

#

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KAMARDINKIN, N.P.; SHUVAYEV, A.S.; PALKIN, V.I.; NERKOVA, A.S.; TARABAN'KO,
P.I.; KHOLMSKIY, R.V.; GNIPP, L.V.; DOBASHIN, G.S.; FLEROVA, L.I.;
MAKSIMOV, N.M.; RAFIYENKO, I.I.; PAL'NOV, I.I.; UVAROV, I.M.;
DUBROVIN, P.Ye.; LIKHACHEVA, O.A.; UVAROVA, I.I.

Conference of the Teaching Staff and Students of the Moscow
Geological Prospecting Institute. Izv. vys. ucheb. zav.; geol.
i razv. 6 no.12:143-148 D '63 (NIRA 18:2)

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PROCESSING AND PROPERTIES INDEX

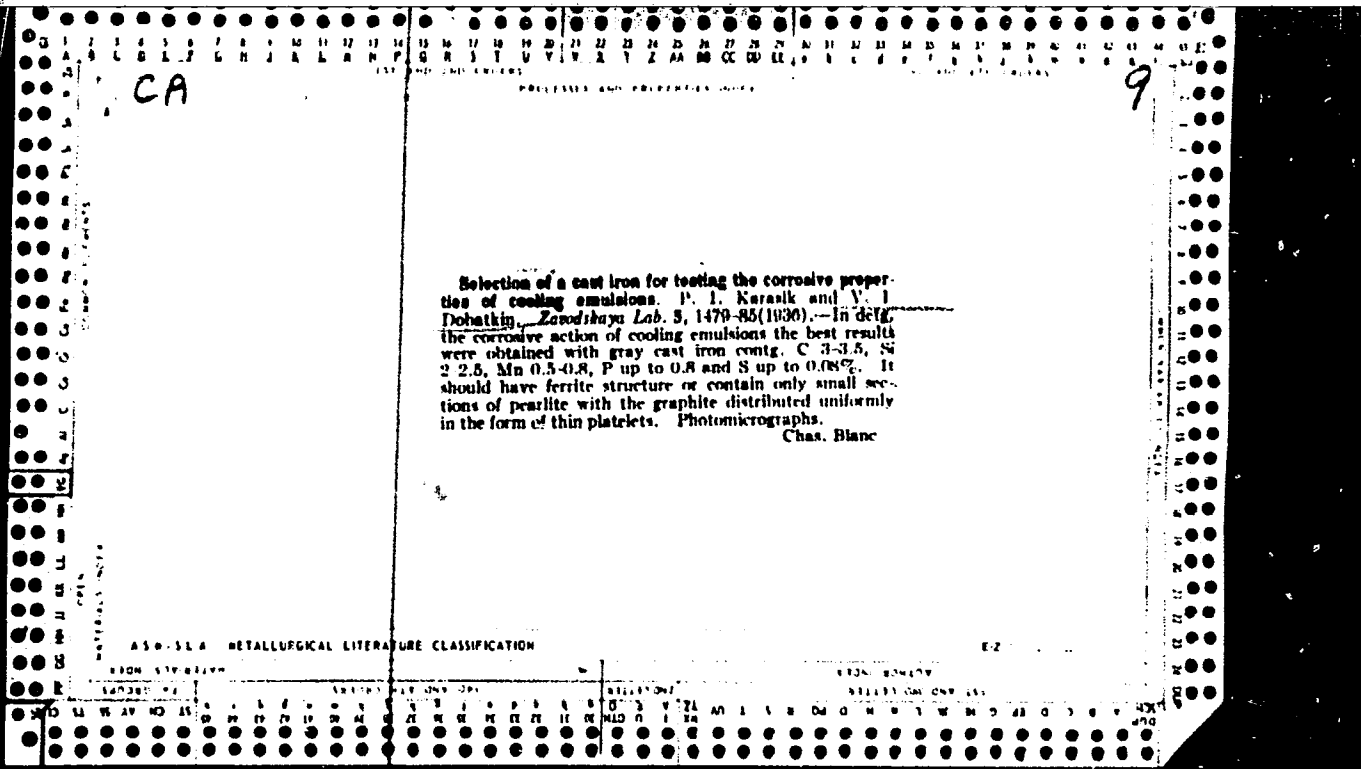
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BC

Analysis of (steel-cooling emulsions. P. 1.
 KARASIK and V. I. BONDARENKO (Zavod. Lab., 1980,
 S. 888-871).—25 ml. of emulsion, containing soap,
 NaOH, NaHCO₃, and Na₂CO₃, are titrated (Me-
 orange) with 0.1N-HCl (total alkalinity). 10 ml. of
 0.1N-NaOH and 20 ml. of 50% NaCl are added to
 25 ml. of emulsion, and the mixture is titrated
 (phenolphthalein). 10 ml. of 0.1N-NaOH and 10 ml.
 of 10% NaCl are added to 25 ml. of emulsion, and
 the mixture is titrated (phenolphthalein). Formulas
 connecting the results of the three titrations with the
 contents of fatty acids, NaHCO₃, Na₂CO₃, and NaOH
 are given for neutral, alkaline, and acid emulsions.
 H. T.

A.S.M.E. METALLURGICAL LITERATURE CLASSIFICATION

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



PROCESSING AND PROPERTIES INDEX

1ST AND 2ND ORDERS 3RD AND 4TH ORDERS

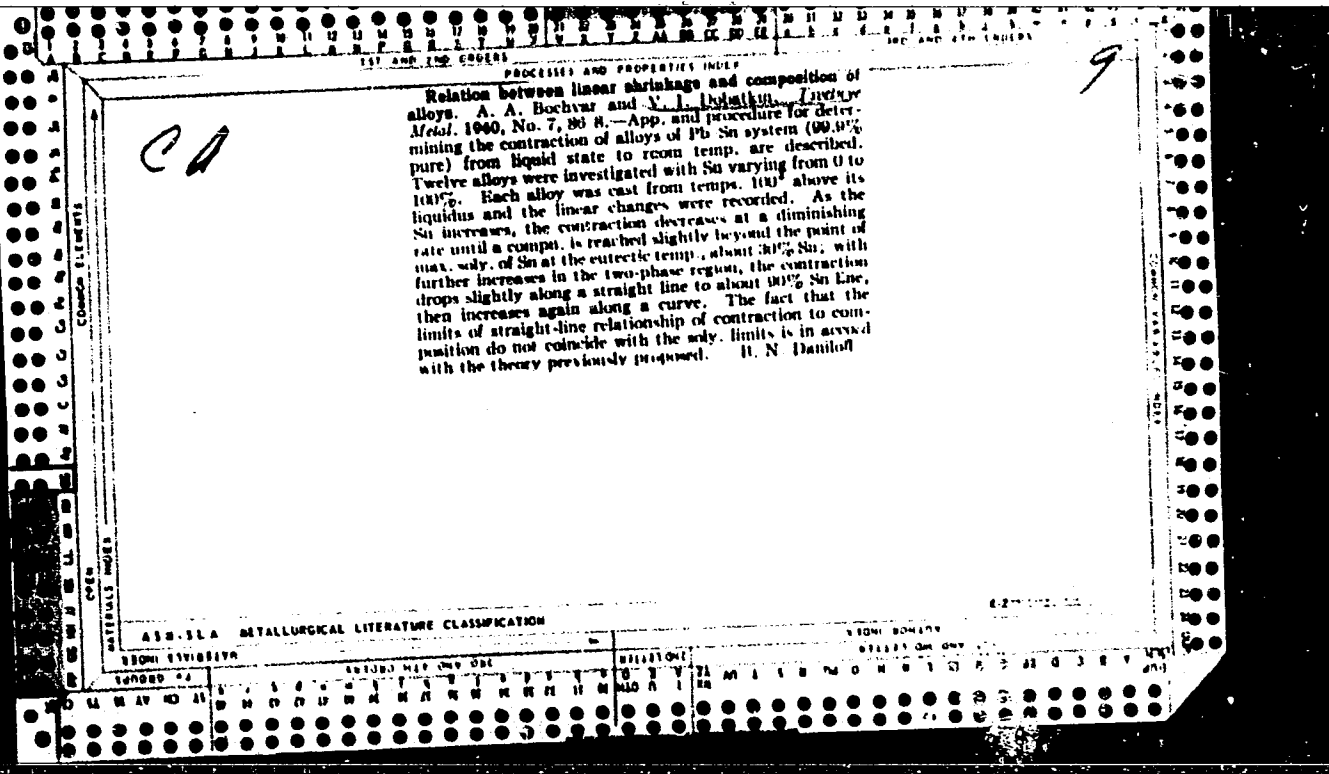
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The use of cooling emulsions for certain types of lathes.
 V. I. Dobatkin. *Vestnik Metalloprom.* 18, No. 10, 46-50 (1938); *Chem. Zentr.* 1939, I, 3448.—The most satisfactory preps. for this purpose are a mixt. of 3-3.5% of the Russian "Osovolichim" (oleic acid content 13-14%) with 0.3% Na_2CO_3 and a mixt. of 3% Russian "Neftebyt" (oleic acid content 16-17) with 0.2% Na_2CO_3 and 0.3% Fe vitriol. The soap, carbonate and bicarbonate contents of the first mixt. should be 0.45-0.5%, 0.15-0.18% and 0.1-0.12%. When the soap content of the emulsion is high, its concn. can be reduced to 2.5%. In operation and with continuous addn. of the cooling emulsion an increase in concn. to double its original value is observed. The formation of basic soaps takes place more rapidly than during storage, while the aggressive properties of the mixt. simultaneously decrease.
 W. A. Moore

ASS. S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS 3RD AND 4TH ORDERS



PROCESS AND PROPERTIES INDEX

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M

***On the Structure and Properties of Commercial Aluminium Alloys of High Iron and Manganese Content.** S. M. Voronov and V. I. Dobatk'in (*Tsvet. Metall.*, 1968, (8), 63-67).—[In Russian]. Ternary aluminium-iron-manganese solid solutions in slowly cooled commercial aluminium alloys tend to give rise to brittle crystals. Primary crystals of an iron-manganese phase begin to appear in alloys containing 0.7% manganese and 0.8% iron. The brittle particles of this phase decrease the plasticity of the alloy in hot working under pressure, and reduce the static and dynamic mechanical properties. With a high iron content (0.6-0.8%) in the alloy "D6" (copper 4.8-5.2, magnesium 0.75-1.0, manganese 0.8-1.2, silicon 0.7%), the manganese content should be close to the lower limit.—N. A.

