Unsteady heat transfer in composite ...

particular problem. By introducing new variables and solving a system of equations derived from the general boundary conditions, the problem of solution of the system of differential equations (1) is reduced to the problem of solving an inhomogeneous differential equation with homogeneous boundary conditions. This equation is solved by means of the Green function over the corresponding area. To illustrate the application of the solution obtained, the following example is included. On one side of a wall consisting of two layers there is a fast moving liquid of sufficiently large heat transfer coefficient and high temperature which varies in time according to the law $t_{b1}(\tau) = 1700 - 1680\, e^{-5\tau}$. The other side of the wall is cooled by air having heat transfer coefficient $\alpha = 100$ kkal/m^2 °C.hour and temperature $t_{b2} = 20$ °C. The material of the first layer is magnezit of thickness and thermal conductivity $\delta_1 = 5 \times 10^{-2}$ m, $\lambda_1 = 5$ kkal/m °C.hour. The material of the other layer is dipas of the thickness and thermal conductivity $\delta_2 = 0.1$ m, $\lambda_2 = 1$ kkal/m °C.hour. Throughout this system there are uniformly distributed heat sources of power $P/c\gamma = 100$ °C/hour where P is the heat generated per unit volume, c is the specific heat, γ is density. From these data

the temperature profile across the wall can be calculated at any time. The problem of presence of heat sources proportional to temperature is not dealt with but the equation which includes the term representing this type of heat source is given and by applying the transformation suggested the equation can be transformed into Eq.(1).
There are 1 figure and 2 references: 1 Soviet and 1 English.
The English language reference reads as follows:
Ref.2: E. Mayer. Heat flow in composite slabs.
J. Amer. Rocket Soc., V.22, May-June 1952, No.3.

SUBMITTED: March 30 1960

SHATALOV, I.

Dormitory council for improving living conditions. Sov.profsoiuzy 4 no.6:47-49 Je '56. (MLRA 9:8)

1. Predsedatel' kul'turno-bytovoy komissii Dnepropetrovskogo obkoma profsoyuza rabochik stroitel'stva.
(Dnepropetrovsk--Community centers)

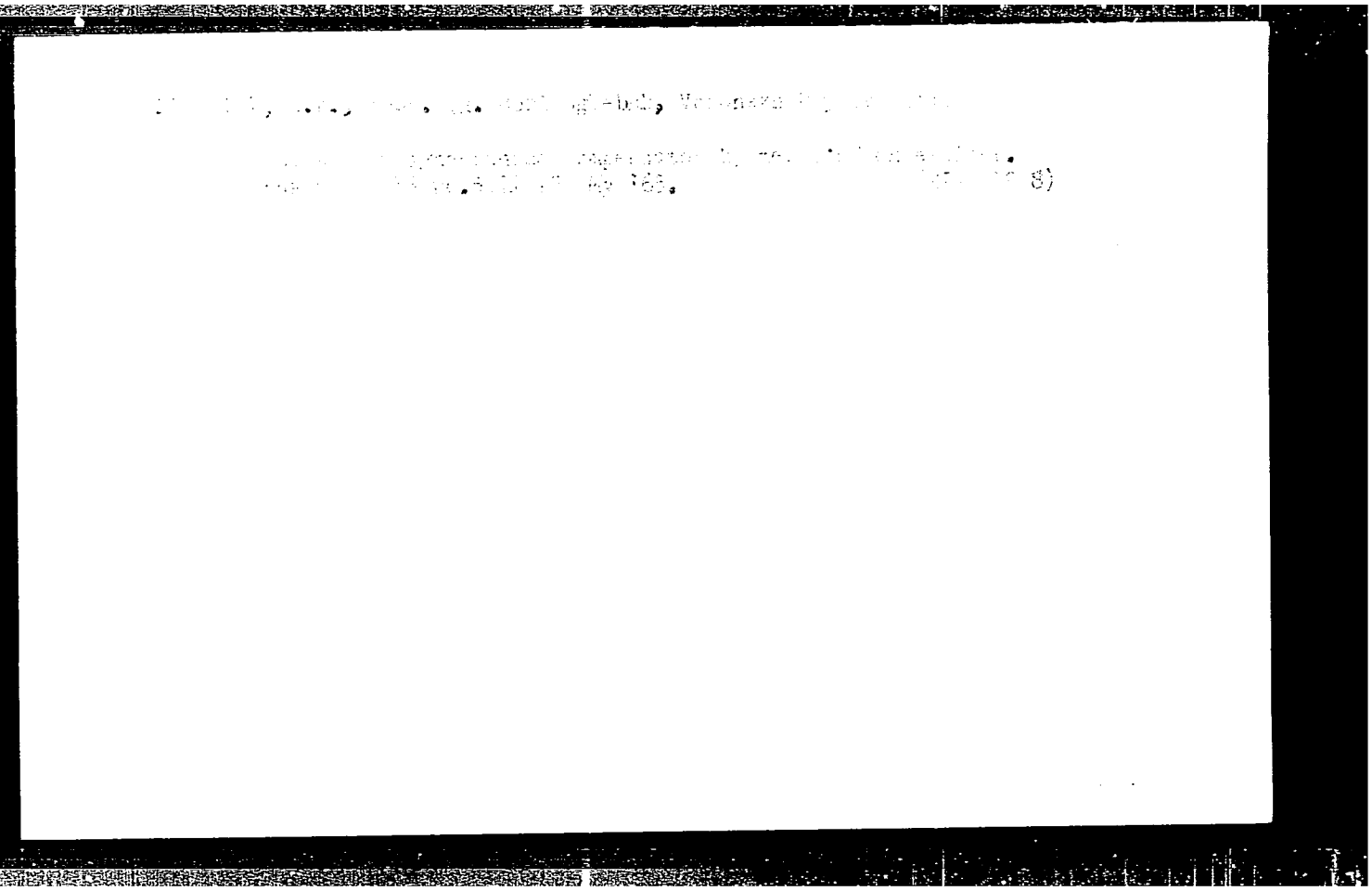
SHATALOV, I.; KNYAZEV, A.; YAKOVLEV, M.

Utilization of production potentialities in the transfer to a seven-hour workday. Sots.trud 4 no.12:110-114 D '59.
(MIRA 13:6)

1. Nachal'nik, otdela organizatsii truda i zarplaty Bereznikovskogo azotnotukovogo zavoda (for Shatalov). 2. Nachal'nik otdela truda i zarplaty Orekhovo-Zuyevskogo zavoda "Karbolit" (for Knyazev). 3. Nachal'nik podotdela organizatsii truda Mosoblsovnarkhoza (for Yakovlev).
(Chemical industries--Labor productivity)
(Hours of labor)

SHATALOV, I.N., kand.med.nauk

Talcosis. Zdorov'e 8 no.5:31 My '62. (MIRA 15:5)
(TALC--PHYSIOLOGICAL EFFECT)



21(4) PHASE I BOOK EXPLOITATION SOV/2714

International Conference on the Peaceful Uses of Atomic Energy. 2nd, Geneva, 1958

Doklady sovetskikh uchenykh; yadernoye goryucheye i reaktornyye metally. (Reports of Soviet Scientists; Nuclear Fuel and Reactor Metals) Moscow, Atomizdat, 1959. 670 p. (Series: Its: Trudy, vol. 3. 8,000 copies printed.

Ed. (Title page): A.A. Bochvar, Academician, A.P. Vinogradov, Academician, V.S. Yemel'yanov, Corresponding Member, USSR Academy of Sciences, and A.P. Zefirov, Doctor of Technical Sciences; Ed. (Inside book): V.V. Pereversev and G.M. Pchelintseva; Tech. Ed.: E.I. Mazel'.

PURPOSE: This volume is intended for scientists, engineers, physicians, and biologists working in the production and peaceful application of atomic energy; for professors and students of schools of higher technical education where the subject is taught; and for people interested in atomic science and technology.

COVERAGE: This is volume 3 of a 6-volume set of reports on atomic energy, presented by Soviet scientists at the Second International Conference on the Peaceful Uses of Atomic Energy, held in Geneva from September 1 to 13, 1958. Volume 3 consists of two parts. The first part, edited by A.I. Zubov, is devoted to geology, prospecting, concentration and processing of nuclear source material. The second part, edited by G.L. Zverev, includes 27 reports on metallurgy, metallography, processing technology of nuclear fuels and reactor metals, and neutron irradiation effects on metals. The titles of the individual papers in most cases correspond word for word with those in the official English language edition on the Conference proceedings. See SOV/2081 for the titles of the other volumes of the set.

Konobeyevskiy, S.T., K.P. Dubrovin, B.M. Levitskiy, L.D. Panteleyev, and N.F. Pravdyuk. Some Physico-chemical Processes occuring in Fissionable Materials Under Irradiation (Report No. 2192)

Pravdyuk, N.F., S.T. Konobeyevskiy, A.D. Amayev, and Yu.I. Pokrovskiy. The Effect of Neutron Irradiation on the Mechanical Properties of Structural Materials (Report No. 2052) 610

Sinel'nikov, K.D., V.Ye. Ivanov, and V.F. Zelenskiy. Magnesium-Beryllium Alloy as Structural Materials for Nuclear Reactors (Report No. 2153) 625

Shatalov, I.E., and V.A. Nikitina. Corrosion Behavior of Structural Metals in Ionized Air (Report No. 2042) 636

Lyashenko, V.S., V.V. Zotov, V.Ye. Andreyev, M.D. Abramovich, and I.A. Ivanov. Inquiry into the Corrosion Resistance of Certain Materials in Sodium and Lithium (Report No. 2194) 642

Card 10/11

CHATALOV, K. T.

Vynzhdennye kolebaniia lineinykh tsepnykh sistem pri uchete vsekh vneshnikh i vnutrennikh trenii; obshchee reshenie zadachi. Moskva, AN SSSR, 1949. 135, 5 p. diagrs.

Bibliography: p. 137.

Induced vibrations of linear chain systems with calculation of all external and internal frictions; general solution of the problem.

DLC: QA935.S4

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

PHASE I TREASURE ISLAND BIBLIOGRAPHICAL REPORT AID 540 - I

BOOK Call No.: AF620011

Author: SHATALOV, K. T.
Full Title: FORCED TRANSVERSE VIBRATIONS OF A FREE BAR ALLOWING FOR FRICTION [See: Orig. Agency and Purpose]
Transliterated Title: Vynuzhdennyye poperechnyye kolebaniya svobodnogo sterzhnya s uchetom treniya

PUBLISHING DATA
Originating Agency: Academy of Sciences, USSR. Institute of Machine Design. Poperechnyye kolebaniya i kriticheskiye skorosti (Transverse Vibrations and Critical Speeds). First Collection
Publishing House: Academy of Sciences, USSR
Date: 1951 No. pp.: 41 (5-45) No. of copies: 3,000
Editorial Staff
Responsible Editor: Serensen, S. V., Active Member, Academy of Sciences, Ukrainian S.S.R.

PURPOSE: This work is one of the seven (AID 540 - 546) which were discussed in a seminar on vibrations in the Institute of Machine Design, and is reprinted for its practical interest.

TEXT DATA
Coverage: In the first part the author covers vibrations of a bar of a certain mass under the action of concentrated forces, dis-

regarding friction. In the second he analyses the same problem in a broader setting, allowing for the forces of internal and external friction along the bar. He discusses the effect of the moments of inertia, connected with angular movements of every element dx of the bar, when the latter is deflected and deformed.

No. of References: Total 14, of which 10 are Russian, 2 foreign, 2 translated into Russian, 1930-1949.

Facilities: None

SHATALOV, K. T.

Shatalov, K. T. - "Induced Oscillations of Complex Discrete Linear Systems." Acad Sci USSR. Inst of Machine Science. Moscow, 1955 (Dissertation for the Degree of Doctor in Technical Sciences).

So: Knizhnaya Letopis', No. 10, 1956, pp. 116-127

S/032/60/026/08/032/046/XX
B020/B052

18.8200

AUTHOR: Shatalov, K. T.

