"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

GRYUNER,V.S., professor; STAROSTINA,N.A., kandidat khimicheskikh nauk
REZNIKOVA,S.B., nauchnyy sotrudnik; AFANAS'YEVA,N.V., nauchnyy
sotrudnik; OSMOLOVSKAYA,V.A.; NIKIFOROVA,G.V.; BUDORAGIN,M.G.,
proizv.instr. LYUBIMOV,P.V.

Testing the technical qualities of berry varieties for confection-
ary products. Trudy VKNII no.10:84-105 '54. (MLRA 8:9)
(Berries)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

REZNIKOVA, S. I.

I. S. LILEEV, Zh Khim Prom 18, No. 11, 22-6, 1941

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

MARKOV, S.S.; REZNIKOVA, S.O.

Production of aluminum sulfate from clay. Sbor.rab.Inst.prikl. khim. no.39:69-90 '47. (MLRA 7:3)
(Aluminum sulfate)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

S/137/60/000/009/001/029
A006/A001

Translation from: Referativnyy zhurnal, Metallurgiya, 1960, No. 9, p. 35,
19500

AUTHOR: Reznikova, S.Ya.

TITLE: The Effect of Rare-Earth Elements on the Sulfur and Oxygen Content in Liquid Steel and the Condition of Sulfur in Solid Steel

PERIODICAL: V sb.: Redkozemel'n. elementy v stalyakh i splavakh, Moscow, Metallurgizdat, 1959, pp. 50-76

TEXT: The author studied conditions of formation of oxide and sulfide impurities of Ce, La in Cr-Ni-Mo-steel (with a Mn content of < 0.2%), melted in basic and acid ~ 3-kg-crucibles in an induction furnace at 1,550 and 1,600°C. It was established that Ce had a greater deoxidizing capacity than Si. Ce deoxidation products partially float up and interact with the lining; the rate of their removal increases with rising temperature. Admixtures of Fe-Ce (0.17-2.0% Ce) promote desulfurization. The desulfurizing capacities of Ce and La

Card 1/2

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

S/137/60/000/009/001/029
A006/A001

The Effect of Rare-Earth Elements on the Sulfur and Oxygen Content in Liquid Steel and the Condition of Sulfur in Solid Steel

(Al-La alloys with 2% La) are the same. The author investigated the effect of the admixture of rare-earth elements on the distribution of S in solid steel and on its mechanical properties.

I.K.

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

18(1,3) PHASE I BOOK EXPLOITATION SOV/3402

Soveshchaniye po primeneniyu redkozemel'nykh elementov dlya uluchsheniya fiziko-mekhanicheskikh svoystv konstruktsionnykh i spetsial'nykh staley i splavov

Redkozemel'nyye elementy v stalyakh i splavakh; trudy soveshchaniya.... (Rare Earth Elements In Steels and Alloys; Transactions of a Conference on the Use of Rare Earth Elements To Improve the Physical and Mechanical Properties of Structural and Special Steels and Alloys) Moscow, Metallurgizdat, 1959. 246 p. Errata slip inserted. 3,150 copies printed.

Ed.: A. A. Prozhogin; Ed. of Publishing House: A. L. Ozeretskaya; Tech. Ed.: P. G. Islent'yeva.

PURPOSE: This book is intended for engineers, technicians and scientists engaged in the metallurgy of heavy and nonferrous metals, and may be used by students of higher educational schools, who are specializing in the metallurgical science of these metals.

COVERAGE: The book contains 14 articles which give general results of investigations and uses of rare earths as alloying components in steels and alloys. The influence of rare earth additives in improving the technical properties of structural, fire-resistant and other steels and alloys is also described. Figures, tables and references (mostly Soviet) accompany each article. No personalities are mentioned.

Kogan, B. I., Candidate of Economical Sciences, Institut mineralogii, geokhimii i kristallokhimii redkikh elementov, AN SSSR (Institute for Mineralogy, Geochemistry and Chemical Crystallography of Rare Earth Elements, AS USSR). The State of Rare Earths Production and the Trend in Its Development (According to non-Soviet Literature) 5

Yeremichev, V. V., Engineer, Candidate of Chemical Sciences; N. M. Nikolayev; and R. P. Kuz'mina, Engineer, Methods of Determining Small Amounts of Rare Earths in Steels 26

Savitskiy, Ye. M., Doctor of Chemical Sciences; V. P. Terekhova, Candidate of Technical Sciences; and V. A. Taikalov, Engineer, Investigation of the Physicochemical Interaction of Rare Earth Metals With Iron and Steel 31

Reznikova, S. Ya., Engineer. Effect of Rare Earths on the Sulfur and Oxygen Contents of Molten Steel and the State of Sulfur in Solid Steel 50

Kultygin, V. S., Engineer. Dependency of the Mechanical Properties of Structural Steel 37KhN3A on Reducing Agents and Methods of Extraction 77

Gulyayev, B. B., Doctor of Technical Sciences; I. A. Shapranov, Candidate of Technical Sciences; O. N. Magnitskiy, Candidate of Technical Sciences; and Z. D. Novzorova, Engineer. Influence of Rare Earths on the Crystallization and Mechanical Properties of Cast Steel 92

Verbol'skaya, Ye. D., Engineer; I. V. Isakov, Engineer; and A. Ye. Khlebnikov, Doctor of Technical Sciences. The Effect of Cerium Additives on the Properties of Cr-Ni-Mo Steel for Shaped Steel Casting 118

Gol'dshteyn, Ya. Ye., Candidate of Technical Sciences, and O. D. Zhizhakina, Engineer. The Effect of Cerium on the Structure and Properties of Cast and Forged Steel 130

Kopp, L. P., Candidate of Technical Sciences, and G. K. Fatukhov, Candidate of Technical Sciences. Study of the Effect of Rare Earths on the Physicomechanical Properties of Cr-Ni-Mo Steel 155

Studnits, M. A., Candidate of Technical Sciences; Yu. K. Konov, Engineer; and A. I. Sokolikov, Engineer. The Influence of Rare Earths on the Nature of Fracture and the Structure and Properties of Steel 183

Danilova, G. P., Candidate of Technical Sciences; M. V. Mal'tsev, Doctor of Technical Sciences; M. V. Poplavko, Candidate of Technical Sciences. Additives for Welding Titanium Alloys 196

Ioffe, V. M., Candidate of Technical Sciences, and V. M. Burov, Engineer. Electrochemical Method of Producing Misch Metal-Magnesium Alloys for Modified Cast Iron 204

Kopp, L. P., Candidate of Technical Sciences; L. M. Shigidina, Engineer; and O. D. Sudakova. The Problems of Causes for the Low Plasticity of Kh23N18-Type Steel at High Temperature and Possibilities of Improving This Condition With Rare Earths 211

REZNIKOVA, S. YA.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

ACC NR: AP6035885 (A) SOURCE CODE: UR/0413/66/000/020/0124/0124

INVENTOR: Shapranov, I. A.; Stepanov, S. A.; Petrova, E. V.; Reznikova, S. Ya.; Kul'bitskiy, A. K.; Bulychev, A. I.

ORG: none

TITLE: Steel. Class 40, No. 187315

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 20, 1966, 124

TOPIC TAGS: steel, nickel molybdenum steel, vanadium ~~containing~~ steel, cerium ~~containing steel~~

ABSTRACT: An Author Certificate was issued for a steel containing silicon, manganese, nickel, and molybdenum. To improve weldability and mechanical properties, the composition of the steel is set as follows (in %): 0.08 max. carbon, 0.5 max. manganese, 0.5 max. silicon, 13—15 nickel, 5—6.0 molybdenum, 0.1—0.2 vanadium, 0.02 max. cerium, 0.015 max. sulfur, and 0.015 max. phosphorus.

SUB CODE: 11/ SUBM DATE: 16Dec64/ ATD PRESS: 5106

UDC: 669.14.018.62: :669.15'24'28-194

Card 1/1

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

REZNIKOVA, S. YA.

Deoxidizing properties of carbon, manganese, and silicon in metal melted in a basic hearth. S. Ya. Reznikova. *Trudy Nauch.-Tekh. Obshchestva Chernoi Met.* 4, 218-38 (1955); *Referat. Zhur., Met.* 1956, No. 1011.—Melts were conducted in an induction furnace with a magnesite crucible of 3-kg. capacity. Into the melt of tech. steel, deoxidizers were introduced, and after a fixed interval samples were taken. During sampling a Pt/Pt-Rh was used to det. the metal temp. The samples were analyzed for content of deoxidizing elements and O (by method of hot extn.). On deoxidizing with Fe-Si and Fe-Mn or their mixt. it was established that the higher the ratio Mn:Si, the more rapidly is established min. O content in the metal. Thus, on deoxidizing with Mn or mixt. of Mn and Si, taken in the ratio 10:1, min. (% O) is reached after 2-3 min., while on deoxidizing with Si or Mn and Si (Mn:Si ≤ 2) after 20-30 min. The deoxidizing ability of Si in basic crucible $[(\% O)^{\circ}_{Si}]$, $\lg (\% O)^{\circ}_{Si} = (-7750/T) + 1.787 - {}^{1}/_{2} \lg (\% Si) + 0.11 (\% Si)$ is higher than on melting in an acid crucible. For detn. of concn. of O $[(\% O)^{\circ}_{Mn}]$ in equil. with Mn the equation $(\% O)^{\circ}_{Mn} = 91.5 L_0 \times K^{\circ}_{Mn}/[(\% Mn) + K^{\circ}_{Mn}]$, where $\lg K^{\circ}_{Mn} = 5550/T + 2.338$ and $\lg L_0 = 5000/T + 0.035$, is presented. The deoxidizing properties of Mn in a basic crucible are 5-6 times less than in an acid one, while on addn. of Si it approaches the latter. It was found that the connection between concn. of O and C in Fe can be expressed by the equation $\lg (\% O)_e = 500/T - 2.734 - \lg (\% C)$.

