GORBATENKO, V.P.; MATVEYEVA, L.S., kand.med.nauk (Moskva)

Splenoportography and splenomanometry in the diagnosis of portal hypertension. Klin.med. 39 no.2:87-91 F '61. (MIRA 14:3)

1. Iz gospital'noy terapevticheskoy kliniki (dir. - deystvitel'nyy chlen AMN SSSR prof. A.L. Myasnikov) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M. Sechenova.
(ANGIOGRAPHY) (HYPERTENSION)

MATVEYEVA, L.S., kand.med.nauk (Moskva, G-59, 3-y Berezhkovskiy per.)
GORBATENKO, V.P.

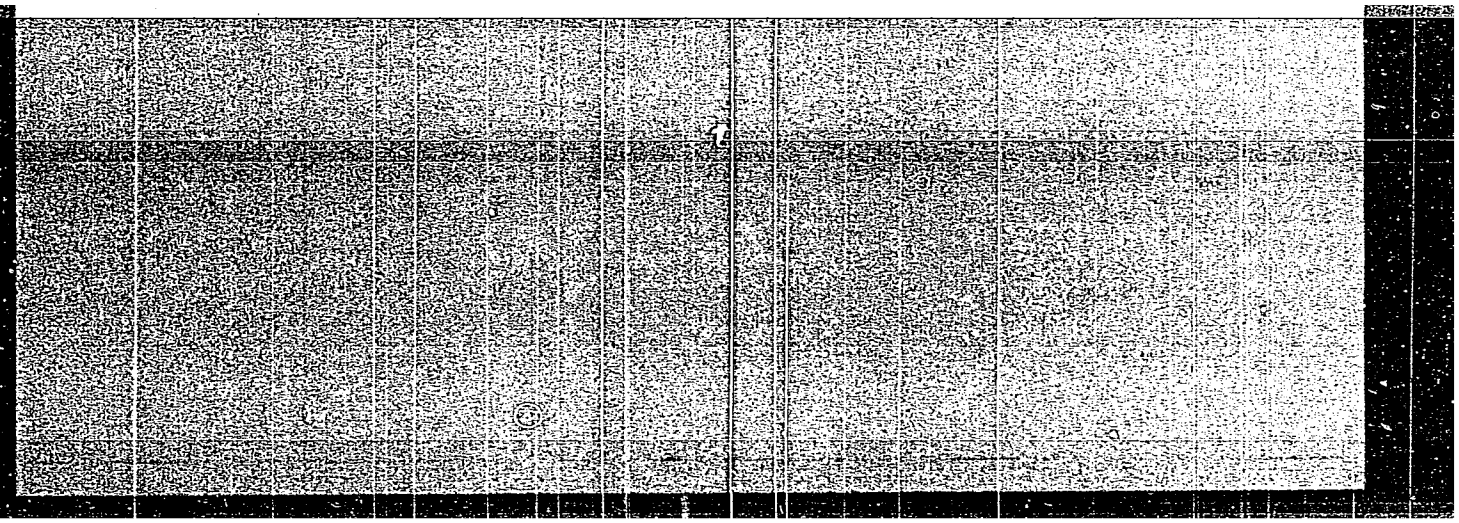
Portal hypertension of hepatic origin combined with thrombosis in the portal vein system. Vest. rent. i rad. 38 no.1:37-40 Ja-F'63. (MIRA 16:10)

1. Iz gospital'noy terapevticheskoy kliniki (zav. - deystvitel'nyy chlen AMN SSSR prof. A.L.Myasnikov) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M.Sechenova.

MATVEYEVA, L.V.; INDENBOM, V.L., kand.tekhn.nauk, otv.red.; GOLUB', S.P., tekhn.red.

[Dislocations in crystals] Dislokatsii v kristallakh; bibliograficheskii ukazatel'. Moskva, 1960. 114 p. (MIRA 13:2)

1. Akademiya nauk SSSR. Institut kristallografii.
(Dislocations in crystals)



APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001033010006-7"

MATVEYEVA, L. V., Cand Tech Sci -- (diss) "Study of the effect of sulfur treatment upon the properties of non-tanned and tanned leather." Mos, 1957. 12 pp (Min of Higher Education USSR, Mos Technological Inst of Light Industry), 100 copies (KL, 52-57, 107)

MATVEYEVA, L.V., inzhener.

Treatment of raw hides with sulfur. Leg.prom. 17 no.4:36-37 Ap '57. (MLRA 10:4)
(Hides and skins) (Sulfur)

MATVEYEVA, I.V.; MIKHAYLOV, A.N.

Effect of sulfur on the properties of tanned leather. Leg. prom. 17 no.5:26-27 My '57. (MLRA 10:6)
(Hides and skins)

MATVEYEVA, L.V., inzh.

Effect of sulfur treatment on the properties of unhaired hides and tanned leather. Nauch.-issl. trudy TSNIKP no.28:3-11 '57. (MIRA 11:10)

(Tanning)

MATVEYEVA, L. V.

FRAME 1 BOOK EXPLOITATION SOV/4419

Spravochnik po mashinostroitel'nym materialam, tom 4: Nemetallicheskiye materialy (Handbook on Machine-Building Materials, Vol. 4: Nonmetallic Materials) Moscow, Mashgiz, 1960. 732 p. Errata slip inserted. 25,000 copies printed.

Ed.: G.S. Pisarenko-Akademik, Doctor of Technical Sciences, Professor; Ed. of Publ. Vol.: A.E. Lavrik, Doctor of Technical Sciences, Professor; Ed. of Publishing House: V.I. Fedorova, Engineer; Tech. Ed.: S.F. Sokolova; Managing Ed. for Literature in Machine Building (Mashgiz): I.M. Homentovskiy, Engineer.

PURPOSE: This book is intended for machine-building and construction engineers, architects, and other persons interested in the properties of building materials.

CONTENTS: This is the fourth of a 4-volume Handbook on Machine-Building Materials. Volume 4 discusses nonmetallic materials suitable for use in machine building and in other constructional applications. Textile, wood, plastic, ceramic, rubber, and glass materials and insulators of these materials are reviewed and data on their physical and mechanical properties are listed. No personalities are mentioned. References follow individual chapters.

Card 1/45

Card 9/15

MATVEYEVA, Lyudmila Yevgen'yevna; KAUFMAN, I.M., redaktor; KHOVANSKIY, I.P., tekhnicheskiy redaktor

[Aids for rural electricians; a bibliography] V pomoshch' sel'skomu elektrifikatoru; kratkii rekomendatel'nyi ukazatel' literatury. Moskva, Gos. biblioteka SSSR im. V.I.Lenina. 1955. 45 p. (Pomoshch' sel'skim rabochim professiiam, no.1) (MLRA 9:9)
(Bibliography--Rural electrification)
(Bibliography--Electricity in agriculture)

MATVEYEVA, Ludmila Yevgen'yevna; MOLCHANOVA, Nina Sergeyevna; KAUFMAN, I.M., redaktor; KHOVANSKIY, I.P., tekhnicheskiy redaktor

[What should I be? What to read about industrial and working occupations; discussions of books] Kem byt'? Chto chitat' o proizvodstvakh i rabochikh professiiakh; besedy o knigakh. Moskva, Gos. biblioteka SSSR im. V.I.Lenina, 1956. 79 p. (MLRA 10:2)
(Bibliography--Occupations)

MATVEYEVA, M., fitogel'mintolog

The nematode Aphelenchoides ritzema-bosi. Zashch. rast. ot vred. i bol. 10 no.9:48-49 '65. (MIRA 18:11)

1. TSentral'naya karantinnaya laboratoriya Ministerstva sel'skogo khozyaystva SSSR.

L 39520-66 GD
ACC NR: AP6005168 SOURCE CODE: UR/0348/65/000/011/0046/0047

AUTHOR: Matveyeva, M. (Phytohelminthologist) 2 B

ORG: TsKL

TITLE: Strawberry nematode

SOURCE: Zashchita rasteniy ot vrediteley i bolezney, no. 11, 1965, 46-47

TOPIC TAGS: helminthology, plant disease, animal parasite, plant injury, plant disease control

ABSTRACT: The findings of a 1963-64 study (conducted by the Plant Quarantine Service of the SSSR) of the spread of strawberry nematode are presented. The nematode was found in several regions of the central non-chernozem belt, in the Baltic area, Astrakhan, Northern Caucasus, Armenia, Central Asia, Western Siberia, in the Altai, and in the Far East. Infected plants were most numerous and conditions for the spread of the parasite were most favorable in an area bounded on the north by Gor'kiy and Leningrad Oblasts, on the west by Kaliningrad Oblast and the Baltic republics, on the south by a line running from Brest to Kursk, and on the east by Kursk,

Card 1/2 UDC: 632.651 : 634.75

L 39520-66
ACC NR: AP6005168

Ryazan', and Gor'kiy Oblasts. Effective control measures include heating seedlings 10-15 min in water at 46-47° and application of a 1% thiophos emulsion before they are set out. Fumigation with methyl bromide is deemed ineffective. Orig. art. has: 1 figure.

SUB CODE: 06/ SUBM DATE: 00/ ORIG REF: 000/ OTH REF: 000

Card 2/2 vmb

MATVEYEVA, M.A.

137-58-3-5520

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 3, p 148(USSR)

AUTHORS: Danilenko, T. P., Matveyeva, M. A.

TITLE: High-temperature Carburization in Shaft Furnaces (Vysokotemperaturnaya tsementatsiya v shakhtnykh pechakh)

PERIODICAL: Tekhnol. avtomobilestroyeniya, 1957, Nr 5, pp 24-27

ABSTRACT: Experimental research on high-temperature carburization (C) was carried out in a shaft furnace of the Ts-60 type on specimens made of 12KhNZA, 18KhGT, and 20Kh steels. The following four procedures were employed in the C of the specimens: 1) C temperature: 920° ; carburizing agent (CA): kerosene; a carburized layer (CL) 1.6-1.9 mm deep was obtained after a period of 20-24 hours; 2) C temperature: 920°; CA: spindle oil Nr 3; a CL 1.6-1.9 mm deep was obtained after 18-20 hours; 3) C temperature: 1000°, CA: kerosene; a CL 1.6-1.9 mm deep was obtained after 13-16 hours; 4) C temperature: 1000°; CA: spindle oil Nr 3. After C a portion of the specimens was subjected to normalizing followed by tempering and stress annealing. By means of mechanical testing and metallographic studies it was established that increasing the C temperature to

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137-58-3-5520

High Temperature Carburization in Shaft Furnaces

1000° does not produce any large increases in grain growth in steels 18KhGT and 12KhNZA; in the case of 20Kh steel grain growth was observed at 1000°; it is, therefore, necessary to normalize this steel prior to tempering. At a temperature of 1000° the C time required to obtain a CL of specified depth is reduced by 20 to 30 percent. C at 1000° raises σ_b and a_k values sometimes and increases the resistance of the steel to static bending.

