7.63% of $MnCO_3$, 1.34% of MgO, and 6.61% of CuO. Briquettes were previously annealed for 2hr at 900°C. All ferrite types mentioned were tested at helium temperature. Testing methods and investigation results are described in Ref. 3 (Misezhnikov, G. S., Rozenberg, Ya. I., Shteynshleyger, V. B., Present Periodical no. 11, 1961, 1430). At these temperatures, the line of ferrimagnetic resonance is considerably widened and attains values of 800 oersteds (M-258) and more (P-28, M-55). The saturation magnetization does not increase essentially and reaches a value of 5600 gauss for M-258. [Abstracter's note: Essentially complete translation.] There are 3 references: 2 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: Ref. 2: American Institute of Physics Handbook, p. 5, 217, N. Y., 1957.

X

Card 3/3

L 17167-63 EWT(1)/BDS AFFTC/ASD
ACCESSION NR: AP3004294 S/0170/63/006/007/0060/0065

AUTHOR: Fabrikov, V. A. 51

TITLE: On the thermodynamic interpretation of the Manley and Rowe theorem in the theory of nonlinear electric oscillations

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 6, no. 7, 1963, 60-65

TOPIC TAGS: Manley and Rowe theorem, frequency oscillation, electromagnetic radiation, radiation temperature, reactive element, entropy flow, energy transfer

ABSTRACT: The article studies the possibility of the thermodynamic exploitation of the laws of conservation established by the Manley and Rowe theory of the frequency components of a power flow in an arbitrary reactive element of an electric circuit. It is based on the concept of energy coefficients developed by Smart. It discusses formulas evolved by Smart, Pease and Weiss. The steady process of entropy transfer from the source of frequency oscillations $omega_{mn}$ (m and n being energy levels) to the source of frequency oscillations $omega_{np}$

Card 1/3

may be regarded as the result an adiabatic change in the frequency of electromagnetic radiation; e.g., the electromagnetic field may be considered to be enclosed in a cavity with a movable piston, and the change in its frequency to be due to the Doppler effect when the piston is moved. The radiation temperature in the adiabatic process varies in the same ratio as the frequency. This permits identification of the temperatures of the several branches of the electric circuit under study with their frequencies, assuming $T_{mm} \sim \text{omega}_{mn}$. In generalizing Manley and Rowe's theorem to include the case of reactive elements with losses, one may proceed from the interpretation of the formulas

$$\sum_{m,n=-\infty}^{\infty} m\frac{W_{mn}}{\omega_{mn}}=0, \qquad \sum_{m,n=-\infty}^{\infty} n\frac{W_{mn}}{\omega_{mn}}=0.$$

as a mathematical expression of the conditions of equality to zero of the work performed per unit of time by the side forces acting on the reactive element. These conditions, in the general case, are to be written as

$$\sum_{m=-\infty}^{\infty} m \sum_{n=-\infty}^{\infty} S'_{mn}=0, \qquad \sum_{n=-\infty}^{\infty} n \sum_{m=-\infty}^{\infty} S'_{mn}=0,$$

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ACCESSION NR: AP3004294

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where $S'_{mn} = \frac{W_{mn}}{\omega_{mn}} - \frac{P_{mn}}{|\omega_{mn}|}$ is that part of the total entropy flow $\frac{W_{mn}}{\omega_{mn}}$, which is connected with the reverse processes of energy transfer. The other (negative) part of the flow compensates for the growth of entropy in the reactive element due to energy dissociation. This compensation is needed to maintain the steady work regime. Orig. has 16 numbered equations.

ASSOCIATION: none

SUBMITTED: 11Jul63	DATE ACQ: 08Aug63	ENCL: 00
SUB CODE: PH	NO REF SOV: 007	OTHER: 010

Card 3/3

L 07947-67 EWT(1) GD/JXT(CZ)

ACC NR: AT6028974 SOURCE CODE: UR/0000/66/000/000/0042/0047

AUTHORS: Gushchina, Z. M.; Kudryavtsev, V. D.; Tret'yakov, Yu. D.; Fabrikov, V. A.; Khomyakov, K. G.;

39

B+1

ORG: none

TITLE: Application of zero-diffusion method to the technology of preparing ultrahigh-frequency ferrites

SOURCE: Vsesoyuznoye soveshchaniye po ferritam. 4th, Minsk. Fizicheskiye i fizikokhimicheskiye svoystva ferritov (Physical and physicochemical properties of ferrites); doklady soveshchaniya. Minsk, Nauka i tekhnika, 1966, 42-47

TOPIC TAGS: ultrahigh frequency, ferrite, solid solution, resonance line / P-28 ferrite

ABSTRACT: The ceramic method for preparing UHF ferrites is reviewed and found inadequate. A suggested new method consists of preparing micro-heterogeneous ferrite powders from solid solutions of isomorphic salts. For example, ferrite batches are obtained from solid solutions of schoenite-type double salts which, under heat treatment, yield

Card 1/2

L 07947-67

ACC NR: AT6028974

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$$\frac{1}{3}(NiFe_2O_4) + 1\frac{2}{3}SO_3 + \frac{1}{3}SO_2 + 2NH_3 + 7H_2O.$$

The ferrites obtained by this zero-diffusion method are found to be dense and sufficiently homogeneous. Resonance absorption line curves plotted against density in the ferrite material show straight lines and, for cases where nondiffusive methods are used, the ferrite density is found to reach 4.86 g/cm^3 with 24- to 30-oersted line widths. A detailed description is given for the preparation of a P-28, Mg-Mn ferrite, using the nondiffusive method. Orig. art. has: 4 figures, 1 formula, and 1 table.

SUB CODE: 11/ SUBM DATE: 22Dec65/ ORIG REF: 005

Card 2/2 ZC

ACC NR: AT6028996 SOURCE CODE: UR/0000/66/000/000/0343/0349

AUTHORS: Gushchina, Z. M.; Stolyarov, A. K.; Fabrikov, V. A.;

ORG: none

TITLE: Ferrite materials for alternating field valves

SOURCE: Vsesoyuznoye soveshchaniye po ferritam. 4th, Minsk. Fizicheskiye i fizikokhimicheskiye svoystva ferritov (Physical and physicochemical properties of ferrites); doklady soveshchaniya. Minsk, Nauka i tekhnika, 1966, 343-349

TOPIC TAGS: ferrite, magnetic property, magnetic hysteresis, magnetization curve

ABSTRACT: Several ferrite materials for use in alternating field valve installations were developed. The choice of starting materials and experimental conditions was guided by the theoretical considerations of A. L. Mikaelyan (Teoriya i primeneniye ferritov na sverkhvysokikh chastotakh. Gosenergoizdat, 1963), and the experimental conditions are tabulated. The Curie temperature, the resonance line width, and the thermal dependence of magnetization of the synthesized ferrites were determined. The experimental results are shown graphically (see Fig. 1). It is concluded that ferrites of type P-28, P-43, and M-274 are suitable materials for use in alternating field

Card 1/2

ACC NR: AT6028996

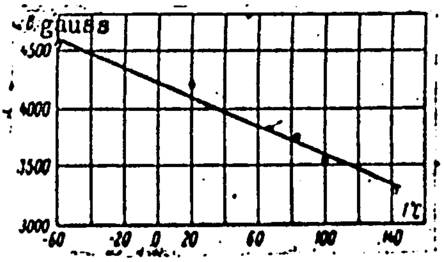

Fig. 1. Temperature dependence of magnetization of ferrite M-274

valve installations. Orig. art. has: 2 tables, 6 graphs, and 2 equations.

SUB CODE: 11/ 20/ SUBM DATE: 22Dec65/ ORIG REF: 004/ OTH REF: 002

Card 2/2

BELOV, I.F.; VOLKOV, A.V.; FABRIKOV, V.I.

Electric machine stopping after breakage or slippage of the sliver on roving machines. Izv.vyz.ucheb.zav.;tekh.tekst.prom. no.5:129-131 '60. (MIRA 13:11)

1. Ivanovskiy tekstil'nyy institut imeni M.V.Frunze.
(Spinning machinery)

BESEKERSKIY, Viktor Antonovich; VOSTOKOV, Sergey Borisovich; TSEYTLIN, Yakov Moiseyevich; GORDEYEV, V.G., kand. tekhn. nauk, retsenzent; FABRIKANT, Ye.A., nauchn. red.; LESKOVA, L.R., red.

[Electromechanical smoothing devices] Elektromekhanicheskie sglazhivaiushchie ustroistva. Leningrad, "Sudostroenie," 1964. 145 p. (MIRA 17:5)

SAPRIKOVA, YE. A.

SAPRIKOVA, YE. A.: "A study of the transformations of sodium phosphotungstate under the influence of caustic soda". Moscow, 1955. Moscow State U imeni M. V. Lomonosov, Chair of Inorganic Chemistry. (Dissertation for the Degree of Candidate of CHEMICAL Sciences)

SO: Knizhnaya Letopis' No. 51, 10 December 1955

FABRIKOVA, YE. A.

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Transformations of sodium phosphotungstate under the influence of sodium hydroxide. V. I. Spitsyn and E. A. Fabrikova. *Proc. Acad. Sci. U.S.S.R., Chem. Sect.* 106, Nos. 1-6, 27-30(1956)(English translation); *Doklady Akad. Nauk S.S.S.R.* 106, 84-7(1956).—Addn. of small amts. of NaOH to a Na phosphotungstate soln. is said to cause partial decompn. of the satd. salt with the formation of phospho-9-tungstate and the normal sodium tungstate. These last two compds then react to form a double or complex salt: $Na_3(PW_{12}O_{40})\cdot 14H_2O + 6NaOH + 4H_2O = Na_3(PW_9O_{31})\cdot 3Na_2WO_4\cdot 21H_2O$. It is suggested that the double salt may be an intermediate product in the formation of the satd. salt. Otto H. Johnson

Fabrikova, Ye. A.

USSR/Chemistry - Conversion processes

Card 1/2 Pub. 22 - 22/43

Authors : Spitsyn, Vikt. I., Memb. Corresp., AN SSSR, and Fabrikova, Ye. A.

Title : Conversions of sodium phosphotungstate during reaction with sodium hydroxide

Periodical : Dok. AN SSSR 106-1, 84-87, Jan 1, 1956

Abstract : The reaction between sodium hydroxide and ordinary tri-substituted sodium phosphotungstate was investigated. It was found that the addition of small amounts of sodium hydroxide to the sodium phosphotungstate solution results in partial decomposition of the saturated salt and formation of phospho-9-tungstate and normal sodium tungstate. These tungstates react between each other forming a new chemical compound of the binary or complex salt type.

Institution : Moscow State University im. M. V. Lomonosov

Submitted : June 29, 1955

Card 2/2	Pub. 22 - 22/43
Periodical :	Dok. AN SSSR 106/1, 84-87, Jan 1, 1956
Abstract :	The possibility that the binary salt may be an intermediate product formed during the synthesis of the saturated salt from the phosphate and sodium tungstate, is discussed. Five references: 2 USSR, 2 Germ. and 1 USA (1908-1952). Tables; graphs.

VERSHKOVSKAYA, O.V.; FABRIKOVA, Ye.A.

Gallium in sphalerites. Geokhimiia no.4:320-324 '57. (MIRA 12:3)

1. Institute of Mineralogy, Geochemistry and Crystallochemistry of Rare Elements, Academy of Sciences, U.S.S.R., Moscow.
(Kurama Range--Sphalerite) (Gallium)

Fabrikova, Ye. A.