V. N. Bednarski

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

[illegible]

Reznikova, T. M. - "Blood transfusion in a repeat thrombosis on a tubercular lung," In the symposium: V. N. Shamov, Kiev, 1949, p. 201-05

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949.)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

53300

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S/020/60/131/06/41/071
B004/B007

AUTHORS: Gamus-Chernyavskaya, Ye. M., Reznikova, S. Sh., Stepukhovich, A. D.

TITLE: Composition of the Products Obtained by Initiated Cracking of Gaseous Alkanes and the Mechanism of This Process

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 131, No. 6, pp. 1376 - 1379

TEXT: The authors investigated the cracking of propane, butane, and isobutane, which was initiated by the addition of azomethane. The reaction products were chromatographically determined. The results are shown in table 1. Under the experimental conditions (propane: 364°, 80 torr, 10 min; butane: 355°, 70-76 torr, 10 min) no thermal cracking occurred as yet without initiator. Small admixtures (1-3%) of azomethane, however, caused intensive cracking. Unlike what is the case with thermal cracking, dehydrogenation in the case of propane predominates over demethanization. The CH_4 yield is nearly double that of ethylene. With increasing addition of azomethane (7-10%) the ethylene yield becomes 7.5 times greater, and the C_3H_6 yield is only doubled. The CH_4 yield, however, remains greater than the C_2H_4 yield. These results prove the initiating action of the CH_3 radicals. At

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

Composition of the Products Obtained by Initiated Cracking of Gaseous Alkanes and the Mechanism of This Process

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S/020/60/131/06/41/071
B004/B007

azomethane concentrations of between 3 and 10% the ratio C_2H_4 : C_3H_6 increases from 0.25 to 1, approximately proportional to the concentration of azomethane. In the initiated cracking of n-butane, the ratio C_3H_6 : C_2H_4 : H_2 equals 10 : 2.5 : 1, whereas in thermal cracking (548°, 180 torr, 6 min) this ratio is 9 : 3.5 : 1 (Ref. 4). Also here demethanization predominates. In isobutane the ratio C_3H_6 : C_2H_4 : H_2 in initiated cracking is 2 : 6 : 1, and in thermal cracking 7 : 3 : 1. With increased addition of azomethane, the action of the initiator is limited, as predicted by the authors (Ref. 5). The formation of propane in the initiated cracking of isobutane has as yet not been explained. The authors suggest trying initiated cracking on an industrial scale as a new method. They thank R. V. Kosyreva for her collaboration in analyses. There are 1 table and 5 Soviet references.

4

Card 2/3

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

Composition of the Products Obtained by Initiated Cracking of Gaseous Alkanes and the Mechanism of This Process

80095
S/020/60/131/06/41/071
B004/B007

ASSOCIATION: Saratovskiy gosudarstvennyy universitet im. N. G. Chernyshevskogo (Saratov State University imeni N. G. Chernyshevskiy)

PRESENTED: December 7, 1959, by V. N. Kondrat'yev, Academician

SUBMITTED: November 30, 1959

Card 3/3

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

GANELINA, Ye.Sh.; REZNIKOVA, T.N.

Existence of a silver salt of telluro-12-tungstic hetero polyacid. Zhur. neorg. khim. 8 no.8:1891-1894 Ag '63. (MIRA 16:8)

(Tungstic acid) (Tellurium compounds) (Silver salts)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

MINKOV, I.; REZNIKOVA, V.

Tires for any road. Za rul. 20 no.5:11 My '62. (MIRA 16:4)

1. Voronezhskiy shinnyy zavod.

(Tires, Rubber)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

P/007/62/000/015/001/002
D001/D101

AUTHORS: Reznikova, V., Candidate of Technical Sciences, and Pshenichner, B., Member (see Association)

TITLE: The prospects of space conquest

PERIODICAL: Skrzydlata Polska, no. 15-16, 1962, 16-17

TEXT: The article is an informative account of achievements in space research since the first man-made satellite was launched in the USSR. A popular outline is given of prospects in space travel and of the use of satellites in communications, weather forecasting and other services. There are 2 figures.

ASSOCIATION: Gosudarstvennoye astronomo-geodezicheskoye obshchestvo (National Astronomo-geodetical Association) (Pshenichner, B.)
/Abstracter's note: The Association is mentioned in the periodical as Astronomo-geophysical/

Card 1/1

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

REZNIKOVA, V.I.

Maps for propaganda purposes. Sbor.st.po kart. no.10:51-62 '58. (MIRA 12:1)

(Propaganda, Communist) (Maps)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

REZNIKOVA, V.I.

Maps for propagandists and agitators. Sbor.st.po kart.no.6:19-28 '55. (MIRA 10:12)

(Maps)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

[illegible], V.I.

[illegible], V.I.: "Soviet [illegible] (for [illegible] [illegible] the [illegible] [illegible] (." [illegible] Kiev [illegible] Education [illegible]. [illegible] of [illegible] of Geodesy, Aerial Photography, and Cartography [illegible] Moscow, 1956.
(Dissertation For the Degree of Candidate in Technical Sciences)

So: [illegible] Letopis', No. [illegible], 1956

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

REZNIKOVA, V.N.

Cerebrospinal pressure and change in the fluid's biochemical structure in newborn infants with disorders of cerebral blood supply and cerebral hemorrhage. Pediatriia 39 no.3:32-35 Mr '61. (MIRA 14:4)

1. Iz Sverdlovskogo nauchno-issledovatel'skogo instituta okhrany materinstva i mladenchestva (dir. - kand.med.nauk R.A. Malysheva, nauchnyy rukovoditel' - dotsent R.Ye. Leyenson).
(BRAIN—BLOOD SUPPLY) (INFANTS (NEWBORN)—DISEASES)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

SOV/78-3-10-2/35

AUTHORS: Fomin, V. V., Reznikova, V. Ye., Zaytseva, L. L.

TITLE: The Production of Plutonium Tribromide and Some of Its Properties (Polucheniye i nekotoryye svoystva tribromida plutoniya)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 10, pp 2231-2235 (USSR)

ABSTRACT: The spectra of absorption of solid plutonium tribromide were taken at the temperature of liquid nitrogen. A method was described according to which plutonium tribromide can be produced by acting HBr on plutonium (IV)-oxalate at a temperature of 500°C. The specific weight of plutonium tribromide thus produced is 5,54 ± 0,02. The density of plutonium tribromide depends on the composition of the compounds which are treated with HBr. The values vary between 5,0 g/cm^3 and 5,8 g/cm^3. The hygroscopic properties of plutonium tribromide were analyzed and it was found that the bromide does not show a perceptible moisture absorption after it has been kept over sulfuric acid for 7 hours. The existence of two crystal hydrates of $PuBr_3$ was found and their spectra of absorption were taken. It was found that $PuBr_3$

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

and its crystal-hydrate compounds decompose when α-rays act on them. The decomposition of bromides by action of α-radiation is observed by the appearance of bromine vapor over $PuBr_3$.

There are 3 figures, 1 table, and 5 references, 3 of which are Soviet.

SUBMITTED: April 14, 1958

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

SOV/78-3-9-2/38

AUTHORS: Fomin, V. V., Dmitriyeva, N. A., Reznikova, V. Ye.

TITLE: Preparation and Properties of Plutonium Halides (Polucheniye i svoystva galogenidov plutoniya) I. On Plutonium Chlorides (I. O khloridakh plutoniya)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 9, pp 1999-2005 (USSR)

ABSTRACT: The chlorination of plutonium at increased CCl_4 pressure was investigated. When chlorinating micro-quantities of thorium and plutonium, it was ascertained that the sublimation of the developed plutonium chloride in a CCl_4 current at low temperature proceeds like that of thorium. In the chlorination of UO_2 and PuO_2 by carbon-tetrachloride vapors uranium dioxide at a temperature of 350-450°C is transformed into uranium tetrachloride. At about 500°C plutonium oxide is transformed into plutonium-III-chloride. The specific weight of $PuCl_3$ is 5,33 g/cm^3. In the vaporization of hydrochloric solutions of plutonium-IV-

Card 1/2

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

SOV/78-3-9-2/38

Preparation and Properties of Plutonium Halides. I. On Plutonium Chlorides

chloride at 70-100°C in the air, a compound is separated in which the ratio Pu : Cl is 2 : 3. In vacuum this compound separates water and oxygen. The possibilities of preparing plutonium-III-chloride by thermodynamical methods were discussed. In the chlorination of plutonium oxide in the presence of rubidium chloride a red-orange substance is formed. The adsorption spectrum of this compound indicates the presence of the Pu-IV-ion in solution. This experiment demonstrates that the preparation of complex chloride of tetravalent plutonium by the dry method is possible. There are 1 figure, 5 tables, and 12 references, 4 of which are Soviet.