TITLE: Measurement of Forces by Elastic Dynamometers in Machines With Cyclic Loads

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 8, pp. 990-999

TEXT: Elastic elements are often used for measuring tensions which are applied to the sample to be tested, under dynamic conditions, as for example in the fatigue testing machines of the types МУП-15 (MUP-15), 150, 200; МУ-50 (MU-50); МУК-100 (MUK-100), 2000; МУРС-500 (MURS-500), 5000, the instruments designed by V. P. Grigor'yev, M. E. Garf, et al, (Refs. 1, 2) etc. The application of elastic dynamometers in these machines is based on results obtained in practical static tests. The very slow cyclic loads may also be counted to the quasi-static cases. Phase relations between the force and the deformations developing due to the incomplete elasticity of material (internal frictional force) also have a considerable effect upon the slow cyclic process. Hence, the phases of motion of the samples and the dynamometers investigated may differ, and the dynamometer indications

Card 1/3

Measurement of Forces by Elastic Dynamometers in Machines With Cyclic Loads

may be misinterpreted. Mechanical, optical, or electric tensometers are known to measure not the force, but only the deformation. If the exact laws of internal frictional force were known, it would be possible to introduce correction factors for tensions to be determined with accuracy. The investigation of the laws of internal frictional forces, however, is very complicated, and tension measurements of high accuracy are necessary. Elastic dynamometers are unsuited for this purpose. This is shown by the example of a quasi-static cycle ($\omega \to 0$) whose vector diagrams are given in Fig. 1. The analysis of the work done by dynamometers during cyclic loading with a frequency of $\omega \to 0$, becomes more difficult by the fact that they already represent part of the oscillation system, and interact with all other components and forces of the system. Therefore, the inertial forces of the masses of the individual transition components cannot be neglected, nor can the results be distorted. Table 1 gives the amplitudes and phases of motion and the deformation of a two-mass system in a sample calculation. Fig. 2 shows the amplitudes of displacements and deformations of the system, Fig. 3 the phases of displacements and deformations of the system. Table 2 gives the amplitudes of the forces acting upon the masses in the sample calculation. Fig. 4 shows the kinetic

and vector diagrams of the system on the basis of the data in Tables 1 and 2. Fig. 5 gives the "true" hysteresis loops of the sample as compared to the experimental ones plotted according to the deformation of the sample and the dynamometer, as well as the estimation of the tension constant in the sample. Fig. 6 shows the ratio between the areas of "experimental" and "true" hysteresis loops. Table 3 gives the relations of hysteresis loops and equal forces of U_{01}. P. M. Ruban and L. G. Etkin (Ref. 6) are mentioned. There are 6 figures, 3 tables, and 6 Soviet references.

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

BRESLAVSKIY, L.M., inzh.; SHATALOV, K.T., doktor tekhn.nauk

"Dynamics of transition processes in machines with many masses" by A.N.Golubentsev. Reviewed by L.M.Breslavskii, K.T.Shatalov. Vest.mash. 40 no.9:80-82 S '60. (MIRA 13:9)
(Machinery, Kinematics of)
(Golubentsev, A.N.)

AGAMIROV, V.L., kand. tekhn. nauk; AMEL'YANCHIK, A.V., inzh.; ANDREYEVA, L.Ye., kand. tekhn. nauk; BIDERMAN, V.L., doktor tekhn. nauk; BOYARSHINOV, S.V., kand. tekhn. nauk; VOL'MIR, A.S., prof., doktor tekhn. nauk; DIMENTBERG, F.M., doktor tekhn. nauk; KOSTYUK, A.G., kand. tekhn. nauk; MAKUSHIN, V.M., kand. tekhn. nauk; MASLOV, G.S., kand. tekhn. nauk; MALININ, N.N., prof., doktor tekhn. nauk; PONOMAREV, S.D., prof. doktor tekhn. nauk; PRIGOROVSKIY, N.I., prof., doktor tekhn. nauk; SERENSEN, S.V., akademik; STEPANOVA, V.S., inzh.; STRELYAYEV, V.S., inzh.; TRAPEZIN, I.I., prof., doktor tekhn. nauk; UMANSKIY, A.A., prof., doktor tekhn. nauk; FEODOS'YEV, V.I., prof., doktor tekhn. nauk; SHATALOV, K.T., doktor tekhn.nauk; YUMATOV, V.P., kand. tekhn. nauk; BLAGOSKLONOVA, N.Yu., red. izd-va; YEVSTRAT'YEV, A.I., red. izd-va; SOKOLOVA, T.F., tekhn. red.

[Manual for a mechanical engineer in six volumes] Spravochnik mashinistroitelia v shesti tomakh. Red. sovet N.S.Acherkan i dr. Izd.3., ispr. i dop. Moskva, Mashgiz. Vol.3. 1962. 651 p. (MIRA 15:4)

1. Akademiya nauk USSR (for Serensen).
(Machinery--Design)

[illegible], F.M.; [illegible], K.T.; [illegible], A.A.; ZHITOMIRSKIY, V.K., doktor tekhn. nauk, retsenzent; DMITIEV, L.N., inzh., red.

[Vibrations of machinery] Kolebaniia mashin. Moskva, Mashinostroenie, 1964. 307 p. (MIRA 17:8)

28(2) SOV/115-59-3-21/29

AUTHOR: Shatalov, M.I.

TITLE: The Calculation of Errors When Using Lissajous Figures for Comparing Frequencies (Vychisleniye pogreshnosti pri primenenii figur Lissazhu dlya sravneniya chastot)

PERIODICAL: Izmeritel'naya tekhnika, 1959, Nr 3, pp 46-48 (USSR)

ABSTRACT: The author presents a table of Lissajous figures for the mostly used frequency ratios and presents a formula for calculating the error

$$\Delta f = \frac{k}{t} \text{ cycles}$$

whereby k is the number of full cycles of figure changes within t seconds during which the number of cycles was counted. There are: 1 table and 3 references, 2 of which are Soviet and 1 English.

Card 1/1

KAYBICHEVA, M.N.; FADEYEVA, N.I.; TULIN, N.A.; SHATALOV, M.I.

Basic refractory wastes are a valuable raw material. Metallurg 6 no. 1:18-20 '61. (MIRA 14:1)

1. Vostochnyy institut ogneuporov i Chelyabinskiy metallurgicheskiy zavod.

(Refractory materials)

GALYAN, V.S.; ZHUKOV, D.G.; KEYS, N.V.; USHAKOV, S.T.; KHAYRUTDINOV, R.M.; SHATALOV, M.I.

Improving the procedure for making transformer steel. Metallurg 8 no.1:13-14 Ja '63. (MIRA 16:1)

(Steel--Metallurgy)
(Sheet steel--Magnetic properties)

KAYBICHEVA, M.N.; TARNOVSKIY, G.A.; GILEV, Yu.P.; BORNOVALOV, M.A.; SHATALOV, M.I.; LANDE, P.A. [deceased]; SYUMKIN, N.I.; BEKISHEV, Yu.A.

Temperature conditions for the resistance of the lining of large capacity electric furnaces at the Chelyabinsk Metallurgical Plant. Stal' 23 [i.e. 24] no.4:324-328 Ap '64. (MIRA 17:8)

1. Vostochnyy institut ogneuporov i Chelyabinskiy metallurgicheskiy zavod.

LUBENETS, I.A.; ZHUKOV, D.G.; VOINOV, S.G.; SHALIMOV, A.G.; KOSOY, L.F.; KALINNIKOV, Ye.S.; CHERNYAKOV, V.A.; YARTSEV, M.A.; GOLIKOV, Ye.S.; MYSINA, G.Ye.; Prinimali uchastiye: KEYS, N.V.; PEGOV, V.G.; MEN'SHENIN, Ye.B.; BARNOVALOV, M.A.; SHIBER, G.B.; SHATALOV, M.I.; MOLCHANOVA, A.A.; ANISIMOVA, M.Ye.

Refining steel with synthetic slag from large-capacity arc furnaces. Stal' 25 no.3:232-235 Mr '65. (MIRA 18:4)

ESBERG, N.A.; SHATALOV, N.N., nachal'nik; EPSHTEYN, G.Ya., professor, starshiy khirurg.

Tissue therapy in certain diseases. Vest.khir. 73 no.4:55-56 Jl-Ag '53. (MLRA 6:8)

1. Leningradskiy gorodskoy gospital' dlya lecheniya invalidov Otechestvennoy voyny. (Tissue extracts)

EPSHTEYN, G.Ya., professor; SHATALOV, N.N., nachal'nik.

Further observations of the treatment of pseudarthrosis without intervention at the false joint itself. Vest.khir. 73 no.5:3-8 S-O '53. (MLRA 6:11)

1. Leningradskiy gorodskoy gospital dlya invalidov Otechestvennoy voyny.
(Pseudarthrosis)

SHATALOV, N.N.

Pneumoconiosis caused by magnesium silicate. Gig.i san.no.2: 29-30 F '54. (MLRA 7:2)

1. Iz Instituta gigiyeny truda i professional'nykh zabolevaniy Akademii meditsinskikh nauk SSSR. (Lungs--Diseases)

SHATALOV, N.N.

Experimental talc pneumoconiosis. Biul. eksp. biol. i med. 41 no.2: 74-76 F '56. (MLRA 9:6)

1. Iz patologoanatomicheskoy laboratorii (zav.-prof. P.P. Dvizhkov) Instituta gigiyeny truda i profzabolevaniy (dir.-deystvitel'nyy chlen AMN SSSR A.A. Letavet) AMN SSSR, Moskva. Predstavleno deystvitel'nym chlenom AMN SSSR A.A.Letavetam.

(PNEUMOCONIOSIS, experimental, talc-induced (Rus))
(TALC, injurious effects, exper. pneumoconiosis (Rus))

SHATALOV, N.N., ORLOVA, A.A.,

Clinical aspects of acute phenylhydrazine poisoning. Gig.truda i prof.zab. 2 no.2:12-16 Mr-Ap'58 (MIRA 11:6)

1. Klinicheskiy sektor Instituta gigiyeny truda i profzabolevaniy AMN SSSR.
(HYDRAZINE--TOXICOLOGY)

SHATALOV, N.N

Session of the Institute of Industrial Hygiene and Occupational Diseases of the Academy of Medicine of the U.S.S.R. devoted to the 40th anniversary of the Great October Socialist Revolution. Gig.truda i prof. zab. 2 no.5:55-57 S-O '58 (MIRA 11:12)
(INDUSTRIAL HYGIENE--CONGRESSES)

SHATALOV, N.N.

Anniversary session of the Institute of Industrial Hygiene and Occupational Diseases of the Academy of Medicine of the U.S.S.R. Vest.AMN SSSR 13 no.8:61-65 '58 (MIRA 11:8)
(INDUSTRIAL HYGIENE)

DROGICHINA, E.A.; RASHEVSKAYA, A.M.; YEVGENOVA, M.V.; ZORINA, L.A.; KOZLOV, L.A.; KUZNETSOVA, R.A.; RYZHKOVA, M.N.; SENKEVICH, N.A.; SOLOV'YEVA, L.V.[deceased]; SHATALOV, N.N.; LETAVET, A.A., prof., red.; YEGOROV, Yu.L., red.; BUL'DYAYEV, N.A., tekhn. red.

[Manual on periodic medical examinations for industrial workers] Posobie po periodicheskim meditsinskim osmotram rabochikh promyshlennykh predpriiatii. By E.A.Drogichina i dr. Moskva, Medgiz, 1961. 287 p. (MIRA 14:12)

(INDUSTRIAL HYGIENE)

SHATALOV, N.N. (Moskva)

Symposium on silicosis in the countries of the people's democracy held in Plovdiv. Gig.truda i prof.zab. 6 no.6:58-59 Je '62. (MIRA 15:12)

(LUNGS—DUST DISEASES)

SHAFIRO, Ya.Ye., prof.; ZINOV'YEV, I.A., kand.med.nauk; SHATALOV, N.N., kand.med.nauk; SIDEL'NIKOVA, T.Ya., kand.med.nauk; ROZENTUL, L.M., vrach-kosmetolog; SADCHIKOVA, M.N., kand.med.nauk

Health hints. Zdorov'e 8 no.8:30-31 Ag '62. (MIRA 15:8)
(HYGIENE)

SHATALOV, N.N. (Leningrad)

Construction of urban hospitals. Sov. zdrav. 21 no.2:30-34 '62. (MIRA 15:3)

(HOSPITALS--CONSTRUCTION)

ANDROSOVA, S.O.; APROSINA, Z.G.; BEZRODNYKH, A.A.; VERMEL', A.Ye.; VINOGRADOVA, O.M.; LEVITSKIY, E.R.; MAKARENKO, I.I.; MAKSHANOV, D.A.; POLYANTSEVA, L.R.; SUMAROKOV, A.V.; SHATALOV, N.N.; SHAPIRO, L.A.; TAREYEV, Ye.M., prof., red.; MEL'NIKOV, Ye.B., red.