METALLURGICAL LITERATURE CLASSIFICATION

T

MATERIALS INDEX

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Distr: 424j

Intermetallic compounds in ingots. V. I. Dobatkin.
Obshchaya Teoriya Metal' i Splovy (Moscow: Gosudarst.
Izdat. Lit. in Met. 1953 52-9. Referat Zhur. Khim.

The coarse sepn. of IC is the cause of lowering the mech. properties of manufd. parts. The formation of coarse IC is aided by the Si contained in the alloys. In the alloys type I, II, and III, the compd. (Al₃Fe₂Ni) appears which starts to sep. at 653°. The elimination of coarse IC is prevented by limiting the lowest cast temp. to 600-620° for I and II and 650-670° for III. The elimination of coarse IC is prevented by limiting the lowest cast temp. to 600-620° for I and II and 650-670° for III. The elimination of coarse IC is prevented by limiting the lowest cast temp. to 600-620° for I and II and 650-670° for III.

DOBATKIE, V.I., kandidat tekhnicheskikh nauk; KRUPENINA, K.B.; SEMENOVA, A.I.

Properties of pressed D16 aluminum alloy shapes depending on heat treatment conditions. Trudy MATI no.23:86-101 '54. (MIRA 8:11)
(Aluminum alloys) (Metals--Heat treatment)

DOBATKIN, V.I. kandidat tekhnicheskikh nauk; SHALAYEV, N.N.

Localized recrystallization in die-stamped parts made of AB aluminum alloy. Trudy MATI no.23:102-112 '54. (MIRA 8:11)
(Aluminum alloys--Metallography) (Sheet--Metal work)

DOBATKIN, V. I.

Determination of the contamination of aluminum alloys with oxide films. V. I. Dobatkin and V. K. Zinov'ev. *Zashchita* Lab. 21, 1961, 111-112. The existence of oxide films on Al alloys is a quality indication of ingots and articles. The films are best observed in the rupture film, when the rupture plane coincides with the film location plane. A block is cut on the ingot perpendicular to its axis; a cylinder machined from it, heat-treated, broken parallel to the butt; and the appearance of the fracture compared visually with a standard. W. M. S.

of 9m

Name: DOBATKIN, Vladimir Ivanovich

Dissertation: Structure of ingots of deformed
aluminum alloys and its effect upon
the properties of articles

Degree: Doc Tech Sci

Affiliation: [not indicated]

Defense Date, Place: 21 May 56, Council of Moscow Inst of
Non-Ferrous Metals and Gold imeni Kali-
nin

Certification Date: 6 Jul 57

Source: BMVO 18/57

Dobatkin, V.I.

137-1958-2-2685

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 2, p 70 (USSR)

AUTHORS: Dobatkin, V.I., Abramovich, M.D.

TITLE: Cracking in Ingots of Industrial Aluminum (Treshchiny v slitkakh tekhnicheskogo alyuminiya)

PERIODICAL: V sb.: Metallurg. osnovy lit'ya legkikh splavov. Moscow, Oborongiz, 1957, pp 164-181

ABSTRACT: A description and analysis are given of observations made of ingot behavior during rolling; results are included of a metallographic quality control maintained by spot checking ingot batches and of several tests conducted under industrial conditions. It was found that incipient breaks on the surface of a strip, which are encountered in the hot rolling of industrial Al, result from the development of fine hair-like cracks along the boundaries of the grains in the ingot. It was established that the basic causes of these cracks are: a) a high Si content in the Al as compared with the Fe content; b) a coarse-grained ingot structure; c) high gas saturation of the Al. The following recommendations are made for effective elimination of cracks in industrial-aluminum ingots:

Card 1/2 a) that the composition of the Al be so regulated that the Fe content

137-1958-2-2685

Cracking in Ingots of Industrial Aluminum

shall exceed the Si content by 0.02 - 0.05 percent; b) that the maximum temperature of the melt in the process of preparation be limited to 730°; c) that the melt be refined with a flux containing 15 percent cryolite; d) that unevenness in ingot cooling be eliminated.

G.S.

1. ~~Aluminum~~ ingots--Fracture

Card 2/2

137-58-4-6875

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 79 (USSR)

AUTHOR: Dobatkin, V. I.

TITLE: Effect of Grain Size on Appearance of Hot Cracks in Aluminum Alloy Ingots (Vliyaniye velichiny zerna na vozniknoveniye gor-yachikh treshchin v slitkakh alyuminiyevykh splavov)

PERIODICAL: V sb.: Metallurg. osnovy lit'ya legkikh splavov. Moscow, Oborongiz, 1957, pp 182-187

ABSTRACT: The appearance of cracks in ingots of technical Al produced by continuous casting, and also in the alloys AMts, DI, and AV is explained by increase in grain size and formation of a coarse granular columnar structure of the metal. The reason for this is fluctuation in Ti content, Ti being an uncontrollable impurity. Intentional addition of 0.02% Ti in continuous production of Al alloys made it possible to assure dependable reduction in grain size and significant diminution of rejects due to cracks. In some alloys, the addition of Ti was increased to 0.04-0.05%.

Ye. Z.

Card 1/1

1. Aluminum alloys--Casting
2. Aluminum alloys--Structural analysis
3. Aluminum alloys--Fracture

DOBATKIN, V.I

137-58-3-6056

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 3, p 231 (USSR)

AUTHORS: Dobatkin, V. I., Zinov'yev, V. K.

TITLE: Inspection of the Structure of Breaks in Ingots Made of Alloys AK4 and AK4-1 (Kontrol' struktury izloma slitkov splavov AK4 i AK4-1)

PERIODICAL: V sb.: Metallurg. osnovy lit'ya legkikh splavov. Moscow, Oborongiz, 1957, pp 229-235

ABSTRACT: Fracture tests may be employed for the evaluation of any schistosity and detection of large crystals of intermetallic compounds in ingots produced by means of continuous casting. The present work is devoted to the selection of standard specimens to be employed in the evaluation of the structure of the break in ingots made of Al alloys AK4 and AK4-1. Specimens representative of every mark on the scale differed from each other by the presence and the amount of acicular intermetallic compounds and by the degree of crushing apparent in the structure of the break. No sharp difference in the content of alloying elements and controlled additives was revealed by chemical analysis of ingots representing various scale marks. Strength

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137-58-3-6056

Inspection of the Structure of Breaks in Ingots Made of Alloys AK4 and AK4-1

and plasticity of alloys increases with increasing grade values of the structure, whereas the σ_s changes relatively little. Differences in properties are considerably reduced after deformation of the ingot, and only in regions where a major amount of intermetallic compounds have accumulated can a sharp reduction in properties be observed. It is shown that the quality of the raw material employed affects the size and number of primary crystals of intermetallic compounds in the ingots. The employment of lower grades of Al enhances the formation of intermetallic compounds. In order to evaluate the quality of an entire smelting, it is sufficient to subject two or three ingots of the total run to fracture tests. The method of evaluation of the structure of breaks proposed here permits a determination of the limits within which a smelting batch may be employed in the manufacture of critical components and has proved to be an effective inspection method.

E. K.

Card 2/2

DOBATKIN, V.I.

18(4); 18(7)

PHASE I BOOK EXPLOITATION

SOV/1326

Moscow. Aviatsionnyy tekhnologicheskii institut

O strukture i svoystvakh pressovannykh i shtampovannykh izdeliy iz al'yuminiyevykh splavov (The Structure and Properties of Extruded and Die-forged Products Made of Aluminum Alloys), Moscow, Oborongiz, 1958. 246 p. (Series: Its: Trudy, vyp. 34) 3,700 copies printed.

Ed.: Voronov, S.M., Doctor of Technical Sciences, Professor; Ed. of Publishing House: Shekhtman, E.A.; Tech. Ed.: Pukhlikova, N.A.; Managing Ed.: Zaymovskaya, A.S., Engineer.

PURPOSE: This book is intended for scientific personnel at research institutes and production engineers at metallurgical plants manufacturing intermediate products from aluminum alloys.

COVERAGE: The book deals with certain special structural characteristics of extruded and die-forged aluminum-alloy products. Data are given on the macro-, micro-, and x-ray analysis of these products. On the

Card 1/5

The Structure and Properties (Cont.)

SOV/1326

basis of an analysis of the relationship between the structure and properties of extruded alloys, explanations are given for the development of the so-called extrusion effect and flaky fracture. (The extrusion effect is defined as "the increased strength [in a longitudinal direction] and decreased plasticity of extruded products in comparison with products obtained by other forms of plastic deformation".) Technological recommendations are given for obtaining extruded and die-forged aluminum-alloy products with good mechanical properties. The first of the two studies in this book is concerned with the extrusion effect and presents what is described as a new theory of the nature of this phenomenon, differing from views expressed previously in the Soviet and non-Soviet literature. It is stated that this new theory makes it possible to explain a number of phenomena commonly observed in aluminum-alloy intermediate products, such as coarse-grained structure of flat products (AMTs alloy), lowered strength characteristics of D16 alloy sheets produced from homogenized ingots, etc. The second study is an

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The Structure and Properties (Cont.)

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an investigation of the nature of the flaky type of fracture observed in various aluminum-alloy products. Results of this work, it is said, make it possible to explain the cause of this kind of fracture, to establish the relationship between alloy composition, structure, and strength characteristics, and to recommend measures to eliminate flakiness.