SUBMITTED: April 11, 1958

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APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

KOCHKIN, D.A.; LUK'YANOVA, L.V.; REZNIKOVA, Ye.B.

Oxygen-containing organotin and organolead compounds. Part 3: Preparation and properties of stannanols. triphenylplumbanols, polydiphenylplumboxane, and their derivatives. Zhur.ob.khim. 33 no.6:1945-1951 Je '63. (MIRA 16:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut Ministerstva zdravookhraneniya SSSR.
(Tin organic compounds) (Lead organic compounds)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

L 13350-63 EWP(j)/EPF(c)/EWT(m)/BDS ASD Pc-4/Pr-4 RM/WW

ACCESSION NR: AP3002626 S/0079/63/033/006/1945/1951

AUTHOR: Kochkin, D. A.; Luk'yanova, L. V.; Reznikova, Ye. B. 7

TITLE: Investigations in the area of oxygen-containing organotin and organolead compounds. 3. Preparation and properties of stannanols, triphenylplumbanol, polydiphenylplumboxane and their derivatives 7

66
64

SOURCE: Zhurnal obshchey khimii, v. 33, no. 6, 1963, 1945-1951

TOPIC TAGS: oxygen-containing organotin, organolead compounds, stannanol, triphenylplumbanol, polydiphenylplumboxane, tetramethylstannane, trimethylbromostannane, triethylstannanol, hexaethyldistannoxane, dimethyethylchloromethylsilane, dimethylethylmagnesium-chloromethylsilane, dimethylethylsilylpropanol, dimethylethylsilyl triethylstannyl methane, triethylsiloxy triethylsiloxy triethylstannane, glycidoxy tributylstannane, triphenylmethacryloxyplumbane, polydiphenylplumboxane, hydrolysis, dehydration, IR spectrum

ABSTRACT: The following stannanols, stannoxanes, plumbanols and plumboxanes and derivatives were synthesized: tetramethylstannane, trimethylbromostannane, triethylstannanol, hexaethyldistannoxane, dimethyethylchloromethylsilane, dimethylethylmagnesium-chloromethylsilane, dimethylethylsitylpropanol, dimethylethylsilyl

Card 1/2

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

REZNIKOVA, Ye.B.; TYULIN, V.I.; TATEVSKIY, V.M.

Temperature dependence of the infrared absorption bands of gaseous 1,3-Butadiene. Opt. i spektr. 13 no.3:364-368 S '62. (MIRA 15:9)

(Butadiene—Spectra)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

STARINSKIY, V.P., kand.tekhn.nauk; REZNIKOVA, Z.G., inzh.

Water power characteristic of condensing thermal electric power plants and its construction and use. Izv. vys. ucheb. zav.; energ. 6 no.5:98-103 My '63. (MIRA 16:7)

1. Institut vodnykh problem AN BSSR.
(Electric power plants)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

25003

S/197/61/000/006/003/007
B104/B201

21.5210

AUTHORS: Kirko, I., Reznikovich, K., Todes, O., Filippov, M.

TITLE: Circulation of materials during exposure in an atomic reactor (in loops). I. Schemes of circulation lines

PERIODICAL: Akademiya nauk Latviyskoy SSR, Izvestiya, no. 6(167), 1961, 27 - 32

TEXT: The production of short-life radioactive isotopes necessitates installing closed circulation systems in order to subject these substances to repeated exposure. As depending on phase and form of the material subjected to irradiation, one has to distinguish between loops through which as a whole the portionated material to be irradiated flows, and loops through which the thoroughly mixed material is pumped. On the scheme shown in Fig. 1, the irradiation of a solid substance transported in portions through the closed loop, is studied first. Transport from irradiation chamber (Г) to emission chamber (И) is performed by a band conveyor or a similar appliance. A quantitative analysis of the circulation line is independent of the structural details, and can be

Card 1/4

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performed in a general form. The balance equation of the atoms activated by neutron irradiation per unit length of the irradiation chamber reads: $dn/dt = \alpha - \lambda n$. Here, $\alpha = A/a = J_0 S/a$, where A is the neutron flux, a the irradiation chamber length, J_0 the neutron flux density in the irradiation zone, and S the absorption surface. The term λn characterizes the decay rate of the activated atoms in the irradiation chamber itself. The following balance equation holds for the emission chamber: $dn^*/dt = -\lambda n^*$. For the total number of activated atoms in the emission chamber the authors obtain

$$N^* = \int_{x=0}^{x=a^*} n^* . dx = w^* \int_{(\tau^*)} n^* . dt, \quad . . \qquad (1.6)$$

where $\tau^* = a^*/w^*$ denotes the time spent in the emission chamber, a* is the emission chamber length. When the material subjected to irradiation is liquid, the mathematical study can, as is shown here, be conducted in the same manner, if suitable parameters are introduced. If the material irradiated consists of small solid particles, it will be advisable to

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convey it in a liquid or gas flow. The production of "boiling bed" apparatus (Fig. 3) for the transport of such materials is of special interest. The equations $\frac{dN}{dt} = A - \lambda N - \frac{N}{\tau} + \frac{N^*}{\tau^*}$ (2.1) and $\nu\frac{dN}{dt} = -\lambda N^* - \frac{N^*}{\tau^*} + \frac{N}{\tau}$ (2.2) are given for these apparatuses, where N is the total number of atoms activated in the irradiation chamber, τ is the mean time spent in the irradiation chamber. The symbols with asterisks refer to analogous quantities in the emission chamber. Another scheme discussed is shown in Fig. 4. In systems of this type the agent is moved together with the particles to be transported. Only in the irradiation chamber there is a "boiling bed" with complete mixing of the material without any longitudinal displacement. The material irradiated is continuously conveyed to the emission chamber. The balance equation $\partial n^*/\partial t = -\lambda n^* - w^*\partial n^*/\partial x$ is given for the emission chamber, where n^* is the concentration of active atoms per unit length of the emission chamber, w^* the velocity of the material passing through. The balance equation for the irradiation chamber reads $dN/dt = A - \lambda N - N/\tau + n^*_H w^*$. Here, n^*_H is the concentration of particles

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S/197/61/000/006/003/007
B104/B201

Circulation of materials ...

at the exit of the emission chamber. There are 4 figures and 2 Soviet-bloc references.

Legend to the figures: (1) pump

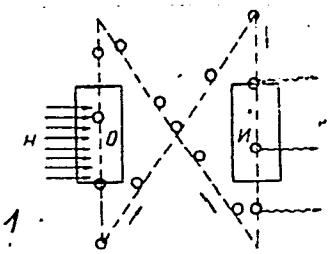

Fig. 1

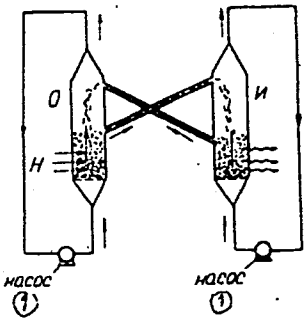

Рис. 3. Fig. 3

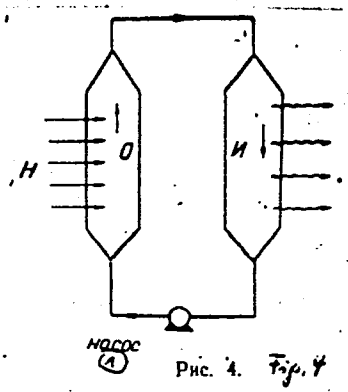

Рис. 4. Fig. 4

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

ASHKINAZI, Aleksandr L'vovich; YEKIMOV, K.K., inzh., retsenzent; REZNIKOVICH, K.A., kand.tekhn.nauk, red.; VARKOVETSKAYA, A.I., red.izd-va; SPERANSKAYA, O.V., tekhn.red.

[Potentialities of steam-powered equipment in press-forge shops] Rezervy parosilovogo oborudovaniia kuznechno-pressovykh tsekhov. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 225 p. (MIRA 12:12)
(Forging machinery) (Steam engines)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

FADEYEV, I.G., inzh.; RAZUMOV, I.M., kand.tekhn.nauk; SKOBLO, A.I., kand.tekhn. nauk; CHEFRANOV, O.A., inzh, REZNIKOVICH, K.A., kand.tekhn.nauk

Calculation of pressure loss in the transport of a granular material in a continuous flow. Khim.mash. no.2:26-28 Mr-Ap '61. (MIRA 14:3)

(Pneumatic-tube transportation)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

REZNIKOVICH, K.A.; TODES, O.M.

Power characteristics of the vertical pneumatic-tube transportation. Izv. vys. ucheb. zav.; neft' i gaz 2 no.8:109-113 '59. (MIRA 12:11)

1. Vyssheye voyenno-morskoye uchilishche im. F.E. Dzerzhinskogo, i Vyssheye inzhenerno-tekhnicheskoye uchilishche Voyenno-morskogo flota (VMF).
(Pneumatic-tube transportation)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

REZNIKOVICH, K. I.

