"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVDEL', A.A.; GORELIK, G.N.

Device for investigating the process of dissolution by a method of rotating disk. Zhur.prikl.khim. 37 no.1:65-69 Ja '64.(MIRA 17:2)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta i Leningradskiy filial nauchno-issledovatel'skogo i proyektnogo instituta lakokrasochnoy promyshlennosti.

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DEREVYAGINA, V.P.; RAVDEL', A.A.

Automatic control of pH in vats used in the production of lithopone. Trudy LTI no.61:65-72 '60. (MIRA 15:5)
(Lithopones) (Hydrogen-ion concentration)

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RAVDEL', A.A.

Refined method of calculating the coefficient of gas to gas diffusion. Trudy LTI no.61:110-118 '60. (MIRA 15:5)
(Gases) (Diffusion)

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVDEL', A.A.

Evaporation rate of spherical bodies in a gas stream. Trudy LTI no.61:119-125 '60. (MIRA 15:5)
(Evaporation) (Gas flow)

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VOL'KENSHTEYN, V.S.; GAL'BRAYKH, I.Ye.; GEL'MAN, A.A.; MEDVEDEV, N.N.; NIKIFOROVA, T.F.; RAVDEL', A.A.

Development and application of the method of express-control of moisture in crude rubber mixtures under production conditions. Kauch.i rez. 21 no.5:55-57 My '62. (MIRA 15:5)

1. Zavod "Krasnyy treugol'nik" i Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Rubber—Moisture)

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVDEL', A.A.; NOVIKOVA, N.A.

Thermodynamics of some reactions of $BaSO_4$ reduction. Trudy LTI no.61:3-8 '60. (MIRA 15:5)
(Barium sulfate) (Reduction, Chemical) (Thermodynamics)

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

MISHCHENKO, K.P.; PONOMAREVA, A.M.; RAVDEL', A.A.; BARON, N.M.; YEGOROV, I.M.; KVYAT, E.I.; VOLOVA, Ye.D.; MARKOVICH, V.G.; SEMENOV, G.I.; MARGOLIS, V.N., SMORODINA, T.P.; YAVORSKIY, I.V. Prinimal uchastiye FRANK-KAMENETSKIY, V.A.; TOMARCHENKO, S.L., red.; LEVIN, S.S., tekhn. red.

[Practical work in physical chemistry] Prakticheskie raboty po fizicheskoi khimii. Izd.2., perer. Leningrad, Gos. nauchno-tekhn. izd-vo khim. lit-ry, 1961. 374 p. (MIRA 15:2)
(Chemistry, Physical and theoretical--Laboratory manuals)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

S/194/61/000/009/033/053
D249/D302

9,2150

AUTHOR: Ravdel', A.A.

TITLE: Frequency distribution of the noise intensity in selenium rectifiers

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 9, 1961, 13-14, abstract 9 D83 (V sb. XVIII Nauchn. konferentsiya prof.-prepodavat. sostava Leningr. inzh.-stroit. in-ta s uchastiyem predstavit. stroit. organizatsiy, predpriyatiy i nauchno-tekhn. o.v. Dokl. sektsiy soprotivl. materialov, matem. i teor. mekhan., fiz., khimii i elektrotekhn. L., 1960, 64-67)

TEXT: In semiconductors the fluctuation noise is due to variations in the density of current carriers during their generation and recombination. This leads to resistance variations which, in turn, are responsible for current oscillations in the circuit or

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D249/D302

Frequency distribution...

voltage oscillations across the sample investigated. The present experimental investigation of selenium rectifiers showed that the noise generated in them is associated with the nature of the p-n junction and, moreover, the rectifier noise intensity considerably exceeds that which is commonly observed in semiconductor materials. The main factor which affects the noise intensity is the electric stress. The increase of noise level with decreasing frequency and a high duty factor at low frequencies indicate that slow processes with long relaxation times are dominant in this effect. These slow processes are caused by the recombination of impurity centers and diffusion of the centers in the vicinity of the junction layer. [Abstracter's note: Complete translation]

Card 2/2

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

S/081/61/000/021/009/094
B102/B138

AUTHOR: Ravdel', A. A.

TITLE: Evaporation rate of spherical bodies in a gas flow

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 21, 1961, 43, abstract 21B344 (Tr. Leningr. tekhnol. in-ta im. Lensoveta, no. 61, 1960, 119 - 125)

TEXT: A general equation is derived for calculating evaporation time and the weight losses of a spherical body at various conditions of gas flow. From a study of the evaporation of naphthaline balls in a wind tunnel with annular flow the following value was found for the function of Reynolds number and the diffusional Prandtl number $f(Re,Pr')$ for calculating the evaporation rate of spherical bodies of slightly volatile substances at Re values between 3000 and 44,500: $f(Re,Pr') = 1 + 0.18(Pr')^{\frac{1}{3}} Re^{0.6}$.

[Abstracter's note: Complete translation.]

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

S/058/61/000/009/020/050
A001/A101

AUTHOR: Ravdel', A.A.

TITLE: A precise method of calculating diffusion coefficient of gas into gas

PERIODICAL: Referativnyy zhurnal. Fizika, no. 9, 1961, 166, abstract 9D9 ("Tr. Leningr. tekhnol. in-ta im. Lensoveta", 1960, no. 61, 110 - 118)

TEXT: The author proposes a more precise method of calculating diffusion coefficients of vapors of organic liquids into air, carbon dioxide and hydrogen. The calculation is based on the assumption that kinetic molar volume in the Maxwell-Stephan equation can be identified with the four-fold value of molecular refraction. Empirical coefficients of the formula are close to those calculated theoretically. Two equivalent methods are proposed for calculating diffusion coefficients at different temperatures.

[Abstracter's note: Complete translation]

Card 1/1

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

SOV/
S/081/61/000/015/009/139
B101/B110

54100

AUTHOR: Ravdel', A. A.

TITLE: More accurate method of calculating the diffusion coefficient of gas into gas

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 15, 1961, 35, abstract 15G245 (Tr. Leningr. tekhnol. in-ta im. Lensoveta, no. 61, 1960, 110-118)

TEXT: It is assumed that the kinetic molecular volume in the Maxwell-Stephan equation (L. Landau, Ye. Lifshits, Mekhanika sploshnykh sred, Gostekhizdat, 1944, p. 440) can be equated to the fourfold value of molar refraction. A more accurate method of calculating the diffusion coefficient of organic liquid vapors in air, carbon dioxide, and hydrogen is suggested. The diffusion coefficient D_{12} of gas 1 into gas 2 is: $D_{12} = A_R T^{3/2}(1/M_1 + 1/M_2)^{1/2}(R_1^{1/3} + R_2^{1/3})^{1/2}P$, where $A = 1.550 \cdot 10^{-3}$ at low concentrations of the light gas and $A = 1.372 \cdot 10^{-3}$ at low concentrations of the heavy gas; M = molecular weight; T = absolute temperature;

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More accurate method of calculating ... B101/B110

p = pressure in atm; R = molecular refraction. In order to check this equation the constant A_R for diffusion into air, carbon dioxide and hydrogen was determined for the following substances: formic acid, methanol, acetic acid, ethanol, propionic acid, ethyl formiate, methyl acetate, n-propyl alcohol, isobutyric acid, n-butyric acid, methyl propionate, ethyl acetate, propyl formiate, n-butyl alcohol, isobutyl alcohol, ethyl propionate, n-amyl alcohol, benzene. For diffusion into air A_R was determined for the following substances: n-propyl bromide, isopropyl alcohol, trimethyl carbinol, ethyl ether, diethyl amine, isobutyl amine, isovaleric acid, isobutyl formiate, propyl acetate, aniline, capronic acid, amyl formiate, n-butyl acetate, ethyl-n-butyrate, ethyl-isobutyrate, isobutyl acetate, benzyl chloride, m-chloro toluene, o-chloro toluene, p-chloro toluene, toluene, isobutyl propionate, propyl butyrate, ethyl benzene, m-xylene, o-xylene, p-xylene, amyl propionate, isobutyl butyrate, n-octane, isopropyl benzene, mesitylene, n-propyl benzene, amyl isobutyrate, naphthalene, safrole isosafrole, eugenol, and diphenyl. The divergence between calculated and experimental data is not higher than 10%. Two equations are suggested for calculating the diffusion coefficient at

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28020

S/081/61/000/015/009/139

More accurate method of calculating ... B101/B110

different temperatures: $D_T/D_{T_o} = (T/T_o)^{3/2}(1+ S/T)/(1 + S/T_o)$ where $D_T = D_{12}$ at the temperature T; $T_o = 273^oK$; $D_T/D_{T_o} \approx (T/T_o)^2$; and S = Sutherland constant (Sutherland, "Phil. Mag.", 1893, 36; 507; 1894, 38, 1). Both equations yield values which at 0 - 200°C are within the experimental error limit. The Sutherland constants were calculated for acetic acid, anilin, and naphthalene. [Abstracter's note: Complete translation.]

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVDEL', A.A.; OGAREV, N.V.

Intensification of the process of producing red lead. Zhur. prikl.khim. 33 no.1:70-76 Ja '60. (MIRA 13:5)
(Lead oxide)

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5.2200,15.1200,15.7300

77504
SOV/80-33-1-13/49

AUTHORS: Ravdel', A. A., Ogarev, N. V.

TITLE: Concerning the Intensification of the Red Lead Manufacturing Process. Communication I From a Series of Investigations of Heterogeneous Reactions

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 1, pp 70-76 (USSR)

ABSTRACT: As reported previously by one of the authors (Tr. LTI imeni Lensoveta, 1959, Vol 50, p 274), the preparation of red lead according to the reaction:

$$3PbO + \frac{1}{2} O_2 \rightleftarrows Pb_3O_4,$$

conducted in fluidized bed at about 480° C, proceeded 7-8 times faster than under the usual technological conditions. The first stage of the reaction i.e., the formation of an oxidized layer on the surface of the litharge particles, takes only about 7% of the total time of reaction. Subsequently, oxygen diffuses through

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Concerning the Intensification of the Red Lead Manufacturing Process. Communication I From a Series of Investigations of Heterogeneous Reactions

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this lead tetroxide layer and comes into contact with a still unreacted, deeper layer of PbO. Since the surface oxidation proceeds much faster than the diffusion of oxygen into the inner layers, it can be assumed that the rate of reaction is governed by the rate of oxygen diffusion. The linear diffusion can be described by the following limit conditions (see Fig. 1):

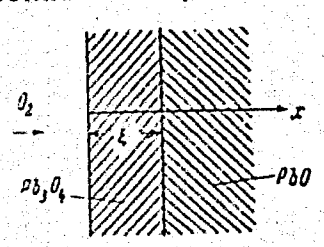

Fig. 1. Diffusion of oxygen through a lead tetroxide layer.