A. B.

Card 2/2

ZONOVA, Z.T. (Moskva); MATVEYEVA, M.D. (Moskva)

Investigation of tar phenols from the continuous coking process. Izv.AN SSSR.Otd.tekh.nauk.Met.i topl. no.5:150-154 S-O '61. (MIRA 14:10)

(Coal tar products) (Phenols)

ZONOVA, Z.T. (Moskva); MATVEYEVA, M.D. (Moskva)

Investigating weakly acid phenols from tar obtained in the continuous coking of Cheremkhovo coals. Izv. AN SSSR. Otd. tekh. nauk. Met. i topl. no.3:130-134 My-Je '62. (MIRA 15:6)
(Phenols)

MATVEYEVA, M.D.

KOROTKORUCHKO, V.P., MATVEYEVA, M.D. [MATVIEIEVA, M.D.]

Nature of the polyvalent action of xanthine oxidase preparations from the liver of healthy and tumorous rabbits [with summary in English]. Ukr.biokhim.zhur. 30 no.2:248-258 '58 (MIRA 11:6)

1. Institut biokhimii AN URSR, Kiiv.
(XANTHINE OXIDASE)
(CANCER)
(LIVER)

PASECHNIK, A.M. [Pasichnyk, A.M.]; MATVEYEVA, M.D. [Matvieieva, M.D.]

Study of fermentating activity in aerobic variants of Bacillus perfringens, type B, produced by X irradiation. Mikrobiol. zhur. 22 no. 5:52-55 '60. (MIRA 13:10)

1. Institut mikrobiologii AN USSR.

(CLOSTRIDIUM PERFRINGENS) (X RAYS—PHYSIOLOGICAL EFFECT)
(FERMENTATION)

PASECHNIK, A.M. [Pasichnyk, A.M.]; MATVEYEVA, M.D. [Matvieieva, M.D.]

Studies on the respiratory activity in aerobic variants of Bacillus perfrigens, type B, obtained by X irradiation and by Muromtsev's method. Mikrobiol. zhur. 22 no.4:45-50 '60. (MIRA 13:11)

1. Iz Instituta mikrobiologii AN USSR, UkSSR
(CLOSTRIDIUM PERFRINGENS) (RESPIRATION)
(X RAYS--PHYSIOLOGICAL EFFECT)

[illegible] [illegible].V. [Pastukhova, A.M.]; [illegible]VETEVA, M.D. [Matvieieva, M.D.]; [illegible]LINA, G.G. [Tulina, H.H.]

Effect of X-ray and nuclear irradiation on Bac. perfringens. Report No.1: Changes in the morphology and cultural characteristics of type A and B Bac. perfringens produced by the action of gamma-neutron irradiation. Mikrobiol. zhur. 25 no.1.10-16 '63. (MIRA 17:5)

1. Institut mikrobiologii AN UkrSSR.

MATVEYEVA, M.D., nauchnyy sotrudnik (Chita); OGNEV, I.M.; LOGOVA, M.G.; BADULIN, A.V., kand.biolog.nauk; ROKTANEN, L.P.; KAL'BERGENOV, G.K.; LYAKH, A.I.; PETROVA, L.A.

Effectiveness of entobacterin. Zashch.rast. ot vred. i bol. 9 no.11:26-27 '64. (MIRA 18:2)

1. Zaveduyushchaya Minskim entomo-fitopatologicheskim uchastkom (for Logova). 2. Kustanayskaya opytnaya sel'skokhozyaystvennaya stantsiya (for Badulin). 3. Zaveduyushchiy kafedroy zashchity rasteniy TSelinogradskogo sel'skokhozyaystvennogo instituta (for Roktanen). 4. Toksikologicheskaya laboratoriya, pochtovoye otdeleniye Tolstopal'tsevo, Moskovskoy oblasti (for Kal'bergenov, Lyakh). 5. Zaveduyushchaya laboratoriyey biometoda, Lubny, Poltavskoy oblasti (for Petrova).

MATVEYEVA, M. I., Cand Biol Sci -- (diss) "Role of diet and feeding relations of adult ichneumon flies in their reproduction and propagation." Gor'kiy, 1960. 16 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Gor'kiy State Univ im N. I. Lobachevskiy); 150 copies; price not given; (KL, 19-60, 132)

TOMASHEVSKIY, F.F., inzh.; CHUDAKOVA, P.V., inzh.; MATVEYEVA, M.I., inzh.

Increase in the specific chara[illegible]istics of alkaline iron-nickel diesel loc[illegible]tive storage bat[illegible]ies. Elektrotekhnika 35 no.5: 40-42 My '64 (MIRA 17:8)

ACCESSION NR: AP4034062 S/0126/64/017/004/0619/0622

AUTHORS: Gufel'd, I. L.; Matveyeva, M. I.

TITLE: On the formation of joints at ultrasonic welding

SOURCE: Fizika metallov i metallovedeniye, v. 17, no. 4, 1964, 619-622

TOPIC TAGS: ultrasonic welding, copper, aluminum, titanium, plastic flow, coherent scattering, diffractometer URS 50 I, welding machine UZSM 1, power generator UZG 10, solid solution, aging process

ABSTRACT: The formation of joints under ultrasonic welding was found to occur in two distinct stages. The first one was characterized by an increase in temperature in the zone of welding caused by the dry friction between contact surfaces, removal of oxide films, formation of cohesive compounds, and a low resistance to fracture. This stage lasted for 0.1-0.3 sec. The process responsible for increasing the resistance occurred in the second stage. The first group of materials chosen for this study consisted of Cu + Al, Al + Al, and Cu + Al; the second group consisted of Ti + Cu and Ti + Ti. The welding was performed in a UZSM-1 machine equipped with a power generator URS-50I. In the first group (under the influence of ultrasonic oscillations) the surface flow of the metal led to the breaking down of blocks of

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ACCESSION NR: AP4034062

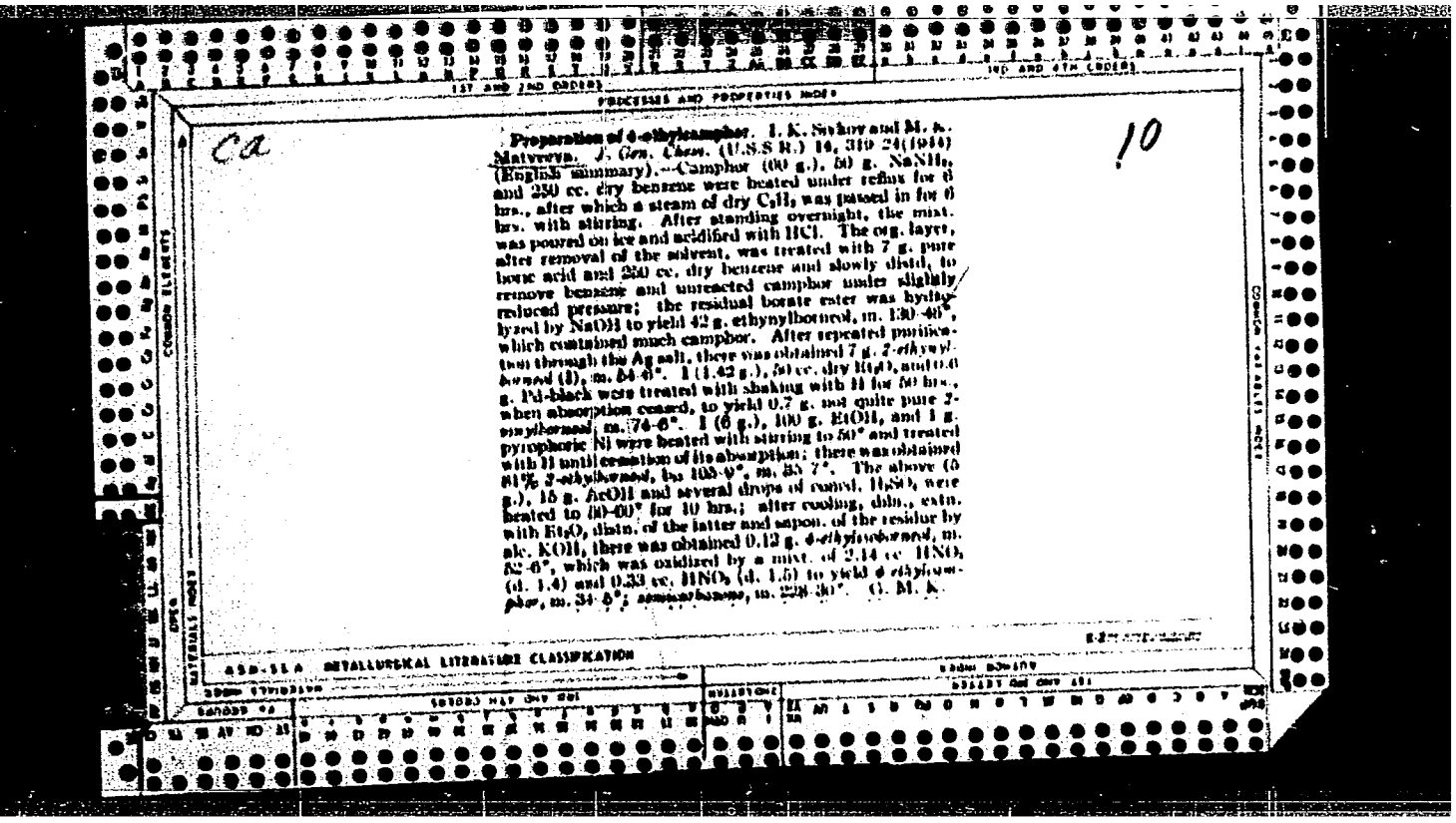
coherent scattering. The intensities of the lines (111) of Cu and Al were reduced significantly. The splitting of line (111) of Cu in the zone of plastic flow of the compound Cu + Al indicated the existence of a solid solution of Al in Cu along with pure Cu. In the cohesion zone only the solid solution was observed. The appearance of $CuAl_2$ accounted for the aging process. In the second group the breaking down of coherent scattering blocks was also observed. In the zone of plastic flow a solid solution of Ti in Cu was noted in place of Cu. The aging process was caused by the appearance of the Ti_3Cu phase. The authors thank V. I. Il'ina for discussion of the results and for the radiographic work. Orig. art. has: 4 figures.

