

ANTIPOVA, L.A.

Course of scarlet fever during symptomatic treatment [with summary
in English]. *Pediatrics* 36 no.2:12-16 F '59. (MIRA 12:4)

1. Is kafedry infeksionnykh bolezney detey Leningradskogo pediatri-
cheskogo meditsinskogo instituta (dir. - prof. N.T. Shutova, nauch-
nyy rukovoditel' - dots. A.T. Kus'nicheva)
(SCARLET FEVER, ther.
symptomatic ther. (Rus))

ANTIPOVA, L.A.

Study of the concentration of penicillin in biological fluids of the body following the administration of bicillin. *Pediatrics* no.7:71-75 '62.

(MIRA 15:12)

1. Iz kafedry infektsionnykh zabolevaniy u detey (zav. - dotsent A.T. Kuz'micheva) Leningradskogo pediatricheskogo meditsinskogo instituta (dir. - dotsent Ye.P. Semenova), Detskoy infektsionnoy bol'nitsy Sverdlovskogo rayona (glavnyy vrach - zaslushennyy vrach N.A. Nikitina).

(PENICILLIN)

(BICILLIN)

KLYACHKO, N.S.; ANTIPOVA, L.A.

Specific prevention of mumps. Report No. 1: Results of clinical and laboratory examination of children inoculated intracutaneously with a live attenuated vaccine against mumps. Trudy Len. inst. epid. i mikrobiol. 16:33-38 '58. (MIRA 16:8)

(MUMPS--PREVENTIVE INOCULATION)

ANTIPOVA, L.A.

Experience in the use of bicillin in scarlet fever. Sovet. med.
27 no.6:107-110 Je'63 (MIRA 17:2)

1. Iz kafedry infektsionnykh zabolevaniy u detey (zav. - prof.
A.T.Kuz'micheva) Leningradskogo meditsinskogo podiatricheskogo
instituta (direktor - dotsent. Ye.P.Semenova).

81
ANTIPOVA, L.K.

811
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Resistance of potato to *Solusobus*. L. K. Antipova (Sov. J. Genet. 1961, No. 2, 54-55; *Herit. Abstr.*, 1961, 21, 92).--*Epilachna vigintio-novevittata*, Muck., is causing very serious damage, not unlike Colorado beetle damage, to potatoes in the Soviet Far East. Observations of wild and cultivated varieties and of hybrids indicate that *Epilachna*-resistance exists among the wild species; some interspecific hybrids with *Solanum demissum* were particularly promising in this respect. C. E. NORTH.

ANTIPOVA, L.M. (Moskva)

~~SECRET~~ TELEVISION. Zdorov'e } no.1:23 Ja '57. (MIRA 10:2)
(TELEVISION--TRANSMITTERS AND TRANSMISSION)

ANTIPOVA, M.A.

LA

27

The selection of the most effective catalysts and conditions for esterification of oils and fatty acids. A. A. Blagovestova and M. A. Antipova. *Russk. khim. zhurn.* *Laboratornyi Pror.* 1960, No. 10, 18-19.—In the esterification of oleic and phthalic acids with glycerol, the use of catalyst (indonesulfonic acid) is necessary only when low temps. (140°) are used. In exchange esterification of vegetable oils with glycerol or pentaerythritol, CuI and PbI₂ are effective catalysts, while MgO is less effective, and oxides of Zn, Fe and Co are ineffective. Caustic alkali, in the form of an alcoholate of the alcohol used, is even more effective than the oxides. Alk. and water-soluble salts were ineffective. In exchange esterification between linseed oil and oleic acid, ZnCl₂ and Al(OH)₃ were effective at 200°; but ineffective for the same reaction with phthalic acid. Maleic anhydride was the most effective acidic component, as much as 35% of it entering linseed oil compn. at 100-200°. O. M. Kozlovskii

ASB 514 METALLURGICAL LITERATURE CLASSIFICATION

CA ANTIPOVA, M. A.

16

Esters of polyhydric alcohols and unsaturated aliphatic acids. II. Exchange esterification of vegetable oils by polyhydric alcohols. A. A. Blagodarova, M. A. Antipova, O. N. Savvina and R. M. Svetikhanov. *J. Applied Chem.* (U. S. S. R.) 14, 192-7 (1941); cf. *C. A.* 35, 2040-4.

This work represents the details of optimal conditions for exchange esterification of vegetable oils by polyhydric alcs. (glycerol (I) and pentaerythritol (II)). The expts. were run with refined linseed oil (acid no. 1.77, sapon. no. 183.2, I no. 175.4, d. 0.930, mol. wt. 861.4). I used was dried at 180°, yielding 98% pure glycerol. II was a tech. product, m. 260°, which was completely sol. in hot H₂O, with a content of 94.3% II, detd. analytically. Alco-

holysis by I was studied in respect to variations, of temp., catalyst amt. and the amt. of I used in the reaction. The character of the product was judged by the Ac no. and sapon. no. The reaction was run in a flask, with a reflux condenser and a stirrer, heated by an oil bath. After completion of a run, the excess I was removed by washing with H₂O. CaO was used as the catalyst. With 85% by wt. of I and 0.5% CaO, a series of expts. was run at 200° and 250° for varying periods, from 2 to 4 hrs. The results showed that increased temp. results in fuller alcoholysis, while longer reaction time gives products with lower Ac nos., indicating some anhydriklisation (dehydration) of the incomplete glycerides formed. Thus, at 200°, a 2.5-hr. run gives a product of Ac no. 162 and sapon. no. 163, while a 4-hr. run yields 166.2 and 168, resp.; at 250° the values are: 2 hrs., 192 and 189.2; 4 hrs., 174.6 and 166.7, resp. The dehydration (or formation of simple esters) generally occurs during alcoholysis. A series of runs with CaO used in varying amts. and a control without CaO, all run at 200° and using 85% by wt. of I, showed

that increase of CaO from 0.15% to 2% tends to increase complete sapon., as shown by low sapon. nos. (to 167.7), and delipidation of the incomplete esters by the influence of the alkali, as shown by low Ac nos. (to 131.7). The run without catalyst gave sapon. no. 189.8 and Ac no. 24.7 (2 hrs.), when heated to 231°; however, the same expt. run at 270° yielded in 2 hrs. a product with values of 157 and 184.9, resp., and in 4 hrs. 155.9 and 182.8, resp. In the study of the influence of the amts. of I used, it was found that at 280° with 0.5% catalyst, 25-80% I yields a mixt. of mono- and diglycerides, while 85% I assures the predominant formation of monoglycerides. For practical purposes (i. e., for alkyl resins) it is only necessary to use 25-30% I at 240° with a 50-55-min. heating period in the presence of 0.04-0.06% CaO, with the resulting product being easily reacted with dibasic acids. Alcoholysis by II was found to run a different course, in that no appreciable excess of II could be tolerated due to the excess carboxylation and formation of a dense ppt. by the excess II. The max. tolerance is 2 mole. II to 1 mol. linseed oil. With 0.04 to 0.06% CaO, at 220°, a series of expts. with mol. ratios of 2:1 to 0.75:1 yielded products with Ac nos. ranging from 131.7 to 63.2. With 20.75% II, and 0.04-0.06% CaO, and heating for 3 hrs., the variation of temp. from 270° to 220° gave a range of Ac nos. from 70.8 to 132.6. Thus, the extent of exchange esterification is increased by increased amt. of II and the increase of temp. lowers the no. of free HO groups, similar to reaction with I. In order to increase the speed of the reaction a more active catalyst (NaOH) was tried; the latter was carefully fused

with II, then mixed with the oil. This catalyst gave an increased reaction rate at 200-10°, with 2.5-hrs. heating time being sufficient to complete the reactions which needed 6 hrs. with CaO catalyst. The product of alcoholysis by II is complex and is insol. in H₂O, whereas the monoesters of II and linseed oil acids is easily sol. Analytical results of the reaction mixt. showed that II displaces to some extent the glycerol of the linseed oil, and II is not found in a free state in the product. The product upon washing with H₂O was found to contain 76.00% fatty acids, 7.50% I, and 15.5% II (original mixt., 81.25% oil and 18.75% II). This confirms previous reports of displacement of secondary alcs. from their esters by primary alcs. G. M. K.

ANTIPOVA, N.A.

CA

13

Alkyd resins from pentacythritol. A. A. Blagovayna and N. A. Antipova. *J. Chem. Ind. (L S R U S S R I U)*, No. 9, 10, 17 (1941).—Linseed and sunflower oils undergo partial saponification with pentacythritol when heated at 231° with an alk. catalyst. The product is then treated with phthalic anhydride at 231° until it contains 13.2% of the latter. This product is heated at 265-301° for 3 h to complete polymerization. When dissolved in the ratio of 1:1 in the usual lacquer solvents, these resins form good lacquers. The one obtained from sunflower oil can be dried at high temp. H. M. Leicester

ADD 514 METALLURGICAL LITERATURE CLASSIFICATION

ANTIPOVA, N.A. [Antypova, N.A.]

A new species of the genus *Oocyatis* from Lake Klubsugul. Ukr.
bot. zhur. 21 no.3:53-55'64 (MIRA 17:7)

1. Biologo-geograficheskiy nauchno-issledovatel'skiy institut
pri Irkutskom gosudarstvennom universitete.

BELYANOVA, Ye.M.; ANTIPOVA, N.O.

Automatic system for relaying gas and blow media parameter measurements to a centralized point in underground coal gasification areas. Podzem. gaz. ugl. no.4:51-55 '58. (MIRA 11:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut Podzemgas.
(Coal gasification, Underground--Testing)
(Remote control)

ANTIPOVA, N.L.