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$$\text{At all } \tau = 0,\ x = 0,\ \xi = 0,\ c = c_0;$$

$$\tau > 0,\ x = \xi,\ c = c_p;$$

$$\text{At } x = \xi,\ -D\left(\frac{\partial c}{\partial x}\right)_{x=\xi} = \varepsilon\frac{\partial \xi}{\partial \tau}. \qquad (1)$$

where x is reaction coordinate; ζ, thickness of reaction product (Pb_3O_4) layer; τ, time; c_o, c, and c_p, oxygen concentrations at the particle's surface, in the lead tetroxide layer, and at the surface of the reaction, respectively; ε, stoichiometric constant which is a function of the density of lead tetroxide $\gamma_{Pb_3O_4}$ and of the molecular weights of lead tetroxide $\mu_{Pb_3O_4}$ and oxygen μ_{O_2}, and equals 0.212. The solution of the diffusion equation:

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$$\frac{\partial c}{\partial \tau} = D\frac{\partial^2 c}{\partial x^2}$$

is given in the form:

$$c = A + B \cdot \Phi(z). \qquad (2)$$

where

$$\Phi(z) = \frac{2}{\sqrt{\pi}}\int_0^z e^{-z^2}dz, \qquad z = \frac{x}{2\sqrt{D\tau}}.$$

Hence,

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$$\Phi(z) = \frac{1}{\sqrt{\pi \cdot D \cdot \tau}} \int_0^{\frac{z}{2\sqrt{D\tau}}} e^{-\frac{z^2}{4D\tau}} dx.$$

By introducing the initial and boundary limits, one obtains:

at $\tau = 0$ and $= 0$ $\Phi(z) = 0$ and $c_0 = A$,

at $\tau > 0$ and $x = \xi$ $c_p = c_0 + B \cdot \Phi(z)_{z=\xi}$.

From the latter equation,

$$B = \frac{c_p - c_0}{\Phi(z)_{z=\xi}} \quad \text{or} \quad B = \frac{c_p - c_0}{\Phi\left(\frac{\xi}{2\sqrt{D\tau}}\right)}.$$

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It is evident that B is constant if:

$$\xi = p\sqrt{\tau}. \tag{3}$$

where p is some constant. Hence,

$$B = \frac{c_p - c_0}{\Phi\left(\frac{p}{2\sqrt{D}}\right)}.$$

By introducing $-\Delta c = c_p - c_o$, and substituting the value of B into Eq. (2), the expression $\frac{\partial c}{\partial x}_{x=\xi}$ can be found and substituted in Eq. (1):

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$$\frac{D \cdot \Delta c}{\Phi\left(\frac{p}{2\sqrt{D}}\right)} \cdot \Phi'(z)_{z=1} = \varepsilon \frac{\partial \xi}{\partial \tau}, \text{ where } \Phi'(z)_{z=1} = \frac{\partial}{\partial z}[\Phi(z)]_{z=1},$$

hence,

$$\frac{D \cdot \Delta c}{\Phi\left(\frac{p}{2\sqrt{D}}\right)} \cdot \frac{e^{-\frac{p^2}{4D}}}{\sqrt{\pi \cdot D \cdot \tau}} = \varepsilon \frac{\partial \xi}{\partial \tau}.$$

The replacement of $\sqrt{\tau}$ in the denominator of the left side of the equation by its value obtained from (3), and integration from $x = 0$ and $\tau = 0$ to ξ and τ, gave:

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$$D = \frac{\xi^2}{\tau} \cdot \frac{\varepsilon \cdot \sqrt{\pi}}{4\Delta\sigma} \cdot \frac{\Phi\left(\frac{p}{2\sqrt{D}}\right)}{\frac{p}{2\sqrt{D}} \cdot e^{-\frac{p^2}{4D}}} \qquad (4)$$

or

$$D = \text{const} \cdot \frac{\Phi(y)}{y \cdot e^{-y^2}}, \qquad (4a)$$

where

$$y = \frac{p}{2\sqrt{D}} \qquad (4b)$$

and

$$\text{const} = \frac{\xi^2}{\tau} \cdot \frac{\varepsilon\sqrt{\pi}}{4\Delta\sigma} = p^2 \frac{\varepsilon\sqrt{\pi}}{4\Delta\sigma}. \qquad (4c)$$

By introducing auxiliary functions and some experimental data, the value of the coefficient of diffusion D at various temperatures can be determined graphically from Eq. (4). It was found that raising the temperature from 480° C to 560° C under 1 atm oxygen pressure (5 atm air pressure) should increase the rate of reaction

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2.5 times due to the increase of the diffusion rate. The oxidation of litharge is fluidized bed should be conducted, therefore, under a simultaneous and correspcnding increase of temperature and oxygen pressure. There are 3 figures; 4 tables; and 9 references, 1 U.S., 8 Soviet. The U.S. reference is: I. W. Mellor, A Comprehensive Treatise on Organic and Theoretical Chemistry, 7, 669 (1947).

SUBMITTED: July 8, 1959

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BARON, N.M.; KVYAT, E.I.; PODGORNAYA, Ye.A.; PONOMAREVA, A.M.; RAVDEL', A.A.; TIMOFEYEVA, Z.N. Prinimal uchastiye VASIL'YEV, I.A.. MISHCHENKO, K.P., red.; PETRZHAK, K.A., red.; LOBINA, M.K., red.; LEVIN, S.S., tekhn.red.; FOMKINA, T.A., tekhn.red.

[Short reference handbook of physicochemical constants] Kratkii spravochnik fiziko-khimicheskikh velichin. Pod red. K.P.Mishchenko i A.A.Ravdelia. Izd.3., dop. Leningrad, Gos.nauchno-tekhn. izd-vo khim.lit-ry, 1959. 122 p. (MIRA 13:2)
(Chemistry, Physical and theoretical--Charts, diagrams, etc.)

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RAVDEL', A.A.

RAVDEL', A.A.

9(4) FRAME I BOOK EXPLOITATION SOV/1428

Baron, N.M., Ye. D. Veleva, I.M. Yegorov, E.I. Kvyat, K.P. Mishchenko, A.M. Ponomareva, A.A. Ravdel', and G.I. Semenov

Prakticheskiye raboty po fizicheskoy khimii (Practical Work in Physical Chemistry) Leningrad, Goskhimizdat, 1957. 263 p. 11,000 copies printed.

Eds. (Title page): K.P. Mishchenko, Professor, and A.A. Ravdel', Docent; Ed. (Inside book): N.K. Lobina; Tech. Ed.: Ye. Ya. Erlikh.

PURPOSE: This textbook was approved by the Ministry of Higher Education as a manual for students of vases specializing in chemistry.

COVERAGE: The text covers the theoretical and practical aspects of experimental physical chemistry. It is the aim of the authors to aid the student in his laboratory work by preceding each experiment with a theoretical introduction, a description of the apparatus, and the order of the determination and computation of results. Much attention is given to the fundamentals of chemical thermodynamics, reaction kinetics, and equilibrium. The basic techniques of

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Practical Work in Physical Chemistry SOV/1428

experimentation and the treatment of experimental data are presented so as to enable the student to work independently. The text was prepared jointly by the staff of the Department of Physical Chemistry, Leningradskiy tekhnologicheskiy institut imeni Lensovets (Leningrad Technological Institute imeni Lensovet) with K. P. Mishchenko and A.A. Ravdel' as editors, and N. M. Baron and A.M. Ponomareva as conditors. The book was reviewed by Professors V.A. Kiryanov, B.P. Nikol'skiy, corresponding member of the AS USSR, and by the staff of Professor Nikol'skiy. There are no references.

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INTRODUCTION

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Card [illegible]

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVDEL, A. A.

Distr: 4E4j

Static method for the determination of vapor pressures of solutions. N. A. Kupina and A. A. Ravdel. Zhur. Priklad. Khim. 30, 1405-8(1957).—Description of an app. and procedure. I. Bencowitz

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PHASE I BOOK EXPLOITATION SOV/4579

Konferentsiya po razvitiyu proizvoditel'nykh sil Vostochnoy Sibiri, 1958.
Khimicheskaya promyshlennost'

Khimicheskaya promyshlennost'; trudy konferentsii (Chemical Industry; Transactions of the Conference on the Development of Productive Forces in Eastern Siberia) Moscow, Izd-vo AN SSSR, 1960. 202 p. (Series: Razvitiye proizvoditel'nykh sil Vostochnoy Sibiri) Errata slip inserted. 2,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Sovet po izucheniyu proizvoditel'nykh sil. Sibirskoye otdeleniye.

Editorial Board: I.P. Bardin (Deceased) Chief Ed., Academician; N.A. Lavrent'yev, Academician; S.I. Vol'fkovich, Academician, V.I. Dikushin, Academician; V.S. Nemchinov, Academician; V.I. Weyts, Corresponding Member, Academy of Sciences USSR; G.D. Levitskiy, Corresponding Member, AS USSR; S.S. Bakrasov, Corresponding Member, AS USSR; L.V. Pustovalov, Corresponding Member, AS USSR; P.S. Khachaturov, Corresponding Member, AS USSR; S.F. Rmatovtsev, Academician, VASKHNIL; A.S. Popov, Corresponding Member, Academy of Building and Architecture USSR; L. Ya. Grafov, Deputy Chairman, Gosplan RSFSR; A.D. Osadchy, Member, Gosplan RSFSR; A. Ya. Probst, Professor; V.F. Vasyutin, Professor; V.A. Krotov, Professor; P.V. Vasil'yev, Doctor of Economic Sciences; G.I. Lyudogovskiy, Candidate of Technical Sciences; P.A. Letunov, Candidate of Geological and Mineralogical Sciences; and M.G. Khazal'shov, Candidate of Economic Sciences; Editorial Board of this volume: S.I. Vol'fkovich (Resp. Ed.); G.V. Ovarov, Deputy Chairman, State Committee on Chemistry, Council of Ministers USSR; and V.P. Lamarov, Secret; Ed. of Publishing House: A.L. Rashvitser; Tech. Ed.: V.V. Brazgil'.

PURPOSE: This book is intended for chemical engineers and economic planners concerned with the industrial development of Eastern Siberia.

COVERAGE: This volume is one of a series of 13 containing the Transactions of the Conference on the Development of the Productive Forces in Eastern Siberia. The Conference took place in August 1958. The volume contains summaries of 20 reports presented at the meetings of the Chemical Section of the Conference, brief summaries of pertinent discussions, and the text of resolutions taken by the Chemical Section. The reports deal with the possibilities of developing chemical industries in Eastern Siberia capable of producing artificial fibers, acetylene, plastics, synthetic detergents, synthetic rubber, mineral fertilizers, sulfuric acid, nitrogen, soda, chlorine, etc. No personalities are mentioned. There are no references.

Chemical Industry (Cont.) SOV/4579

Kolyasnikov, I.A. [Candidate of Chemical Sciences, Irkutskiy filial AS SSSR (Irkutsk Branch, AS USSR)] 169

Chukhanov, Z.F. [Corresponding Member, AS USSR] 169

Mikulina, S. Ya. [Irkutsk State University] 171

Grechkin, B.B. 171

D'yakova, E.K. [Doctor of Technical Sciences, IOI AS SSSR (Institute of Mineral Fuels imeni G.M. Krzhizhanovskiy, AS USSR)] 173

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PHASE I BOOK EXPLOITATION SOV/4579

Konferentsiya po razvitiyu proizvoditel'nykh sil Vostochnoy Sibiri, 1958.
Khimicheskaya sektsiya

Khimicheskaya promyshlennost'; trudy konferentsii (Chemical Industry; Transactions of the Conference on the Development of Production Forces in Eastern Siberia) Moscow, Izd-vo AN SSSR, 1960. 202 p. (Series: Razvitiye proizvoditel'nykh sil Vostochnoy Sibiri) Errata slip inserted. 2,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Sovet po izucheniyu proizvoditel'nykh sil. Sibirskoye otdeleniye.