ASSOCIATION: none

SUBMITTED: 05Aug63 ENCL: 00

SUB CODE: MM NO REF SOV: 002 OTHER: 000

Card 2/2



Ca

10

Preparation of 4-ethylcamphor. I. K. Sutkov and M. S. Matveeva. *J. Gen. Chem.* (U.S.S.R.) 14, 319-24(1944) (English summary).—Camphor (60 g.), 50 g. $NaNH_2$, and 250 cc. dry benzene were heated under reflux for 6 hrs., after which a steam of dry C_2H_2 was passed in for 6 hrs. with stirring. After standing overnight, the mixt. was poured on ice and acidified with HCl. The org. layer, after removal of the solvent, was treated with 7 g. pure boric acid and 250 cc. dry benzene and slowly distd. to remove benzene and unreacted camphor under slightly reduced pressure; the residual borate ester was hydrolyzed by NaOH to yield 42 g. ethynylborneol, m. 130-40°, which contained much camphor. After repeated purification through the Ag salt, there was obtained 7 g. *2-ethynylborneol* (I), m. 84-6°. I (1.42 g.), 50 cc. dry H_2O, and 0.6 g. Pd-black were treated with shaking with H for 50 hrs., when absorption ceased, to yield 0.7 g. not quite pure *2-vinylborneol*, m. 74-6°. I (6 g.), 100 g. EtOH, and 1 g. pyrophoric Ni were heated with stirring to 50° and treated with H until cessation of its absorption; there was obtained 81% *2-ethylborneol*, bp. 105-9°, m. 55-7°. The above (5 g.), 15 g. AcOH and several drops of concd. H_2SO_4 were heated to 80-90° for 10 hrs.; after cooling, dild., extd. with Et_2O, distd. of the latter and sapon. of the residue by alc. KOH, there was obtained 0.12 g. *4-ethylborneol*, m. 82-6°, which was oxidized by a mixt. of 2.14 cc. HNO_3 (d. 1.4) and 0.33 cc. HNO_3 (d. 1.5) to yield *4-ethylcamphor*, m. 34-5°; *semicarbazone*, m. 228-30°. (C. M. K.

MATVEYEVA, M. K.

Chemical Abst.
Vol. 48 No. 4
Feb. 25, 1954
Organic Chemistry

Effect of pressure on the condensation of acetone. I. N. Vereshchagin and M. K. Matveyeva (Inst. Org. Chem., Acad. Sci., Moscow). Zhur. Fiz. Khim. 28, 680-5(1954).—The reversible condensation of 2 Me_2CO into $Me_2C(OH)CH_2COMe$ (I), the equil. of which at room temp. and under normal pressure lies near 5–10% I, does not proceed at a measurable rate under these conditions, without addn. of a condensing agent. It does proceed under pressures of 1000–3000 atm., apparently owing to the action of the wall of the steel reactor. In a flow system, and in the presence of $Ba(OH)_2$, the yield of condensation products increases with the feed rate decreasing from 200 to 25 ml./hr., and reaches its max. limit at about 24 ml./hr. At that feed rate, in the presence of $Ba(OH)_2$, increase of the pressure from 1 to 3000 atm. shifts the equil. in favor of I and increases the yield of condensation products by a factor of 4.5. Moreover, $Me_2C(OH)CH_2COCH_2C(OH)Me_2$ (II) appears in the product (17% of the total product; the rest, 83%, is I). Increase of the temp. from 20 to 80° results in a shift of the equil. in favor of Me_2CO, and in a decrease of the relative amt. of II in the product. The total yield of product decreases by 30%, and the product consists of 93% I and 7% II. N. Thon

9-13-54

TITOV, A. I., MATVEYEVA, M. K.

Cyclohexane - Nitration, Oxidation

The mechanism of nitration and oxidation of cyclohexane. Dokl. AN SSSR 83 no. 1, 1952.

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

MATVEYEVA, M. K.

Theory of nitration of saturated hydrocarbons and their derivatives. VII. Processes of diffusion and the role of hermetically sealed reactors in nitration with nitric acid in the liquid phase. A. I. Titov and M. K. Matveyeva. *Zhurnal Obshchei Khim., Akad. Nauk S.S.S.R.*, 1, 241–5(1953); cf. *C.A.* 43, 6583*i*; 47, 2715*b*.—In nitration of paraffins with HNO_3 the closure of the reaction vessels (usually sealing of tubes) is an essential factor in nitration since it assures the preservation of NO_2 and NO in the reaction zone. In liquid phase nitration there occurs a lag of the diffusion processes behind the actual course of the reaction; this causes a slowing down of the reaction proper and manifests itself in alteration of the quant. amts. of products: the relative yield of mono- and *gem*-dinitro derivs. rise, while oxidation products decline. This lag increases with the more reactive hydrocarbons and with elevation of temp., although it depends on the design of the app. and the mechanical conditions. The liquid phase nitration in sealed tubes gives a much better yield of total products if the tubes are placed horizontally rather than vertically; particularly great is the increase of the oxidation products. As the reaction tubes are increased in cross section, the same effects are observed and yield factors of 2 or 3 are not uncommon in reactions with xylene and cyclohexane. Nitration with NO_2 gave similar results. O. M. K.

MATVEYEVA, M.K.

1953

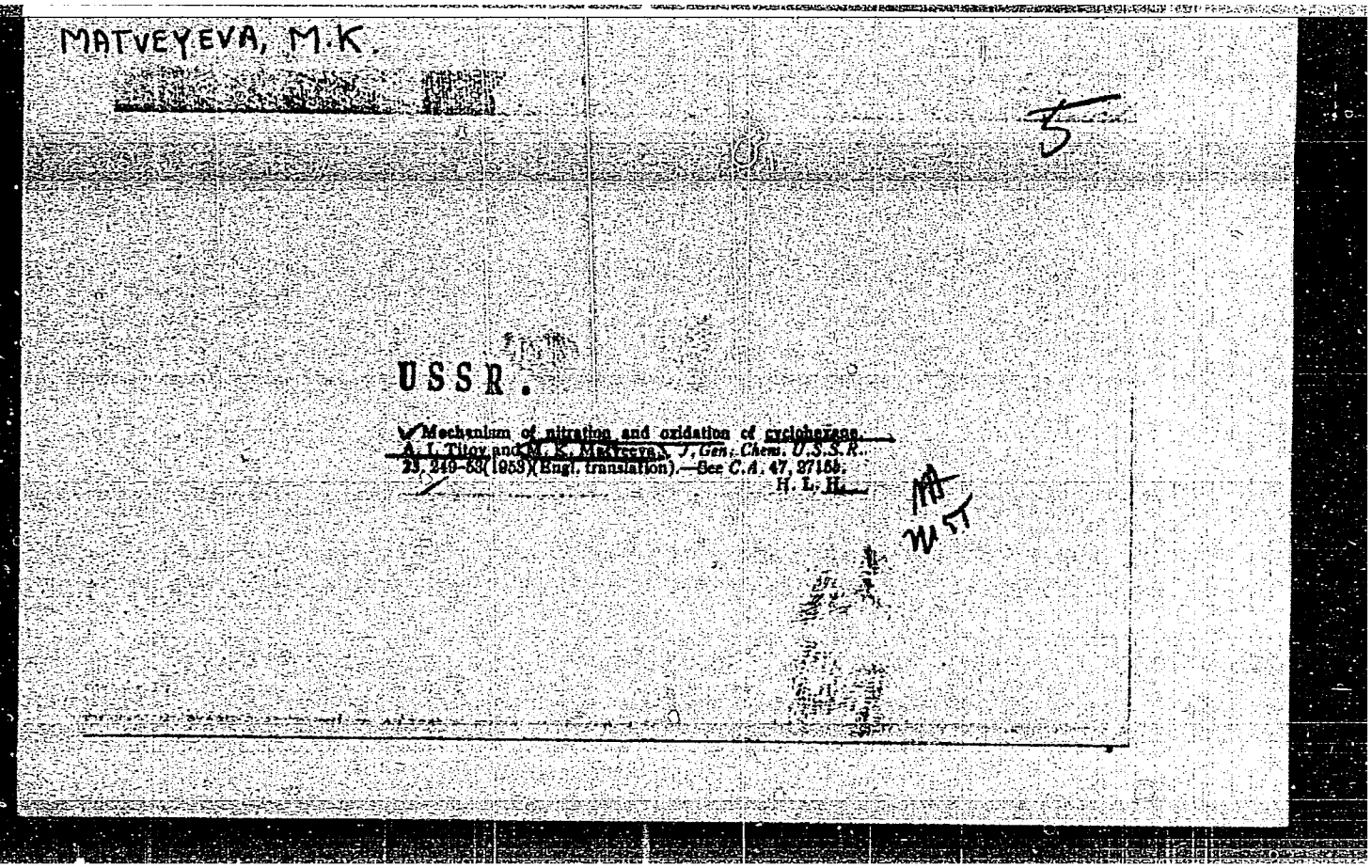
Mechanism of oxidation and nitration of cyclohexane by nitric acid and nitrogen oxides. II. Formation of cyclohexyl nitrite and intermediate products in its transformation into adipic acid. A. I. Titov and M. K. Matveyeva. *Zhurnal Obshchei Khim., Akad. Nauk S.S.S.R.*, 23, 246-51; cf. *C.A.* 47, 2715f.—In nitration of cyclohexane by HNO_3 or N oxides the initial step is the formation of cyclohexyl radical and HNO_2; the radical reacts rapidly with NO_2 monomer yielding RNO_2 and RONO; as the ratio of N_2O_4/NO_2 increases, the formation of RONO becomes more important; the cyclohexyl radical also reacts with N_2O_4 yielding RONO (with NO_2) and RNO_2 (with NO by-product). RONO hydrolyzes to ROH and HNO_2; the ROH is readily oxidized to the ketone and to the acid (adipic), and on the other hand ROH is also esterified and yields cyclohexyl adipate, nitrate, and dicyclohexyl ether. All these substances were identified in the reaction mixts. In a similar nitration of pentane, $AmONO$ was detected. Generally an increase of concn. of NO_2 increases the yield of oxidation products, as expected from the above theory. Cyclohexyl nitrite was prepd. by addn. of 62 ml. concd. HCl to 70 g. $C_6H_{11}OH$, 90 ml. H_2O, and 53 g. $NaNO_2$ at 0°; a 40% yield of product, b. 57°, d_4^{20} 0.991, n_D^{20} 1.4770, was obtained. Heating $C_6H_{11}OH$ and $(CH_2)_4(CO_2H)_2$ 10 hrs. to 130-40° gave dicyclohexyl adipate, b. 218-19°, m. 30°, along with oily monocyclohexyl ester. Allowing $C_6H_{11}ONO$ to stand several days at 20-5° in loosely stoppered flask gave $(CH_2)_4(CO_2H)_2$, $C_6H_{11}ONO$, $C_6H_{11}OH$, cyclohexanone, dicyclohexyl ether, dicyclohexyl adipate, and monocyclohexyl adipate. When cyclohexane was heated in sealed tubes (horizontal) with NO_2 1 hr. at 100°, the products contained $(CH_2)_4(CO_2H)_2$, monocyclohexyl adipate, $C_6H_{11}ONO$, $C_6H_{11}OH$, and $C_6H_{11}NO_2$. Similar reaction with HNO_3 (d. 1.3) also gave $C_6H_{11}ONO$ and $(CH_2)_4(CO_2H)_2$.