Fluctuations in the abundance of Melosira species in the plankton of Lake Baikal. Trudy Gidrobiol. ob-va 13:235-241 '63.

(MIRA 16:11)

1. Baykal'skaya biologicheskaya stantsiya Biologo-geograficheskogo instituta pri Irkutskom universitete imeni Zhdanova, pos. Listvenichnoye.

ANTIPOVA, N. L.

USSR/ Biology - Botany
Card 1/1 Pub. 22 - 41/45
Authors : Antipova, N. L.
Title : New types of Gymnodinium Stein from Baikal Lake
Periodical : Dok. AN SSSR 103/2, 325-328, Jul 11, 1955
Abstract : Scientific data are presented on new types of flora Gymnodinium Stein (Gymnodiniaceae) taken from the Baikal Lake. Three references: 1 Germ. and 2 USSR (1935-1954). Graph; drawing.
Institution : Irkutsk State University im. A. A. Zhdanov
Presented by : Academician Ye. N. Pavlovskiy, March 14, 1955

ANTIPOVA, N.L.

Formation of auxospores in *Cyclotella baicalensis* (C.Meyer)
Skvortsov. Bot.mat.Otd.spor.rast. 11:39-42 Ja '56. (MLRA 9:11)
(Baikal, Lake--Diatoms)

ANTIPOVA, N.L.

Seasonal and annual changes in the phytoplankton of Lake Baikal.
Trudy Lim. Inst. 2 pt. 2:12-28 '63. (MIRA 17:3)

AMFIPOVA, N. I.

"The Entomofauna of Fields Used for Various Purposes and Protected by Shelter belts, and the Regularity of its Distribution Under the Conditions on the Lateroherbaceous Feather-Grass Steppes." Cand Biol Sci, Moscow State Pedagogical Inst imeni V. I. Lenin, 30 Dec 54. (Zh, 22 Dec 54)

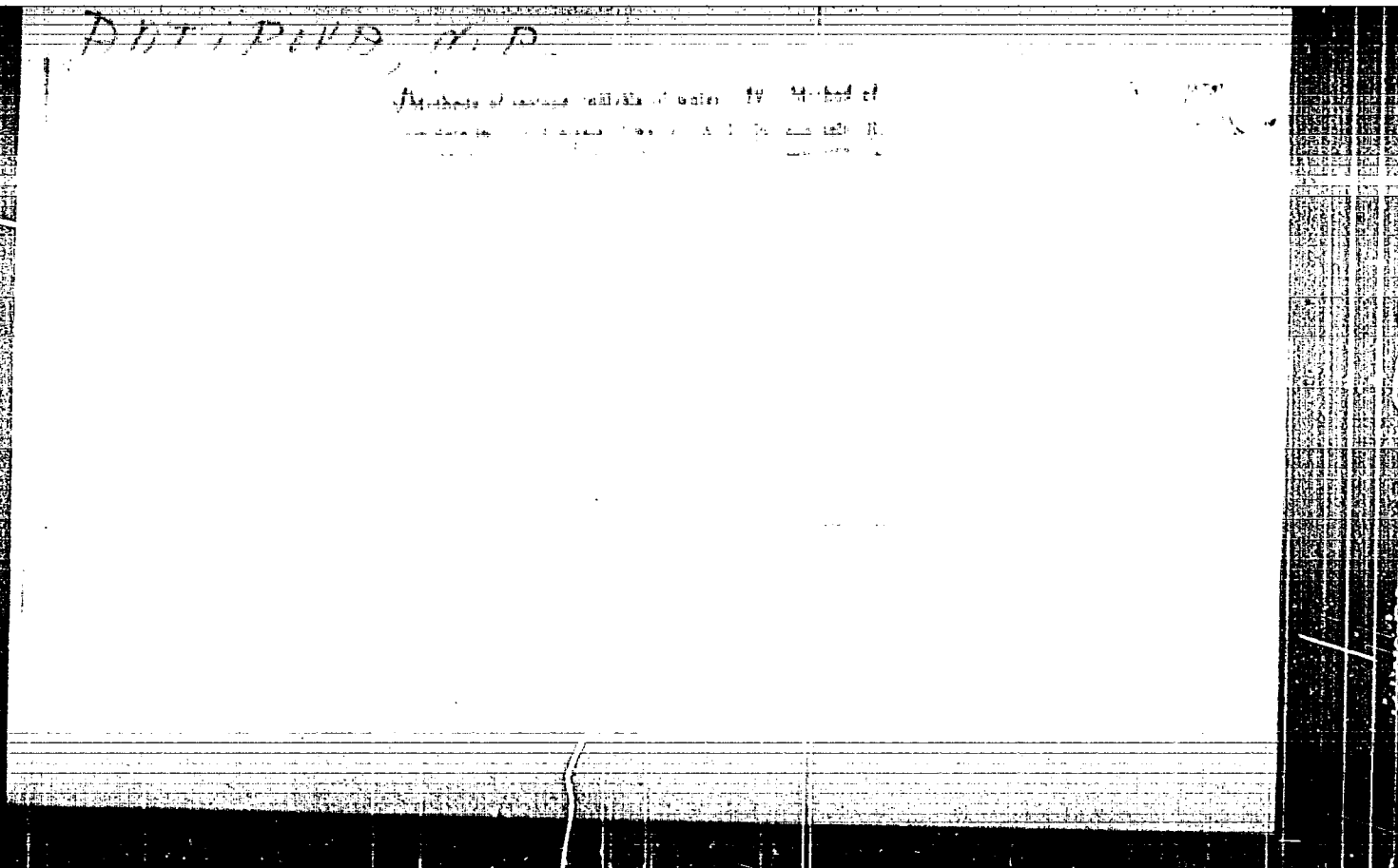
Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SC: SUK. No. 556, 24 Jun 55

"APPROVED FOR RELEASE: 06/05/2000

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CIA-RDP86-00513R000101720011-8"



KONO:YENKO, T.V.; MELINA, N.I.; ANTIPOVA, N.P.; ROZHKOVA, V.V.; VASIL'YEVA,
V.V.

Using new synthetic fibers in the woolen industry. Tekst. prom. 18
no.8:10-14 Ag '58. (MIRA 11:10)
(Textile fibers, Synthetic) (Woolen and worsted manufacture)

LEYTES, L.G., kand.tekhn.nauk, nauchnyy sotrudnik; ANTIPOVA, N.P., inzh.,
nauchnyy sotrudnik; NATAROVA, L.G., inzh., nauchnyy sotrudnik

Assortments of woolen fabrics. Tekst.prom.22 no.3:5-7 Mr '62.
(MIRA 15:3)

1. Tsentral'nyy nauchno-issledovatel'skiy institut sherstyanoy
promyshlennosti.

(Textile fabrics)

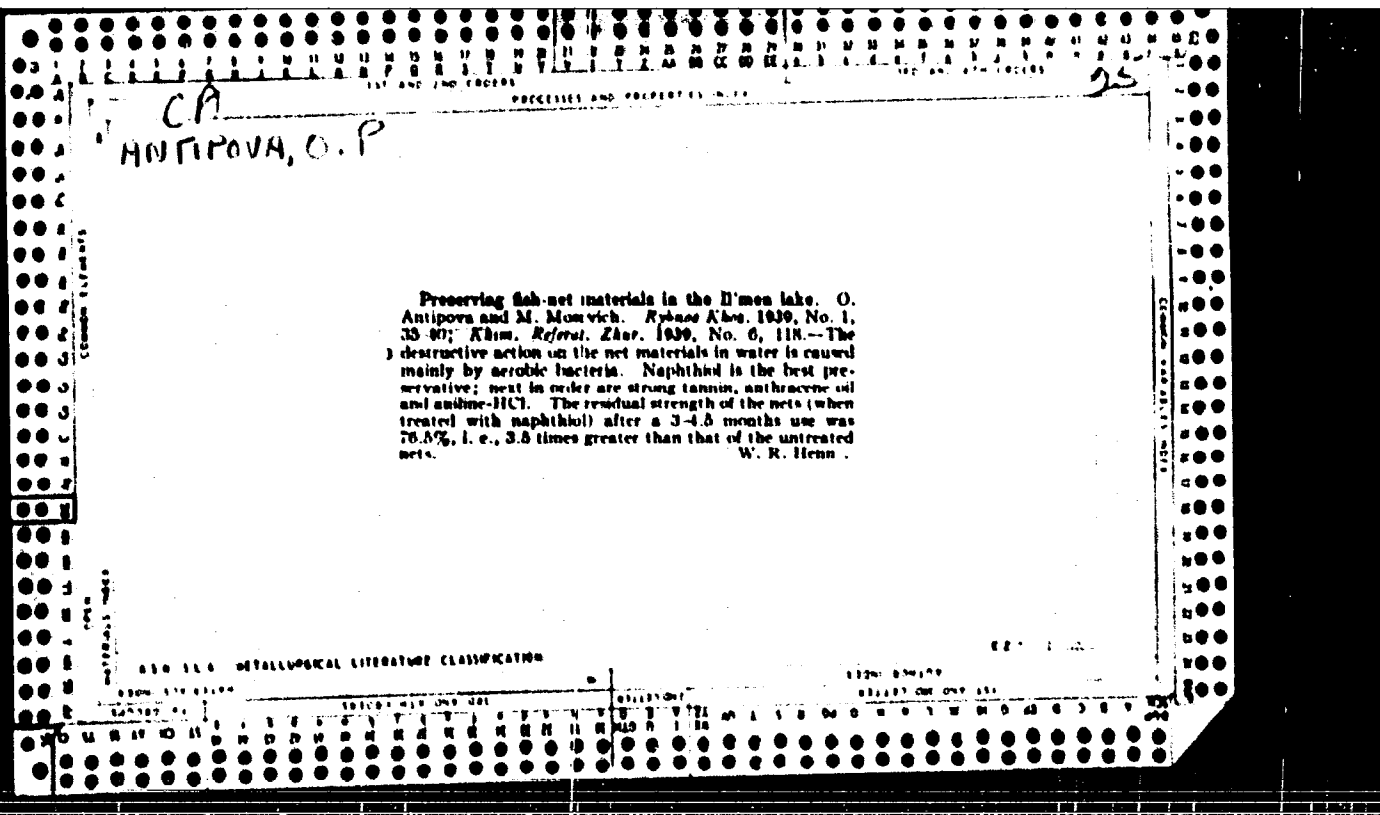
ROZHKOVA, V.V., inzh.; KONONENKO, T.V., inzh.; PANICHEVA, A.A., kand. tekhn.
nauk; ANTIPOVA, N.P., inzh.; KORSAKOVA, V.B., inzh.; VASIL'YEVA,
V.V., inzh.