[Occupational diseases] Professional'nye bolezni; uchebnoe posobie dlia studentov sanitarno-gigienicheskikh fakul'tetov. Pod red. E.M.Tareeva. Moskva, 1963 p. 223 p. (MIRA 16:6)

1. Moscow. Pervyy meditsinskiy institut. 2. AMN SSSR (for Tareyev).

(OCCUPATIONAL DISEASES)

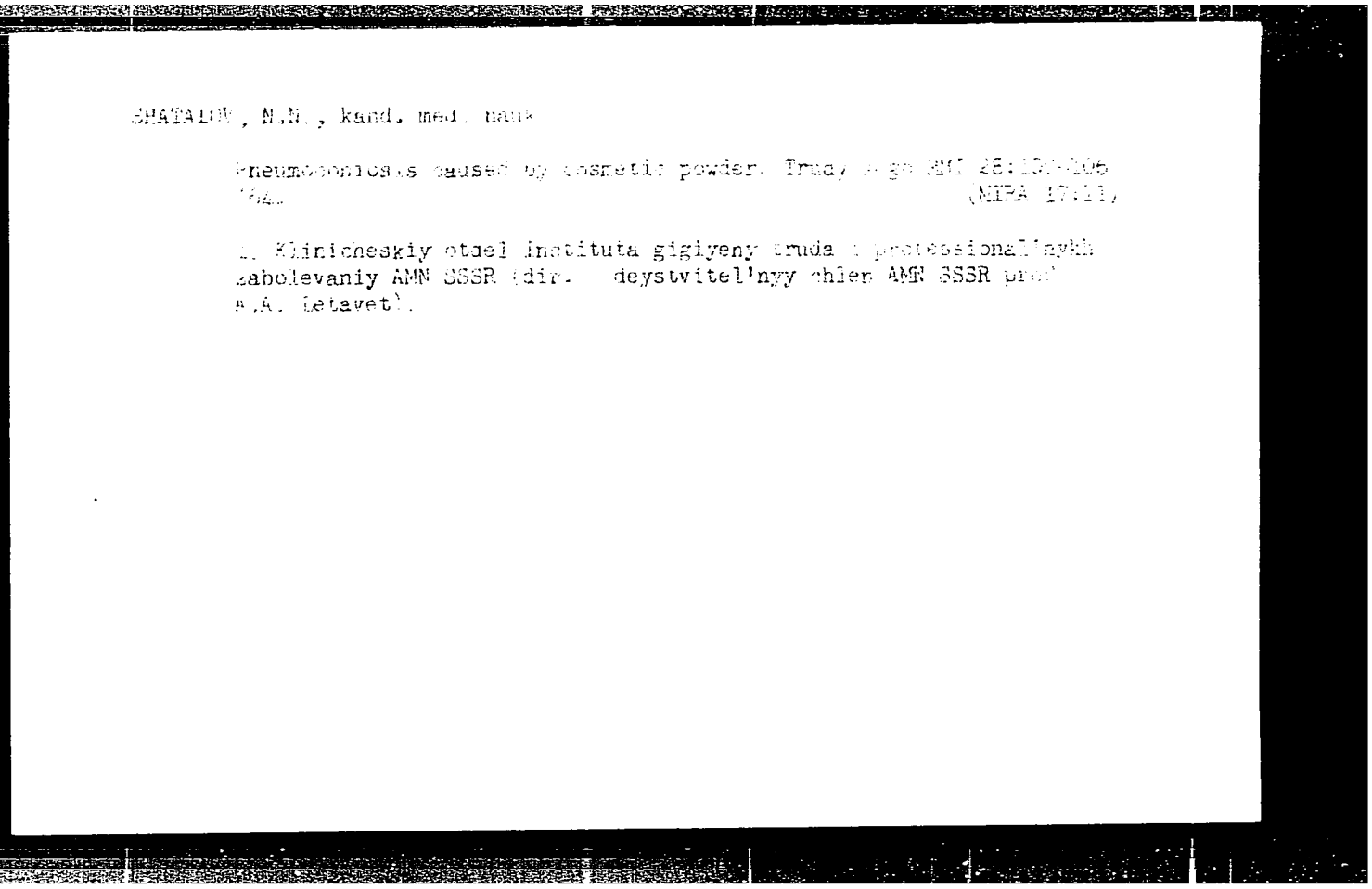
KANDAUROVA, Ye.I., vrach; MAZUNINA, G.N., kand.med.nauk; PRON'KOVA, Ye.P. vrach; TORUBAROVA, N.A., vrach; SHATALOV, N.N., kand.med.nauk; SIDEL'NIKOVA, T.Ya., kand.med.nauk; SHCHECHKIN, V.N., kand.med. nauk.

Hints of the "Zdorov'e". Zdorov'e 9 no.5:30-31 My'63. (MIRA 16:9)

(HYGIENE)

SHATALOV, N.N., kand.med.nauk

Dangerous solutions. Zdorov'e 9, no.1:31 Ja '63. (MIRA 16:7)
(POISONS—PHYSIOLOGICAL EFFECT)



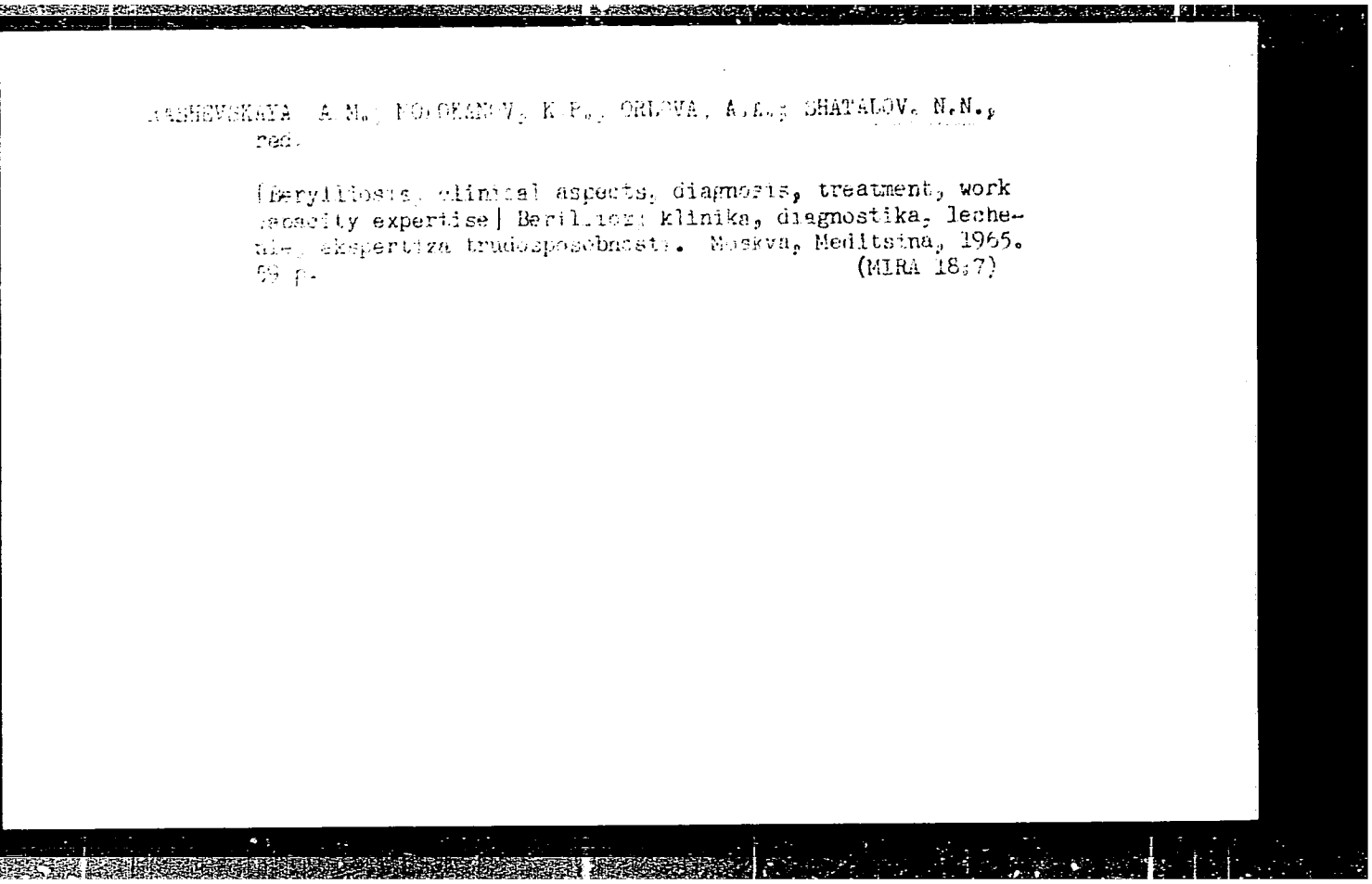
SHATALOV, N.N., kand. med. nauk

Pneumoconiosis caused by cosmetic powder. Trudy ... gos. NII ... (MIRA 17:11)

... Klinicheskiy otdel Instituta gigiyeny truda i professional'nykh zabolevaniy AMN SSSR (dir. ... deystvitel'nyy chlen AMN SSSR prof. A.A. Letavet).

KONCHALOVSKAYA, N. I.; RASHEVSKAYA, A.M.; SHATALOV, N.N. (Moskva)

State of the cardiovascular system under the effect of some chemical and physical factors of an industrial environment. Vest. AMN SSSR 20 no.6:19-24 '65. (MIRA 18:9)



[illegible] A.M.; [illegible] K.P.; ORLOVA, A.L.; SHATALOV, N.N., red.

[Beryllosis, clinical aspects, diagnosis, treatment, work capacity expertise] Berilliozy; klinika, diagnostika, lechenie, ekspertiza trudosposobnosti. Moskva, Meditsina, 1965. 99 p. (MIRA 18:7)

LETAVET, A.A., prof., red.; ANTON'YEV, A.A., dots., red.; DROGICHINA, E.A., prof., red.; KONCHALOVSKAYA, N.M., prof., red.; PAVLOVA, I.V., doktor med. nauk, red.; POPOVA, T.B., kand. med. nauk, red.; RABEN, A.S., doktor med. nauk, red.; RABEN, A.S., doktor med. nauk, red.; RASHEVSKAYA, A.M., prof., red.; SHATALOV, N.N., kand. med. nauk, red.

[Occupational diseases in the chemical industry] Professional'nye zabolevaniia v khimicheskoi promyshlennosti. Moskva, Meditsina, 1965. 322 p. (MIRA 18:12)

1. Deystvitel'nyy chlen AMN SSSR (for Letavet).

L 44304-66

ACC NR: AP6018225 (N) SOURCE CODE: UR/0391/66/000/006/0006/0010

AUTHOR: Metlina, N. B. (Moscow); Milkov, L. Ye. (Moscow); Shatalov, N. N. (Moscow); Ponomareva, N. I. (Moscow)

ORG: Institute of Industrial Hygiene and Occupational Diseases, AMN SSSR (Institut gigiyeniy truda i profzabolevaniy AMN SSSR)

TITLE: Some clinical data on effects produced by vibrations of different frequencies

SOURCE: Gigiyena truda i professional'nyye zabolevaniya, no. 6, 1966, 6-10

TOPIC TAGS: human physiology, industrial hygiene, vibration biologic effect

ABSTRACT: A total of 115 subjects aged up to 40 was studied to determine the comparative effects of high- and low-frequency vibrations. The first group (38 subjects) was made up of workers with 5 years of service exposed to high-frequency vibrations (500—900 cps; 50 μ (microns)). The second group of 77 subjects with 10 years service was exposed to low-frequency vibrations (12—20 cps; 12—14 mm). The two groups differed in the nature and degree of reactions to vibrations. Low-frequency vibrations affected the sympathetic nervous system and inhibited the cutaneous motor, vestibular, and auditory analyzers. High-frequency vibrations caused the premature development of the angiospastic syndrome in the hand. Vestibular analyzer function and pain sensitivity were altered in this group. In all likelihood, the angiospastic syndrome was caused by the disruption of peripheral autonomic structures.. [CD]

SUB CODE: 06 / SUBM DATE: 28Sep65/ ORIG REF: 005

UDC: 617-001.34-02:534.292

Card 1/1 UDC

SHATALOV, N. N.; RYZHKOVA, M. N.; KOZLOV, L. A.; GLOTOVA, K. V.; GRIGOR'YEVA, V. M. (Moskva)

Some information on occupational pathology in persons servicing ultrasonic power installations. Gig. truda i prof. zab. 5 no.7: 28-33 Jl '61. (MIRA 15:7)

1. Institut gigiyeny truda i professional'nykh zabolevaniy AMN SSSR.

(ULTRASONIC WAVES—PHYSIOLOGICAL EFFECT)

TSFAS, B.S., dotsent, kand.tekhn.nauk; SHATALOV, N.S., student;
FILIPPOV, V.I., student

Determining the angle of equistable oblique butt weld.
Sbor.dokl.Stud.nauch.ob-va fak.mekh.sel'.Kuib.sel'khoz.inst.
no. 1:126-130 '62. (MIRA 17:5)

1. Kuybyshevskiy sel'skokhozyaystvennyy institut.

[redacted], I. V. (Moskva); SHAFRANOV, N. V.