G. M. Kosolapoff

MATVEEVA, M. K.

"Mechanism of oxidation and nitration of cyclohexane with nitric acid and nitrogen oxides. Part I." Titov, A. I., Matveeva, M. K. (p. 238)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1953, Volume No. 23, No.2.



MATVEYEVA, M.K.

USSR.

Mechanism of nitration and oxidation of cyclohexene. A. I. Titov and M. K. Matveyeva. *J. Gen. Chem. U.S.S.R.* 23, 249–53 (1953) (Engl. translation).—See *C.A.* 47, 9716b. H. L. H.

62-58-5-6/27

AUTHORS: Makarova, L. G., Matveyeva, M. K.

TITLE: Decomposition of Phenyldiazonium-Boron Fluoride in the Ester of Benzenesulpho-Acids and in Acetophenone (Razlozheniye borftorida fenildiazoniya v efirakh benzolsul'fokisloty i v atsetofenone)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Khimicheskikh Nauk, 1958, Nr 5, pp. 565 - 569 (USSR)

ABSTRACT: The authors continued their investigations for the purpose of proving the cationic nature of phenyl (References 1,2). It was assumed with the dissociation of phenyl-diaconium-boron fluoride that the entering of phenyl into the meta-position with respect to the meta-"orientates" proves the cationic nature of phenyl. With the decomposition of this compound, the products of the entering of phenyl into the benzene-ring of the methyl- and ethyl-ester of benzenesulphoacid could not be obtained. The action of phenyl was directed to the sulphalk-oxyl-group. Phenylester of benzenesulphoacid proved to be the sole determinable reaction-product in both cases. The yield amounted to 40% in the case of ethylester, to 35% in the case of methylester (of

Card 1/2

Decomposition of Phenyldiazonium-Boron Fluoride in the Ester of Benzenesulpho-Acids and in Acetophenone 62-58-5-6/27

benzenesulphoacid). This phenyl thus acted exclusively on the sulphalkoxylgroup. A mixture of the m-and p-phenylacetophenones (relation 4:1) is formed in acetophenone with the decomposition of boron-fluoride of phenyldiazonium. These reactions prove the heterolytic character of the decay of phenyldiazonium-boron fluoride. There are 11 references, 3 of which are Soviet.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute for Elemental-organic Compounds AS USSR)

SUBMITTED: December 19, 1956

1. Phenyldiazonium boron fluoride--Decomposition 2. Benzenesulpho acid esters--Applications 3. Acetophenone--Applications

Card 2/2

5(3)

SOV/62-58-12-8/22

AUTHORS: Makarova, L. G., Matveyeva, M. K., Gribchenko, Ye. A.

TITLE: Decomposition of Aryl-Diazonium Boron Fluorides in Nitrobenzene (Razlozheniye boroftoridov arildiazoniyev v nitrobenzole)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye khimicheskikh nauk, 1958, Nr 12, pp 1452-1460 (USSR)

ABSTRACT: In the present paper the authors investigated the decomposition of aryl-diazonium boron fluorides in nitro-benzene with aryl= phenyl, paratolyl, parachloro phenyl, paramethoxy phenyl, orthocarbomethoxy phenyl, paracarbethoxy phenyl, orthonitro phenyl, and orthochloro phenyl. Besides a direct precipitation of reaction products by means of distillation and crystallization, the relation between the substitution products of the benzene nucleus - ortho-, meta- and para-isomers - possibly forming in the reaction mixture, were determined by optical analysis. In the first six cases the aryl formed in the decomposition of aryl diazonium boron fluorides in nitro-benzene entered the nitro-benzene nucleus only in a meta-position to the nitro group. Of the 3 possible isomers (ortho-, penta-, para-) only one, the corresponding metanitro-biaryl, was

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Decomposition of Aryl-Diazonium Boron Fluorides in Nitrobenzene

separated. The optical analysis of these mixtures by ultraviolet spectroscopy likewise proves the presence of meta-isomers only. Absorption curves of the investigated substances were obtained by the spectrophotometer SF-4, a construction by V. I. Dianov-Klokov. The authors thank I. V. Obreimov and I. Kachkurova for their optical measurements. The entrance of aryl from the aryl-diazonium boron fluorides into the nitrobenzene in the meta-position proves the electrophilic, cationic nature of this aryl and a heterolytic character of the decomposition of the diazonium salt. Only in the last two cases the aryl unexpectedly entered the ortho-position of nitro-benzene. Only 2 diphenyl derivatives were separated: 2,2-dinitro-diphenyl and 2-chloro-2' nitrodiphenyl. In the first case a possible crosswise conjugation of the two nitro groups with both benzene nuclei and besides that a coplanarity of two benzene nuclei in such a substituted diphenyl may be regarded as the cause of that formation. In the second case there is also a possible conjugation of chlorine atom electrons with the electron system of 2-nitro-diphenyl and a coplanarity of such a molecule. In this case also the possible presence of a certain ortho-effect must be considered. It is expressed by

Decomposition of Aryl-Diazonium Boron Fluorides in Nitrobenzene

the interaction of the electron cloud of the chlorine atom with the positive charge of the nitrogen atom of the nitro group. There are 6 figures and 23 references, 2 of which are Soviet.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elementorganic Compounds, Academy of Sciences, USSR)

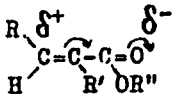
SUBMITTED: March 16, 1957

5(3)

AUTHORS: Makarova, L. G., Matveyeva, M. K. SOV/62-59-8-7/42

TITLE: Decomposition of the Boron Fluoride of Phenyldiazonium in the Esters of the α, β-Unsaturated Acids

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 8, pp 1386-1392 (USSR)

ABSTRACT: It is shown in the present paper that the boron fluoride of phenyldiazonium can decompose heterolytically with compounds containing a polar carbon - carbon double bond, such as the esters of α,β-unsaturated acids, in contrast with the Meerwein-Koelsch reaction. Therefore, the decomposition of boron fluoride diazonium was carried out in the esters of acrylic, crotonic, and methacrylic acids, which have the following structure:  . The phenyl cation has an effect upon the α-carbon so that the esters of the α-arylated unsaturated acids or products of a simultaneous addition of fluorine or, in the presence of water, hydroxyl in the

Card 1/2

β-position are formed. To go into greater detail, the β-methylatropic acid forms with ethyl crotonate (after saponification) as well as small amounts of dibasic acids: $C_{14}H_{16}O_4$ or $C_{14}H_{14}O_4$. With methyl acrylate atropic acid, phenyl acrylate, and insignificant quantities of α-methyl--β-phenylglutaric acid form. With methyl methacrylate benzylacrylic acid and further transformation products of phenyl methacrylate are formed; ketophenol-2-methyl-5--oxyindan-1-on. The reactions are described in the experimental part. There are 1 figure and 15 references, 4 of which are Soviet.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental-organic Compounds of the Academy of Sciences, USSR)

SUBMITTED: December 16, 1957

S/062/60/000/011/005/016
B013/B078

AUTHORS: Makarova, L. G., Natveyeva, M. K.

TITLE: Decomposition of Aryldiazonium Boron Fluorides in Nitrobenzene and Ethyl Benzoate in the Presence of Free Metal - Copper Powder

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1960, No. 11, pp. 1974 - 1980

TEXT: In this paper, the decomposition of aryldiazonium boron fluorides in nitrobenzene and of phenyldiazonium boron fluoride in ethyl benzoate in the presence of free metal - copper powder - was examined in order to obtain a confirmation for the formation of the aryl radical during the synthesis of organometallic compounds from aryldiazonium boron fluorides. As had been expected, products of a homolytic reaction were formed in nitrobenzene in the presence of a large quantity of copper powder. This occurred during the decomposition of aryldiazonium boron fluorides. The aryl occupies all of the three positions of nitrobenzene, especially, the ortho and para positions. Phenyldiazonium boron fluoride decomposes

Decomposition of Aryldiazonium Boron Fluorides in Nitrobenzene and Ethyl Benzoate in the Presence of Free Metal - Copper Powder

S/062/60/000/011/005/016
B013/B076

in ethyl benzoate in the presence of excess copper powder likewise according to a homolytic mechanism. The reaction products showed no traces of phenyl benzoate. The main product formed with the entrance of phenyl into the nucleus was the ethyl ester of biphenyl carboxylic acid. The meta-isomer formed only in a slight quantity. During the decomposition of aryldiazonium boron fluorides with aryls - phenyl, paratolyl, orthocarbomethoxyphenyl - in the presence of copper in nitrobenzene, aryl enters only the para and ortho positions to the nitro group of nitrobenzene: 4-nitrodiphenyl, 2-nitrodiphenyl, 2-carbomethoxy-4-nitrodiphenyl, and 2-carbomethoxy-2'-nitrodiphenyl are then formed. During the decomposition of 4-methylphenyl- and 4-chlorophenyldiazonium boron fluorides, the aryls enter all of the three positions of nitrobenzene, the orthoisomer being formed first of all. The following compounds were isolated: 4-methoxy-4'-nitrodiphenyl and 4-methoxy-3'-nitrodiphenyl. The presence of 4-methoxy-2'-nitrodiphenyl, 2'-nitro-, 4'-nitro-, and 3'-nitrochlorodiphenyls was spectrographically proved. During the decomposition of 4-carbethoxyphenyldiazonium boron fluoride, the main

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products separated were the ortho-isomer 2-nitro-4'-carbethoxydiphenyl and the meta-isomer 3-nitro-4'-carbethoxydiphenyl, which was formed in a smaller quantity. In this case, like in the decomposition of paramethoxy and parachlorophenyldiazonium boron fluorides, symmetrical azocompounds were isolated from the reaction products: the diethyl ester of azobenzene dicarboxylic-4,4'-acid, 4,4'-dioxyazobenzene, and 4,4'-dichlorobenzene. Besides, products of normal thermal decomposition were isolated in two cases: biaryl and an organofluorine compound. The formation of homolytic reaction products thus indicates that the heterolytic decomposition mechanism of aryldiazonium boron fluorides in the presence of a metal changes into a homolytic one. There are 6 references: 1 Soviet.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental-organic Compounds of the Academy of Sciences USSR)

SUBMITTED: June 19, 1959

MAKAROVA, L.G.; MATVEYEVA, N.K.