Technology for the processing of staple lamsan in woolen and
worsted manufacture. Nauch.-issl. trudy TSNIIShersti no.17:
56-68 '62. (MIRA 17:12)

ANTIPOVA, O. P.

ANTIPOVA, O. P.: "The formation of schools of commercial fish in the Rybinsk Reservoir". Leningrad, 1955. All-Union Sci Res Inst of Lake and River Fish Economy. (Dissertations for the Degree of Candidate of Biological Sciences)

SO: Knizhnaya letopis', No. 52, 24 December, 1955. Moscow.



ANTIFOVA, P.S.

Seasonal and age variations in the morphological composition of the
blood in carp. Vop. ikht. no.2:120-122 '54. (MLRA 8:5)

1. Moskovskiy tekhnicheskiy institut rybnoy promyshlennosti i
khoz'yaystva imeni A.I.Mikoyana - Mosrybvtuz.
(Blood--Analysis and chemistry) (Carp)

GONCHAROV, O.D.; POPOV, M.D.; ANTIPOVA, P.S.; BISHEV, L.L.

Disease among young pike perch in the Sea of Azov in 1951-1952.
Trudy VNIRO 31 no.2:249-258 '55. (MLRA 9:8)
(Fishes---Diseases and pests)

ARENSHTYN, A.M.; ANTIPOVA, P.S.

Growth of micro-organisms in waste waters containing hexogen.
Vod. i san. tekhn. no. 7:15-16 J1 '58. (MIRA 11:7)
(Hexogen)
(Sewage--Bacteriology)

S/136/61/000/011/001/007
E142/E165

AUTHORS: Lur'ye, Yu.Yu., and Antipova, P.S.

TITLE: Extraction of bichromate ions from effluents with anion-exchange resins

PERIODICAL: Tsvetnyye metally, ³⁴no.11, 1961, 25

TEXT: During the chemical purification of effluents valuable substances contained in the effluents are lost. This can be avoided by purification with ion-exchange resins. Chromates can be extracted by using highly basic anion-exchange resins, e.g. AB-17 (AV-17). Chromic acid and chromate ions are strong acids and the satisfactory results obtained during these experiments are due to the oxidation-resistance of the anion-exchange resin. Good results were also obtained during extraction and regeneration of hexavalent chromium with the low-basic anion-exchange resin AH-18 (AN-18), which was prepared at the Institut plastmass (Plastics Institute). It was obtained by reacting chloromethylated copolymers with dimethylamine. The anion-exchange resin consists of light yellow grains of 0.3 - 1.5 mm diameter. It was subjected to swelling and then placed in a 1-cm diameter glass tube, treated

Card 1/3

Extraction of

S/136/61/000/011/001/007
E142/E365

(thus, ion-exchange with subsequent regeneration results in a 75- to 100-fold concentration of the chromate). The regenerated solution can then be used for the extraction of the chromate, for recovery in industrial processes and for the preparation of chromium pigments. A regenerated solution containing a small quantity of chromium can be recycled for the regeneration of the anion-exchange resin. Three-fold recycling of the resin did not alter its consistency. The anion-exchange resin AN-18 can be recommended for further tests in experimental and industrial plants dealing with the purification of effluents.

[Abstractor's note: Abridged translation.]

Card 3/3

LUR'YE, Yu.Yu., prof.; ANTIPOVA, P.S.; BELEVTSSEV, A.N.

Purification of waste waters from fluorides. TSvet, met. 34 no.2:
43-47 F '61. (MIRA 14:6)
(Industrial wastes) (Water—Purification)

ANTIPOVA, P.S.; RYBNIKOVA, A.I.; MILOVANOV, L.V.

Purification of industrial waste waters from nickel salts. TSvet.
met. 34 no.1:66-71 Ja '61. (MIRA 17:3)

LUR'YE, Yu.Yu.; ANTIPOVA, P.S.

Removal of chromium from plating plant waste water, using ion
exchange. Ozhis. stooh. vod. no.3,39-49 '62. (MIRA 16,5)
(Chromium) (Industrial wastes--Purification) (Ion exchange)

MARTUR, V.G.; KOZLOVA, V.S.; ANTIPOVA, S.A.

Analysis of a mixture of halogenated hydrocarbons by the method
of gas-liquid chromatography. Zav. lab. 30 no.9:1076 '64.
(MIRA 18:3)

KLIMOVA, V.A.; ANTIPOVA, T.A.

Degradation of organic compounds in a rapid oxygen flow under conditions of microelementary analysis. Zhur.anal.khim. 16 no.3:343-347 My-Je '61. (MIRA 14:6)

1. N. D. Zelinsky Institut of Organic Chemistry, Academy of Sciences of the U.S.R., Moscow.

(Organic compounds)
(Microchemistry)

KLIMOVA, V.A.; ANTIPOVA, T.A.

Flash combustion in the microdetermination of carbon and hydrogen in a rapid flow of oxygen. Zhur. anal. khim. 16 no. 4:465-468 J1-Ag '61.
(MIRA 14:7)

1. N.D. Zelinskiy Institute of Organic Chemistry, Academy of Sciences U.S.S.R., Moscow.
(Carbon—Analysis) (Hydrogen—Analysis) (Oxygen)

KLIMOVA, V.A.; ANTIPOVA, T.A.; MUKHINA, G.K.

Simultaneous determination of carbon, hydrogen, and halogens or sulfur by "flash combustion". Izv. AN SSSR Otd.khim.nauk no.1:19-22 Ja '62. (MIRA 15:1)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR. (Carbon--Analysis) (Hydrogen--Analysis) (Halogens)

ANTIPOVA, V. I.

Cultivation of sequoia in the Yalta forest station. Les. khos. 5 no. 6, 1952.

SO: MLRA. August 1952.

PIPSKIY, I.A;YAKHININ, G. M;KHILKOVA, V. A;ANTIPOVA, V. Ya.

Treatment of gonorrhoea with penicillin and autohemotherapy.
Vest. vener., Moskva no.2:55-56 Mar-Apr 1952. (CML 22:?)

1. Of Arkhangel'sk Oblast Venereal Dispensary.

3(7)

PHASE I BOOK EXPLOITATION

SOV/3031

Moscow. Tsentral'nyy institut prognozov

Voprosy dalgosrochnykh prognozov (Problems in Long-Range Forecasting)
Moscow, Gidrometeoizdat (otd.) 1958. 104 p. (Series: Its: Trudy,
vyp. 73) 1,100 copies printed.

Sponsoring Agency: USSR. Glavnoye upravleniye gidrometeorologicheskoy
sluzhby.

Ed.: (title page): V.M. Murganskaya; Ed. (inside book): V.I. Tarukhnova;
Tech. Ed.: I.M. Zarkh

PURPOSE: This issue of the Institute's Transactions is intended for meteorological
and hydrographic specialists working in the field of long-range weather fore-
casting.

COVERAGE: This collection of articles deals with aspects of extended weather
forecasting. Individual articles discuss: synoptic conditions of wind
regimes most favorable to shipping along the Northern Sea Route [Soviet Arctic
Seas]; synoptic conditions underlying a continuous ice cover in various parts

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Problems in Long-Range Forecasting

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of the Sea of Azov; a method for compiling daily schematic 500-mb contour maps (AT₅₀₀) for 3 days by utilizing an equation of the conservation of vortex velocity and temperature regime; a method for the advance computation of the baric field for periods of 24, 48, and 72 hours; the determination of definite relationships for forecasting air temperature for a natural synoptic period. The results of actual tests in a series of investigations in extended forecasting are cited. References accompany each article.

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Problems in Long-Range Forecasting

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D.A. Ped', and R.M. Al'tverger. The Forecasting of Air Temperature for a Natural Synoptic Period 94

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AVAILABLE: Library of Congress

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TM/jb
12-19-59

... 1971, Ye.G.

... conditions ... dis-
charges on the Murgab and Tedzhen Rivers during the growing
season and the possibility of predicting these discharges.
Trudy TSP no. 139:106-112 1971. (1971: 7:10)

АНТИПОВА, Я.О.

Synoptic processes governing wind conditions in the southern
part of the Barents and Kara seas during the navigation period.
Trudy TSIP no.73:3-28 '58. (MIRA 12:2)
(Barents Sea--Winds) (Kara Sea--Winds)

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Antipova, Ye. I.

