

AUTHORS: Grinev, A. N., ~~Yermakova, V. N.~~, SOV/20-121-5-27/50
Terent'yev, A. P., Corresponding Member, AS USSR

TITLE: Synthesis of 1-Benzyl-2-Methyl-5-Methoxy Tryptamine (Sintez
1-benzil-2-metil-5-metoksitriptamina)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 121, Nr 5,
pp. 862-864 (USSR)

ABSTRACT: E. Shaw (Ref 1, 1955) synthesized 1-benzyl-2-methyl-5-methoxy-
-indole-3- acetic acid from the substituted phenyl-hydrazone
of the methyl ether of levulinic acid by means of the Fischer
(Fisher) reaction. Owing to the reduction of the amide of this
acid by means of lithium-aluminium hydride, 1-benzyl-2-methyl-
-5-methoxy tryptamine (VII) was produced. Clinical investiga-
tions have shown that the latter substance being a benzyl ana-
log of serotonin (BAS) has a higher physiological activity
than its antimetabolite (Refs 2 - 5). A scheme of the synthe-
sis of the substance (VII) carried out by the authors is
given. The condensation of p-benzoquinone with the ethyl-ether
of the N-benzyl- β -amino-crotonic acid with respect to
1-benzyl-2-methyl-3-carbethoxy-5-oxy indole (I) has only been

Card 1/2

Synthesis of 1-Benzyl-2-Methyl-5-Methoxy Tryptamine

SOV/20-121-5-27/50

achieved under conditions which deviate from the conditions of production of other nitrogen-substituted 5-oxy indolines (Refs 6-9). The methylation of the oxy-group of indole (I) takes place smoothly under the influence of dimethyl sulfate in an alkaline medium. The splitting off of the carbethoxy group from 1-benzyl-2-methyl-3-carbethoxy-5-methoxy indole (II) most probably passes through a stage of formation of a form of indoline in connection with an action of H_2SO_4 in acetic acid solution. The other stages of the process are carried out according to methods analogous to those given in publications (Refs 10,11). There are 11 references, 5 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova
(Moscow State University imeni M.V. Lomonosov)

SUBMITTED: March 21, 1958

Card 2

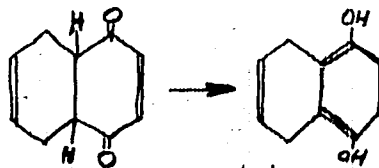
SOV/79-29-1-19/74

AUTHORS: Grinev, A. N., Yermakova, V. N., Terent'yev, A. P.

TITLE: Investigations in the Field of Quinones (Issledovaniya v oblasti khinonov) XXIV. Isomerization of the Adducts of p-Quinones With Diene Hydrocarbons (XXIV. Izomerizatsiya adduktov p-khinonov s dienyovymi uglevodorodami.)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 1, pp 86-89 (USSR)

ABSTRACT: An important method of synthesis of the substituted hydroquinones is the isomerization of the p-quinone adducts with diene hydrocarbons:



In this connection the authors suggest to carry out the isomerization of the adducts by boiling with acetic acid as they had already done in the case of synthesis of 2-methyl-5,8-dihydro-5,8-endoethylene naphtho-hydroquinone (Ref 6). This method permits the condensation of the quinones by diene hydrocarbons, as well as the isomerization of the adducts formed,

Card 1/3

S07/79-29-1-19/74

Investigations in the Field of Quinones. XXIV. Isomerization of the Adducts of p-Quinones With Diene Hydrocarbons

into the substituted hydroquinones without separation of the adducts. In the present paper the following hydroquinones were synthesized: 5,8-dihydro naphthohydroquinone (I), 6-methyl-5,8-dihydro naphthohydroquinone (II), 2-methyl-5,8-dihydro naphthohydroquinone (III), 6,7-dimethyl-5,8-dihydro naphthohydroquinone (IV), 2-chloro-5,8-dihydro naphthohydroquinone (V), 2,3-dichloro-5,8-dihydro naphthohydroquinone (VI), 2,3-dichloro-6-methyl-5,8-dihydro naphthohydroquinone (VII), 2,3-dimethyl-1,4-dihydro anthrahydroquinone (VIII), 2,3,5-trimethyl-1,4-dihydro anthrahydroquinone (IX), 2,3,6-trimethyl-1,4-dihydro anthrahydroquinone (X) and 6-methyl-1,4-dihydro-1,4-endo-ethylene anthrahydroquinone (XI). The quantity of reagents, reaction duration, melting points, yields and analyses of these hydroquinones are given in table 1. For the first time the adducts of 5-methyl naphthoquinone were synthesized with 2,3-dimethyl butadiene (XII), the adducts of 6-methyl naphthoquinone with 2,3-dimethyl butadiene (XIII) and the adducts of 6-methyl naphthoquinone with cyclohexadiene (XIV). Table 2 gives yields, melting points and analyses of the adducts

Card 2/3

S07/79-29-1-19/74

Investigations in the Field of Quinones. XXIV. Isomerization of the Adducts of p-Quinones With Diene Hydrocarbons

mentioned. There are 2 tables and 9 references, 6 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: November 16, 1957

Card 3/3

SOV/79-29-1-20/74

AUTHORS: Grinev, A. N., Yermakova, V. N., Terent'yev, A. P.