Editorial Board: I.P. Bardin (Deceased) Chief Ed., Academician; N.A. Lavrent'yev, Academician; S.I. Vol'fkovich, Academician, V.I. Dikushin, Academician; V.S. Nemchinov, Academician; V.I. Veyts, Corresponding Member, Academy of Sciences USSR; G.B. Levitskiy, Corresponding Member, AS USSR; N.N. Nikrasov, Corresponding Member AS USSR; L.V. Pustovalov, Corresponding Member AS USSR; P.S. Khachaturov, Corresponding Member, AS USSR; N.P. Rostovtsev, Academician, VASKHNIL; A.N. Popov, Corresponding Member, Academy of Building and Architecture USSR; L. Ye. Grafov, Deputy Chairman, Gosplan RSFSR; A.D. Gankov, Member, Gosplan RSFSR; A. Ye. Probst, Professor; V.P. Vasyutin, Professor; Y.A. Krotov, Professor; P.V. Vasil'yev, Doctor of Economic Sciences; G.I. Lyudogovskiy, Candidate of Technical Sciences; P.A. Letunov, Candidate of Geological and Mineralogical Sciences; and E.G. Shkol'nikov, Candidate of Economic Sciences; Editorial Board of this volume: S.I. Vol'fkovich (Resp. Ed.); G.V. Uvarov, Deputy Chairman, State Committee on Chemistry, Council of Ministers USSR; and V.P. Kamarov, Secret; Ed. of Publishing House: A.L. Ronkvitser; Tech. Ed.: V.V. Krugal'.

PURPOSE: This book is intended for chemical engineers and economic planners concerned with the industrial development of Eastern Siberia.

COVERAGE: This volume is one of a series of 13 containing the Transactions of the Conference on the Development of the Productive Forces in Eastern Siberia. The Conference took place in August 1958. The volume contains summaries of 20 reports presented at the meetings of the Chemical Section of the Conference, brief summaries of pertinent discussions, and the text of resolutions taken by the Chemical Section. The reports deal with the possibilities of developing chemical industries in Eastern Siberia capable of producing artificial fibers, acetylene, plastics, synthetic detergents, synthetic rubber, mineral fertilizers, sulfuric acid, nitrogen, soda, chlorine, etc. No personalities are mentioned. There are no references.

Chemical Industry (Cont.) SOV/4579

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III. RESOLUTIONS OF THE CHEMICAL SECTION OF THE CONFERENCE 198

AVAILABLE: Library of Congress (HD9656.R9Z6,1958)

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VANIN, A.L.; GIL'MAN, S.M.; GOL'DBERG, A.S. (deceased); GULENKO, G.V.; RAVDEL', A.M.

Experience in the use of EAUS regulators in the automation of the thermal operation of a Martin furnace. Avtom. i prib. no.1:7-9 Ja-Mr '65. (MIRA 18:8)

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

AUTHORS: Danoylovich, M. A., Barkan, A. B., Ravdel', B. A. 64-58-2-1o/16

TITLE: The Selection of Rational Feeding Automation for Pyrites Furnaces (Vybor ratsional'noy skhemy avtomatizatsii pitaniya kolchedannykh pechey)

PERIODICAL: Khimicheskaya Promyshlennost', 1958, Nr 2, pp. 49-5o (USSR)

ABSTRACT: In the investigations for obtaining the necessary gas concentration and temperature at the output of the furnace it was found that a complete readjustment of feeding is necessary. The following demands must be met by the feeding apparatus to be constructed: It must be standardized and produced in series. A widely variable filling interval for pyrite must exist which operates without using the dosing apparatus not acknowledged by industry. The plant must be capable of operating in a very dusty atmosphere and is to have a minimum number of contact elements in its regulation scheme. The constructions in use at present as well as a design by the Giprotsvetmet Institute did not meet these demands. In the Giprokhim branch consequently a scheme was elaborated in which the regulation system has practically no con=

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tact elements at all. From the mentioned schematic representations can be seen that the feeding mechanism is operated by a P M Z-290-type motor which has a standard magnetic contactor D M -1122-12A2 for connection. The regulation apparatus is an electropotentiometer with a pneumatic isodromic system arrangement of the E P D -32-type, while the a thermocouple of the TXA-146-type or T K G-4 D -type with a special arrangement for gas purification is used corresponding to the conditions of regulation. A servo-motor of the K_3-4201 -type permanently connected with a rheostat of the PB-18-L -type serves as operating element. The latter is connected with the field winding of the motor. The d.c.source for the motor as well as for the selenium rectifier of the type ABC-100-53, connected according to the three-phase scheme, are directly connected with the 380/220 V supply. An additional rheostat of the type PB-18-L serves for the automatic regulation of the shunt resistance. Besides the cased motor and the control buttons the whole systems in h a casing (figure). The use of the isodromic system arrangements is

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explained by the few intermediate apparatus and the absence of contact elements; moreover this type of regulator has already proved valuable in the automation of sulfuric acid industry. The single parts of the described plant are produced in series and can easily be exchanged and assembled. The scheme of arrangement can be used for the automatic dosing in other technologic processes: then the regulation can be adjusted according to the specific weight, the concentration of hydrogen ions etc.
There are 2 figures and 4 references, all of which are Soviet.

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1. Furnaces--Operation 2. Pyrites--Handling 3. Furnace equipment --Control systems 4. Control systems--Operation

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SAMOYLOVICH, M.A.; BARKAN, A.B.; RAVDEL', B.A.

Choosing an efficient system of automatic feeding of pyrite furnaces. Khim. prom. no.2:113-114 Mr '58. (MIRA 11:5)
(Pyrites) (Smelting furnaces)

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USSR/Chemistry - Pharmaceuticals Mar 52

"Synthesis of m-Amino (Hydroxy)-Phenyl-β-(Methylamino)-Ethanols and Catalytic Reduction of m-Nitroacetophenone," S. I. Sergiyevskaya, G. A. Ravdel', All-Union Sci Res Chem-Phar Inst imeni S. Ordzhonikidze

"Zhur Obshch Khim" Vol XXII, No 3, pp 496-502

m-Aminophenyl-β-(methylamino)-Ethanol was obtained. Its structure was shown by its transformation into the hydrochloride of the known m-hydroxyphenyl-β-(methylamino)-ethanol. Gives a

209T48

USSR/Chemistry - Pharmaceuticals (Contd) Mar 52

method for obtaining m-hydroxyphenyl-β-(methylamino)-ethanol, and describes a method for obtaining m-amino-acetophenone by a catalytic conversion.

209T48

RAVDEL', G. A.

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RAVDEL', G. A.

Lur'e, S. I., Ravdel', G. A., Chaman, E. S.- "Amino acids. Part 2. Catalytic reduction of esters of oximino-(isonitroso)-carboxylic acids." (p. 2011)

SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii), 1952, Vol. 22, No. 11

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVDEL', G. A.

23474

USSR/Chemistry - Pharmaceuticals 1 Mar 52

"Geometric Isomers of 2-Phenyl-4-ethoxyethylidene-5-oxazolone," S. I. Lur'ye, G. A. Ravdel', Inst of Biol and Med Chem, Acad Med Sci USSR

"Dok Ak Nauk SSSR" Vol 83, No 1, pp 97-99

When the ethyl ester of orthoacetic acid is heated with hippuric acid in the presence of acetic anhydride, 2 isomers of 2-phenyl-4-ethoxyethylidene-5-oxazolone are obtained. One has a mp of 112-113° and the other has a mp of 136-138°. Points out that the oxazolone ring is very stable. Presented by Acad V. M. Rodionov 5 Jan 52.

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

Kavdel, G. A.

Amino acids. IV. Geometric isomers of 2-phenyl-4-(1-ethoxyethylidene)-5-oxazolone. S. I. Lur'e and G. A. Kavdel (Inst. Biol. and Med. Chem., Acad. Med. Sci. U.S.S.R., Moscow). *Sbornik Statei Obshchei Khim., Akad. Nauk S.S.S.R.* 1, 498-503(1953); cf. *C.A.* 46, 5039*h*; 48, 4513*e*.—Heating 14.3 g. $MeC(OEt)_3$, 15.8 g. $BzNHCH_2CO_2H$, and 18.7 ml. Ac_2O 1 hr. at 140-50° gave on cooling 20-8% *geometric isomer* (Ia) of *2-phenyl-4-(1-ethoxyethylidene)-5-(4H)-oxazolone* (I), m. 112-13° (from EtOH). The mother liquor dild. with H_2O and C_6H_6, the C_6H_6 ext. sepd., washed with $NaHCO_3$, dried, and evapd. gave a slowly crystallizing oil, which was rubbed with Et_2O leaving behind 1.8-2% of a *2nd isomer* (Ib) of I, m. 136-8° (from C_6H_6). The 1st isomer had abs. max. at 3400 and 3250 A. in EtOH, while the 2nd isomer absorbed at 3500 and 3350 A. in dioxane both had abs. max. at about 3500 and 3250 A. The Et_2O wash liquid gave some I, m. 112-13°, and Et hippurate. To 5.52 g. $BzNHCH_2CO_2H$ and 2.14 g. powd. K_2CO_3 was added 9.8 ml. Ac_2O, the mixture heated to 38° until the action ceased, and the residue was treated with ice H_2O and C_6H_6 yielding 1.87 g. 2-phenyl-5-oxazolone, which with 1.87 g. $MeC(OEt)_3$ and 3 ml. Ac_2O heated 1 hr. at 140-50° gave 35% I and 1.8-2% 2nd isomer of I. Keeping the 2nd isomer 1 day in pyridine gave 77% I. Ia or Ib boiled 20 min. with 2% NaOH and acidified with HCl after cooling gave 77.3% *2-phenyl-4-(1-hydroxyethylidene)-5-(4H)-oxazolone* (II), m. 192-4° (decompn.); the isomers are similarly transformed by warm concd. HCl. Heating Ia or Ib 7 min. with 0.5*N* HCl gave *benzamidoacetone*, m. 82-3°. Refluxing II in abs. EtOH 1 hr., followed by addn. of semicarbazide HCl salt and KOAc gave *Et N-benzoylaminoacetoacetate semicarbazone*, decomp. 159-60°. Heating Ia or Ib or its isomer with $PhNH_2$ in C_6H_6 2 hrs. gave 82.2% *2-phenyl-4-(1-phenylaminoethylidene)-5-(4H)-oxazolone* (III), m. 123-5°; in some runs there was also obtained a substance (IV), m. 136-7°, of the same compn. which on crystn. from EtOH changed to the above compd. m. 123-5°; absorption spectra of III and IV were identical. Heating the product 0.5 hr. with 2% NaOH gave II. Similarly I or its isomer heated in C_6H_6 with piperidine gave 90% *2-phenyl-4-(1-piperidinoethylidene)-5-oxazolone*, m. 116-18°; this refluxed 2.5 hrs. with 2% NaOH gave II. G. M. Kosolapoff

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RAVDEL, G. A.