Decomposition of phenyldiazonium borofluoride in nitrobenzene in the presence of powdered zinc, cadmium, and silver. Izv.AN SSSR. Otd.khim.nauk no.10:1898-1899 O '61. (MIRA 14:10)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Diazonium compounds)

L 30711-66 EWT(m)/EWP(j)/T RM
ACC NR: AP5028990 (A) SOURCE CODE: UR/0342/65/000/009/0032/0033

AUTHORS: Toropova, Ye. G.; Matveyeva, M. K.

ORG: Klin Combine for Artificial and Synthetic Fibers (Klinskiy kombinat iskusstvennogo i sinteticheskogo volokna) 15,44,55

TITLE: Capron fibers with noncircular cross section

SOURCE: Tekstil'naya promyshlennost', no. 9, 1965, 32-33

TOPIC TAGS: textile, textile engineering, textile industry, textile industry machinery, capron

ABSTRACT: This paper deals with a spinneret invented jointly by the Design Bureau of the Mosgorsovnarkhoz and the Klin Combine for Artificial and Synthetic Fibers. The spinneret is designed for the production of capron fibers of triangular cross section. It was successfully employed for the production of capron monofibers No. 450 (2.22 text.). The new monofiber has found many applications in the textile industry, and the authors hope that many more applications and uses will be found in the future.

SUB CODE: 11/ SUBM DATE: none

Card 1/1 S

UDC: 677.002.6.4

KYUNTSEL', A.A., IVANOV, M.I.; MATVEYEVA, M.M

Influence of phytoncides of plants on the bacterial flora in the air. Gig.i san. 26 no.12:88-89 D '61. (MIRA 15:9)

1. Iz kafedry gigiyeny detey i podrostkov Permskogo meditsinskogo instituta.

(PHYTONCIDES)

MAKHORD, S.F.; MATVEYEVA, M.M.; OKUNEVA, S.I.; FIMINA, I.M.

Some results of the work of the Technical Rubber Goods Industry during 1964. Kauch. i rez. 24 no.11:39-41 '65.

(MIRA 19:1)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.

MATVEYEVA, M.N.

KORNILOV, I.I.; MATVEYEVA, M.N.

Continuous solid solutions of metallic compounds FeCr and FeV.
Dokl. AN SSSR 98 no.5:787-790 O '54. (MLRA 8:2)

1. Institut metallurgii im. A.A.Baykova Akademii nauk SSSR.
Predstavleno akademikom G.G.Urazovym.
(Iron--Chromium alloys) (Iron--Vanadium alloys)

ACC NR: AP6021828 SOURCE CODE: UR/0413/66/000/012/0146/0146

INVENTORS: Matveyev, I. B.; Matveyeva, M. N.

ORG: none

TITLE: A hydraulic inertial vibropress. Class 58, No. 183070

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 12, 1966, 146

TOPIC TAGS: hydraulic equipment, metal press, forge press, metal forming press

ABSTRACT: This Author Certificate presents a hydraulic inertial vibropress containing a base in the form of a closed power frame, and cylinders mounted in the frame and carrying movable working plungers (see Fig. 1). To improve the efficiency of the

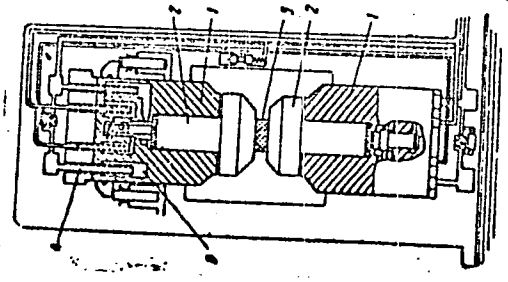

Fig. 1. 1 - cylinders; 2 - plungers; 3 - hollow; 4 - shaft; 5 - product

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UDC: 621.226:621.979

ACC NR: AP6021828

press, a movable cylinder is held in the base. This cylinder contains an auxiliary hollow which holds a shaft rigidly fixed to the base. The working plunger is provided with collars through which power is transmitted from the cylinder to the product. Orig. art. has: 1 figure.

SUB CODE: 13/ SUBM DATE: 03Jun64

Card 2/2

MATVEYEVA, M. P.

USSR/Metals - Stress
Metallography

Jan 50

"Problem of Investigating the Properties of Metals and Alloys at High Temperatures in Vacuo," Acad N. T. Gudtsov, M. G. Lozinskiy, I. P. Zudin, M. A. Bogdanov, M. P. Matveyeva, Inst of Metal imeni A. A. Baykov, Acad Sci USSR, 17 pp

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 1 p. 108-125, 1950

Completely describes apparatus (consisting of ordinary large glass bell jar, vacuum pump, and electrical connections) for studying in vacuo behavior of metal samples under tension and compression at high temperatures. Describes operating techniques. Meters and dials inside and outside the jar show tensions applied to samples b lever arms, etc. Submitted 8 Jun 49.

PA 161T104

TRANS-W 16673, 2 Feb. 51

MATVEYEVA, M.P.

USSR/ Physical Chemistry - Thermodynamics. Thermochemistry. Equilibrium. Physicochemical analysis. Phase transitions B-8

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11148

Author : Ivanov L.I., Kulikov I.S., Matveyeva M.P.
Inst : Department of Technical Sciences, Academy of Sciences USSR
Title : Method for Determining Vapor Tension and Diffusion Constants

Orig Pub : Izv. AN SSSR, Otd. tekhn. n., 1955, No 8, 145-147

Abstract : A method has been developed for determining vapor pressure of components and diffusion constants in metal alloys. In a chamber are placed, one above the other, two samples of the same chemical composition one of which contains a radioactive isotope. The samples are placed into ceramic holders which are inserted in Mo-pans. A vacuum (10^{-6} - 10^{-7} mm Hg) is produced in the unit and heating is effected by means of an induction furnace. On heating the apparatus is disconnected from the pumps and a vapor pressure of the components of the alloy, corresponding to the experiment temperature, becomes established therein. A reaction of isotope exchange takes place between the samples, which can be followed by observing the radioactivity increase of the inactive sample. Temperature is measured

Card 1/2

USSR/ Physical Chemistry - Thermodynamics. Thermochemistry. Equilibrium. Physicochemical analysis. Phase transitions B-8

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11148

with a Pt - PtRh thermocouple and is regulated within $\pm 3^{\circ}$. To decrease the reverse flow of radioactive atoms the surface area of the inactive sample is made 20-30 times greater than that of the active. Absolute amount of evaporated component is determined, after cooling in vacuum, by comparison with radioactivity of a standard sample. Under the described conditions kinetics of isotope ecchange is determined by the rate of evaporation of the tagged component from the radioactive sample and the velocity of diffusion flow of tagged component from internal layers to the surface of radioactive sample. The inclination angle of the linear portion of $Q = f(t)$ curve (Q --amount of substance evaporated from the active sample) serves to determine the rate of evaporation. A formula for determining the diffusion coefficient has been derived. The method has been checked with technical iron over the temperature range 1120-1255°. A good agreement with literature data has been attained. If the rate of evaporation is high and the curve has no linear portion a diaphragm with a small aperture can be inserted between the samples.

Card 2/2

MATVEYEVA, M. P.

Ivanov, L. I., Matveyeva, M. P., Kulikov, I. S., "Concerning the Question of the Determination of Thermodynamic Constants of Metals and Alloys."

in book Research on Heat Resistant Alloys, pub by Acad. Sci. USSR, Moscow, 1956, 160pp.

Inst. Metallurgy im A. A. Baykov

IVANOV, Lev Ivanovich; MATVEYEVA, Nelitina Petrovna, kand.tekhn.nauk; UDAL'TSOV, A.N., glavnyy red.; TOLCHINSKIY, Ye.M., inzh.red.

[Methods and equipment for gauging the heat of sublimation of metals according to the rate of vaporation of open surfaces] Metod i ustanovka dlia izmereniia teploty sublimatsii metallov po skorosti isparenila s otkrytoi poverkhnosti. Moskva, In-t tekhniko-ekon. inform. 1956. 10 p (Pribory i stendy. Tema 4, no.P-56-427)
(Heat of sublimation) (MIRA 11:3)

MATVEYEVA, M. P.

B-8

USSR/ Physical Chemistry - Thermodynamics. Thermochemistry. Equilibrium. Physicochemical analysis. Phase transitions

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11120

Author : Ivanov L.I., Matveyeva M.P., Kulikov I.S.
Inst : Institute of Metallurgy of the Academy of Sciences USSR
Title : On the Problem of Determination of Thermodynamic Constants of Metals and Alloys

Orig Pub : In the Book: Issledovaniya po zharoprochnym splavam. M., Izd-vo AN SSSR, 1956, 11-16

Abstract : description of three methods for determining thermodynamic constants of metals and alloys, utilizing radioactive isotopes, which are used at the Institute of Metallurgy of the Academy of Sciences USSR. 1. Determination of the rate of evaporation from the amount of substance evaporated from open surface and condensed on cells cooled with liquid nitrogen. 2. Determination of rate of outflow of saturated vapor, into high vacuum, from closed space through calibrated opening. In both methods amount of condensate was determined radiochemically. Due to necessity of using high activities the instrument for method 2 has remote control means. Both

Card 1/2

USSR/ Physical Chemistry - thermocynamics. Thermochemistry. Equilibrium. Physicochemical analysis. Phase transitions B-8

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11120

these methods do not ensure exact determination of partial values due to changes in concentration at the surface of sample under study. 3. Determination of rate of isotope exchange through the vapor phase, between active and inactive samples of same composition. The last mentioned method makes it possible to determine heat of sublimation, diffusion coefficient and activation energy on diffusion in metals and alloys. Diagrams of instruments for the described methods ar shown.