AUTHORS: Saltykova, V. S., Fabrikova, Ye. A. 75-1-9/26

TITLE: **The Determination of Gallium in Minerals by the Rhodamine Photometric Method** (Opredeleniye galliya v mineralakh pri pomoshchi rodaminovogo fotometricheskogo metoda)

PERIODICAL: Zhurnal Analiticheskoy Khimii, 1958, Vol 13, Nr 1, pp. 63-65 (USSR)

ABSTRACT:

The main deficiency of the reactions used for the determination of small quantities of gallium lies in their low specificity. Gallium must therefore be separated from hydrochloric solutions by repeated extraction of its chloride with ether or amyl-acetate. This circumstance renders the work with series analyses extremely difficult. The authors perfected a quantitative photometric method of the determination of gallium with rhodamine B according to Onishi and Sandell (reference 3) in a manner that gallium is not separated from the accompanying elements. Gallium can be determined in minerals independent of the content of iron and aluminum. With gallium ions in 6n-hydrochloric solutions rhodamine B forms a colored chlorine gallate of rhodamine B which can be extracted with benzene. The presence of more than 0,5γ

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The Determination of Gallium in Minerals by the Rhodamine Photometric Method 75-1-9/26

gallium in the solution is recognized by a red-violet coloring of the organic layer, a gallium content lying below $0{,}5\gamma$, an orange-yellow fluorescence. The disturbing influence of Au (III), Fe(III), Sb(V) and Tl(III) is removed by the addition of $TiCl_3$ to the initial solution. Other foreign ions, with the exception of the ion NO_3^+ (probably misprint, should read NO_3^-; abstractor's remark) do not disturb the proof and the determination of gallium. The law value of the extraction coefficient for rhodamine B - chlorine gallate in benzene and its dependence on the composition and the concentration of the admixtures in the solution prevents the possibility of a quantitative determination of gallium according to Onishi's method, but without a previous separation of galliu. The authors found that a mixture of ether and benzene exercises a much more intense extracting effect upon the rhodamine-complex of gallium from hydrochloric solutions than the individual components of this mixture. When plotting the percentage portion of the precipitate extracted against the composition of the mixture of ether and benzene a curve is obtained which shows a sharp maximum at a volume ratio ether: benzene = 1 : 3. This maximum means a 100% extraction of the

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The Determination of Gallium in Minerals by the Rhodamine Photometric Method 75-1-9/26

gallium-rhodamine complex into the organic phase and is pratically independent of the content of admixtures. The use of this mixture of enzene and ether for the extraction of the gallium-rhodanide complex permits a visual colorimetric determination of gallium. At a gallium content of the sample from 0,2γ to 1γ the accuracy amounts to 0,1γ, at a gallium content from 1γ to 2γ - 0,3γ, at a gallium content from 2γ to 5γ - 0,5γ and at a gallium content of from 5γ to 10γ - 1γ. The relative error of this determination on the average amounts to 10-15%. The minimum quantity of gallium which can be proved on the basis of the coloring of the benzene-ether layer amounts to 0,1γ per ml. This method was applied to more than 200 samples of gallium-containing minerals: bauxites, natrolites, nephelines, sphalerites and others. The minimum gallium content which can be determined with the rhodamine B - method without separating gallium from the accompanying elements for sulfidic ores, natrolites and nephelines amounts to 0,0001%, for bauxites and some silicates to 0,001%. The results obtained were compared with the results obtained by Lukin's method (ref. 5) and also with

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The Determination of Gallium in Minerals by the Rhodamine Photometric Method 75-1-9/26

those obtained by the rhodamine-method with a previous separation of gallium from the accompanying elements. It was found that the deviations of the results do not exceed the error limit of the method (10-15%). There are 1 figure, 1 table, and 8 references, 4 of which are Slavic.

ASSOCIATION: Institute for Mineralogy, Geochemistry and Crystallochemistry of Rare Elements AS USSR, Moscow (Institut mineralogii, geokhimii i kristallokhimii redkikh elementov AN SSSR, Moskva)

SUBMITTED: January 5, 1957

AVAILABLE: Library of Congress

1. Gallium - Determination 2. Rhodamine - Applications 3. Photometry - Applications

Card 4/4

5(2)

AUTHOR: Fabrikova, Ye. A. SOV/75-14-1-7/32

TITLE: Increasing Sensitivity and Accuracy in the Determination of Cesium in Minerals by the Aid of Flame Photometry (Povysheniye chuvstvitel'nosti i tochnosti opredeleniya tseziya v mineralakh metodom fotometrii plameni)

PERIODICAL: Zhurnal analiticheskoy khimii, 1959, Vol 14, Nr 1, pp 41-44 (USSR)

ABSTRACT: The author worked out a high-sensitive flame photometric determination method, that permits to determine one-hundredth and one-thousandth percentages of cesium in natural materials with an accuracy of 5-10%. The determination limit is at 0.2 γ/ml. The increased sensitivity of this method was attained by the aid of the increase effect of the cesium line radiation intensity at λ = 8521 Å in the presence of large amounts of potassium. The influence of the other alkali metals (K, Na, Li, Rb) upon the cesium line intensity at 8521 Å was investigated quantitatively. A monochromator UM-2 served as analyzer of the spectral lines. The radiation intensity was measured over a photo-multiplier FEU-22 by the aid of a reflecting galvanometer of the M-21 type. It was found that the presence of other alkali metals effects a noticeable intensity increase of the

Card 1/3

Increasing Sensitivity and Accuracy **in** the SOV/75-14-1-7/32
Determination of Cesium in Minerals by the Aid of Flame Photometry

cesium line, if the concentration of the admixtures is higher than that of cesium. The greatest effect of that type is shown by potassium, whose influence with increasing concentration tends towards a saturation value. Potassium contents, corresponding to this saturation value of the concentration, effected a 25fold increase of the cesium line intensity. The connection between line intensity and cesium concentration in the solution in the presence of large quantities of potassium for 0.2 - 100 γ Cs/ml is virtually a straight line. The same connection shows a curve, if taken with pure cesium salt. The essence of the method elaborated for the determination of cesium consists in that a large quantity of potassium sulfate (5570 γ/ml) is added to the sample solution and to the standard solution prior to flame photometrical measuring. Potassium content in the initial material is to be considered with an accuracy of 50 γ/ml. The chemical preparation of the samples before carrying out the determination took place according to data from publications (Ref 2). The relative error of the Cs determination amounts to ± 4.45 % when determining one-hundredth percentages and

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Increasing Sensitivity and Accuracy in the Determination of Cesium in Minerals by the Aid of Flame Photometry SOV/75-14-1-7/32

± 9.7% on one-thousandth percentages. Reproducibility is satisfactory. The procedure of the analysis of minerals from the preparation to the flame photometrical determination of cesium is very accurately described. The results of some cesium determinations in granites according to this method are also specified. The formula for the calculation of the cesium content on the basis of the results is given. There are 2 figures, 2 tables, and 2 references.

ASSOCIATION: Institut mineralogii, geokhimii i kristallokhimii redkikh elementov AN SSSR, Moskva (Institute of Mineralogy, Geochemistry and Crystal-Chemistry of Rare Elements, Academy of Sciences, USSR, Moscow)

SUBMITTED: November 28, 1957

Card 3/3

FABRIKOVA, Ye.A.

Flame-photometric determination of small amounts of rubidium in silicates. Zhur.anal.khim. 15 no.4:427-430 Jl-Ag '60.
(MIRA 13:9)

1. Institute of Mineralogy, Geochemistry and Crystallochemistry of Rare Elements, Academy of Sciences, U.S.S.R., Moscow.
(Rubidium--Analysis) (Silicates)

FABRIKOVA, Ye.A.

Flame photometric determination of alkali metals in silicate rocks and minerals. Trudy Inst. min., geokhim. i kristallokhim. red. elem. no.6:118-128 '61. (MIRA 15:3)
(Photometry) (Alkali metals) (Silicates)

88579

S/075/61/016/001/003/019
B013/B055

5.5230

AUTHOR: Fabrikova, Ye. A.

TITLE: Flame-photometric Determination of Small Amounts of Cesium in Natural Samples Enriched in Potassium

PERIODICAL: Zhurnal analiticheskoy khimii, 1961, Vol. 16, No. 1, pp. 22-24

TEXT: The present work studies the possibility of separating microquantities of cesium from large amounts of potassium by coprecipitation with ammonium silicomolybdate. The author used the data given in Refs. 10 and 11 as a basis for working out a procedure for this coprecipitation. These two references state that the solubility of cesium silicomolybdate decreases with an increase in acidity of the solution, while excess ammonium chloride markedly decreases the solubility of ammonium silicomolybdate. By alternately varying these factors it was found that cesium is completely coprecipitated with the ammonium silicomolybdate precipitate from a solution containing 0.1 g/ml H_2SO_4, 0.2 g/ml NH_4Cl, and 1.4 g/ml $2Na_2O \cdot SiO_2 \cdot 12MoO_3$ (Table 1). Tests of the degree of coprecipitation of cesium with

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Flame-photometric Determination of Small Amounts of Cesium in Natural Samples Enriched in Potassium

S/075/61/016/001/003/019
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ammonium silicomolybdate in the presence of potassium showed that potassium does not interfere. The major portion of potassium (99.8%) remains in solution. The results obtained in four check determinations of cesium in different granite samples appear in Table 2. From this it may be seen that the losses do not exceed 16.6%. The maximum sensitivity of the flame-photometric determination of Cs in the presence of 2500 γ/ml potassium agrees with the data given in Ref. 7 (0.1 - 0.2 γ/ml). The chemical preparation of the sample is described. The flame-photometric measuring technique has been described in Ref. 4. There are 2 tables and 11 references: 4 Soviet, 2 British, 1 German, 2 Japanese, 1 US, and 2 Austrian.

ASSOCIATION: Institut mineralogii, geokhimii i kristallokhimii redkikh elementov AN SSSR, Moskva (Institute of Mineralogy, Geochemistry, and Crystallochemistry of Rare Elements of the Academy of Sciences USSR, Moscow)

SUBMITTED: January 14, 1960

Card 2/2

KOGAN, B.I.; KAL'ZHANOVA, Ye.G.; SAL'TINA, L.V.; SOLODOV, N.A.;
DMITRIYEVA, O.P.; Prinimali uchastiye: UKHANOVA, N.I.;
PERVUKHINA, A.Ye.; KAZANTSEVA, V.G.; ULANOVSKAYA, V.D.;
VLASOV, K.A., glav. red.; LIZUNOV, N.V., otv. red.;
PYATENKO, Yu.A., otv. red.; SALTYKOVA, V.S., otv. red.;
SLEPNEV, Yu.S., otv. red.; FABRIKOVA, Ye.A., otv. red.
PODOSEK, V.A., red. izd-va; GOLUB', S.I., tekhn. red.

[Rare alkali metals (lithium, rubidium, and sesium); a bibliography on their geochemistry, mineralogy, crystal chemistry, geology, the analytic methods of their determination, and their economics]Redkie shchelochnye metally (litii, rubidii i tsezii); bibliografiia po geokhimii, mineralogii, kristallokhimii, geologii, analiticheskim metodam opredeleniia i ekonomike. Sost. B.I.Kogan i dr. Moskva, Izd-vo Akad. nauk SSSR, 1962. 327 p. (MIRA 16:2)

1. Akademiya nauk SSSR. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov. 2. Chlen-korrespondent Akademii nauk SSSR (for Vlasov).

(Bibliography--Alkali metals)

FABRIKOVA, Ye.A.; ISAYEVA, A.G.

Flame photometric determination of barium in natural objects. Zhur. anal. khim. 18 no.3:329-332 Mr '63. (MIRA 17:5)

1. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov AN SSSR, Moskva.

FABRIKOVA, Ye.A.; ISAYEVA, A.G.

Joint flame photometric determination of strontium, calcium, and barium in natural samples. Trudy IMGRE no.18:175-185 '63. (MIRA 16:12)

FABRIS, Karol, mgr.,inz.

The tasks of the technical management in the field of production concentration. Przegl gorn 17 no.9:442-443 S '61.

1. Wiceminister Gornictwa i Energetyki.

FABRIS, Karol, mgr. inz.

Problems of electrification and demethanization of gas mines in the U. S. S. R. Wiad gorn 13 no.1:7-12 Ja '62.

1. Wiceminister Gornictwa i Energetyki, Warszawa.

FABRIS, Karol, mgr inz.

Problems concerning the reconstruction of coal mines. Przegl techn 85 no.48:9 29 N '64

1. Vice-Minister of Mining and Power Engineering, Warsaw.

FABRISTOV, A. S.

"Marker Sowing of Plowed and Industrial Crops in Wide Rows," Sov. agron., No.2, 1952

FABRISTOV, N., agronom.

Using molybdenum for fertilizer. Nauka i pered. op. v sel'khoz.
8 no.4:30 Ap '58. (MIRA 11:5)

1.Raysemkhoz imeni Timiryazeva, Krasno-Bakovskiy rayon, Gor'kovskoy oblasti.
(Plants, Effect of molybdenum on)

SELYAKOV, L.M.; FABRISTOV, Yu.V., red.

[Aperture distortions and their correction; textbook for a course on amplifiers, indicator systems, and television] Aperturnye iskazheniia i ikh korrektsiia; posobie dlia kursa usilitelei, indikatornykh ustroistv i televideniia. Taganrog, Taganrogskii radiotekhnicheskii in-t, 1960. 74 p. (MIRA 14:10)

(Television—Handbooks, manuals, etc.)

PISICA, Const. D.; FABRITIUS, Klaus

Proctotypridae (Hym.) of Rumania. Studii biol agr Iasi
13 no.1:79-84 '62.