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Voronov, S.M., Doctor of Technical Sciences, Professor (Deceased); and V.I. Yelagin, Candidate of Technical Sciences. Investigation of the Extrusion Effect in Aluminum Alloys

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Introduction

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AVAILABLE: Library of Congress

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DOBATKIN, V. I.

"Isothermal Quenching of Aluminum Alloys"

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. A.U. Conf on Light Alloys 1955)

DOBATKIN, V. I.

"Peculiarities of the Recrystallization of Aluminum Alloys"

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 A.U. Conf on Light Alloys 1955)

SOV/137-58-12-25170

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 12, p 162 (USSR)

AUTHOR: Dobatkin, V. I.

TITLE: Special Features of Recrystallization of Aluminum Alloys (Osobennosti rekristallizatsii alyuminiyevykh splavov)

PERIODICAL: V sb.: Legkiye splavy. Nr 1. Moscow, 1958, pp 200-221

ABSTRACT: The author examines the causes of the rise of recrystallization temperature (t_r) in extruded Al-alloy articles, the nature of the press effect and the causes of formation, in separate cases, of a large-grain recrystallization (R) structure at a high degree of deformation (D). The increase in t_r is explained by a removal of distortions during the hot extrusion of the alloys and by a decrease in the self-diffusion coefficient of the alloy upon subjection to omnilateral reduction (owing to the decrease in the number of dislocations and vacancies and to the presence of Mn in the solid solution). As the result of an analysis of the structure and strength of alloys after extrusion under various conditions it is shown that the press effect is related to the appearance of very fine-grained structure. Formation of a coarse-grained

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SOV /137-58-12-25170

Special Features of Recrystallization of Aluminum Alloys

structure is explained by the intercrystalline liquation of Mn. Methods are proposed for avoiding the latter phenomenon by homogenizing the alloys at high temperatures or adding Fe and Ti to them.

A. B.

Card 2/2

SOV/137-58-10-21264

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 117 (USSR)

AUTHOR: Dobatkin, V. I.

TITLE: Multistage Quenching of Aluminum Alloys (Stupenchataya zakalka alyuminiyevykh splavov)

PERIODICAL: V sb.: Legkiye splavy. Nr 1. Moscow, 1958, pp 249-259

ABSTRACT: To determine the systems for the isothermal and multistage quenching of AK4-1 and AK6 alloys, measurements were made of σ_b and δ of 12x12x100-mm specimens heated up to 540°C for 1 hour (for AK4-1) and up to 515° for 40 min (for AK6) and cooled according to two methods: 1) Immersion into the quenching medium and soaking in it for 5 hours, followed by immersion in water; 2) multistage cooling, first in cooling media with various temperatures for 2 min, then in cold water followed by artificial aging according to standard practices. The following materials were used as cooling media: Up to 100°, water; at 100 - 150°, oil; above 150°, a molten mixture of 45% NaNO₂ and 55% KNO₃. It is determined that a great deterioration in mechanical properties occurs upon soaking at 250° - 450°. To prevent decomposition of the solid solution

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Multistage Quenching of Aluminum Alloys

it is necessary that the cooling in the 450 - 250° interval do not exceed 1 min and that the total cooling time from the quenching temperature down to 200° do not exceed 1.5 - 2 min. Under shop conditions, curves were obtained for the cooling of drop-forged articles of the AK4-1 alloy weighing 150 kg when quenched in water and in a molten mixture of 45% NaNO₂ and 55% KNO₃ heated to 180°. In the second case the rate of cooling in the 535 - 250° interval amounted to 0.7 degree/sec, while the decrease in σ_b was 3 - 5 kg/mm² and of σ_s up to 8 kg/mm² (as compared to quenching in water when the rate of cooling amounted to 10 degrees/sec). To increase the cooling rate in the serial quenching of drop-forged articles the following conditions are recommended: 1) Employment of multistage cooling with an initial immersion in the salt melt at 160 - 180°, soaking therein for 2 min, and subsequent immersion in water; 2) a 1:20 ratio of the weight of the article to the weight of the molten salts; 3) forced stirring of the cooling medium. Under these conditions the decrease of σ_b and σ_s is guaranteed to be not greater than by 2 - 3 kg/mm².

1. Aluminum alloys--Heat treatment

N. S.

Card 2/2

VORONOV, S.M., doktor tekhn.nauk, prof. [deceased]; DOBATKIN, V.I., doktor
tekhn.nauk

Foliated structure of fractures in aluminum alloys. Trudy MATI
no.34:158-247 '58. (MIRA 11:8)
(Aluminum alloys--Metallography)

D. BATKIN, V. I.

18(7) PHASE I BOOK EXPLOITATION 80Y/3355
Akademiya nauk SSSR. Institut metallurgii. Nauchnyy sekret po
probleme zharoprochnykh splavov
Issledovaniya po zharoprochnym splavam, t. IV (Studies on Heat-Resistant Alloys, vol. 4), Moscow, Izd-vo AN SSSR, 1959. 300 p. Errata slip inserted. 2,200 copies printed.

Ed. of Publishing House: V. A. Klimov; Tech. Ed.: A. F. Guseva; Editorial Board: I. P. Barin, Academician; G. V. Kurdjumov, Academician; M. V. Aseyev, Corresponding Member, USSR Academy of Sciences; I. A. Odintsov, E. M. Zolotarev, and I. P. Zudin, Candidate of Technical Sciences.

PURPOSE: This book is intended for metallurgists concerned with the structural metallurgy of alloys.

COVERAGE: This is a collection of specialized studies of various problems in the structural metallurgy of heat-resistant alloys. Some are concerned with theoretical principles, some with design and treatment and methods, others with properties of specific materials. Various methods of forming heat-resistant alloys under specified conditions are studied and reported on. For details, see Table of Contents in the back of the book. For details, see Table of Contents in the back of the book. For details, see Table of references, both Soviet and non-Soviet.

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PHASE I BOOK EXPLOITATION SOV/4435

Dobatkin, Vladimir Ivanovich, Doctor of Technical Sciences

Slitki alyuminiyevykh splavov (Aluminum Alloy Ingots)
Sverdlovsk, Metallurgizdat, Sverdlovskoye otd-niye,
1960. 175 p. Errata slip inserted. 3,150 copies
printed.

Reviewer: B. M. Ksenofontov; Ed.: L. F. Spoludenny;
Ed. of Publishing House: M. M. Syrchina; Tech. Ed.:
Ye. D. Turkina.

PURPOSE: This book is intended for technical personnel of
factories and institutes. It can also be used as a
textbook by students at schools for higher education
specializing in founding and the physical metallurgy
of nonferrous alloys.

COVERAGE: The book presents the author's investigations
on crystallization and the structure of aluminum alloy
ingots. The author discusses current methods of teeming

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Aluminum Alloy Ingots

SOV/4435

aluminum alloy ingots. He examines regular occurrences in crystallization and describes the structure of ingots obtained under industrial conditions. Experience gained in continuous casting of aluminum alloy ingots is given and the results of original research in the field are included. The theory of primary crystallization of aluminum alloys is developed and typical varieties of ingot structures are presented. The author makes recommendations for raising the quality of ingots on the basis of experimental research and consideration of the nature of cracks, partial liquation of inter-metallic compounds, zonal segregation, oxide films and other defects. The author thanks V. K. Zinov'yev, V. I. Kulakov, A. V. Polyanskiy, R. M. Sizova, L. F. Spoludenny, and I. L. Teytel' for help in organizing and conducting the research and investigations, and B. M. Ksenofontov for reviewing the manuscripts. There are 98 references: 77 Soviet, 17 English, and 4 German.

~~Card 2/6~~

DOBATKIN, Vladimir Ivanovich, doktor tekhn.nauk; KSENOFONTOV, B.M.,
retsensent; SPOLJDENNYY, L.F., red.; SYRCHINA, M.M., red.
izd-va; TURKINA, Ye.D., tekhn.red.

[Aluminum alloy ingots] Slitki aluminievyykh splavov. Sverdlovsk,
Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii,
Sverdlovskoe otd-nie, 1960. 175 p. (MIRA 13:8)
(Aluminum alloys) (Nonferrous ingots)

FRIDLYANDER, Iosif Naumovich, doktor tekhn.nauk; DOBATEKIN, V.I., doktor tekhn.nauk, retsenzent; ZILOVA, T.K., kand.tekhn.nauk, red.; SUVOROVA, I.A., isdat.red.; ORESHKINA, V.I., tekhn.red.

[High-strength deformable aluminum alloys] Vysokoprochnys deformatsionnyye aluminievye splavy. Moskva, Gos.nauchno-tekhn.isd-vo, 1960. 290 p. (MIRA 13:5)

(Aluminum alloys)

11500A

24486
S/128/60/000/010/014/016/XX
A033/A133

AUTHORS: Dobatkin, V. I., and Simakovskiy, B. I.

TITLE: Investigating the crystallization of aluminum with the aid of radioactive isotopes during continuous casting

PERIODICAL: Liteynoye proizvodstvo, no. 10, 1960, 34 - 36

TEXT: The authors point out that the motion of the liquid melt during the crystallization process affects to a considerable degree the formation of the casting structure. It was attempted to prove the nature of these motions on the basis of the theory of thermodynamics [Ref. 1: G. P. Ivantsov. Teploobmen mezhdru slitkom i izlozhnitszey (Heat exchange between ingot and ingot mold), Metallurgizdat, 1951], but experimental investigations have never been carried out hitherto. In the tests described the aluminum master alloy contained 1% of the radioactive Ca⁴⁵ isotope, i.e. approximately 0.7 millicurie per 1kg of melt in the pipe hole. The ingots were radiographed with the aid of an XX grade X-ray film exposed some 20 - 25 days. The ingots 280 mm in diameter of commercial aluminum (0.10% Fe; 0.12% Si; 0.006% Cu) were cast in a crystallizer 180 mm high. Asbestos-

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Investigating the crystallization of...