V 47
r-53
Chemistry

Amino acid series. V. Condensation reaction of aldehydes and ketones with acylglycines. S. I. Lur'e, E. S. Chunap, and G. A. Ravdel. *Zhur. Obshchei Khim.* 23, 1392-9(1953); cf. *C.A.* 47, 12353*i*.—AcPh does not react with hippuric acid under conditions of the Erlenmeyer reaction. A NO_2 group introduced into AcPh activates the CO group and the reaction becomes possible. In formation of oxazolones in the condensation of alds. or ketones with acylglycines the use of $NaHCO_3$ gave at least as good yields as did the use of K_2CO_3. Addn. of 40 ml. Ac_2O to 26.5 g. BzH, 22.5 g. hippuric acid (I), and 17.25 g. dry K_2CO_3 gave a vigorous, but delayed reaction; after 24 hrs. the mass was ground with H_2O and dil. AcOH yielding 83.70% *2-phenyl-4-benzylidene-5-oxazolone*, m. 165.5-7°. Mixing 14.75 g. aceturic acid, 8.6 g. K_2CO_3, 26.5 g. BzH and 40 ml. Ac_2O led to a mild temp. rise, after which the mixt. was kept 1 hr. at 60°, 1 hr. at 120°, and 1 hr. at 120-35°; the usual treatment gave 85% *2-methyl-4-benzylidene-5-oxazolone*, m. 146-9°. Similar reaction gave 80-5% *2-phenyl-4-(p-methoxybenzylidene)-5-oxazolone*, m. 150-3°, when $NaHCO_3$ was used and the temp. was kept at 60°. Reaction of 10 g. I with 8.5 g. o-$O_2NC_6H_4CHO$, 4.7 g. $NaHCO_3$ and 20 ml. Ac_2O at 50-5° gave 82% *2-phenyl-4-(o-nitrobenzylidene)-5-oxazolone*, m. 160-4°. Heating 5 g. aceturic acid, 6.5 g. o-$O_2NC_6H_4CHO$, 3.72 g. $NaHCO_3$, and 9.5 ml. Ac_2O 2 hrs. at 55-67°, followed by standing overnight, gave *2-methyl-4-(o-nitrobenzylidine)-5-oxazolone*, m. 110-12° (from C_6H_6).

Inst. Biol. & Med Chem,
Acad Med Sci USSR

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and Et_2O-insol. *Et α-acetylamino-o-nitrocinnamate*, m. 121–3° (from C_6H_6); when the above oxazolone is kept several hrs. in 2% NaOH there is formed 98% *α-acetylamino-o-nitrocinnamic acid*, m. 201–3° (decompn.). When the oxazolone is kept 1–1.5 hrs. in C_6H_6 with $PhNH_2$ there is formed *α-acetylamino-o-nitrocinnamanilide*, decomp. 199–201° (from dil. EtOH); use of piperidine gave the *piperidide*, m. 214–16° (from dil. EtOH). Heating 10 g. I with 4.6 g. $NaHCO_3$, 16 ml. Ac_2O, and 165 ml. Me_2CO 6 hrs. at reflux gave 23–9% BzONa ppt., while the filtrate gave upon diln. 50% *2-phenyl-4-isopropylidene-5-oxazolone*, m. 94–7° (from dil. EtOH). MeEtCO gave the *4-sec-butylidene analog*, obtained as 2 undescribed geometric isomers. I (3.26 g.) with 1.26 g. K_2CO_3 and 5.78 ml. Ac_2O, followed by 3 g. *p*-$O_2NC_6H_4Ac$, added when CO_2 evolution slackened, then heated 20 min. to 44° and kept overnight, gave upon treatment with ice 28% *2-phenyl-4-(1'-p-nitrophenylethylidene)-5-oxazolone*, m. 175–7° (from EtOH). If the crude orange product is washed with EtOH, the yellow form is removed and a red form is left behind; both have the same m.p. The red form ppts. from hot solns. in EtOH, C_6H_6, or dioxane in the yellow form; the red form dissolved in pyridine and dild. also gave the yellow form. Heating the oxazolone with 2% NaOH gave *α-benzoylamino-β-(p-nitrophenyl)crotonic acid*, decomp. 202–4°; use of MeOH and a little MeONa gave the corresponding *Me ester*, m. 181–3°, while the use of $PhNH_2$ in hot C_6H_6 gave 81% *corresponding anilide*, decomp. 251–2° (from Me_2CO-C_6H_6); piperidine gave the *piperidide*, decomp. 211–13° (from dioxane). I (1.09 g.), 0.42 g. K_2CO_3, 1.9 ml. Ac_2O, and 1 g. *m*-$O_2NC_6H_4Ac$ similarly gave 13.3% *2-phenyl-4-(1'-m-nitrophenylethylidene)-5-oxazolone*, m. 174–6° (from EtOAc); this heated with 2% NaOH gave *α-benzoylamino-β-(m-nitrophenyl)crotonic acid*, decomp. 197–8° (from dil. EtOH); heating the oxazolone with piperidine in C_6H_6 1 hr. gave the corresponding *piperidide*, decomp. 216–17° (from EtOH-dioxane). *Acetylleucine* treated with *piperidine* in C_6H_6 gave *quaternary salt*, $C_{13}H_{28}O_3N_2$, m. 146–7°; *acetylvaline* gave similarly $C_{12}H_{26}O_3N_2$, m. 108–11°; *α-benzamidocinnamic acid* gave $C_{22}H_{18}O_3N_2$, m. 153–4°; *α-acetamidocinnamic acid* gave $C_{13}H_{22}O_3N_2$, m. 152–3°; *α-benzamido-β-isopropylcinnamic acid* gave $C_{19}H_{22}O_3N_2$, m. 109–16°; *α-acetamido-p-methoxycinnamic acid* gave $C_{13}H_{22}O_4N_2$, m. 181–2°; and *α-benzamido-p-methoxycinnamic acid* gave $C_{22}H_{18}O_4N_2$, m. 105–6°. G. M. Kosolapoff

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RAVDEL, G. A.

3

21 Synthesis of peptides containing the residues of α-hydroxy-α-amino acids. M. M. Shemyakin, G. A. Ravdel, and E. S. Chaman. *Proc. Acad. Sci. U.S.S.R., Sect. Chem.* 107, 195-8(1956)(Engl. translation).—See *C.A.* 50, 14628f. B. M. R.

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

SHEMYAKIN, M.M.; RAVDEL', G.A.; CHAMAN, Ye.S.

Synthesis of peptides containing an α-oxy-α-aminoacid residue. Dokl.AN SSSR 107 no.5:706-709 Ap '56. (MLRA 9:8)

1. Chlen-korrespondent AN SSSR (for Shemyakin); 2. Institut biologicheskoy i meditsinskoy khimii Akademii meditsinskikh nauk SSSR. (Peptides)

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

SHEMYAKIN, M.M.; SHCHUKINA, L.A.; VINOGRADOVA, Ye.I.; KOLOSOV, M.N.; VDOVINA, R.G.; KARAPETYAN, M.G.; RODIONOV, V.Ya.; RAVDEL', G.A.; SHVETSOV, Yu.B., BAMDAS, E.M.; CHAMAN, Ye.S.; YERMOLAYEV, K.M.; SEMKIN, Ye.P.

Research data on sarkomycin and its analogues. Part 1: Synthesis of dihydrosarkomycin and its antipode. Zhur. ob. khim. 27 no.3:742-748 Mr '57. (MLRA 10:6)

1. Institut biologicheskoy i meditsinskoy khimii Akademii meditsinskikh nauk SSSR.

(Sarkomycin)

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5.3400,5.3600,5.3610

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SOV/62-59-12-21/43

AUTHORS: Shemyakin, M. M., Ravdel', G. A., Chaman, E. S., Shvetsov, Yu. B., Vinogradova, E. I., Vdovina, R. G., Yermolayev, K. M., Bamdas, E. M.

TITLE: Studies in the Field of Sarcomycine and Its Analogs. Communication 4. Study of Synthetic Routes to Sarcomycine and Its Analogs

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 12, pp 2177-2187 (USSR)

ABSTRACT: 2-Methylcyclopentan-3-one-1,1-dicarboxylic acid (III) was used for the preparation of (Sarcomycine) 2-methylene-cyclopentanone-3-carboxylic acid (I). (III) was assumed to be converted into (V) by bromination. It seemed possible to synthesize (I) from (V) by removal of HBr and by decarboxylation. Diacid (V) could not be obtained because elimination of HBr from (IV) and simultaneous decarboxylation formed (VI) with an endocyclic double bond.

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Studies in the Field of Sarcomycine and Its Analogs. Communication 4. Study of Synthetic Routes to Sarcomycine and Its Analogs

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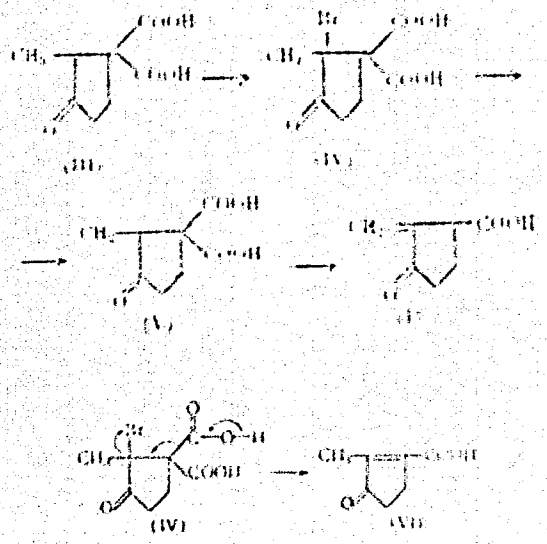

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Studies in the Field of Sarcomycine and Its Analogs. Communication 4. Study of Synthetic Routes to Sarcomycine and Its Analogs

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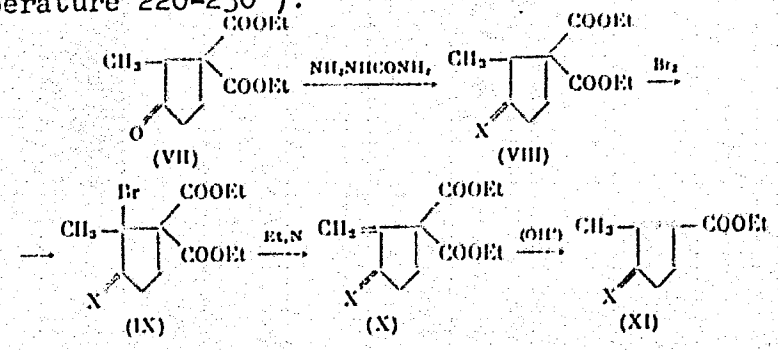
The semicarbazone of the diethyl ester of 2-methylcyclopentan-3-one-1,1-dicarboxylic acid (VIII) was brominated, and after eliminating HBr the semicarbazone of the diethyl ester of 2-methylenecyclopentan-3-one-1,1-dicarboxylic acid (X) was obtained in 56% yield (mp 207-209°). Diester (X) was saponified and the semicarbazone of the ethyl ester of 2-methylcyclopenten-1-one-3-carboxylic acid (XI) was obtained, in 74% yield (dec. temperature 220-230°).



где X = NNHCONH₂.