Card 2/2

MATVEYEVA, M.P.

Category : USSR/Solid State Physics - Phase Transformation in Solid Bodies E-5

Abs Jour : Ref Zhur - Fizika, No 2, 1957 No 3796

Author : Gudtsov, N.T., Ivanov, L.I., Matveyeva, M.P.
Title : Radioactive Methods of Metallophysical Investigations

Orig Pub : Vestn. AN SSSR, 1956, 26, No 3, 79-83

Abstract : Description of calculation methods and of instruments developed at the Institute of Metallurgy, Academy of Sciences, USSR, for the determination of the velocity of evaporation, vapor tension, and heat of sublimation of metals in the solid state. The use of radioactive isotopes makes it possible to investigate metals with low values of vapor tension at low temperatures.

Card : 1/1

MATVEYEVA, M.P.

IVANOV, L.I.; MATVEYEVA, M.P.

New instrument for studying the vapor tension and diffusion constants of metals by means of isotopic exchange. Trudy Inst.met. AN SSSR no.1:104-107 '57. (MIRA 10:11)
(Metals) (Isotopes) (Physical instruments)

SOV/137-58-7-15610

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 7, p 242 (USSR)

AUTHORS: Matveyeva, M. P., Ivanov, L. I.

TITLE: Determination of the Heat of Solid-state Sublimation of Iron in Iron-chromium Alloys (Opredeleniye teploty sublimatsii zheleza v splavakh zheleza s khromom v tverdom sostoyanii)

PERIODICAL: V sb.: Issled. po zharoprochn. splavam. Vol 2. Moscow, AN SSSR, 1957, pp 52-56

ABSTRACT: The heat of sublimation (HS) was determined by the rate of evaporation. Two specimens of alloy of the same chemical composition are mounted in a ceramic cup, one facing the other at a distance of 1 mm. The cup is placed in a vacuum furnace ($\sim 10^{-7}$ mm Hg). One of the specimens contains a radioactive isotope of the constituent investigated. The specimens are heated to a specified temperature and held at this temperature for a specified time. The vapor pressure of the components of the alloy corresponding to the temperature of the experiment is established in the space between the specimens. A reaction of isotope exchange goes on between the samples, the rate of which is gaged by the growth of

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SOV/137-58-7-15610

Determination of the Heat of Solid-state Sublimation of Iron (cont.)

radioactivity in the specimen which had been originally inactive. To bring the reverse current to a minimum, the area of the nonradioactive specimen is made 20-30 times as large as the surface of the active specimen. The HS of iron in a number of Fe-Cr alloys (0.8-87.5% Cr) was investigated in the 1100-1250°C range. The relationship of the HS to the composition has the appearance of a curve with a maximum in the region of 50% Cr. At 0.8% 50%, and 87.5% Cr the ΔH_{Fe} is 98, 161, and 99.3 kcal/g.atom, respectively. The calculation of the variation in thermodynamic activity of the Fe in relation to the Cr content in the alloy shows that in the region of intermediate concentrations of Cr there exists a considerable negative deviation from the ideal. This indicates that in this region the interaction between like atoms is weaker than between unlike ones. This situation leads to the formation of a phase on lowering of the temperature. Data on the heat-resistance of Fe-Cr alloys likewise indicate that the highest resistance is possessed by alloys containing ~60% Cr.

1. Chromium-iron alloys--Properties 2. Iron--Sublimation
3. Radioisotopes--Applications

L. B.

Card 2/2

MATVEYEVA, M. P.

137-58-1-1984

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 1, p 266 (USSR)

AUTHORS: Ivanov, L. I., Matveyeva, M. P.

TITLE: A New Instrument for Studying the Vapor Pressure and Diffusion Constants of Metals by Isotope Exchange (Novyy pribor dlya izucheniya uprugosti para i diffusionnykh konstant metallov metodom izotopnogo obmena)

PERIODICAL: Tr. In-ta metallurgii. AN SSSR, 1957, Nr 1, pp 104-107

ABSTRAC T: A method and instrument (I) based on the principle of isotope exchange for the purpose of investigation of the vapor pressure and the diffusion constants of metals are described. The Fe^{59} isotope is employed for study of industrial Fe and also of Fe in a number of its binary alloys. The isotope is introduced into the alloy by metallurgical methods. Measurement of the gamma activity was on a B-type apparatus. An AMM/4 tube was used as a counter [β radiation was not recorded in this study in order not to introduce corrections for self-absorption and reflection from the surface of the specimen (S)]. A tube was placed in a lead housing with a device making it possible to set the radioactive apparatus in a strictly determinate position

Card 1/3

A New Instrument for Studying the Vapor Pressure (cont.)

relative to the counter. In order to remove all gas from the metal, the extra specimen was first fused in vacuum. Industrial Fe was investigated in the 1120-1255° temperature interval. After a number of anneals of varying duration, the specific activity of the S was measured, and the amount of Fe condensing on the target was counted. Under conditions of unilateral exchange, i. e., under experimental conditions in which the area of the radioactive S is set at only 1/20 to 1/30 of the area of a non-radioactive specimen so as to reduce to a minimum the feedback of vaporized atoms, the solution of the problem of mass transfer for the concentration of isotope is analogous to the solution of the problem of heat transfer from a semi-infinite heat source in a medium the temperature of which remains zero. A method of calculation on the basis of the data of the kinetics of isotope exchange is presented, covering rate of evaporation, vapor pressure, and the coefficient of self-diffusion of industrial Fe. The data obtained were employed to derive the heat of sublimation of Fe, ΔH=97 kcal/g-atom, and the energy of activation of self-diffusion, Q=70 kcal/g-atom, which is completely in agreement with the literature data. A diagram and description of an I, making it possible to heat a number of pairs of disk-shaped S simultaneously, are presented. Dishes containing the S are placed in a special Mo adapter, which is placed in turn within a graphite heater. The use of a graphite heater permitting heating in vacuum

A New Instrument for Studying the Vapor Pressure (cont.)

to 1800°, in place of induction heating, makes possible a considerable stabilization of the experimental conditions and the creation of a uniform temperature within the adapter. Alloys of Fe and Cr were tested in the new I and their thermodynamic constants were determined.

L. G.

1. Metals--Vapor pressure--Measurement 2. Metals--Diffusion 3. Instrumentation--Applications 4. Instrumentation--Characteristics

Card 3/3

MATVEYEVA, M.P.; IVANOV, L.I.; BYSTROV, L.N.

Connection between thermodynamic values and the strength of alloys at high temperatures. Issl. po zharopr. splav. 3:50-55 '58.
(MIRA 11:11)
(Metals at high temperatures) (Alloys--Thermal properties)
(Crystal lattices)

М.П. МАТВЕЕВА

24(8) PHASE I BOOK EXPLOITATION SOV/2117

Soveshchaniye po eksperimental'noy tekhnike i metodam vysokotemperaturnykh issledovaniy, 1956

Eksperimental'naya tekhnika i metody issledovaniy pri vysokikh temperaturakh; trudy soveshchaniya (Experimental Techniques and Methods of Investigation at High Temperatures; Transactions of the Conference on Experimental Techniques and Methods of Investigation at High Temperatures) Moscow, AN SSSR, 1959. 789 p. (Series: Akademiya nauk SSSR. Institut metallurgii. Komissiya po fiziko-khimicheskim osnovam proizvodstva stali) 2,200 copies printed.

Resp. Ed.: A.N. Samarin, Corresponding Member, USSR Academy of Sciences; Ed. of Publishing House: A.L. Bankvitser.

PURPOSE: This book is intended for metallurgists and metallurgical engineers.

COVERAGE: This collection of scientific papers is divided into six parts: 1) thermodynamic activity and kinetics of high-temperature processes 2) constitution diagram studies 3) physical properties of liquid metals and slags 4) new analytical methods and production of pure metals 5) pyrometry, and 6) general questions. For more specific coverage, see Table of Contents.

Vatolin, N.A., and O.A. Yesin. Solubility of Carbon in Iron Alloyed With Various Elements 88

A study was made of the effect of phosphorus, chromium, manganese, sulfur, and vanadium on the solubility of carbon in liquid iron, and also of silicon on the solubility of carbon in molten manganese and ferrochrome. It was shown that regularities observed in the effect of the nature and concentration of the addition, as well as of the temperature, can be qualitatively explained with the aid of the theory of regular solutions.

Ivanov, L.I., I.S. Kulikov, and M.P. Matveyeva. Methods of Measuring the Thermodynamic Constants of Metals and Alloys at High Temperature 96

An apparently reliable method was developed for determining the heat of sublimation of metals, making use of the principle of isotope exchange in the gaseous phase of metals. The use of radioactive isotopes permits the determination of partial values of the following thermodynamic constant: rate of vaporization, vapor pressure, heat of sublimation, and the individual thermodynamic activity of each of the elements of the alloy.

5

MATVEEVA, M. P.

19

The use of radioactive isotopes in physicometallurgical investigations. M. P. Matveeva. *Tekhnika (Sofia)* 8, No. 3, 1-5(1958); cf. Ivanov, *et al.*, *C.A.* 50, 2249e.—A method for detg. the heat of sublimation and the activation energy of diffusion of various iron alloys by using Fe^{59} as tracer is described.