S/128/60/000/010/014/016/XX
A033/A133

lined casting funnels were used for the casting. The aluminum tapping temperature was 700°C, the hole 210 - 220 mm deep. The authors describe the obtained radiographs of transverse and longitudinal templets cut from the ingot, and point out that, with the aid of radioactive isotopes, in contrast to all other methods, not only the shape of the holes but also the peculiarities concerning their geometry can be disclosed. It was possible to conclude on the cyclic motion of the ingot in the crystallizer and on the formation of a forced allowance between ingot and crystallizer. It is emphasized that, in order to prevent ruptures, beading and cracks, it is necessary to reduce the crystallizer height. It is also recommended to avoid any horizontal displacement of the ingot during the casting process, which would cause the formation of a forced allowance. Some structural non-homogeneities of the ingot can be fully exposed on the macro-radiogram, including isolated dendrites originating on the open ingot surface. The authors present a number of radiograms showing the various crystallization zones of alternating intensity, the formation of tapered and non-tapered peripheral casting skins, isolated dendrite inclusions, etc., which prove the applicability of the method of radiography to investigate the mechanics

Card 2/3

Investigation the crystallization of...

²⁴⁴⁸⁶
S/128/60/000/010/014/016/XX
A033/A133

of hot crack formation. There are 9 figures and 2 references: 1 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: G. L. Putman. "J. Inst. of Metals", no. 8 (82), 1953 - 54.

Card 3/3

X

FRIDL'YANDER, I.N., doktor tekhn. nauk, red.; DOB'ATKIN, V.I., doktor tekhn. nauk, red.; ZAKHAROV, Ye.D., kand. tekhn. nauk, red.; BAZHENOV, M.F., inzh., retsenzent; MAKOVSKIY, G.M., inzh., red.; VINOGRADSKAYA, S.I., red. izd-va; GARNUKHINA, L.A., tekhn. red.

[Malleable aluminum alloys] Deformiruemye aliuminievye splavy; sbornik statei. Moskva, Gos. nauchno-tekhn. izd-vo Oborongiz, 1961. 234 p. (MIRA 15:1)

(Aluminum alloys)

S/689/61/000/000/013/030
D205/D303

AUTHOR: Dobatkin, V.I.

TITLE: Mechanical properties of pressed articles in transverse sections

SOURCE: Fridlyander, N.I., V.I. Dobatkin, and Ye.D. Zakharov, eds. Deformiruyemyye alyuminiyevyye splavy; sbornik statey, Moscow, 1961, 104 - 112

TEXT: It is often assumed that every force acting in a transverse section is cutting across the fibers. Actually only those forces -which are directed across the thickness of the wall of the profile cut the fibers. Therefore, the mechanical properties are higher in the direction of the longer axis of the transverse section. The concept of fibers is only conventional. In a general case, after deformation an ellipsoid will be formed from the cast grain. The mechanical properties in the 3 main directions will be determined by the axis of ratios of the ellipsoid; they will be highest in the direction of the longest axis and lowest in the direction of the shortest

Card 1/3

Mechanical properties of pressed ...

S/689/61/000/000/013/030
D205/D303

one. The fiber direction coincides with the longest axis of the deformation ellipsoids, this being the longitudinal section. A new parameter is introduced which enables estimation of the mechanical properties from the dimensions of the rolled strips. This is called the 'conventional' drawing coefficient K_w , given by $K_w = \sqrt{b/h}$, where b is the width and h the thickness of the strip. Grain of the strip will not be deformed in the direction of the width, but an orientation will appear which is assessed by this coefficient. Assuming that the influence of the press-effect on the strength of the pressed product depends mainly on the orientation of grains and subgrains, it can be said that in the direction of the width such strength will be attained which corresponds to that attained in the longitudinal direction at K_w calculated for this cross-section. On this basis it was deduced that for D1 and D16, half of the strength gain induced by rolling is attained at $b/h = 6.2$, three quarters at $b/h = 25$ ($K_w = 2.5$ and 5 respectively). The strength gains during the rolling of strips of AK4-1 (AK4-1) were measured in various directions, show-
Card 2/3

Mechanical properties of pressed ...

S/689/61/000/000/013/050
D205/D303

ing that in this case the main differences appear in the relative elongation values. Applicability of $K_w = \sqrt{b/h}$ was checked on further examples and was found to be sufficiently reliable. There are 3 figures, 3 tables, and 2 Soviet-bloc references.

✓

Card 3/3

S/689/61/000/000/025/030
D205/D303

AUTHOR: Dobatkin, V.I.

TITLE: Influence of cooling and heating of the open surface on structure of the ingot

SOURCE: Fridlyander, I.M., V.I. Dobatkin, and Ye.D. Zakharov, eds. Deformiruyemye alyuminiyevyye splavy; sbornik statey. Moscow, 1961, 174 - 180

TEXT: During the continuous casting of alloys the upper surface remains uncovered up to the termination of the liquid metal feeding. The character of cooling, whether through covered or uncovered surfaces, while not affecting the rate of crystallization considerably influences the nucleation of crystals, grain-size, density, structure homogeneity and properties of the casting. The author gives some examples of the influence of the heat-removal through the uncovered surface on the structure of the ingot and discusses the expediency of using a protective cover of the open surface during continuous cast-

Card 1/2

Influence of cooling and heating of ...

S/689/61/000/000/023/030
D205/005

ing under industrial conditions. Cooling of the uncovered surface leads to the formation and growth of dendrites on the surface, finer grain, development of volume crystallization and an increase in the micro-inhomogeneity of the structure. Heating of the uncovered surface can suppress the volume crystallization and can also lead to denser ingots. It is recommended designing a special heating arrangement from above for the continuous casting of large pieces of high-strength aluminum alloys. There are 5 figures, 1 table and 5 references: 4 Soviet-bloc and 1 non-Soviet-bloc.

Card 2/2

18 7500

1555, 1454, 4016

21120
S/149/61/000/003/003/004
A006/A106

AUTHORS: Dobatkin, V. I., Boohvar, G. A., Potapenko, Yu. I.

TITLE: Comparative investigation of properties of titanium alloy ingots and deformed work

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Tsvetnaya metallurgiya, no. 3, 1961, 120 - 124

TEXT: The main causes for the difference of properties in ingots and deformed work are defects of the cast structure. For titanium alloys, however, this difference may also be connected with peculiarities of phase recrystallization. The temperature of recrystallization annealing of titanium is considerably below the temperature of allotropic transformation. During the cooling of an ingot the alloy is inevitably in the β -range and, when passing into the $(\alpha + \beta)$ and the α -range, suffers phase recrystallization at a comparatively slow transformation rate. A deformed alloy, however, does not pass through the β -range during annealing. If pressure working is performed at the β -range temperature, phase recrystallization takes place in both the ingot and the deformed work, but at different transformation rates. The authors attempted to determine which of the aforementioned causes was

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21120

Comparative investigation of properties of ...

S/149/61/000/003/003/004
A006/A106

decisive, by heating both cast and forged specimens to a β -range temperature and by subsequent slow or speeded-up cooling. Single and bi-phase alloys were prepared from $T\bar{r}O$ (TgO) and $T\bar{r}OO$ ($TgOO$) sponge. (Composition see table). The content of impurities did not exceed 0.15% Fe, 0.11% Si, 0.07% C, 0.06% N. All the ingots were obtained by double vacuum melting in a water-cooled copper crystallizer. Rods of 12 - 15 mm diameter were forged with a deformation degree not less than 90%; forging was terminated at 800 - 850°C. The blanks were annealed at 750°C. Cast blanks were cut out of the rods on an anodic-mechanical saw. Specimens of 12 mm in diameter or 12 x 60 mm section were heat-treated as follows: heating to 1,100°C for 30 min; cooling with the furnace at 30 degrees per h to 600°C, or in water at 20°C with subsequent annealing at 750°C for one h. The specimens were then subjected to tensile and impact tests. The following regularities were stated in the change of properties: Ultimate strength of forged single-phase alloy specimens was by about 10 kg/mm² higher than that of ingots; the difference was 15 kg/mm² for bi-phase alloys. Ultimate strength of cast and forged specimens after heating to 1,100°C and slow cooling approached that of the ingot, and that of forged specimens after heating to 1,100°C and high-speed cooling. Elongation and contraction of the cross sections of single-phase alloys varied little, depending on the cooling conditions from the β -range; in forged specimens they exceed in all states the corresponding

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Comparative investigation of properties of ...

S/149/61/000/003/003/004
A006/A106

values of cast specimens. Elongation, contraction and toughness of forged bi-phase alloy specimens are higher than those of ingots. After heating to 1,100°C and both slow or rapid cooling, the indicated characteristics approach those of an ingot. It can be concluded that the main cause for a reduced ductility of bi-phase alloy ingots is the fact of cooling them from the β -range i.e., beta embrittlement. The main cause for a reduced strength of single- and bi-phase alloy ingots is the low cooling rate during the transition through the bi-phase ($\alpha + \beta$) range. The effect of crystallization was less noticeable than that of phase recrystallization, because the defects in the ingots are not strongly developed due to the small range of the liquid-solid state in titanium ingots and low-alloyed titanium alloys. The main difference in the structure of cast and forged specimens treated at 1,100°C is the grain size, which is coarser in cast specimens. The internal structure of the grains in specimens cooled from 1,100°C does not depend on the preliminary treatment but on the cooling rate. The results obtained by the study show the possibility of obtaining the same strength in commercial titanium-alloy castings and in deformed work by proper heat treatment. On the other hand, the results obtained show reduced ductility values of ingots, in particular for bi-phase ($\alpha + \beta$) -alloys. Higher ductility and an optimum strength-ductility ratio in annealed state can not be obtained by deformation in the β -range but only by deformation in the bi-phase or the α -range.

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21120

Comparative investigation of properties of ...