PA 66/49T32

USSR/Engineering - Compressed Air Pipes Pipe Lines — Jun 49

"Thermal Processes in Pipe Lines Carrying Compressed Air," K. I. Reznikovich, 8 pp

"Energet Byul" No 6

Describes difficulties caused by moisture in compressed air pipes (corrosion, ice plugs, premature wear of pneumatic instruments). Analyzes theoretical aspects of problem aided by water vapor content, with temperature graph and nomogram. Illustrates use of nomogram in determining point along pipe where temperature [redacted]

66/49T32

USSR/Engineering - Compressed Air Pipes (Contd) — Jun 49

[illegible] guide [illegible] water separators. [illegible]

[redacted]

66/49T32

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

1. REZNIKOVICH, K. I.

2. USSR (600)

4. Compressors

7. Optimal conditions for compressor cooling. Energ. biul. No. 7. 1952.

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

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

BRENIKOVICH, K. I.
(Cand. Tech. Sci.

Theoretical Solution of the Problem of Calculating the Parameters of a Cooled Steam Gas Mixture."

report presented at sci. and tech. session on Heat Exchange during Change of Aggregate State of Matter (by Comm. on High Steam Conditions, Power Inst. AS USSR, and Inst. Thermal Engineering, AS UkrSSR) Kiev, 23-28 Sep 57.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

AUTHOR: Reznikovich, K. I., Cand.Tech.Sc. 96-4-14/24

TITLE: Calculation of the parameters of a cooled vapour-gas mixture at low steam concentrations. (Raschet parametrov okhlazhdayemoy parogazovoy smesi pri nalykh kontsentratsiyakh para).

PERIODICAL: Teploenergetika, 1958, No.4, pp. 75-79 (USSR).

ABSTRACT: Determination of the parameters of a vapour-gas liquid as they change during cooling is difficult because in addition to heat exchange it is necessary to allow for transport of the condensed component from the flow to the cooling surface. For accurate calculations use is generally made of the very laborious method of successive approximation. In any case, the solution is only possible for certain specific boundary conditions. This article considers the case when the temperature of the surrounding medium is constant and the concentration of vapour in the mixture is low. These conditions are approximately realised for pipes laid in the ground or in the open air and carrying wet gas. However, similar cases may arise in surface coolers of vapour/gas mixtures when the temperature rise of the cooling water is small and the thermal resistance of the heat transmitting surface is

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significant. The relevant relationships are then derived. Tests were made to check the theoretical considerations, using the apparatus illustrated in Fig.2. It consisted of a glass tube of 32 mm inside diameter and 6 metres long, made up of six separate sections. This was placed in a steel tube with transparent plastic windows. Air at a pressure of 6 - 7 atm was passed through the glass tube while its outside was cooled by brine at a temperature of -2 to -7°C. Arrangements were made to raise the humidity of the air passing through the glass tube. Measurements were taken of the flow of brine and of air; and of air, temperature, pressure and humidity. Tests were carried out at various rates of flow. Heat- and mass-transfer coefficients were determined from the arithmetic mean values of temperature and partial pressure, using graphs similar to those of Fig.3. The theoretical and experimental results are compared in a table: the differences do not exceed the usual errors in making calculations of surface cooling. In addition, calculations were made on a vapour/gas mixture condenser. This was based on a previously published example. The method gives

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96-4-14/24

Calculation of the parameters of a cooled vapour-gas mixture at low steam concentrations.

a first approximation to the result. Fig.4 is a graph of the relationship between the Nusselt and Reynolds numbers in logarithmic coordinates based on test data. An empirical formula is offered, corresponding to this curve. A similar formula relates to the thermal criterion. It is concluded that the equation given is sufficiently accurate for low vapour concentrations. There are 4 figures, 1 table and 5 references - 4 Russian, 1 English.

ASSOCIATION: Higher Naval Engineering College. (Vysshee Voyenno-Morskoye Inzhenernoye Uchilishche)

AVAILABLE: Library of Congress.

Card 3/3

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

S/862/62/002/000/022/029
A059/A126

AUTHORS: Zhukovskiy, V.S., Reznikovich, K.I. (Leningrad)

TITLE: Heat and mass transfer in air coolers with spiral-finned tubes

SOURCE: Teplo- i massoperenos. t. 2: Teplo- i massoperenos pri fazovykh i khimicheskikh prevrashcheniyakh. Ed. by A.V. Lykov and B.M. Smol'-skiy. Minsk, Izd-vo AN BSSR, 1962. 206 - 214

TEXT: With respect to the coefficient of heat transfer from the air side, spiral-finned tubes produced by rolling-on differ only little from circular--ribbed tubes with wound-on spirals under the conditions of good contact of the ribs with the supporting surface. Stability of the heat contact independently of the operating conditions is an advantage of the rolling-on method. The coefficient of heat transfer can be calculated from the dependence:

$$Nu = 0.077\ Re^{0.7} \qquad (3)$$

developed by the authors. The mass-transfer coefficient at initial-volume moisture contents up to 10% should be determined on the assumption of a similarity

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of the partial pressure and temperature fields from the equality: $Nu_D = Nu$, where Nu_D is the Nusselt diffusion criterion. The hydraulic resistance of spiral-finned tubes at which moisture condensation occurs is in excess of the resistance of circular-finned tubes in dry air, and is approximately determined by the formula:

$$Eu = 27.8\ n\ Re^{-0.417},$$

where n is the number of longitudinal rows of tubes in the direction of flow. The entrainment of moisture at velocities of flow exceeding 15 m/sec is extremely great and attains 60% of that condensed in the cooler. In this case, particularly efficient water separators should be used which, in addition to a scale-up of the device, results in a further increase of the resistances which were considerable also without this fact intervening. An appropriate upper limit of velocity is 10 - 12 m/sec which is usually recommended and at which a separation up to 80 - 90% of the supplied moisture is obtained with the most simple separators. Tubes with rolled-on ribs show a rough internal surface with alternating flat depressions and projections resembling the thread of a screw. Due to such an "artificial roughness", the coefficient of heat transfer from the water side is twice that calculated from the current dependences. This effect is particu-

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A059/A126

Heat and mass transfer in air coolers ....

larly useful for finned tubes. V.M. Antuf'yev, G.S. Beletskiy, and the Tsentral'nyy institut tekhnologii mashinostroyeniya (Central Institute of Technology of Machine Building) (TsNIITMASh) are mentioned. There are 4 figures and 1 table.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

TUGES, O.M., dr. fiz.-ma em. nauk prof.; [illegible]
nauk, dotsent.

Distribution of the solid phase [illegible]
transport [illegible] (MIRA 1[illegible])
no.[illegible] Ja'[illegible]

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L 40875-66 EWT(m) IJP(c) TCH/CAJ/GD

ACC NR: AT6021846 (N) SOURCE CODE: UR/0000/65/000/000/0317/0323

37

B+1

AUTHOR: Zhukovskiy, V. S.; Madiyevskiy, V. L; Reznikovich, K. I.

ORG: Higher Naval Engineering School im. F. E. Dzerzhinskiy (Vyssheye voyenno-morskoye inzhenernoye uchilishche)

TITLE: The true wall temperature in a stream of supersaturated vapor

SOURCE: Teplo- i massoperenos. t. III: Teplo- i massoperenos pri fazovykh prevrashcheniyakh (Heat and mass transfer. v. 3: Heat and mass transfer in phase transformations). Minsk, Nauka i tekhnika, 1965, 317-323

TOPIC TAGS: steam power plant, temperature measurement

ABSTRACT: The experimental unit employed was fed from an industrial boiler which produced slightly moist steam at a pressure of 16 to 20 atmospheres. After throttling, this steam, which was somewhat superheated, was led through a spray type humidifier into a horizontal tank to which was attached the experimental round nozzle, which had along its length seven outlets for sampling the pressure at the wall. The experimental results are presented in the form of a figure which shows the distribution of the relative temperature, $\beta = p/p_0$. Further

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ACC NR: AT6021846

figures show the calculated distribution of the relative pressures along the length of the nozzle, and the distribution of the temperatures along the length of the nozzle. A final figure shows the change in the recovery coefficient as a function of the initial degree of saturation of the steam. Orig. art. has: 4 figures.

SUB CODE: 20/ SUBM DATE: 09Dec65/ ORIG REF: 004/ OTH REF: 005

Card 2/2 MLP

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

L 4567/1-66 EWT(1)/EWP(m) WW

ACC NR: AP6021217 SOURCE CODE: UR/0294/66/004/003/0399/0406

AUTHOR: Zhukovskiy, V. S. (Leningrad); Madiyevskiy, V. L. (Leningrad); Reznikovich, K. I. (Leningrad)

ORG: none

61

TITLE: On the characteristic temperature of a wall in a stream of supersaturated steam

SOURCE: Teplofizika vysokikh temperatur, v. 4, no. 3, 1966, 399-406

TOPIC TAGS: steam superheater, Laval nozzle, supersonic flow, liquid flow

ABSTRACT: The flow of a saturated steam in a Laval nozzle is investigated by determining the characteristic wall temperature and the temperature stagnation coefficient. The review of literature covering such flows indicates incomplete understanding of the problem which has been attacked by authors by developing a special apparatus allowing stagnation and wall temperature measurements to be made at any point in the flow. This system is described with special attention paid to the supersonic regime of the flow. The measurements have been tabulated for two-to-one relative pressure range and several superheating conditions. The results satisfy a simple relation for the temperature dependence of the stagnation coefficient. The characteristic wall temperature corresponds to the results of D. J. Riley in *Engineer*, 210, 1960. The divergence of results from the theoretical predictions is due to flow conditions where the steam is

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L 45671-66

ACC NR: AP6021217

near the phase-transition state and such initial parameters as the degree of saturations are critical. This has been confirmed by observing the behavior of flow with artificially introduced liquid phase. It was established that the surface effects which determine the stagnation coefficient are also strongly dependent on the proximity of equilibrium transition point and influence the flow characteristics. Orig. art. has: 4 figures, 1 table.