L 18114-66 EWT(d) IJP(c)

ACC NR: AP6010397 SOURCE CODE: CZ/0045/65/000/003/0177/0185

25
8

AUTHOR: Fabritsi, Imrich--Fabrici, I. (Bratislava)

ORG: Department of Mathematics, Chemical Faculty, Slovak Institute of Technology, Bratislava (Katedra matematiky, Chemicka fakulta, Slovenska vysoka skola technicka)

TITLE: Invertible elements of a semigroup and their relation to increasing elements of a semigroup

12, 44, 55

SOURCE: Matematicko-fyzikalny casopis, no. 3, 1965, 177-185

TOPIC TAGS: group theory, matrix element, mathematics

ABSTRACT: The article has the purpose of characterizing in a certain manner the structure of semigroups which contain inversible elements and also the structure of semigroups which contain increasing elements. [JPRS]

SUB CODE: 12 / SUBM DATE: 21Nov63 / ORIG REF: 002 / OTH REF: 001
SOV REF: 002

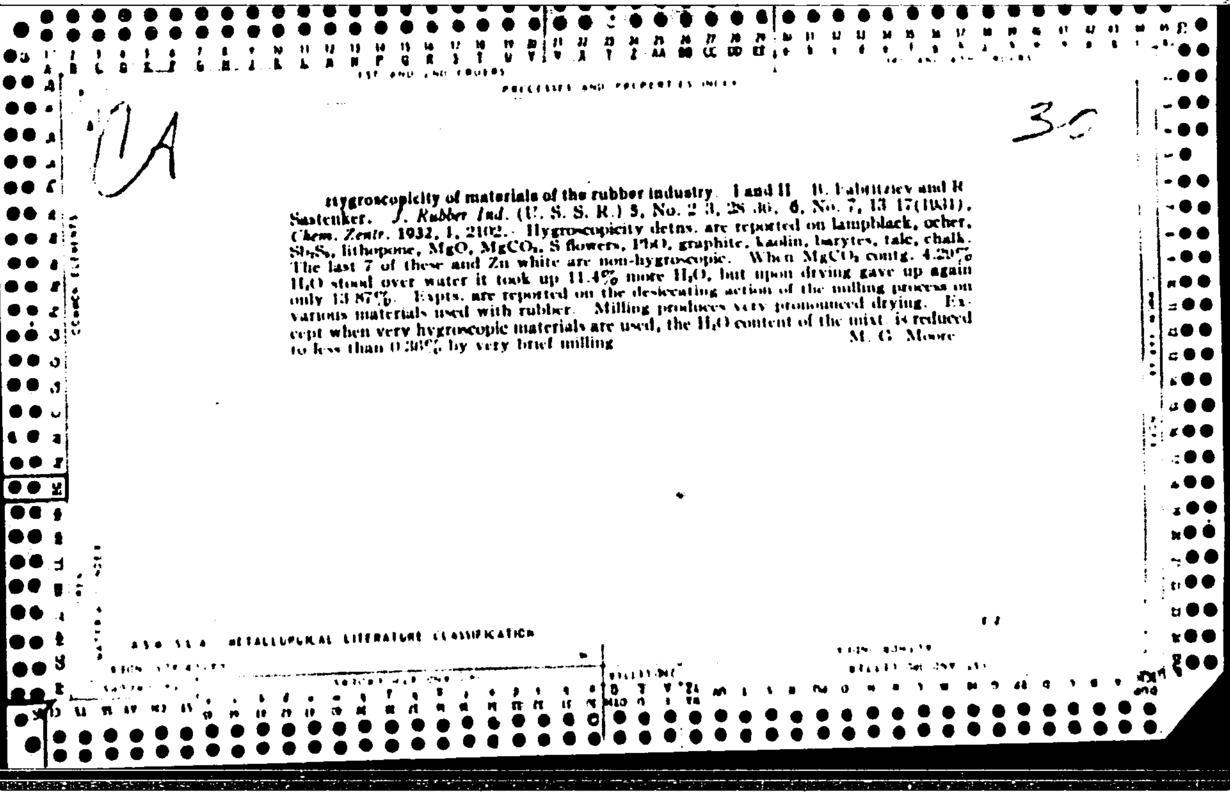
Card 1/1
SC.

FABRITSIUS, I. V.

"Archeological Map of Black Sea Coastal Area of the Ukrainian SSR," Kiev Izd-vo Ak. nauk UkrSSR, No.1, 1951

FABRITSIUS, I. V.

"Geographical Distribution of Scythian Tribes," Vest. drev. ist., No.2, 1952



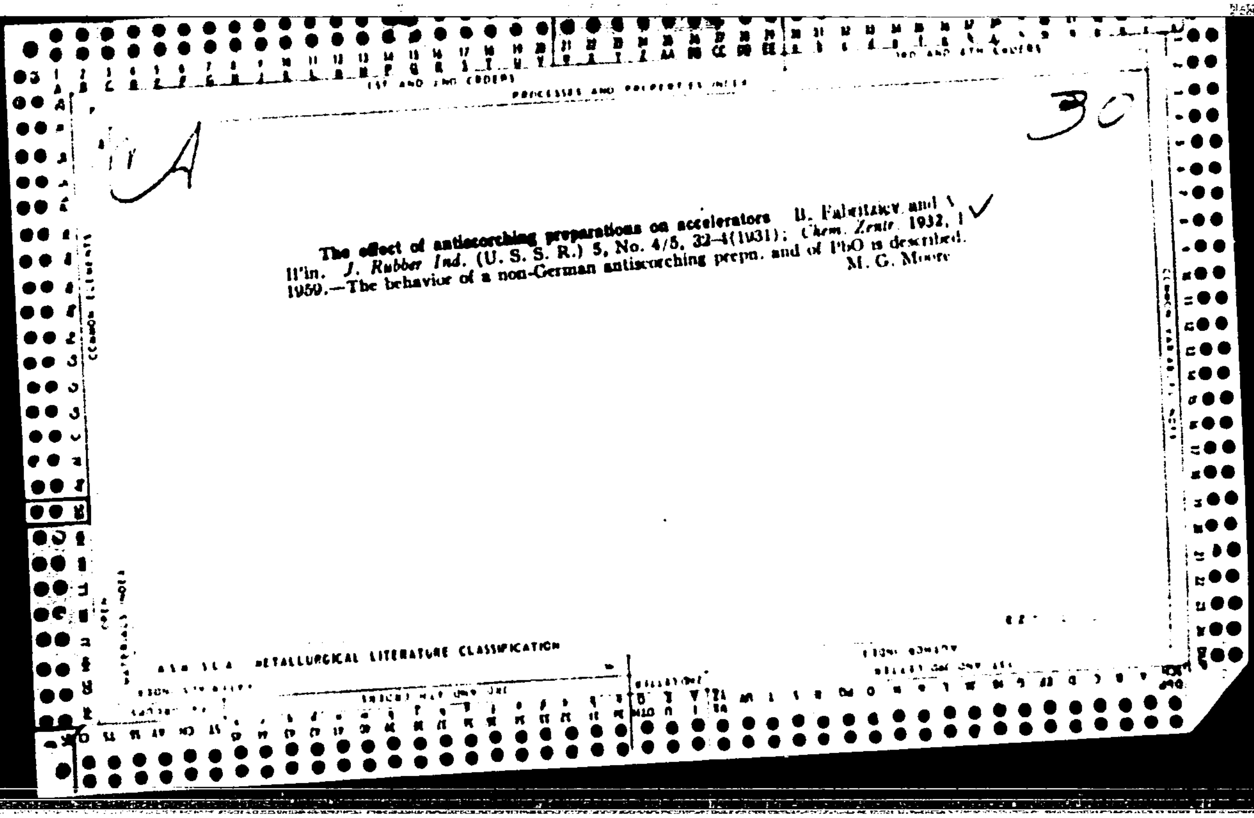
PROCESSES AND PROPERTIES INDEX

11A

3-C

Hygroscopicity of materials of the rubber industry. I and II. B. Falmitzev and R. Sastenker. *J. Rubber Ind.* (U. S. S. R.) 5, No. 2-3, 28-30, 6, No. 7, 13-17(1931); *Chem. Zentr.* 1932, I, 2102.—Hygroscopicity detns. are reported on lampblack, ocher, Sb_2S_3, lithopone, MgO, $MgCO_3$, S flowers, PbO, graphite, kaolin, barytes, talc, chalk. The last 7 of these and Zn white are non-hygroscopic. When $MgCO_3$ contg. 4.29% H_2O stood over water it took up 11.4% more H_2O, but upon drying gave up again only 13.87%. Expts. are reported on the desiccating action of the milling process on various materials used with rubber. Milling produces very pronounced drying. Except when very hygroscopic materials are used, the H_2O content of the mixt. is reduced to less than 0.30% by very brief milling. M. G. Moore

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



11 A

30

The effect of antiscorching preparations on accelerators B. Falkitzky and V. Il'in. *J. Rubber Ind.* (U. S. S. R.) 5, No. 4/5, 32-4(1931); *Chem. Zentr.* 1932, I 1959.—The behavior of a non-German antiscorching prepn. and of PbO is described. ✓

M. G. Moore

PROCESSES AND PROPERTIES INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

1a

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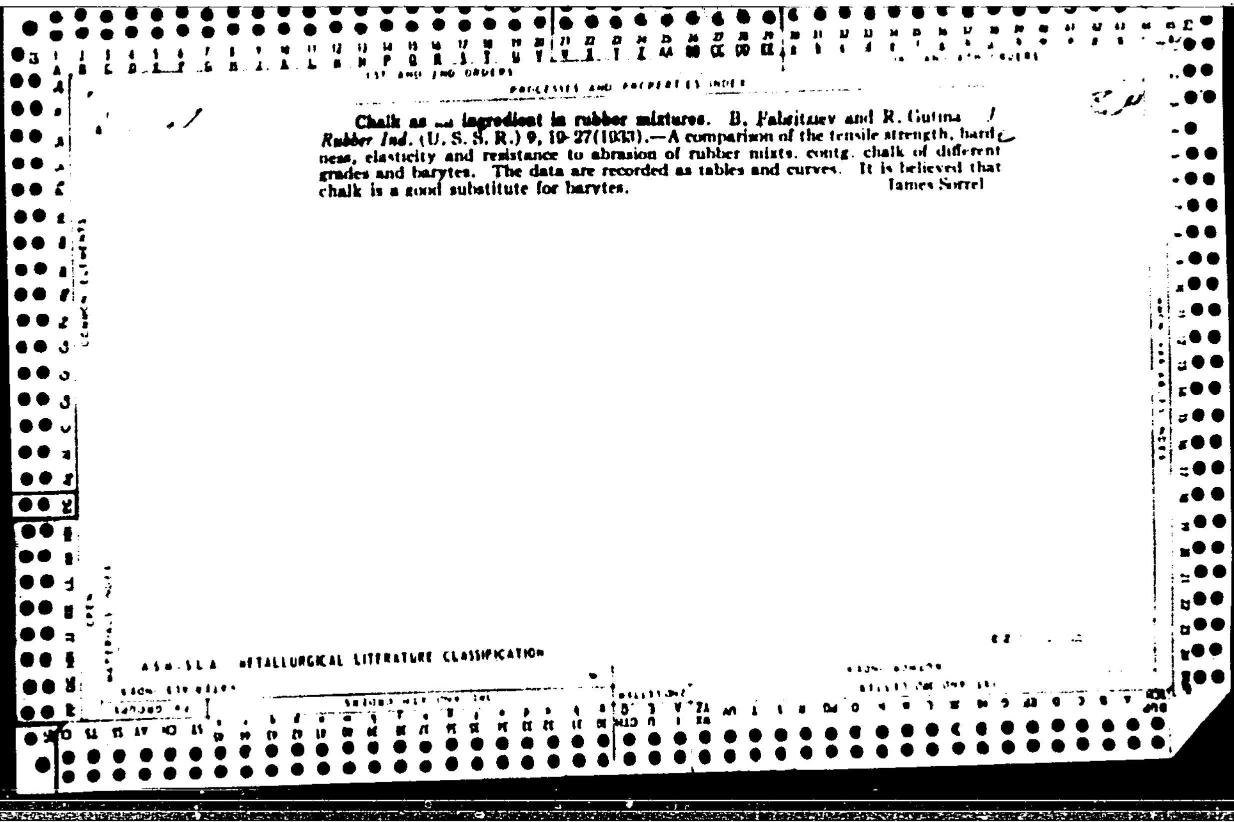
Barytes. H. FABRICHNY AND R. GUTINA. *J. Rubber Ind.* (U. S. S. R.) 8, 199-202 (1932).—A study of barytes as a rubber filler. Natural ground barytes produced practically the same results as pptd. BaSO$_4$. The use of a specially ground natural barytes is recommended for the U. S. S. R. rubber industry as an economical possibility. Chalk mixt. is recommended for automobile inner tubes. James Sewell

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Chalk as an ingredient in rubber mixtures. B. Fabritzev and R. Gutina. *Rubber Ind.* (U. S. S. R.) 9, 19-27(1933).—A comparison of the tensile strength, hardness, elasticity and resistance to abrasion of rubber mixts. contg. chalk of different grades and barytes. The data are recorded as tables and curves. It is believed that chalk is a good substitute for barytes. James Sorrel

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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3RD AND 4TH ORDERS

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B-II-9

[illegible] of [illegible] [illegible] different accelerators. [illegible] and R. SHARANOVA [illegible] Rubber J., 1953, 86, [illegible] methods for determining the [illegible] scorching, based on (a) swelling the rubber in [illegible] and (b) the plasticity. Using method (b), experiments are recorded on mixtures containing 13 [illegible] accelerators of various types and also containing combinations of mercaptobenzthiazole with diphenylguanidine, tetramethylthiuram disulphide, and Zn dimethyldithiocarbamate (A). PbO is an energetic activator for the last 2 combinations, but reduces the activity of A alone.

