures. The highly significant effect of small quantities of water on the scorching of SKS-30-1 mixtures containing metal oxides is explained by the fact that when water is added to the various micro-sections of the mixtures a polar medium is formed facilitating the interaction between the polymer acid and the metal oxides at comparatively low temperatures. A simple method for the removal of water is given, viz., the mechanical treatment of the mixtures at elevated temperatures over long periods of time. Experiments showed that when storing the

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mixtures for a period of ten days no noticeable increase in the moisture content or a tendency to scorching is observed (Fig. 4). The properties of the SKS-30-1 based rubber are compared to that of SKS-30ARKM and NR. The outstanding feature of the SKS-30-1 based rubber is said to be the combination of a high static modulus with a high relative elongation. It has superior resistance to thermal aging and its main advantage over the other two types is its extremely high resistance to crack growth in repeated bending. One of its disadvantages is its comparatively low temperature-resistance manifesting itself in a significant drop of the tensile strength at high temperatures. However, the latter property improves noticeably during the aging process contrary to SKS-30ARKM and NR based rubbers. The tensility properties of the SKS-30-1-based rubber during the rolling process improve as opposed to the other types. The difference between SKS-30-1 rubber on one hand and NR and SKS-30ARKM rubbers on the other is noted in the dependence of the heat-resistance coefficient in tear-resistance on the roadability of the tires in stationary tests (Fig. 6). As to its hysteresis properties the SKS-30-1 rubber resembles the rubbers based on butadiene-styrene and is much inferior to NR. Data on experimental procedures showed that non-filled SKS-30-1 rubber contrary to SKS-30ARKM and NR rubber has a high wear-resistance

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