SUB CODE: 20/ SUBM DATE: 05Jan65/ ORIG REF: 007/ OTH REF: 003

Card 2/2 fv

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

REZNIKOVSKIY, A., inzh.

Importance of the asynchronous flow of rivers for the organization of combined power systems. Gidr.stroi. 29 no.3: 41-43 Mr '60. (MIRA 13:6)
(Hydroelectric power stations)
(Hydraulics)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

VASIL'YEV, Yu.S., dots., kand. tekhn. nauk; VEL'NER, Kh.A., dots., kand. tekhn. nauk; GINDUS, D.O., inzh.; GOLOVACHEVSKIY, N.I., dots., kand. tekhn. nauk; GROMOV, A.I., inzh.; DOMANSKIY, L.K., inzh.; ISAYEV, Yu.M., inzh.; KULESH, N.P., dots., kand. tekhn. nauk; MIKHALEV, B.N., dots., kand. tekhn. nauk; MOROZOV, A.A., prof., doktor tekhn. nauk [deceased]; NALIMOV, S.M., st. nauchn. sotr., kand. tekhn. nauk; REZNIKOVSKIY, A.Sh., kand. tekhn. nauk; SVANIDZE, G.G., doktor tekhn. nauk; TANANAYEV, A.V., dots., kand. tekhn. nauk; KHAZANOVA, A.Z., inzh.; CHERNYATIN, I.A., st. nauchn. sotr., kand. tekhn. nauk; SHCHAVELEV, D.S., prof., doktor tekhn. nauk; YAGODIN, N.N., st. nauchn. sotr., kand. tekhn. nauk; LEONOVA, B.I., red.

[Utilization of water power] Ispol'zovanie vodnoi energii. Moskva, Energiia, 1965. 563 p. (MIRA 19:1)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

REZNIKOVSKIY, A. Sh., kand. tekhn. nauk; VELIKANOV, A. L., inzh.; SOLOV'YEVA, I. Yu., inzh.

Water-power computations on digital computers. Gidr. stroi. 33 no.12:26-28 D '62. (MIRA 16:1)

(Calculating machines) (Hydroelectric power)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

REZNIKOVSKIY, A.Sh. (Moskva); SOLOV'YEVA, I.Yu. (Moskva)

Use of electronic computers in water power calculations in designing series of hydroelectric power stations for Eastern Siberia. Izv. AN SSSR. Ener. i transp. no.4:539-548 Jl-Ag '63. (MIRA 16:11)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

SVANIDZE, G.G.; [illegible], A.Sh.; ZUBAREV, V.V.

Graphs for designing impounding reservoirs for flow regulation over a period of years. Trudy Inst. energ. AN Gruz. SSR 17: 287-296 '63. (MIRA 17:7)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

SVANIDZE, G. G.; [illegible]SKIY, A. Sh.; ZUB[illegible], V.V.

Curves $F(\ldots, \beta, \rho) = 0$ for calculating the several-year capacity of a water reservoir. Soob. AN Gruz. SSR 34 no.3: 621-628 Je '64 (MIRA 18:1)

1. Gruzinskiy nauchno-issledovatel'skiy institut energetiki imeni A.I. Didebulidze, Tbilisi. Submitted March 12, 1964.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

REZNIKOVSKIY, A. Sh., inzh.

Increase in the power efficiency of interconnected hydroelectric power stations in Central Asia. Izv. vys. ucheb. zav.; energ. 4 no.3:82-86 Mr '61. (MIRA 14:3)

1. Energeticheskiy institut imeni G. M. Krizhizhanovskogo AN SSSR. Predstavlena gidroenergeticheskim sektorom otdela obshchey energitiki.
(Soviet Central Asia—Interconnected electricity utility systems)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

REZNIKOVSKIY, A.Sh. (Moskva)

Modeling of hydrologic series and calculation of the regulation of the runoff by cascades of hydroelectric power stations over a period of years. Izv. AN SSSR. Energ. i transp no.2: 255-265 Mr-Ap'64. (MIRA 17:5)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

REZNIKOVSKIY, M.

Innovator P.F.Sharyi. Mashinostroitel' no.3:7 Mr '63. (MIRA 16:4)

(Odessa--Machine-tool industry)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

REZNIKOVSKIY, A.Sh.

Compensated electrical control in the overall utilization of the flow of rivers. Probl. gidroenerg. i reg. rech. stoka no.11:107-111 '63. (MIRA 18:3)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

[illegible], K. M. Caud Chem Sci

Dissertation: "Comparative Study of the Elastic Properties of Rubber and Products of Its Bromination."

25 April 4[illegible]

Moscow Inst of Fine Chemical Technology imeni M. V. Lomonosov.

SO Vecheryaya Moskva
Sum 71

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

REZNIKOVSKIY, M.M.

Kinetics of highly elastic deformation. B. A. Dogadkin, G. M. Bartenev, and M. M. Reznikovskii (M. V. Lomonosov Inst. Fine Chem. Technol., Moscow). *Issledovaniya v Oblasti Vysokomolekul. Soedinenii. Doklady 6-oi Konf. Vysokomolekul. Soedineniyma, Akad. Nauk S.S.S.R.* 1949, 297–307; cf. *C.A.* 45, 9037*f*.—The equation connecting the relaxation time with excess value of stress $(\sigma - \sigma_\infty)$ is derived in the form: $\tau = \tau_0 \exp[\{U - (V(\sigma - \sigma_\infty)^2/2E_1)\}/KT]$. In connection with the expression $-d\sigma/dt = (1/\tau)(\sigma - \sigma_\infty)$ it gives the differential law of relaxation for rubberlike substances. Relaxation curves at const. deformation and deformation curves at const. rate afford the methods for detn. of the consts. of the equations. Natural and synthetic vulcanized *rubbers* show agreement with the above equation. Energy of activation U of the elementary transformation that composes the relaxation phenomenon is 15–17 kcal./mole; the vol. of the kinetic element of relaxation at 22° and 100% elongation is 100,000 cu.A.

G. M. Kosolapoff

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

REZNIKOVSKIY, M. M.

"Investigation on the Role of Intermolecular Forces in the Mechanism of High Elastic Deformation: I. Molecular Mechanism and Equation for the Kinetics of High Elastic Deformation," Kolloid. Zhur., 11, No. 5, 1949.

Mbr., Chair Chemistry & Physics of Rubber, Moscow Inst. Fine Chemical Technology im. M. V. Lomonosov, -1948-.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

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CA

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The importance of intermolecular forces in the mechanism of high-elastic deformation. II. Relaxation properties of natural rubber and its bromination products. B. A. Dogadkin and M. M. Reznikovskii (Inst. Fine Chem. Technol., Moscow). *Kolloid. Zhur.* 12, 102-11 (1950); cf. *C.A.* 44, 907c.—Brominated smoked sheet (I) differs from smoked sheet (II) only by its higher concn. of polar groups; thus, comparison of I and II should show the importance of intermol. forces. I was prepd. from II and Br in the presence of I in CCl_4 at 0°; its Br content was 85% of the theory, and its mol. wt. (from light scattering) was 400,000, in comparison with 213,000 of the starting II. I showed no crystal pattern, even after 300% extension. When the samples were deformed and the deformation was kept const., the stress σ decreased according to $-(d\sigma/dt) = (\sigma - \sigma_0)/\tau$ and $\log \tau = \log \tau_0 - \beta(\sigma - \sigma_0)^2$. The equil. stress σ_0 was detd. by keeping the deformed sample at 70° for about 10 min. and cooling it to the temp. of the expt. The σ_0 of II was zero, and of I, e.g., 50 kg. wt./sq. cm. The const. τ_0 was independent of deformation (extension), but decreased when the temp. was raised; for II it was, e.g., 80 hrs. and 30 min. at 5° and 80°, resp., and for I it was, e.g., 100 and 20 min. at 22° and 80°, resp. The const. β (cm.$^{-1}$ kg. wt.$^{-2}$) decreased when extension increased; it was, e.g., 0.118 and 0.010 at 62% and 197% extension, resp., at 22.5°, and 0.119 at 102% extension and 80° for II, and 0.001 and 0.000013 at 50°, and 300% extension, resp., at 22°, and 0.052 at 102% extension and 80° for I. From τ_0, the energy of activation was calcd.; it was 16,000 ± 1000 cal. for the kinetic unit of relaxation V in II, and 5000-6000 cal. for I. The bonds in I are those between Br atoms. The decrease of V (which is proportional to β) on extension shows that orientation of mol. chains, produced by extension, increases the no. of bonds between chains. I. J. B.