S/149/61/000/003/003/004
A006/A106

There are 3 tables and 2 figures

ASSOCIATION: Krasnoyarskiy institut tsvetnykh metallov (Krasnoyarsk Institute of Non-Ferrous Metals) Kafedra metallovedeniya (Department of Metal Science)

SUBMITTED: August 15, 1960

Table

Chemical composition and transformation temperature of the titanium alloys investigated

Alloy	Ingot diam. mm	Content. %					Transformation temperature $\beta \rightarrow \alpha + \beta$ °C
		Al	V	Mo	Sn	Fe	
BT1 (VT1)	120	-	-	-	-	-	-
BT5 (VT5)	200	4.87	-	-	-	-	1000
BT5-1 (VT5-1)	380	4.69	-	-	2.6	-	1000

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S/149/61/000/003/003/004
A006/A106

Comparative investigation of properties of ...

BT 6 (VT6)	380	5.13	4.07	-	-	-	970
BT 6 (VT6)	120	5.45	3.55	-	-	-	-
TiAlMo	120	5.35	-	2.69	-	-	-
TiAlMoFe	200	3.78	-	2.75	-	1.5	940

Card 5/5

NOVIKOV, Il'ya Izriellovich; ZAKHAROV, Mikhail Vasil'yevich. Primal
uchastiye BORIN, F.A., dots.; DOBATEKIN, V.I., doktor tekhn.
nauk, retsenzent; Primal uchastiye VISHNAYKOV, D.Ya., prof.,
doktor tekhn. nauk; ARKHANGEL'SKAYA, M.S., red. izd-va; KARASEV,
A.I., tekhn. red.

[Heat treatment of metals and alloys] Termicheskaia obrabotka me-
tallov i splavov. Pod obshchei red. I.I. Novikova. Moskva, Me-
tallurgizdat, 1962. 429 p. (MIRA 15:12)
(Metals--Heat treatment)

S/806/62/000/003/003/018

AUTHOR: Dobatkin, V. I.

TITLE: On the press effect in aluminum alloys.

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Issledovaniye splavov tsvetnykh metallov. no. 3. 1962, 19-25.

TEXT: The paper analyzes new experimental data on the structure and properties of extruded parts; confirmation is found for the conclusion that conservation of a nonrecrystallized structure appears to be a mandatory prerequisite for the existence of the press effect, that the fundamental reason of the press effect is a comminution of the structure in nonrecrystallized extruded parts, and that the magnitude of the press effect is determined by the condition of the grain and sub-grain boundaries. Hypothetical views are set forth on the character of the change in solubility of the fundamental alloying elements along the grain boundaries as a function of the temperature (T), thereby providing an explanation for a number of peculiarities of the structure and properties of Al alloys. The paper is a contribution to the study of the increase in strength of extruded Al-alloy parts after quenching and aging. A brief state-of-the-art survey is made, culminating in a reference to the postulate of L. P. Luzhnikov and O. A. Romanova (in sbornik

Card 1/3

On the press effect in aluminum alloys.

S/806/62/000/003/003/018

"Legkiye splavy," Izd-vo AN SSSR, 1958) that not all Mn-containing alloys are subject to press effect, but that a substantial effect is exerted by the presence of Mg, without which no press effect can obtain. The author attributed the effect observed by Luzhnikov-Romanova not to the presence of Mg as such, but to recrystallization. Jointly with V. K. Zinov' yev he tested his hypothesis by preparing 100- and 120-mm diam rods of D20 (D20) alloy with 6.38% Cu, 0.1% Ti, 0.19% Fe, 0.17% Si, and <0.01% Mg by indirect extrusion (for better uniformity). Heat transfer: 30 min soaking at 540°C, quench, 16 hrs aging at various T (140-220°C). X-ray metallography showed a nonrecrystallized structure in all rods aged at any of the tested aging T. The press effect was present in all specimens, most markedly so in those aged at 160°C. All that Luzhnikov-Romanova appear to have proved is that the press effect is not always in evidence in Mn-containing Al alloys, and that it is more difficult to preserve a nonrecrystallized structure in the almost Mg-free D20 alloy than in the Mg-containing D1 and D16 alloys. A similar experimental investigation was undertaken jointly with Z. N. Chernykh to disprove the hypothesis that a press effect does not occur in Al alloys not containing Mn, Cr, or Zn. Under certain favorable circumstances the press effect was found to exist even in AK2, AK4, and AK4-1 alloys containing no more than 0.07% Mn. Heat treatment: 30 min soaking at 535°C, quenching, 10-hr aging at 195°. The nonrecrystallized structure was preserved in the central portion of the rods. Strength tests confirmed

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On the press effect in aluminum alloys.

S/806/62/000/003/003/018

the existence of a press effect in the nonrecrystallized portion of the rods. In summary, the strength-governing basic factors that distinguish a nonrecrystallized structure after hot-deformation from a recrystallized structure, are: (1) The presence of the deformation texture, and (2) comminution of the structure produced by the formation of oriented subgrains as a result of fragmentation and subsequent polygonization. Reference is made to Kozlovskiy, V. P., in "Issledovaniye splavov tsvetnykh metallov," sbornik 2, Izd-vo AN SSSR, 1960, and Dickenschied, W., Seemann, H. J., Zeitschr. f. Metallkunde, v.49, no.10, 1958. The losses of press effect discussed in these two references are examined in the light of the above-outlined nonrecrystallization and structural-comminution hypothesis. There are 4 figures and 9 references (7 Russian-language Soviet, 2 German).

ASSOCIATION: None given.

Card 3/3

DOBATKIN, V.I.; BOCHVAR, G.A.

High-temperature treatment of titanium alloys with an instable
 β -phase. Metalloved. i term. obr. met. no.2:59-62 F '63.

(MIRA 16:3)

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

DOBATKIN, V.I.

Crystallization of ingots prepared by arc smelting with a
consumable electrode. Issl. splav. tsvet. met. no.4:117-
129 '63. (MIRA 16:8)

(Titanium alloys--Electrometallurgy)
(Crystallization)

DOBATKIN, V.I.; KOZLOVSKAYA, V.P.; GOLOKHMATOVA, T.N.

Slaty structure of the fracture of extruded D16 aluminum alloy.
products. Metalloved. i term. obr. met. no.12:7-12 D'63.
(MIRA 17:2)

MAL'TSEV, Mikhail Vasil'yevich; DOBATKIN, V.I., prof., doktor
tekhn. nauk, retsenzent; AL'TMAN, M.B., doktor tekhn.
nauk, retsenzent; VIGDOROVICH, V.N., red.

[Modifying the structure of metals and alloys] Modifi-
tsirovanie struktury metallov i splavov. Moskva, Izd-
vo "Metallurgiiia," 1964. 212 p. (MIRA 17:6)

LOKTIONOVA, N.A.; RASTVOROVA, N.M.; KOVRIZHNYKH, V.G.; KOMAROVA, N.K.;
TELIS, M.Ya.; DOBATKIN, V.I., rukovoditel' raboty; Prinimali
uchastiye: VINOKUROV, N.G.; PONAGAYBO, Yu.N.; PERETYKINA, I.N.;
BULGAKOV, G.F.; PYATUNINA, V.I.; TITKOV, S.M.; KALMYKOV, K.V.;
BRASLAVSKIY, D.N.; VEYSMAN, S.Ya.; APER'YANOVA, N.N.;
PANTYUSHKOVA, N.S.; PRIVEZENTSEVA, T.V.

Ways to reduce warping of large-size parts made of the
AK4-1 alloy. Alium. splavy no.3:271-284 '64.

(MIRA 17:6)

BOBATKIN, V.I.; ANOSHKIN, N.F.; LEISAUOV, M.I.

Zonal liquation in titanium alloy ingots. Izv. Akad. Nauk SSSR, 1986, no. 7:81-86
31 186. (MIRA 18:2)

L 63777-65 ENT(m)/ENT(t)/ENT(b) IJP(z) JD
ACCESSION NR: AP5017608

UR/0136/65/000/007/0081/0086
069,295,621,740

AUTHOR: Dobatkin, V. I.; Anoshkin, N. F.; Musatov, M. I.

TITLE: Zonal segregation in titanium alloy ingots

SOURCE: Tsvetnyye metally, no. 7, 1965, 81-86

TOPIC TAGS: zonal segregation, titanium alloy ingot, homogeneous melt, titanium rich binary system, alloy component, arc melting, consumable electrode, crystallization surface, two phase region

ABSTRACT: Contrary to the general assumption, the vacuum arc melting of titanium alloy may, particularly if the ingots are bulky, involve the occurrence of a nonuniform chemical composition of the ingot owing to the segregation of alloy components during the crystallization of the melt. To determine the mechanism of these processes and to determine ways of producing more uniform ingots. Ingots of Ti alloys 30-35 mm in diameter, containing 0-12% Cu, Ni, Mo, Fe, and Cr, respectively, were melted in a vacuum arc furnace. The pattern of distribution of the constituents. It was found that Ni, Cu, Cr, and Fe, which reduce the melting point in titanium-rich binary systems, are present in greater amounts in the central zone of the ingots. There is an increase in the content of alloy components in the direction from the periphery to-

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L 63773-65

ACCESSION NR: AP5017608

ward the center as well as from the bottom toward the top, and also the distinct dependence of the intensity and direction of the segregation on the distribution coefficient of the alloy indicate a similarity between the mechanisms of the distribution of chemical composition in arc melting with a consumable electrode and zone melting. However, the patterns of distribution of components in the process of melting differ markedly. Arc melting is characterized by a) the front of crystallization is nearly conical compared with the plane front of crystallization in zone melting; b) the front of crystallization includes a transition region which, by changing in its dimensions, may considerably affect the nature of the distribution of the component or impurity; c) the movement of the melt is directed toward the anode parts of the melting bath. The principal measures to reduce zonal segregation are: selection of optimal arc current intensities; dispensing with the use of a magnetic field and, if the need arises, dispensing with the use of a magnetic field; increasing the cooling rate of the ingot by performing the melting in a vacuum atmosphere or by developing a special melting technique that assures rapid cooling of the ingot. An additional way to reduce zonal segregation is the use of additives that alter the character of crystallization so as to orient it in the direction of an increase in the resistance to the movement of the segregating elements in the two-phase region. Orig. art. has: 5 figures.