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Studies in the Field of Sarcomycine and Its Analogs. Communication 4. Study of Synthetic Routes to Sarcomycine and Its Analogs

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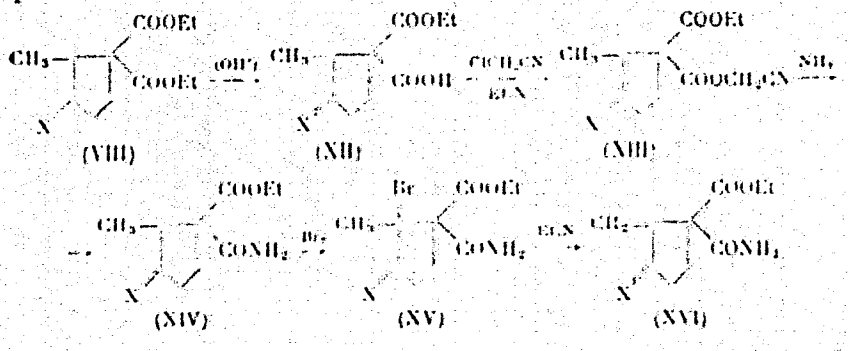
Attempts were made to convert the semicarbazone of the amide of 1-carbethoxy-2-methylcyclopentanene-3-carboxylic acid (XIV) into the semicarbazone of the amide of 1-carbethoxy-2-methylenecyclopentanone-3-carboxylic acid (XVI), but the isolated compound (XVI) was not pure and contained from 30 to 40% polymeric material.



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Studies in the Field of Sarcomycine and Its Analogs. Communication 4. Study of Synthetic Routes to Sarcomycine and Its Analogs

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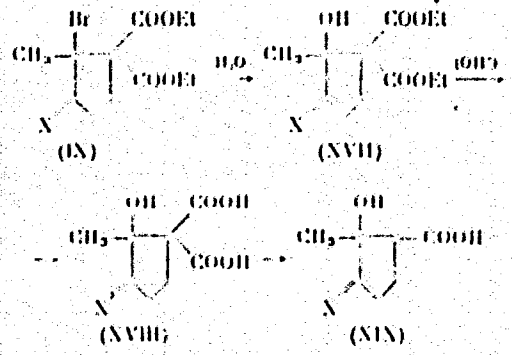
SOV/62-59-12-21/43

Semicarbazone of the diethyl ester of 2-methylcyclopentan-2-olone-3-carboxylic acid (XVII) was obtained, in 81% yield (mp 160-161°), from (IX) by reaction with water. Semicarbazone of 2-methylcyclopentan-2-olone-3-carboxylic acid (XIX) was prepared in 38% yield (mp 187-188°) by saponification of (XVII) and by subsequent decarboxylation of the intermediate (XVIII).



Card 5/10

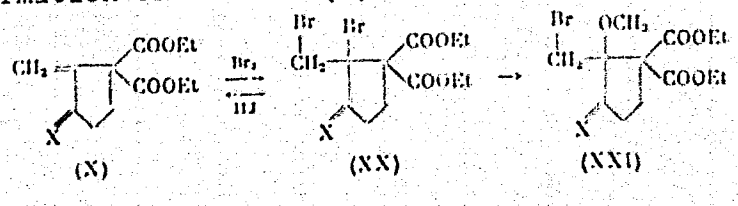
APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

Studies in the Field of Sarcomycine and Its Analogs. Communication 4. Study of Synthetic Routes to Sarcomycine and Its Analogs

77077
SOV/62-59-12-21/43

Dibromide (XX) was obtained quantitatively (mp 82-85° dec.) by addition of two bromine atoms to the diester (X). In the compound (XX) one bromine atom (position 2) is very labile. (XX) reacts with CH_3OH or H_2O forming corresponding compounds (XXI) in 65% yield (mp 138-139°) or (XXII) in 83% yield (mp 148-149°). The labile bromine atom in compound (XX) can quantitatively oxidize KI to free iodine, in the cold, but the obtained product can not be isolated, because the reaction is accompanied by elimination of HBr and formation of diester (X) in 71% yield (mp 207° dec.).



(X) (XX) (XXI)

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

Studies in the Field of Sarcomycine and Its Analogs. Communication 4. Study of Synthetic Routes to Sarcomycine and Its Analogs

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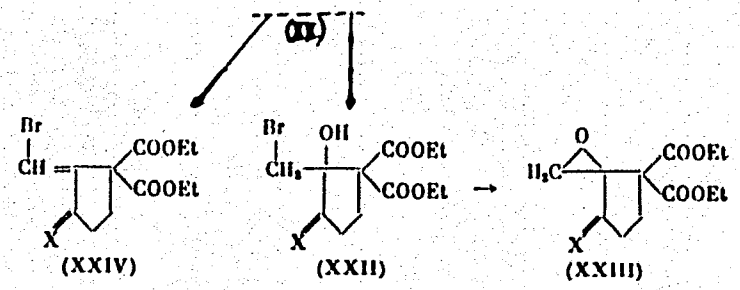
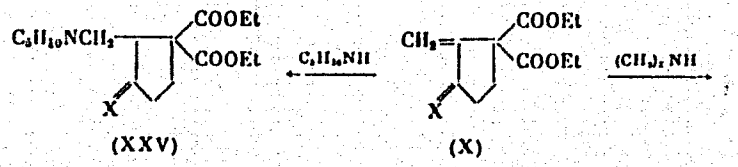
SOV/62-59-12-21/43



X = NNHCONH₂.

Compound (X) was converted into corresponding amines (XXV), in 17% yield (mp 124-126°), and (XXVI), in 62% yield (m p 160-161°), according to the reaction:



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APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

Studies in the Field of Sarcomycine and Its Analogs. Communication 4. Study of Synthetic Routes to Sarcomycine and Its Analogs

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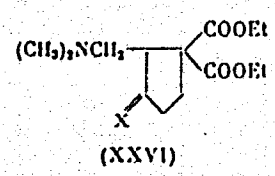
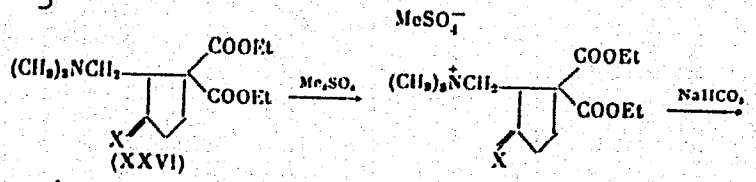
SOV/62-59-12-21/43



where X = NNHCONH$_2$.

Amine (XXVI) reacted with $(CH_3)_2SO_4$, in the presence of $NaHCO_3$, and diester (X) was obtained in 75% yield.



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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

Studies in the Field of Sarcomycine and Its Analogs. Communication 4. Study of Synthetic Routes to Sarcomycine and Its Analogs

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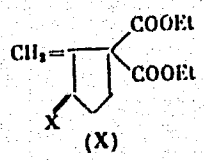
SOV/62-59-12-21/43



(X)

X = NNHCONH₂.

The synthesis of (I) may take place as follows: amines of (XXV-XXVI)-type, after hydrolysis, decarboxylation, and formation of the methylene group, can be converted into (I). The results of investigation will be published in a forthcoming communication. There are 9 references, 3 Soviet, 1 German, 2 Japanese, 1 U.K., 2 U.S. The 3 U.S. and U.K. references are: Chem. and Industr. 1957, 1320; E. J. Corey, J. Amer. Chem. Soc. 75, 1163 (1953); J. R. Hooper, L. C. Cheney et al., Antibiot. and Chemother. 5, 585 (1955).

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APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

Studies in the Field of Sarcomycine and Its Analogs. Communication 4. Study of Synthetic Routes to Sarcomycine and Its Analogs

77077
SOV/62-59-12-21/43

ASSOCIATION: Institute of Biological and Medical Chemistry, Academy of Medical Sciences (Institut biologicheskiy i meditsinskoy khimii Akademii medicinskhikh nauk)

SUBMITTED: April 12, 1958; Additions made, December 28, 1958

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APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

5.3400,5.3600,5.3610

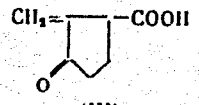
77078
SOV/62-59-12-22/43

AUTHORS: Shemyakin, M. M., Ravdel', G. A. Chaman, E. S., Shvetsov, Yu. B., Vinogradova, E. I.

TITLE: Investigation in the Field of Sarcomycine and Its Analogs. Communication 5. Synthesis of Racemic Sarcomycine

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 12, pp 2187-2194 (USSR)

ABSTRACT: Racemic sarcomycine (III) was synthesized in the form of its semicarbazone (XVIII).



(III)

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Investigation in the Field of Sarcomycine and Its Analogs. Communication 5. Synthesis of Racemic Sarcomycine

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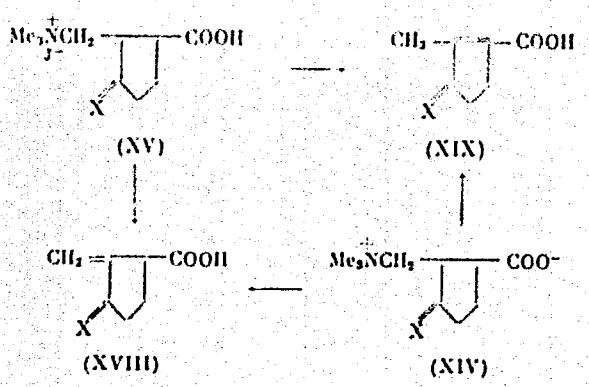
SOV/62-59-12-22/43



X = NNHCONH$_2$

The ethyl ester of 2-dimethylaminomethylcyclopentanone-3-carboxylic acid (XI) was used as starting material for the preparation of (III). Racemic sarcomycine in the form of its semicarbazone (XVII) can be obtained, in 39% yield, from the methiodide of acid (XV) or from betaine (XIV) together with the semicarbazone of 2-methylcyclopenten-1-one-3-carboxylic acid (XIX). For

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Investigation in the Field of Sarcomycine and Its Analogs. Communication 5. Synthesis of Racemic Sarcomycine

77078
SOV/62-59-12-22/43

this purpose (XV) or (XIV) is heated on a water bath for 4 minutes with 2 moles (for betaine 1 mole) of 1N NaOH. The solution was cooled to 0-2°, 10% HCl was added, and after 30 minutes the precipitate was removed by filtration and washed with cold water. The mixture of (XVIII) and (XIX) was obtained in 39% yield. The compound turns black on heating, but does not melt. Found: C 48.87%; H 6.02%. $C_8H_{11}O_3N_3$. Calculated: 48.75%; H 5.63%. From the above mixture, the semicarbazone of racemic sarcomycine (XVIII) was isolated by crystallization, in 50-55% yield. There are 8 references, 3 Soviet, 1 Japanese, 1 U.K., 3 U.S. The 4 U.S. and U.K. references are: Chem. and Industr. 1957, 1320. G. Buchi, N. G. Yang and Others, Chem. and Industr. 1953, 1063; J. Meinwald, S. L. Emerman and others., J. Amer. Chem. Soc. 77, 4401 (1955); E. E. Van Tamelen, S. R. Bach, J. Amer. Chem. Soc. 77, 4683 (1955).

