MATSYUK, L.N.; KOLOBKOV, Yu.M.; KOTOVSHCHIKOVA, O.A.; GRISHELEVICH, V.A.

Welding of fluoroplast films. Plast.massy no.5:23-29 '62.
(MIRA 15:4)

(Plastics--Welding)

MATSYUK, L.N.; BOGDASHEVSKIY, A.V.; ZHAROVA, L.K.; KOLOBKOV, Yu.M.; KOTOVSHCHIKOVA, O.A.; VOLKOV, R.A., inzh., retsenzent

Welding of polymer films] Svarka polimernykh plenok. Moskva, Mashinostroenie, 1965. 76 p. (MIRA 18:5)

KOLOBKOVA A. I. Cand. Medical Sci.

"Data on the Clinical Treatment of Malignant Anthrax." Sub 8 Jul 47, Central Inst for the Advanced Training of Physicians

Dissertations presented for degrees in science and engineering in Moscow in 1947

SO: Sum No. 457, 18 Apr 55

KOLOBKOVA, A. I., (Cand. of Med. Sci.) and RUDNEV, G. P. (Prof.)

"Levomycetin in Treating Dysentery Patients," pages 21-32 of the book "Treatment of Infectious Diseases," Moscow, 1953

Presented 6 March 1953 (Moscow) at the All-Union Conference on the Control of Dysentery sponsored by the Ministry of Public Health SSSR.

Translation No. 474, 19 Oct 1955.

KOLOBKOVA, A. L. and RUDNEV, G. P.

"Evaluation of the effectiveness of biomycin in treating dysentery," appears in TABCON of "Biomycin (Experimental Study and Clinical use of Biomycin)", edited by A. F. Bilibin, Moscow, 1954.

SO: Translation-417, 21 Jun 1955.

KOLOBKOVA, A.I., kand.med.nauk

Compound treatment of dysentery; late results in the treatment of dysentery. Lech. infekts. bol'. no.3:99-110 '57. (MIRA 14:5)
(DYSENTERY)

Kolobkova, A. I.

USSR / Pharmacology and Toxicology--Chemotherapeutic Preparations V-6

Abs Jour: Ref Zhur-Biol, No 23, 1958, 107428

Author : Kolobkova, A. I., Kravchenko, G. V.

Inst : Not given

Title : Furacillin (F_6) in the Treatment of Dysenteric Patietns

Orig Pub: V sb.: Lecheniye infekts. bol'nykh. vyp. 3. M., 1957, 120-125

Abstract: No abstract

Card 1/1

KOLOBKOVA, A.I., kand.med.nauk

Tetracyclines and the factor of sensitivity in the treatment of dysentery. Lech. infekts. bol'. no.4:23-32 '60. (MIRA 14:5)
(DYSENTERY) (TETRACYCLINE)

KOLOBKOVA, A.I., kand.med.nauk

Terramycin in the treatment of dysentery. Lech. infekts. bol'. no.4: 39-46 '60. (MIRA 14:5)
(TERRAMYCIN) (DYSENTERY)

KOLOBKOVA, A.I., kand.med.nauk; RUDNEV, G.P., prof. (Moskva)

Differentiated evaluation of antibiotics and chemical preparations in dysentery treatment. Vrach. delo 4:98-102 Ap '62. (MIRA 15:5)

1. Kafedra infektsionnykh bolezney TSentral'nogo instituta usovershenstvovaniya vrachey na baze bol'nitsy imeni Botkina. 2. Deystvitel'nyy chlen AMN SSSR (for Rudnev).
(ANTIBIOTICS) (DYSENTERY)

RASSUDOVA, N.S.; Prinimala uchastiye KOLOBKOVA, A.T.

Physical and technological properties of lead oxide obtained by the electrochemical method. Lakokras.mat.i ikh prim. no.1: 63-64 '62. (MIRA 15:4)

(Lead oxides)

VASIL'YEV, N.; DEMIN, D.; YEROKHOVETS, A.; ZHURAVLEV, V.; ZHURAVLEVA, R.; KANDYBA, Yu.; KOLOBKOVA, G.; KRASNOV, V.; KUVSHINNIKOV, V.; MATUSHEVSKIY, V.; PLEKHANOV, G.; SHIKALOV, L.; SUKHOVA, G.M., red.; RUBINOVA, L.Ye., tekhn. red.

[On the trail of the Tunguska catastrophe] Po sledam Tungusskoi katastrofy. Tomsk, Tomskoe knizhnoe izd-vo, 1960. 157 p. (MIRA 16:10)
(Podkamennaya Tuguska Valley--Meteorites)

ACCESSION NR: AR4014628 S/0269/64/000/001/0086/0086

SOURCE: RZh. Astronomiya, Abs. 1.51.581

AUTHOR: Kuvshinnikov, V. M.; Kolobkova, G. P.

TITLE: Possibility of the falling of blocks of the Tunguska meteorite in the Lakurskiy Range

CITED SOURCE: Tr. Tomskiy otd. Geogr. o-va SSSR, Betatron. labor. Tomskogo med. in-ta, v. 5, 1963, 159-162

TOPIC TAGS: meteorite, Tunguska meteorite

TRANSLATION: In 1929 the ethnographer I. M. Suslov heard from local inhabitants of the existence of a "dry stream" in the Lakurskiy Range, supposedly associated with the Tunguska meteorite. In 1959-1960 the Complex Independent Expedition for Study of the Tunguska Meteorite checked this report by foot reconnaissance and inspection from a helicopter. No formations of a catastrophic nature were discovered. I. Zotkin.

Card 1/2

ACCESSION NR: AR4014628

DATE ACQ: 19Feb64 SUB CODE: AS ENCL: 00

Card 2/2

KOLOBKOVA, L.

3(4) PHASE I BOOK EXPLOITATION SOV/2072

Moscow. Institut inzhenerov geodezii, aerofotos"yemki i kartografii

Trudy, vyp. 30 (Transactions of the Moscow Institute of Geodetic, Aerial Survey and Cartographic Engineers, Nr 30) Moscow, Geodezizdat, 1958. 95p. Errata slip inserted. 1,200 copies printed.

Editorial Board: A. I. Mazmishvili (Resp. Ed.), V. I. Avgevich (Deputy Resp. Ed.), G. V. Bagratuni, K. Ya. Bobir, N. N. Volkov, A. I. Durnev, S. V. Yeliseyev, P. S. Zakatov, G. P. Levchuk, N. I. Modrinskiy, N. D. Solov'yev, B. V. Fefilov, and F. F. Shokin.

PURPOSE: This collection of articles is intended for geodesists, photogrammetrists and cartographers.

COVERAGE: This issue is devoted primarily to problems in geo-

Card 1/4

desy. Individual articles on photogrammetry and cartography
are also included. The articles on geodesy treat: 1) the com-
putation of coordinates from sides in primary triangulation,
2) continuous operation electric computers for adjustments, 3)
solar eclipses as related to the figure of the Earth,4) pro-
blems of the Earth's flattening,5) surveys for construction
work, and others. On the subject of photogrammetry there are
articles on photo rectifier FTB and on the properties of silver
bromide. In cartography, the matter of problematical islands
in the Arctic is discussed. References accompany individual
articles.

TABLE OF CONTENTS:

Transaction of the Moscow Institute (Cont.) SOV/2072

Card 3/4

*Student, Chair of Photogrammetry, Moscow Inst. Engr. Geodesy, Aerophotography & Cartography

ACC NR: AP7006028 SOURCE CODE: UR/0062/66/000/007/1292/1292

AUTHOR: Nesmeyanov, A. N.; Anisimov, K. N.; Kolobova, N. Ye.; Skripkin, V. V.

ORG: Institute of Heteroorganic Compounds, Academy of Sciences USSR (Institut elementoorganicheskikh soyedineniy AN SSSR)

TITLE: Bi- and polymetallic compounds with a Fe-Sn bond and their derivatives

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 7, 1966, 1292

TOPIC TAGS: organotin compound, organoiron compound

ABSTRACT: The reaction of $SnCl_4$, $C_6H_5SnCl_3$, and $(C_6H_5)_2SnCl_2$ with $NaFe(CO)_2C_5H_5$ in tetrahydrofuran yielded $[pi\text{-}C_5H_5Fe(CO)_2]_4Sn$ (I), $[pi\text{-}C_5H_5Fe(CO)_2]_3SnC_6H_5$ (II), and $[pi\text{-}C_5H_5Fe(CO)_2]_2Sn(C_6H_5)_2$ (III). Hydrochlorination of (II) and (III) in carbon tetra-chloride yielded the known $[pi\text{-}C_5H_5Fe(CO)_2]_2SnCl_2$. The latter was used to prepare a series of compounds with various functional groups on the tin atom. These colored compounds were characterized. Most were obtained in high or quantitative yields. Orig. art. has: 1 table. [JPRS: 38,967]

SUB CODE: 07 / SUBM DATE: 05May66 / OTH REF: 001

Card 1/1 UDC: 547.13 + 546.72 + 546.81

0927 0813

L 41690-65 EWT(m)/EWF(e)/EPR/EWP(j)/EWP(t)/EWP(b) Pc-4/Pr-4/Ps-4 IJP(c)
JD/WW/RM

ACCESSION NR: AP5008914 S/0076/65/039/001/0075/0756

AUTHOR: Bogdanov, G. A.; Kolobkova, R. V.; Petrova, G. L. 30

[illegible] catalytic decomposition of hydrogen peroxide by [illegible] together [illegible] elements of the zinc subgroup

[illegible] Zhurnal fizicheskoy khimii, v. 39, [illegible]

[illegible] hydrogen peroxide, sodium tungstate, [illegible] sulfate, [illegible] peroxide decomposition [illegible]

[illegible] The article describes the results of the catalytic decomposition of [illegible] in solution in the presence of [illegible] $ZnSO_4$, $Na_2WO_4 + NaSO_4$, [illegible] and electrical conductivity [illegible] H_2O_2 by sodium tungstate [illegible] The rate constants were calculated [illegible] kinetic curves of reaction [illegible] which indicate the formation of no less than three intermediate peroxides; this is in agreement with the kinetic data and colorimetric observations. In catalysis involving Hg^{2+} or Hg_2^{2+} ions, radical-chain processes and compensating reactions

Card 1/2

AP5008914

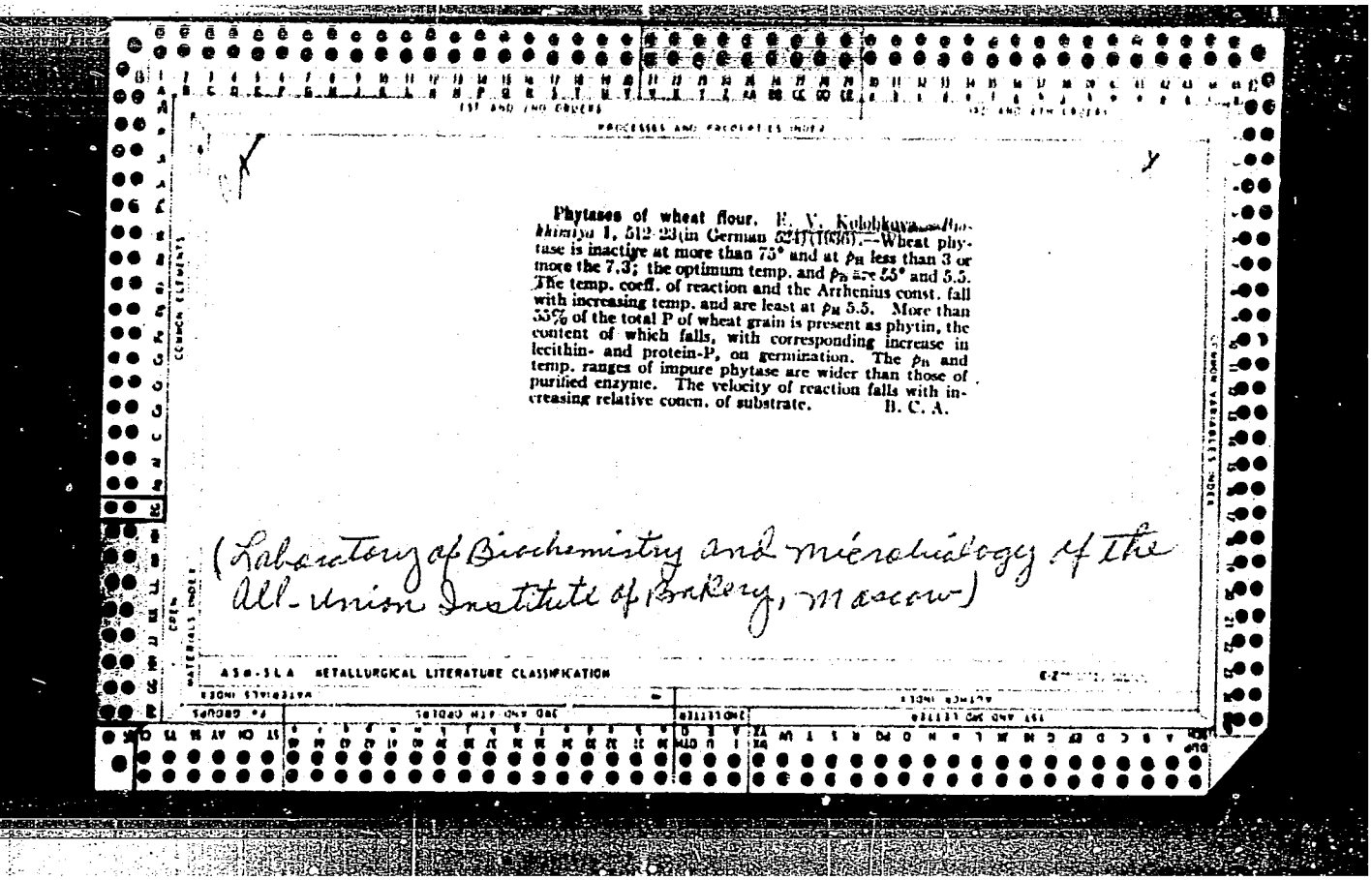
... and intermediate compounds are formed. Orig. art. has: 5 figures, ... formulas.

ASSOCIATION: Moskovskiy tekstil'nyy institut (Moscow Textile Institute)

SUBMITTED: 14Feb64 ENCL: 00 SUB CODE: IC

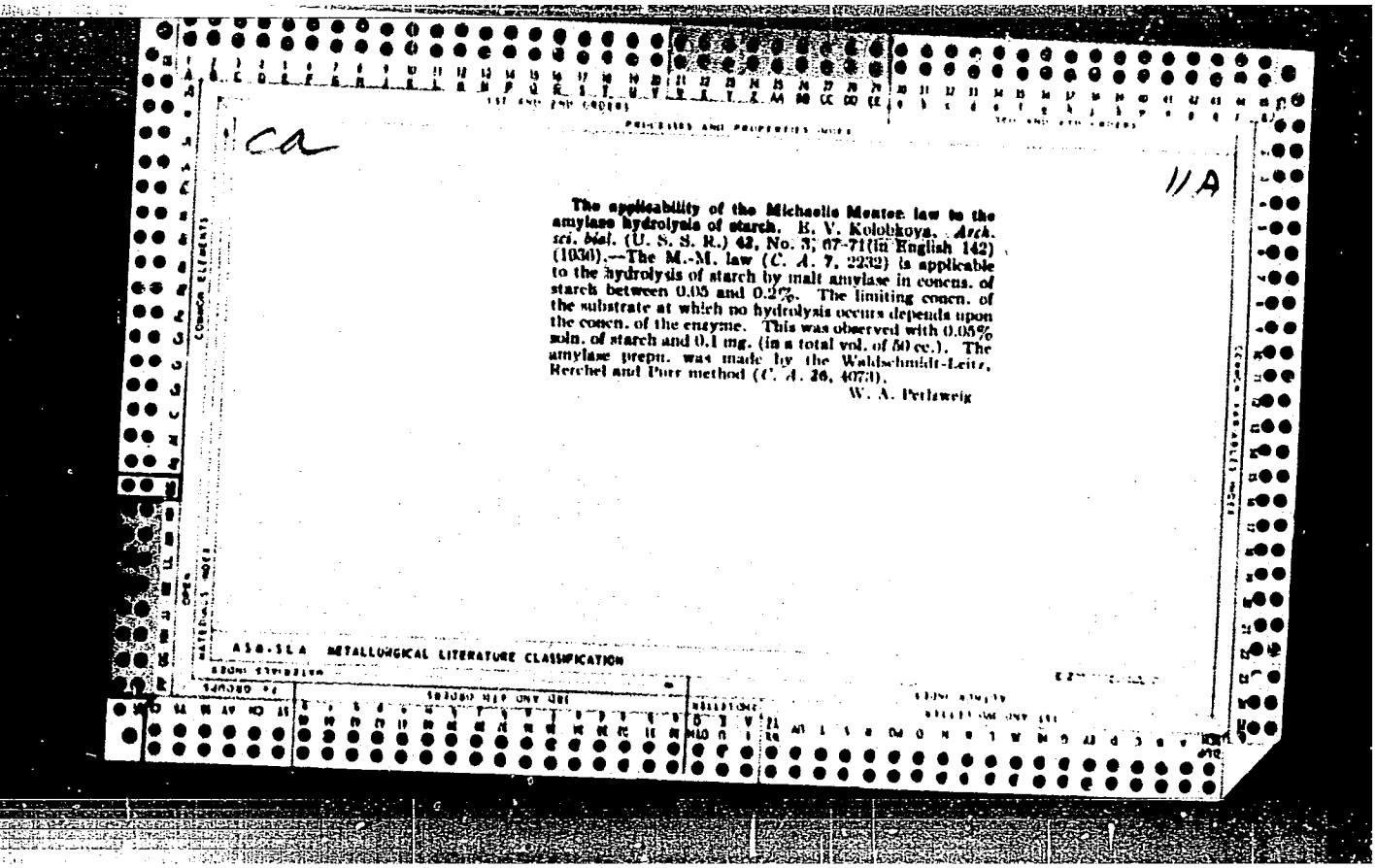
... 009 OTHER: 002

Card 2/2



Phytases of wheat flour. E. V. Kolobkova. *Biokhimiya* 1, 512-23 (in German 524) (1936).—Wheat phytase is inactive at more than 75° and at p_H less than 3 or more the 7.3; the optimum temp. and p_H are 55° and 5.5. The temp. coeff. of reaction and the Arrhenius const. fall with increasing temp. and are least at p_H 5.5. More than 55% of the total P of wheat grain is present as phytin, the content of which falls, with corresponding increase in lecithin- and protein-P, on germination. The p_H and temp. ranges of impure phytase are wider than those of purified enzyme. The velocity of reaction falls with increasing relative concn. of substrate. B. C. A.