AUTHORS: Antipova, Ye. I., Guterma, M. B. and Lozinskiy, M. G. 24-9-7/33
(Moscow)

TITLE: Certain features of polymorphous β to α transformation of pure (iodide) titanium. (Nekotoryye osobennosti polimorfnoego $\beta \rightarrow \alpha$ -prevrashcheniya chisto_o (iodidnogo) titana).

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1957, No.9, pp.45-49 + 6 plates (USSR)

ABSTRACT: Until very recently very little information has been published on direct observations of the polymorphous transformation of titanium and no detailed information was available on the kinetics of this process, the exception being a paper by Lozinskiy, M.G. (Ref.7). Such direct observations at elevated temperatures can only be carried out by heating in vacuum with a residual pressure of 10^{-5} to 10^{-6} mm Hg (Ref.8). In this paper the experiments are described which were carried out by the authors at the Institute of Mechanical Engineering, Ac.Sc. USSR (Institut Mashinovedeniya AN SSSR) on titanium containing various small additions of iron, silicon, aluminium and carbon, as specified in the table, p.45. The experiments

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Certain features of polymorphous β to α transformation of pure
(iodide) titanium. 24-9-7/33

on a polished surface of a titanium specimen, whilst Fig.7 shows a micro-photo of a zone of coexistence of the original micro-structure of the iodide titanium specimen and of the micro-relief forming as a result of β to α transformation. By means of high temperature metallography methods, the different kinetics of growth have been elucidated of α -titanium crystals during polymorphous β to α transformation. It was established that the time of formation and growth of α -titanium crystals until reaching their final dimensions may exceed $1/16$ sec and may also continue at a rate of $0.8-1.2^\circ/\text{sec}$. In individual cases an additional growth of the α -titanium crystals with an average rate of 0.06 to $0.08^\circ/\text{sec}$ was observed during the polymorphous transformation. The here described schemes illustrate the causes of observation of differing kinetics of growth on the α -titanium grains observed on the specimen surfaces. There are 9 figures, 1 table and 9 references, 6 of which are Slavic.

SUBMITTED: May 24, 1957.
AVAILABLE: Library of Congress.
Card 3/3

SOV-129-58-6-2/17

AUTHORS: Lozinskiy, M. G. (Dr. of Tech. Sci.), Guterman, M. B. and
Antipova, Ye. I. (Engineers)

TITLE: Micro Nonuniformity of Deformation of Metals during High
Temperature Heating (Mikroneodnorodnost' deformatsii
metallov pri vysokotemperaturnom nagrove)

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, Nr 6,
pp 6-9 and 4 plates (USSR)

ABSTRACT: Oding and Ivanova (Ref.1) have shown that in the volume
of specimens subjected to tension at room temperature and
at elevated temperature the speed of expansion differs in the in-
dividual local sections of sizes of about 10 mm.
In this paper information is given on the relations govern-
ing the kinetics of nonuniform deformation in the micro
volumes at temperatures above and below the equicohesion
temperature, i.e. under regimes at which the grain bound-
aries are respectively weaker or stronger than the body of
the grain. The experiments were effected on equipment de-
veloped by the Institute of Machinery, Academy of Sciences,
USSR. A valuable feature of this equipment is the
possibility of direct observation under the microscope and
photographing of the micro structure of the surface of the

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SOV-129-58-6-2/17

Micro Nonuniformity of Deformation of Metals during High Temperature Heating.

studied specimens when heating up to 1100°C during the process of deformation under tension in vacuum. For measuring the micro hardness a series of indentations by a diamond pyramid were made in the longitudinal direction of the specimen with spacings of about 0.05 to 0.1 mm; these indentations were viewed with a microscope with a magnification of 200 times. During the tests one and the same section of the surface of the specimens was continuously observed and photographed and the produced series of micro photographs permits comparison of the nonuniformity of the deformation and of the individual micro volumes of the specimen. The accuracy of measurement was 0.05%. Figs. 2 and 3 (plates) show two series of micro photographs made of the same section of the surface of annealed specimens of a single phase nickel-molybdenum alloy, with 7% Mo, during heating and tensile stressing in a vacuum of about 10^{-5} mm Hg col. In Fig. 4 the deformation is graphed of the

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SOV-129-58-6-2/17

Micro Nonuniformity of Deformation of Metals during High Temperature Heating.

individual micro sections and of the entire zone during the tests of the specimens, the micro photographs of which are shown in Fig.2. In Fig.5 the deformation curves are graphed of micro sections and of the entire zone during testing of a specimen, micro photographs of which are given in Fig.3. Fig.6 shows the micro structure of a specimen of a homogenized ageing alloy of iron with 12 wt.% Mo after being subjected to tensile stresses of 40 kg/mm² at 450°C for 2 hours. In Fig.7 the relative changes of the dimensions of the diagonals of the square indentations (shown in Fig.2), by the diamond pyramid, on the specimen surface are graphed. Fig.8 shows the micro structure of the surface of a specimen of Fe-Mo alloy (12 wt % Mo) after being subjected to a tensile stress of 40 kg/mm² at 450°C for 2 hours in vacuum. The here described experimental results have enabled for the first time the recording of the kinetics of the nonuniform process of deformation in micro volumes in a wide temperature range by direct observation. Thereby the non-uniformity observed earlier in relatively larger volumes of lengths of 1 - 10 mm (Ref.1), was considerably more pronounced in sections of dimensions from 50 μ onwards.

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SOV-129-58-6-2/17

Micro Nonuniformity of Deformation of Metals during High Temperature Heating.

Furthermore, within a single grain, the magnitude of deformation evaluated by distortion of the indentations on the specimen and the change in the spacings of these indentations varies very considerably. There are 8 figures (4 of them plates) and 5 references, of which 4 are Soviet and 1 English.

ASSOCIATION: Institut Mashinovedeniya AN SSSR (Institute of Machinery, Academy of Sciences USSR)

1. Metals - Deformation
2. Metals - Temperature effects
3. Metals - Test methods

Card 4/4

SOV/129-58-11-3/13

AUTHORS: Sokolov, Ye. N., Candidate of Technical Sciences,
Lozinskiy, M. G., Doctor of Technical Sciences, and
Antipova, Ye. I., Engineer

TITLE: Structure of Grain Boundaries and Heat Resistance of
Austenitic Steel (Struktura granits zeren i zharoprochnost'
austenitnoy stali)

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, Nr 11,
pp 19-25 + 4 plates (USSR)

ABSTRACT: Hardening of the boundaries of austenitic grains,
detected during impact bending tests and also as a
result of static tensile stresses at liquid nitrogen
temperature (Ref 6), leads to the assumption that the hardening
is accompanied by an increase in the resistance to plastic
deformation at elevated temperatures. Therefore, it was
considered advisable to investigate the influence of the
structure of the grain boundaries in the austenitic steel
60Kh4G8N8V on the creep speed. After hardening from
1100-1150°C, this steel has an austenitic structure and
possesses a high impact strength, 30-40 kgm/cm². Ageing
in the range of 600-800°C results in separating out of
Card 1/5 a carbide phase which brings about a drop in the impact

SOV/129-58-11-3/13
Structure of Grain Boundaries and Heat Resistance of Austenitic Steel

strength to 3-5 kgm/cm². The development of brittleness is accompanied by inter-crystallite disruptions. It was established that rolling of steel at 900 to 1000°C under conditions excluding recrystallisation of austenite leads to a reduction in the brittleness. The authors considered it of interest to compare the established influence of plastic deformation on the impact strength with the creep speed at elevated temperatures. The experiments were effected by means of the test device IMASH-5M which permits studying the micro-structure during heating and tensile tests in vacuum (Refs.7-9). The material was prepared for the investigations as follows: the blanks were heated to 1200°C and allowed to cool to the rolling temperature (1000-1100°C). Rolling with a reduction of 25% was effected on a laboratory rolling stand. For preventing recrystallisation of the work hardened austenite, the metal was cooled immediately afterwards in water, whereby the time interval between the end of the rolling and the cooling process amounted to no more than 0.2-0.3 sec. A part of the blanks which were not subjected to deformation were also hardened from 1000-1100°C. Following that, the blanks were

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Structure of Grain Boundaries and Heat Resistance of Austenitic Steel

aged for a duration of four hours at 750°C and then specimens were cut out to a shape as shown in Fig.1. The flat surface of the specimen was ground and chemically etched for the purpose of revealing the structure. The etched structure was conserved during subsequent heating to 900-1000°C in vacuum and this enabled observations of the changes in the structure during plastic deformation. For measuring the deformation during the tests a number of indentations were made on the ground surface; these were arranged perpendicular to the axis of the specimen with spacings of 6 mm; during the tests the distance between the individual indentations were measured with an accuracy of $\pm 1\mu$. The specimen was heated by passing current directly through it, whereby the temperature was controlled by a thermocouple which was welded onto the specimen. All the changes in the structure observed during the tests were recorded by photographing one and the same spot of the ground surface. The micro-structures of the specimens after three heat treatment regimes are reproduced in Fig.2, whereby the duration of ageing in all cases was 4 hours at 750°C. The test results graphed in

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SOV/129-58-11-3/13

Structure of Grain Boundaries and Heat Resistance of Austenitic Steel

Fig.3, i.e. the changes in the elongation of the steel 60Kh4G8N8V with various initial structures as a function of the test duration at 900°C and an initial load of 5 kg/mm², show that the behaviour of the specimens differs greatly for differing initial structures. It can be seen from Figs.4 and 5 that in ordinary specimens, as well as in specimens preliminarily deformed at 1000°C, cracks will appear and develop along the boundaries of the austenitic grains. The influence of partial recrystallisation at elevated temperatures on the heat resistance is graphed in Fig.3; a special experiment (curve 4) shows to what extent the creep speed can increase when crystallisation develops. On the basis of the obtained results the following conclusions are arrived at: For the investigated alloy an increase in the heat resistance will be brought about by such changes of the structural state of the austenitic grain boundaries which result in an intensive distortion of the preliminary plastic deformation under conditions excluding development of recrystallisation; a decrease in the creep speed is linked with braking of the plastic

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SOV/129-58-11-3/13

Structure of Grain Boundaries and Heat Resistance of Austenitic Steel

deformation along the boundaries of the austenitic grain; hardening of the alloy is apparently also determined by a change in the fine structure throughout the entire body of the grain.