Card 2/3

L 63-77-65

ACCESSION NR: AP5017608

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: MM

NR REF SOV: 003

OTHER: 001

2
Card 3/3

DRITS, M.Ye., doktor tekhn. nauk, otv. red.; BOCHVAR, A.A.,
akademik, red.; BELOV, A.F., doktor tekhn. nauk, red.;
DOBATKIN, V.I., doktor tekhn. nauk, red.; MAL'TSEV, M.V.,
doktor tekhn. nauk, red.; FRIDLYANDER, I.N., doktor tekhn.
nauk, red.; SVIDERSKAYA, Z.A., kand. tekhn. nauk, red.;
YELAGIN, V.I., kand. tekhn. nauk, red.; BARBANEL', R.I.,
kand. tekhn. nauk, red.; SHAROV, M.V., kand. tekhn. nauk,
red.; KADANER, E.S., kand. tekhn.nauk, red.; TROKHOVA, V.F.,
red.; CHERNOV, A.N., red.

[Metallography of light alloys] Metallovedenie legkikh spla-
vov. Moskva, Nauka, 1965. 226 p. (MIRA 18:10)

1. Moscow. Institut metallurgii.

L 37170-66 EWT(m)/EWP(t)/ETI/EWP(k) IJP(c) JD/HW/GD/JH

ACC NR: AT6016418

SOURCE CODE: UR/0000/65/000/000/0116/0124

AUTHOR: Dobatkin, V. I.

ORG: none

TITLE: Structural strengthening of aluminum alloysSOURCE: ²⁷AN SSSR, Institut metallurgii, Metallovedeniye legkikh splavov (Metallography of light alloys). Moscow, Izd-vo Nauka, 1965, 116-124

TOPIC TAGS: tensile strength, aluminum alloy / D1 aluminum alloy, ATsM aluminum alloy

ABSTRACT: The structural strengthening effect in aluminum alloys is reviewed, and the desirability of retaining the noncrystalline state in aluminum alloys even after their annealing is pointed out. A schematic is presented based on literature data for the change of the tensile strength as a function of degree of crystallinity of the alloy and temperature of annealing (see Fig. 1). Photographs of the macro- and microstructure of pressed aluminum alloy ATsM and D1 specimens are presented. The mechanical strength of specimens is directly dependent on the degree of their crystallinity and is a maximum for noncrystalline specimens. Future research in this field should be directed towards development of better annealing and forging techniques and towards discovering new additives which inhibit the recrystallization of aluminum. The experiment results were obtained by E. P. Belova, N. N. Averkina,

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L 37170-66

ACC NR:

AT6016418

2

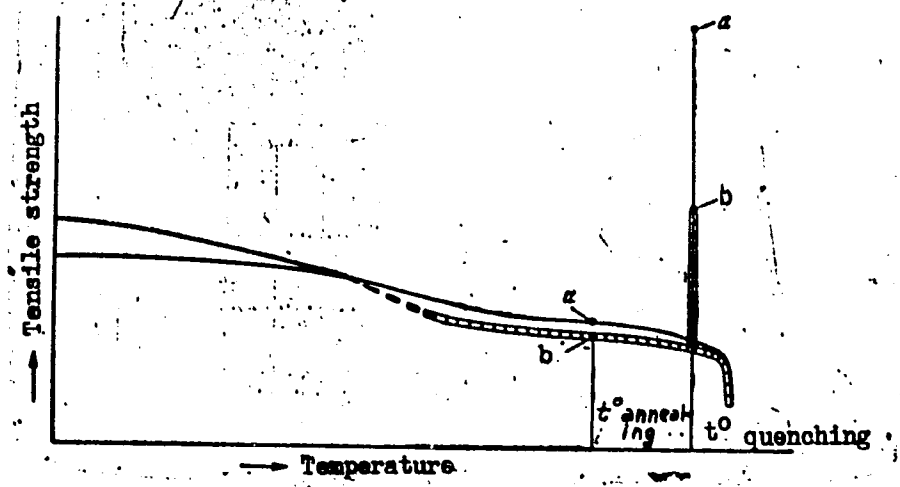


Fig. 1. Diagram for the change in tensile strength as a function of the annealing temperature and the value of the tensile strength in the quenched and aged state for nonrecrystallized (a) and recrystallized (b) alloy.

I. N. Savkina, and M. K. Rublevaya. Orig. art. has: 7 figures.

SERIALS: 11/ SUBM DATE: 16Sep65

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I 37165-66 EWT(m)/EWP(w)/T /EWP(t)/ETI LJP(o) JD/GD

ACC NR: AT6016424

SOURCE CODE: UR/0000/65/000/000/0166/0172

AUTHORS: Dobatkin, V. I.; Kozlovskaya, V. P.; Bavykina, I. M. 43

ORG: none 31

TITLE: Influence of structure on the mechanical properties of pressed products manufactured from alloy D16 for different types of applied loads

SOURCE: AN SSSR. Institut metallurgii. Metallovedeniye legkikh splavov (Metallography of light alloys). Moscow, Izd-vo Nauka, 1965, 166-172

TOPIC TAGS: solid mechanical property, tensile strength, aluminum alloy / D16
aluminum alloy 27

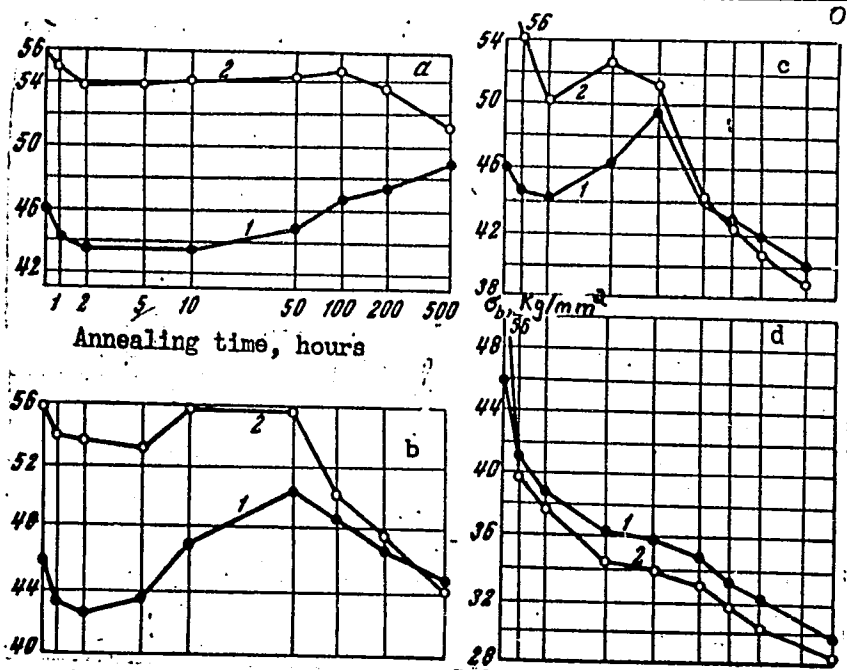
ABSTRACT: The effect of recrystallization on the mechanical properties of parts manufactured from alloy D16 was investigated. The investigation supplements the results of V. I. Dobatkin (O presseffekte v alyuminiyevykh splavakh, Sb. Issledovaniye splavov tsvetnykh metallov, vyp. 3 Izd-vo AN SSSR, 1962). The mechanical properties and microstructure of nonrecrystallized and recrystallized specimens were determined as a function of the type and magnitude of applied load. The experimental results are presented in graphs and tables (see Fig. 1). It was found that artificial aging of the alloy at elevated temperatures tended to smooth out any differences in the mechanical properties of non- and recrystallized specimens.

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L 37165-66

ACC NR: AT6016424

Fig. 1. Change in the tensile strength at room temperature of 20-mm diameter rods manufactured from alloy D16 having a recrystallized (1) and non-recrystallized (2) structure as a function of annealing time at temperatures of 150C (a), 175C (b), 200C (c), and 250C (d).



Orig. art. has: 2 tables and 5 figures.

SUB CODE: 11/ SUBM DATE: 16Sep65/ ORIG REF: 007/ OTH REF: 002

Card 2/2 of

L 04196-67 EWT(m)/I/EWP(t)/ETI IJF(c) JD/WW/JG/JH

ACC NR: AP6028586

SOURCE CODE: UR/0129/66/000/008/0027/0031

AUTHOR: Dobatkin, V. I.; Grishkovets, Ya. G.

ORG: none

TITLE: Recrystallization of binary alloys of aluminum with manganese and zirconium

SGURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 8, 1966, 27-31

TOPIC TAGS: aluminum alloy, manganese, zirconium, recrystallization, cold deformation, structural property, metallographic examination, cast structure, heat treatment, quenching, grain size, electron microscopy

ABSTRACT: The recrystallization behavior of binary aluminum alloys and its dependence on the predeformed ingot structure were studied. Ingot structure was varied by heat treatment, and alloying with manganese and zirconium. Ingots were prepared in three conditions: A--cast, with maximum supersaturation of the solid solution; B--quenched from 620°C; C--slowly cooled at 5 deg/hr. The binary alloy contents ranged from 0.21 to 1.84% Mn and 0.03 to 0.45% Zr. The ingots were deformed to bars of 18 mm diameter and recrystallized. Recrystallization temperatures were determined metallographically and x-ray methods were used to study the texture changes. The recrystallization temperatures were given as a function of manganese and zirconium content for A, B, and C.