(Laboratory of Biochemistry and Microbiology of the All-Union Institute of Bakery, Moscow)



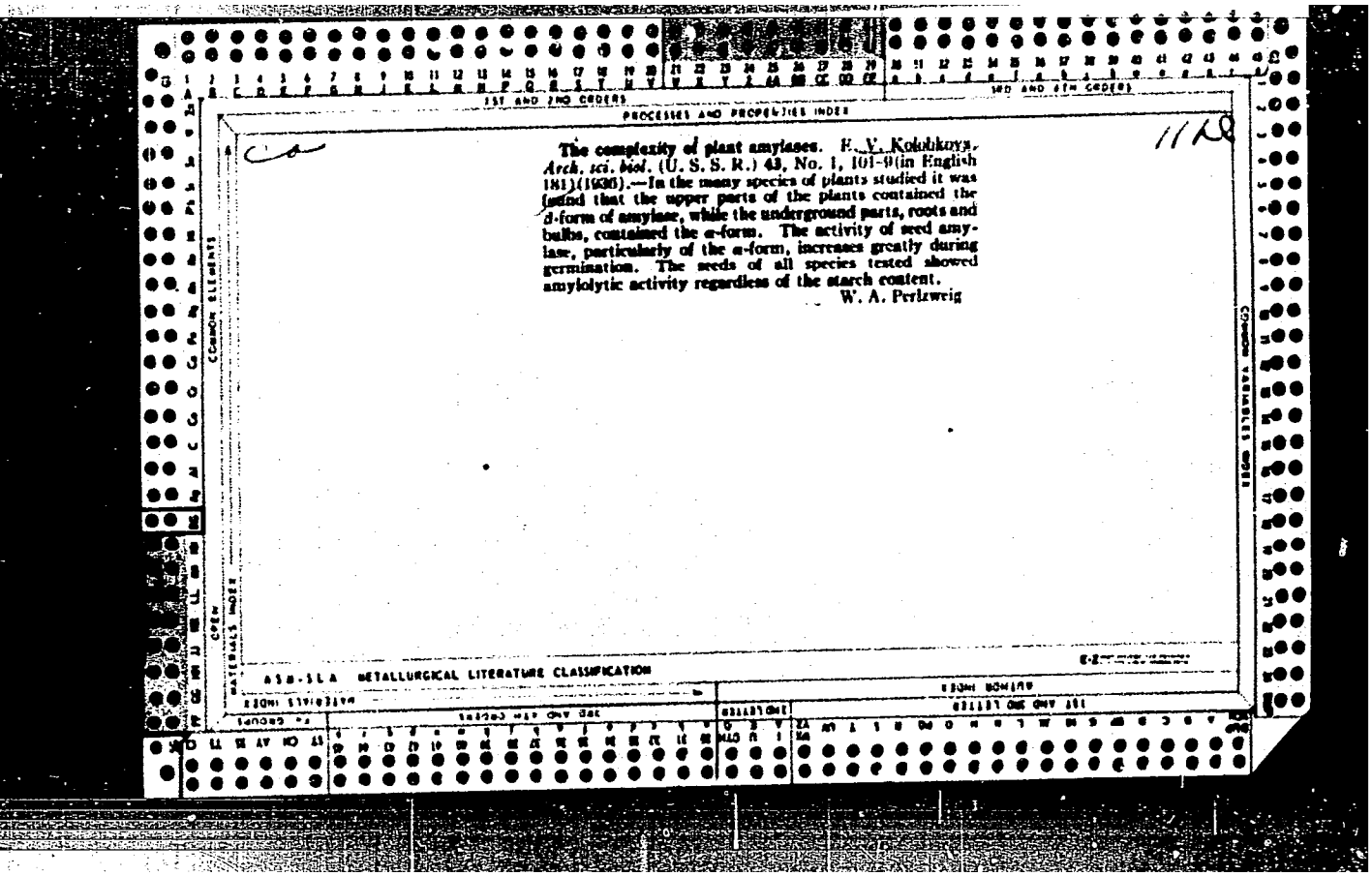
ca

11A

The applicability of the Michaelis Menten law to the amylase hydrolysis of starch. B. V. Kolobkova. *Arch. sci. biol.* (U. S. S. R.) **42**, No. 3, 67-71(in English 142) (1934).—The M.-M. law (*C. A.* **7**, 2232) is applicable to the hydrolysis of starch by malt amylase in concns. of starch between 0.05 and 0.2%. The limiting concn. of the substrate at which no hydrolysis occurs depends upon the concn. of the enzyme. This was observed with 0.05% soln. of starch and 0.1 mg. (in a total vol. of 50 cc.). The amylase prepn. was made by the Waldschmidt-Leitz, Rerchel and Purr method (*C. A.* **26**, 4073).

W. A. Perlzweig

A50-51A METALLURGICAL LITERATURE CLASSIFICATION

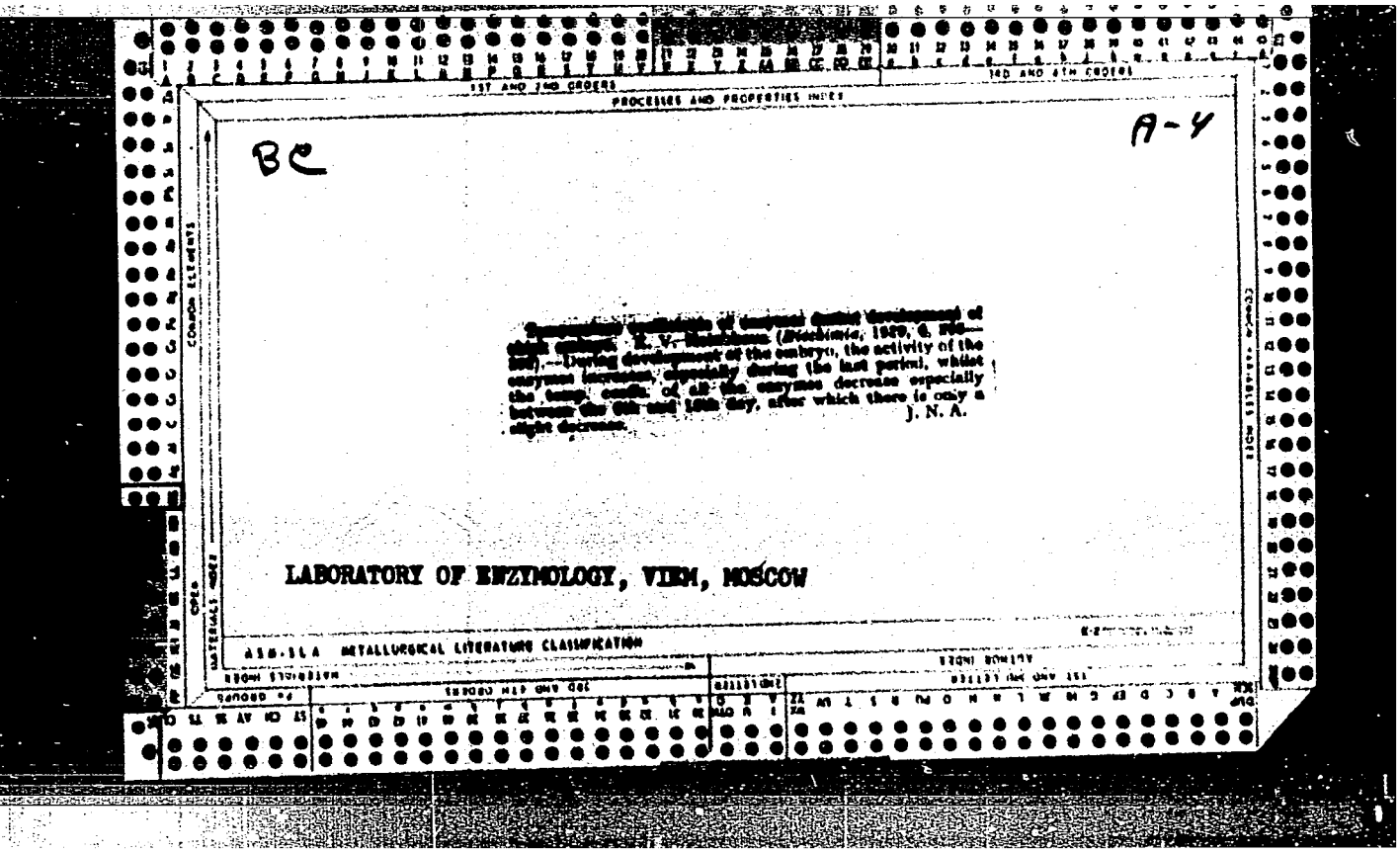


PROCESSES AND PROPERTIES INDEX

1120

The complexity of plant amylases. E. V. Kolobkova. *Arch. sci. biol.* (U. S. S. R.) **43**, No. 1, 101-9(in English 181)(1936).—In the many species of plants studied it was found that the upper parts of the plants contained the β-form of amylase, while the underground parts, roots and bulbs, contained the α-form. The activity of seed amylase, particularly of the α-form, increases greatly during germination. The seeds of all species tested showed amylolytic activity regardless of the starch content.
W. A. Perlzweig

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

1/4

Proteolytic enzymes of leaves of phylogenetically distinct plants. B. V. Kolobkova. *Doklady Akad. Nauk S.S.S.R.* **68**, 107-9(1949).—Detn. of rate of hydrolysis of casein by enzymes extd. by pH 5.9 phosphate buffer from leaves of **Leguminosae**, Rosaceae, and Ranunculaceae at 11° and 24° gave the temp. coeff. from which it was shown that Leguminosae give values from 1.35 to 1.91, Ranunculaceae from 1.35 to 3.8; species of *Astragalus* gave unusually high values, 2.6-3.27. Rosaceae failed to yield active enzymes. Activation energy values from temp. coeffs. were 8,300 cal./mole and 12,900 cal./mole, resp., for averages of Leguminosae and Ranunculaceae; the total N values were 37.64 and 25.16 mg./g. (dry wt.), resp.

G. M. Kosolapoff

KOLOBKOVA, YE. V., KUDRYASHEVA, N. A.

Enzymes

Natures of Ferments in leaves. Trudy Glav. bot. sada 2, 1951.

9. Monthly List of Russian Accessions, Library of Congress, September 1952, Unclassified.

KOLOBKOVA, Ye.V.; KUDRYASHOVA, N.A.

Biochemical characteristics of tea leaves from southern Kirghizistan. Biul. Glav.bot.sada no.14:53-55 '52. (MLRA 6:5)

1. Glavnyy botanicheskiy sad Akademii Nauk SSSR. (Tea)

KOLOBKOVA, E. V.

Proteolytic enzymes of the leaves of Rosaceae. N. A. Kudryashova and E. V. Kolobkova. *Byull. Glavnogo Botan. Sada* 1955, No. 19, 31-5; *Referat. Zhur., Khim.* 1954, No. 36007.—Protease of the leaves of the majority of the investigated rosaceous plants showed low activities during the autolysis and during the action on gelatin. Exceptionally high activities were found in leaves of *Cerasus pumila*, *Sorbus*, and *Amygdalus*. The leaf protease of *Spiraea hamalda* showed no effect on the different plant proteins as compared with its effect on gelatin. Addn. of urea greatly increased the degree of the proteolysis, both in the case of autolysis and in the assocn. with various substrates, particularly with the globulin from the seeds of watermelon.

B. Wierbicki

KOLOBKOVA, E. V.

Content of free amino acids in dormant seeds. N. A. Kudryashova and E. V. Kolobkova. *Doklady Akad. Nauk S.S.S.R.* 91, 1365–8(1953).—Paper chromatography was used on various dormant seeds (Williams and Kirby, *C.A.* 42, 5404*f*) with the following results (cystine, lysine, aspartic acid, glutamic acid, asparagine, alanine, proline, tryptophan, valine and leucine are listed below with + indicating presence, — indicating absence, in the usual manner): *Sophora japonica* —, —, —, —, —, —, —, —, —, —; *Cercis siliquastrum* trace, trace, trace, +, —, trace, —, —, —, —; *C. canadensis* —, trace, trace, trace, —, trace, —, —, —, —; *C. chinensis* —, trace, trace, —, —, —, —, —, —, —; *Lupinus* sp. —, trace, trace, trace, —, trace, —, —, —, —; *Phaseolus aureus* ++, +++, +++, +++, —, ++, —, —, +, —; *Phaseolus* sp. +++, +++, +++, +++, +, +++, —, ++, ++, +; *Pisum sativum* +, ++, ++, +++, +, +, —, —, +, ++; *Caragana arborescens* ++++, ++++, ++++, ++++, —, ++++, —, ++, +++, ++; *Cydonia japonica* trace, trace, trace, trace, —, —, —, —, —, —; *Rosa* sp. ++, +++, ++, +++, +++, —, +, ++, —, —; *Prunus armeniaca* +, +++, ++, ++, +, ++, +, +, trace, trace; *Cerasus vulgaris* trace, +, ++, ++, +++, +, ++, +, ++, ++, ++; *Paeonia anomala*, *Trollius asiaticus*, *T. europaeus*, *Aquilegia* sp., *A. vulgaris*, *A. glauca*, *A. baicalensis*, *A. dichroa*, *A. bicolor*, *A. karelini* have no cystine, lysine, asparagine, proline, tryptophan, valine or leucine; some aspartic acid, glutamic acid and alanine are usually found. *Ranunculus bulbosus* contains all the acids except proline and leucine, while in *R. propinquus* their distribution is: —, —, +, +, —, +, —, +, —, —; *Thalictrum foetanus* —, +, +, +, —, —, —, +, —, +; *Th. minus* —, +, +, +, —, —, —, —, —, —; *Delphinium* sp., *D. cuneatum*, *D. retropilosum*, *D. confusum*, *Nigella sativa*, and *N. damascena* have much cystine, lysine, aspartic and glutamic acids, alanine, tryptophan, valine and leucine; the 1st 4 contain no proline, while the 2nd, 3rd and 4th contain no asparagine. *Zea* contains no free amino acids, while *Triticum vulgare*, *T. lutescens*, *T. durum* contain all but proline.

G. M. Kosolapoff

C.A. V-48
Jan 10, 1954
Botany

KOLOBKOVA, E. V.

The seed proteins of the white and yellow acacia. E. V. Kolobkova and N. A. Kudryashova. *Byull. Glavn. Botan. Sada* 1954, No. 17, 57-61; *Referat. Zhur. Khim., Biol. Khim.* 1955, No. 6927.—Seeds of white and yellow acacia were defatted and extd. successively with H_2O, 4 and 10% $(NH_4)_2SO_4$ solns., and 0.2–2.0% soln. of NaOH. The H_2O- and $(NH_4)_2SO_4$-extd. proteins were pptd. with different concns. of $(NH_4)_2SO_4$, and the alk. exts. with AcOH. The seeds of white acacia yielded 7 salt-sol., 4 H_2O-sol., and 2 alkali-sol. proteins; the seeds of yellow acacia yielded 9 types of proteins most of which were salt-sol. The salt-sol. proteins of the seeds of white acacia salted out with greater difficulty than those of yellow acacia. All pptd. proteins possessed proteolytic properties, notably those of the white acacia seeds, which pptd. with 59–67% $(NH_4)_2SO_4$ satn.

B. S. Levine

KOLOBKOVA, Ye.V.