Card 3/4

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

Investigation in the Field of Sarcomycine and Its Analogs. Communication 5. Synthesis of Racemic Sarcomycine

77078
SOV/62-59-12-22/43

ASSOCIATION: Institute of Biological and Medical Chemistry, Academy of Medical Sciences (Institut biologicheskoy i meditsinskoy khimii Akademii meditsinskikh nauk)

SUBMITTED: April 12, 1958; Additions made, December 28, 1958

Card 4/4

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVDEL', G.A.; KRIT, N.A.; SHCHUKINA, L.A.; SHEMYAKIN, M.M., akademik

Synthetic paths in the preparation of the peptide part of ergot alkaloids. Dokl.AN SSSR 137 no.6:1377-1380 Ap '61. (MIRA 14:4)

1. Institut boilogicheskoy i meditsinskoy khimii Akademii meditsinskikh nauk SSSR.
(Ergot alkaloids)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVDEL', G.A.; KRIT, N.A.; OLADKINA, V.A.; SHCHUKINA, L.A.; SHEMYAKIN, M.M.

Depsipeptides. Report No.31: Synthesis of depsipeptides containing α-hydroxy-β-amino acid radicals. Izv. AN SSSR. Ser. khim. no.11:1987-1992 '65. (MIRA 18:11)

1. Institut khimii prirodnykh soyedineniy AN SSSR.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

SHCHUKINA, L. A.; RAVDEL', G. A.

"Depsipeptide analogs of biologically active peptides."

report submitted for the 7th European Peptide Symp, Budapest, 3-8 Sep 64.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

S/776/62/000/025/011/025

AUTHOR: Ravdel', M. P.

TITLE: The mechanism of decomposition in Mn-Cu and Mn-Cu-Ni alloys.

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii. Sbornik trudov. no. 25. Moscow, 1962. Pretsizionnyye splavy. pp. 158-176.

TEXT: The paper describes an experimental investigation of the phase transformations in alloys of the Mn-Cu systems which afford a special interest, because, on the one hand, this system is basic for the Mn-Cu-Ni alloys that are of much significance as high-ohmic-resistance alloys and, on the other hand, these alloys evince structural peculiarities which, apparently, are common to an entire group of other Mn-based alloys (for example, the systems Mn-Pd, Mn-Ge, Mn-Ga, et al.). The present investigation undertook to clarify the kinetics of the decomposition for the purpose of explaining the sequence of processes that occur during anneal at various stages of the decomposition and to establish their interrelationship with transformations that occur during high-speed cooling. Along with the study of the mechanism of the decomposition of the γ solid solutions of alloys of the Mn-Cu system, the present investigation studied the effect of additions of Ni on the precipitation process. The test alloys were smelted in an open high-frequency furnace in a magnesite

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crucible of 5-kg capacity. The heat treatment of all specimens was performed in evacuated quartz ampoules with some excess Mn vapor pressure. The X-ray investigations were performed at room T and at N T (80°K) in a special chamber. X-ray photography was performed under Fe radiation of the Debye type. The microstructure was investigated on mechanically polished specimens at room T and on electrolytically polished specimens at high T. The electrolytic polishing method is explained in detail. The investigation ascertained the details of the initial stage of decomposition in Mn-Cu alloys and established the sequence of the processes of diffusion and alteration of the crystalline lattice during anneal. A difference in the mechanism of the decomposition of the binary Mn-Cu and the ternary Mn-Cu-Ni alloys containing 5-10% Ni is revealed: In the ternary alloys neither fast cooling nor decomposition produces an intermediate tetragonal martensitic phase γ_t. It is established that in Mn-Cu-Ni alloys that contain more than 20% Ni a superstructural Mn-Ni phase precipitates, leading to a hardening and some decrease in electrical resistance (ER). The kinetics of the decomposition in Mn-Cu-Ni alloys with a small Ni content (5-10%) is at variance with that of similar alloys with a high Ni content (25-30%). In the latter instance the ER increases during the first stages of the decomposition. It is shown that in alloys containing 15-20% Ni the single-phase solid solution is stable and does not decompose during anneal. Some increase in ER is noted during long-term anneal of these alloys. There are 14 figures, 7 tables, and 7 references (3 Russian-language Soviet and 4 English-language).

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

S/776/62/000/025/008/025

AUTHORS: Ravdel', M. P., Emmil', K. V.

TITLE: The effect of anneal on the properties of alloyed Iron-Nickel alloys.

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii. Sbornik trudov. no. 25. Moscow, 1962. Pretsizionnyye splavy. pp. 117-125.

TEXT: The paper describes an experimental investigation of the kinetics of the change of the magnetic properties of Fe-Ni alloys alloyed with V, W, Cr, Mn, and Cu in the course of their isothermal anneal. The composition of the alloys tested is tabulated. The alloys were smelted in an open induction furnace and were cast into ingots. Forging, hot rolling, and cold rolling into a strip 0.35 mm thick were performed. The magnetic properties were measured by the ballistic method with DC at room temperature (T) on toroids assembled from disks-shaped annuli with an ODiam of 30 mm and an IDiam of 20 mm. The investigation of the kinetics of the change of magnetic properties in the course of low-T anneal were performed in an equipment which permits one to make the measurements of the magnetic properties at room T directly after vacuum treatment of the specimens, i.e., without removing them from the furnace. The electrical resistance (ER) was measured on wire

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specimen 1.0 and 0.3-mm diam by the potentiometric method, both at room T and at T within the 20-800°C range. A spiral specimen wound made of wire 0.3-mm diam was placed into a quartz tube in which a vacuum of the order of 2 to $5 \cdot 10^{-5}$ mm Hg had been produced. Four full-page graphs summarize the changes in magnetic properties and ER of the alloys investigated as a function of the time of holding at various anneal T. The investigation performed here confirmed the possibility of improving the magnetic properties of a number of Fe-Ni alloys, alloys with V, Cr, or W after an anneal which brings them to the formation of the so-called K state. In the ternary alloys, Fe-Ni-V, the dependence of the magnetic permeability on the holding time at the optimal anneal T has a fairly sharp maximum, and a rigorous maintenance of the optimal heat-treatment regime is indispensable for the obtainment of the extremal values of the magnetic characteristics. In quaternary alloys, Fe-Ni-W-Mo or Fe-Ni-W-V, the maximum on the curve of the magnetic properties vs. the time of holding during anneal is more rounded, and the heat treatment required to obtain desired properties can be reproduced more readily. The character of the anomaly of the ER remains the same as in the ternary alloys, but the level of the corresponding magnetic properties is higher. There are 5 figures, 1 table, and 4 references (2 Russian-language Soviet and 2 German-language papers by F. Assmus, F. Pfeifer, Z. f. Metallkunde, no. 42, 1951, 295, and Metall, no. 7, 1956, 56).

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVDEL', M.P., kand.tekhn.nauk; YEVDOKIMOVA, O.I., inzh.

Martensite transformation in manganese-base alloys. Metalloved. i term. obr. met. no.12:23-26 D '62. (MIRA 16:1)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii.

(Manganese alloys—Metallography)
(Phase rule and equilibrium)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

S/129/62/000/012/005/013
E073/E351

AUTHORS: Ravdel', M.P., Candidate of Technical Sciences and Yevdokimova, O.I., Engineer

TITLE: Martensitic transformation in manganese-base alloys

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, no. 12, 1962, 23 - 26

TEXT: The conditions and the mechanism of formation of the metastable tetragonal phase ('γ' according to the authors' terminology) were investigated for the system Mn-Ni on seven alloys with 65-90% Mn, using microscopical, X-ray and dilatometric analysis. The X-ray analysis was carried out on wire specimens at 20 °C, 300 °C and at liquid-nitrogen temperatures. Microscopical studies were made on electrolytically-polished specimens during heating to 300 °C and cooling. Conclusions: in Mn-Ni as well as Mn-Cu alloys the γ-phase has a low-temperature metastable modification γ' which appears to be a martensitic phase. This phase is formed during very rapid cooling from the γ-range without diffusion. A reverse γ'→γ transformation is accompanied by the

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Martensitic transformation S/129/62/000/012/005/013
E073/E351

formation of a relief structure on the polished section.
There are 4 figures.

ASSOCIATION: TsNIIChM

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APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

FAYVILEVICH, G.A.; RAVDEL', M.P.

Applying high-temperature metallography to the investigation of manganese-base alloys. Sbor. trud. TSNIICHM no.24:204-224 '62. (MIRA 15:6)

(Manganese alloys--Metallography)
(Metals, Effect of temperature on)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVDEL', M.P.; SELISSKIY, Ya.P.

Transformations in ternary Ni, Fe-base solid solutions. Dokl. AN SSSR 115 no.2:319-321 Jl '57. (MIRA 10:12)

1.Institut pretsizionnykh splavov TSentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii. Predstavleno Akademikom I.P. Bardinym.

(Iron-nickel alloys)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVDEL, M.P.

1. Antimony-cobalt systems--Electrical properties--Thermal effe
2. Antimony-cobalt systems--Thermodynamic properties 3. Antimony-cobalt systems--Metallurgical analysis 4. Antimony-cobalt systems--X-ray analysis 5. Antimony-cobalt systems--Chemical analysis

137-58-4-8094

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 247 (USSR)

AUTHORS: Livshits, B.G., Ravdel', M.P.

TITLE: The Effect of Molybdenum on Order/Disorder Transitions in Permalloy (Vliyaniye molibdena na uporyadocheniye permalloya)

PERIODICAL: Sb. tr. Tsentr. n.-i. in-t chernoy metallurgii, 1956, Nr 15, pp 53-67

ABSTRACT: Resistance (R) measurements and dilatometric investigations were employed to determine the effect of heat treatment and work hardening on the properties of Fe-Ni-Mo alloys of constant Ni contents (about 80%) and various Mo contents (0-6%), also the kinetics of structural transformations in alloys. The R of a hardened specimen of Ni_3Fe alloy (0% Mo) after heating and slow cooling in the temperature interval of order/disorder transition declines by 17.5% due to ordering. Addition of up to 1% Mo diminishes this effect, and when more than 1% is added, its sign is reversed. In an alloy with 5% Mo, the increase in R attains 5%. On work-hardening, contrariwise, the R of alloys with 5-6% Mo diminishes by 13%, and the R of the ordered Ni_3Fe alloy (OA) increases by 36%. Dilatometric investigation of isothermic

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

137-58-4-8094

The Effect of Molybdenum on Order/Disorder Transitions in Permalloy

tempering of a hardened specimen of Ni_3Fe shows the reduction in volume common in OA. Under the same conditions of tempering, an alloy having 5% Mo showed the opposite, viz., an increase in volume. In cold-drawn specimens of Ni_3Fe, quenched from 300-600°C, the R drops rapidly with time until equilibrium is attained. In Fe-Ni-Mo alloys, R increases in the same manner at all tempering temperatures. The greatest change in R in both cases is that occurring at 400-500°. Heat treatment in the 300-600° interval does not affect the microstructure of the alloy. The anomalous change in the properties of Fe-Ni alloys when >1% Mo is added is explained by the appearance of a K phase which may perhaps owe its existence to the fact that the Mo and Fe atoms form complexes as a result of the appearance of chemical bonding forces between the different atoms. These complexes are the reason for the supplementary scattering of electrons and consequently the increase in R. An alloy containing 1% Mo is midway between OA and alloys with a K phase.