Gyroscopic power stabilizer with a dynamic vibration damper.
Izv. AN SSSR. Mekh. i mashinostr. no.3:87-89 My-Je '64.
(MIRA 17:7

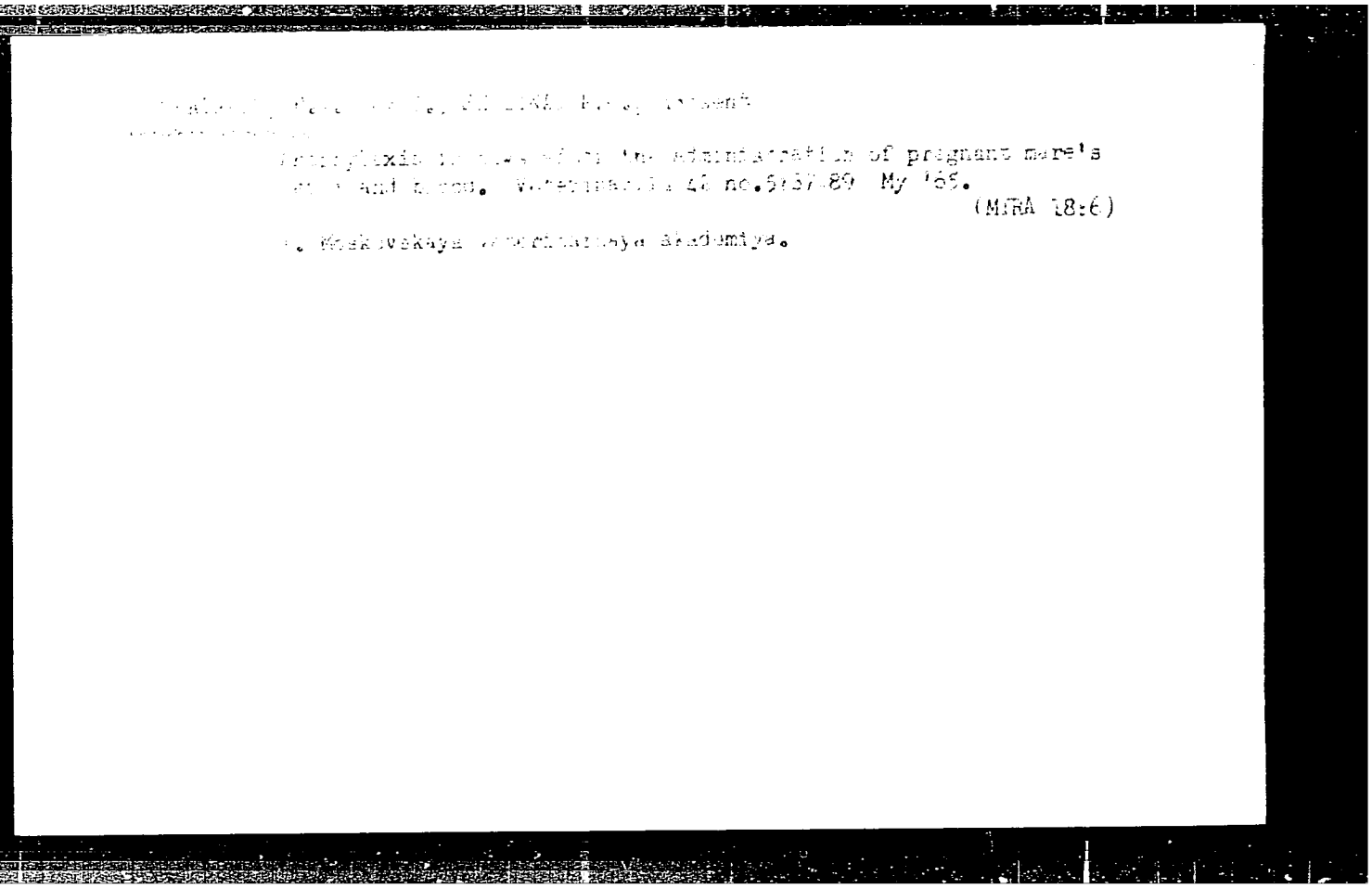
SHATALOV, P.; STROKIN, P.; KOKAREVA, A.; DROFA, P.; AGAFONOV, I.

Surprise inspection of worker correspondents of the All-Union Central Council of Trade Unions periodical "Okhrana truda i sotsial'noe strakhovanie": There is not much use in this kind of control. Okhr. truda i sots. strakh. 3 no. 10:48-52 O '60. (MIRA 13:11)

1. Predsedatel'rabochkoma sovkhoza "Pobeda," Altay (for Shatalov). 2. Doverennyy vrach kraysovprofa, Altay (for Strokin). 3. Pomoshchnik epidemiologa Sharchinskogo rayona, Altay (for Kokareva). 4. Predsedatel' rabochkoma sovkhoza imeni Gastello, Altay (for Drofa). 5. Spetsial'nyy korrespondent zhurnala "Okhrana truda i sotsial'noye strakhovaniye" (for Agafonov).
(Altai Territory--Medicine, Rural)

BOCHAROV, G.N.; SHATALOV, P.I.

What is a rated accounting? [Mashinostroitel' no.11:32-33 '65. (MIRA 18:11)



[illegible] Moskovskaya veterinarnaya akademiya.

Prophylaxis in cases of the abortion of pregnant mare's [illegible]. Veterinariia 42 no.5:87-89 My '65.
(MIRA 18:6)

SHATALOV, R. T.

"Basic Features of Magnatism in the Northwestern Part of the Pacific Ocean Ore Belt"

report presented at the First All-Union Conference on the Geology and Metallurgy of the Pacific Ocean Ore Belt, Vladivostok, 2 October 1960.

So: Geologiya Rudnykh Mestorozhdeniy, No. 1, 1961, pages 119-127

1. SHATALOV, S. M., ENG. ; MIL'NER,YE. D., ENG.

2. USSR (600)

4. Concrete Construction

7. Experience in the use of rolling molds.
Biul. stroi. tekh. 9. No. 20. 1952.

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

SHATALOV, V., inzh.

Design of apparatus repair shops for electric and radio navigation, communications, control and measurement, and automatic control in shipyards. Mor. flot 23 no.3:35-37 Mr '63. (MIRA 16:3)

1. Otdel tekhnologii i ekonomiki sudoremonta Chernomorniiproyekta.
(Electricity on ships) (Radio in navigation)

AID P - 1625

Subject : USSR/Engineering

Card 1/1 Pub. 29 - 7/23

Authors : Petrov, V. A., Eng., Turkin, A. N., Eng. and Shatalov, V. A., Eng.

Title : Adaptation of stoker with a pocking plank to the locomobile boiler

Periodical : Energetik, 1, 15-16, Ja 1955

Abstract : At a Northern railroad junction, the electric power plant with the Erste-Brunner 395 HP stationary locomobile was transferred from burning firewood to coal. The authors describe the technique of adaptation and the coal stoker with a movable pocking plank, illustrating with 3 diagrams. This outfit has been in operation since 1953.

Institution: None

Submitted : No date

Greater Stability of the SKS-30 Polimerization System S/138/60/000/01/01/010

has been tested under laboratory and industrial conditions. The results of tests are shown in 2 Tables. These data show that under industrial conditions leucanol improved considerably the stability of the polimerization system. After introduction of leucanol the use of the deposition in the end polimerizers decreased about 10 times, while in the first apparatus coagulation was practically not existing. Laboratory tests permitted to draw the conclusion, that the stabilization brought about by leucanol is due to the effect it produces on the ion of iron and to the physico-chemical processes of colloidal substances like soap or dispersers, whereby the protective action of the film surrounding the rubber particles is strengthened. It can therefore be concluded that by the introduction of leucanol into the recipe of SKS-30, by the total prevention of iron compounds from getting into the system and by the improvement of the dispersion of phenyl-β-naphtylamine it is possible to eliminate the precipitation of coagulum from latex in the course of polimerization as well as the separation of monomers. There are 3 tables and 3 Soviet references.

ASSOCIATION: Voronezhskiy zavod sinteticheskogo kauchuka im. S. M. Kirova (Voronezh Plant of Synthetic Rubber im. S. M. Kirov)

Card 2/2

SHATALOV, V.D.

Manufacture of fabrics from a glend of cotton and synthetic fibers.
Tekst.prom.22 no.3:26-28 Mr '62. (MIRA 15:3)
(Textile fabrics)(Textile finishing)

SHAIALOV, V.F.

ZEMTOVICH V.F., KUPRIYSHVILI, S.P., SHAIALOV, V.F.

Veterinarians

Medicine

"Experience in the Elimination of Equine Infectious Anemia According to B.M. Bosh'yan (Preliminary Communication)." Veterinariya, Vol. 28, No. 5, 1951

PA 182T74

SHATALOV, V. F.; [illegible]VICH; BONDAREV, G. A.; LUMIN, N. T.

"An elevation of the effectiveness of vaccine against swine erysipelas."

SO: Veterinariya [illegible]), 1952, p. 32

ZENKOVICH, V.P.; SHATALOV, V.F.

Freeing farms of infectious anemia in horses by using Doctor of Biological Sciences G.M. Bosh'ian's method. Veterinariia 30 no.6:20-22 Je '53. (MLRA 6:5)

SHATALOV, V.F., veterinarnyy vrach (g. Marinsk, Kemerovskoy oblasti); PROZOROVSKIY, L.M., veterinarnyy vrach (g. Marinsk, Kemerovskoy oblasti).

Drugs to control horse bot larvae. Veterinariia 33 no.3:43-45 Mr '56. (MLRA 9:5)

(INSECTICIDES) (BOTFLIES)

AUTHOR: Shatalov, V.F. (Mariinsk) SOV-26-58-11-49/49

TITLE: Why Didn't the Starlings Fly Away? (Pochemu ne uleteli skvortsy?)

PERIODICAL: Priroda, 1958, Nr 11, p 127 (USSR)

ABSTRACT: In 1953 the author had noticed a flight of starlings on the territory of the Kemerovskaya oblast', that stayed on in the area in November at a temperature of - 23°C. They were mostly seen on a thawed patch of earth in the vicinity of a chimney and close to an open attic. The author concludes that this opportunity held the starlings back far beyond the usual migration time.

1. Birds--USSR

Card 1/1

SHATALOV, V.F., vet. vrach(Mariinsk, Kemerovskoy oblasti); MUROMETS, G.K., vet. vrach(Mariinsk, Kemerovskoy oblasti); TSIMOKH, P.F., vet. vrach(Mariinsk, Kemerovskoy oblasti).

Vaccinating swine following the injection of anti-erysipeloid serum. Veterinariia 35 no. 7:30-31 Jl '58. (MIRA 11:7)
(Erysipeloid)

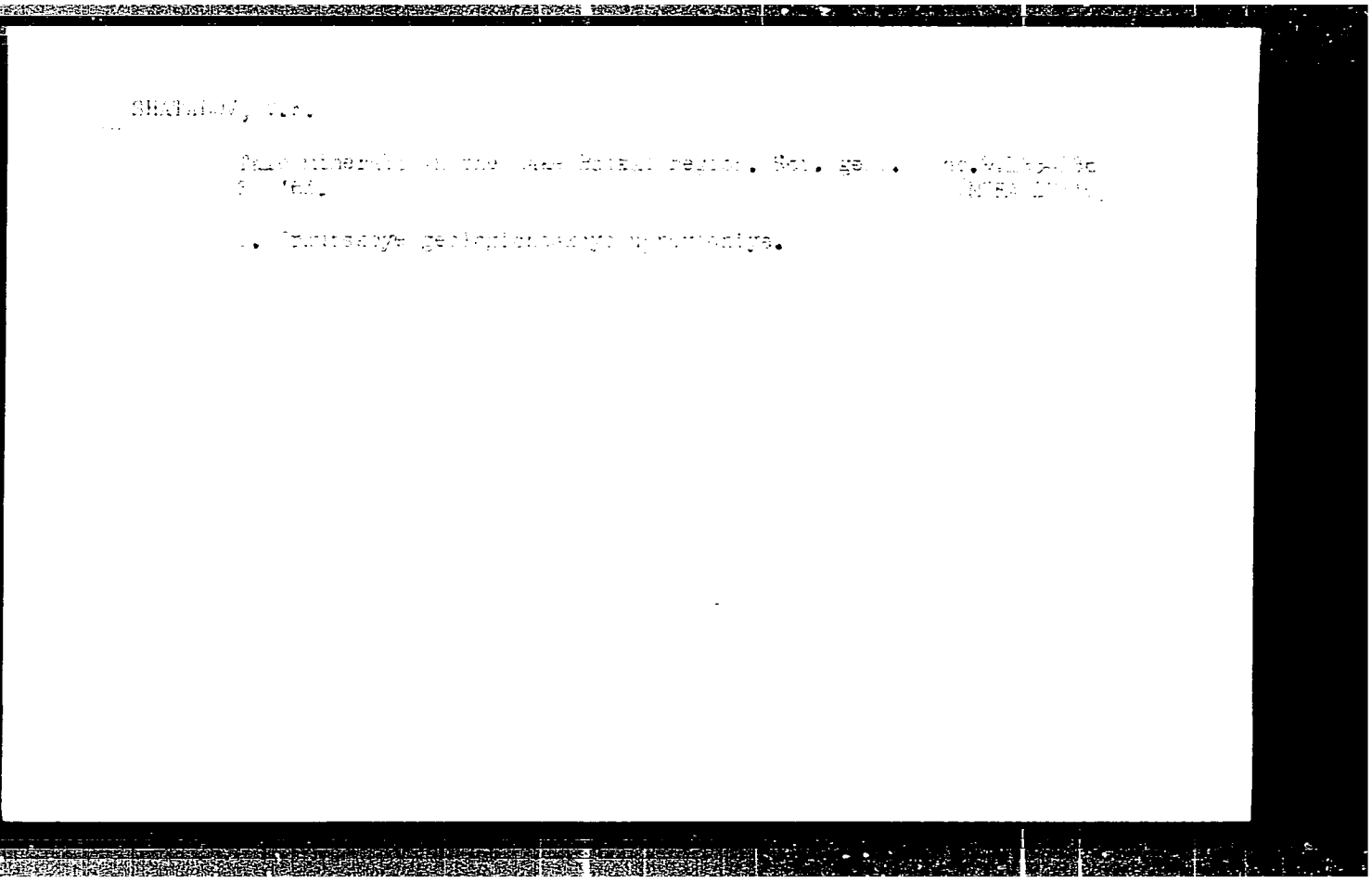
SHATALOV, V.F. (Veterinary Doctor).