Proteolytic enzymes of seeds of the almond and the hawthorn germinating with difficulty. Biul.Glav.bot.sada no.19:78-85 '54. (MLRA 8:2)

1. Glavnyy botanicheskiy sad Akademii nauk SSSR.
(Almond) (Hawthorn) (Proteinases)

Kolobkova, E. V.

The hinderer of sprouting of seeds of yellow acacia. E. V. Kolobkova and N. A. Kudryashova (Botan. Garden, Moscow). *Plant. Rastenii* 3, 115-20(1938).—The seeds of yellow acacia (*Caragana arborescens*) contain a substance which hinders sprouting of seeds. The most active material is found in unripe seeds, and the hindering action appears to lie in the monoamino monocarboxylic acid fraction. Chromatographic sepn. of this fraction showed small amts. of serine, glycine, alanine, tryptophan, valine, asparagine, and leucine group. Tests with pure amino acids showed that tryptophan has the strongest hindering action, being effective even in 0.00001 *M* concn. Neither of these agents affect the activity of proteolytic enzymes in the plants.

G. M. Kosolapoff

2

AUTHOR: Kolobkova, Ye. V. SOV/ 2o-12o-4-61/67

TITLE: Nitrogen Metabolism in Ripening Seeds of Maize (Zea Mays) (Azotistyy obmen sozrevayushchikh semyan kukuruzy)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 12o, Nr 4, pp. 9o7 - 91o (USSR)

ABSTRACT: Only few data concerning this problem are found in publications. A short survey is given (Refs 1-3). From this survey appears that apart from a small number of papers investigations of individual parts of the seed which are as different as embryo and endosperm are lacking almost completely. In this connection the author made it her task: 1) to observe the change of the nitrogen compounds in the different stages of maturity of the two mentioned parts of the seed; 2) to clarify those changes of the properties and the composition of the proteins; 3) to determine the same for free amino acids. Ripening seeds of zea mays of the genus Podmoskovnaya served as material; they were collected at different periods of maturity. In the stage of lactal maturity the investigations were carried out separately for embryo and

Card 1/3

endosperm. For this purpose Kjeldahl's (K'yeldal')method was applied, Non-protein-nitrogen was determined by the same method after the removal of protein by 2,5% trichloroacetic acid; the difference of the two above mentioned numbers gave the amount of protein nitrogen. Nitro amine was determined in water extracts according to Pope and Stevens (Ref 4). The results point to an increased amount of total nitrogen in the earlier stages of development of the corn. Apparently the seed tissues in that period have young thin-walled cells filled with protoplasm. Then the amount of total nitrogen decreases since carbohydrates are accumulated in the seed. Another characteristic feature of ripening embryos and endosperms is the reduction of low-molecular nitrogen substances (of the peptides and amino acids) and the increase of the amount of high-molecular substances (proteins). In completely mature embryos and endosperms, however, a certain amount of low-molecular substance remains. The investigations showed further that the qualitative composition and the quantitative relations of free amino acids vary in the different parts of the seed and at different stages of maturity. The highest amount was observed in the period of lactal maturity. The changes in concentration are so pronounced that they can be chromatographically determined

Nitrogen Metabolism in Ripening Seeds of Maize (Zea Mays) SOV/2o-12o-4-61/67

without chemical analysis. The results of determination of the protein fractions prove this fact. In the stage of maturity mainly reserve proteins of the zein and gluteline type were accumulated in the endosperms. In the embryos, however, mainly globuline and albumin were accumulated. There are 2 figures, 1 table, and 8 references, 3 of which are Soviet.

ASSOCIATION: Glavnyy botanicheskiy sad Akademii nauk SSSR (Main Botanical Garden AS USSR)

PRESENTED: December 3o, 1957, by N.V.Tsitsin, Member, Academy of Sciences, USSR

SUBMITTED: December 26, 1957

1. Plants--Nitrogen metabolism 2. Seeds--Physiology 3. Amino acids --Determination 4. Chromatographic analysis 5. Protein--Determination

Card 3/3

KOLOBKOVA, Ye.V.; KUDRYASHOVA, N.A.

On the 70th birthday of Andrei Vasil'evich Blagoveshchenskii.
Biul. MOIP. Otd.biol. 64 no.6:151-155 N-D '59. (MIRA 13:5)
(BLAGOVESHCHENSKII, ANDREI VASIL'EVICH, 1889-)

KOLOBKOVA, Ye.V.; KUDRYASHOVA, N.A.

Germination inhibitors. Trudy Glav. bot. sada 7:8-31 '61.
(MIRA 14:3)

(Germination) (Growth inhibiting substances)
(Tryptophan)

KOLOBKOVA, Ya.V.

Transformation of nitrogenous substances during the ripening of seeds in Triticum-Agropyron hybirds and corn. Trudy Glav. bot. sada 7:67-92 '61. (MIRA 14:3)
(Seeds) (Protein metabolism) (Triticum-Agropyron hybirds) (Corn(Maize))

KOLOBKOVA, Ye.V.

Dynamics of nitrogenous substances during the ripening of seeds of leguminous plants. Trudy Glav. bot. sada 8:75-96 '61. (MIRA 15:1)

(Leguminosae)
(Nitrogen metabolism)

KOLOBKOVA, Ye.V., kand.biologicheskikh nauk

Dynamics of nitrogen substances in rye seeds during ripening.
Trudy VNIIZ no.38:143-151 '60. (MIRA 15:12)

1. Glavnyy botanicheskiy sad AN SSSR.
(Rye) (Nitrogen metabolism)

KOLOBKOVA, Ye.V.; KUDRYASHOVA, N.A.

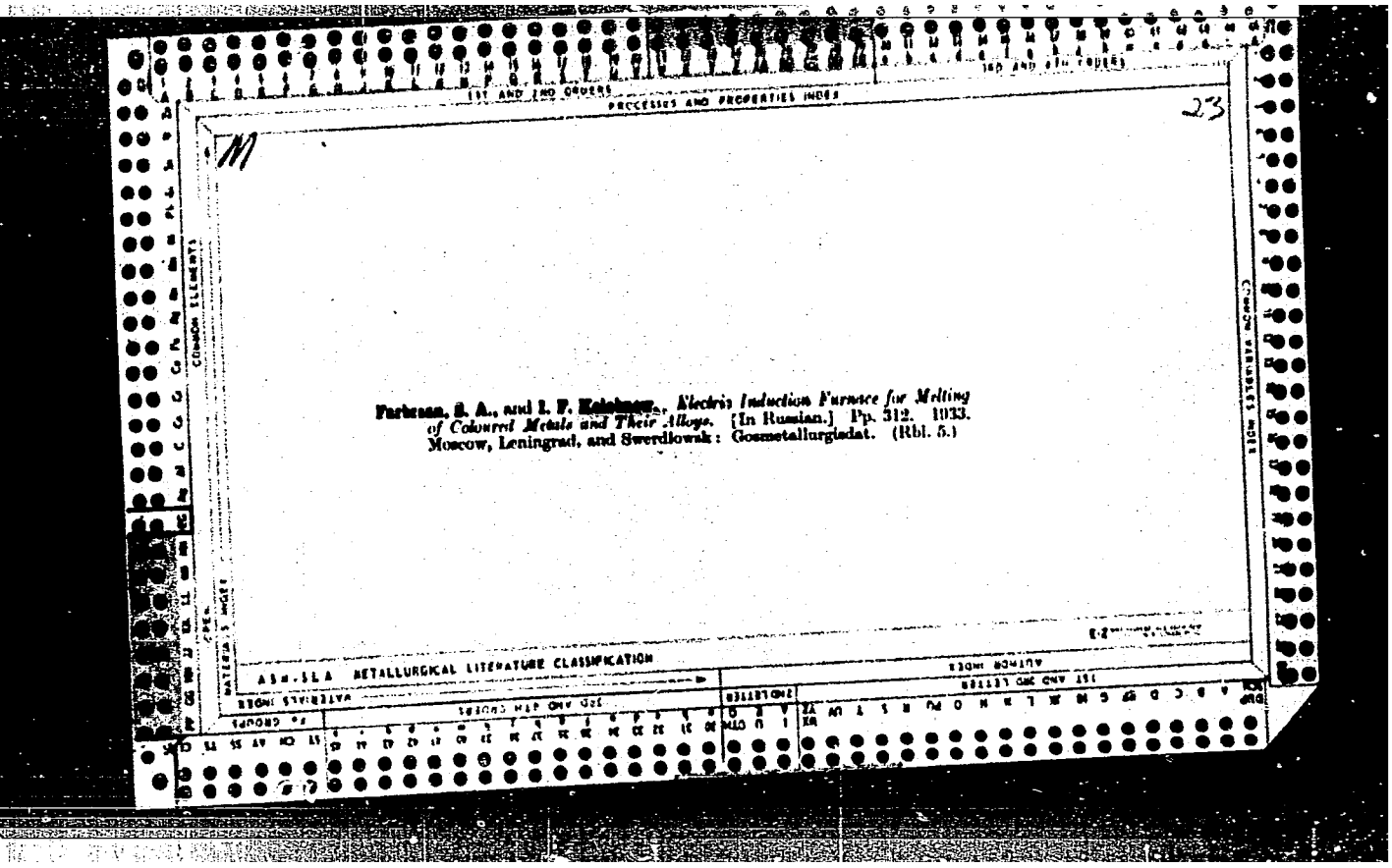
Amino acid composition and crude protein content in the herbage of vetch and sainfoin. Biul.Glav.bot.sada no.48:48-53 '63. (MIRA 17:5)

1. Glavnyy botanicheskiy sad AN SSSR.

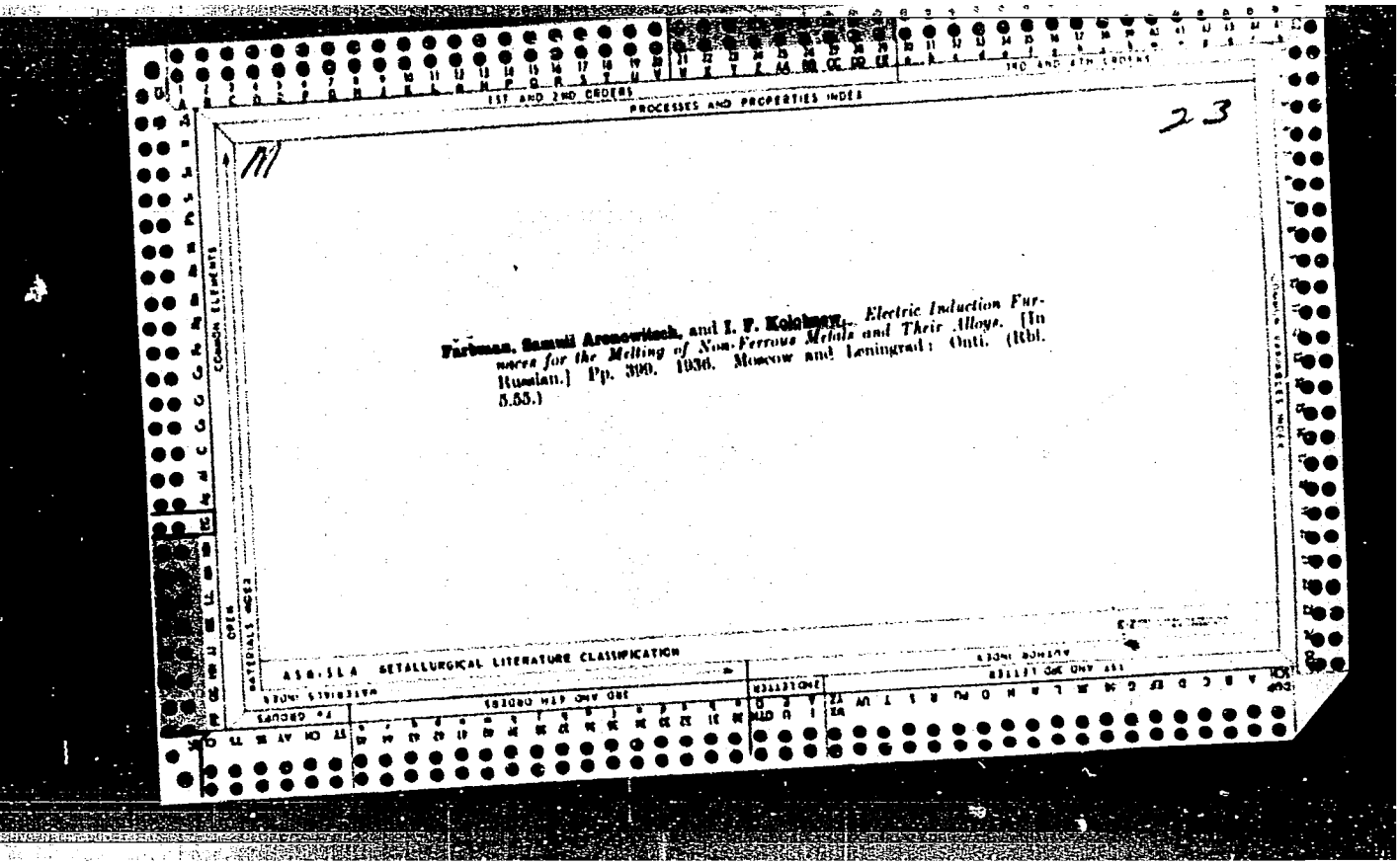
KUDRYASHOVA, N.A.; KOLOBKOVA, Ye.V.

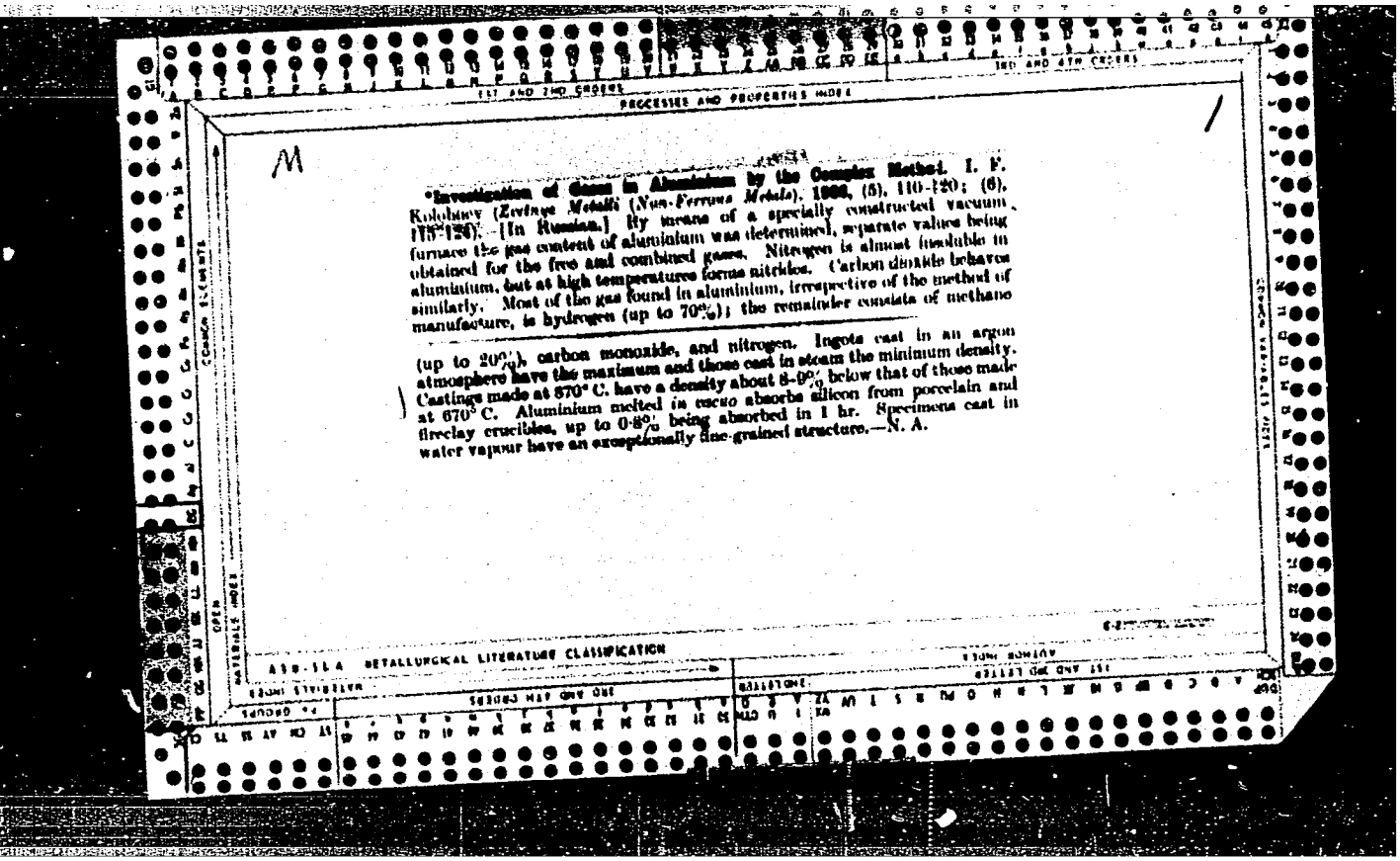
Determination of tryptophan by paper chromatography. Biul. Glav. bot. sada no.54:75-80 '64. (MIRA 17:11)

1. Glavnyy botanicheskiy sad AN SSSR.



Parkman, S. A., and I. P. Kalabnov. *Electric Induction Furnace for Melting of Coloured Metals and Their Alloys.* [In Russian.] Pp. 312. 1933. Moscow, Leningrad, and Swerdlowsk: Gosmetallurgizdat. (Rbl. 5.)