Ye. V.

1. Iron-molybdenum-nickel alloys--Phase studies 2. Iron-molybdenum -nickel alloys--Phase transitions--Effects of molybdenum 3. Iron-molybdenum -nickel alloys--Properties--Effects of heat treatment 4. Iron-molybdenum -nickel alloys--Properties--Hardening effects

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APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVDEL, M.P.

20-2-34/62

AUTHOR RAVDEL, M.P. and Selisskiy, Ya.P.

TITLE Transformations in Ternary solid Solutions with Ni_3Fe as Primer. (Prevrashcheniya v troynykh tverdykh rastvorakh na osnove Ni_3Fe.- Russian)

PERIODICAL Doklady Akademii Nauk SSSR 1957, Vol 115 Nr 5, pp 319-321 (U.S.S.R.)

ABSTRACT In the first four papers quoted the special influence by molybdenum on the arranging alloys of a composition close to Ni_3Fe was emphasized. It was found that alloying with molybdenum fundamentally changes the transformation character in the annealing of these alloys. This shows in an anomaly of electric resistance and in effects of volume deviating from the arrangement. In the present paper the influence of various elements - Mn, Si, Cu, Mo, V. and W - on the process of arrangement of the Ni_3Fe alloy was investigated. Ill. 1 shows the change of the Velectroresistance of alloys with various alloying additions as dependent on the quenching temperature in the course of gradual cooling. The initial state of all alloys was obtained after quenching from 900°C in water. The duration was varied from 24 to 120 hours according to the quenching temperature.

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APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

20-2-34/62

Transformations in Ternary Solid Solutions with Ni_3Fe as Primer.

Alloying with 3 % Mn considerably intensifies the effect of arrangement in non-alloyed Ni_3Fe and markedly raises the temperature of the transformation "order-disorder". Alloying with 5% Cu reduces this effect. It acts in the same way as the deviation from the stoichiometric composition in a binary alloy Fe--Ni (e.g. 79 % Ni). In the alloys with 45 % Cr, 4 % V and 4 % W an abnormal increase in electric resistance develops after a long-lasting gradual heat-treatment (6,5 % in Cr, 12 % in Mo, 20 % in Va). In the W-alloy it is comparatively small (2,5 %). In the Si-alloy it is 3 %. This alloy also shows the same anomaly. The curve here has a maximum at 450°C. Above that the resistance in Si increases more intensively than in other elements. Ill. 2 records the curves of change of the coefficient of thermal expansions α as dependent on temperature. The initial state was reached in like manner as above, but between 250 and 550°C. Ill. 3 gives the thermomagnetic curves characteristic for alloys with only one element which latter exhibits an anomaly of electroresistance. Ill. 4 gives a comparison of the same curves of the arranging alloys Ni_3Fe and $Ni_3(Fe,Mn)$.

CARD 2/4

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

20-2-34/62

Transformations in Ternary Solid Solutions with Ni_3Fe as Primer.

The thermomagnetic curves of the alloys which show the anomaly of resistande and the abnormal course of the coefficient of thermal expansion, are similar and characterized by an indistrinct magnetic transformation on heating and coolong. The latter may be explained by the local chemical heterogenousness of the solid solution. Chemical complexes distinguished by a higher Curie point apparently form around the atoms of admixture at a certain temperature due to their chemical relationship with the atoms of the chief components. The more the alloying element differs from the chief elements the stronger is the chemical relationship and the stabler the developing complexes. The peculiar influence of Mn is apparently connected with the fact that, in a solid solution which possesses an incompletely built 3d-shell, Mn participates in the magnetic interaction. In an orderly arrangement the magnetic saturation of the $N_3(Fe,Mn)$-alloy is much higher than in Ni_3Fe, whereas

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APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

Electrical resistance of Ni_3Fe alloys containing molybdenum. B. G. Livshits and M. P. Ravdel' (*Dokl. Akad. Nauk. SSSR*, 1953, 93, 1033—1035).—Addition of Mo to Ni_3Fe reduces the linear increase in its specific conductivity κ with % reduction in area, normally observed, and at >1% Mo there is actually a decrease. An alloy with 5% Mo shows a max. κ at 450°, whereas pure Ni_3Fe has a min. κ at this temp. The dilatometric curve for Ni_3Fe with 5% Mo does not show the sudden increase (followed by later decrease) of volume at 550° shown by pure material, but simply a change to a lower coeff. of expansion; the curve for alloy with 1% Mo shows the first effect at 550°, the second at ~650°. The interpretation is that Mo eliminates the ordered structure of Ni_3Fe at low temp. and replaces it by segregation of Mo and Fe.

R. C. Murray.

62

1

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

Dissertation: "Influence of Molybdenum on the Regulation of Iron-Nickel Alloys." Cand Tech Sci, Moscow Order of Labor Red Banner Inst of Steel imeni I. V. Stalin, 13 May 54. Vecherniyaya Moskva, Moscow, 3 May 54.

SO: SUM 284, 26 Nov 1954

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

NAVIEL', M.P.

Mechanism of decomposition in Mn-Cu and Mn-Cu-Ni alloys. Sbor. trud. TSNIICHM no.25:153-176 '62. (MIRA 15:6)
(Manganese-copper alloys--Metallography)
(Manganese-copper-nickel alloys--Metallography)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

NAVDEL', M.P.; EMMIL', K.V.

Effect of tempering on the properties of iron-nickel alloys with addition elements. Sbor. trud. TSNIICHM no.25:117-125 '62. (MIRA 15:6)

(Iron-nickel alloys--Heat treatment)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

AUTHORS: Ravdel', M.P. and Selisskiy, Ya. P. SOV/126-7-6-13/24

TITLE: Investigation of Transformations in Alloyed Permalloy

PERIODICAL: Fizika metallov i metallovedeniye, 1959, Vol 7, Nr 6, pp 885-892 (USSR)

ABSTRACT: The authors have carried out a systematic investigation of hardening of Ni_3Fe-base alloys. The alloying elements used were Mo, Cr, Cu, V, W, Si and Mn and were added to the Ni_3Fe alloy at the expense of iron. The chemical composition of the alloys investigated is shown in a table, p 886. The alloys were melted in a high-frequency induction furnace and cast into ingots of 5 kg, homogenized in hydrogen at 1100°C and subsequently forged partly into billets and partly into rods of 8-9 mm. Specimens for dilatometric and thermomagnetic study (ℓ = 50 mm, d = 3 mm and ℓ = 25 mm, d = 3 mm, respectively) and wire of 1 mm diameter were produced from the rods. All electrical resistance measurements were carried out at room temperature on specimens of 1 mm diameter by a potentiometric method. The dilatometric study was carried out on a differential dilatometer of the Shevenar type which was provided with a special device to enable isothermal soaking

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APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

SOV/126-7-6-13/24

Investigation of Transformations in Alloyed Permalloy

to be carried out. The thermomagnetic study was carried out on an Akulov system anizometer. All specimens of the alloys investigated were subjected to stepwise heat treatment (heating to 900°C followed by stepwise cooling, with lengthy soaking at the following temperatures: 550, 500, 450, 400, 350, 300 and 250°C). After soaking, the duration of which varied between 24 and 120 hours depending on temperature, the specimens were immediately quenched in water. Such heat treatment ensured different degrees of order in the specimens in relation to the temperature of quenching. In Fig 1 the change in electrical resistance of a specimen quenched from 900°C in relation to the quenching temperature is shown. In Fig 2 dilatometric heating and cooling curves of a non-alloyed Ni_3Fe alloy, converted to the ordered state by stepwise heat treatment, are shown. In Fig 3 curves are plotted for the dependence of thermal expansion on temperature. Fig 4 shows the change in volume of alloyed Fe-Ni alloys during isothermal tempering in the dilatometer furnace. The tempering temperature was 450°C and the soaking time 5 hours. Fig 5 shows thermomagnetic heating and

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

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Investigation of Transformations in Alloyed Permalloy

cooling curves. In Fig 6 similar curves are shown for the alloy $Ni_3(Fe,V)$, containing 4% V. The authors arrive at the following conclusions: the introduction of 3% Mn at the expense of iron brings about a considerable intensification of ordering effects in a Ni_3Fe alloy. This is shown by a considerably increased drop in the electrical resistance after stepwise heat treatment. A greater volume effect can be observed in this alloy than in the selected one during disordering and isothermal tempering. The order-disorder transformation temperature of this alloy is higher than that of the Ni_3Fe alloy. The magnetic saturation of the ordered $Ni_3(Fe,Mn)$ alloy is considerably greater than that of the Ni_3Fe alloy, whereas Mn lowers the magnetic saturation of a disordered Ni_3Fe alloy. Such peculiar influence of Mn is due to the structure of its 3d-shell. Other solid solutions, which also contain Mn, become ferromagnetic after ordering. It appears that Mn in the ordered lattice also participates in a magnetic reaction, as a result of which magnetic saturation increases strongly. A supplementary fall in electrical resistance on tempering is associated

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Investigation of Transformations in Alloyed Permalloy

with an increase in saturation of the ordered alloy $Ni_3(Fe,Mn)$. Copper brings about a concentration disorder in the Ni_3Fe alloy. Additions of Cr, W and V act on the ordering process of the Ni_3Fe alloy in the same way as Mo (Ref 3), changing the nature of the effects. An anomaly in electrical resistance has been found to exist in Mo permalloy as well as in alloys containing Cr, V and W, i.e. an increase in the electrical resistance after heat treatment in the temperature range at which ordering takes place. All these alloys exhibit identical dilatometric and thermomagnetic anomalies. No lattice contraction, characteristic for the ordered state, occurs in these alloys. Also there is no sharp volume increase on disorder establishment. The dilatometric peculiarities of these alloys are characterized only by a change in the thermal expansion coefficient at the transformation temperature. In all these alloys a temperature range is observed for the ferromagnetic transformation instead of a sharply defined Curie point. Such an effect of Mo, Cr, W and V is due to the fact that complexes are formed in a one-phase solid solution at definite temperatures, the

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Investigation of Transformations in Alloyed Permalloy

Curie points of which differs from that of the basic solid solution. This can be seen even more convincingly in alloys containing Si which forms very stable complexes. There are 6 figures, 1 table and 8 references, 1 of which is Soviet, 2 English, 3 German and 2 French.

ASSOCIATION: TsNIIChM

SUBMITTED: May 15, 1957 (Initially)
June 9, 1958 (After revision)

Card 5/5

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

HUME-ROTHERY, W.; CHRISTIAN, I.W.; PEARSON, W.B.; KADYKOVA, G.N. [translator]; KRASNOPEVTSEVA, T.V. [translator]; [redacted] M.P. [translator]; SELISSKIY, Ya.P., redaktor; GOL'DENBERG, A.A., redaktor; ARKHANGEL'-SKAYA, M.S., redaktor izdatel'stva; EVENSON, I.M., tekhnicheskiy redaktor

[Metallurgical equilibrium diagrams. Translated from the English] Diagrammy ravnovesiia metallicheskikh sistem. Perevod s angliiskogo B.N.Kadykovoi i dr. Pod red. IA.P.Selisskogo. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1956. 399 p. (Phase rule and equilibrium) (MLRA 10:4)
(Alloys) (Solutions, Solid)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

S/126/61/012/002/017/019
E073/E535

AUTHORS: Ravdel', M.P. and Fayvilevich, G. A.