A. Aladjem

18.8200 1146,1454,1467
10.9200

86065
S/180/60/000/005/006/033
E073/E535

AUTHORS: Ivanov, L. I., Matveyeva, M.P. and Prokoshkin, D.A.(Moscow)

TITLE: Investigation of Plastic Deformation of High Melting Alloys at Elevated Temperatures

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskiy nauk, Metallurgiya i toplivo, 1960, No.5, pp.79-85

TEXT: The results are described of investigations of creep in torsion at various stresses and temperatures in titanium, niobium and chromium. The technique of investigation was similar to that applied in earlier work (Ref.7). All the tests were carried out in vacuum with a residual pressure of 10^{-5} mm Hg, both for constant temperature and also for cyclically varying temperatures. In the latter case the specimen was tested with a constant torque at various temperatures. Straight line dependence on the diagram strain versus time was taken as evidence that the steady state of creep had been reached at the given temperature. The reliability of the obtained results was verified by the coincidence of the activation energy of the steady state creep during gradual increase and decrease in the temperature. In the case of titanium, metal of 99.5% purity was chosen that had been forged into rods of

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S/180/60/000/005/006/033
E073/E535

Investigation of Plastic Deformation of High Melting Alloys at Elevated Temperatures

12 mm diameter and also iodide titanium that had been purified by zonal melting. The specimens had a gauge length of 12 mm and a diameter of 3 mm. Their surface was carefully polished. The creep was tested in the range of β modification (1000 to 1500°C) with torques of 90.5, 109, 137 and 200 g/cm. Fig.1 shows the graphs of the logarithm of creep speed as a function of the reciprocal of the temperature for various torques. It was found that the results complied with the following relation

$$U = K \exp\left(-\frac{Q(\sigma)}{RT}\right) \qquad (1)$$

where U - creep speed, Q - energy creep parameter depending on the applied stress and temperature, K - a constant which is sensitive to the structure of the metal (or the alloy). The activation energies did not vary greatly, the average being 32.3 kcal/g.atom. The creep of chromium was determined (on specimens with 14 mm gauge length and 3 mm diameter) in the temperature range 900 to 1380°C, using electrolytic chromium after resmelting in the suspended state

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8606 5

S/180/60/000/005/006/033
E073/E535

Investigation of Plastic Deformation of High Melting Alloys at Elevated Temperatures

in an atmosphere of dried and purified helium. The dependence of the logarithm of the speed of creep of Cr on the reciprocal of the temperature for various stresses is graphed in Fig.3. Similar results for niobium specimens are plotted in Fig.5. The dependence of the activation energy of chromium and niobium on the applied stresses is plotted in Figs. 4 and 6. The following conclusions are arrived at: no temperature dependence of the activation energy of steady state creep was observed for chromium, niobium and titanium. With increasing applied stress, the creep activation energy of Cr and Nb decreases, whilst that of Ti remains unchanged. The absolute value of the creep activation energy of titanium is less than that of self-diffusion. The creep activation energy of Cr and Nb at $\tau = 0$ is a complex value equalling in the first approximation the sum of the activation energy of self-diffusion and the energy of formation of vacancies. Microscopic analysis using special methods of etching has shown clearly the validity of the dislocation mechanism of plastic deformation of chromium at

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elevated temperatures up to 400°C. The process of polygonization has been investigated and it is shown that development of polygonization can be observed even at the beginning of the second stage of creep. There are 6 figures and 17 references: 9 Soviet, 1 German and 7 English.

SUBMITTED: May 27, 1960

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S/180/60/000/005/021/033
E111/E135

AUTHORS: Dekht er, I.Ya., Ivanov, L.I., Matveyeva, M.P. and Pro in, D.A. (Moscow)

TITLE: Influence of Plastic Deformation on the Kinetics of Evaporation of Iron from Type 10 Steel

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1960, No.5, pp.171-173

TEXT: The authors point out that crystal lattice defects produced by plastic deformation must affect both partial and integral thermodynamic properties. Dekhtyar et al. (Ref.1) and other authors (Refs 2, 3) have previously shown that plastic deformation affects many properties. The present work gives preliminary results of an investigation of the influence of plastic deformation (torsion) on the rate of evaporation of iron from type 10 steel (0.10% C; 0.45 Si; 0.03 P; 0.02 S; 0.26 Al; remainder Fe). The apparatus developed and used is shown in Fig.1: the hollow cylindrical specimen has its open end closed with a tantalum diaphragm to form a Knudsen cell. The specimen, subjected to torsion if required, is heated in a

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graphite inductor of an axially varying wall thickness. After fabrication specimens were annealed in helium for 30 minutes at 1200 °C, sealed in quartz capsules and irradiated with thermal neutrons, giving Fe^{59}. The rate of evaporation was found from the activity of the deposit on a molybdenum foil (polished to a mirror finish) in an aluminium holder cooled with liquid nitrogen. Fig.2 shows evaporation rates of iron for undeformed specimens of the steel (curve 1) and pure iron (curve 2). Fig.3 shows evaporation rate for the steel (curve 1) and the corresponding deformation rate (curve 2). The effect is complex and the authors suggest a similar study on pure iron.
There are 3 figures, 1 table and 4 references: 2 Soviet and 2 English.

SUBMITTED: March 22, 1960

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18.8100 1045, 1418, 1413

S/180/61/000/001/010/015
E021/E406

AUTHOR: Matveyeva, M.P. (Moscow)

TITLE: The Problem of Plastic Deformation of Chromium

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1961, No.1, pp.122-125

TEXT: Results are described of a microscopic study of the process of plastic deformation of chromium in the initial stages under conditions of torsion at high temperatures. Tests were carried out on electrolytic chromium (99.96%) remelted in an atmosphere of dried and purified helium by the method of levitation melting. Casting was carried out also in an atmosphere of helium to give castings of diameter 6 and length 45 mm. Samples of diameter 3 mm and working length 15 mm were prepared by electrolytic dissolution from these castings and subjected to torsion testing. The samples had a mirror-polished surface and were free from stresses. Testing was carried out in a vacuum at 1200 to 1400°C and stresses of 0.65 and 1.2 kg/mm^2. When a specimen was twisted through 60°, deformation in the form of Frank-Reed sources was observed (Fig.1). Calculations showed that in order for this source to generate dislocations, the stress required is about

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0.5 kg/mm^2. The actual stress was 0.65 kg/mm^2 and about 30 dislocation loops were formed. Analysis of the structure of the source showed that it was obstructed because the distance between the internal loops was almost 3 times greater than that of the external loops. As a result of accumulation of groups of dislocations, the stress concentration in individual places may increase considerably and lead to the formation of microcracks and subsequent brittle fracture. For chromium this obstruction of dislocations can occur even at high temperatures leading to brittle fracture. This explains why chromium has an intercrystalline fracture up to 0.75 T_{fusion}. As a result of the action of the Frank-Reed source, a large number of dislocations are formed and slip lines appear. Fig.2 shows the surface of a sample subjected to torsion at 1300°C. Thus the dislocation - slip mechanism of plastic deformation at high temperatures is confirmed for chromium. There are 2 figures and 9 references: 8 Soviet and 1 non-Soviet.

SUBMITTED: June 20, 1960

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Fig.1. A Frank-Reed source on the surface of cast chromium in torsion (x3000)

Fig.2. Slip lines on the surface of a sample of cast chromium in torsion (x450)

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PROKOSHKIN, D.A.; MATVEYEVA, M.P.; MOROZOV, V.A.

Investigating by the hot hardness method the resistivity of chromium-molybdenum alloys to plastic deformation. Issl. po zharopr. splav. 7:210-213 '61. (MIRA 14:11)
(Chromium-molybdenum alloys--Testing)
(Deformations (Mechanics))

S/032/61/027/002/010/026
B134/B206

AUTHORS: Matveyeva, M. P. and Platov, Yu. M.

TITLE: Electrolytic method for the preparation of samples from brittle chromium

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 2, 1961, 179-180

TEXT: Since studies of the properties of pure chromium are complicated on account of its brittleness, a method based on electrolytic dissolution was elaborated for preparing chromium samples. A solution consisting of 95% phosphoric acid and 5% water (Ref. 1) is used as electrolyte. Work is conducted with an anodic current density of 1.8 a/cm^2 and a terminal voltage of 7 v, a layer of 1.5 mm thickness being separated from the crude sample in the course of 2 hr. Castings of electrolytic chromium, obtained by floating melting in pure, dry helium atmosphere, of the following dimensions were used as crude samples: length of the tapered part 15 mm, diameter 3 mm, length of the crown pieces (at both ends) 5 mm, their diameter 6 mm. These crude samples are hung into the electrolytic bath, and current is fed through by means of molybdenum wire contacts. The

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Electrolytic method for the...

crown pieces which are not to be dissolved are protected by rubber covers. The samples obtained after separation of the surface layer were used for torsion tests at high temperatures in vacuum. In order to prevent possible irregularities during electrolytic dissolution, it is recommended to turn the crude samples during electrolysis. The finished samples have a polished and stress-free surface. There are 2 figures and 2 Soviet-bloc references.

ASSOCIATION: Institut metallurgii Akademii nauk SSSR (Institute of Metallurgy of the Academy of Sciences USSR)

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37739

S/180/62/000/002/009/018
E040/E135

18.1235

AUTHORS: Ivanov, L.I., Matveyeva, M.P., Morozov, V.A., and Prokoshkin, D.A. (Moscow)

TITLE: On the self-diffusion of chromium

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Metallurgiya i toplivo, no.2, 1962, 104-106

TEXT: In spite of the fact that chromium is widely used as an alloying element and that it serves as a basis of development of heat resistant alloys, its physico-chemical properties have not yet been fully investigated. Furthermore, such data as have been reported in technical literature are often very contradictory. For these reasons a re-examination was made of self-diffusion of chromium on specimens prepared from electrolytic chromium (99.96% pure) with nitrogen content of less than 0.010% and oxygen content of the order of 0.1%. The specimens were prepared by levitation melting and casting in copper moulds in an atmosphere of dry and purified helium. The specimens were in

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the form of rings 16 mm in diameter. After polishing, Cr^{51} was deposited on the specimen surface under a vacuum of 10^{-5} mm Hg. Care was taken to ensure an even thickness of the deposit of the radioactive chromium. Diffusion annealing was carried out at 1050-1400 °C in a special vacuum furnace in a corundum crucible, using simultaneously two specimens positioned face-to-face; the actual annealing temperature being controlled by means of two Pt/Pt-Rh thermocouples. The self-diffusion coefficient of chromium was determined by a method described previously by I.B. Borovskiy, Yu.G. Miller and A.P. Shcherbakov (Ref.8: Samodiffuziya v α-Fe. Issledovaniya po zharoprochnym splavam (Self-diffusion in α-Fe. Research in Heat Resistant Alloys). Izd-vo AN SSSR, 2, 1957, 208) and by L.I. Ivanov and N.P. Ivanichev (Ref.9: Izv. AN SSSR, OTN, no.8, 1958). A layer with a thickness of about 10 microns was removed at each stage, the thickness of the layer thus removed being controlled with an accuracy of ± 0.001 mm. The radioactivity determination was on filter paper moistened with a 15% NaCl solution using scintillation counters and reference standards. The test results

are plotted as log I vs. x^2 curves (I = intensity of radiation and x = distance from the specimen surface). Coefficients of volume diffusion of chromium were calculated from the above curve and are reported for various temperatures. The temperature dependence of chromium self-diffusion was found to obey the following relation:

$$D = 0.0647 \exp\left(\frac{-59200}{RT}\right) \quad (1)$$

where R - universal gas constant and T - temperature.
Investigation of the self-diffusion of chromium is also of great interest because chromium has a body-centred crystal lattice structure. If it is assumed that the vacancy mechanism of self-diffusion holds true for body-centred crystal lattice metals, it can be shown that

$$D_o = a^2 v \exp\left(\frac{\Delta S}{R}\right) \quad (3)$$

where: D_o - self-diffusion velocity; a - lattice constant; v - atom oscillation frequency; ΔS - entropy of self-diffusion activation; R - gas constant. The entropy calculated in the

present investigation was positive although negative entropies of chromium self-diffusion activation were previously reported by other workers. However, it was also shown previously that ΔS cannot be negative for metals with cubic crystal lattice structure if the energy of activation of self-diffusion exceeds 10 kcal/g.atom and if the vacancy mechanism of self-diffusion is assumed to apply.
There are 3 figures and 2 tables.