"Study of infection means in swine erysipelas..."
Veterinariya, vol. 39, no. 3, March 1962 pp. 46

GAVELYA, S. P.; SHATALOV, V. I. (Zaporozhye)

"On the numerical solution of boundary value problems of the theory of shells by the method of integral equations"

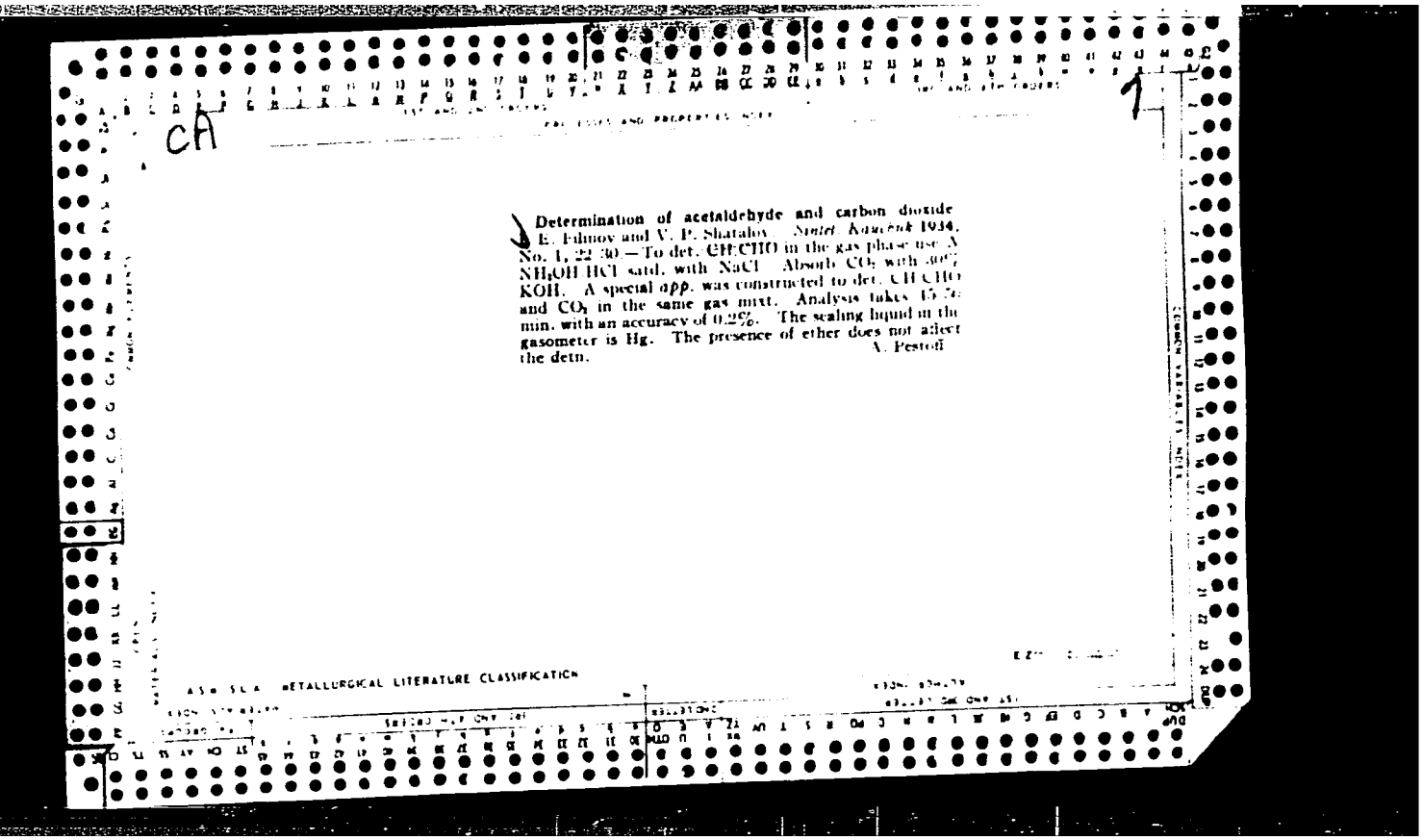
report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 Jan - 5 Feb 1964.



SHATALOV, V. ...

Recent data on complex mineralization in the western Baikal area region. Izvest. i okh. nedr. 30 no.1:5-10 Ap '64. (MIA 17:10)

1. Irkutskoye geologicheskoye upravleniye.

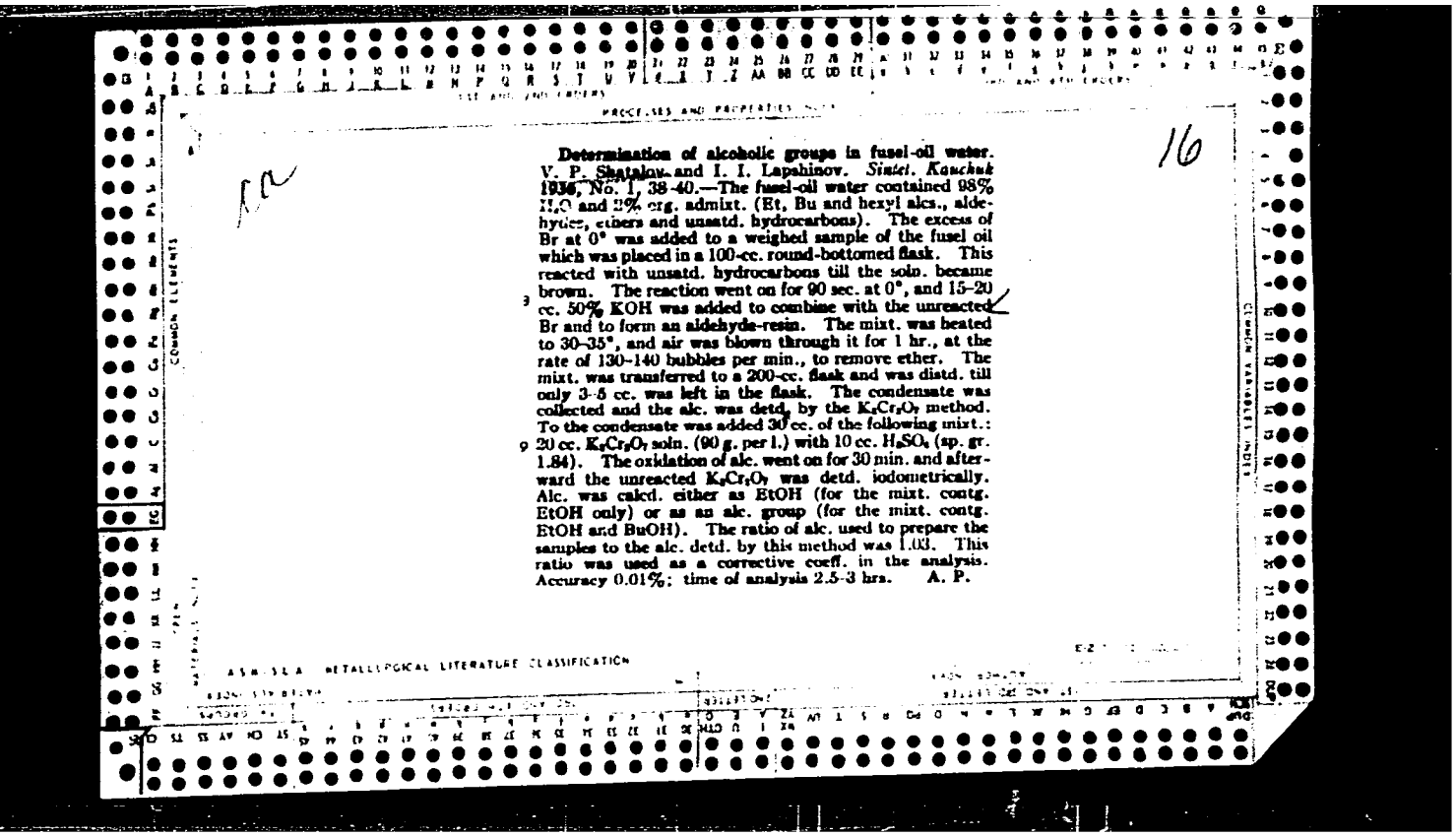


CA

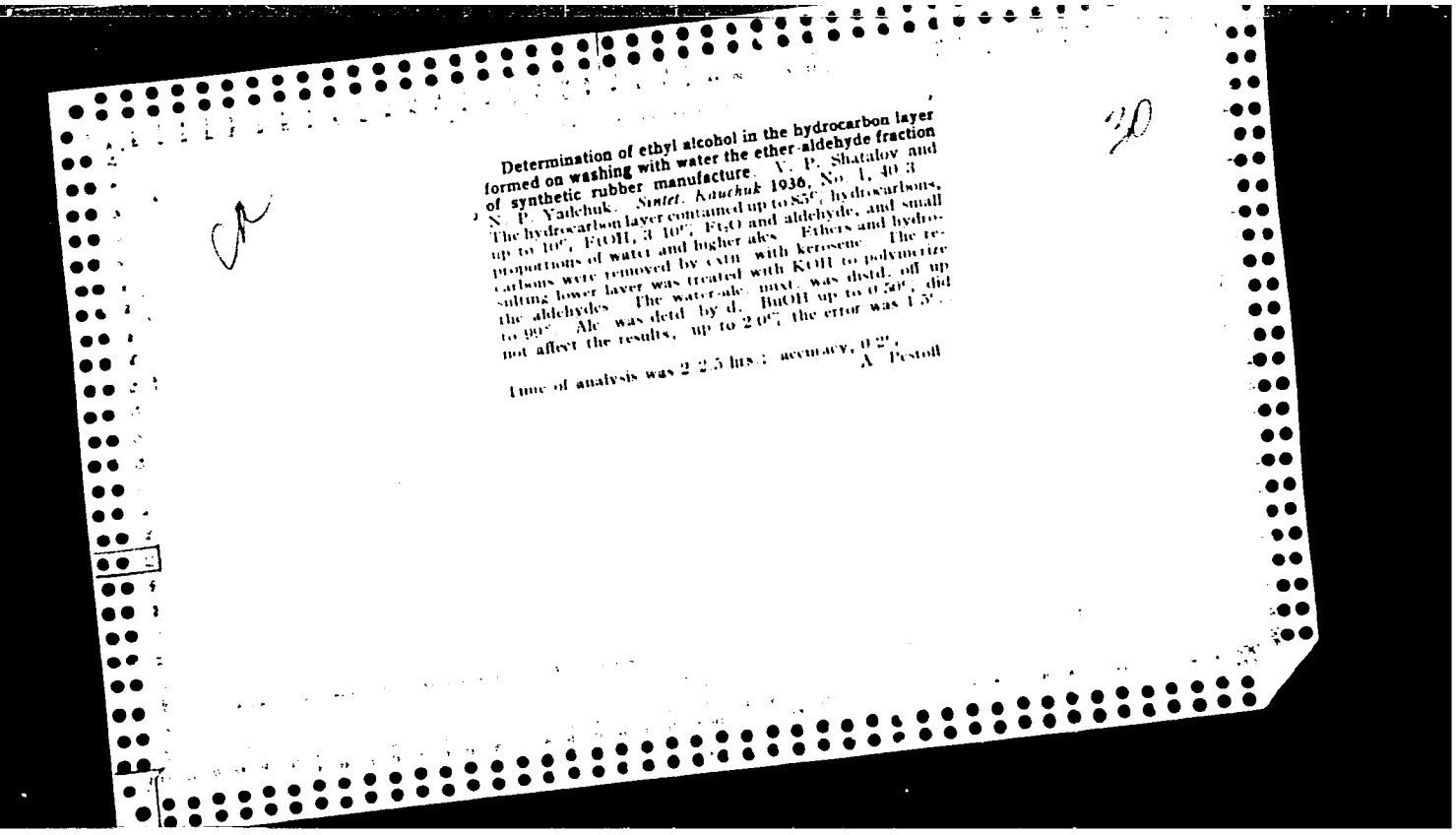
Determination of acetaldehyde and carbon dioxide. E. Filinov and V. P. Shatalov. *Sintet. Kauchuk* 1934, No. 1, 22-30.—To det. CH_3CHO in the gas phase use NH_4OH HCl satd. with NaCl. Absorb CO_2 with 30% KOH. A special *app.* was constructed to det. CH_3CHO and CO_2 in the same gas mixt. Analysis takes 15-20 min. with an accuracy of 0.2%. The sealing liquid in the gasometer is Hg. The presence of ether does not affect the detn.