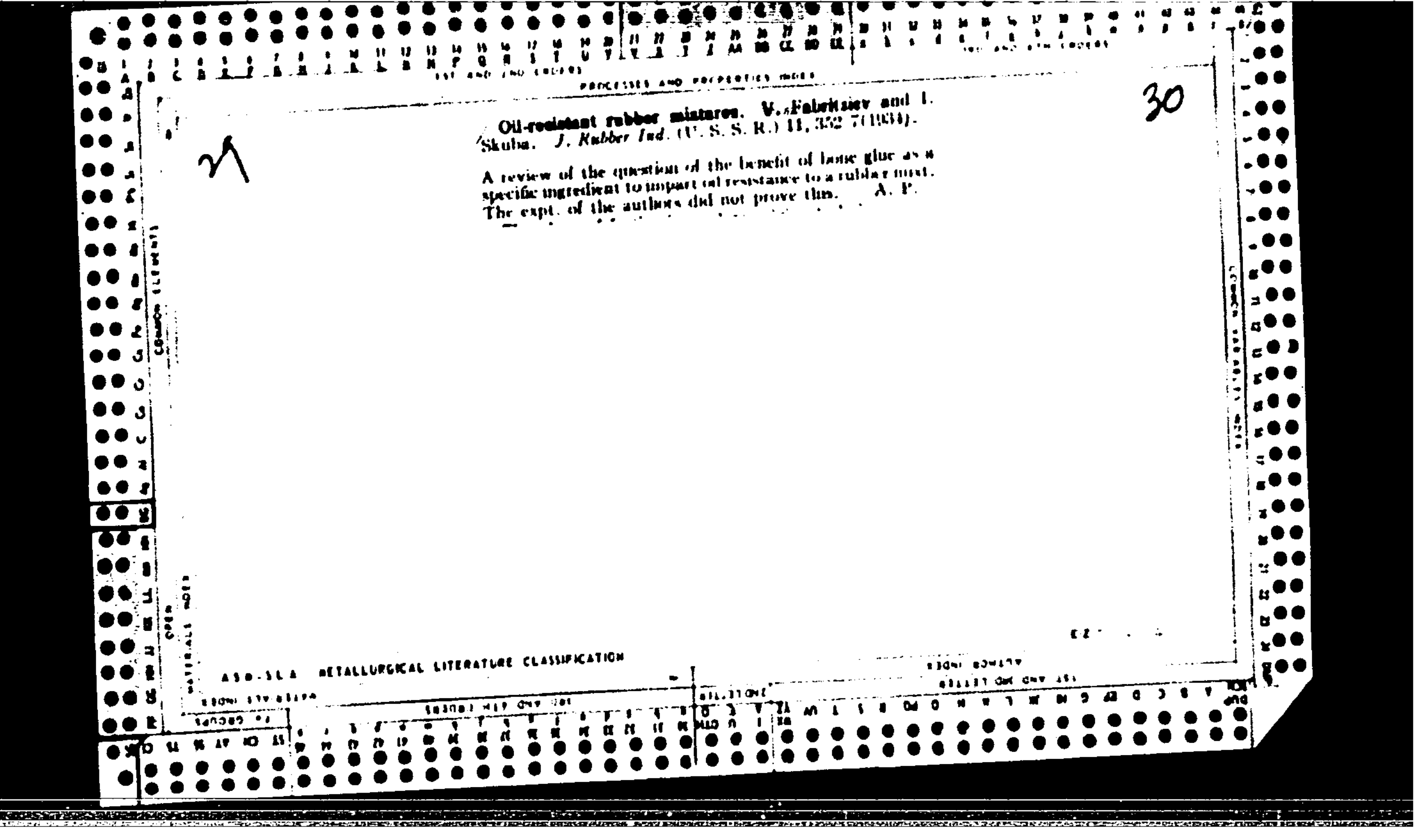
D. F. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

Ebonite for the parts of a magneto. B. Fabritziev, I. Pelkov and A. S[illegible]ov. *J. Rubber Ind.* (U. S. S. R.) 11, 223-32(1934).—A description of expts. on the replacement of shellac by ebonite. Ebonite is used in parts of the magneto: rotor and distributor cap. The original formula was: smoked sheet 32, S 17, MgO 6, shellac 7.5 and talc 37.5. The formulas recommended are: (1) for natural rubber: [illegible] 32, S 17, MgO 6, talc 37.5 and pitch residue 7.5, and (2) for synthetic rubber: synthetic rubber (milled and vulcanized for 5 hrs.) 32, S 17, MgO 6, talc 37.5 and pitch residue 7.5. The tensile strengths (in kg. per sq. cm.) were 398, 422 and 300, resp. The heat resistances (in degree Martens) were 47.6, 50.6 and 33.5, resp. A. Pestoff

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

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Oil-resistant rubber mixtures. V. Fabritsiev and I. Skuba. *J. Rubber Ind.* (U. S. S. R.) 11, 352-7(1934).

A review of the question of the benefit of bone glue as a specific ingredient to impart oil resistance to a rubber mixt. The expt. of the authors did not prove this. A. P.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

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1a

Cements for joining leather to rubber. B. Fabritziev, G. Buiko and E. Pakhomova. *Kozhevenno-Obuvnaya Prom.* 13, 522-3(1934). The following types of rubber cements were investigated: (1) self-vulcanizing cements, prepd. from rubber mixts. with ultra-accelerators such as "Zimate" and "Pipsol"; (2) "Thermoprene" cements, prepd from rubber and p-$HOC_6H_4SO_3H$ (low-temp. Thermoprene prepd. at 130° and high-temp. prepd. at 180°); (3) gutta-percha cements, prepd. by dissolving gutta-percha in various solvents; and (4) combination cements, prepd. by the simultaneous application of 2 types of cements, whereby each component is used for cementing different parts. All cements were prepd. with naphtha, and were tested for adhesion, resistance to heat, strength of the cemented pieces while hot, water resistance and fat resistance.

A. A. Boehtlingk

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

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Control of the quality of powdered rubber fillers. B. Fabritsiev and Yu. Margolina. *J. Rubber Ind.* (U. S. S. R.) 12, 449-55(1935).—A crit. discussion of the detn. of the degree of dispersion by 3 methods, sieve, sedimentation and microscopic. The last is the best. A. P.

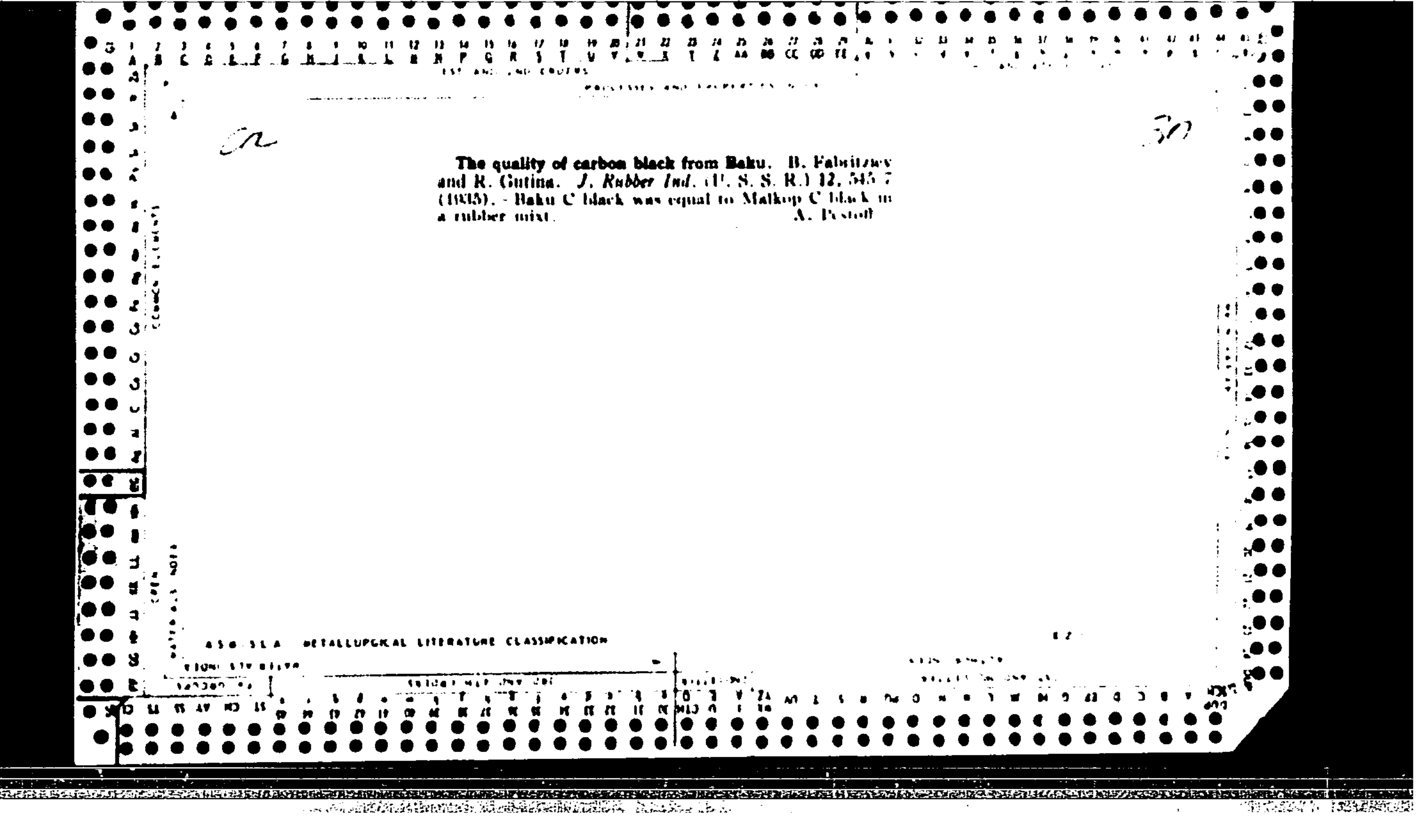
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

Technical specification for carbon blacks in U. S. S. R. B. Fabritzky and R. Gutina. *J. Rubber Ind.* (U. S. S. R.) 12, 455-60(1935).—A comparative discussion and description of the methods of analysis and technological tests in rubber mixt. of gas blacks (Bakinskaya and Maikopskaya) and lamp blacks (Yaroslavskaya, Kudinovskaya and Ligovskaya). Specifications are given for each five C blacks.

A. Pestoff

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Cn

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The quality of carbon black from Baku. B. Falsitzev and R. Gutina. *J. Rubber Ind.* (U. S. S. R.) 12, 545-7 (1935). - Baku C black was equal to Maikop C black in a rubber mixt. A. Pestoff

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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The newest principles of formulating rubber mixtures B. Fabritziev. *J. Rubber Ind.* (U. S. S. R.) 12, 757-62 (1935).—The free S in rubber is oxidized by the air to H_2SO_3 or H_2SO_4. These deteriorate the rubber; therefore formulas should contain a min. of free S. Vulcanization in the future will be with polysulfide accelerators like tetramethylthiuram disulfide (I), e. g., 3% in the presence of a very small proportion of S, or combinations of S 0.1-0.5% and Se 3.0%. The effects of various ingredients, including ZnO, magnesia alba, ground asbestos, etc., in a formula with 3% tetramethylthiuram disulfide and no S, on the mech. properties of rubber are shown. A. Pestoff

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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The action of the ingredients dispersed to different degrees on the mechanical qualities of synthetic rubber. B. Fabritsky and R. Gutina. *J. Rubber Ind.* (U. S. S. R.) 12, 816-7(1935).—Glukhovetskii kaolin, Shchelekinskii $CaCO_3$ and Kimtibakii diatomite were tested. The rubber contg. the most highly dispersed ingredient had the highest tensile strength, modulus of elasticity and resistance to aging. The best dispersion was obtained with kaolin (diam. of particles 2.35 μ), next with diatomite (2.84 μ) and poorest with $CaCO_3$ (3.10 μ). A. Pestoff.