TITLE: Polygonization in manganese-base alloys

PERIODICAL: Fizika metallov i metallovedeniye, 1961, Vol.12, No.2, pp.294-296

TEXT: The authors studied the microstructure of the Mn-Cu-Ni alloy containing 67% Mn, 20% Ni, rest copper. At room temperature alloys of this type have a "block" microstructure which can be revealed by means of ordinary chemical etching in a 3% aqueous solution of hydrochloric acid. R. S. Dean et al. (Ref.1: TASM, 1945, 34, 443) attributed this structure to the effect of grinding and polishing. To elucidate the problem as to whether this block structure characterizes a high temperature solid solution or whether it is formed during the cooling process, investigations were carried out during the process of heating to 800°C and subsequent cooling to room temperature. The microstructure was investigated in vacuo on unetched polished sections after electrolytic polishing and in a pure hydrogen atmosphere. Neither in vacuo nor in hydrogen did thermal etching reveal a block

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

Polygonization in manganese-base alloys S/126/61/012/002/017/019
E073/E535

structure. At 400 to 500°C grain boundaries were revealed, which remained unchanged during the further process of heating. At 800°C an instantaneous breaking up of the original grains occurred and a structure formed, a microphotograph of which is reproduced in the paper. Cooling did not result in great changes in structure; the initial grains were broken up into fragments of 5-10 μ and the boundaries of these fragments represent regular rows of etching points distributed at certain intervals. The particular breaking up of the grains observed during the process of heating may be associated with polygonization - formation of ordered systems of dislocations as a result of their displacement in the crystal lattice during the process of heating. Similar structures were observed (for preliminary deformation and annealing) in Fe-Al alloys by B. V. Molotilov (Ref.4: FMM, 1959, 8, 3, 463) and in Fe-Si alloys by C. Dunn and W. Hubbard (Ref.5: Acta met., 1955, 3, 409; 1956, 4, 307) and in aluminium by P. Lacombe, L. Beaujard and R. W. Cahn (Ref.6: J.Inst. Met., 1948, 74, 1; 1949, 76, 121). These structures were revealed by ordinary chemical etching at room temperature. In the Mn-Cu-Ni alloy only thermal etching enabled

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

Polygonization in manganese-base alloys S/126/61/012/002/017/019
E073/E535

for the first time direct observation of grain refining during heating to 800°C of a preliminarily quenched alloy. In manganese alloys this can be associated with the anomalously high coefficient of thermal expansion and the development during heating of large thermal stresses which result in plastic deformations (illustrated in the case of impulse heating by slip lines in a microphotograph, which is reproduced in the paper). The block structure revealed by ordinary chemical etching did not permit observation of polygon boundaries. The block structure, which so far has been revealed by chemical etching only in solid solutions with a face-centered cubic lattice, is attributed to dislocations. Similar structures were theoretically predicted for metals with a face-centered cubic lattice by T. Sudzuki and T. Imura (Ref.7: Problems of Modern Physics, 1957, 9, 80) and observed experimentally in chemically etched Al-Mn alloys. The authors explain the nature of such a substructure by a regular distribution of dislocations. In Mn-Cu-Ni alloys the disappearance of the block boundaries during decomposition is accompanied by the appearance of a large number of chaotic-alloy distributed etching pits, which may be the result of

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

Polygonization in manganese-base alloys S/126/61/012/002/017/019
E073/E535

individual dislocations which previously were regularly distributed at the block boundaries. There are 4 figures and 7 references: 3 Soviet and 4 non-Soviet.

ASSOCIATION: Institut pretsizionnykh splavov TsNIIChM (Institute of Precision Alloys TsNIIChM)

SUBMITTED: November 25, 1960

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APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVDEL', M.P.; FAYVILEVICH, G.A.

Polygonization of manganese-base alloys. Fiz. met. i metalloved. 12 no.2:294-296 Ag '61. (MIRA 14:9)

1. Institut pretsizionnykh splavov TSentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii.
(Manganese alloys--Metallography)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

L 34973-65 EWT(m)/EWP(t)/EWP(b) Pad IJP(c) JD/HW/JG

ACCESSION NR: AP5008554 S/0286/65/000/006/0063/0063

AUTHOR: Ravdel', M. P.; Yevdokimova, O. I.

19
B

TITLE: Manganese-base alloy. Class 40, No. 169257

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 6, 1965, 63

TOPIC TAGS: manganese base alloy, palladium containing alloy, nickel containing alloy, copper containing alloy

ABSTRACT: This Author Certificate introduces a manganese-base alloy containing palladium. To increase its physical and engineering properties, the alloy contains 14.5—15.5% Pd, 14.5—15.5% Ni, and 4.5—5.5% Cu. [ND]

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii im. I. P. Bardina (Central Scientific Research Institute of Ferrous Metallurgy)

SUBMITTED: 12Aug63 ENCL: 00 SUB CODE: MM

NO REF SOV: 000 OTHER: 000 ATD PRESS: 3217

Card 1/1

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

PROCESSES AND PROPERTIES INDEX

Open-hearth practice in Germany and reconstruction of open-hearth plants in U. S. S. R. P. RAVDEL. *Domez* 1931, No. 12, 1-10.—Review. S. L. MADORSKY

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVDEL', P.G., inzhener; SHEFTEL', N.I.

Steel conveyor belts. Stal' 7 no.3:265-268 '47. (MLRA 9:1)

1.Ministerstvo chernoy metallurgii.
(Conveying machinery)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVDEL', P.G.

Phosphorous cast iron reduction in blast furnaces. Stal' 15 no.6: 566-567 Je '55. (MLRA 8:8)
(Cast iron--Metallurgy)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVDEL', P.G.

Outlook for the development of electrometallurgy. Stal' 15 no.9: 846-848 S'55. (MLRA 8:12)

1. Ministerstvo chernoy metallurgii SSSR
(Electrometallurgy)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

ROYTBURD, Lazar' Nisonovich, kandidat ekonomicheskikh nauk, dotsent; BANNYY, N.P., redaktor; RAVDEL', P.G., retsenzent; AVRUTSKAYA, R.F., redaktor; EVRISON, I.M., tekhnicheskiy redaktor

[Development of ferrous metallurgy in the U.S.S.R.] Razvitie chernoi metallurgii SSSR. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1956. 123 p.
(Russia--Metallurgy) (MLRA 9:3)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

L 10229-66

ACC NR: AP6002410 SOURCE CODE: UR/0105/64/000/010/0087/0087

AUTHOR: Basharin, A. V.; Belyakov, V. A.; Donskoy, A. V.; Neyman, L. P.; Ravdonik, V. S.; Renne, V. T.; Rusin, Ya. L.; Sabinin, Yu. A.; Usov, S. V.

ORG: none

33
32
B

TITLE: Professor V. G. Drannikov (60th birthday and 35th anniversary of his scientific and pedagogical activity)

SOURCE: Elektrichestvo, no. 10, 1964, 87

TOPIC TAGS: electric engineering personnel, electric engineering

ABSTRACT: Vasiliy Gavrilovich Drannikov was born in Serpukhov on 30 June 1904 to a worker's family. He began as a textile worker at the "Proletariy" factory in 1920, transferring to the Textile Institute in the same year. In 1924 he was enrolled in the college of Electromechanics at the Leningrad Industrial Institute. In 1930 he became a candidate for an advanced degree and began his teaching career at the then newly organized Chair of "Elektroprivod" (Electric power drives). One of his first publications was the laboratory textbook "Opredeleniye poter'v transmissii" (Determination of transmission losses) in 1932. In 1931 he became an assistant and in 1934 a reader (docent) for the chair of "Promy'shlennoye ispol'zovaniye elektricheskoy energii" (Industrial uses of electric power). At that time he

UDC: 621.3(092)

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

L 10229-66
ACC NR: AP6002410

became the first in the USSR to lecture on the "use of ionic-electronic devices in electric power drives." In 1939 Drannikov defended his dissertation "Teoreticheskoye i eksperimental'noye issledovaniye nekotory*kh skhem by* strogo vozbuzhdeniya generatora Leonarda" (Theoretical and experimental investigation of certain high-speed excitation circuits for a Leonard generator). During the war Drannikov was Chief Engineer at the Vologodskaya Oblast' Communal Economy Directorate in charge of electric power. Returning to Leningrad in 1944, he took an active part in reopening the Polytechnical Institute. From 1952 to 1955 he was abroad on teaching assignments. Since 1958 he has been dean of the Chair of "Elektroprivod i avtomatizatsiya promyshlenny*kh ustanovok" (Electric power drives and automation of industrial equipment). He has written 10 books, 12 texts, and many scientific papers on automation and electric drives. For his scientific and pedagogical activities he holds among other awards the "Znak pocheta" (Badge of Honor). Orig. art. has: 1 figure. [JPRS]

SUB CODE: 09 / SUBM DATE: none /

Card 2/2

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

ADRIANOVA, V.P.; ANDREYEV, T.V.; ARANOVICH, M.S.; BARSKIY, B.S.; GROMOV, N.P.; GUREVICH, B.Ye.; DVORIN, S.S.; YERMOLAYEV, N.F.; ZVOLINSKIY, I.S.; KABLUKOVSKIY, A.F.; KAPKLOVICH, A.P.; KASHCHENKO, D.S.; KLIMOVITSKIY, M.D.; KOLOSOV, M.I.; KOROLEV, A.A.; KOCHINEV, Ye.V.; LESKOV, A.V.; LIVSHITS, M.A.; MATYUSHINA, N.V.; MOROZOV, A.N.; POLUKAROV, D.I.; RAVDEL', P.G.; ROKOTYAN, Ye.S.; SMOLYARENKO, D.A.; SOKOLOV, A.N.; USHKIN, I.N.; SHAPIRO, B.S.; EPSHTEYN, Z.D.; AVRUTSKAYA, R.F., red. izd-va; KARASEV, A.I., tekhn.red.

[Brief handbook on metallurgy, 1960] Kratkii spravochnik metallurga, 1960. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1960. 369 p. (MIRA 13:7)
(Metallurgy)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

KHAN, Boris Khanonovich; DOBROKHOTOV, N.N., akademik, nauchnyy red.; RAVDEL', P.G., inzh., retsenzent; ARSENT'YEV, P.P., kand.tekhn. nauk, retsenzent; VENETSKIY, S.I., red.izd-va; DOBUZHINSKAYA, L.V., tekhn.red.

[Deoxidation, gas removal and alloying of steel] Raskislenie, degazatsiia i legirovanie stali. Pod red. N.N.Dobrokhotova. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1960. 237 p. (MIRA 13:3)

1. AN USSR (for Dobrokhotov).
(Steel--Metallurgy)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVDEL', Z.

Shortcomings in the work of construction organizations serving several collective farms. Sel'.stroi. 11 no.12:13-15 D '56. (MLRA 10:2)

1. Nachal'nik planovo-otchetnogo otdela Upravleniya po stroitel'stvu v kolkhozakh Ministerstva gorodskogo i sel'skogo stroitel'stva SSSR.
(Building)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443