A. Pestoff

METALLURGICAL LITERATURE CLASSIFICATION



Determination of alcoholic groups in fusel-oil water. V. P. Shatalov and I. I. Lapshinov. *Sintet. Kauchuk* 1936, No. 1, 38–40.—The fusel-oil water contained 98% H_2O and 2% org. admixt. (Et, Bu and hexyl alcs., aldehydes, ethers and unsatd. hydrocarbons). The excess of Br at 0° was added to a weighed sample of the fusel oil which was placed in a 100-cc. round-bottomed flask. This reacted with unsatd. hydrocarbons till the soln. became brown. The reaction went on for 90 sec. at 0°, and 15–20 cc. 50% KOH was added to combine with the unreacted Br and to form an aldehyde-resin. The mixt. was heated to 30–35°, and air was blown through it for 1 hr., at the rate of 130–140 bubbles per min., to remove ether. The mixt. was transferred to a 200-cc. flask and was distd. till only 3–5 cc. was left in the flask. The condensate was collected and the alc. was detd. by the $K_2Cr_2O_7$ method. To the condensate was added 30 cc. of the following mixt.: 20 cc. $K_2Cr_2O_7$ soln. (90 g. per l.) with 10 cc. H_2SO_4 (sp. gr. 1.84). The oxidation of alc. went on for 30 min. and afterward the unreacted $K_2Cr_2O_7$ was detd. iodometrically. Alc. was calcd. either as EtOH (for the mixt. contg. EtOH only) or as an alc. group (for the mixt. contg. EtOH and BuOH). The ratio of alc. used to prepare the samples to the alc. detd. by this method was 1.03. This ratio was used as a corrective coeff. in the analysis. Accuracy 0.01%; time of analysis 2.5–3 hrs. A. P.

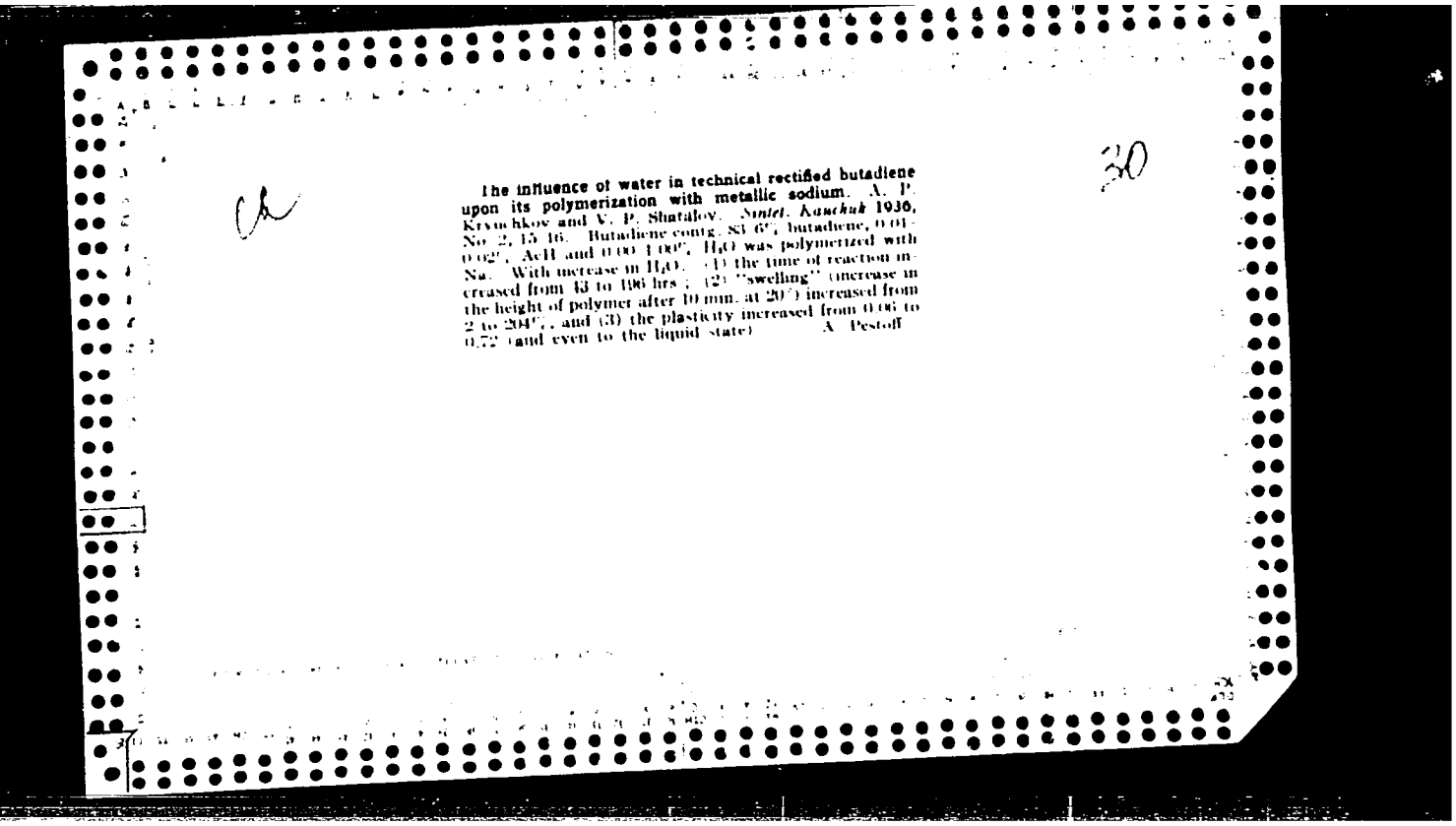


Determination of ethyl alcohol in the hydrocarbon layer formed on washing with water the ether-aldehyde fraction of synthetic rubber manufacture. V. P. Shatalov and N. P. Yalchuk. *Sintet. Kauchuk* 1936, No. 1, 40-3

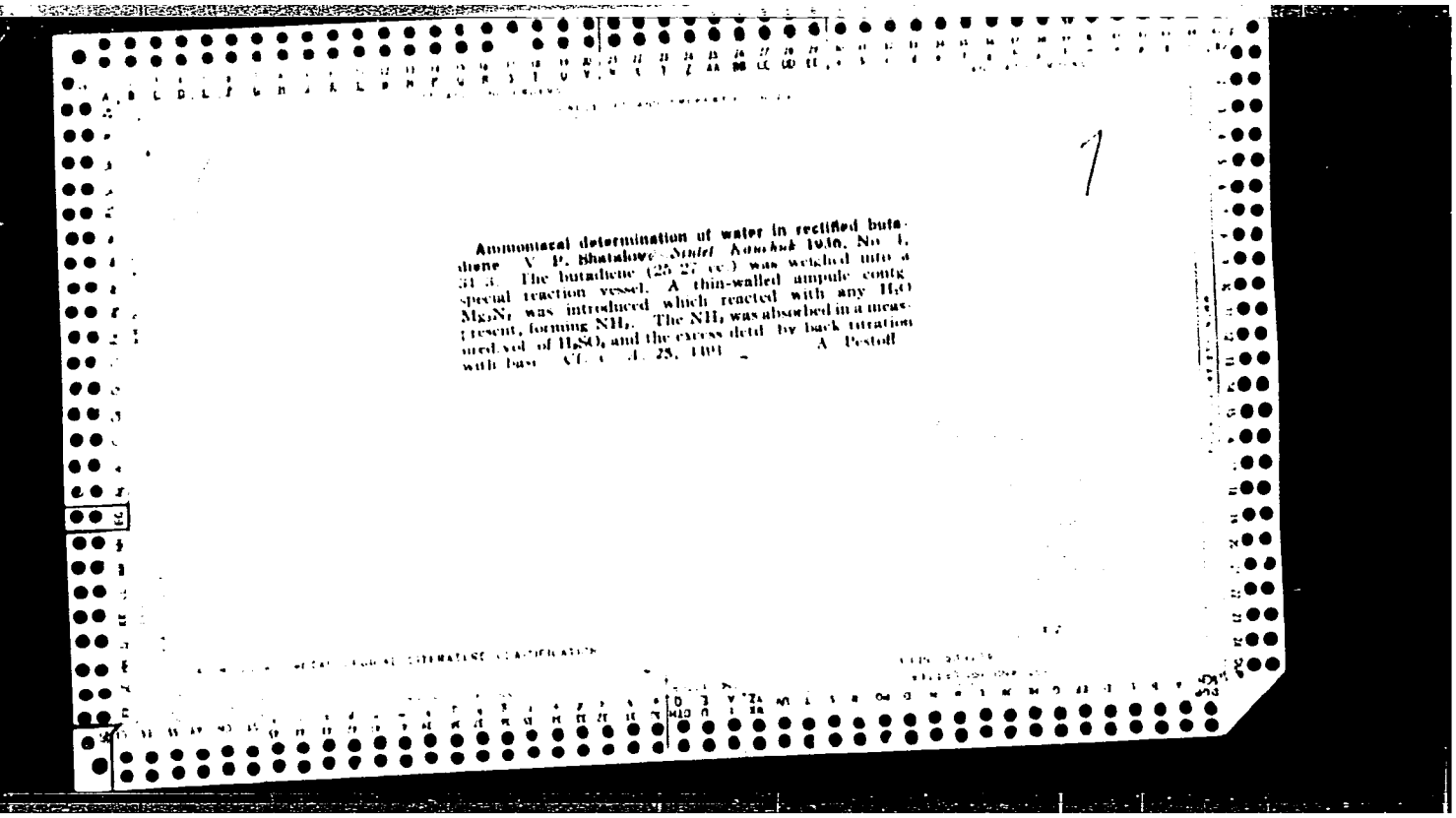
The hydrocarbon layer contained up to 85% hydrocarbons, up to 10% EtOH, 3-10% Et$_2$O and aldehyde, and small proportions of water and higher alcs. Ethers and hydrocarbons were removed by extn. with kerosene. The resulting lower layer was treated with KOH to polymerize the aldehydes. The water-alc. mixt. was distd. off up to 99°. Alc. was detd. by d. BuOH up to 0.50%, did not affect the results, up to 2.0%; the error was 1.5%.

Time of analysis was 2-2.5 hrs.; accuracy, 0.2%.

A. Pestoff



The influence of water in technical rectified butadiene upon its polymerization with metallic sodium. A. P. Krynchkov and V. P. Shatalov. *Sintet. Kauchuk* 1936, No. 2, 15-16. Butadiene contg. 85.6% butadiene, 0.01-0.02% AcH and 0.00-1.00% H_2O was polymerized with Na. With increase in H_2O: (1) the time of reaction increased from 43 to 196 hrs.; (2) "swelling" (increase in the height of polymer after 10 min. at 20°) increased from 2 to 204%, and (3) the plasticity increased from 0.06 to 0.72 (and even to the liquid state). A. Pestoff



Ammoniacal determination of water in rectified butadiene. V. P. Shatalova. *Stolet Kauchuk* 1940, No. 1, 31-3. The butadiene (25-27 cc.) was weighed into a special reaction vessel. A thin-walled ampule containing Mg_3N_2 was introduced which reacted with any H_2O present, forming NH_3. The NH_3 was absorbed in a measured vol. of H_2SO_4 and the excess detd. by back titration with base. CA 35, 25, 1101. A. Pestoff

138-1-7/18

AUTHORS: Shatalov, V. P; Kostyukov, N. M; Bashkatov, T. V; Yazikova, Ye. G; Chulyukova, T. A; Popova, Ye. N.

TITLE: The Preparation of 1,3-Butadiene-Styrene Rubber With Oil Fillers. (Part 1). Polucheniye maslonapolnennogo divinil-stirol'nogo kauchuka - soobshcheniye 1).

PERIODICAL: Kauchuk i Rezina, 1958, Nr.1, pp. 24 - 27. (USSR).

ABSTRACT: BHИИSK has evolved a method for the addition of mineral oil to latex during the processing of 1,3-butadiene-styrene rubber with oil fillers by determining the requirements of emulsified oils. In the Voronezh Plant for Synthetic Rubber an oil emulsion was added in a continuous manner to the latex stream. ОКС-30А with a surface tension not exceeding 38 din/cm was tested. The latex was cooled to a temperature of 25 - 30°C before the oil emulsion was added which, in turn, was also cooled to a temperature of 30°C. Under these conditions coagulation of the latex and the oil emulsion took place after a few minutes. The 1,3-butadiene-styrene rubber ОКС-30А was prepared similarly as СКС-30АМ, according to a method evolved by A. Ye. Kalaus, M. A. Robinerzon,

Card 1/3

The Preparation of 1,3-Butadiene-Styrene Rubber with Oil Fillers (Part 1).

P. I. Zakharchenko, A. B. Zaytseveya and M. G. Faynshteyn. The lubricating oil emulsion-18 was added to the latex in an agitator (approximately 150 revolutions/minute). This mixture was coagulated with calcium chloride and acetic acid. Comparative data of physical and mechanical properties of the mixtures SKC-30AM and SKC-30A are given in a Table on page 25. The influence of temperature and surface tension of the latex on the stability of the emulsion was determined. The physico-mechanical properties for SKC-30AM, when using emulsions based on stearic acid and on synthetic fatty acids (from the Shebekinsk Combine) were determined according to GOST (Table 1). Emulsions of oil with ammonia soaps were mixed with latex when cooling to 35-40°C and also at 55-60°C. Rubber containing the lubricating oil emulsion-18 had equally good physical and mechanical properties as rubber prepared with triethanolamine soaps (Table 2). Oil emulsions with ammonia were prepared under identical conditions as with triethanolamine. The soaps were saponified at temperatures of 35-40°C. The oil content of the rubber was 15%, the latex was not cooled before mixing. The surface tension of the

SOV/138-58-9-2/11

AUTHORS: Shatalov, V. P; Bashkatov, T. V; Kostyukov. N; Popova, Ye.N; Shulyukova, T. A; Krygina, M. K. G.