The use of synthetic rubber in molded surgical goods. N. Kamotskii. *J. Rubber Ind.* (U. S. S. R.) 12, 834-5 (1935).—Refined synthetic rubber with a plasticity of 0.4-0.6 was used in proportions of 50-75%. The goods had a disagreeable odor. The molds were greased with a neutral soln. of vegetable soap and were cleaned by boiling in a 15-20% rubber soln. A. Pestoff

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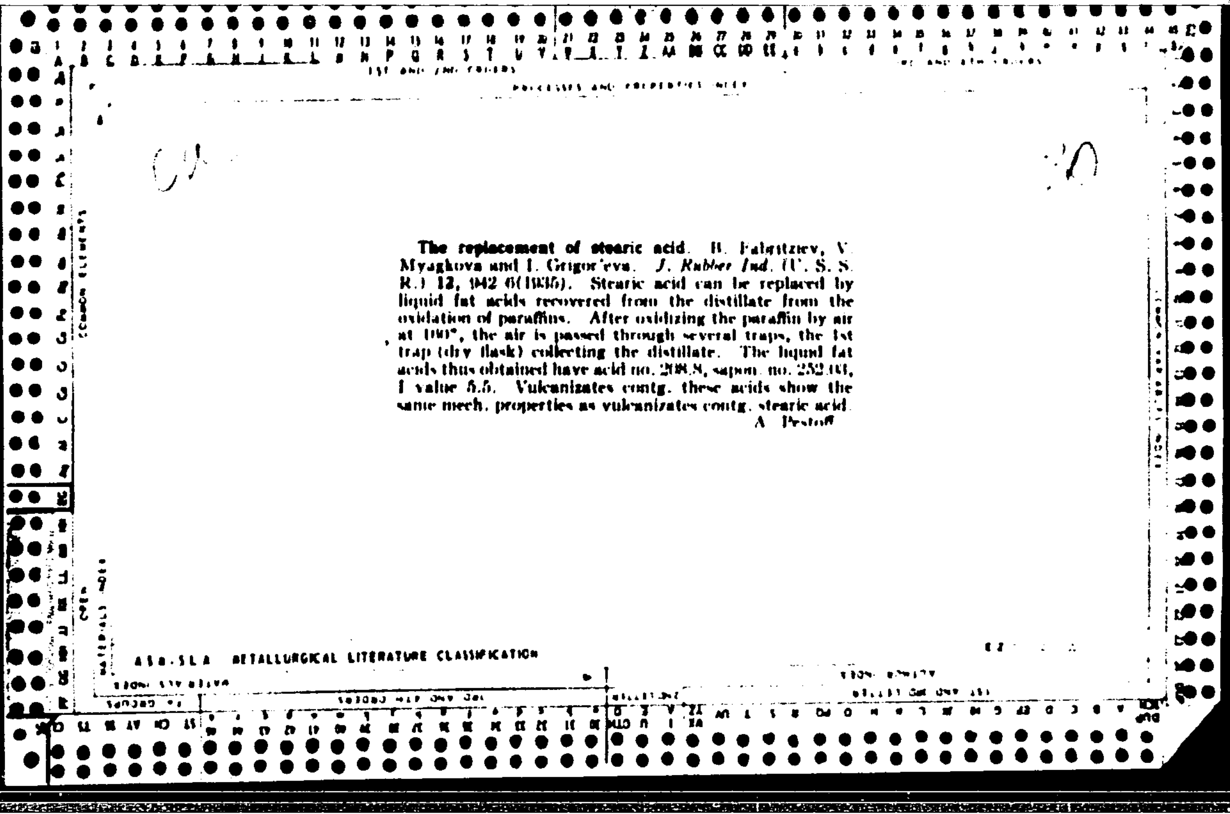

PROCESSES AND PROPERTIES INDEX

The replacement of stearic acid. B. Falgitziev, V. Myaghova and I. Grigor'eva. *J. Rubber Ind.* (U. S. S. R.) 12, 942-6(1936). Stearic acid can be replaced by liquid fat acids recovered from the distillate from the oxidation of paraffins. After oxidizing the paraffin by air at 100°, the air is passed through several traps, the 1st trap (dry flask) collecting the distillate. The liquid fat acids thus obtained have acid no. 208.8, sapon. no. 252.01, I value 5.5. Vulcanizates contg. these acids show the same mech. properties as vulcanizates contg. stearic acid.

A. Pestoff

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

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Selenium in rubber mixtures containing synthetic and natural rubbers. B. Fabeltziev, G. Bulko and I. Skula. *J. Rubber Ind.* (U. S. S. R.) 12, 1161-5(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

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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Rubber solvents and substances which lower the viscosity of rubber cement. B. V. Fabritsky, G. N. Buiko and R. A. Pakhomova. *Kozhevenno-Obuvnaya Prom.* 14, 514-18(1935).—Expts. show that the viscosities of rubber solns. are lowered most by alcs., the effects increasing in the order: iso-PrOH, BuOH, EtOH, PrOH, iso-AmOH and MeOH. HOC_6H_4Ac, C_5H_5N and Me_2CO also lower considerably the viscosity of rubber solns., though not so much as do alcs. $(CH_2OH)_2$ 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 alcs. 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 alcs.; the viscosities remain unchanged for 24 hrs. after addn. of alcs., 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. Bochtlingk

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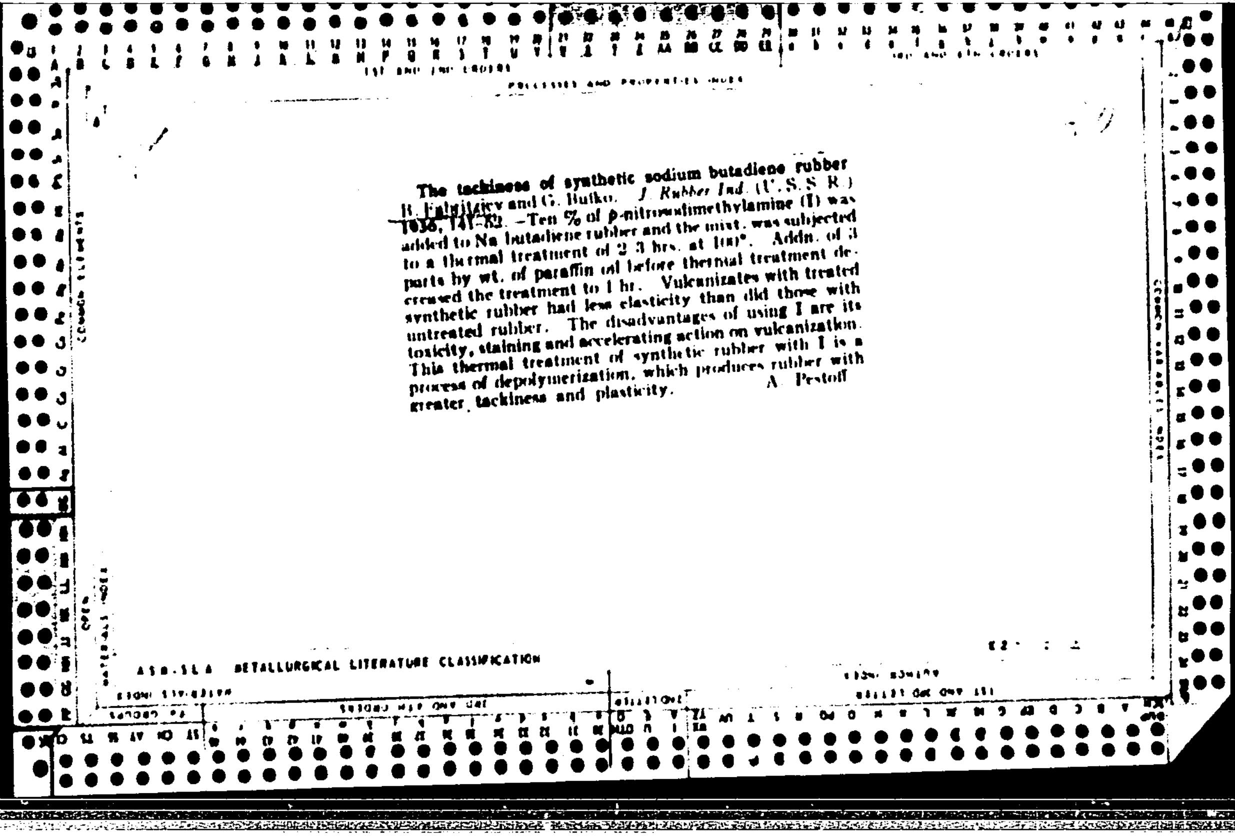

PROCESSES AND PROPERTIES INDEX

The tackiness of synthetic sodium butadiene rubber. B. Falnitzky and G. Bulko. *J. Rubber Ind.* (U.S.S.R.) 1936, 141-82.—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

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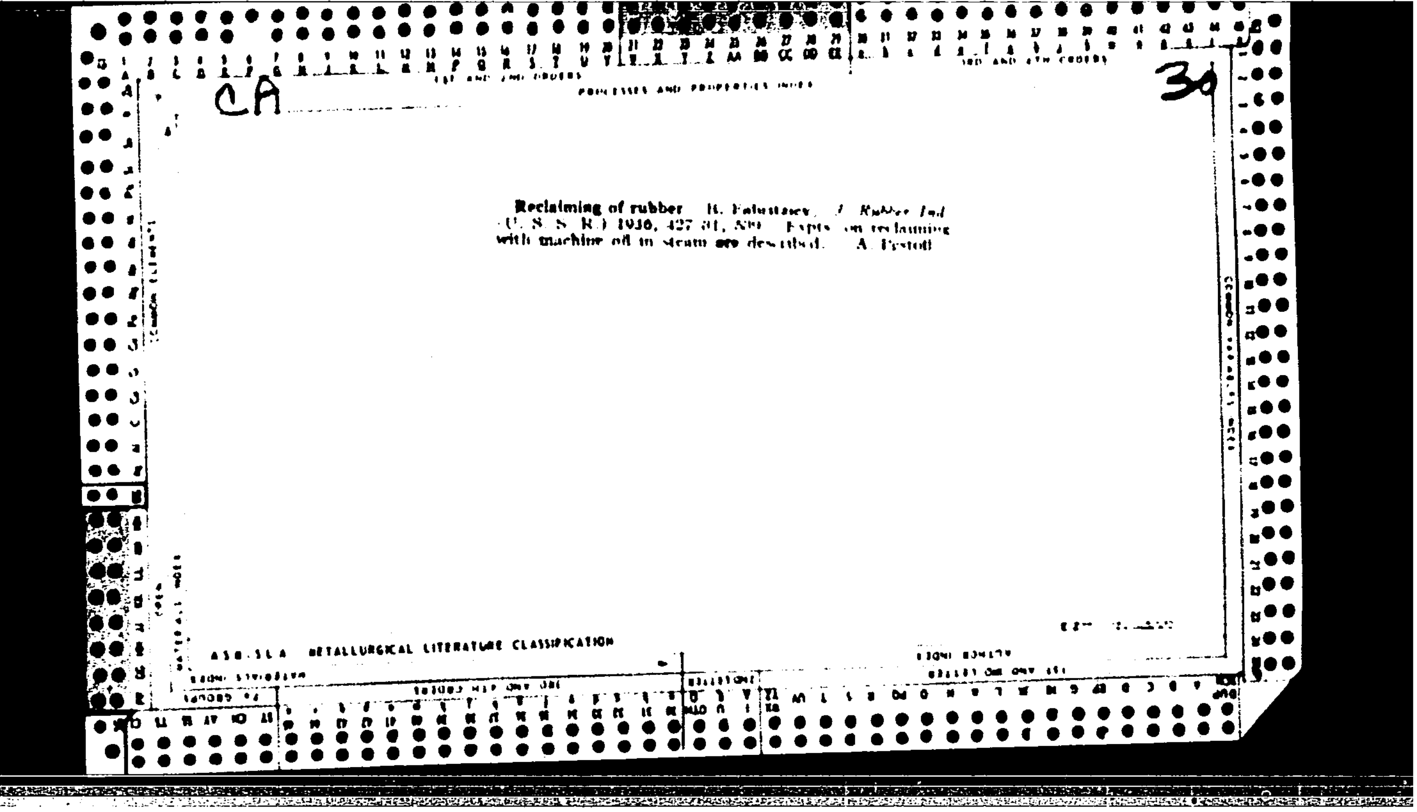

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PROCESSES AND PROPERTIES INDEX

Reclaiming of rubber. B. Falustaev. *J. Rubber Ind.* (U. S. S. R.) 1936, 427-31, 880. Expts. on reclaiming with machine oil in steam are described. A. Pestoff

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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Synthetic rubber from butadiene. B. V. Fabritsiev. *Novosti Tekhniki* **1936**, No. 3, 35-6.—Thermal treatment of a mixt. of Na butadiene and 10% of *p*-nitrosodimethylaniline (I) at 100° for 1 hr. increases the adhesiveness of the synthetic rubber by 25-135%, but the toxic nature of I prevents its use. The Yaroslavl rubber plant uses the polymerized-hydrocarbon spent liquor of the plant, which increases the adhesiveness of synthetic rubber almost twice after treatment at a temp. 90° for 3 hrs. under a pressure of 600 mm. of Hg. A. A. Podgorny

A.S.M.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

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The use of cement made of 100% synthetic rubber for impregnating cloth. B. V. Fabritsiev, G. Bulko and E. Pakhomova. *J. Rubber Ind.* (U. S. S. R.) 1936, No. 8-9, 900-92.—The general technic is described. A. P.