There are 5 figures and 9 references, 8 of which are Soviet, 1 Czech.

ASSOCIATIONS: Institut fiziki metallov UFAN SSSR (Institute of Metal Physics, Ural Branch of the Ac.Sc., USSR) and Institut mashinovedeniya AN SSSR (Institute of Mechanical Engineering, Ac.Sc., USSR)

1. Steel--Structural analysis
2. Grains (Metallurgy)--Boundary layer
3. Grains (Metallurgy)--Crystal structure
4. Austenite--Metallurgical effects

Card 5/5

ИД
S/659/61/007/000/021/044
D217/D303

18.11.51

AUTHORS: Sadovskiy, V.D., Sokolov, Ye.N., Lozinskiy, M.G.,
Petrova, S.H., Antipova, Ye.I., Gaydukov, M.G., and
Mirmel'shteyn, V.A.

TITLE: Influence of thermo-mechanical treatment on the high
temperature strength properties of austenitic steel

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Issledova-
niya po zharoprochnym splavam, v. 7, 1961, 202-209

TEXT: A complex alloy steel of the austenitic class, widely used
in industry for manufacturing components for high temperature ser-
vice, was studied. During ageing of this steel, the complex chromi-
um and vanadium carbides responsible for its strengthening are pre-
cipitated. The material was heated to 1180 - 1200°C and rolled at
1000 - 1100°C at a speed of 5.7 m/min. After rolling, the billets
were immediately water quenched in order to prevent recrystalliza-
tion. The cross-section of the billets obtained was 11.5 x 11.5 mm
their length, 70 mm, and the reduction due to rolling, 25 - 30 %.

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X

Influence of thermo-mechanical ...

S/659/61/007/C00/021/044
D217/D303

Control billets were heated simultaneously with those chosen for thermo-mechanical treatment, and were subsequently quenched from the above temperature. All billets, whether thermo-mechanically treated or only heated and quenched, were aged to a hardness of 310 - 320 Hg. After heat treatment, specimens for two series of tests were made from the billets. One series was used for studying structure during high temperature extension in vacuo. This also enabled the degree of deformation to be determined and photographs of the same portion to be taken at various stages of testing. Testing was carried out in a IMASH-5M machine at 900°C and a stress of 9.5 kg/mm², using specimens of 3 x 3 mm cross-section, heated by direct passage of current. The second series of tests, in which K.I. Terexkhov participated, consisted of the standard tests for long-term strength at 650°C and stresses of 35 and 38 kg/mm², as well as at 700°C and a stress of 32 kg/mm². For this purpose, specimens of working portion diameter of 5 mm and 50 mm length were used. The microstructure of each specimen was studied in conjunction with these tests, particularly any peculiarities in structure appearing after thermo-mechanical treatment as compared with normal quenching.

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Influence of thermo-mechanical ...

S/659/61/007/000/021/044
D217/D303

The distribution of deformation along the length of the specimen, the intercrystalline and crystalline plasticity and the formation and propagation of cracks during fracture were given particular attention. It was found that high-temperature plastic deformation of the steel investigated, under conditions in which recrystallization processes are suppressed (thermo-mechanical treatment), leads to a considerable increase in long-term strength. The beneficial action of thermo-mechanical treatment is associated with structural characteristics of the steel which arise during high temperature plastic deformation and are fixed by cooling at a sufficiently high rate. Such characteristics are the complex geometry of grain boundaries, grain fragmentation and further refinement of the fine crystal structure. These structural characteristics of the steel retarded the development of fracture during creep, since (a) the characteristic serrated grain boundary structure retards the amalgamation between micro- and macro-cracks; (b) breaking-up of the fine crystal structure, and an increase in the density of immobilized dislocations render plastic deformation within the grains more difficult. There are 5 figures and 16 references: 15 Soviet-bloc and

Card 3/4

Influence of thermo-mechanical ...

S/659/61/007/000/021/C44
D217/D303

1 non-Soviet-bloc. The reference to the English-language publica-
tion reads as follows: P.W. Davies and J.P. Dennison, J. Inst. Me-
tals, 87, 4, 1958.

X

Card 4/4

188200

72099
S/129/61/000/010/001/012
E193/E480

AUTHORS: Odina, I.A., Corresponding Member AS USSR,
Lozinskiy, M.G., Doctor of Technical Sciences,
Antipova, Ye.I., Engineer and Stepanov, V.N. Engineer

TITLE: A study of the mechanism of fracture of austenitic steel
in short-time service at 1100°C

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov.
no.10, 1961, 10-13 + 4 plates

TEXT: Results are reported of short time (3 to 30 minutes),
constant-load and time-to-rupture tests, carried out at 1100°C on
austenitic steels 3X18H9 (EKH18N9) (0.07% C, 18% Cr, 9% Ni,
1.56% Mn, 0.31% Si) and 4X14H14B2M (4KH14N14V2M) (0.45% C,
14% Cr, 15% Ni, 2.3% W, 0.6% Mn and 0.34% Si). The test pieces
were preliminarily heat treated by heating for two hours at
1100°C in evacuated quartz ampules followed by oil quenching. (one
face of each heat treated specimen was polished and etched to
reveal the microstructure and test pieces with an average grain-
size of 30 to 60 (EKH18N9) or 100 to 130 microns (4KH14N14V2M) X
were selected. During the tests (carried out in vacuum) the
etched side of the test piece, marked by a series of equi-distant
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S/129/61/000/010/001/012

E193/E480

A study of the mechanism ...

(50 microns) microhardness indentations, was facing a window through which microcinphotographs were taken throughout the duration of each test. This made it possible to study each stage of the deformation process by measuring the increase in the distance between the diamond pyramid indentations, and by following the changes in the microstructure. To overcome the difficulties caused by volatilization of the test piece material and its subsequent condensation as a metallic film on the window of the vacuum chamber, a special device was constructed whose detailed description is given in the paper. Some of the typical results are reproduced in Fig.9, showing the strain (ϵ , %) versus time (minutes) curves for steel 4Kh14N14V2M tested at 1100°C under a stress of 5.5 kg/mm²; broken curve relates to the total elongation of the test piece, curves marked by numbers give the elongation of microregions bounded by the corresponding diamond indenter marks as shown in the insert in Fig.9. Other observations can be summarized as follows.

- (1) The microstructure of the steels studied was revealed after one minute at 1100°C; this was most likely caused by preferential volatilization of the metal in the grain boundary regions.
- (2) Intergranular cracks appeared in the very early stages of

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E193/E480

A study of the mechanism ...

deformation which indicated that, under the experimental conditions employed, creep is associated mainly with intercrystalline slip with very little deformation taking place within the grains.

(3) The total elongation depended upon the applied stress and varied between 17.5 and 25% in steel EKhl8N9 and between 8 and 16% in steel 4Kh14N14V2M. This difference was attributed to the larger grain-size of the latter material.

(4) For an equal stress of 2.5 kg/mm², the time-to-rupture was 5.5 and 24 minutes on steels EKhl8N9 and 4Kh14N14V2M respectively. This difference was also attributed to the difference in the grain-size, since the total length of the grain boundaries which determine the strain accumulated prior to fracture is smaller in a coarse-grained material. There are 9 figures and 3 Soviet-bloc references.

ASSOCIATION: Institut metallurgii i Institut mashinovedeniya
AN SSSR (Institute of Metallurgy and Institute of
Science of Machines AS USSR)

Card 3/4

BOKSHTEYN, S.Z. (Moskva); KISHKIN, S.T. (Moskva); LOZINSKIY, M.G. (Moskva);
SOKOLKOV, Ye.N. (Moskva); Priniimali uchastiyе: PODVOYSKAYA, O.N.;
ZILOVA, T.K.; SOROKINA, K.P.; POLYAK, E.V.; MOROZ, L.M.;
BULYGIN, I.P.; LASHKO, N.F.; POKAMESTOVA, T.N.; GORDEYEVA, T.A.;
YAGLOV, R.V.; VOLODINA, T.A.; KORABLEVA, G.N.; ANTIPOVA, Ye.I.

Thermomechanical treatment of chromium-nickel-manganese
austenitic steel. Izv. AN SSSR. Otd. tekhn. nauk. Met. i topl.
no.2:15-21 Mr-Ap '62. (MIRA 15:4)
(Chromium-nickel steel--Hardening)

S/129/62/000/011/003/007
E073/E535

AUTHORS: Lozinskiy, N.G., Doctor of Technical Sciences and
Antipova, Ye.I., Engineer

TITLE: Features of the structure of nickel at elevated
temperatures

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov,
no.11, 1962, 18-20

TEXT: High-purity nickel specimens were heated in vacuum to 1100°C for 30 min, then cooled to 500°C and subjected to the effect of twelve successive 1 cm³ doses of air. The structural changes caused by the oxidation process were studied by observing the microstructure, particularly as regards coloration. The lowest rate of increase in the thickness of the oxide film was observed in the light yellow sections of the surface with an orientation approaching (100). The oxidation was more intensive in the orange coloured sections with orientations approaching (111). The highest rate of oxidation was in the blue sections, the orientation of which was near to that of the dodecahedron plane (110). The change in colour was most intensive for the
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Features of the structure of ...