PROCESSES AND PROPERTIES INDEX

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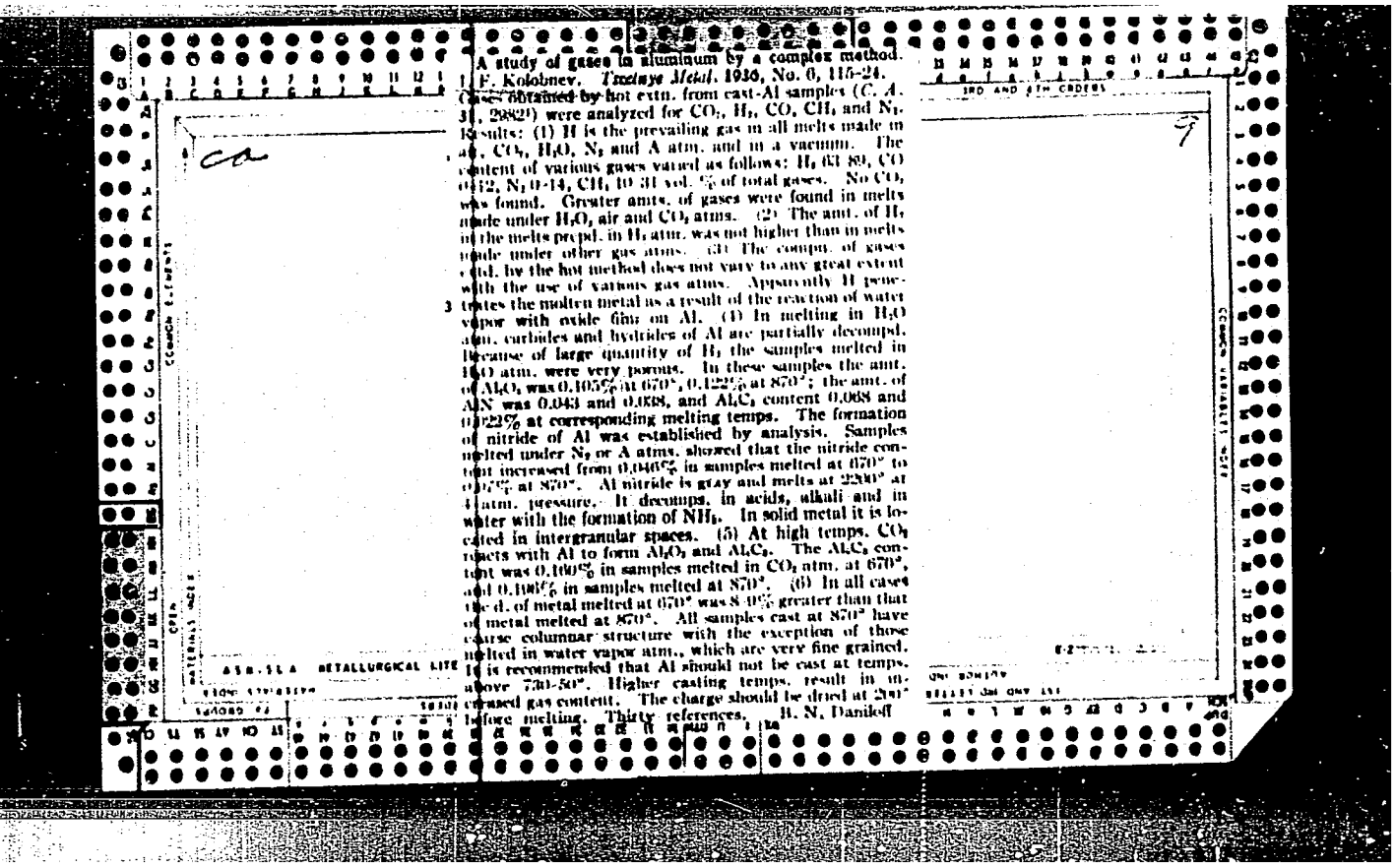
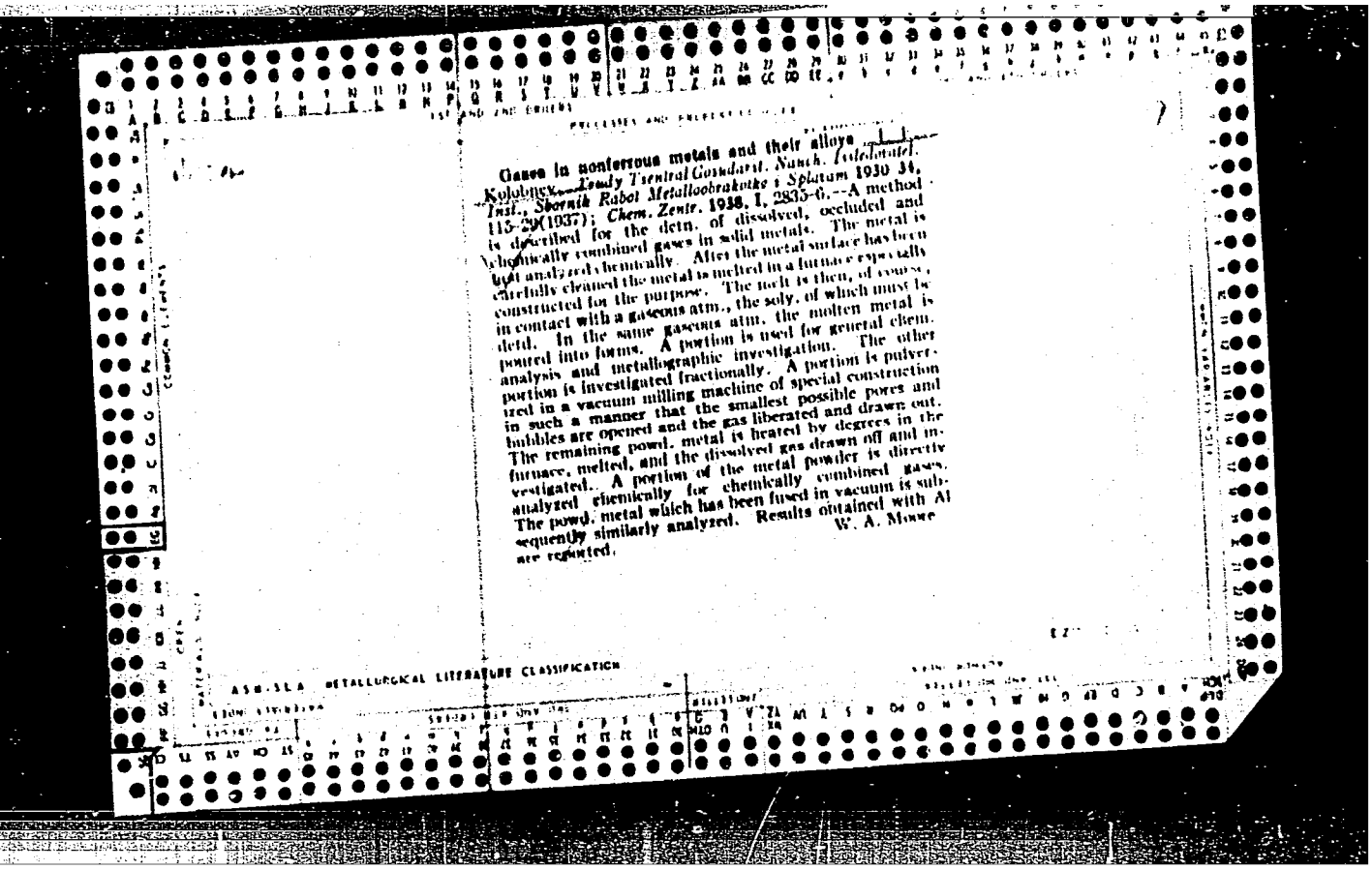
Investigation of Gases in Aluminium by the Complex Method. I. F. Kolobnev (*Tsvetnye Metalli* (*Non-Ferrous Metals*), 1956, (5), 110–120; (6), 118–126). [In Russian.] By means of a specially constructed vacuum furnace the gas content of aluminium was determined, separate values being obtained for the free and combined gases. Nitrogen is almost insoluble in aluminium, but at high temperatures forms nitrides. Carbon dioxide behaves similarly. Most of the gas found in aluminium, irrespective of the method of manufacture, is hydrogen (up to 70%); the remainder consists of methane (up to 20%), carbon monoxide, and nitrogen. Ingots cast in an argon atmosphere have the maximum and those cast in steam the minimum density. Castings made at 670° C. have a density about 8–9% below that of those made at 670° C. Aluminium melted *in vacuo* absorbs silicon from porcelain and fireclay crucibles, up to 0·8% being absorbed in 1 hr. Specimens cast in water vapour have an exceptionally fine-grained structure.—N. A.

A59-11-A METALLURGICAL LITERATURE CLASSIFICATION

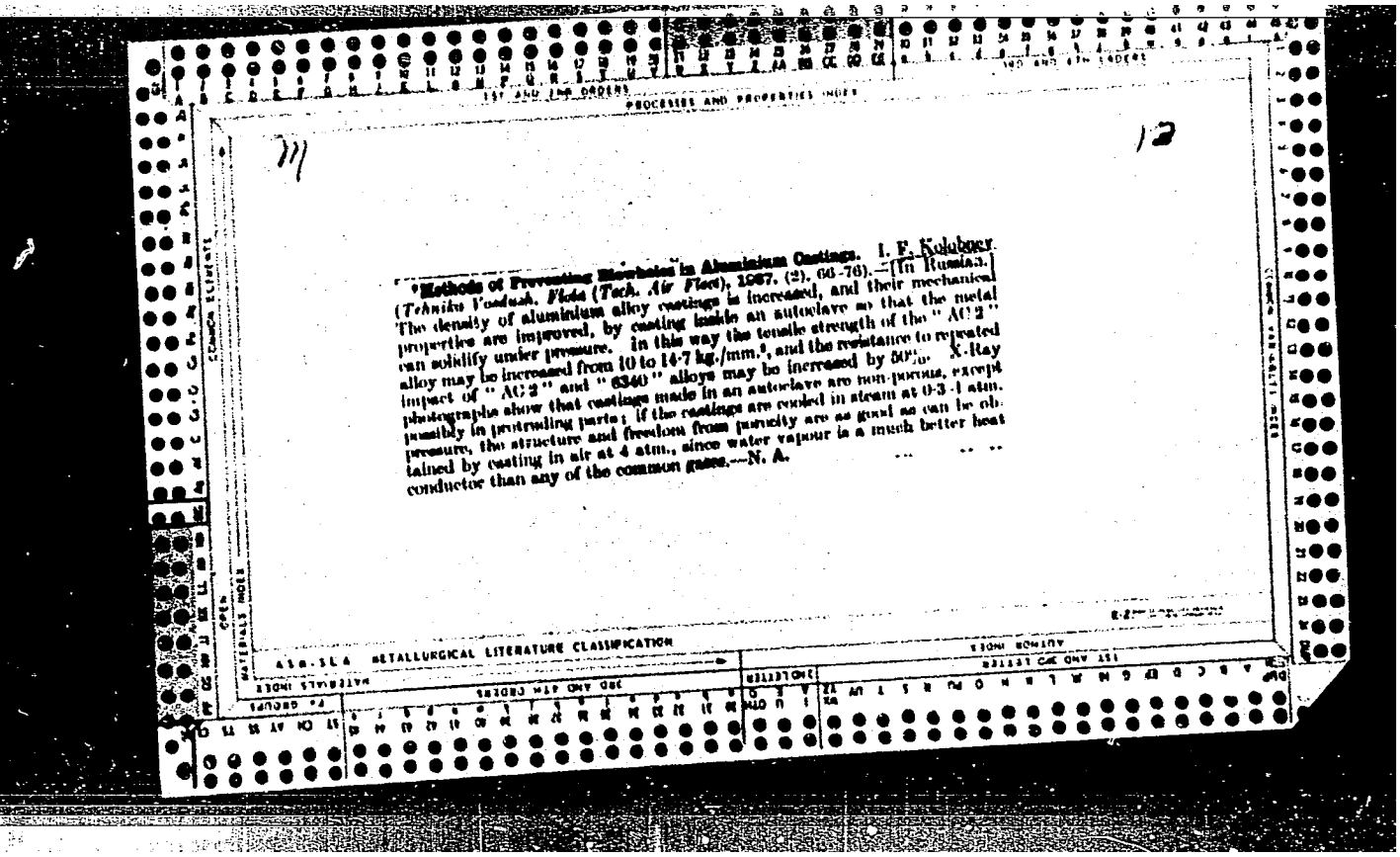


A study of gases in aluminum by a complex method. F. Kolobnev. *Tsvetnye Metal.* 1936, No. 6, 115-24. Gases obtained by hot extn. from cast-Al samples (*C. A.* 31, 2882) were analyzed for CO_2, H_2, CO, CH_4 and N_2. Results: (1) H is the prevailing gas in all melts made in air, CO_2, H_2O, N_2 and A atm. and in a vacuum. The content of various gases varied as follows: H_2 63-89, CO 0-12, N_2 0-14, CH_4 10-31 vol. % of total gases. No CO_2 was found. Greater amts. of gases were found in melts made under H_2O, air and CO_2 atms. (2) The amt. of H_2 in the melts prepd. in H_2 atm. was not higher than in melts made under other gas atms. (3) The compn. of gases evol. by the hot method does not vary to any great extent with the use of various gas atms. Apparently H penetrates the molten metal as a result of the reaction of water vapor with oxide film on Al. (4) In melting in H_2O atm. carbides and hydrides of Al are partially decompd. Because of large quantity of H_2 the samples melted in H_2O atm. were very porous. In these samples the amt. of Al_2O_3 was 0.105% at 670°, 0.122% at 870°; the amt. of AlN was 0.043 and 0.038, and Al_4C_3 content 0.068 and 0.022% at corresponding melting temps. The formation of nitride of Al was established by analysis. Samples melted under N_2 or A atms. showed that the nitride content increased from 0.046% in samples melted at 670° to 0.07% at 870°. Al nitride is gray and melts at 2200° at 1 atm. pressure. It decomps. in acids, alkali and in water with the formation of NH_3. In solid metal it is located in intergranular spaces. (5) At high temps. CO_2 reacts with Al to form Al_2O_3 and Al_4C_3. The Al_4C_3 content was 0.100% in samples melted in CO_2 atm. at 670°, and 0.108% in samples melted at 870°. (6) In all cases the d. of metal melted at 670° was 8-9% greater than that of metal melted at 870°. All samples cast at 870° have coarse columnar structure with the exception of those melted in water vapor atm., which are very fine grained. It is recommended that Al should not be cast at temps. above 730-50°. Higher casting temps. result in increased gas content. The charge should be dried at 200° before melting. Thirty references. B. N. Danilov