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Solubility of oxygen in some organic liquids. M. Reznikovskii, Z. Tarasova, and B. Dogadkin (Moskov. Inst. Tonkoi Khim. Tekhnol. im. M. B. Lomonosova). *Zhur. Obshchei Khim.* (J. Gen. Chem.) 20, 63–7(1950).—The following solubilities were detd. under atm. pressure, in ml. O_2/ml. solvent: in tech. xylene (fraction b. 131–8°) 0.177 (at 21°); toluene, 0.128 (20°); ligroin (fraction 110–20°) 0.156 (20°); white spirit (fraction 115–50°) 0.178, 0.170 (19°); cracking gasoline (fraction 115–50°) 0.178, (19°). In the tech. xylene, at 21, 80, and 100°, soly. 0.177, 0.226, and 0.268 ml. O_2/ml. solvent, and the absorption coeff. (ml. O_2 (S.T.P.)/ml. solvent) = 0.162, 0.170, and 0.192, resp. The pos. temp. coeff. is accounted for thermodynamically by the work spent in the isothermal compression of the gaseous vol. v_g to its vol. in the soln., v_l, approx. equal to the vol. of the solvent. This gives $\Delta E \sim RT \ln v_l/v_g = RT \ln L$, where L = soly. in ml./ml., and $\Delta H = RT(\ln L + 1)$; hence $\Delta H = 1$ at $L \sim 0.37$, i.e., the temp. coeff. of the soly. is pos. at solubilities below 0.37 ml./ml., neg. at solubilities greater than 0.37. N. Thon

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REZNIKOVSKIY M.M.; KAMENSKIY, B.Z.

Time dependence of the binding stength of the adhesion of rubbers. Dokl. AN SSSR 155 no. 4:924-926 Ap '64. (MIRA 17:5)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti. Predstavleno akademikom V.A.Karginym.

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REZNIKOVSKIY, M. M.

184T21

USSR/Chemistry - Elastomers Jan/Feb 51

"Relaxation Processes in the Deformation of Pure Rubbers and the Effect of the Degree of Vulcanization," B. A. Dogadkin, M. M. Reznikovskiy, Sci Res Inst of Rubber Ind (~C 1951)

"Kolloid Zhur" Vol XIII, No 1, pp 11-19

Applies previously proposed eq of kinetics of highly elastic deformation to 3-dimensional polymers in study of process of relaxation of tension with different initial elongations and process of deformation of const-rate elongation for pure rubbers at temps 20-70° C. Finds relaxation

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USSR/Chemistry - Elastomers (Contd) Jan/Feb 51

properties of soft pure natural and synthetic rubbers essentially unchanged by vulcanization. Proposes constancy exists up to point where nodes of spacial lattice are so far apart as not to influence interaction or thermal motion of chain sections in between.

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REZNIKOVSKIY, M. I., KHROMOV, M. K.

Rubber

Investigation of spontaneous contraction of rubbers. Part 1. Theory of spontaneous contraction, Koll. zhur., 14, No. 3, 1952.

9. Monthly List of Russian Accessions, Library of Congress, October 1952, Uncl.

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1. REZNIKOVSKIY, M. M.; KHROMOV, M. K.

2. USSR (600)

4. Rubber

7. Investigation of spontaneous contraction of rubber. Part 2. Spontaneous contraction of rubber and its dependence on the conditions of testing and on some technological factors. Koll. zhur. 14, No. 5, 1952.

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

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

REZNIKOVSKIY, M.M.

3959. Investigations in the field of rubber vulcanisation. XI. Effect of degree of vulcanisation on the internal friction of uncompounded butadiene-styrene vulcanisates. M. M. REZNIKOVSKII, V. S. YUROVSKAYA, and B. A. DUGADKIN. *Koll. Zhur.*, 1952, 14, 444-55; *Rubb. Chem. Technol.*, 1954, 27, 416-29. The purpose of this work is to study the influence of side-chain development of the spatial structure, determined by the number of transverse cross-links which are formed during vulcanisation, on the internal friction which occurs in the reversible deformation of vulcanisates. Vulcanisates were prepared in films 1 mm. thick, with 10 different sulphur contents, from about 1 to 33%; the total and free sulphur were determined analytically. Measurements of internal friction were made by means of tests on a Bidermann pendulum, the Schob apparatus, and a Kornfeld vibrator. Reasons are given for considering that the Bidermann apparatus gives the most reliable results, and this apparatus is illustrated. The theory of the measurements is discussed in detail. A float dynamometer is also illustrated, for measuring the equilibrium stress in the test-specimen. In conclusion, it is stated that internal friction and the related relaxation properties do not depend on the percentage of combined sulphur up to 9%; further increase causes a sharp increase. It is also shown that, up to 8%, the nature of the stress in the rubber is predominantly entropic, while further increase causes an increase in the energy component of the stress. The values of the molecular weights of a chain segment between cross-links were calculated from these results, and shown to have a critical value of about 7,000 for this polymer; further densening of the network causes the sharp increase in the internal friction and the energy component of the stress. The hypothesis is advanced that this critical value can be regarded as a criterion of the flexibility of the molecular chains of the polymer. 2S2D21MD23.6725

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REZNIKOVSKIY, M.M.

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1351. Heat formation under deformation of vulcanised rubber and new methods of dynamic testing. M. M. REZNIKOVSKIJ, E. O. VOSTROKNUTOV and M. K. KHROMOV. "Starenie i Utomlenie", 1953, p. 68–75. Three methods are described for the determination of dynamic properties. An apparatus is described at some length for assessing the properties of tyre stocks by oscillatory tests on ring specimens. The Biderman hammer (see also *Rubb. Abs.*, 1955, abs. 2990) is described as a rapid method of assessing dynamic properties. A further method and apparatus have been developed for investigation of the elastic properties of vulcanised rubbers, based on the measurement of tension in a stretched strip, of its contraction on release of load, and of the rate of propagation of the impulse on release of load. 64424-D

Meets

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REZNIKOVSKIY, M.M

1845. Questions of method in the study of the strength of vulcanised rubber under alternating stress. M. M. REZNIKOVSKII, E. G. VOSTROKNUTOV and L. S. PRISS. 'Starenie i Utomlenie', 1953, p. 76–88. The first part of this paper is devoted to an attempt to classify the fundamental dynamic cycles which may take place with repeated cyclic stressing of rubber. The second part discusses new Russian methods for the dynamic testing of vulcanised rubbers, making it possible to effect a series of basically different dynamic cycles and to investigate not only the fatigue strength but also the extent of fatigue as shown by the change in properties of the material. 64424-D

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REZNIKOVSKIY, M.M.

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3600. Investigation of the influence of the bonding layers upon the uniformity of plied-up butadiene-styrene vulcanisates. M. K. Khromov, Z. N. Tarasova, M. M. Reznikovskii, and B. A. Dogadkin. 'Prochnost' Svyazi. . . ', 1954, p. 151-7. (Vses. Khim. Obshch. im. D. I. Mendeleeva, Dec. 1954). A stripping test is proposed for the determination of tackiness of plied-up layers, to supplement the Behr method. A new synthetic resin, 330, has been developed by the NII Sh P (the tyre research station) which in combination with a bonding agent based on SKS-30, gives excellent bond strengths. By varying the composition of the vulcanising group of SKS-30 vulcanisates, plied-up with a natural rubber bonding agent, the bond strength can be significantly raised. It is shown that as a result of the high rate of diffusion of the low molecular-weight ingredients dissolved in the rubber, their content in the bonding layer at the temperature of vulcanisation is determined not so much by the formula of the bonding layer as by the composition of the rubbers plied-up by means of that layer. There are 4 references.

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P. ZNIKOVSKIY, M. M.

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1232. Determination of bond strength between vulcanised rubbers in conditions of static and dynamic loading. M. M. REZNIKOVSKIY. 'Prochnost' Svyazi . . . ., 1954, p. 166-72. (Vses. Khim. Obshch. im. D. I. Mendeleeva, Dec., 1954). The author describes static and dynamic methods of determination of bond strength on multi-ply vulcanised test-pieces. To get static stripping on the boundary layer of two rubbers, talc is applied in a thin layer in circles of diameter 1.5 mm in checkered arrangement 2 mm apart on one of the plied up sheets, using a perforated stencil. This reduces the effective surface and the stripping occurs always at the joint. The dynamic bond strength is determined on a shear machine with a vertical joint. The tread and breaker rubbers referred to are SKS-30. 15 — 64422

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REZNIKOVSKIY, M.M.

The effects of production conditions on the dynamic properties of rubber and heat evolution under repeated stresses. M. M. Reznikovskii and B. A. Dogadkin. *Khim. Prom.* 1954, 227-31.—Vulcanization may affect the dynamic modulus of rubber at a const. internal friction of the material. The ratios of the nonequil. fraction of the dynamic modulus and of the internal friction of rubber to the proportion of filler may be the same for any filler used. Changes of the internal friction produced by the plasticizer addn. (petrolatum) are not related to the nature and proportion of the filler. A quant. expression was found for the heat evolution in the product under repeated stresses, as related to the different production details, such as vulcanization, fillers, plasticizers, and under various dynamic conditions. W. M. Sternberg

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REZNIKOVSKIY, M.M.