SUBMITTED: July 17, 1961

Card 4/4

PROKOSHKIN, D. A. (Moskva); MATVEYEVA, M. P. (Moskva); PLATOV, Yu. M. (Moskva)

Observing dislocations in cast and deformed polycrystalline chromium. Izv. AN SSSR. Otd. tekh. nauk. Met. i topl. no.6: 107-111 N-D '62. (MIRA 16:1)

(Chromium—Metallography)
(Dislocations in metals)

MATVEYEVA, M.P.

Investigating the microstructure of chromium. Trudy Inst.met. no.10:181-187 '62. (MIRA 15:8)
(Chromium--Metallography)

ACCESSION NR: AT4013922 S/2659/63/010/000/0022/0027

AUTHOR: Prokoshkin, D. A.; Matveyeva, M. P.; Morozov, V. A.

TITLE: An investigation of the process of plastic deformation of chromium at high temperatures

SOURCE: AN SSSR. Institut metallurgii. Issledovaniya po zharoprochny*m splavam, v. 10, 1963, 22-27

TOPIC TAGS: chromium, chromium alloy, chromium deformation, chromium stress, plastic deformation, creep, high temperature creep, molybdenum

ABSTRACT: The basic task of the investigation was a study of the influence of the substructure formed in the process of creep at high temperatures on the subsequent resistance of chromium and chromium alloys to plastic deformation. The tests were performed with pure electrolytic chromium (99.96%). Chromium samples 55 mm long and 6 mm in diameter were cast in pure helium and were then tested for creep on the IM-4K machine under constant torque at temperatures up to 1500-1600C. It was found that one of the most important factors at high temperatures is the position of the boundaries and the presence of processes

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ACCESSION NR: AT4013922

arising at the boundaries. Photomicrographs in the article show the gradual development of defects at the grain boundaries in the process of buckling of the chromium sample at 1200C and a load of 2.05 kg/mm^2. Another part of the experiment involved tests on molybdenum. It was found that molybdenum failure at the grain boundaries started at a significantly lower degree of deformation, which showed that molybdenum has a higher resistance to plastic deformation and a relatively lower plasticity in comparison to chromium. Thus, when creating heat-resistant alloys, not only should the solid solution be strengthened, but the possibility of strengthening the grain boundaries should be considered. Orig. art. has: 3 figures.

ASSOCIATION: Institut metallurgii AN SSSR (Institute of Metallurgy AN SSSR)

SUBMITTED: 00 DATE ACQ: 27Feb64 ENCL: 00

SUB CODE: MM NO REF SOV: 002 OTHER: 001

Card 2/2

SEMICHASTNAYA, A.V. (Moskva); GELLER, Yu.A. (Moskva); MATVEYEVA, M.P. (Moskva)

Investigating the irreversible temper brittleness of spring steel. Izv. AN SSSR. Met. no.4:150-155 Jl-Ag '65. (MIRA 18:8)

L 07386-67 EWT(m)/EWP(w)/EWP(t)/ETI IJP(c) JD/JG
ACC NR: AP6027746 SOURCE CODE: UR/0370/66/000/004/0099/0102

AUTHOR: Matveyeva, M. P. (Moscow); Morozov, V. A. (Moscow)

ORG: None

TITLE: Crack propagation in polycrystalline chromium during cyclic heat treatment

SOURCE: AN SSSR. Izvestiya. Metally, no. 4, 1966, 99-102

TOPIC TAGS: chromium, polycrystal, metal heat treatment, cyclic heat treatment, crack propagation

ABSTRACT: The authors study the effect of cyclic heat treatment on the process of crack formation in polycrystalline chromium. Test specimens 5 mm in diameter and 10 mm long were made from 99.96% pure electrolytic chromium. In each heat treatment cycle the specimens were heated to 1200°C with holding for 5 min and subsequent rapid cooling in water to room temperature. No special measures were taken to protect the specimens from oxidation. After each 10 cycles the microstructure of the metal was studied and the microhardness was measured with a load of 50 g on the indenter. A slight change in microhardness from 210 to 250 kg/mm was observed after 100 cycles due to the hardening action of cyclic thermal stresses and diffusion of oxygen from the surface to the inner regions of the specimen. Cracks appear after 40-60 cycles preceded by dislocation pile-up in certain slip planes, The increase in dislocation

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density in these planes results in the formation of submicroscopic cracks which then propagate at an extremely high rate of speed due to the increased brittleness of the material. The possibility for development of slipping in the secondary slip system or development of other processes, e. g. transverse slipping, results in relaxation of the stress in front of the developing crack and propagation of the crack in the parallel plane creating favorable conditions for "relay-race" crack propagation. Orig. art. has: 3 figures.

SUB CODE: 11/ SUBM DATE: 14Jan65/ ORIG REF: 014/ OTH REF: 001

Card 2/2 LS

ASTAKHOVA, L.N.; MATVEYEVA, M.V.

Hemagglutination reaction as a valuable method for the laboratory diagnosis of typhus. Lab. delo 6 no.4:34-36 Jl-Ag '60.
(MIRA 13:12)

1. Sverdlovskiy nauchno-issledovatel'skiy institut po profilaktike poliomiyelita (dir. G.F. Bogdanov).
(TYPHUS FEVER) (BLOOD--AGGLUTINATION)

L 08213-67 EWT(m)/EWP(t)/ETI IJP(c) JD/WB

ACC NR: AP6014504 (A,N) SOURCE CODE: UR/0317/66/000/004/0063/0066

AUTHOR: Lipin, A. (Candidate of chemical sciences; Engineer; Lieutenant colonel); Golovkina, N. (Engineer); Matveyeva, N. (Engineer)

ORG: None

38
B

TITLE: Use and application of corrosion protection

SOURCE: Tekhnika i vooruzheniye, no. 4, 1966, 63-66

TOPIC TAGS: corrosion protection, electrolyte, electrolytic deposition, steel, [illegible] METAL COATING, ZINC, CADMIUM

ABSTRACT: Various considerations on corrosion and preservation of metals are presented on the basis of experimental research and practical applications. The mechanism of electrochemical reactions in zinc and cadmium coatings, in phosphate and other oxide films is explained and illustrated. It is mentioned that the corrosion of cadmium coated surfaces can be 0.5 mm deep. The destruction of zinc films proceeds with a speed of 0.4 to 4 microns per year. In general, the electrolytic processes are more effective. A cadmium-zinc electrolyte containing in one liter 14 g of zinc sulphate, 12 g of cadmium sulphate, 55 g of caustic potash and 55 g of Trilon A is considered the most effective. The effect of the current density and of the concentration of zinc salts on the cathode coatings is evaluated and graphically illustrated. The cadmium-zinc electrolyte has the same throwing power as the potassium cyanide electrolyte. The favorable effect of Trilon A on the increase of the cathode current density is stressed. The stability of cadmium-zinc electrolyte is high. The physical properties of cadmium-zinc are characterized by a microhardness of about 40 kg/sq mm and by the disappearance of porosity in layers of 3 microns and

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ACC NR: AP6014504

and thicker. A pyrophosphate electrolyte (9 gr of stannic sulfate, 8 gr of zinc sulphate, 190 g of sodium pyrophosphate, 1 g of citric acid and 1 g of ammonium nitrate per one liter) is considered the most stable for obtaining a tin-zinc coating. Better results were obtained with electrolytes where sulphates were replaced by stannic chlorides. The Trilon pyrophosphate electrolyte is considered the best for obtaining tin-cadmium coatings. One liter of this electrolyte contains 12 to 45 g cadmium sulphate, 15 g of stannic chloride, 60 g of sodium pyrophosphate, 25 to 85 g of Trilon A, 10 g of phenol and 5 to 8 ml of triethanolamine. Its high throw power and increase of current density are stressed. Corrosion-resistant properties of various coatings were tested and compared. The best results were obtained with cadmium-zinc coatings containing 18 to 20% of zinc. In general, mechanical strength of metals were little affected by coatings. Some examples for certain types of steel are cited. The most effective phosphate processes are summarized in a table indicating electrolyte solutions, processing temperatures and duration. In general, combined phosphate and cadmium films resist better against corrosion than ordinary phosphate coatings (as shown in a comparative diagram). Orig. art. has: 3 diagrams and 1 table.

SUB CODE: 07, 13/ SUBM DATE: None

Card 2/2 egh

VISHNYAKOV, G.F., inzh.; KALININA, K.S., inzh.; MATVEYEVA, N.A., inzh.

Functioning of the ventilation systems of motion-picture theater auditoriums in Moscow. Vod. i san. tekh. no.8:8-11 Ag '62. (MIRA 15:9)

(Motion-picture theaters--Ventilation)

KORSHAK, V. V., GRIBOVA, I. A., and MATVEYEVA, N. A.

"Progress in the Field of Synthesis of High Molecular Compounds," Publishing House Technology, Moscow, 1953

Contains 811 references with many Western references including numerous British patents.

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MAKUSHENKO, G.D., inzh.; MATVEYEVA, N.A., inzh. (Riga).

Creativity of efficiency promoters. Put' i put. khoz. no.6:27 Je '59. (MIRA 12:10)
(Railroads--Equipment and supplies)