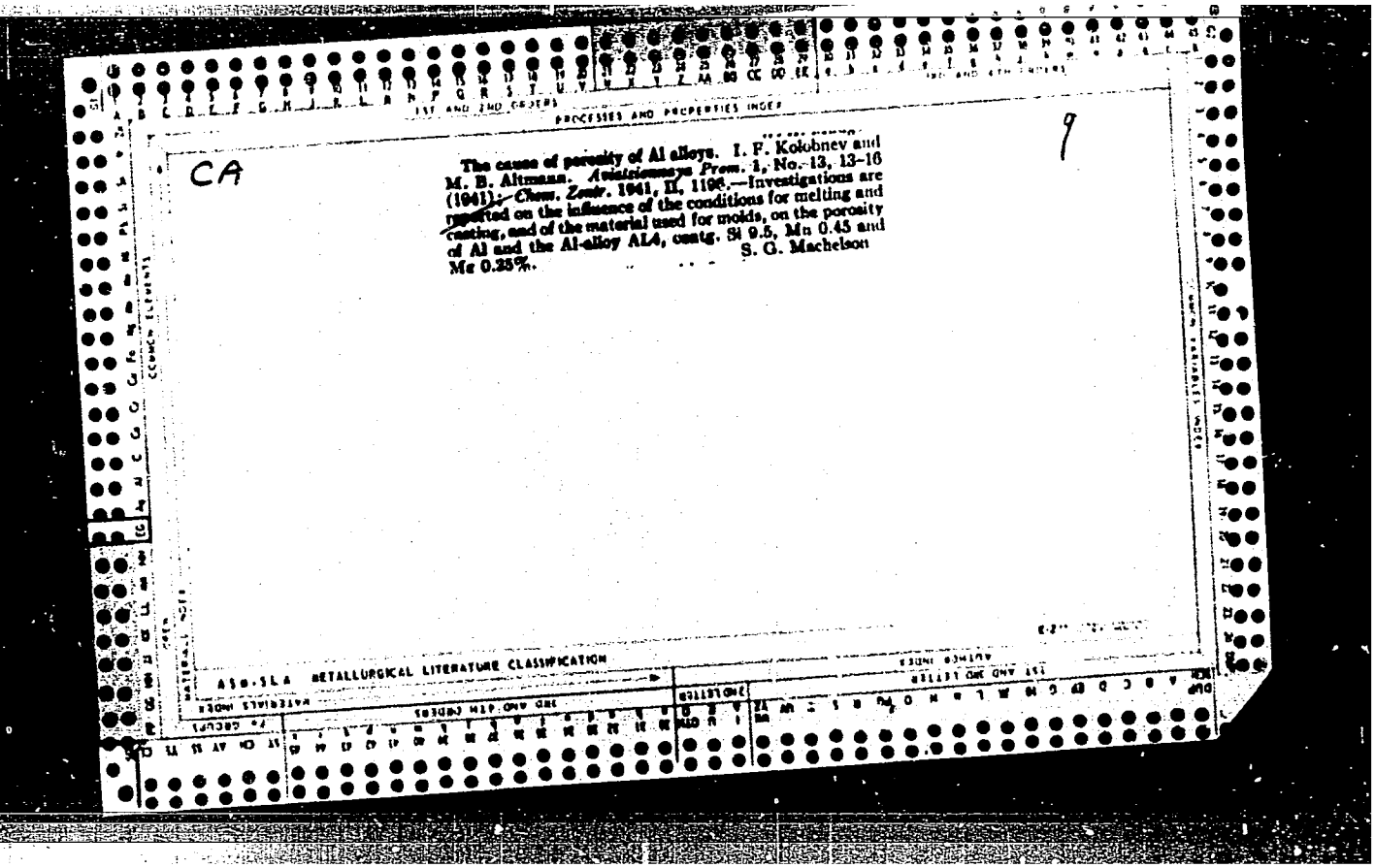


Gases in nonferrous metals and their alloys. Kolobnev, *Trudy Tsentral Gosudarst. Nauch. Issledovatel. Inst., Sbornik Rabot Metalloobrabotke i Splavam* 1930 34, 115-29(1937); *Chem. Zentr.* 1938, I, 2835-6.--A method is described for the detn. of dissolved, occluded and chemically combined gases in solid metals. The metal is first analyzed chemically. After the metal surface has been carefully cleaned the metal is melted in a furnace especially constructed for the purpose. The melt is then, of course, in contact with a gaseous atm., the soly. of which must be detd. In the same gaseous atm. the molten metal is poured into forms. A portion is used for general chem. analysis and metallographic investigation. The other portion is investigated fractionally. A portion is pulverized in a vacuum milling machine of special construction in such a manner that the smallest possible pores and bubbles are opened and the gas liberated and drawn out. The remaining powd. metal is heated by degrees in the furnace, melted, and the dissolved gas drawn off and investigated. A portion of the metal powder is directly analyzed chemically for chemically combined gases. The powd. metal which has been fused in vacuum is subsequently similarly analyzed. Results obtained with Al are reported.

W. A. Mowe



"**Methods of Preventing Blowholes in Aluminium Castings.** I. F. Kolobnev. (*Tekhnika Vozdush. Flota* (*Tech. Air Fleet*), 1937, (2), 66–76).—[In Russian.] The density of aluminium alloy castings is increased, and their mechanical properties are improved, by casting inside an autoclave so that the metal can solidify under pressure. In this way the tensile strength of the "AC2" alloy may be increased from 10 to 14·7 kg./mm.², and the resistance to repeated impact of "AC2" and "6340" alloys may be increased by 50%. X-Ray photographs show that castings made in an autoclave are non-porous, except possibly in protruding parts; if the castings are cooled in steam at 0·3–1 atm. pressure, the structure and freedom from porosity are as good as can be obtained by casting in air at 4 atm., since water vapour is a much better heat conductor than any of the common gases.—N. A. ... .



CA

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The cause of porosity of Al alloys. I. F. Kokobnev and M. B. Altmann. *Avtotrienmaya Prom.* 1, No. 13, 13–16 (1941); *Chem. Zentr.* 1941, II, 1196.—Investigations are reported on the influence of the conditions for melting and casting, and of the material used for molds, on the porosity of Al and the Al-alloy AL4, contg. Si 9.5, Mn 0.45 and Mg 0.35%. S. G. Machelson

KOLOBNEV, I. F.

FARMAN, S. A. & KOLOBNEV, I. F.

Induction furnaces for the smelting of metals and alloys. INDUKTSIONNYYE PECHI DLYA PLAVKI METALLOV I SPLAVOV. Approved handbook for higher technical establishments. Moscow. State sc. Tech. Publ. of Lit. on Ferrous and Non-Ferrous Mettallurgy. 1949. pp. 540.

KOLOBNEV, I.F.; ARISTOVA, N.A.; BERNSHTEYN, M.L.; NIKITINA, Ye.N.

Use of the ultraviolet microscope for examining the structure of aluminum alloys. Zav.lab.22 no.7:803-804 '56. (MIRA 9:12)
(Aluminum alloys) (Ultraviolet rays) (Microscope)

KOLOBNEV I. F.

in book--
Shaped Casting of Copper (~~Cont.~~) Collection of Articles, Moscow, Mashgiz, 1957, 205pp. 509

~~Engineer, V. A. Alekseyev, and P. S. Parshin, There is 1 Soviet reference.~~

This book contains papers presented during a technical and Scientific convention, Moscow, Dec. '55, on theory and practice of shaped copper-alloy castings. Kolobnev, I. F., Candidate of Technical Sciences and Farbman, S. A., Engineer. Modern Submerged-Resistor Furnaces and Special Features of Copper Alloy Melting Process

The authors claim that the most efficient and modern way of melting copper and copper alloys is by means of a submerged-resistor furnace with closed channels. Advantages listed are simple construction and equipment, small size, high productivity, and low power consumption. Disadvantages are low temperature of slag and high rate of wear of channel lining. The authors stress the need for increased size and higher output of these furnaces and mention as an example a new furnace in Birkenhead, England, with a 15-ton capacity. Some submerged-resistor furnaces are reported to be used in pressure casting. The text contains a full description of operating conditions and some maintenance problems. No personalities are mentioned. There are no feferences.

~~Card 16/17~~

PHASE I BOOK EXPLOITATION 587

Kolobnev, I. F., Krymov, V. V., Polyanskiy, A. P.

Spravochnik liteyshchika; fasonnoye lit'ye iz alyuminiyevykh i magniyevykh splavov (Manual for the Foundry Man; Shape Casting of Aluminum and Magnesium Alloys) Moscow, Mashgiz, 1957. 482 p. 17,000 copies printed.

Ed.: Rubtsov, N. N., Doctor of Technical Sciences; Reviewers: Al'tman, M. B., Candidate of Technical Sciences; Zakharova, G. V., Candidate of Technical Sciences; Tikhova, N. M., Candidate of Technical Sciences; Arbuzov, B. A., Engineer; Astaulov, V. S., Engineer; Boykova, L. T., Engineer; Kitari-Oglu, G. S., Engineer; Krysin, B. T., Engineer; Lotareva, O. B., Engineer; Smirnova, T. I., Engineer; Khodorovskiy, G. L., Engineer; Ed. of this volume: Kolobnev, I. F., Candidate of Technical Sciences; Ed. of Publishing House: Sirotin, A. I., Engineer; Tech. Ed.: Model', B. I.; Managing Ed. for literature of heavy machine building: Golovin, S. Ya., Engineer

~~Card 1/12~~

KOLOBNEV, I. F.

"Effect of Chemical and Phase Composition on the Properties of Cast Aluminum Alloys at Elevated Temperatures"

Light Alloys. no. 1: Physical Metallurgy, Heat Treatment, Casting, and Forming; Principal Reports of the Conference, Moscow, Izd-vo AN SSSR, 1958, 497 P.

(2nd. All Conf. on Light Alloys, 1955)

KOLOBNEV, I.F.

KOLOBNEV I.F.

VLADISLAVEV, V.S.

25(1) p 4,1,8, PHASE I BOOK EXPLOITATION SOV/1439

Spravochnik metallista v pyati tomakh, t. 3, kn. 1 (Metals Engineering Handbook in Five Volumes, Vol. 3, Bk. 1) Moscow, Mashgiz, 1958. 560 p. 50,000 copies printed.

Ed. (Title page): V.S. Vladislavlev, Professor (Deceased); Ed. (Inside book): V.I. Krylov, Engineer; Tech. Ed.: T.F. Sokolova; Editorial Board: N.S. Acherkan (Chairman and Chief Ed.), Doctor of Technical Sciences, Professor, V.S. Vladislavlev, Professor (Deceased), A.N. Malov, Candidate of Technical Sciences, S.N. Pozdnyakov, A.Ya. Rostovykh, O.B. Stalbin, and S.A. Chernavskiy; Managing Ed. for Reference Literature: V.I. Krylov, Engineer.

PURPOSE: The book is a reference book for technicians and engineers working in the field of machinery design and in production.

COVERAGE: The book covers the following: engineering specifications, treatment and use of cast iron, steel and carbides, heat treatment of steel and cast iron, specifications, treatment and use of nonferrous metals and nonmetallic materials. I.E. [illegible], V.P. Vologdin, N.V. Gevaling are mentioned as having contributed in this field.

Card 1/14

Aluminum Alloys (I.F. Kolobnev, Candidate of Technical Sciences) [illegible]

- Properties of metallic aluminum [illegible]
- Strength per unit of weight of aluminum [illegible]
- Classification of cast aluminum alloys [illegible]
- Aluminum alloys for press forming [illegible]

Card 11/14

- Low-alloys and alloys not hardening with heat treatment [illegible]
- Alloys based on Al-Mg-Si and Al-Si-Mg-Cu-Mn systems [illegible]
- Duralumin-type alloys [illegible]
- Alloys based on the Al-Cu-Mg-Si system [illegible]
- V95-type alloys with maximum strength at room temperature [illegible]

Light die-casting alloys [illegible]

KOLOBNEV, I. F.

FARBMAN, Samuil Aronovich; KOLOBNEV, Ivan Filippovich; KRYLOV, V.I., red.; SIDOROV, V.N., inzh., red.izd-va; ISLENT'YEVA, P.G., tekhn.red.

[Induction furnaces for melting metals and alloys] Induktsionnye pechi dlia plavki metallov i splavov. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii. 1958. 704 p. (MIRA 11:2)
(Metallurgical furnaces)
(Induction heating)

SOV/137-58-11-23543

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 11, p 241 (USSR)

AUTHOR: Kolobnev, I. F.

TITLE: Influence of Chemical and Phase Composition Upon the Properties of Cast Aluminum Alloys at Elevated Temperatures (Vliyaniye khimicheskogo i fazovogo sostava na svoystva liteynykh alyuminiyevykh splavov pri povyshennykh temperaturakh)

PERIODICAL: V sb.: Legkiye splavy. Nr 1. Moscow, 1958, pp 157-171

ABSTRACT: A discussion is offered of the influence of disperse secondary phases on the heat resistance (HR) of heterogeneous casting alloys (A) of Al. An analysis of the softening of Al-Mg, Al-Zn, and Al-Si A at high temperatures if offered. Al-Zr and Al-Cu A offer the best prospects in terms of HR. The most heat-resistant A are those developed by the author and associates having the following % composition: AL19 (Cu 5, Mn 0.9, Ti 0.4, remainder Al) and V300 (Cu 4.6-6.0, Ni 2.6-3.6, Mg 0.8-1.5, Mn 0.18-0.35, Ti 0.1-0.25, remainder Al). The complex structure of the α solid solution and the hardening of the grain boundaries by $CuAl_2$, T, and S phases make it possible to obtain a stress-rupture σ of 6.5-7.0 kg/mm^2 at 300°C for

Card 1/2

Influence of Chemical and Phase Composition Upon the Properties of Cast (cont.)

AL19 and of 7-8 kg/mm^2 for V300.

G. E.

Card 2/2

I.F. Kolobnev

AUTHOR: Gulyayev, B.B. SOV/24-58-4-37/39

TITLE: Conference on Crystallisation of Metals (Soveshchaniye po kristallisatsii metallov)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 4, pp 153 - 155 (USSR)

ABSTRACT: This conference was held at the Institut mashinovedeniya AN SSSR (Institute of Mechanical Engineering of the Ac.Sc. USSR) on June 28-31, 1958. About 400 people participated and the participants included specialists in the fields of foundry, metallurgy, crystallography, physics, welding, heat, physical chemistry, mathematical physics and other related subjects. In addition to Soviet participants, foreign visitors included Professor D. Czikl (East Germany) and N.I. Chvorinov (Czechoslovakia). This conference on crystallisation of metals was the fourth conference relating to the general problem of the theory of foundry processes.

Crystallisation of Non-ferrous Metals. N.N. Belousov and A.A. Dodonov - in their paper "Investigation of the Crystallisation and the Properties of Non-ferrous Metals Under Conditions of Applying Pressure", presented results of experiments on producing castings which crystallise under pressure from all sides and piston pressure within a wide range of specific loads. The results of the investigation provide material for improving existing methods of applying pressure to influence the crystallisation of alloys. The influence of the conditions of crystallisation on the casting and mechanical properties of aluminium alloys, at normal and at elevated temperatures, were discussed in the papers of I.F. Kolobnev and A.Ye. Semenov. The results of investigations of the conditions of crystallisation of aluminium alloys during continuous casting were presented in the paper of Ye.D. Zakharov. N.L. Pokrovskiy and D.Ye. Ovsiyenko

Card8/10 dealt with the features of crystallisation of various non-ferrous alloys and the physico-chemical phenomena accompanying this process.

Crystallisation of Metals in the Welding Bath. The following papers were read: B.A. Movchan - "Investigation of the Features of the Microscopic Chemical Non-uniformity in Alloys"; G.L. Petrov - "Crystallisation and Chemical Non-uniformity in Weld Joints"; M.Kh. Shorshorov and V.S. Sedykh - "Influence of Non-uniformities of Crystallisation in the Weld Bath on the Formation of Hot Cracks".

Crystallisation of Metals in an Ultrasonics Field. The following papers were read: Member of the Ac.Sc. Belorussian SSR N.N. Sirota, Ye.L. Lekhtblad and E.M. Smolyarenko - "Crystallisation of Metals and Alloys in an Ultrasonics Field"; I.I. Teumin - "Influence of Elastic Oscillations on the Processes of Crystallisation and the technological properties of Alloys"; L.L. Silin and A.A. Yerokhin - "Effect of Ultrasonics on Crystallising Metal in the Weld Bath".

Card9/10

16

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E193/E483

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2308 only 18.1210

AUTHORS: Kolobnev, I.F., Lyuttsau, V.G., Candidates of Technical Sciences and Aristova, N.A., Engineer

TITLE: The Effect of Manganese on the Heat-Resistant Properties of Aluminium Alloys

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1960, No.9, pp.38-41 + 1 plate

TEXT: Following their earlier work on various Mn-bearing aluminium-base alloys, the present authors studied the effect of manganese on the properties of alloy AL7, containing 4.5% Cu, 0.17% Fe and 0.3% Si, and alloy AL19 which contained 5.1% Cu, 0.83% Mn, 0.27% Ti, 0.17% Fe and 0.31% Si. The experimental techniques employed included micro-analysis, mechanical tests carried out at temperatures between 20 and 300°C on specimens subjected to various heat treatments (solution treatment with or without subsequent ageing) and so-called X-ray shadow microscopy based on selective absorption of X-rays of various wave lengths by various constituents of the alloy. The following conclusions were reached: 1) The X-ray shadow microscopy technique is eminently suitable for studying the structural changes taking

Card 1/3

S/129/60/000/009/008/009
E193/E483

The Effect of Manganese on the Heat-Resistant Properties of Aluminium Alloys

place in complex alloys subjected to various heat treatments or tested for creep at high temperatures. 2) The AL19 alloy, in the as-cast condition, consists of (a) the Mn-enriched, low copper content, solid solution matrix (α-phase), (b) the $CuAl_2$ phase crystallizing mainly in the form of coarse platelets, situated at the grain-boundaries of the α-phase, (c) the T-phase ($Al_{12}Mn_2Cu$) present in the form of both fine particles dispersed uniformly throughout the grains of the α-phase and relatively large particles, located at the grain-boundaries of the matrix and (d) phase Al_3Ti, present also in the form of platelike crystals. 3) After solution treatment (quenching), the AL19 alloy consisted of (a) the solid solution matrix with relatively higher Cu and lower Mn content, (b) the T-phase in the form of a large number of small particles dispersed in the interior of the α-grains and (c) the primary Al_3Ti grains. 4) The same alloy which, after quenching and ageing for 3 h at 175°C, was tested in creep at 300°C for 100 h under a stress of 6.5 kg/mm^2, consisted of non-homogeneous α-solution within the grains of which a large quantity

S/724/61/000/000/001/020

AUTHOR: Kolobnev, I. F.