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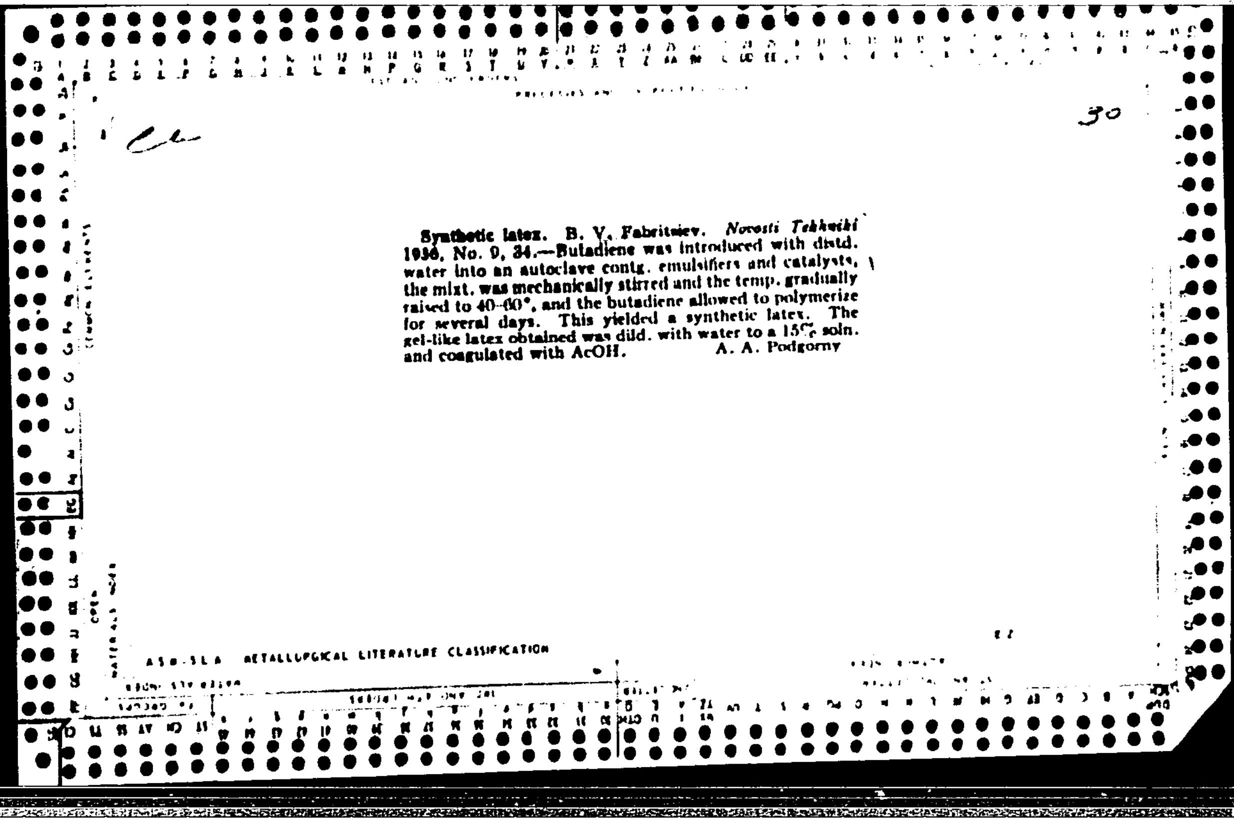

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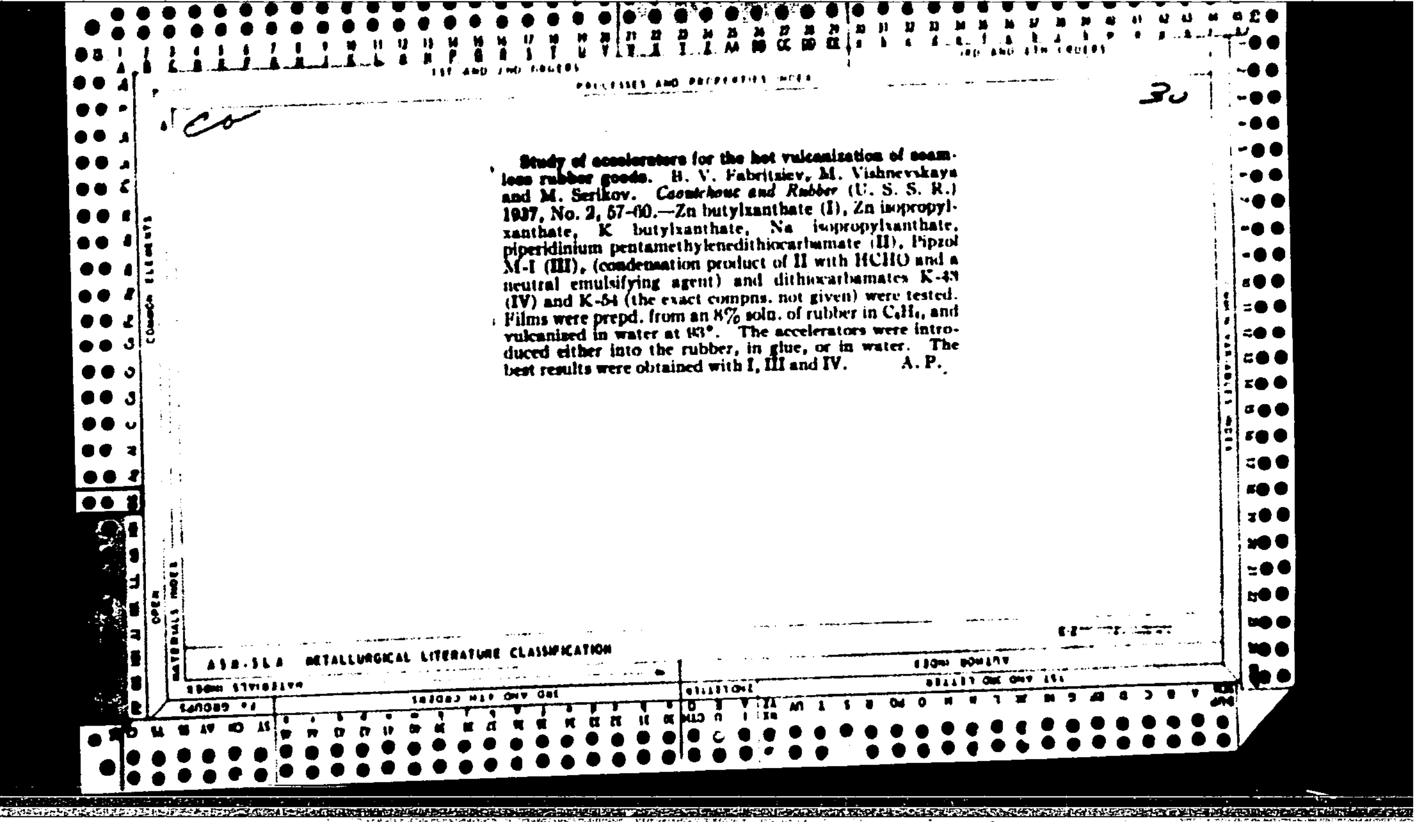
Synthetic latex. B. V. Fabritsiev. *Novosti Tekhniki* 1936, No. 9, 34.—Butadiene was introduced with distd. water into an autoclave contg. emulsifiers and catalysts, the mixt. was mechanically stirred and the temp. gradually raised to 40-60°, and the butadiene allowed to polymerize for several days. This yielded a synthetic latex. The gel-like latex obtained was dild. with water to a 15% soln. and coagulated with AcOH. A. A. Podgorny

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



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Study of accelerators for the hot vulcanization of seamless rubber goods. B. V. Fabritsiev, M. Vishnevskaya and M. Serikov. *Caoutchouc and Rubber* (U. S. S. R.) 1937, No. 2, 57-60.—Zn butylxanthate (I), Zn isopropylxanthate, K butylxanthate, Na isopropylxanthate, piperidinium pentamethylenedithiocarbamate (II), Pipzol M-I (III), (condensation product of II with HCHO and a neutral emulsifying agent) and dithiocarbamates K-48 (IV) and K-54 (the exact compns. not given) were tested. Films were prepd. from an 8% soln. of rubber in C_6H_6, and vulcanized in water at 93°. The accelerators were introduced either into the rubber, in glue, or in water. The best results were obtained with I, III and IV. A. P.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND DIGITS

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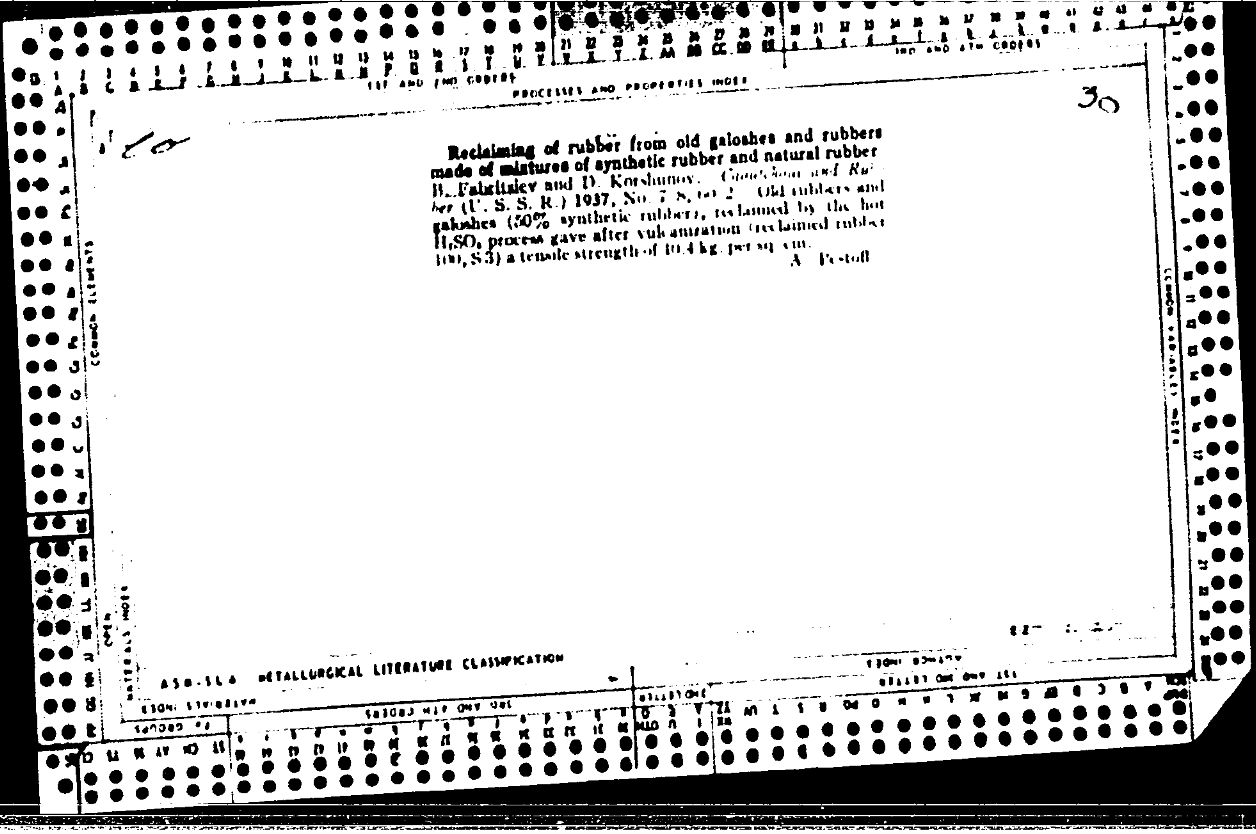
Manufacture of nipples and pacifiers from latex by the hot vulcanization process. B. V. Fabritsiev and A. Komarova. *Caoutchouc and Rubber* (U. S. S. R.) 1937, No. 4, 94-9.—Descriptive. A. Pestoff

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



1ST AND 2ND ORDERS

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3RD AND 4TH ORDERS

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Reclaiming of rubber from old galoshes and rubbers made of mixtures of synthetic rubber and natural rubber. B. Faizitsiev and D. Korshunov. *Caoutchouc and Rubber* (U. S. S. R.) 1937, No. 7-8, 61-2.—Old rubbers and galoshes (50% synthetic rubber), reclaimed by the hot H_2SO_4 process gave after vulcanization (reclaimed rubber 100, S 3) a tensile strength of 10.4 kg. per sq. cm.

A. Pestoff

ASD-SLA METALLURGICAL LITERATURE CLASSIFICATION

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Rubber from kok-sagiz. I. B. V. Fabritsiev and M. T. Vishnevskaya. *Caoutchouc and Rubber* (U. S. S. R.) 1938, No. 8 9, 45 9.--This is a study of the properties of rubber from kok-sagiz. It is extd. from the roots by boiling water, masticating, on boiling in 2% lye for 3.5 hrs., washing and drying to 1.2% moisture. It then showed d. 0.908, acetone ext. 0.7%, acid resin no. (of acetone extn.) 22.1, $CHCl_3$-insol. 9.3%, N 0.62%, albumin 3.9%, ash 1.8, Mn 0.003, Fe_2O_3 0.02 and $CHCl_3$ ext. (by difference) 77.1. Tables and curves give comparative data with pale crepe; Williams plasticity after breakdown, energy necessary for plasticization; recovery after plastication; Ostwald viscosity, capillary creep and swelling in C_6H_6. II. *Ibid.* No. 11, 13-17.--The mech. properties, aging and behavior with softeners of "pure gum" and loaded kok-sagiz (I) mixts. were tested in comparison with similar mixts. of pale crepe (II), smoked sheet (III), synthetic rubbers and various combinations of these. The optimum cure of the base mixt.: rubber 100, ZnO 5, stearic acid 1.5, S 3, mercaptobenzothiazole 1, was for I, 20 min. at 138° and for II and III, 30 min. at 138°. The tensile strengths at these curves were for I, 200 kg. per sq. cm. and for II and III 225 kg. per sq. cm. When loaded with 30 vols. of C black I, II and III gave tensile strengths of 161, 250 and 251 kg. per sq. cm., resp., and elongations of 500, 584 and 582%. Twenty vols. of whiting gave the tensile strengths 129, 180 and 190 kg. per sq. cm., resp., the elongations 780, 724 and 681%; 20 vols. of kaolin tensile gave 142, 213 and 208 kg. per sq. cm., and elongations of 680, 580 and 550%. Stearic acid, Batkak (fish fat) pine tar, Rubrax and machine oil were tested as softeners. In practically all cases samples cured from I and mixts. of I and synthetic rubbers showed a tendency to scorch. B. K.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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ca

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The need of the rubber industry for whiting prepared by the flotation process. B. V. Fabritsiev. *Kauchuk i Rezina* 1941, No. 6, 12-13; *Chem. Zentr.* 1942, II, 2431.—Whitings suitable for the rubber industry and prepd. by the ordinary elutriation process and by the flotation process are compared. Since the flotation process yields a decidedly better product, the construction of a large plant for manufacturing whiting by the flotation process is recommended. C. C. Davis

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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Preparation of mixtures from sodium butadiene rubber. B. F. Fabritsiev and A. Komarova. *Legkaya Prom.* 1946, No. 5/6, 25-8. — Particularly good mech. properties were obtained with rubberax and stearic acid. Mazut increases considerably the mech. strength of vulcanizates without increasing their elasticity. W. R. Henn

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

SMIRNOV, B.M.; FADDEYEV, B.V.; KRYZHOV, L.V.