S/129/62/000/011/003/007
E073/E535

grains with the orientation (110) which passed through the entire range of colour changes, indicating that nickel is chemically more active in the crystallographic direction (110) than in the directions (100) and (111). Coloured selective oxidation after high-temperature vacuum heating can be usefully applied for investigating the initial stages of corrosion and for closer study of the fine crystalline structure of various materials. There are 3 figures.

ASSOCIATION: Institut mashinovedeniya GKAM SM SSSR
(Institute of Machine Science GKAM SM USSR)

Card 2/2

LOZINSKIY, M.G.; ANTIPOVA, Ye.I.; AEBSONOVA, Ye.A.; MITINA, I.I.

Strength of nickel at room and elevated temperatures as affected by the specific structural state arising in high-temperature thermomechanical treatment. Dokl. AN SSSR. 144 no.6:1289-1292
Je '62. (MIRA 1516)

1. Institut mashinovedeniya Gosudarstvennogo komiteta Soveta Ministrov SSSR po avtomatizatsii i mashinistroyeniyu.
Predstavleno akad. A.A.Bocharoyu.
(Metals at high temperatures) (Nickel)
(Bocharoyu)

LOZINSKIY, M.G., doktor tekhn.nauk; ANTIPOVA, Ye.I., inzh.

Characteristics of nickel structure at high temperatures.
Metalloved. i term. obr. met. no.11:18-20 N '62. (MIRA 15:11)
(Nickel—Metallography)
(Metals at high temperatures)

L 11114-63 EWT(q)/EWT(m)/EDS AFFTC/ASD JD/JT

ACCESSION NR: AP3000491

S:0129/63/000/005/0054/0060

AUTHOR: Lozinskiy, M. G.; Mirotvorskii, V. S.; Antipova, Ye. I.

58
56

TITLE: Effect of rolling conditions on recrystallization and heat resistance of nickel *18*

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 5, 1963, 54-60

TOPIC TAGS: nickel, thermomechanical treatment, recrystallization range, microhardness, heat resistance, rupture life, total elongation, deformation mechanism

ABSTRACT: The effect of thermomechanical treatment (TMT) on recrystallization and heat resistance in 99.5% pure Ni has been studied. Round bars, 16 mm in diameter and 160 mm long, were annealed at 1100C for 1 hr, cooled to 900, 800, 700, 600, 500, 400, or 20C, rolled at these temperatures with a reduction of 25%, and water quenched. The specimens were then subjected to recrystallization annealing for 1 hr in a vacuum at 500-900C. Hardness tests and microscopic examination revealed that an increase in temperature of TMT increases the temperature of the beginning and end of recrystallization. For instance, in specimens rolled at room temperature recrystallization begins at approximately 575C

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ACCESSION NR: AP3000491

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and is completed at approximately 650C. Corresponding figures for specimens rolled at 900C are approximately 660 and 740C. The temperature interval between the beginning and end of recrystallization is not affected by the conditions of TMT and remains approximately 75C for all conditions tested. The kinetics of recrystallization were studied at 600C in a vacuum of 10^{-5} mm Hg. At this temperature a sharp decrease of microhardness begins after approximately 1 hr in all specimens rolled at 20-800C. After 50 hr recrystallization was completed and microhardness dropped from the original 190-120 kg/mm² to approximately 70 kg/mm². In specimens rolled at 900C the recrystallization proceeded at a much lower rate and was not completed even after annealing 100 hr, when microhardness dropped from approximately 120 kg/mm² to 80 kg/mm². The stress-rupture tests at 600C under an initial stress of 10 kg/mm² showed that rolling at 20-900C considerably improves heat resistance as compared with that of Ni annealed at 1100C. Specimens rolled at 20, 400, 800, and 900C had the longest rupture life. Specimens rolled at 20 and 700-900C had the lowest creep rate in the first-stage creep. The total elongation in stress-rupture tests, which does not exceed 3-4% for Ni annealed at 1100C, varied in TMT specimens from 15% (rolled at 500C) to 42% (rolled at 600 and 700C). Microscopic examination revealed a considerable difference in the mechanism of deformations between fully

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ACCESSION NR: AP3000491

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annealed and thermomechanically treated Ni. In the former, microcracks began to form at the grain boundaries at the very beginning of the stress-rupture test without grain deformation, while in the latter, microcracks (also at grain boundaries) appeared only after completion of recrystallization. Recrystallization appears to delay both the generation and propagation of microcracks. Orig. art. has: 4 figures and 1 table.

ASSOCIATION: Institut mashinovedeniya GKAM pri Gosplane SSSR (Institute of the Science of Machines GKAM under the Gosplan SSSR)

SUBMITTED: 00

DATE ACQ: 03Jun63

ENCL: 00

SUB CODE: ML

NO REF SOV: 012

OTHER: 002

Card 3/3

S/032/63/029/002/025/028
B101/B186

AUTHORS: Lozinskiy, M. G., Antipova, Ye. I., and Nikitina, I. I.

TITLE: Device for protecting the inspection glass in high-temperature studies

PERIODICAL: Zavodskaya laboratoriya, v. 29, no. 2, 1963, 237 - 238

TEXT: In order to avoid misting of the field of vision caused by sublimates when studying the microstructure of heated samples in vacuo, driving device is suggested which causes a quartz glass disc of 105 mm diameter to rotate and simultaneously to shift in plane-parallel direction at a rate of 3.8 mm per rotation. This ensures that a clear section of the quartz glass always appears in front of the eyepiece. There are 2 figures.

ASSOCIATION: Institut mashinovedeniya (Institute of the Sciences of Machines)

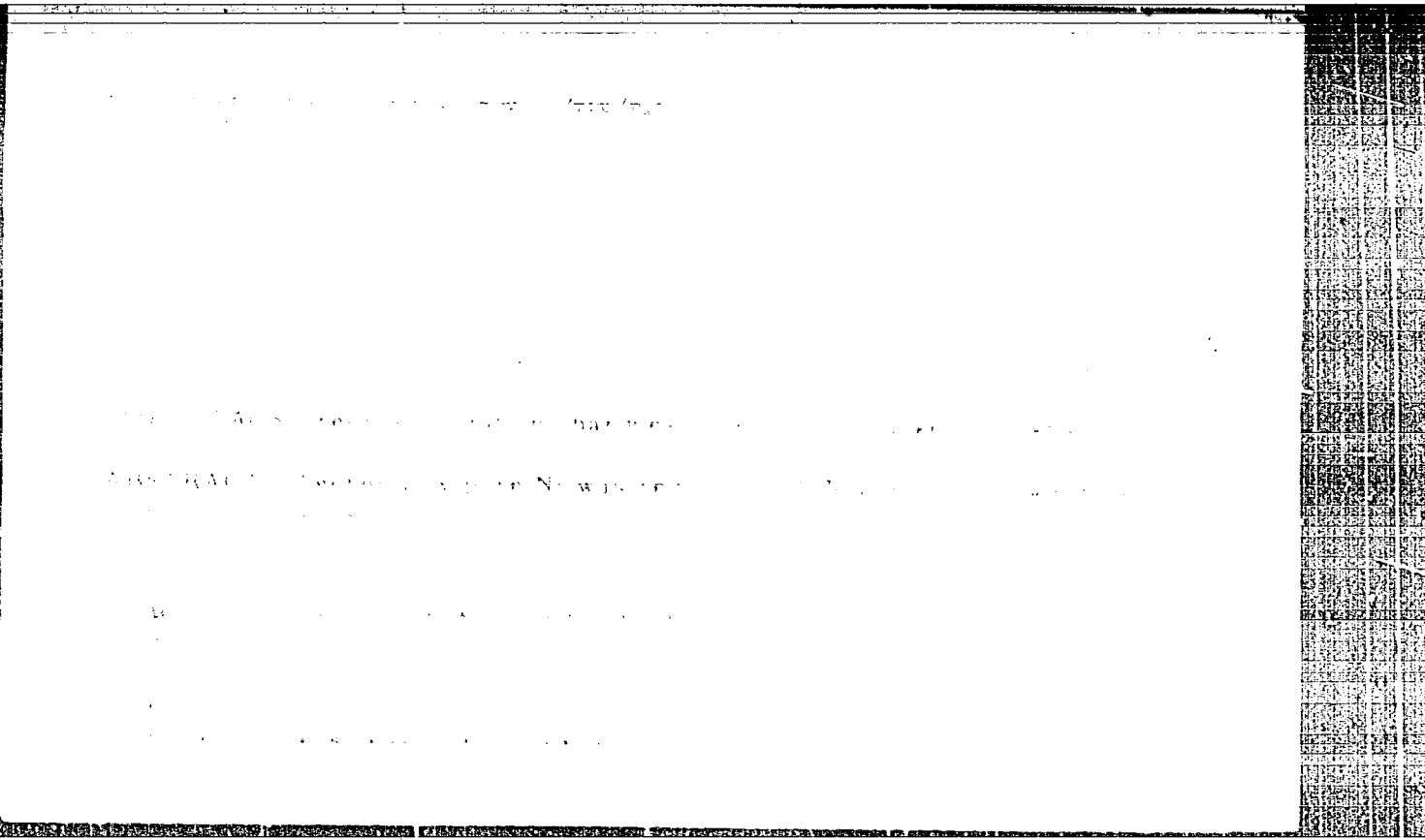
Card 1/1

ANTIPOVA, Ye.I.; LOZINSKIY, M.G.