TITLE: Fundamental principles of the alloying of cast Aluminum alloys according to their operating temperatures and their specific application.

SOURCE: Liteynyye alyuminiyevyye splavy; svoystva, tekhnologiya plavki, litʹya i termicheskoy obrabotki. Sbornik statey. Ed. by I. N. Fridlyander and M. B. Alʹtman. Moscow, Oborongiz, 1961, 5-15.

TEXT: This survey-type paper defines the following operational parameters as determining criteria in the alloying of cast Al alloys: The environmental medium, the cyclic nature and magnitude of the stresses applied, the temperature, and the time of exposure to it. The Soviet literature on the theory of the heat resistance of metallic alloys is briefly reviewed, and the following factors are found to affect the heat resistance of alloys substantially: (1) The interatomic bonds, (2) the degree of supersaturation and the nature of the solid solution, (3) the grain structure of the solid solution, (4) the m.p. of the eutectic, (5) the structure of the grain boundary, and (6) the nature, size, and character of the distribution of the particles of the second phase in the alloy. The mechanism whereby multi-component alloys with a stronger interatomic bond afford a greater heat resistance is examined, and the magnitude of the sublimation energy is identified as a significant indicator of the

Card 1/3

interatomic bonding force. High-temperature (350-400°C) alloys should, therefore, contain elements with a greater sublimation heat than that of Al. The effect of the diffusion process on the structure and, hence, the properties of alloys is discussed. The powerful role of minute particles of second phases in increasing the heat resistance of alloys is investigated; the strengthening effects of small particles of $T(Al_{12}Mn_2Cu)$ on Al alloys is adduced as an example. The effect of supersaturation of the solid solution, whereby with increasing supersaturation the transition of the hardening phases into it is more complete, the grain boundaries of the solid solution are freer of particles of second phases, and the tensile strength and the magnitude of the impact toughness are increased. It is shown that hardening of alloys intended for operation at T from 20 to 100°C may be attained by an increasing degree of disorientation of the grains with strongly distorted crystalline lattice, especially in the near-boundary zones. Soviet high-pressure methods (up to 2,000-at gauge pressure) for the improvement of the mechanical properties are noted. In this connection, the desirable effect of ultrasonic vibrations is mentioned. The following structural factors are found to be significant under any given set of testing or operating conditions: (a) The stability of the solid solution; (b) the degree of microheterogeneity of the second order within the grains of the solid solution as determined by the ultradispersive particles of stable second phases: The less the latter interacts with the solid solution, the greater the heat resistance of the alloy;

(c) the structure of the second phases, which produces a network in the near-boundary layer of the grains of the solid solution: The stronger the network, the greater the heat resistance of the alloy. Experimental data show that a fine-grain structure of complex alloys ensures more elevated limits of the stress-rupture strength and the creep. This is interpreted as a favorable result of the presence of small particles of second phases and a reduced degree of the interaction with the solid solution. Several specific examples of the assertions made in the paper relative to the selection of the operational condition of an alloy are adduced, comprising the following operational circumstances: (1) Highly loaded parts, operating under adverse operational conditions at temperatures not in excess of 100°C; (2) cast parts operating under similar circumstances, but having a thin-wall structure and a complex geometry; (3) parts operating at elevated temperatures (300-350°); and (4) parts operating at yet higher T (350-400°). A full-page table summarizes the fundamental characteristics of several structural components in Al alloys; a 2-page table summarizes typical mechanical properties of cast Al alloys as affected by their heat treatment and their operating conditions. There are 2 tables and 10 references (9 Russian-language Soviet and 1 English-language: Jeffries, L., Trans. ASME, v. 60, 1919, 474); no figures.

S/724/61/000/000/002/020

AUTHORS: Kolobnev, I. F., Shvyreva, L. V., Aristova, N. A., Mishin, G. Ya.

TITLE: Composition, structure, and properties of the alloy AA19 (AL19).

SOURCE: Liteynyye alyuminiyevyye splavy; svoystva, tekhnologiya plavki, lit'ya i termicheskoy obrabotki. Sbornik statey. Ed. by I. N. Fridlyander and M. B. Al'tman. Moscow, Oborongiz, 1961, 16-27.

TEXT: The paper describes the reasonings which led to the development of the AL19 alloy and adduces data to show that the alloy is characterized by an elevated heat resistance, good mechanical properties at room temperature (T), and good weldability. It is noted, however, that it has less desirable casting properties which must be taken into account in the development of casting technologies of various types. The following criteria governed the development of the alloy AL19: (1) It was to be an alloy of the Al-Cu system to obtain the highest achievable strength characteristics at room T and at elevated T; (2) the Cu content should not exceed 5.5% to avoid embrittlement at room T and the development of diffusion plasticity at elevated T; yet the Cu content could not be less than 4.5% to retain maximum strength and ductility at room T; (3) the third component of the alloy was to exhibit: (a) A high interatomic bond, (b) a minimal diffusion coefficient in solid

Card 1/3

Composition, structure, and properties....

Al, (c) a sufficiently elevated solubility at room T and at operating T (300-350°C); (d) an ability to form structurally and chemically complex phases which would participate in the formation of a refractory eutectic, would strengthen the grain boundaries of the solid solutions, and also would form a microheterogeneity within the solid-solution grains that would constitute comparatively stable minute solid particles even at high operating T. Mn was chosen to serve as that third component. The effects of Cu and Mn on the mechanical properties of alloys of the Al-Cu-Mn system with varying Cu contents are tabulated in detail, using a reference alloy with Al with 5.0% Cu and 0.9% Mn. The influence of Ti, Cr, and V on the properties of the alloys are analyzed in detail, and the results are tabulated. It is concluded that most favorable properties at elevated operating T are exhibited by an alloy containing 4.5-5.3% Cu, 0.6-1.0% Mn, and 0.25-0.45% Ti. This alloy is designated henceforth as AL19. The effect of additions of Si, Fe, and Mg on the properties of the Al alloy are discussed in detail, and the following optimal values are determined: Fe up to 0.3%, Si up to 0.3%, and Mg up to 0.05%. The optimal heat-treatment procedure for the alloy thus determined is then developed. Two heat-treatment procedures consisting of a quench and a quench-plus-aging, respectively, are developed for the alloy; the first procedure produces an 8-12% elongation and a 30-35 kg/mm^2 tensile strength, the second a 3-6% elongation and a 34-43 kg/mm^2 tensile strength. The latter is recommended for parts operating under higher stresses. A full-page

table summarizes the mechanical properties of the AL19 alloy at T ranging from −40 to +350°C for both heat-treatment versions. The stress-rupture values for T from 175 to 350° of AL19 alloys, heat-treated according to both regimes, and a comparison table of the mechanical properties of the AL19 alloy as against those of other widely utilized Soviet cast Al alloys at T ranging from 200 to 300°C are also tabulated. The physical properties of the AL19 alloy, namely, its heat conductivity and its linear expansion coefficient, are tabulated for the two heat-treatment versions of the alloy, for T from 250-300°C. The technological and casting properties of the AL19 and its microstructure in both the freshly and the heat-treated state are described and depicted in microphotographs. The microstructure of the AL19 alloy appears to be the same after either type of heat treatment. There are 4 figures, 9 tables, and 1 German-language reference: Hofmann, W., Falkenhagen, G., Z. f. Metallkunde, v. 43, 1952.

S/724/61/000/000/009/020

AUTHORS: Kolobnev, I. F., Mikhin, G. Ya., Aristova, N. A., Shvyreva, L. V., Mel'nikov, V. A.

TITLE: Smelting and casting procedures for the AL19 alloy.

SOURCE: Liteynyye alyuminiyevyye splavy; svoystva, tekhnologiya plavki, lit'ya i termicheskoy obrabotki. Sbornik statey. Ed. by I. N. Fridlyander and M. B. Al'tman. Moscow, Oborongiz, 1961, 28-35.

TEXT: The paper describes the equipment and procedures employed in the smelting and casting of the AL19 alloy. While all types of standard furnaces can be employed, electric resistance furnaces, and especially inductance furnaces, are most effective in producing strong castings with a minimal porosity in the shortest possible time. The preparation of the preliminary alloy is described in detail, with due consideration to the burn-off of metals in various types of charges and in two types of furnaces. The charging order, including the principal components and the ligatures, is listed, and the refining of the melt by gaseous Cl or dehydrated chlorous Mn is described. A maximum smelting T of 720°C is recommended. This is followed by a step-by-step explanation of the sequence of the preparation of the working alloy. It is noted that, in the preparation of AL19 alloy, liquation and

Card 1/2

Smelting and casting procedures for the AL19 alloy. S/724/61/000/000/003/020

elevated porosity can be prevented only by thorough mixing and refining. In designing the process equipment for the casting of AL19 parts, it is necessary to provide a forced feed, a decentralized input of metal, and the application of input rods. Bottom pouring is established as the basic system of pouring cast AL19 alloy. For tall cylindrical castings it is recommended that a vertical-slot system with two pits be used. For large ingots the following basic parameters of the pouring system are specified: (a) The diameter of the risers is 18-25 mm; it is desirable to set up casting screen underneath the risers, also to provide a sufficient metal-receiver and slag-catcher volume; (b) the cross-section of the collectors must exceed the cross-section of the riser by 2-3 times; the number of slag catchers in the collector is determined by the metal volume of the mold and its size and complexity; (c) the total cross-section of the feeders must exceed the cross-section of the riser by 3 or 4 times, and the width of the feeder must not exceed 6-8 mm. The number and size of the overflow gates must be selected with due consideration of the most massive portions of the casting; the overflow system applicable for Silumin-type alloys is not suitable for the casting of AL19 alloy; the AL19 alloy has twice the viscosity of Silumin, so that especially high overflow gates do not operate satisfactorily; it is advisable to establish low overflow gates having an elliptic cross-section. There are 4 figures, and 3 tables; no references.

Card 2/2

S/724/61/000/000/012/020

AUTHORS: Kolobnev, I. F., Loktionova, N. A.

TITLE: The enhancement of the plastic properties of the alloy B300 (V300).

SOURCE: Liteynyye alyuminiyevyye splavy; svoystva, tekhnologiya plavki, lit'ya i termicheskoy obrabotki. Sbornik statey. Ed. by I. N. Fridlyander and M. B. Al'tman. Mosvow, Oborongiz, 1961, 94-98.

TEXT: The paper describes various experimental approaches toward the improvement of the plasticity of the alloy B300 (V300) which excels by its elevated stress-rupture strength (7 kg/mm^2 for 100 hrs at 300°C and 4 kg/mm^2 for 100 hrs at 350°C), and an elevated creep strength (5 kg/mm^2 for 100 hrs at 300° and 2 kg/mm^2 for 100 hrs at 350°, with a residual strain of 0.2%, but which is severely limited in many applications by its low plasticity. The brittleness of the alloy is attributed to the presence in it of large particles of insoluble phases of the type of $Al_6Cu_3Ni_3$, $Al_3(CuNi)_2$, et al., containing Cr, Mn, and Fe. The present experimentation shows that a high plasticity can be attained in the V300 alloy with the following composition: 5% Cu, 3% Ni, no more than 1.2% Mg, no more than 0.3% Mn, and no more than 0.2% Cr. Such an alloy has a tensile strength and a stress-

Card 1/2

PHASE I BOOK EXPLOITATION SOV/6027

Kolobnev, Ivan Filippovich

Termicheskaya obrabotka alyuminiyevykh splavov (Heat Treatment of Aluminum Alloys) Moscow, Metallurgizdat, 1961. 413 p. Errata slip inserted. 6700 copies printed.

Reviewers: V. I. Mikheyeva, Professor, Doctor of Chemical Sciences, and M. V. Mal'tsev, Professor, Doctor of Technical Sciences; Ed. of Publishing House: K. D. Misharina; Tech. Ed.: P. G. Islent'yeva.

PURPOSE: This book is intended for the engineering personnel of the metallurgical, metalworking, machine-building, and aircraft industries. It may also be useful to students at schools of higher technical education.

COVERAGE: Compositions, structures, phase transformations, and mechanical properties of cast and wrought aluminum alloys are discussed from the standpoint of their dependence upon heat-treatment conditions. Examples of phase

Card 1/8

2

26284
S/078/61/006/009/003/010
B107/B101

18.1210 2408, 1413, 2808, 2208

AUTHORS: Gladyshevskiy, Ye. I., Kolobnev, I. F., Zarechnyuk, O. S.

TITLE: Investigation of high-aluminum alloys of the system Al - Cu -Ce

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 6, no. 9, 1961, 2103 - 2108

TEXT: Two isothermal sections (at 400 and at 500°C) in the high-aluminum part of the system Al - Cu - Ce were investigated. The alloys were prepared from aluminum-000 (99.98% Al), electrolytic copper (99.99% Cu) and cerium (98.6% Ce), and analyzed by V. V. Oshchapovskiy and O. M. Pasichnyk. The specimens were kept at 500°C for five days and at 400°C (± 20C) for ten days, respectively, and subsequently quenched in toluene. A total of 130 alloys was investigated. On 55 specimens in the range from 0 to 5% by weight of Ce and 0 to 12% by weight of Cu, the lattice constant of the solid solution in Al (ω-phase) was measured with an accuracy of ± 0.0001 kX (back-reflection camera with thermostat) (Figs. 1 and 2). Polished sections were prepared of all alloys, and the microhardness was determined with an instrument of the ПМТ-3 (PMT-3) type at 50 g load. Fig. 3 shows the isothermal section at 500°C in the aluminum corner of the system. For the isothermal section at 400°C, alloys with a higher cerium content (up to 65% by weight) and

Card 1/6

Investigation of high-aluminum alloys ...

copper content (up to 60% by weight) were also investigated (Fig. 4). Three ternary compounds were studied more closely: T_1 lies close to Al_8Cu_4Ce; the narrow range of its homogeneity corresponds to 19.2% by weight of Ce, 42.5% by weight of Cu and 38.3% by weight of Al. The microhardness amounts to 386 ± 10 kg/mm^2. The compound is in equilibrium with the ω-phase, Al_2Cu, T_2, T_3 and other compounds not closely investigated. The T_2 compound corresponds to Al_4CuCe, its homogeneity range lies at 43.7 to 47.2% by weight of Ce, 19.0 to 23.9% by weight of Cu and 30.5 to 37.0% by weight of Al. The microhardness amounts to 317 ± 10 kg/mm^2. T_2 is in equilibrium with the ω-phase, Al_4Ce, Al_2Ce, T_1, T_3 and other phases not closely investigated. The T_3 compound is in equilibrium with T_1 and T_2. The composition lies close to T_1: 25.6% by weight of Ce, 44.2% by weight of Cu and 30.2% by weight of Al. There are 5 figures and 4 references: 3 Soviet and 1 non-Soviet. The reference to English-language publication reads as follows: M. Hansen, K. Anderko. Constitution of binary alloys, 1958.

Card 2/6

Investigation of high-aluminum alloys ...

ASSOCIATION: L'vovskiy gosudarstvennyy universitet im. Iv. Franko (L'vov State University imeni Iv. Franko)

SUBMITTED: July 26, 1960

Fig. 1: Lattice constant of the solid solution of copper and cerium in aluminum with 1% by weight of Ce.
Fig. 2: Lattice constant of the solid solution of copper and cerium in aluminum. Legend: a) For alloys with 5% by weight of Ce; 6) for alloys with 5% by weight of Cu.
Fig. 3: Isothermal section through the Al-corner of the Al - Cu - Ce system at 500°C (% by weight). Legend: 1) Monophase alloys; 2) diphase alloys; 3) triphase alloys.
Fig. 4: Composition of the alloys produced and results of the phase analysis in the Al - Cu - Ce system at 400°C (% by weight). Legend: 1) Monophase alloys; 2) diphase alloys; 3) triphase alloys.

Card 3/6

KOLOBNEV, I.F.; BUSAROV, V.M.; SHVYREVA, L.V.

Heat-resistant, silumin-type alloy for internal combustion engine pistons. Alium. splavy no.1:33-40 '63. (MIRA 16:11)

ARISTOVA, N.A.; GERCHIKOVA, N.S.; KOLOBNEV, I.F.; KORABLEVA, G.N.

Electron microscopy of alloys in the system Al - Cu, Al - Cu - Mn, Al - Cu - Mn - Ni. Alium. splavy no.1:50-54 '63. (MIRA 16:11)

KOLOBNEV, I.F.; SHVYREVA, L.V.

Effect of cerium and zirconium on the properties and structure of the Al19. Alium. splavy no.1:92-98 '63. (MIRA 16:11)

KOLOBNEV, I.F.

Basic principles in the development of heat-resistant aluminum alloys for founding. Issl. splav. tsvet. met. no.4:233-238 '63. (MIRA 16:8)

(Aluminum alloys—Thermal properties)

L 13504-63 EWP(q)/EWT(m)/BDS AFFTC/ASD JD/JG

ACCESSION NR: AP3003478 S/0078/63/008/007/1668/1672

AUTHORS: Zarechnyuk, O. S.; Kolobnev, I. F.; Teslyuk, M. Yu.