TITLE: The Preparation of Oil-Filled 1,3-Butadiene-Styrene Rubber SKS-30M (K voprosu polucheniya maslonapolnennogo divinil-stirol'nogo kauchuka SKS-30M)

PERIODICAL: Kauchuk i Rezina, 1958, Nr 9, pp 4 - 7 (USSR)

ABSTRACT: Unsatisfactory results were obtained with a batch of rubber SKS-30M produced in the Voronezh Factory for Synthetic Rubber during 1955 - 1956. The authors investigated the possibility of improving the properties of this rubber by using "controlled" latex. When a control agent is added to the rubber SKS-30 only 45% of insoluble substances are found as compared with 8% when no control agent is added. An increased content of insoluble particles in the rubber impairsthe technological properties of the rubber mixtures (Table 1). Table 2 gives data on the physico-mechanical characteristics of rubbers containing 15% oil fillers. The elasticity and residual elongation of both rubbers are of the same order. The oil-filled controlled rubber SKS-30M-15 is softer and plasticises quicker. When

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The Preparation of Oil-Filled 1,3-Butadiene-Styrene Rubber SKS-30M

the lubricating oil Mark 18 a slight lowering of the specific physico-mechanical properties of rubber SKS-30 can be observed, but this lowering is of the same order as for the low-temperature rubber SKS-30A when using an equal amount of filler. A 15 - 20% decrease in strength occurs when 25% of the filler is used (Table 3). The addition of the lubricating oil Mark 18 to the rubber SKS-30 (hardness 2,000 - 2,500 g and 1,000 - 1,500 g) leads to analagous changes, but at a hardness of 2,000 - 2,500 g it suffices to add 15% of the lubricating oil to obtain a rubber of a hardness of about 1,000 g. Improved plasticity can be obtained in the same mixer by adding plasticisation accelerators. Experiments on lowering the hardness to 400 g showed that it was necessary to use 30% of the filler. This quantity, however, lowers the physico-mechanical properties of the rubber. Experiments were carried out in the Voronezh Plant SK in co-operation with VNIISK on the industrial production of a batch of oil-filled 1,3-butadiene-styrene rubber obtained during high-temperature polymerisation (SKS-30M-18) containing 14 - 17% oil. Characteristics of this batch are given

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The Preparation of Oil-Filled 1,3-Butadiene-Styrene Rubber SKS-30M

in Table 4. Results showed that this type of rubber can be used for the manufacture of inner tubes and tyres. The composition of the industrial test batch, as well as of the oil emulsion, is given. This rubber was dried at the following temperatures: the first zone 110 - 130°C; the second zone 110 - 124°C; the third zone 104 - 112°C. There are 4 Tables.

ASSOCIATION: Voronezhskiy zavod sinteticheskogo kauchuka im. S. M. Kirova (Voronezh Factory for Synthetic Rubber im. S. M. Kirov)

Card 3/3

SHATALOV, V.P.; BASHKATOV, T.V.; KOSTYUKOV, N.; POPOVA, Ye.N.; CHULYUKOVA, T.A.; KRYGINA, M.K.G.

Manufacturing SKS-30M oil extended divinyl-styrene rubber. Kauch. i rez. 17 no.9:4-7 S '58. (MIRA 11:10)

1.Voronezhskiy zavod sinteticheskogo kauchuka imeni S.M. Kirova.
(Rubber, Synthetic)

PALKIN, A.I., prof., otv. red.; ZAVGORODNIY, S.V., red.; OCHNEVA, O.S., red.; PEROVA, A.P., red.; UGAY, Ya.A., red.; SHATALOV, A.Ya., red.; SHATALOV, V.P., red.

[Transactions of the Voronezh Branch of the D.I.Mendeleev All-Union Chemical Society] Sbornik trudov Voronezhskogo otdeleniia Vsesoiuznogo khimicheskogo obshchestva imeni D.I.Mendeleeva. Voronezh, Voronezhskoe knizhnoe izd-vo. No.2. 1959. 184 p. (MIRA 17:5)

1. Vsesoyuznoye khimicheskoye obshchestvo imeni D.I.Mendeleyeva. Voronezhskoye otdeleniye.

5(3) SOV/64-59-4-3/27

AUTHORS: Shatalov, V. P., Popova, Ye. N., Zenina, T. N., Antonova, A. N., Khlopotunov, G. F.

TITLE: Synthesis of Hydrogen Peroxide of Diisopropyl Benzene and Investigation of Its Initiating Properties in the Process of the Production of Butadiene Styrene Rubber SKS-30A (Sintez gidroperekisi diizopropilbenzola i ispytaniye yeye initsiiruyushchikh svoystv v protsesse polucheniya butadiyen-stirol'nogo kauchuka SKS-30A)

PERIODICAL: Khimicheskaya promyshlennost', 1959, Nr 4, pp 13 - 15 (USSR)

ABSTRACT: It was already noticed that an acceleration of the polymerisation (P) is effected by the application of diisopropyl benzene hydrogen peroxide (I) instead of isopropyl hydrogen peroxide as oxidizing agent in the synthesis of butadiene-styrene rubber (Ref 2). The investigations mentioned in the title were begun in the VNIISK. The oxidation took place in a special apparatus (Fig 1) at 110-112° on adding 1.0% "giperiz" (g), 0.07% caustic soda and an air supply of 100-120 l/hour (per liter (II)). During 8-9 hours 22-28% (II) are transformed into (I) (Fig 2, curve of the function of the concentration of (II) of the oxidation duration). An increase of the amount of lye by 0.05% accelerates

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the process by 15-20% (Fig 3). On adding 5% hydrogen peroxide without lye 25-30% (II) are transformed into (I) during 10-14 hours. Two methods of concentrating (I) were tested - a steam- and a high-vacuum distillation. The first yields at given conditions up to 90% (I), the latter 65-70% (I). Investigations of the initiating properties of (II) on the (P) according to the prescription SKS-30A show that (P) takes place by 15-20% more quickly with (I) than with isopropyl hydrogen peroxide and with tert-butylisopropyl benzene approximately as quickly as with (I) (Table 2). The application of diisopropyl monohydrogen peroxide instead of (g) permits an increase of the (P)-rates by 15-20% and a decrease of the Nekal-addition in the SKS-30A-prescription by approximately 6% without effecting a deterioration of the yield or quality of the rubber. There are 3 figures, 3 tables, and 5 references, 2 of which are Soviet.

SHATALOV, V.P.; KOSTYUKOV, N.M.; POPOVA, Ye.N.; CHULYUKOVA, T.A.; NEDOYNOVA, L.A.

SKS-30AM highly plastic oil-extended divinyl-styrene rubber. Kauch. i rez. 18 no.1:4-6 Ja '59. (MIRA 12:1)

1.Voronezhskiy zavod sinteticheskogo kauchuka imeni S.M. Kirova.
(Rubber, Synthetic)

SHATALOV, V.P.

PHASE I BOOK EXPLOITATION SOV/5153

Garmonov, I.V., and B. S. Mortkevich, Resp. eds.

Sintez monomerov dlya proizvodstva sinteticheskogo kauchuka (Synthesis of Monomers for the Production of Synthetic Rubber) Leningrad, Goskhimizdat, 1960. 290 p. Errata slip inserted. 4,500 copies printed.

Sponsoring Agencies: Gosudarstvennyy komitet Soveta Ministrov SSSR. Upravleniye XI i neftekhimii. Giprokauchuk i VNIISK.

Eds.: S.A. Zonis and Ya. I. Shur; Tech. Ed.: T.A. Fomkina.

PURPOSE: This book is intended for scientists, engineers, and technicians working in the synthetic rubber, plastics, and petroleum refining industries, and in scientific research institutes affiliated with these industries.

COVERAGE: The book contains articles which report on research carried out at the Nauchno-issledovatel'skiy institut sinteticheskogo kauchuka imeni Akademika S.V. Lebedeva (Scientific Research Institute for Synthetic Rubber imeni Academician S.V. Lebedev) and the Gosudarstvennyy proyektnyy i nauchno-issledovatel'skiy institut promyshlennosti sinteticheskogo kauchuka (State Scientific Research and Design Institute of the Synthetic Rubber Industry) in the synthesis of isoprene, styrene, acetylenes, acetaldehyde, and other initial products for synthetic rubber production. The articles also discuss methods of extracting these products from their preparatory media. No personalities are mentioned. References accompany individual articles.

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Card 5/6

1Y

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B022/B008

S/3300

AUTHORS: Shatalov, V. P., Velikanova, L. A.

TITLE: Experiments for the Increase of the Selectivity and Effectiveness of a Styrene Contact

PERIODICAL: Khimicheskaya promyshlennost', 1960, No. 1, pp. 31 - 33

TEXT: In order to improve dehydrogenation of ethyl benzene on a styrene contact, the activity of the catalyst with various types of the production of some of its components, i.e., ZnO and Al_2O_3, was investigated in the paper under review. The catalyst samples were tested in a laboratory- and industrial contact furnace. ZnO was obtained either from the hydrate or by burning of metallic zinc according to GOST 202-41. The laboratory- (Table 1) as well as the industrial experiments (Figs. 1-3) showed that a quick decline of selectivity was observed in the case of catalysts which contain ZnO produced by the second method mentioned. Al_2O_3 was produced 1) by reaction of industrial $Al(OH)_3$ with NaOH, 2) with KOH, 3) with HNO_3,

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Experiments for the Increase of the Selectivity and Effectiveness of a Styrene Contact

S/064/60/000/01/06/024
B022/B008

4) by annealing aluminum-ammonium sulfates at high temperatures. The Al_2O_3 produced according to process 4) showed the highest catalytic activity (styrene yield of up to 92.8%, Table 2). The effectiveness of the various modifications of Al_2O_3 was evaluated on the basis of their reinforcing properties in SKS-30 and SKS-30AM butadiene-styrene rubber (Table 3). There are 3 figures, 3 tables, and 2 references, 1 of which is Soviet.

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A051/A029

AUTHORS: Rayevskiy, A.B., Shatalov, V.P.

TITLE: The Inhibition of the Polymerization Process of Styrene

PERIODICAL: Kauchuk i Rezina, 1960, No. 4, pp. 9 - 11

TEXT: The self-induced polymerization in styrene and its inhibition by sulfur was studied earlier (Refs. 1 - 4). Compounds with a quinoid structure were also found to have inhibiting properties (Ref. 5). Although several compounds are known with inhibiting effects on the polymerization of styrene, which are used in industry, these have, however, a short live span. Therefore, the purpose of the article was to evaluate the inhibiting properties of the known products and to discover new substances more effective in the inhibition of polymerization and to select the most suitable inhibitor for distillation of the recovered styrene in the production of butadiene-styrene rubbers. The experimental procedure is outlined and a table of comparison is submitted of the different inhibitors tested at 100°C. It was found that sulfur is surpassed only by n-nitrosodimethylaniline. However

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The Inhibition of the Polymerization Process of Styrene

sulfur was used in production experiments as a more readily available material and was highly effective. According to decreasing activity on the polymerization of styrene, the substances tested line up in the following sequence: n-nitrosodimethylaniline > sulfur > pulp-resin antipolymerizer > quinone > hydroquinone > n-oxydiphenylamine > o-nitrophenol and > 4-nitropyridine-N-oxide. Sulfur as an inhibitor during the production distillation process of styrene instead of pulp-resin antipolymerizer increases the column's run and decreases the losses of styrene. There are 2 figures and 9 references: 7 Soviet and 2 English.

ASSOCIATION: Voronezhskiy zavod sinteticheskogo kauchuka im. S.M. Kirova (Voronezh Plant of Synthetic Rubber imeni S.M. Kirov)

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S/138/60/000/007/003/010
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15.9210

AUTHORS: Shatalov, V.P.; Popova, Ye.N.; Gergasevich, T.V.; Zenina, T.N.; Krygina, K.G.; Makashova, A.M.

TITLE: The Production of Butadiene-Styrene Rubbers in an Emulsion in Modified Colophony Soap Systems

PERIODICAL: Kauchuk i Rezina, 1960, No. 7, pp. 6 - 9

TEXT: The authors refer briefly to the significance of improving the performance of automobile and other tires, which involves the perfecting of the butadiene-styrene rubber properties, the main raw material used in their production. The properties of the rubber are improved in comparison with the use of Nekal by using emulsifying agents during the emulsion copolymerization of butadiene and styrene. Nekal has the tendency to form a calcium salt, which reduces the mileage of the tire. The conditions for the production of butadiene-styrene rubber in an emulsion with modified colophony soap and synthetic fatty acids were investigated at 5 and 50°C. The method for the production of rubber both at 5 and 50°C is outlined. The copolymerization of 1.3-butadiene with styrene in an aqueous emulsion with modified colophony soap was studied in 2 systems: 1) with the oxidation-re-

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duction group hydroquinone-sodium sulfite-ammonia-hydroperoxide of 1.1-diphenyl-ethane and 2) the oxidation-reduction group formaldehyde-sodium sulfoxylate-trilon B-ferric sulfate hydroperoxide of 1.1-diphenylethane. Potassium soap of hydrated and disproportionate colophony with an addition of synthetic fatty acid soap was used as the emulsifying agent (Table 1). The composition recommended for the synthesis of low-temperature butadiene-styrene rubber is cited. Table 2 shows the comparative rates of polymerization at different contents. Sodium chloride and acetic or sulfuric acids are suggested as the coagulating agent of the latex with the colophony soaps. The order in which the reacting substances are mixed affects the nature of the coagulum, the stability of the process and the expenditure of sodium chloride. Table 3 is a listing of the physico-mechanical properties of the low-temperature rubbers. The modification method of the colophony does not affect the copolymerization process at both 5 and 50°C. The order by which the acid is introduced into the system has a significant effect on the rubber formation from the latex with colophony soap. In addition to this, the waiting period between each mixing of the ingredients is another important factor determining the nature

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of the rubber formation from the latex. It was also established that the less soap is used in the content, the less chloride is needed for the reaction. It is seen that the rubber formed in the colophony soap system is more pliable than that formed in a Nekal system, the dosage of the regulator remaining constant. The former is more easily masticated, its rubber mixtures have greater adhesiveness and vulcanize more rapidly. There are 4 tables and 6 references: 4 Soviet and 2 English.