Magnetite ores in Kustanay Province. Gor.zhur. no.3:78-79 Mr '60.
(MIRA 14:5)

1. Ural'skiy filial AN SSSR
(Kustanay Province—Magnetite)

FADDEYEV, B.V., kand.tekhn.nauk.; KAGASOVA, S.M., inzh.

Strong conveyor belts for open-pit mining. Gor.zhur. no.2:42-45 F '61. (MIRA 14:4)

1. Gorno-geologicheskiy institut Ural'skogo filiala AN SSSR (for Faddeyev). 2. Sverdlovskiy zavod rezinovykh tekhnicheskikh izdeliy (for Kagasova).
(Conveying machinery) (Strip mining)

FADDEYEV, B.V., kand.tekhn.nauk

Mechanization of auxiliary operations in conveying. Mekh. i avtom. proizv. 15 no. 5:28-30 My '61. (MIRA 14:5)
(Conveying machinery—Technological innovations)

FABRITSKIY, Kh.B.; SEMENOV, A.I., redaktor; VOROB'YEVA, N.N., redaktor;
KARASIK, N.P., tekhnicheskiy redaktor

[Standard work norms for the saw milling and woodworking industry]
Tekhnicheskoe normirovanie v lesopil'no-derevoobrabatyvaiushchem
proizvodstve. Moskva, Goslesbumizdat, 1954. (MLRA 7:10)
(Woodworking industries) (Job analysis)

FABRITSKIY, Khanon Borisovich; SEMENOV, A.I., redaktor; BEL'CHENKO, N.I.,
redaktor; [illegible]

[Establishing production norms for sawmills and woodworking industries]
Tekhnicheskoe normirovanie v lesopil'no-derevoobrabatyvaiushchem
proizvodstve. Izd. 2-oe, perer. Moskva, Goslesbumizdat, 1956. 265 p.
(Woodworking industries) (Sawmills) (MLRA 9:5)

FABRITSKIY, Khanon Borisovich; LYUBMAN, Semen Markovich; SEMENOV, A.I., red.; MEL'NIKOVA, M.S., red. izd-va; LOBANKOVA, R.Ye., tekhn. red.

[Reference book for establishing norms in the manufacture of furniture] Spravochnik normirovshchika mebel'nogo proizvodstva. Moskva, Goslesbumizdat, 1961. 279 p. (MIRA 14:7)
(Furniture industry) (Production standards)

FABRITSKIY, Khanan Borisovich; LYUBMAN, Semen Markovich; SEMENOV, A.I., red.; BOYKO, L.I., red.izd-va; GRECHISHCHEVA, V.I., tekhn. red.

[Manual for the standards setter in furniture manufacture] Spravochnik normirovshchika mebel'nogo proizvodstva. Izd.2., perer. Moskva, Goslesbumizdat, 1963. 322 p. (MIRA 17:2)

FABRITSKIY, Kh.B., kand.ekonom.nauk

A useful textbook on the establishment of work norms. Der. prom. 14 no.2:30-31 F '65. (MIRA 18:6)

FA[illegible], [illegible].D., kand. ekonom. nauk

Practices in paying wages based on finished products in the furniture industry. Der. prom. 14 no.6:17-19 Je '65. (MIRA 18:7)

FABRITSY, A.

"Transformation of di-tertiary glycols of the acetylene series under the influence of mercury salts." Min Higher Education USSR. Leningrad Prder of Labor Red Banner Technological Inst imeni Leningrad Soviet. Chair of Organic Chemistry. Leningrad, 1956. (Dissertation for the Degree of Candidate in Chemical Sciences).

SO: Knizhnaya letopis', No. 16, 1956

Fabritsy, A.

4

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Influence of the structure of the acetylenic α-glycols on their transformations. E. D. Venus-Danilova, L. A. Pavlova, and A. Fabritsy. *Vestnik Leningrad.* [illegible] No. 16, *Ser.* ~~Fiz. i Khim.~~ No. 3, 117 25 (1956) [illegible] transformations of acetylenic α-glycols induced by H_2SO_4, are reviewed. Certain basic products [illegible] give colored salts with acids, and colored complexes with some metal chlorides of the type R.$FeCl_4$, and [illegible] hydroxy group causing their basicity. They are [illegible] related to α- and γ-chromanols, flavanols, and [illegible] $HgCl_2$ induces similar transformations. [illegible] cumulated exptl. data, the authors propose a general [illegible] of the isomeric transformations of acetylenic glycols, leading to acetylenic ketones by dehydration or to 4-hydroxy [illegible] dihydrofurans by cyclization, with possible further hydration to substituted furans if H is available [illegible] position. If dehydration is impossible [illegible] may be formed (2 possible structural [illegible]. These salts, on hydrolysis and cleavage of the free base, may lead to ethylenic γ-oxo alcs. Similar transformations were observed with 2- and 4-substituted [illegible] 12 references. J. Vecera

FABRITSY, A.

5000

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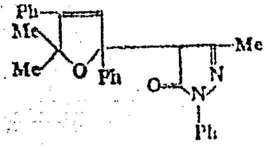
Hydroxydihydrofurans. IV. Basic properties of substituted 2-hydroxy-2,5-dihydrofurans. E. D. Venus-Danilova and A. Fabritsy (Lensovet Technol. Inst., Leningrad). *Zhur. Obshchei Khim.* 26, 884-91(1956); cf. *C.A.* 49, 1471; 49, 280*f*.—Basic properties of *5,5-dimethyl-2,4-diphenyl-3-hydroxy-2,5-dihydrofuran* (I) are due to formation of a carbonium ion; this forms salts which are named dihydrofuryllium salts. The mechanism of formation of I in cyclization of acetylenic glycols with H_2SO_4 is discussed (cf. references above). I yields the *perchlorate* (Ia), yellow, decomp. 203-4°; *picrate*, orange, m. 168-9°; salt with $FeCl_3$, $C_{18}H_{17}OFeCl_4$, yellow, m. 147-8°; yellow salt with $HgCl_2$ in EtOH soln. $C_{18}H_{17}OHgCl_3.H_2O$, decomp. 160°; salt with $HgBr_2$ in HBr, $C_{18}H_{17}OHgBr_3.H_2O$, m. 180-5° (from MeOH). Refluxing 0.3 g. 2-hydroxydihydrofuran with 0.3 g. 1-phenyl-3-methyl-5-pyrazolone in MeOH 4 hrs. gave after standing 2 days in an open flask 63.5% colorless II, m. 137-8°. Ia (18 g.) with MeMgI from 30 g. MeI gave after aq. treatment with NH_4Cl 78% *2,2,5-trimethyl-3,5-diphenyldihydro-3,5-furan*, b_4 163°, n_D^{20} 1.5730, d_{20} 1.0660, which with 1.5% $KMnO_4$ gave AcPh, HCO_2H, BzOH, and methylphenylglycolic acid, m. 65-7° (Ag salt analyzed).

Chem

1/2

VENUS-DANILOVA, E.D., FABRITSY, A.

The tarry material from the synthesis of I by cyclization of unsym. dimethylphenyl(phenylethynyl)ethylene glycol with H_2SO_4 after standing 5-6 months gave some *2-methyl-3,5-diphenyl-1,3-pentadien-5-one*, m. 92-3°; *2,4-dinitrophenylhydrazone*, red, m. 155-6°; ozonolysis of the ketone gave apparently acetylbenzoyl- and 2,5-diphenylquinone, as well as BzOH, benzoylformic acid, and HCO_2H; the yield of ketone is 9-10%. Potentiometric titration of I gave a hydrolysis constant of about 1.2×10^{-3} in 60% Me_2CO. The ultraviolet absorption spectrum of I is shown (λ 252 mμ); *HCl salt*, λ 252, 308, 400 mμ; *HBr salt*, λ 248, 306-8, and 400 mμ.



(II)

G. M. Kosolapoff 2/2

FABRITSY, A.

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Hydroxydihydrofurans. IV. Basic properties of substituted 2-hydroxy-2,5-dihydrofurans. [illegible] and A. Fabritsy. J. Gen. [illegible]
[illegible] translation [illegible]

VENUS-DANILOVA, E.D.; FABRITSY, A.; ORLOVA, A.N.

Study of oxydihydrofurans. Part 5. Basic properties of 5,5-dimethyl-2-tert-butyl-4-phenyl-2-oxydihydrofuran-2,5. Zhur.ob.khim. 26 no.4:1160-1165 Ap '56. (MLRA 9:8)

(Furan)

Fabritsy, A.

USSR/Organic Chemistry. Synthetic Organic Chemistry. E-2

Abs Jour: Ref Zhur - Khimiya, No. 8, 1957, 26883.

Author : Venus-Danilova, E.D., Fabritsy, A.
Inst :
Title : Study of Conversions of Pinacols with Replaced Acetylene Radicals. XI. Action of Mercury Chloride and Bromide on Asymmetrical Dimethyl-phenyl-Acetylenyl-Ethyleneglycol.

Orig Pub: Zh. obshch. khimii, 1956, 26, No. 6, 1609 - 1616.

Abstract: The following compounds were obtained by boiling equimolar amounts of 2-methyl-3,5-diphenylpentine-4-diol-2,3 (I) and $HgCl_2$ in alcohol solution 1 to 6 hours: 5,5-dimethyl-2,4-diphenyl-2-oxydihydrofuran-2,5 (II), melting point 160-161° (decomposes), the mercury complex thereof

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Leningrad Technological Inst im Lensovet.

USSR/Organic Chemistry. Synthetic Organic Chemistry. E-2

Abs Jour: Ref Zhur - Khimiya, No. 8, 1957, 26883.

together with II in the composition of III. The presence of II in the reaction mixture means that the isomerization of I into II proceeds, as it seems, more rapidly than the interaction of I with $HgCl_2$, though the mechanism of II formation has not been made clear. It has been established that II does not react with $HgCl_2$, and that I is converted into II in presence of 20%-ual HCl, yield 52%. The mercury complex $C_{18}H_{17}OHgBr_3.H_2O$ (melting point 180-183°) described by the author earlier (see RZhKhim, 1956, 71562) was produced by the interaction of I with $HgBr_2$ (yield 84%). It is surmised that IV forms from I and $HgCl_2$ according to the scheme: $I+HgCl_2 \rightarrow (CH_3)_2C(OH)C(C_6H_5)-(OH)C(HgCl)=CClC_6H_5 \longrightarrow (CH_3)_2C(OH)(C_6H_5)=C(HgCl)-$

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Fabritsy, A.

MT

Fabritsy, A.

Transformations of pinacones with substituted acetylene residues. XII. Action of mercuric acetate on *unsym*-**dimethylphenyl(phenylethynyl)ethylene glycol.** E. D. Venus-Danilova and A. Fabritsy (Lensovet Technol. Inst., [illegible] grad). *Zhur.* ~~Obshchei Khim.~~ 26, [illegible] 51, 1934*h*. —Heating a 1: [illegible] (OH)CPh(OH)C:CPh in 60% AcOH [illegible] 83.5-97% glassy substance contg. 2[illegible] Hg [illegible] ently impure $Me_2C(OH)CPh:CBzHgOBz$ (I), with [illegible] proportion of reactants the yield dropped to [illegible]. The product forms a *2,4-dinitrophenylhydrazone*, decomp. 144 [illegible]. The substance dissolves with fluorescence in aq. H_2SO_4 and reacts with concd. HCl yielding a yellow complex, $C_{18}H_{18}$-$OHgCl_2.H_2O$, decomp. 160-1°, and 2-hydroxy-2,5-dihydrofuran. The glassy product with alc. HCl gave $Me_2C(OH)$-$CPh:CBzHgCBz:CPhCMe_2OH$, m. 154-5°. If the glycol and $Hg(OAc)_2$ react in EtOH, there is formed in 3 hrs. refluxing 100% I, m. 104-10°; *2,4-dinitrophenylhydrazone*, decomp. 144°; $CaCl_2$ with pure I yields a *substance*, m. 165-6°, identical with that formed from glassy I and $CaCl_2$. Refluxing 5,5-dimethyl-2,4-diphenyl-2-hydroxy-2,5-dihydrofuran with $Hg(OAc)_2$ in EtOH 5 hrs. gave 66% *5,5-dimethyl-2,4-diphenyl-3-acetomercuri-2-hydroxy-2,5-dihydrofuran*, m. 99-105°; *2,4-dinitrophenylhydrazone*, decomp. 144°; the furan deriv. with $CaCl_2$ forms a product, m. 200-2°, identical with that formed from the glycol, $HgCl_2$, and NH_3 (*loc. cit.*).