TITLE: Analysis of melts of the ternary sytem Al-Mn-Ce, rich in aluminum

SOURCE: Zhurnal neoganicheskoy khimii, v. 8, no. 7, 1963, 1668-1672

TOPIC TAGS: Al, Mn, Ce, aluminum, cerium, manganese, ternary system, aluminum ternary system

ABSTRACT: The phase diagram and the isothermic cross section of the Al corner of the Al-Mn-Ce system were drawn from x-ray and microstructure data on 116 melts at 500F. In equilibrium with the solid solution (Al, Omega-phase) are the compounds Al sub 6Mn and Al sub 4 Ce (or solid solutions based on these) and a ternary compound T, whose area of homogeneity is in the interval 36-43 wt. % Al, 30-40 Mn and 24-28Ce. T, is also in equilibrium with Al sub 4 Ce, with the double compounds of Al and Mn and with a ternary compound T3 whose area of homogeneity is 23-35 wt. % Al, 30-42 Mn and 33-38 Ce and whose structure type approaches Th sub 2 Zn sub 17. Structure of T, approaches the type ThMn sub 12. Compounds analogous to the T sub 2 in Al-Cu-Ce system (Al sub 4 MnCe) do not exist in the Al-Mn-Ce system.

"The authors express thanks to Ye. I. Gladyshevskiy and P.I. Kripyakevich for

Card 1/2

L 13504-63

ACCESSION NR: AP3003478

discussing the work. N. G. Kisil' took part in the work." Orig. art. has: 15 figures.

ASSOCIATION: L'vovskiy gosudarstvenny*y universitet im. I. Franko (Lvov State University).

SUBMITTED: 20Aug62 DATE ACQ: 02Aug63 ENCL: 00

SUB CODE: CH, ML NO REF SOV: 008 OTHER: 003

Card 2/2

L 12598-63 EWP(q)/EWT(m)/BDS AFFTC/ASD JD

ACCESSION NR: AP3003479 S/0078/63/008/007/1673/1677

AUTHOR: Altunina, L. N.; Glady*shevskiy, Ye. I.; Zurechnyuk, O.S.; Kolobnev, I. F.

TITLE: Physico-chemical analysis of the system Al-Si-Ce in the region of 0-73% by weight of Ce

SOURCE: Zhurnal neorganicheskoy khimii, v. 8, no. 7, 1963, 1673-1677

TOPIC TAGS: Al, Si, Ce, x-ray analysis

ABSTRACT: The joint solubility of silicon and cerium in aluminum is studied. In equilibrium with a solid solution of the aluminum-base alloy, there is besides Si and Al_4Ce, a compound X and a solid solution of aluminum in $CeSi_2$. The approximate composition of compound X is 35 at. % Al, 45 at. % Si, 20 at. % Ce (19 w % Al, 25 w % Ce). X-ray analysis of the solid solution Ce $(Si, Al)_2$ indicated that its structure is related to type Alpha-$ThSi_2$. Maximum content of aluminum in solid solution $Ce(Si,Al)_2$ is 20-22 wt%. Orig. art. has: 6 figures.

Card 1/2 L'vov State Univ.

VUL'F, Boris Konstantinovich, KORNILOV, I.I., prof. dokt. khim. nauk, retsenzent; KOLOBNEV, I.F., doktor tekhn. nauk, retsenzent

[Ternary metal phases in alloys] Troinye metallicheskie fazy v splavakh. Moskva, Metallurgiia, 1964. 221 p. (MIRA 17:11)

AM1037191 BOOK EXPLOITATION S/ 0

Kolobnev, Ivan Filippovich

High-temperature strength of aluminum casting alloys (Zharoprochnost' liteyny*kh alyuminiyevy*kh splavov), Moscow, Metallurgizdat, 1964, 223 p. illus., biblio., plates. Errata slip inserted. 3,100 copies printed.

TOPIC TAGS: metallurgy, high temperature strength, aluminum casting alloy

PURPOSE AND COVERAGE: The book presents the many years of research on the heat resistance of aluminum casting alloys and literature data on the problems of the theory of the heat resistance of metallic materials. The effect of the structure and diffusion processes on the heat resistance of alloys and the relation of the heat resistance of aluminum alloys to the chemical and phase composition and type of phase diagram are covered. Handbook data on the heat resistance of basic standard aluminum alloys are given. The book is intended for engineers and technicians of the metallurgical, machine building, and aviation industries and can also be useful to students in higher educational institutions.

TABLE OF CONTENTS [abridged]:

Card 1/2

L 05030-65 EWT(m)/EPR/T/EWP(t)/EWP(b) Ps-4 IJP(c) JD/JG/MLK

ACCESSION NR: AT4048707 S/0000/64/000/000/0151/0152

AUTHOR: Cherkashin, Ye. Ye.; Zarechnyuk, O.S.; Kripyakevich, P.I.; Kolobnev, I.F.

SOURCE: Vsesoyuznoye soveshchaniye po splavam redkikh metallov. 1963. Voprosy* teorii i primeneniya redkozemel'ny*kh metallov (Problems in the theory and use of rare-earth metals); materialy* soveshchaniya. Moscow, Izd-vo Nauka, 1964, 151-152

TOPIC TAGS: quaternary system crystal structure, ternary system crystal structure, [illegible] alloy, manganese alloy, copper alloy, aluminum alloy

Card 1/2

L 25036-65

ACCESSION NR: AT4048707

[illegible] One of these, called Q_1, contained a rather large amount of Mn and was in [illegible] with $CeMn_4Al_8$ and Q_2 which latter was [illegible]

[illegible] A. The intensity of the lines agreed with those calculated for the [illegible] Further studies will deal with the range of [illegible]

ASSOCIATION: none

[illegible]

OTHER: 005

Card 2/2

L 40374-66 ETI/EWP(t)/ETT(m) IJP(c) JH/JD/WB/JT
ACC NR: AP6025629 SOURCE CODE: UR/0413/66/000/013/0080/0080

INVENTOR: Al'tman, M. B.; Ambartsumyan, S. M.; Kolobnev, I. F.; Lotareva, O. B.; Loktionova, L. I.; Spiridonova, S. B.

ORG: none

TITLE: Cast aluminum-base alloy. Class 40, No. 183398

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 13, 1966, 80

TOPIC TAGS: aluminum alloy, cast alloy, zinc containing alloy, magnesium containing alloy, manganese containing alloy, titanium containing alloy, iron containing alloy, beryllium containing alloy, stress corrosion, corrosion resistant metal

ABSTRACT: An Author Certificate has been issued for a cast aluminum-base alloy containing zinc, magnesium, manganese and titanium. In order to reduce susceptibility to stress corrosion while retaining high mechanical properties, the content of alloying elements should be kept within the following limits in %: zinc 3.5--5.5, magnesium 1.2—2.2, manganese 0.2—0.7, titanium 0.05—0.25, chromium 0.1—0.6, iron 1.0—1.6, and beryllium 0.01—0.5. The alloy may also contain silver, niobium, cobalt, nickel, molybdenum, boron, tungsten, and rare-earth metals in an amount up to 1.5%. [DV]

SUB CODE: 11/ SUBM DATE: 12Jun64/ ATD PRESS: 5053

Card 1/1 MLP UDC: 669.715'5'721'74

L 40990-66 EWP(e)/EWT(m)/EWP(t)/ETI/EWP(k) IJP(c) JH/JD

ACC NR: AT6024932 (A,N) SOURCE CODE: UR/2981/66/000/004/0214/0218

AUTHOR: Lekarenko, Ye. M. (deceased); Stepanova, M. G.; Sarul', L. A.; Kolobnev, N. I.; Zenkov, G. P.

ORG: none

TITLE: Aluminum powder for high-strength SAP alloy

SOURCE: Alyuminiyevyye splavy, no. 4, 1966. Zharoprochnyye i vysokoprochnyye splavy (Heat resistant and high-strength alloys), 214-218

TOPIC TAGS: aluminum alloy, aluminum powder, TENSILE STRENGTH, high strength alloy, sintered aluminum powder, ~~sintered aluminum powder alloy~~, metal property/SAP aluminum alloy

ABSTRACT: SAP-1 and SAP-2 alloys made of APS-1 and APS-2 grade aluminum powder (respective content of aluminum oxide 6—9 and 9—13%) have a tensile strength of 26—32 kg/mm^2 and 32—38 kg/mm^2, respectively. By increasing the content of aluminum oxide to 23% the strength of alloys can be increased up to 45 kg/mm^2. Two new grades of aluminum powder were developed: APS-3 with 13—18% aluminum oxide and APS-4 with 18—23% aluminum oxide. Since the content of aluminum oxide depends on the fineness of the powder, which in turn depends on the duration of grinding (APS-1 and APS-2 powders require 25 and 35 hr grinding), the grinding process was modified to accelerate oxidation and lower the consumption of stearic acid (which is added to prevent the agglomeration of powder particles). SAP alloys made from APS-3 and APS-4 powders

Card 1/2

KOLOBNEV, N.I.

PHASE I BOOK EXPLOITATION SOV/5685

Fridlyander, I. N., Doctor of Technical Sciences, and B. I. Matveyev, Candidate of Technical Sciences, eds.

Teploprochnyy material iz spechennoy alyuminiyevoy pudry [SAP]; sbornik statey (Heat-Resistant Material From Baked Aluminum Powder [SAP]; Collection of Articles) Moscow, Oborongiz, 1961. 122 p. Errata slip inserted. 3,550 copies printed.

Reviewers: M. F. Bazhenov, Engineer, and M. Yu. Bal'shin, Candidate of Technical Sciences; Ed.: M. A. Bochvar, Engineer; Ed. of Publishing House: S. I. Vinogradskaya; Tech. Ed.: V. I. Oreshkina; Managing Ed.: A. S. Zaymovskaya, Engineer.

PURPOSE: This collection of articles is intended for scientific workers and engineers in the institute and plant laboratories of the metallurgical and machine-building industry; it may also be useful to instructors and advanced students.

COVERAGE: The 12 articles contain the results of research on the structure, properties, and manufacture of semifinished products

Card 1/5

Heat-Resistant Material From (Cont.)

from sintered aluminum powder. The technology for the manufacture of aluminum powder and briquets is described as are sintering processes, and pressing, rolling, drawing, and sheet-stamping methods. The dependence of the properties of semifinished products on the aluminum-oxide content of the powder, on the degree of hot and cold deformation, and on the stresses of pressing is investigated. Also investigated are the mechanical and corrosive properties of semifinished products, the mechanism of hardening of sintered aluminum powder, the reasons for blister formation, and the possibility of recrystallization. Data on sintered aluminum alloys are included. No personalities are mentioned. References in the form of footnotes accompany the articles.

3

TABLE OF CONTENTS:

S/032/61/027/012/006/015
B104/B108

AUTHORS: Gerchikova, N. S., and Kolobnev, N. I.

TITLE: Preparation of sintered aluminum powder samples for structural analysis

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 12, 1961, 1498 - 1499

TEXT: Experiments made by the authors jointly with G. N. Korobleva and I. A. Nabatova showed that electrolytic polishing and etching of polished sections from sintered aluminum powder (E. Gregory, N. J. Grant, J. of Metals, 6, 2, 247 (1954); F. V. Lenel, Ansell, Nelson, J. of Metals, 9, 1, 117 (1957); H. Hug, H. Bichfel, Metal, 1, 19 (1961)), usually leads to the corrosion of the aluminum master dies. In order to prevent pitting, the electrolytic polishing of aluminum-powder sections may last a few seconds only, until the aluminum-oxide particles appear weakly above the background of the uncorroded aluminum master. The polished sections cut from pressed bars were polished with electrolyte no. 1 (400 ml H_3PO_4; 100 ml H_2SO_4; 50 g CrO_3; 25 ml H_2O; current density, 0.15 a/cm^2; room temperature;

Card 1/2

ACCESSION NR: AT4012708 S/2981/63/000/002/0023/0027

AUTHOR: Stepanova, M. G.; Kolobnev, N. I.; Kibitova, L. I.

TITLE: Shape and dimensions of the particles of aluminum powder for making blanks of SAP

SOURCE: Alyuminiyevy*ye splavy*. Sbornik statey, no. 2. Spechenny*ye splavy*. Moscow, 1963, 23-27

TOPIC TAGS: powder metallurgy, aluminum powder, sintered aluminum, sintered aluminum powder, SAP, aluminum blank

ABSTRACT: A peculiarity of the process of manufacture of SAP is that the size of the aluminum particles is critical, since the amount of surface area exposed depends on the granularity of the aluminum, and, in turn, the formation of aluminum oxide depends on the amount of surface exposed. An electron microscopic investigation carried out by the authors demonstrated the influence of an increase in pulverization on the particle size and bulk density of the aluminum particles. It was discovered that coarsening of the elementary particles and an increase in the bulk density do not begin simultaneously. In the manufacturing process, grade APS aluminum powder was first pulverized in ball mills, the size of the elementary particles being less than 75μ. The powder began to form

Card 1/2

ACCESSION NR: AT4012708

lumps after 16 hours, even though a size of 75μ was reached only after 24 hours. During pulverization in a ball mill, the powder passes through three stages. The aluminum is first flattened and then leaf-shaped, work-hardened particles are obtained. The particles are then crushed finer. The beginning of this process is accompanied by an increase in the specific gravity of the powder. The fine powder particles adhere to each other forming conglomerates or powder lumps. "The investigations of particle size and shape were carried out with an electron microscope under the guidance of N.S. Gerchikova." Orig. art. has: 7 figures.

ASSOCIATION: None

SUBMITTED: 00 DATE ACQ: 13Feb64 ENCL: 00

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

2/2

Card

ACCESSION NR: AT4012709 S/2981/63/000/002/0028/0030

AUTHOR: Lekarenko, Ye. M.; Pokrovskaya, G. N.; Zenkov, G. P.; Sarul', L. A.; Kolobnev, N. I.

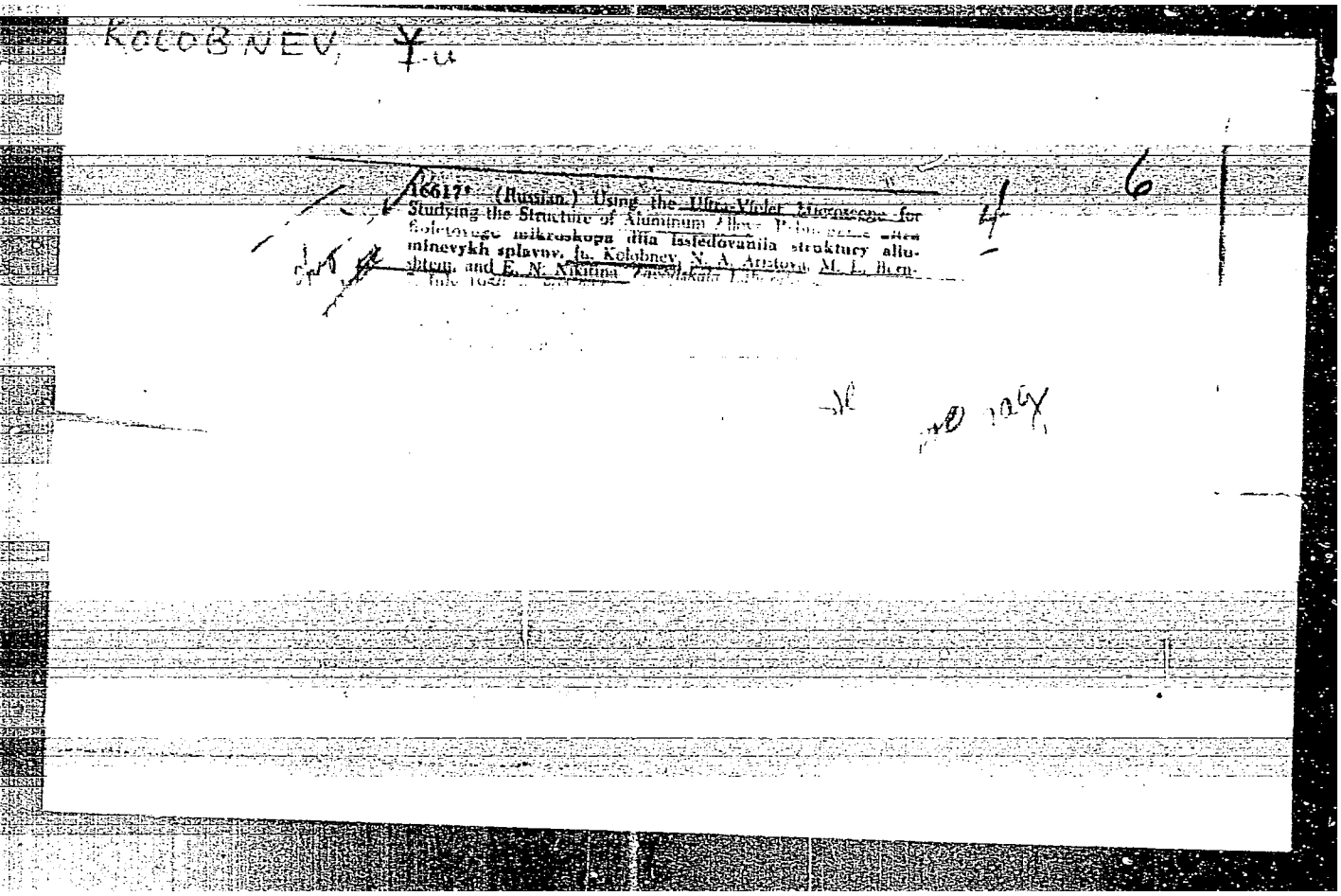
TITLE: SAP made from secondary aluminum

SOURCE: Alyuminiyevy*ye splavy*. Sbornik statey, no. 2. Spechenny*ye splavy*. Moscow, 1963, 28-30

TOPIC TAGS: powder metallurgy, sintered aluminum, aluminum powder, sintered aluminum powder, primary aluminum, secondary aluminum, SAP

ABSTRACT: Grade A0 and A00 primary aluminum is normally used for manufacturing grade APS aluminum powder. The problem of using aluminum powder made of grade ATsV secondary aluminum (1.1% Al_2O_3; 3.1% Si; 2.88% Cu; 1.56% Zn; 1.1% Fe; 0.01% Mn; 0.03% H_2O; the rest Al, with a specific gravity of 1.15) was solved by a series of tests investigating the mechanical properties and corrosion resistance of such blanks. These tests showed that at temperatures up to 350C, the ultimate strength of SAP from secondary aluminum containing 7% Al_2O_3 (45 kg/mm^2 at 20C and 15 kg/mm^2 at 300C) is higher than that of SAP from primary aluminum. The relative elongation (4% at 20C, 6% at 300C), on the other hand, was lower than that of SAP from primary aluminum at temperatures up to 100-120C and higher at

Card 1/2



KOLOBNEV, Yu

A6617* (Russian.) Using the Ultra-Violet Microscope for Studying the Structure of Aluminum Alloys. Primenenie ultrafioletovogo mikroskopa dlia issledovaniia struktury aliuminievykh splavov. Iu. Kolobnev, N. A. Anatova, M. L. Bernshtein, and E. N. Nikitina. Zavodskaia Laboratoriia, Vol. 16, [illegible]

KOLOBNEVA, L. I.