TITLE: Investigations in the Field of Quinones (Issledovaniya v oblasti khinonov) XXV. Synthesis of Naphthoquinones and Dihydro Anthraquinones (XXV. Sintez naftokhinonov i digidroantra-khinonov)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 1, pp 90-92 (USSR)

ABSTRACT: In one of the earlier papers the authors showed that the easiest way to obtain 1,4-naphthoquinone and 2-methyl-1,4-naphthoquinone is from p-benzoquinone (toluquinone) and divinyl in which case the reaction takes place without separation of adducts and hydroquinones obtained from their isomerization (Ref 1). According to this method 6-methyl naphthoquinone (I) and 5-methyl naphthoquinone (II) were found in the present work. 6,7-dimethyl-8,4-naphthoquinone (III) was obtained in high yield by the oxidation of 6,7-dimethyl-5,8-dihydro-naphtho hydroquinone (Ref 2). 2,3-dichloro-p-naphthoquinone (IV) was obtained from 2,3-dichloro-p-benzoquinone and divinyl. Apart from this several quinones already characterized in the previous paper were oxidized in an acid medium with potassium

Card 1/2

SOV/79-29-1-20/74

Investigations in the Field of Quinones. XXV. Synthesis of Naphthoquinones and Dihydro Anthraquinones

bromate. The following anthraquinones were obtained: 6-methyl-1,4-dihydro-1,4-endoethylene anthraquinone (V), 6,7-dimethyl-1,4-dihydro-1,4-endoethylene anthraquinone (VI), 2,3-dimethyl-1,4-dihydro anthraquinone (VII), 2,3,5-trimethyl-1,4-dihydro anthraquinone (VIII) and 2,3,6-trimethyl-1,4-dihydro anthraquinone (IX). The table gives the experimental results of the synthesis of dihydro anthraquinones.

There are 1 table and 5 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: November 14, 1957

Card 2/2

5(3) SCV/79-29-8-74/81
 AUTHORS: Grinev, A. N., Yermakova, V. N., Vrotek, Ye., Terent'yev, A. P.
 TITLE: Investigations in the Field of Quinones. XXVIII. Synthesis of the 5-Oxyindole Derivatives
 PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 8, pp 2777 - 2782 (USSR)
 ABSTRACT: The authors were interested in the synthesis of serotonin analogues (Ref 6) and the growth stimulants of plants (Refs 7,8) based on 5-oxyindole derivatives, and continued their previously not quite successful investigations (Refs 1-5) by trying to increase the indole derivative yield. They presupposed that the water forming in the course of the condensation process hydrolyzes the β -aminocrotonate (Scheme 1). The separation of ammonia and the amines, however, effects a polymerization of the initial quinone and other side reactions. In order to bind the water which has a detrimental effect, the anhydride of acetic acid and zinc chloride were used, but did not lead to a higher indole yield. In order to remove the water from the reaction mass, the azeotropic distillation with dichloro-

Card 1/2

Investigations in the Field of Quinones. XXVIII. Synthesis SOV/79-29-8-74/81
of the 5-Oxyindole Derivatives

ethane was used in the reaction process which led to a considerably higher yield. Compounds (I) - (VII) were obtained. In the methylation of (VI) with dimethylsulphate (VIII) was obtained. In order to achieve the synthesis of new growth stimulants of plants, the reaction of 5-oxyindoles with chloroacetic acid and a bromoacetate was tried. Under the influence of the acid on (II) in the presence of a 40% soda solution a good yield of compound (IX) was achieved. The condensation of the other 5-oxyindole derivatives only resulted in the initial indoles and in resins similar to polyglycol. The reaction of the phenolates of the 5-oxyindole derivatives with ethylbromoacetate is normal. A high yield of the substituted esters (X), (XI), and in the hydrolysis of esters, of the indolyl-5-oxyacetic acids (XII), (XIII), (XIV) was obtained. The table shows the derivatives of 5-oxyindole. There are 1 table and 10 references, 9 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: July 2, 1958
Card 2/2

GRINEV, A.N.; YERMAKOVA, V.N.; TERENT'YEV, A.P.