UDC: 669.71'72:669.29.296:629.186.5

Card 1/2

54
33
B

L 04196-57

ACC NR: AP6028586

For A, recrystallization did not occur at 1.04 and 1.85% Mn. For B, partial recrystallization occurred, while for C the entire volume recrystallized. The recrystallization temperatures varied from 320 to 520°C depending on the ingot condition and alloy content. In bars alloyed with 0.05 and 0.21% Zr the greatest degree of recrystallization occurred in ingots which were not heat treated, while for 0.45% Zr it occurred for condition C. The increase in recrystallization temperature with rise in manganese content in cast ingots was caused by supersaturation of the solid solution, as confirmed by lattice parameter and electrical resistivity measurements. Electron microscopy showed partial decomposition of the solid solution after holding alloys with 1.04 and 1.84% Mn at 620°C; the particles were situated along the dendritic boundaries and were about a micron in diameter. The structural inhomogeneity was related to widening of texture maxima on x-ray patterns. The texture maximum contracted with rise in alloying of the solid solution and widened sharply when second phase particles were present in the structure before deformation. It established that heat treatment of Al-Mn ingots lowers the recrystallization temperature, if solid solution decomposition occurs; however, Al-Zr alloys exhibit the opposite behavior. In the first case slow cooling strengthens the effect, while in the second case it weakens it. Orig. art. has: 2 figures, 2 tables.

SUB CODE: 11,13/ SUBM DATE: none/ ORIG REF: 003/ OTH REF: 002

Card 2/2 LC

L 05705-67 EWT(k)/EWT(m)/T/EWT(w)/EWT(t)/EWT(e) EWT

ACC NR: AP6029674

(N)

SOURCE CODE: UR/0136/66/000/008/0081/0086

AUTHOR: Dobatkin, V. I.; Yelagin, V. I.

22
20
B

ORG: none

TITLE: Aluminum-high melting metal alloys from rapidly cooled alloy shot

SOURCE: Tsvetnyye metally, no. 8, 1966, 81-86

TOPIC TAGS: aluminum ~~manganese~~ alloy, ~~aluminum~~ iron alloy, ~~aluminum~~ chromium alloy, zirconium containing alloy, ~~alloy shot~~, ~~alloy shot property~~, ~~alloy shot metal~~ extrusion, *manganese alloy*

ABSTRACT: Small granules, 1-6 mm in diameter, of several experimental aluminum alloys were obtained by centrifuging liquid (700-750C) alloys in a perforated container and immediately water quenching the alloy drops. The alloys contained 5 or 10% manganese (Al5Mn and Al10Mn) or 12% iron (Al10Fe), or 1, 1.5 or 2.0% each of chromium and zirconium (Al1G1Zr, Al1.5G1.5Zr, and Al2Cr2Zr) i.e., several times more than the limit of solid-state solubility of these elements in aluminum. The estimated average cooling rate varied from 5000C/sec for granules 3.0-3.5 mm in diameter to 18,000C/sec for granules 1mm in diameter. The Al5Mn, Al1G1Zr and Al1.5Cr1.5Zr granules were found to have homogeneous or almost homogeneous structures of solid solution. In the other alloys, dendritic formation of intermetallic phases was observed. Granules encased in an aluminum envelope were hot extruded into bars

Card 1/2

UDC: 669.715'24/29:620.18

L 05705-67

ACC NR: AP6029674

10.5—24 mm in diameter. The structure of the bars was roughly similar to that of aged aluminum alloys. The best combination of mechanical properties, especially at elevated temperatures, was shown by aluminum-chromium-zirconium alloys, which had at room temperature a tensile strength of 22.6—36.0 kg/mm², a yield strength of 21.3—32.1 kg/mm², and an elongation of 11.3—13.2%. Corresponding figures for 350C were 9.2—9.8 kg/mm², 8.5—9.6 kg/mm² and 24.0—39.2%; and for 500C—3.2 to 4.7 kg/mm², 2.9 kg/mm² and 19.8—38.2%. The 100-hr rupture strength of these alloys varied from 9.0 to 9.5 kg/mm² at 250C, from 4.2 to 4.5 kg/mm² at 350C, and was 1.1 kg/mm² for all three alloys at 500C. Orig. art. has: 4 figures and 3 tables. [DV]

SUB CODE: 11, 13/ SUBM DATE: none/ ORIG REF: 006/ OTH REF: 001/ ATD PRESS: 5069

Card 2/2

ACC NR: AP6032622

(N)

SOURCE CODE: UR/0126/66/022/003/0424/0431

AUTHOR: Buynov, N. N.; Dobatkin, V. I.; Rakin, V. G.; Romanova, R. R.; Shashkov, O. D.; Dobromyslov, A. V,

ORG: Institute of Metal Physics, AN SSSR (Institut fiziki metallov, AN SSSR)

TITLE: Investigation of the structure of ATsM and V92 heat-treatable aluminum alloys

SOURCE: Fizika metallov i metallovedeniye, v. 22, no. 3, 1966, 424-431

TOPIC TAGS: metal aging, aluminum base alloy,
aluminum zinc magnesium alloy, aluminum alloy aging, aluminum alloy
structure/ATsM aluminum alloy, V92 aluminum alloy

ABSTRACT: Aging-induced structural changes and the kinetics of aging in aluminum-base alloys ATsM (4.72% zinc, 1.84% magnesium, 0.69% manganese, 0.35% zirconium, 0.03% titanium, and 0.5% copper) and V92 (3.34% zinc, 4.48% magnesium 0.8% manganese, and 0.005% beryllium) have been studied by means of electron microscopy and x-ray diffraction analysis. The aging kinetics were found to be the same in both alloys. The decomposition of solid solution begins with the formation of Guinier Preston zones with a high density of vacancies, which serve as nuclei for the precipitation of MgZn₂-phase and play an important part in the age hardening of the alloys. The temperature and duration of aging has little or no effect on the size of Guinier Preston zones, but a considerable effect on their composition. V92 alloy age hardens

Card 1/2

UMC: 546.3-19'621'47'46 : 548.0

ACC NR: AP6032622

more intensively than ATsM does owing to a higher total zinc and magnesium content of the former. Orig. art. has: 4 figures.

SUB CODE: 11/ SUBM DATE: 27Dec65/ ORIG REF: 008/ OTH REF: 007

Card 2/2

DOBAVINSEK, Alfonz, inz.

Rationalization of transport through tariff system. Medun transp
10 no.11:29-31 N '64.

COUNTRY : Rumania H-28
CATEGORY :
ABS. JCUR. : RZKham., No. 16 1959, No. 58839
AUTHOR : Silaghy, G. and Dobay, I.
INST. : Not given
TITLE : Improving the Quality of Small Bakery Products
by Changes in the Baking Process
ORIG. PUB. : Rev Ind Aliment Prod Vegetale, No 6, 29 (1958)
ABSTRACT : Crescents (50 and 150 gms), calatches (150 gms),
and salt 'bubliki' of 40 gms wt are proofed for
40-50 min after snapping from the dough and are
then placed individually (not in trays) in the
oven for 15 min at 240-250°. A single baking
yields 228 kg/hr or 1520 crescents of 150 gms
per hr. Savings in materials (shortening, sheet
metal) were realized, the yield of baked products
was increased, working conditions were improved,
and the quality of the product was improved.
A. Marin

CARD: 1/1

~~HUNGARY~~
DOBAY, Sandor, Dr, GAJDACS, Gyorgy, Dr, SZEGEDI, Bela, Dr; National Animal Health Institute (director: KADAR, Tibor, Dr, cand. of vet. sci.) (Orszagos Allategeszsegugyi Intezet), and Animal Health Institute of Bekescsaba (director: PROKOPOVITSCH, Otto, Dr) (Bekescsabai Allategeszsegugyi Intezet).

"On the Methemoglobinemia of Sheep."

Budapest, Magyar Allatorvosok Lapja, Vol 21, No 2, Feb 66, pages 64-67.

Abstract: [Authors' English summary modified] A few cases of methemoglobinemia in sheep are reported. In 1963-64, the disease was diagnosed on 6 occasions in 20 carcasses. Losses caused by emergency slaughter amounted to 114 animals, 5.7 per cent of the affected stocks. On 3 occasion, the disease was caused by the ingestion of nitrate fertilizers; in other cases, water was drunk by the animals which contained nitrate or nitrite. The diagnosis is established on the basis of the anamnesis, clinical symptoms and the observation of pathological changes. Laboratory tests such as the nitrate content of the food in the rumen and of the blood and the blood methemoglobin level are also useful. To prevent the condition, animals must be kept away from such chemicals. Treatment consists of i.v. injection of 0.01-0.02 g/kg of methylene blue dissolved in water. The results of this treatment are reliable. 7 Eastern European, 29 Western references.

1/1

BOCHAROV, F.; DOBRA, A.; ZAYTSEV, N.; KALUTSKIKH, N.; KOMOGORTSEV, N.;
KOPANTSIA, Ya.; MIKHAYLENKO, I.; PLIKHIN, P.; PODZHAROV, P.;
RUZOV, M.; SEMENOV, N.; STAKHANOV, A.; USKOV, A.

Fema Evgen'evich Tiurin; an obituary. Mart. ugol. 7 no.11:32 N '58.
(MYRA 11:12)

(Tiurin, Fema Evgen'evich, 1898-1958)

DOBBERT, N. N.

"The Contribution to the Biochemistry of the Sporulating Gramicidin
Producing Bacteria," Mikrobiol., 13, No.4, 1944

Lab. of Chem. of Protein Metabolism, and Dept. of Biochem. of Microbes, Inst.
Experimental Medicine, Moscow

DOBBERT, N. N.

USSR/Medicine - Microbiology
Medicine - Bacteriology

Jan 1947

"Utilization of Various Sources of Nitrogen and Carbon by Sporeforming Bacterium
B Brevis," A. S. Konikova, N. N. Dobbert, 8 pp

"Biokhimiya" Vol XII, No 1

Tests with suspensions of B brevis to detect a new formation of amino acids from
pyruvic acid and ammonium salts, and clarify the nature of the utilization of
ammonium salts by this organism.

PA 13T3

DOBBERT, N. N.