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Fabritsy, A.

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Transformations of pinacones with substituted acetylenic radicals. XIII. Action of salts of mercury on unsym-methyldiphenyl(phenylethynyl)ethylene glycol and trimethyl(phenylethynyl)ethylene glycol. E. D. Venus-Danilova and A. Fabritsy (Lensovet Technol. Inst., Leningrad). *Zhur. Obshchei Khim.* 26, 2468-[illegible](1956); cf. preceding abstr.—Treatment of $Me_2C(OH)CMe(OH)C{:}CPh$ with an equimolar amt. of $HgCl_2$ in 95% EtOH with ice cooling yielded a yellowish sparingly-sol. solid which darkens at 135°, and which was identified as the *$HgCl_2$ salt of 4,5,5-trimethyl-2-phenyl-3-chloromercuri-2-hydroxy-2,5-dihydrofuran.* If the reaction is run in the presence of a small amt. of concd. HCl there is obtained 66% colorless product, m. 102-3° (decompn.), identified as the *$HgCl_2$ salt of 4,5,5-trimethyl-2-phenyl-2-hydroxy-2,5-dihydrofuran.* The 1st salt is $C_{13}H_{16}OCl_4Hg_2$, the 2nd is $C_{13}H_{16}OCl_2Hg$. Treatment of $Ph_2C(OH)CMe(OH)C{:}CPh$ with $HgCl_2$ in 95% EtOH as above gave after 0.5 hr. at 50° a yellowish amorphous product, $C_{46}H_{36}O_2$, m. 110-23°, which is apparently formed by loss of 2 moles H_2O from 2 moles of the glycol; oxidation with $KMnO_4$ gave BzOH and Ph_2CO; the substance did not appear to be homogeneous. Similar reaction with $Hg(OAc)_2$ at room temp. gave 68.7% $Ph_2C(OH)CMe(OH)C(HgOAc){:}CPhOAc$, which decomp. on warming in EtOH forming an amorphous yellow mass sol. in org. solvents, which is apparently a form of $Ph_2C(OH)CMe{:}CBzHgOAc$.

G. M. Kosolapoff

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FABRITSY, A

VENUS-DANILOVA, E.D.; PAVLOVA, L.A.; FABRITSY, A.

Study of oxydihydrofurans. Part 6: Reaction of 5,5-dimethyl-2,4-diphenyl -2-oxydihydrofurna-2,5 and 2,4-dinitrophenylhydrazine. Zhur. ob. khim. 27 no.9:2423-2429 S '57. (MIRA 11:3)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Furan) (Hydrazine)

AUTHORS: Pavlova, L. A., Fabritsy A., Venus-Danilova, ~~E. D.~~

79-28 3-19/61

TITLE: Investigation of the Reactions of Pinacols With Substituted Acetylene Radicals (Issledovaniye prevrashcheniy pinakonov s zameshchennymi atsetilenovymi radikalami). XV. The Action of Sulfate of Mercury on the Asymmetric Dimethylphenyl-Phenyl-Acetylenyl- and the Asymmetric Methyl-Diphenyl-Phenylacetylenyl-Ethylene-Glycols (XV. Deystviye sernokisloy rtuti na nesimm. dimetil-fenil-fenil‿atsetilenil- i nesimm. metil-difenil-fenilatsetilenil-etilen‿glikoli)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 3, pp. 651-657 (USSR)

ABSTRACT: Using mercury salts the authors have not succeeded until now in obtaining hydration products of acetylene-double-tertiary α-glycols. It was observed that the asymmetric methyl-diphenyl-phenylacetylenyl-ethylene glycol (formula I b) in aqueous as well as in acetone solution converts to the earlier described $C_{46}H_{36}O_2$ (ref. 3) in the presence

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Investigation of the Reactions of Pinacols With Substituted Acetylene Radicals. XV. The Action of Sulfate of Mercury on the Asymmetric Dimethylphenyl--Phenyl-Acetylenyl- and the Asymmetric Methyl-Diphenyl-Phenylacetylenyl-Ethylene-Glycols

79-28-3-19/61

of small amounts of sulfuric acid. It can be assumed from the dehydration and the regrouping within the molecule that in the beginning a 2,5,5-triphenyl 4-vinyl-dihydrofurfuran-4,5 is formed which then converts to a dimer, analogous to 2,3,3,4-tetramethyl-2-(β,β) dimethylvinyl-dihydrofurfuran-2,3 (ref. 4). The parallel experiment to convert glycol (I b) with diluted sulfuric acid without sulfate of mercury was not successful, as was to be expected. The asymmetric dimethyl-phenyl-phenylacetylenyl-ethylene glycol (I a) was subjected to the action of sulfate of mercury on various conditions. In aqueous and weakly acidous sulfuric acid 5,5-dimethyl (-2,4-diphenyl-2 oxydihydrofurfuran-2,5 (II) resulted, in acetone solution a viscous oil which did not have any hydroxyl group and slowly decolored a bromo- and potassiumpermanganate solution. The synthetized product could be obtained pure by vacuum distillation. The same product resulted from the action of sulfate of mercury on glycol in acetone solution. According to its elementary solution and its molecular weight this

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Investigation of the Reactions of Pinacols With Substituted Acetylene Radicals. 79-28-3-19/61
XV. The Action of Sulfate of Mercury on the Asymmetric Dimethylphenyl--Phenyl-Acetylenyl- and the Asymmetric Methyl-Diphenyl-Phenylacetylenyl-Ethylene-Glycols

product could either be an isopropylidene derivative of glycol (VII) or that of a condensation of oxydihydrofurfurans (II) with acetone-5,5-dimethyl-2,4-diphenyl-2 acetonyldihydrofurfuran-2,5 (VIII). The attempt to try and obtain the bond (VIII) by condensation of dihydrofurfurans (II) with acetone was successful. The heating of the acetone solution of the compound (II) with sulfate of mercury lead to a product which is identical with the one synthetized from glycol under these conditions. This experiment makes it possible to acknowledge the compound obtained from glycol in acetone solution under the action of sulfate of mercury, as being 5,5-dimethyl-2,4-diphenyl-2-acetonyl-dihydrofurfuran-2,5. The identity of the products obtained from (I a) and (II) was illustrated by taking the absorption spectra in ultraviolet light.

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There are 2 figures and 12 references, 10 of which are Soviet.

Investigation of the Reactions of Pinacols With Substituted Acetylene Radicals. 79-28-3-19/61
XV. The Action of Sulfate of Mercury on the Asymmetric Dimethylphenyl--Phenyl-Acetylenyl- and the Asymmetric Methyl-Diphenyl-Phenylacetylenyl-Ethylene-Glycols

ASSOCIATION: Leningradskiy tekhnologicheskiy institut imeni Lensoveta (Technological Institute imeni Lensovet , Leningrad)

SUBMITTED: January 23, 1957

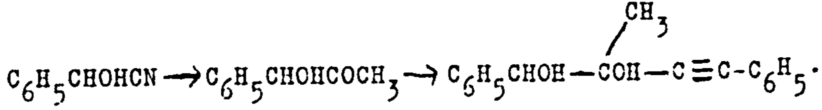
Card 4/4

AUTHORS: Fabritsy, A., Venus-Danilova, E. D. SOV/79-28-12-14/41

TITLE: Investigation of the Transformations of Sec-Tert-α-Glycols of the Acetylene Series Under the Action of Mercury Salts (Issledovaniye prevrashcheniy vtorichno-tretichnykh α-glikoley atsetilenovogo ryada pod vliyaniyem soley rtuti) III. 2-Methyl-1,4-Diphenyl Butyne-3-Diol-1,2 (III.2-metil-1,4-difenilbutin-3-diol-1,2)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol 28, Nr 12, pp 3227-3231 (USSR)

ABSTRACT: The results of the reaction of another (Refs 1, 2) sec-tert-α-glycol of the acetylene series, of 2-methyl-1,4-diphenyl butyne-3-diols-1,2(I) with mercury chloride and sulfate in alcohol solution are described. This glycol was synthesized according to Zh. J. Jotsich from phenyl-acetyl carbinol and magnesium bromo-phenyl acetylenyl:



$$C_6H_5CHOHCN \rightarrow C_6H_5CHOHCOCH_3 \rightarrow C_6H_5CHOH-\overset{CH_3}{C}OH-C\equiv C-C_6H_5$$

·Compound (I)

on the action of the mercury chloride dissolved in alcohol

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Investigation of the Transformations of Sec-Tert-α-Glycols of the Acetylene Series Under the Action of Mercury Salts. III. 2-Methyl-1,4-Diphenyl Butyne-3-Diol-1,2

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rapidly separated a white, silk-like product which on heating the mixture gradually entered solution so that 3-methyl-2,5-diphenyl furan (Refs 6, 7-(III)) resulted as final product. It turned out that the final product obtained as crystals contained mercury and chlorine, and that, according to its analysis, it corresponded to the mercurized 3-methyl-2,5-diphenyl furan (II). It is considerably stable, even does not change on boiling with alcohol and water, and passes to a substituted furan only if hydrochloric acid is added, and on heating. Based on these results it may be assumed that the transition of the sec-, tert-, α-glycols of the acetylene series to the substituted furans takes place under the action of mercury chloride by way of the mercurized furans according to scheme 2. There are 13 references, 10 of which are Soviet.

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Investigation of the Transformations of Sec-Tert-α-Glycols of the Acetylene Series Under the Action of Mercury Salts. III. 2-Methyl-1,4-Diphenyl Butyne-3-Diol-1,2 SOV/79-28-12-14/41

ASSOCIATION: Silezskiy politekhnicheskiy institut, Pol'sha i Leningradskiy tekhnologicheskiy institut imeni Lensoveta (Silesian Polytechnic Institute, Poland, and Leningrad Technological Institute imeni Lensovet)

SUBMITTED: December 20, 1957

Card 3/3

FABRITSY, A.; GOSHCHINSKIY, S.

Effect of mercury salts on 2-methyl-4-phenyl 1,2-butene-3-diol. Zhur.ob. khim. 29 no.1:81-86 Ja '59. (MIRA 12:4)

1. Silesskiy politekhnicheskiy institut, Pol'sha.
(Mercury salts) (Butenediol)

FABRITSY, A.; KUBALYA, I.

Reactions of mercury salts with secondary-tertiary α-glycols of the acetylene series. Part 3: 5,5-dimethyl-1,2-diphenyl-3-hexyne-1,2-diol and mercuric chloride and sulfate. Zhur. ob. khim. 30 no.11:3604-3607 N'60. (MIRA 13:11)

1. Silesskiy politekhnicheskiy institut, Pol'skaya Narodnaya Respublika.

(Hexynediol) (Mercury chloride) (Mercury sulfate)

FABRITSY, A.; KUBALYA, Y.

Reactions of mercury salts with secondary-tertiary acetylenic α-glycols. Part 4: 1,2,4,-Triphenyl-3-butyne-1,2-diol, 3-methyl-5-phenyl-4-pentyne-2,3-diol, and mercuric chloride. Zhur. ob. khim. 31 no. 2:476-479 F '61. (MIRA 14:2)

1. Seleziyskiy politekhnicheskiy institut, Polskaya Narodnaya Respublika.
(Butynediol) (Pentynediol) (Mercury chloride)

FABRITSY, A.

Preparation of stable salts of 4, 5, 5-trimethyl-2-phenyl-2, 5-hydrofurylium. Zhur.ob.khim. 31 no.5:1548-1551 My '61.
(MIRA 14:5)

1. Silezskiy politekhnicheskiy institut, Pol'skaya Narodnaya Respublika.
(Furan)

PISICA, Constantin; FABRITIUS, Klaus

Contributions to the study of the Proctotrupoidea (Hym.)
in Rumania. Anal St Jassy II 10:121-124 '64.

FABRY, A.

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VESTNIK. Praha, Czechoslovakia, Vol. 5, No. 7/8, 1958.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 9, September 1959. Unclassified.

FABRY, Andrej, inz., ScC.

Effect of the sowing time on the transiation dynamics of winter varieties of rape and colza into the generative phase. Rost vyroba 9 no.5:525-540 '63.

1. Vysoka skola zemedelska, katedra rostlinne vyroby, Praha.