ASSOCIATION: Voronezhskiy zavod sinteticheskogo kauchuka im. S.M. Kirova (The Voronezh Synthetic Rubber Plant im. S.M. Kirov)

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77540
SOV/80-33-1-49/49

AUTHORS: Ponomaryev, F. G. Troytskiy, A. F., Shatalov, V. P.

TITLE: Brief Communications. Concerning the Copolymerization of Styrene Oxide With Butadiene. Communication XIX. From the Series of Investigation in the Field of Unsymmetrical Organic Epoxides

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 1, pp 254-256 (USSR)

ABSTRACT: Copolymerization of styrene oxide with butadiene, and also of styrene with butadiene in the presence of a small amount of ethylene oxide was investigated. By polymerization of styrene oxide with butadiene in a ratio 15 to 85, in a water emulsion, at 5°, in the presence of isopropylbenzene hydrogen peroxide (as initiator), a latex was obtained by coagulation of which a polymer with rather high molecular weight was obtained. The latter had a better elasticity than rubber CKC-30A). The addition of ethylene oxide

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(0.5-4%) to the polymerization system of butadiene and styrene causes the lowering of the temperature (from 12 to 6°) of gelatinization of the latex. N. V. Starostina took part in this work. There are 2 tables; and 2 references, 1 Soviet, 1 French.

SUBMITTED: March 2, 1959

Brief Communications. Concerning the Copolymerization of Styrene Oxide With Butadiene. Communication XIX.

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Physical-chemical properties of polymers:

h	a c	a d	a e
f	140—156	93—112	251—264
g	470—525	420—445	680—725
h	14	20	22—30
i	47	43—44	36—37
j	3600/52	4350/51	3600/47
k	500/29	2200/24	650/28
l	67—73	—	36—45

h = physical-methanical properties
a = copolymer of styrene oxide and butadiene
d = polymer of butadiene
e = Rubber SKS-30A
f = tensile strength in (kg/cm²)
g = relative elongation (in %)
h = residual elongation (in %)
i = elasticity according to rebound (in %)
j = hardness according to Defo - nonplasticized
k = hardness according to Defo - nonplasticized

Card 3/3

Production of alpha-methyl ...

Shatalov, L. A. Velikanova (Khim. prom., No. 1, 31 (1960)). The weight ratio of isopropyl benzene : water vapor was nearly always 1 : 3, the volume rate of the contact gas 0.25 and 0.5 hr^{-1}. Before work was started, the catalyst was used six times for 1hr at 650°C for contacting isopropyl benzene, and then regenerated by means of a vapor-air mixture. During the study, the authors usually desisted from a regeneration of the catalyst. The process was carried out within 12 - 62 days. The effect of the catalyst was determined every 24 hr. The following products are obtained with catalyst a): α-methyl-styrene as main product, styrene, benzene, CO_2, propylene, H_2, CH_4 and a small amount of products which are not distillable at a residual pressure of 20 mm Hg ("dry residue"). At a volume rate of propyl benzene of 0.5 hr^{-1} and a dilution by vapor of 1 : 3, the yield of α-methyl styrene was 93-94% (referred to the decomposed isopropyl benzene which was contained in the catalyzate to about 39%). The process took place at about 530°C. The undistillable residue amounted to hundredths per cent; benzene 0.3%, styrene up to 8.9%, the contact gas contained 6.6 - 8.9% CO_2, up to 1.2% CH_4, and up to 0.2% propylene. The amount of by-products increases very slowly with the time of catalyst

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Production of alpha-methyl ...

application. A decrease of the volume rate of isopropyl benzene to 0.25 hr^{-1} increases the CO_2 content in the contact gas and the content of the dry residue in the catalyzate. The composition of the resultant products is hardly changed by regeneration of the catalyst. When catalyst b) was used (it was obtained from zinc oxide prepared via the hydrate, and from Al_2O_3 from aluminum ammonia alum), the same products resulted as with catalyst a). The highest yield of α-methyl styrene (92%) is obtained at a volume rate of 0.5 hr^{-1} (dilution by vapor 1 : 3). In this case 37.0% α-methyl styrene at most was contained in the catalyzate. The process took place at 590°C. In the case of b), some of the by-products are formed in higher quantities than with a): the dry residue - up to tenths per cent, CH_4 2.0%, CO_2 and propylene about as much as with a). The yields of styrene and benzene are lower with b). The formation of by-products slowly increases with time also in this case. The CO_2 amount in the contact gas and the content of the undistillable residue in the catalyzate likewise increased with decreasing volume rate. When b) was used, ethylene was formed in addition; the yield of α-methyl styrene drops. When isopropyl benzene is less diluted with water vapor, an undesirable effect

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is brought about: the CO_2 content rapidly increases. Higher dilution of isopropyl benzene than 1 : 3 gives rise to rapid deactivation of the catalyst. It is stated in conclusion that the dehydrogenation on catalysts a) and b) proceeds very selectively and with good yields. Isopropyl benzene is dehydrogenated on a) at a lower temperature and with higher selectivity. Neither a) nor b) need be regenerated. In the analysis of gaseous products the device by Ors is used. There are 4 references: 3 Soviet-bloc and 1 non-Soviet-bloc. The reference to English-language publications see in the body of the abstract.

SHATALOV, V.F.; VELIKANOVA, L.A.

Production of α-methylstyrene by the catalytic dehydrogenation of isopropylbenzene. Khim.prom. no.8:530-531 Ag '61. (MIRA 14:9)
(Styrene) (Cumene)

S/064/62/000/003/004/007
B110/B101

AUTHORS: Zavgorodniy, S. V., Novikov, I. N., Kryuchkova, V. G., Shatalov, V. P.

TITLE: Production of hydroperoxides of alkyl aromatic hydrocarbons. Their initiating properties in copolymerization of divinyl with styrene.

PERIODICAL: Khimicheskaya promyshlennost', no. 3, 1962, 29 - 35

TEXT: The synthesis of hydroperoxides of cyclohexylbenzene (I); p-isopropyl-sec-butylbenzene (II); p-isopropylcyclohexylbenzene (III); p-di-sec-butylbenzene (IV); p-diisopropyl-2-chloro benzene (V) and 1,3,5-triisopropylbenzene (VI) by autoxidation with atmospheric oxygen was studied, as well as their capacity for initiating copolymerization of divinyl with styrene at low temperatures. Oxidation took place in the presence of manganese resinate and alkali: NaOH, $Ca(OH)_2$, Na_2CO_3, K_2CO_3 at 95 - 120°C. It was found that VI is oxidized the most strongly, II and III are oxidized well, but I, especially in the presence of BaO_2, is oxidized only slowly. Increasing the reaction temperature from 110 to 120°C (5 - 6

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mg/mole of manganese resinate, 1 - 3 g/mole of soda) caused faster autoxidation and raised the maximum hydroperoxide concentration of IV; it influenced the oxidation of II and VI and reduced the hydroperoxide concentration of I. In the autoxidation of I (at 95, 110, and 120°C) the addition of manganese resinate and soda produced an optimum effect. In the autoxidation of III it is chiefly mono hydroperoxides of α,α-dimethyl-p-cyclohexylbenzyl that arise. II readily forms a mixture of two mono and one dihydroperoxide

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ACCESSION NR: AR3006942 S/0081/63/000/010/0698/0698 MAY

SOURCE: RZh. Khimiya, Abs. 10T499

AUTHOR: Mikhant'yev, B. I., Kretinin, S. A., Shatalov, V. P.

TITLE: Study of the properties of divinyl-styrene rubbers filled in the latex stage

CITED SOURCE: Tr. Labor. khimii vy*sokomolekul. soyedeneniy. Voronezhsk. un-t, vy*p. 1, 1962, 162-169

TOPIC TAGS: Divinyl-styrene rubber, latex stage, rubber

TRANSLATION: A study was made of the conditions of filling SKS-30AR with HAF carbon black, channel carbon black, Al sub 2 O sub 3, PN-6 oil, auto scrap-18, and mazut at the latex stage and on rollers. Carbon black dispersions were prepared with a magnetic striction vibrator with a frequency of 25 kilocycles (concentration of carbon black of 15%, vibration time of 20 minutes). With

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the introduction of 0.2-0.5% leucanol the vibration time is lowered to 5-10 minutes. The combination of latex with the dispersion of carbon black and the oil emulsion was also conducted through vibration for 3-5 minutes. The mixture was coagulated by CaCl sub 2 with H sub 2 SO sub 4 or CH sub 3 COOH. The expenditures per ton of commercial rubber with HAF carbon black were: CaCl sub 2 -- 30 kg, CH sub 3 COOH -- 1.9 kg; with channel carbon black; CaCl sub 2 -- 15.6 kg. CH sub 3 COOH -- 8 kg. The product which was obtained was dried at 80-90 degrees with forced ventilation. Upon introducing the carbon black into the latex a more plastic mixture was obtained which yielded stronger and more elastic vulcanized rubbers; the speed of vulcanization was increased. Dispersions with leucanol yielded better rubbers than without it. A basic technological plan for the production of carbon black-butyric rubbers was proposed. A 20% aqueous solution of Al sub 2 O sub 3 was prepared in a ball mill (30 rev/min) for 3 hours at about 20 degrees. The expenditure of CaCl sub 2 for the coagulation of 1 ton of commercial rubber was 47 kg. There was no loss of Al sub 2 O sub 3 during the coagulation of the latex mixture. The introduction of Al sub 2 O sub 3 into the latex produced more plastic mixtures and stronger vulcanized rubbers than when it was introduced on rollers. G. Chasovshchikov

DATE ACQ: 01Jul63 SUB CODE: CH, MA ENCL: CO

Card 2/2

ZAVGORODNIY, S.V.; NOVIKOV, I.N.; KRYUCHKOVA, V.G.; SHATALOV, V.P.

Preparation of hydroperoxides of alkylaromatic hydrocarbons, and their initiation properties in copolymerization of bivinyl with styrene. Khim.prom. no.3:181-185 Mr '62. (MIRA 15:4)
(Hydrocarbons) (Butadiene polymers) (Styrene polymers)

S/079/62/032/009/007/011
I048/I242

AUTHORS: Novikov, I.N., Antonova, A.M., Zhilina, R.I., Furtichova, R.P., Shatalov, V.P., and Zavgorodniy, S.V.

TITLE: Synthesis and autooxidation of isopropylcyclohexylbenzene

PERIODICAL: Zhurnal obshchey khimii, v. 32, no. 9, 1962, 2954-2957

TEXT: Experiments on the cycloalkylation of isopropylbenzene by cyclohexanol in the presence of sulfuric acid and the oxidation of the product thereof are described. The relative amounts of reagents taken for the alkylation varied from an isopropylbenzene/sulfuric acid molo ratio of 2:3 to 3:1.5 with 1 mole of cyclohexanol. The isopropylbenzene and sulfuric acid were mixed first, the cyclohexanol was added slowly (during 2.5-3 hrs) and the reaction was continued with stirring for another 4-5 hrs. The end of the reaction was indicated by a constant value of the refraction index of the organic phase. The main reaction product was isopropylcyclohexylbenzene; its yield was highest (81.2%) when the reagents were taken

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I048/I242

...synthesis and autooxidation...

...the ratio isopropylbenzene/sulfuric acid/cyclohexanol = 3/5/1, and lowest (48.4%) when this ratio was 3:1.5:1. Variations in the temperature, within the range 10-40°C, had no significant effect on yield. The yield of by-products (isopropyldicyclohexylbenzenes, cyclohexene polymers) varied between 10.2 and 23.5%. A chromatographic analysis showed that the isopropylcyclohexylbenzene is a 25:31:63 mixture of the O-, m-, and p-isomers. The isopropylcyclohexylbenzene was oxidized in air, at 110°C, in the presence of a small amount of an initiator (e.g., 1 wt % isopropylbenzene hydroperoxide) and a small amount of alkali (e.g., 0.1 wt % NaOH); the total yield of hydroperoxides varied between 67.0 and 71.5%, after a reaction time of 28-49 hrs. Among the hydroperoxides separated from the reaction product by extraction with NaOh were: n-isopropylcyclohexylbenzene dihydroperoxide (m.p. 105-106°C) and n-isopropylcyclohexylbenzene monohydroperoxide (m.p. 56-57°C). There are 2 figures and 2 tables.

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