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5459. Apparatus for dynamic testing of tyre rubbers. E. G. VOSTROKNUTOV and M. M. REZNIKOVSKII. *Zavodsakaya Laboratoriya*, 1954, 885-6. This paper describes an apparatus devised at the Nauchno-Issled. Inst. Shinnoi Prom., and described previously in a conference paper (*Rubb. Abs.*, 1957, abs. 1351) for comparative testing of tyre rubbers by applying cyclic deformation to a ring-shaped rubber test-piece, which is secured to the shaft of an electric motor, by means of a roller mounted on a dynamometric lever. 64424-D

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REZNIKOVSKIY, M. M.

USSR/Chemistry - Rubber and Elastomers

Card 1/1

Authors : Reznikovskiy, M. M., Dogadkin, B. A.

Title : The influence of the formulation and of technological factors on the dynamic properties of rubber and heat formation as a result of repeated loading

Periodical : Khim. prom. 4, 35-39 (227-231), June 1954

Abstract : Discusses the effects of vulcanization, fillers, and softeners on the dynamic modulus and internal friction of natural and SK rubbers, particularly SKB. Derives relationships pertaining to the formation of heat in rubber samples subjected to different types of dynamic loading. Seven USSR references, all since 1940; three foreign references. Eight graphs, one figure.

Institution : Scientific Research Institute of the Tire Industry

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

REZNIKOVSKIY, M.M.

A Study of the regularities in the deformation of loaded rubbers. M. M. Reznikovskii, L. S. Priss, and B. A. Logadkin (Sci. Research Inst. Tire Ind., Moscow). *Kolloid. Zhur.* 16, 211-10(1954); cf. *C.A.* 47, 3603b.—The quasi-equiv. modulus (E) of elasticity of unloaded vulcanized Na-butadiene rubber (I) and butadiene-styrene rubber (II) was independent of the previous deformations. The E of I and II contg. 10–40 parts channel black per 100 parts rubber was, for a deformation ϵ, independent of previous deformation ϵ_1 if ϵ_1 was $< \epsilon$, and was smaller the greater the ϵ_1 if this was $> \epsilon$. The ratio of E to ϵ after ϵ_1 to that after no deformation was independent of the concn. of the filler. The greater was ϵ_1, the smaller was the difference between the E values for loaded and unloaded rubber. Between 300° and 370° Abs., E for loaded and unloaded rubbers was proportional to the abs. temp.; thus, E of loaded rubbers depended on the elasticity of the mol. chains. In confirmation of Patrikeev (1940), the stress-strain curves of loaded rubbers were independent of ϵ_1 when ϵ_1 was $< \epsilon$. Stress-strain curves of rubber strips were detd.; the stress-strain curves of the ruptured fragments were measured. These curves practically coincided with those of unloaded rubber at small ϵ values, but rose with increase of ϵ more steeply than the initial curves. The effect of ϵ_1 on E decayed in time, but had still 0.5 the original value after a rest of 6 months. The ratio of E_1 to E for 2 samples was identical to the ratio of k for these samples, independently of the concn. of filler where E_1 = the dynamic modulus of elasticity, k = the coeff. of internal friction.

J. J. Bikerman

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

FD-1001

USSR/Engineering - Dynamics of wheels

Card 1/1 : Pub. 153 - 5/24

Authors : Reznikovskiy, M. M., and Vostroknutov, Ye. G.

Title : Dynamics governing free play in a rubber tire on a rigid support

Periodical : Zhur. tekh. fiz., 24, 997-1007, Jun 1954

Abstract : Describe a device for investigating the dynamics of free play in a rubber tire on a rigid support. Present computational and experimental data illustrating the possibilities and limits of applicability of A. Yu. Ishlinskiy's phenomenological theory of free play. Show that the condition for the constant radial load assigned to a wheel is equivalent to the condition for constant assigned work of cyclic loading under uniform compression. Six references, 4 USSR

Institution : -

Submitted : November 1, 1953

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REZNIKOVSKIY, M.M.

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The vulcanization of rubber. XI. Influence of the degree of vulcanization on the internal friction of unloaded butadiene-styrene vulcanizates. M. M. Reznikovskii, V. S. Yurovskaya, and B. A. Dogadkin (Sci. Research Inst. Tire Ind., Moscow). *Rubber Chem. & Technol.* 27, 415-29 (1954).—See *C.A.* 47, 3603*b*. C. C. Davis

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

REZNIKOVSKIY, M.M.

1156. Spontaneous contraction of rubbers. II. Spontaneous contraction of rubber and its dependence on the test conditions and some factors of compounding and technology. M. M. REZNIKOVSKII and M. K. KHROMOV. *Rubb. Chem. Technol.*, 1954, 27, 964–73. Cf. this journal, 1953, abs. 2636. An English translation of this paper now appears. 6342

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

SOV/124-57-4-5063

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 4, p 156 (USSR)

AUTHORS: Reznikovskiy, M.M., Vostroknutov, Ye.G., Priss, L.S.

TITLE: Methodological Problems in the Study of the Strength of Rubber Under Time-variable Stress Conditions (Metodicheskiye voprosy izucheniya prochnosti reziny pri peremennykh vo vremeni napryazheniyakh)

PERIODICAL: V sb.: Stareniye i utomleniye kauchukov i rezin i povysheniye ikh stoykosti. Leningrad, Goskhimizdat, 1955, pp 76-88

ABSTRACT: The author suggests a method for the classification of the basic regimes of testing rubber for dynamic fatigue. All types of operational regimes may be referred to one of the four groups of tests suggested in the classification. New instruments for the dynamic tests of rubber are examined which make possible an analysis both of the fatigue strength, characterized by the number of the cycles before failure, and of the "exhaustion" characterized by changes in the material properties after repeated loading: 1) An instrument which makes possible the accomplishment of any of the dynamic regimes with an asymmetric loading cycle. Tests on this instrument are conducted under uniform tension and with a harmonic law of

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SOV/124-57-4-5063

Methodological Problems in the Study of the Strength of Rubber (cont.)

stress and strain variation. 2) An instrument for the study of the exhaustion and fatigue strength of rubber with a symmetrical loading cyle (with mean values of the stress and strain equal to zero), which in samples subjected to bending deformation makes possible the determination of the dynamic modulus and the losses per load cycle along with the fatigue strength.

L. S. Bryukhanova

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USSR/Chemical Technology. Chemical Products and Their Application -- Crude rubber, natural and synthetic. Vulcanized rubber, I-21

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 6038

Author: Reznikovskiy, M. M., Vostroknutov, Ye. G., Priss, L. S.

Institution: None

Title: Problems of Method in the Study of Durability of Vulcanized Rubber Under Stresses Varying with Time

Original Publication: Sb. Stareniye i utomleniye kauchukov i rezin i povysheniye ikh stoykosti. L., Goskhimizdat, 1955, 76-88

Abstract: Specific features of mechanical behavior of vulcanized rubber during fatigue tests, are considered. A classification is provided of the fundamental dynamic conditions of operation, which takes into consideration the dependence of working conditions of the sample on duration of the experiment. An apparatus is proposed, which puts into effect any of the dynamic conditions under consideration, and ensures performance of tests over a wide range of

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REZNIKOVSKIY, M.M.

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2293. Formation and properties of network polymers. B. A. DOGADKIN, and M. M. REZNIKOVSKIY. *Uspekhi Khim.*, 1955, 24, 801–14; *Chem. Abs.*, 1956, 50, 3790. This is a review of physical and chemical properties and modes of formation, of three-dimensional polymers, specifically rubber materials, covering the period through 1954, with 70 references. 38

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

REZNIKOVSKIY, M.M.

6461. Rotary apparatus for study of dynamic properties and fatigue of rubber. M. M. REZNIKOVSKIY and E. G. VOSTROMITIN. U.S.S.R.P. 102835, *Byull. Izobretenii*, 1956, No. 2, 31; *Kauch. i Rezina*, 1957, 18, No. 2, 40. Cf. abstract above.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

REZNIKOVSKIY, M.M.

Study of the dynamic properties of rubber by the method of free contraction. G. M. Bartenev, M. M. Reznikovskii, and M. K. Khromov (Sci. Research Inst. Tire Ind., Moscow). *Kolloid. Zhur.* 18, 395-403(1956); cf. *C.A.* 47, 1963*e*.—Two marks were made on a rubber ribbon, and the distance between them was continually recorded after the ribbon was kept extended x% for t min. and then released. For an unfilled synthetic rubber (SKS-30) the dynamic modulus of elasticity E_0 and the friction modulus K were independent of x and t, while the rate of propagation of the contraction wave was a linear function of x. For a filled SKS-30, E_0 and K decreased when t increased. The K and E_4 were independent of the true stress σ, except at high σ values, for several synthetic rubbers and natural rubber, all unfilled. The ratio of K to the nonequil. part of E_4 was 0.47-0.56, i.e., almost const. for various rubbers, filled or unfilled, at various temps. Ln K was a linear function of the vitrification temp. of rubber. J. J. Bikerman

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

REZNIKOVSKIY, M.M.