Synthesis of 2-alkyl-5-methoxygramine derivatives. Zhur.
ob. khim. 31 no. 2:490-495 F '61. (MIRA 14:2)

1. Moskovskiy gosudarstvennyy universitet.
(Inodle)

GRINEV, A.N.; YERMAKOVA, V.N.; MEL'NIKOVA, I.A.; TEREENT'YEV, A.P.;

Quinones. Part 37: Condensation of p-benzoquinone with anilides
of β -aminocrotonic acids. Zhur.ob.khim. 31 no.7:2303-2306 J1
'61. (MIRA 14:7)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.
(Benzoquinone) (Crotonic acid) (Anilides)

USSR / Human and Animal Physiology. Carbohydrate Metabolism.

T

Abs Jour : Ref Zhur - Biol., No 15, 1958, No. 69844

Author : Yermakova, V. P.

Inst : Azerbaydzhani Medical Institute

Title : The Influence of "Istis" on the Content of Sugar and Phosphorus in the Blood in Experimental Liver Damage

Orig Pub : Sb. tr. Azerb. med in-ta, 1956, No 3, 71-76

Abstract : Hepatitis of varying severity was produced in rabbits by subcutaneous injections of CCl_4 in a solution of apricot oil. One group of animals was given 0.3 ml CCl_4 per kg body weight for a period of three days; a second group was given twice the dose for twice the length of time. Along with the CCl_4 injections, the experimental rabbits received "Istis" mineral water for 15 days in doses of ten ml per kg body weight, while control animals received the same dose of

Card 1/2

USSR / Human and Animal Physiology. Carbohydrate Metabolism.

T

Abs Jour : Ref Zhur - Biol., No 15, 1958, No. 69844

tap water. In all animals, studies were made of the glyceimic curve following glucose challenge and of the content of inorganic phosphorus in the blood. The "istis" was noted to exert a marked therapeutic effect. The hyperglycemic and postglycemic coefficients for animals following CCl_4 poisoning and treated with "istis" at the end of the experiment differed little from those prior to the injection of CCl_4 . In the second group of animals, with more severe poisoning of the liver, this effect was somewhat weaker. No clear-cut rule for the changes of content of inorganic phosphorus in the blood could be seen. --
L. A. Kashchevskaya

Card 2/2

YERMAKOVA, V.V.

**[Machine-tractor station's workers' committee; the work practices
of the trade union at the Kovyagi machine-tractor station]
Robithychyi komitet MTS; Z dosvidu roboti profororganizatsii
Kov'iagiv's'koi MTS. Kharkiv, Kharkivs'ke Oblasne Vid-vo, 1956.
41 p. (MIRA 10:4)**

(Machine-tractor stations) (Ukraine--Trade unions)

YERMAKOVA, V.V.

Terrigenous sediments in the Jivet and Frasnian stages in the southwestern Zhiguli Hills. Izv. vys. ucheb. zav.; no. 5 no.6:21-24 '62. (MIRA 16:5)

1. Saratovskiy gosudarstvennyy universitet imeni N.G.Chernyshevskogo. (Zhiguli Hills--Geology, Stratigraphic)

YERMAKOV, B.S.; YERMAKOVA, V.Ye.

Setting of adventitious roots in the green cuttings of grape.
Biul. Glav. bot. sada no.55:99-106 '64. (MIRA 18:11)

1. Moskovskaya sel'skokhozyaystvennaya akademiya imeni K.A.
Timiryazeva.

DERGUNOVA, A.A.; MIROMOV, A., professor, retsenzents; YERMAKOVA, Ya., inzhener,
retsenzents; MIRKIN, Kh., kandidat tekhnicheskikh nauk, spetsredaktor;
IVANOVA, N.M., redaktor; YAROV, N.M., tekhnicheskii redaktor

[Sausage casing production] Kishchnoe proizvodstvo. Moskva,
Pishchepromizdat, 1956. 103 p. (MIRA 10:2)
(Sausage casings)

YERMAKOVA, Ye.A.

Investigating temperature distributions during the evaporation
from solid state in a vacuum. Inzh.-fiz. zhur. 7 no.5:39-44 My '64.
(MIRA 17:6)

1. Institut khimicheskogo mashinostroyeniya, Moskva.

YERMAKOVA, Ye.A.

Mechanism of heat and mass transfer during sublimation of ice
in a vacuum. Inzh.-fiz.shur. no.11:73-79 N '58.

(MIRA 12:1)

1. Tekhnicheskii institut rybnoy promyshlennosti i khosyay-
stva imeni A.I. Mikhoyana, g. Moskva.

(Sublimation (Physical sciences))

(Heat--Transmission) (Mass transfer)

YERMAKOVA, Ye.A.