Kinetics of the oxidation of metals during heating studied by
means of selective coloring. Zav.lab. 29 no.7:815-817 '63.

(MIRA 16:8)

(Metals--Corrosion) (Metallography)



10/28/52

ACCESSION NR AP4046099

ACCESSION NR AP4046099

ACCESSION NR AP4046099

NO REF 500 001

NO REF 500 001

OTHER 000

Card 2 2

L OBL22-67 EWP(a)/EWP(m)/EWP(w)/EWP(v)/EWP(t)/ETI/EWP(k)/EWP(h)/EWP(l) IJP(e)

ACC NR: AT6034460 (N) SOURCE CODE: UR/0000/66/000/000/0231/0236
 JD/JG/GD

AUTHOR: Lozinskiy, M. G.; Antipova, Ye. I.

ORG: none

TITLE: New method and IMASH-18 unit for examining the microstructure of refractory-metal materials during tensile tests at temperatures up to 3300C in vacuum, argon, helium or hydrogen 9M

SOURCE: AN SSSR. Institut metallurgii. Svoystva i primeneniye zharoprochnykh splavov (Properties and application of heat-resistant alloys). Moscow, Izd-vo Nauka, 1966, 231-236

TOPIC TAGS: refractory ~~metallic material~~ ^{metal} refractory ~~material~~ ^{product} ~~microstructure~~ microstructure investigation ~~microstructure~~ ~~equipment~~ ^{metal test}

ABSTRACT: A new IMASH-18^{7b} unit has been designed for the microscopic examination of the structure of specimens subjected to tensile tests¹⁰ at temperatures of up to 3300C in a vacuum of 1.10⁻⁵ mm Hg or in an atmosphere of argon, helium or hydrogen. The unit features three new elements: a lighting system for the MVT¹⁰ microscope which uses a mercury lamp of the DRSh-100-2¹⁰ type (power, 100w; brightness, about 100 ksb); an MIM-13CO objective which magnifies 270 times; and a

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L 08122-07

ACC NR: AT6034460

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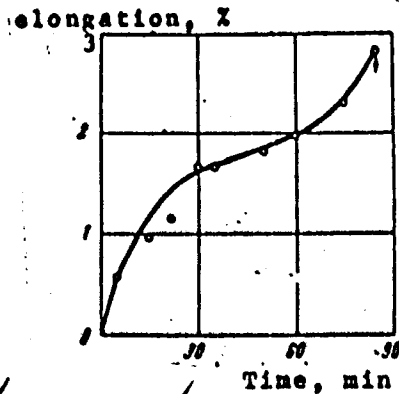


Fig. 1. Elongation-time curve for an AV-3 tungsten specimen tested in the IMASH-18 unit.

monochromatic filter which passes light waves $\lambda = 546 \text{ m}\mu$. Specimens of AV-3 99.9%-pure tungsten containing 0.03% of aluminum and 0.002% of calcium were tested in this unit for tensile strength at 3000C under a constant stress of 0.835 kg/mm² and were found to have very low ductility even at high temperature (see Fig. 1). Orig. art. has: 4 figures.

SUB CODE: 13, 11/ SUBM DATE: 10Jun66/ ORIG REF: 006/ OTH REF: 001/ ATD PRESS: 5103

Card 2/2 1s

ALEKSEYEV, A.A., zasluzhennyy vrach UkrSSR; ANTIPOVA, Ye.N.

Dacryocanaliculitis. Vestn. oftal. 76 no.474-76 J1-Ag'63
(MIRA 17:1)

1. Gorodskaya bol'nitsa No.1, Sevastopol'.

KARPOV, I.K.; ANILOVA, Ye.N.

Comparative characteristics of the chemical composition of
pegmatites and enclosing rocks in the Mama pegmatite zone.
Izv.vys.ucheb.zav.; geol. i razv. 8 no.10 57-63 O '65.
(MIRA 19:1)

1. Irkutskiy gosudarstvennyy universitet.

ANTIPOVA, Ye.V.

Efferent lymphatic vessels of the cervix uteri and ovaries.
Akush. i gin. 39 no.5:82-85 S-0 '69. (MIRA 17:8)

1. Iz kafedry akusherstva i ginekologii (zav. - dotsent Ye.V. Novikova) I topograficheskoy anatomii (zav. - prof. A.N. Skobunova) pediatricheskogo fakul'teta Sverdlovskogo meditsinskogo instituta.

SHADRIKOV, I., brigadir molochnotovarnoy fermy; BARKOVA, T. pomoshchnik brigadira, chlen rabochego komiteta; TUMANDYEVA, L., profgruporg; KAYMAKINA, Ye., doyarka; ANTIPOV, Yu., doyarka; FICHCOVA, M., podsmennaya doyarka; ARKHANDEYEV, B., skotnik; NURABAYEVA, R., telyatnitsa.

Disseminate the progressive practice among all state farm workers.
Sov. profsoiuzy 17 no. 5:12-14 Apr '61. (MIRA 14:2)

1. Sovkhoz "Karanash," Kuybyshevskoy oblasti.
(Kuybyshev Province--Dairying) (Socialist competition)

I 49776-15

ACCESSION NR: ARS 12041

UR 12058 ARS 12041/1001/1002/1003

SOURCE: Ref zh. Fizika, Abs 30170

AUTHORS: Antipova-Karatayeva, I. I.; Kutseva, Y. I.

TITLE: Study of solvation processes from electronic absorption spectra of some
dyes in organic solvents.

CITED SOURCE: Tr. Kazis. po spektroskopii. AN SSSR, vy. 1, 1974, 618-72

TOPIC TAGS: solvation, absorption spectrum, electronic absorption, dye, electronic transition

TRANSLATION: English translation available from the National Technical Information Administration

ADDITIONAL INFORMATION: See also ARS 12041/1001/1002/1003

REMARKS: See also ARS 12041/1001/1002/1003

See also ARS 12041/1001/1002/1003

Card 1/2

ACCESSION NR: ARSOL7741

of the solvates into hydrates takes place, while in aqueous solutions of Ti^{3+} and Cr^{3+} there occurs a transformation of hydrates into solvates upon addition of small amounts of organic solvents. The observed facts are related to the features of the structure of the electronic shells, to the presence of the ligand...

SUB CODE: OF ENCL: 1

ord 2/2

ANTIPOVA-KARATAYEVA, I.I.; GRUM-GRZHIMAYLO, S.V.

Possibility of using luminescence as an analysis and control of
corundum boule components. Trudy inst.krist.no.8:139-144 '53.
(MLRA 7:5)

(Corundum) (Luminescence)

АМЕРИКАНИЗМ, П.Д.

Dissertation: "The Relation of the Absorption Spectra of Solutions and Isomorphous Crystals of Alums to the Chromium Content." Cand Phys-Math Sci, Inst Of Crystallography, Acad Sci USSR, 30 Jun 54. (Vechernyaya Moskva, Moscow, 22 Jun 54)

SO: SUM 318, 23 Dec 1954

PESHKOVA, V.M.; ANTIPOVA-KARATAYEVA, I.I.

Photometric analysis. Zhur. anal. khim. 12 no.5:629-636 S-O '57.
(Photometry) (MIRA 10:11)

~~IRINA KOVA-KAROTAYEVA, T. T.~~

... in ... The ... and ...
... in ... The ... and ...
... in ... The ... and ...

A N T I P O V A - K A R A T A Y E V A , L . I .

24(8) PHASE I BOOK EXPLOITATION 507/8009
 Muzdaniya nash SSSR. Otdeleniye knizheobedachn nash

Termodinamika i kinyetivnyye razvoren; troydy soveshchaniya...
 (Thermodynamics and Structure of Solutions) Transactions of the
 Conference Held January 27-30, 1958) Moscow, Izd-vo AN SSSR,
 1959. 295 p. 3,000 copies printed.

M. I. N. Z. Shukharov, Doctor of Chemical Sciences; M. of Publishing
 House; N. O. Yegorov, Tech. M.; T. V. Polyakova.

PURPOSE: This book is intended for physicists, chemists, and
 chemical engineers.

COVERAGE: This collection of papers was originally presented at the
 Conference on Thermodynamics and Structure of Solutions sponsored
 by the Section of Chemical Sciences of the Academy of Sciences,
 USSR, and the Department of Chemistry of Moscow State University,
 and held in Moscow on January 27-30, 1958. Officers of the
 conference are listed in the Foreword. A list of other reports
 also read at the conference, but not included in this book,
 are given. Among the problems treated in this work are:
 electrolytic solutions, viscometric measurement, dielectric
 and thermodynamic properties of various mixtures, spectroscopic
 analysis, etc. Numerous secondary literature citations
 are included.

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5(4)

AUTHORS:

Vaynshteyn E. Ye
Antipova-Karatayeva I. I.

SOV/79-4-4-13/44

TITLE:

Investigation of the Solvation of the Cu^{2+} Ion in Aqueous Solutions Using Optical Absorption Spectra (Issledovaniye sol'vaniy iona Cu^{2+} v vodnykh rastvorakh s pomoshch'yu opticheskikh spektrov pogloshcheniya)

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 4, pp 783-792 (USSR)

ABSTRACT:

The form and the fine structure of the absorption bands of the Cu^{2+} ions in the spectra of aqueous solutions of copper chloride and copper nitrate were investigated in the region 220-1200 $\text{m}\mu$. The spectra were plotted using a SF-4 spectrophotometer for concentrations of the copper salts from 0.008 to 9 N. A broad absorption band appears in the spectra with an absorption maximum at 800 $\text{m}\mu$. With an increase in concentration the maximum is displaced toward longer wavelengths. The parameters ascertained for the absorption bands in the spectra of the solutions with the above mentioned concentrations are summarized in table 1.