V Study of the dynamic properties of rubbers by the method of free contraction. O. M. Bartenev, M. M. Reznikovskii, and M. K. Khromov. *Colloid J.* (U.S.S.R.) 43, 389-97 (1956) (English translation).—See *C.A.* 51, 16384. B. M. R.

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[illegible], [illegible], [illegible], [illegible], and [illegible], [illegible]

"Recovery power of rubber under static and dynamic stress," a paper presented at the 9th Congress on the Chemistry and Physics of High Polymers, 3[illegible] Jan-2 Feb 57, Moscow, Rubber Research Inst.

B-3,084,325

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

REZNIKOVSKIY, M.M.

15

8480. Rotary apparatus for the study of dynamic properties and fatigue of rubber under stress. E. G. VOSTROKNUTOV and M. M. REZNIKOVSKIY. *Zavodskaya Laboratoriya*, 1957, 361–4. This apparatus, the subject of U.S.S.R.P.102635, and also described in an earlier conference paper (*Rubb. Abs.*, 1957, abs. 1845) employs rubber test pieces stretched between a driving and a driven disc, to investigate patterns of dynamic stress for a wide range of deformations and with thermal control.

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ANIKANOVA, K.F.; BETTS, G.E.; ZHAKOVA, V.G.; KOMSKAYA, N.F.; KARMIN, B.K.; PRISS, L.S.; REZNIKOVSKIY, M.M.; CHERNIKINA, L.A.; SHTEYN, Ye.B.

Structural and characteristic similarity of Soviet SKU polyusoprene rubber and natural rubber. Kauch.i rez.no.1:4-14 Ja '57. (MLRA 10:2)
(Rubber--Synthetic)

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SOV/124-58-11-13591

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 11, p 228 (USSR)

AUTHORS: Reznikovskiy, M. M., Priss, L. S., Khromov, M. K., Vostroknutov, I. G.

TITLE: Problems of Methodology in the Fatigue Testing of Rubber With Repeated Loads (Metodicheskiye voprosy ispytaniya reziny na ustalost' pri mnogokratnom nagruzhenii)

PERIODICAL: Tr. N.-i. in-ta shin. prom-sti, 1957, Nr 4, pp 5-35

ABSTRACT: An examination of the problems arising in fatigue-performance testing; novel, more highly perfected, methods for comparative tests are recommended.

Reviewer's name not given

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RE ZNIKOVSKIY, M.M.

124-58-9-10674

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 9, p 171 (USSR)

AUTHORS: Lukomskaya, A. I., Reznikovskiy, M.M.

TITLE: On Methods of Dynamic Testing of Rubber (A Literature Survey) [O metodakh dinamicheskikh ispytaniy rezin. (Obz. lit.)]

PERIODICAL: Tr. N.-i. in-ta shin. prom-sti, 1957, Nr 4, pp 36-61

ABSTRACT: Bibliographic entry

1. Rubber--Test methods

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Reznikovskiy, M.M.

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Rotation apparatus for the study of the dynamic properties and fatigue of rubber during elongation. E. G. Vostroknutov and M. M. Reznikovskii. *Zavodskaya Lab.* 23, 361-4(1957). ~~An app. is described~~ for which the following advantages are claimed: absence of edge effects permits the study of large deformations and a rigorous calcn. of the plastic and relaxation characteristics of rubber; maintenance of an accurate temp. uniformity of the samples; measurements of all the principal conditions of dynamic loading (measurements of the dynamic properties of rubber and their changes with time). W. M. Sternberg.

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REZNIKOVSKIY, M.M.

AUTHORS: Novikov, A.S., and Reznikovskiy, M.M. 28-58-1-26/34

TITLE: In the Technical Committee "Caoutchouc" (V tekhnicheskom komitete "Kauchuk")

PERIODICAL: Standartizatsiya, 1958, # 1, pp 68-69 (USSR)

ABSTRACT: The article presents information on the latest session of the ISO/TC 45 in Zurich, Switzerland. Delegations from the USA, Brasil, Great Britain, Hungary, Germany, Holland, India, Italy, Poland, France, and the USSR participated. For the first time, the USSR took part in the work of this TC. Recommendations for the international standardization of physico-mechanical and physico-chemical test methods for caoutchouc and rubber were discussed. The Soviet delegation participated in the work group sessions, where test methods for aging, tear resistance, frost-proofness, adherence of rubber to metal, etc, were discussed. Both the "Muni" and "Kanavts" viscosity-testers were referred to the committee for recommendation.

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SOV/138-58-5-7/9

AUTHOR: Kanavets, I.F.,
Lukomskaya, A.I.,
Reznikovskiy, M.M.

TITLE: On the Possibility of Using the Kanavets Displacement Plastometer for Testing Rubber and Plastic Mixtures (O vozmozhnosti primeneniya sdvigovogo plastometra Kanavtsa dlya ispytaniya kauchukov i rezinovykh smesey)

PERIODICAL: Kauchuk i Rezina, 1958, Nr 5, pp 34-36 (USSR)

ABSTRACT: Various devices used for testing the plastic and elastic properties of rubbers and unvulcanised rubber mixtures, such as viscosimeters VR-1 (constructed by NIIShP) and the viscosimeter VR-2 (constructed by "Metallist") as well as others are mentioned (Refs.1-6). The advantages of the Kanavets displacement plastometer, as compared with its other instruments, are discussed. This device is used in the rubber industry for testing rubbers and unvulcanised rubber mixtures and makes it possible to determine their viscosity. The use of this device for ascertaining the capacities of these mixtures for vulcanisation was described by J.V.Weaver and

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On the Possibility of Using the Kanavets Displacement Plastometer for Testing Rubber and Plastic Mixtures

A.E.Juve (Refs.10 and 11). Changes in the viscosity of various rubber mixtures (based on different rubbers and fillers) during deformation at 121°C, whilst testing them in the viscosimeter VR (NIIShP) and in the plastometer by Kanavets (NIIPM) are shown in Figures 1 and 2. It was found that the time of relaxation bears no simple relation to the elastic recovery of the mixture. Fig.3. shows the sensitivity of this plastometer to changes in the age of a mix and change in order of combining components of the mix. The different samples of the same mix stabilize at the same viscosity after about 1 minute. When using the Mooney plastometer, the way of preparing the mixtures and especially of rubbers, is very important but this does not apply in the case of the Kanavets plastometer. The constant of viscosity changes with small variations in the content of plasticisers and fillers in the rubber mixtures: this makes it possible to assess the accuracy of composition of the mixture (Fig.4.). The correct proportions of vulcanisation agents and

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SOV/138-58-5-7/9

On the Possibility of Using the Kanavets Displacement Plastometer for Testing Rubber and Plastic Mixtures

accelerators introduced into the mixture can be controlled according to the rate of vulcanisation, i.e. rate of rise in viscosity at temperatures up to 200°C. (Fig.5.). There are 5 figures and 11 references of which 7 are English and 4 Soviet.

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

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001444820002-6

SOV/138-58-10-5/10

AUTHORS: Sakhnovskiy, N. L; Ivanova, S. A; Mel'nikova, M. V; Ratner, S. B; Reznikovskiy, M. M, and Smirnova, L. A.

TITLE: Wear Testing of Rubber (Ob otsenke istirayemosti reziny)

PERIODICAL: Kauchuk i Rezina, 1958, Nr 10, pp 18 - 22 (USSR)

ABSTRACT: The mechanism of abrasive wear of rubber is imperfectly understood. Laboratory tests with different types of equipment give inconsistent results, and results of laboratory tests do not agree with service or road tests. The relations between the three mechanical parameters, F, frictional force, N, normal load, and U, rubbing speed are discussed. Three modes of test are possible: (a) F, variable, N and U constant, (b) N, variable and (c) U, variable. These give respective wear indices: V_{NU}, V_{FU}, and V_{NF} where V is expressed in cm^3 wear from the specimen. A specific wear index, v, is given: $v = V_{NU}/W$ (cm^3/kwh) where W is work done against friction. This specific wear index takes into account the coefficient of friction μ of the rubber. Since μ varies for different rubbers, correlation between the indices V_{NU}, V_{FU} and the specific index v,

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will vary for different rubbers. This is illustrated in Figs. 1, 2 and 3 where the relative wear according to different indices is plotted against filler content in the rubber sample. Actual values for different rubbers of the indices V_{NU}, v, and V_{FU} are given in Table 1. The specific wear index v is calculated only under the constant normal load regime. The final columns in the table give relative values for these indices for comparison with relative values obtained on actual service tests (given in the last column). The index V_{FU} shows best correlation with service or road tests, and it is suggested that this index would be more appropriate when testing rubber intended for tyres. This is brought out further in Fig.4 where the relative indices of laboratory tests are compared with relative wear in actual road tests. (Symbols 1, 2 3 and 4 are for tests giving an index V_{FU}, symbols 5 and 6 give V_{NU} and symbol 7 is for index v.). While indices v and V_{FU} should have similar correlation, errors can arise when v is taken as an index through changes in temperature at the rubbing surface. The third mode of test with F and N constant and with U variable has received little attention, but is of interest since it represents the conditions of wear

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