62/49T47

USSR/Medicine - Amino Acids
Medicine - Biochemistry

Nov/Dec 47

"Stability of Alpha-Hydrogen of Aminoacids According to the Effect of an Aminophorase," A. S. Kaulkova, N. N. Dobbert, A. Ye. Braunshcheyn, Lab of Chem of Nitrogen Exchange, Inst of Biol and Med Chem, Acad Med Sci, USSR, Lab of Physiol Chem, Acad Sci USSR, 12 pp

"Izvestiya" Vol XII, No 6

Results of experiments permit classification of the process of enzymatic transamination into two phases. First phase includes labilization and dissociation of alpha-hydrogen by amino acids. 62/49T47

USSR/Medicine - Amino Acids (Contd) Nov/Dec 47

Second phase is related to regrouping of electrons which are arranged according to the alpha-carbohydate system. Catalysts of this latter phase is thermolabile and represents a specific function of an aminophorase. Submitted 22 Sep 47.

62/49T47

DOBBERT, N. N.

PA 3/49T72

USSR/Medicine - Bacteria, Culture Mar/Apr 48
Medicine - Chemistry

"Utilization of Amino Acids of L and D Configuration
in Cultures of B. Brevis," A. S. Konikova, N. N.
Dobbert, Chem of Nitrogenous Exchange Lab, Biol and
Med Chem Inst, Acad Med Sci USSR, 9 pp

"Biokhimiya" Vol XIII, No 2

Describes experiments. Lists various l-amino acids
which may be used by B. brevis as sole source
of nitrogen and carbon. Addition of glucose
accelerates growth. Lists various d-amino acids
in which B. brevis do not grow. Addition of glucose
enables these acids to serve as nitrogen-feeding
3/49T72

USSR/Medicine - Bacteria, Culture (Contd) Mar/Apr 48
substrates; d-amino acids enter into composition of
B. brevis albumen. Submitted 25 May 47.

3/49T72

111
110
Eritrin. L. M. Yakobson, A. S. Konikova, A. I. Chamova,
and N. N. Dobbert. *Trudy Vsesoyuz. Nauch. Issledovatel.
Inst. Antimikrob. 1933, No. 1, 152-7.*—Eritrin, an antibiotic
extd. from liver and spleen of white rats, is an amorphous,
dark-red powder, sol. in weak alkalis, acetone, and insol. in
water and acids. It remains biologically active, and insol. in
at 70° for 10 min. in neutral or weak alk. or acid solns. In
weakly alk. media, eritrin is inactivated in 48-60 hrs. It
can be pptd. out by (NH₄)₂SO₄ and acids, especially by tri-
chloroacetic acid. Eritrin destroys almost completely the
activity of D-amino acid oxidase; it also decreases the
activity of glutamic acid dehydrogenase by about 50%. The
decrease of activity of the above substances probably is due
to the presence of hemin. V. Mitajlov.


DOBBERT, N. N.

From Russian for Dr. R. Carl Millican

Biokhimiia 18 (6): 732-738; 4 figs; 1953

Biochemical Changes in Muscle After Its Denervation and Tenectomy and at the Intergrowth
in It of Nerve Fibers

by
N. A. Iudaev, M. I. Smirnov, P. G. Pazina, and N. N. Dobbert
(Institute of Biological and Medical Chemistry of the Acad. of Med. Sciences, the USSR,
Moscow).

Translated at the National Institutes of Health, Bethesda, Maryland.
Full translation available in /M.

DOBBIN, A.Th.

Natural labor; experience of an Australian physician. Akush.
1 gin. 33 no.2:41-44 Mr-Apr '57. (MLRA 10:6)

(LABOR:

natural childbirth, management & methods (Australia)

PERME, L.; CERNIGOJ, B.; DOBEIC, J.; PLESNICAR, S.; VADNAL, A.; PEHANI, B.;
SZAVITS-NOSSAN, O.; ZAJC, B.; LEONARDIS, S.; PEHANI, A.; JAGODIC, F.;
KERSIC, N.; STARIC, P.; VIRANT, J.; GOSAR, P.; AVGIN, F.; WEDAM, A.;
KRALJ, A.

New books and periodicals. Elektr vost 31 no.3/5: 113-120 Mr-My
'64

HOFER, E.; AVCIN, F.; MIKLAVZIC, U.; PONIZ, R.; GOSAR, P.; GRUDEN, M.; DOBEIC, J.;
VAJDA, B.; MLAKAR, F.; VIRANT, J.; VDOVIC, J.; JEREB, P.; GERLANG, I.;
STARIC, P.; SKUBIC, T.; MAGAJNA, B.; KERSIC, N.; LEONARDIS, S.; PIRKMAJER,
E.; CAJHEN, R.

New books and periodicals. Elektr vest 17 no.1/2:46-56 Ja-F '64.

ADAMSKI, Jan; BARANCZAK, Zofia; DOBKE, Jacann; KRAJNIK, Joanna;
ZIOLEKIEWICZ, Tadeusz

Conservative penicillin and streptomycin therapy based on bacteriological studies in cervicofacial actinomycosis. Gzaspismo stomat. 7 no.8:320-328 Aug 54.

1. Z Zakladu Chirurgii Stomatologicznej Akademii Medycznej w Poznaniu. Kierownik: prof. dr L.Lakner. Z Zakladu Mikrobiologii akademii

Medycznej w Poznaniu. Kierownik: prof. dr J.Adamski.

(ACTINOMYCOSIS,

cervicofacial, ther., penicillin & streptomycin)

(FACE, diseases,

actinomycosis, ther., penicillin & streptomycin)

(PENICILLIN, therapeutic use,

actinomycosis, cervicofacial, with streptomycin)

(STREPTOMYCIN, therapeutic use,

actinomycosis, cervicofacial, with penicillin)

(NECK, diseases,

actinomycosis, ther., penicillin & streptomycin)

EXCERPTA MEDICA Sec. 6 Vol. 11/8 Aug. 57
DOBEK J.

4869. DOBEK J. 1. Klin. Chor. Wewnętrznych A. M., Poznań. "Skutki długo-
trwałego zarzucania zawartości dwunastnicy do żołądka. Results of
long-lasting reflux of the duodenal content into the
stomach POL. TYG. LEK. 1956, 11/29 (1284-1288) Graphs 1

On the basis of 42 personal observations of the long-lasting reflux of duodenal
content into the stomach, associated with changes in the hydrochloric acid, it is
concluded that the reflux is the principal factor of gastric catarrh. The reflux
is also a pathological phenomenon of motor duodenogastric activity as is dysche-
sia, dystonia, dyskinesia etc. The causes of the disorders were found to be: chole-
cystopathy, cholecystitis, cholelithiasis and tumour of the bile ducts.

Bflek - Prague

DOBEK, J.

DOBEK, J. Sand-lime materials and their application in the production of building sections! p. 277. Vol. 11, no. 9, Sept. 1956. MATERIALY BUDCWLANE. Warszawa, Poland.

SOURCE: EAST EUROPEAN ACCESSIONS LIST (EEAL) VOL 6_ NO 4 APRIL 1957

DOBEK, Jan

Use of directly-enlarged roentgenograms in the diagnosis of pulmonary diseases. Polski przegl.radiol. 25 no.3:247-252 My-Je '61.

1. Z Zakladu Radiologii Szpitala Miejskiego im. J. Strusia w Poznaniu
Kierownik: dr med. doc. B. Gladysz.

(LUNGS radiog)

DÓBEK, Jan

Hypertrophy of Brunner's glands. Polski przegl. radiol. 25 no.2:
165-172 '61.

1. Z Zakładu Radiologii Szpitala Miejskiego im. J. Strusia w Poznaniu
Kierownik: doc. dr med. B. Gładysz.

(DUODENUM pathol)

DOBEK, Jan

Roentgenographic examination of the large intestine with the use of tannin and hard rays. Polski tygod. lek. 16 no.50:1932-1936 11 D '61.

1. Z Zakladu Radiologii Szpitala Miejskiego im. J. Strusia w Poznaniu;
kierownik: doc. dr med. Boleslaw Gladysz.
(INTESTINE LARGE radiog) (TANNINS)

DOBEK, Jan; LORKIEWICZ, Zbigniew

Bullous bronchiectasis. Polski tygod. lek. 17 no.3:96-100 15 Ja '62.

1. Z Zakładu Radiologii Szpitala Miejskiego im. J. Strusia w Poznaniu; kierownik; doc. dr. med. B. Gladysz i z Oddziału Chirurgii Torakalnej Szpitala Miejskiego im. J. Strusia w Poznaniu; kierownik: doc. dr med. J. Moll.

(BRONCHIECTASIS case reports)

DOBEK, J.; MOLL, J.; TYBORSKI, H.

Drainage of the veins of the right lung into the inferior and superior venae cavae. Report of 2 cases. Kardiol. pol. 6 no.3:161-165 '63.

1. Z Oddziału Chirurgii Torakalnej Kierownik: prof. dr J. Moll i z Zakładu Radiologii Szpitala Miejskiego im. J. Strusia w Poznaniu Kierownik: prof. dr B. Gladysz.

(PULMONARY VEINS) (HEART DEFECTS, CONGENITAL)
(THORACIC RADIOGRAPHY) (VENAE CAVAE)
(ABNORMALITIES)

POLAND

DOBK, Jan and OKOWA, Halina; Department of Radiology (Zaklad Radiologii), AM [Akademia Medyczna, Medical Academy] in Poznan (Director: Prof. Dr. med. B. GLADYSZ)

"X-ray Picture of Digestive Tract in Patients with Virus Hepatitis."

Warsaw, Polski Tygodnik Lekarski, Vol 18, No 31, 29 Jul 63, pp 1142-1146

Abstract: [Authors' English summary] X rays of the digestive tract of (170) patients with virus hepatitis revealed delayed passage of barium contrast to duodenum, especially in first and last phases of evaluation. Signs of hypotonia of duodenal and intestinal wall and weak peristaltic and mixing movements were noted in 30 per cent of the cases, and none for the terminal and iliac parts. Irregular concentrations of contrast were noted in large intestine. All changes disappeared within a year in control examinations. There are ten references: one each Polish and English, 2 French, and 6 in German.

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