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Investigation of the Solvation of the Cu^{2+} Ion in
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A new method of analysis and evaluation of the experimental results is suggested which allows the separation of the compound absorption lines into their components. This method makes possible the calculation of the parameters and the ascertainment of the structure of the asymmetrical absorption bands of the copper ion. The dependence of the position of the maxima of the summary absorption curves upon the distance between the maxima of the components at various values

$\frac{D_2}{D_1}$ is given in figures 2-4 $\frac{D_2}{D_1}$ absorption ratio of the

maxima of both components. On the basis of the parameters determined the absorption curves of the components and the summary curves were plotted and compared with the experimentally determined absorption spectra. The nomogram used for establishing the absorption curves is given in figure 8. The proposed method for resolving the asymmetrical curves into the symmetrical components makes possible an analysis of $\pm 10\%$ accuracy. An important characteristic of the symmetry of the field, which is formed by the radicals around the

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Investigation of the Solvation of the Cu^{2+} Ion in
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Cu^{2+} ion in solution, is the ratio of the frequencies $\frac{\nu_1}{\nu_2}$ of the corresponding maxima of the single components of the observed absorption bands. In dilute solutions $\frac{\nu_1}{\nu_2}$ for the spectra of both the above-mentioned salts is practically the same (1.25 for copper chloride solutions and 1.24 for copper nitrate solutions). The dependence of the configuration of the solvated molecules upon the concentration of the solution and upon the nature of the anions was investigated. On the basis of the calculations and the experimental data for the ratio of the frequencies of the maxima of both components of the compound absorption bands $\frac{\nu_1}{\nu_2} = 1.24 - 1.29$ it was shown that the field formed by the radicals surrounding the copper ion possesses the symmetry of a tetragonal bipyramid. A table gives the parameters of both components of the absorption bands for both the salts investigated.

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Investigation of the Solvation of the Cu^{2+} Ion in
Aqueous Solutions Using Optical Absorption Spectra

SOV/78-4-4-13/44

There are 13 figures, 2 tables, and 9 references, 5 of which
are Soviet.

ASSOCIATION: Institut geokhimi i analiticheskoy khimii im. V. I. Vernadskogo Akademii nauk SSSR (Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy of the Academy of Sciences, USSR)

SUBMITTED: January 21, 1958

Card 4/4

5(4)

AUTHORS:

Antipova-Karataya, I. I.
Vaynshteyn, E. Ye.

SOV/78-4-4-14/44

TITLE:

Investigation of the Solvation of the Cu^{2+} Ion in Alcoholic Solutions Using Optical Absorption Spectra (Issledovaniye sol'vatatsii iona Cu^{2+} v spirtovykh rastvorakh s pomoshch'yu opticheskikh spektrov poglosheniya)

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 4, pp 793-800 (USSR)

ABSTRACT:

The absorption spectra of solutions of $\text{Cu}(\text{NO}_3)_2 \cdot 3\text{H}_2\text{O}$ and $\text{CuCl}_2 \cdot 2\text{H}_2\text{O}$ in anhydrous methyl and ethyl alcohols were investigated. The spectra were plotted using a SF-4 spectrophotometer at wavelengths of 220-1,200 μm . The $\text{CuCl}_2 \cdot 2\text{H}_2\text{O}$ concentration varied between 0.001 and 3 N in ethyl alcohol and 0.001 and 8.2 N in methyl alcohol. The concentration of $\text{Cu}(\text{NO}_3)_2 \cdot 3\text{H}_2\text{O}$ varied from 0.0005 to 3.2 N in ethyl alcohol. The spectra show a broad absorption band with a maximum at 870 μm . The variation of the absorption bands with the nature

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Investigation of the Solvation of the Cu^{2+} Ion in
Alcoholic Solutions Using Optical Absorption Spectra

SOV/78-4-4-14/44

of the solvent and the number of solvent molecules on the solvated copper ion was investigated, and the results are summarized in tables 1-3. The solvated molecules formed in aqueous and alcoholic solutions have similar structures. In the solutions of $\text{Cu}(\text{NO}_3)_2 \cdot 3\text{H}_2\text{O}$ the symmetry of the field of the solvated molecules is invariable over the concentration range investigated. Nevertheless, in solutions of $\text{CuCl}_2 \cdot 2\text{H}_2\text{O}$ in water and methyl alcohol the symmetry of the field of the solvated molecule is variable over the concentration range. The cause of this is the complicated solvated molecules which form in concentrated solutions of copper chloride and which include chloride ions. Beer's Law is followed in the range of lower concentrations in aqueous and alcoholic solutions. The absorption coefficients of Cu^{2+} are somewhat greater in ethyl alcohol than in methanol solutions. There are 5 figures, 3 tables, and 8 references, 2 of which are Soviet.

Card 2/3

SOV/51-7-2-24/34

AUTHOR: Antipova-Karatayeva, I.I.

TITLE: Investigation and Interpretation of Bands in the Absorption Spectra of Crystals Coloured with Chromium Ions (Issledovaniye i interpretatsiya polos v spektrakh pogloshcheniya kristallov, okrashennykh ionami khroma)

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, Nr 2, pp 263-265 (USSR)

ABSTRACT: The author studied absorption spectra of Cr^{3+} -coloured crystals of $\text{KCr}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$ alums and artificial rubies, as well as solutions of $\text{KCr}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$. An SF-4 spectrophotometer was used and measurements were made in the region 200-1200 μm . Two wide bands (Fig 1) with maxima at $\nu_1 = 17400 \text{ cm}^{-1}$ and $\nu_2 = 24300 \text{ cm}^{-1}$ were observed at all concentrations of alum solutions in water. In $\text{KCr}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$ crystals (Fig 2) three bands were observed at $\nu_1 = 17700 \text{ cm}^{-1}$, $\nu_2 = 24600 \text{ cm}^{-1}$, $\nu_3 = 38750 \text{ cm}^{-1}$. Three bands were also observed in the spectrum of artificial ruby crystals $\text{Al}_2\text{O}_3 \cdot \text{Cr}_2\text{O}_3$ (Fig 3); these bands were at $\nu_1 = 17750 \text{ cm}^{-1}$, $\nu_2 = 24700 \text{ cm}^{-1}$, $\nu_3 = 39500 \text{ cm}^{-1}$. The occurrence of three absorption bands in the crystal spectra is unexpected since the crystal field theory predicts only two bands for Cr^{3+} ions in fields of octahedral symmetry (bands obtained in alums and rubies discussed here). The author suggests that the three bands are due to configuration exchange

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interaction between levels of the same symmetry F_{1g} but belonging to terms with different orbital quantum numbers L , e.g. levels $F_{1g}(4F)$ and $F_{1g}(4P)$. This leads to mutual repulsion of the interacting levels, as shown in Fig 4: Fig 4a shows the level scheme of a free Cr^{3+} ion, Fig 4b shows the ion in an octahedral symmetry field, Fig 4c shows the ion in the same field but with the interaction between F_{1g} levels taken into account. The interacting levels lose their nature of pure $4F$ and $4P$ terms, and the selection rule $\Delta L = 0, \pm 1$ no longer holds. The following transitions are then possible: $A_{2g}(4F) \rightarrow F_{1g}(4F, 4P)$, $A_{2g}(4F) \rightarrow F_{1g}(4P, 4F)$ and $A_{2g} \rightarrow F_{2g}$. Acknowledgment is made to Prof A. Kiss of Hungarian People's Republic for his advice. There are 4 figures and 7 references, 1 of which is Soviet, 1 translation from English into Russian, 1 English, 3 German and 1 Hungarian.

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Card 2/2

ANTIPOVA-KARATAYEVA, I.I.; VAYNSHTEYN, E.Ye.

Study of ion solvation in solution by means of absorption
spectra. Zhur.neorg.khim. 5 no.1:107-111 Ja '60.

(MIRA 13:5)

1. Institut geokhimi i analiticheskoy khimii im. V.I.
Vernadskogo Akademii Nauk SSSR.
(Solvation--Spectra)

ANTIFOVA-KARATAYEVA, I.I.; KUTSENKO, Yu.I.

Spectrophotometric determination of erbium and holmium in solutions.
Zhur. anal. khim. 15 no.5:581-586 8-0 '60. (MIRA 13:10)

I. V.I. Vernadsky Institute of Geochemistry and Analytical Chemistry,
Academy of Sciences, U.S.S.R., Moscow.
(Erbium--Analysis) (Holmium--Analysis)

VAYNSHTEYN, E.Ye.; ANTIPOVA-KARATAYEVA, I.I.

Spectrophotometric study of the structure of solvated ions in solutions and the degree of their stability under X-irradiation.
Izv. Sib. otd. AN SSSR no. 3:38-45 '61. (MIRA 14:5)

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(Solvation) (X rays)

ANTIPOVA-KARATAYEVA, I.I.; VAINSHTEYN, E. Ye.

Reply to I.S. Pominov's letter "Comments on the paper by I.I. Antipova-Karataeva and E. E. Vainshtein." Zhur. neorg. khim. 6 no.3:759 Mr '61. (MIRA 14:3)

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(Solvation)
(Pominov, I.S.)