"The Effect of Thermal Cycling on Dimensional and Structural Stability of Various Metals and Alloys", by A. A. Bochvar, G. J. Sergeyev, A. A. Yulkova, L. I. Kolobneva, G. I. Tomson.

Report presented at 2nd UN Atoms-for-Peace Conference, Geneva, 9-13 Sept 1958

KOLOBNEVA, L. I.

21(4)

PHASE I BOOK EXPLOITATION SOV/2714

International Conference on the Peaceful Uses of Atomic Energy. 2nd, Geneva, 1958

Doklady sovetskikh uchenykh; yadernoye goryucheye i reaktornyye metally. (Reports of Soviet Scientists; Nuclear Fuel and Reactor Metals) Moscow, Atomizdat, 1959. 670 p. (Series: Its: Trudy, vol. 3) 8,000 copies printed.

Ed. (Title page): A.A. Bochvar, Academician, A.P. Vinogradov, Academician, V.S. Yemel'yanov, Corresponding Member, USSR Academy of Sciences, and A.P. Zefirov, Doctor of Technical Sciences; Ed. (Inside book): V.V. Pereversev and G.M. Pchelintseva; Tech. Ed.: E.I. Mazel'.

PURPOSE: This volume is intended for scientists, engineers, physicians, and biologists working in the production and peaceful application of atomic energy; for professors and students of schools of higher technical education where the subject is taught; and for people interested in atomic science and technology.

COVERAGE: This is volume 3 of a 6-volume set of reports on atomic energy, presented by Soviet scientists at the Second International Conference on the Peaceful Uses of Atomic Energy, held in Geneva from September 1 to 13, 1958. Volume 3 consists of two parts. The first part, edited by A.I. Zubov, is devoted to geology, prospecting, concentration and processing of nuclear source material. The second part, edited by G.L. Zverev, includes 27 reports on metallurgy, metallography, processing technology of nuclear fuels and reactor metals, and neutron irradiation effects on metals. The titles of the individual papers in most cases correspond word for word with those in the official English language edition on the Conference proceedings. See SOV/2081 for the titles of the other volumes of the set.

Budayev, I.V., and A.N. Vol'skiy. Investigating the Reactions of Uranium Dioxide and Plutonium Dioxide Chlorination by Carbon Tetrachloride (Report No. 2195)

Voronov, N.M., Ye.A. Voytekhova, and A.S. Danilin. Phase Diagrams for the UO_2 - ZrO_2 and the ThO_2 - ZrO_2 Systems (Report No. 2490) 305

Budnikov, P.P., S.G. Tresvyatskiy, and V.I. Kushakovskiy. Binary Phase Diagrams for UO_2 - Al_2O_3; UO_2 - BeO; and UO_2 -MgO (Report No. 2193) 315

Sergeyev, G.Ya., V.V. Titova, Z.P. Nikolayeva, A.M. Kaptel'tsev, and L.I. Kolobneva. The Influence of Fabrication Methods on the Structure and Properties of Uranium (Report No. 2307) 322

Ivanov, O.S., and T.A. Badayeva. Phase Diagrams of Certain Ternary Systems of Uranium and Thorium (Report No. 2043) 333

Card 6/11 347

Bochvar, A.A., G.Ya. Sergeyev, A.A. Kuznetsova, L.I. Kolobneva, and G.I. Tomson. Effect of Thermal Cycling and Cooling on the Dimensional and Structural Stability of Various Metals and Alloys (Report No. 2190) 354

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S/089/60/009/002/003/015
B006/B056

AUTHORS: Sergeyev, G. Ya., Titova, V. V., Kolobneva, L. I.

TITLE: Recrystallization of Cold-rolled Uranium

PERIODICAL: Atomnaya energiya, 1960, Vol. 9, No. 2, pp. 104-109

TEXT: The authors investigated the influence exerted by rolling and annealing in the α-phase upon the structure and the mechanical properties of uranium, and in the present paper, they give a report upon the results obtained. The raw material investigated consisted of 99.7% by weight of U, 0.02% by weight of C + Fe, Si, Ni, and N impurities. The uranium was rolled in the γ-phase (at 950-900°C, degree of deformation ~80%), after which it was slowly cooled and hardened from the β-phase (720-730°C); only then was the cast uranium cold-rolled. The change in the microstructure of the uranium is shown in the photos (Fig. 1). The cast uranium and that rolled in the γ-phase show a rough granulation (1.5 - 2.5 mm); after hardening from the β-phase, the grain size amounts to only 100 to 200μ. The fine-grained uranium has a considerably greater strength than the rough-grained initial material. Figs. 3 and 4 show the changes in

Card 1/3

Recrystallization of Cold-rolled Uranium

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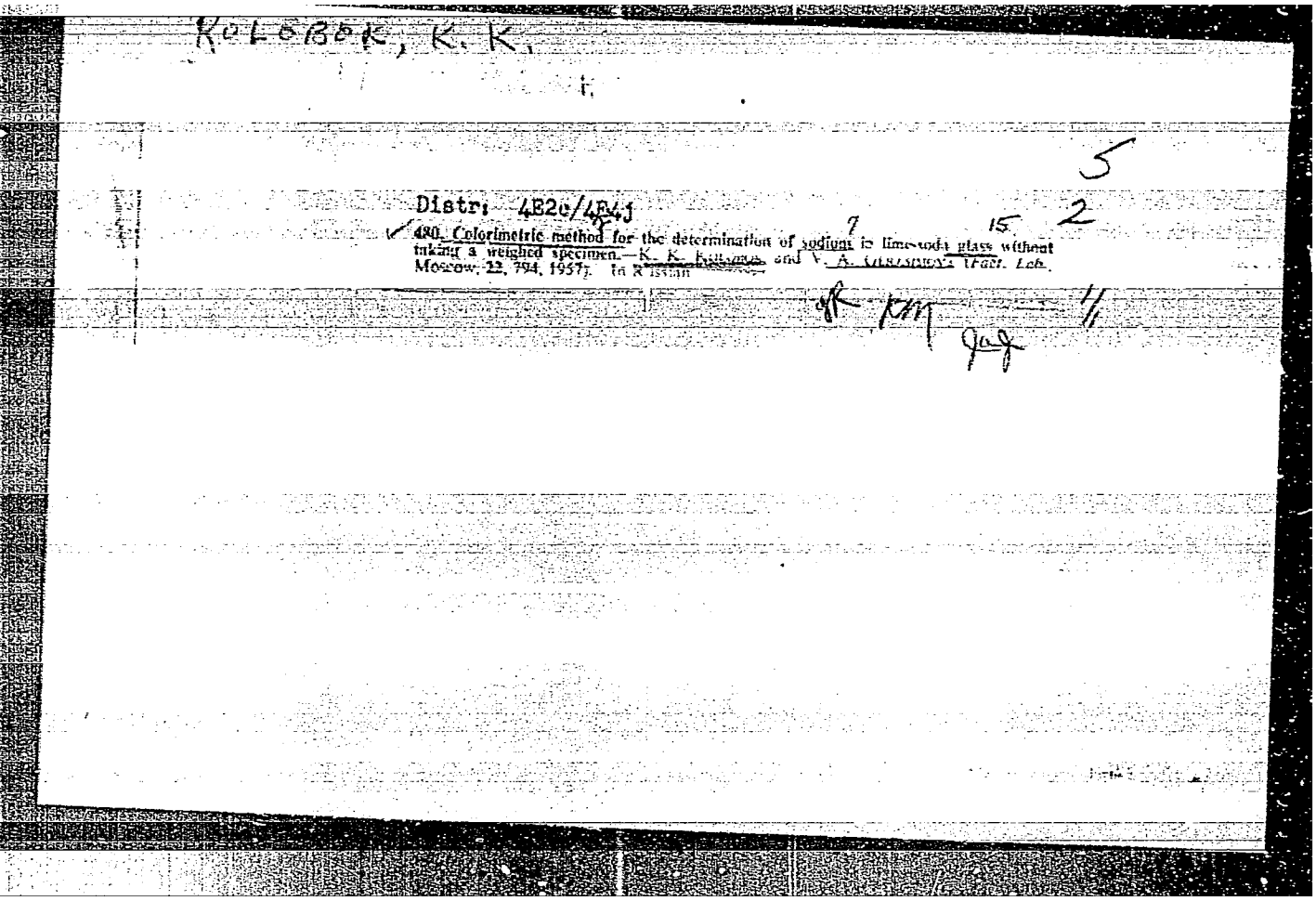
the mechanical properties of the rolled uranium as functions of the degree of deformation. In the case of a deformation by 40 - 50%, hardness increases by 35%, and the limit of strength by 75%; the relative linear expansion remains practically constant. In the following, the authors discuss the influence exerted by annealing in the α-phase upon the structure and mechanical properties of the cold-rolled uranium. Microphotographs show the changes in microstructure in the case of 10 hours' annealing in the α-phase at different temperatures as dependent on the degree of deformation. Recrystallization annealing reduces the strength characteristics, but at all degrees of deformation the values are still higher than those of the initial substance. It is found that recrystallization practically does not depend on the initial states investigated. Some data are given on the kinetics of recrystallization, and are discussed. Fig. 6 shows approximated diagrams of recrystallization for three initial states, and Fig. 7 shows the kinetic curves of the change in grain size. The influence exerted by an addition of 0,1% by weight of molybdenum upon the recrystallization process is finally discussed. The diagram in Fig. 7b shows the grain sizes for such a material as a function of the duration of annealing. The change in microstructure is shown in Fig. 8. Fig. 9 shows the results obtained by hardness

Card 2/3

4

Card 3/3



Kolobok, K. K.

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Distr: 4E2c/4E4j

490. Colorimetric method for the determination of sodium in lime-soda glass without taking a weighed specimen.—K. K. Kolobok and V. A. Gerasimov (Gen. Lab. Moscow, 22, 794, 1957). In Russian

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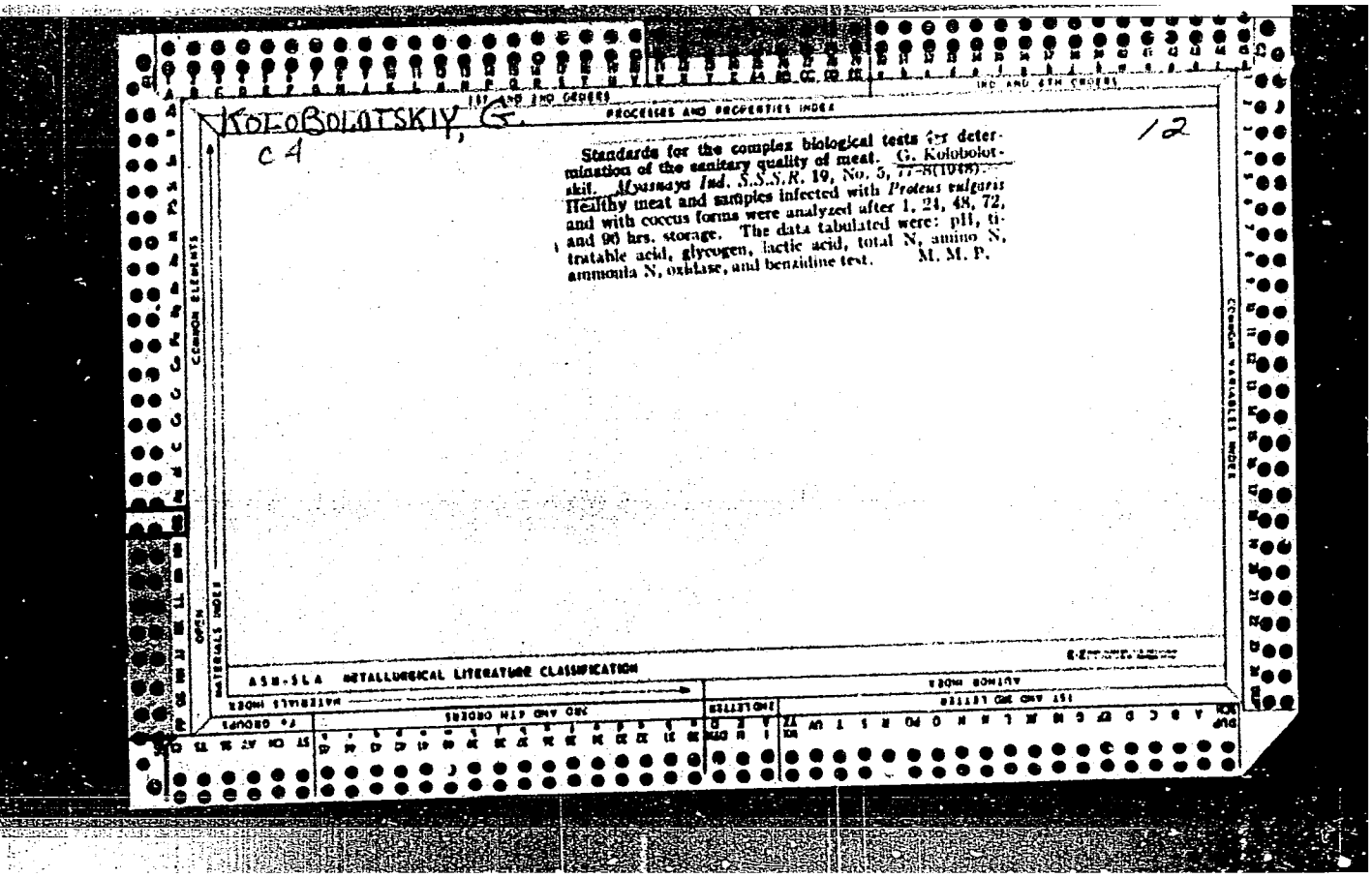
TITKOV, V.A.; KOLOBOLOTSKAYA, T.A.

Problem of the connection between the structure of anthraquinone vat dyes and their photoactivity. Zhur. prikl. khim. 36 no.4: 843-856 Ap '63. (MIRA 16:7)

1. Nauchno-issledovatel'skiy institut organicheskikh poluproduktov i krasiteley.

(Anthraquinones) (Photochemistry)


KOLOBOLOTSKIY, G.
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12
PROCESSES AND PROPERTIES INDEX
Standards for the complex biological tests for determination of the sanitary quality of meat. G. Kolobolotskii. *Myasnaya Ind. S.S.S.R.* 19, No. 5, 77–8(1948).
Healthy meat and samples infected with *Proteus vulgaris* and with coccus forms were analyzed after 1, 24, 48, 72, and 96 hrs. storage. The data tabulated were: pH, titratable acid, glycogen, lactic acid, total N, amino N, ammonia N, oxidase, and benzidine test. M. M. P.
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

KOLOBOLOTSKIY, G.

Kolobolotskiy, G. "Potentiometric methods of meat analysis", Myas. industriya, 1949, No. 1, p. 88-91.

SO: U-3042, 11 March 53, (Letopis (nykh Statey, No. 10, 1949).