Experimental investigation of heat exchange during the sublimation of ice [with summary in English]. Inzh.-fiz.sbur. no.12:54-58 '58. (MIRA 11:12)

1. Tekhnicheskiy institut rybnoy promyshlennosti i khosyaystva imeni A.I. Mikoyana, g. Moskva.
(Heat of vaporisation) (Ice)

ACCESSION NR: AP4037996

S/0170/64/000/005/0039/0044

AUTHOR: Yermakova, Ye. A.

TITLE: Study of the temperature distributions during sublimation in vacuum

SOURCE: Inzhenerno-fizicheskiy zhurnal, no. 5, 1964, 39-44

TOPIC TAGS: Sublimation, convective heat transfer, heat conduction, heat exchange

ABSTRACT: The temperature fields in the chamber of a sublimator were studied for the case of evaporation of water from the solid state in vacuum for different temperatures of the walls of the sublimator. A comparison of relative distribution curves shows that heat conduction cannot be the only mechanism of heat transfer. Balance calculations based on experimentally constructed isothermal surfaces and an analysis of the configuration of experimental temperature distribution curves indicate a substantial influence of convection on the rate of heat exchange in vacuum. The role of convection in heat transfer gradually diminishes with increasing distance from the sample. Orig. art. has: 4 figures.

Card 1/2

ACCESSION NR: AF40 37996

ASSOCIATION: Institut khimicheskogo mashinostroyeniya, Moscow (Institute of
Chemical Machinery)

SUBMITTED: 17Jun63

DATE ACQ: 09Jun64

ENCL: 00

SUB CODE: TD

NO REF SOV: 000

OTHER: 000

Card 2/2

YERMAKOVA, Ye. A.

YERMAKOVA, Ye. A. -- "Investigation of Heat and Mass Exchange in Drying by Sublimation." Sub 11 Jun 52, Moscow Technological Inst of Food Industry (Dissertation for the Degree of Candidate in the Technical Sciences)

SO: VECHERNAYA MOSKVA, JANUARY-DECEMBER 1952

YERMAKOVA, Ye. A.

EXERPTA MEDICA Sec 2 Vol 11/7 Physiology July 58

2857. METHOD OF QUANTITATIVE DETERMINATION OF AMINO-ACIDS ON COMPLETELY NINHYDRIN-DEVELOPED CHROMATOGRAMS (Russian text)
Ermakova E. A. Uzbek Res. Sanit. Inst., Tashkent, USSR - BIOKIMIYA 1957, 22/5 (917-923) Graphs 2 Tables 2 Illus. 5

To avoid adsorption losses of amino-acids and reduction of the colour yield, standard solutions of various amino-acids were chromatographed under the same conditions as protein hydrolysates. The amino-acid spots thus obtained are eluted with water and standardization curves constructed from the extinction values of the eluates. The amount of amino-acid in each spot of the ninhydrin-developed chromatogram of the protein hydrolysate was determined photometrically from the respective standardization curves. The mean error of the determinations is $\pm 4\%$.

YERMAKOVA, Ye.A., Cand Chem Sci -- (diss) "Method of ^{cl}
quantitative ^{detection} ~~definition~~ of amino acids in chromatograms
completely developed with ninhydrin (Nutritive evaluation
of ^{cereals} ~~grains~~ and leguminous vegetables of ~~the~~ Uzbekistan
according to their amino acid composition)." Tashkent
1958, 14 pp (Min of Higher Education USSR. Middle Asian
~~by~~ Polytechnic Inst) 200 copies, bibliography: ~~on~~ p. 14
(16 titles) (KL, 42-58, 113)

- 7 -

~~YERMAKOVA, Ye. A.~~

Evaluation of proteins from cereals and leguminous plants in
Uzbekistan according to their amino acid content. [with summary
in English]. Vop.pit. 17 no.4:35-41 Je-Ag '58 (MIRA 11:7)

i. Iz Uzbekskogo nauchno-issledovatel'skogo sanitarnogo instituta,
Tashkent.

(AMINO ACIDS, determination.
in cereals & leguminous plants (Rus))
(CEREALS,
amino acid content (Rus))
(VEGETABLES,
same)

5(1)

AUTHORS:

Kuz'minykh, I. N., (Deceased),
Yakhontova, Ye. L., Rodionov, A. I.,
Yermakova, Ye. I.

SOV/153-58-3-15/30

TITLE:

Drying of Superphosphate in a Boiling Layer (Podsuushka
superfosfata v kipiyashchem sloye)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i
khimicheskaya tekhnologiya, 1958, Nr 3, pp 80 - 85 (USSR)

ABSTRACT:

The superphosphate produced in Soviet factories from apatite (continuous method) contains 19.3 - 19.9% assimilable P_2O_5 , including 10 - 12% H_2O . As 1% H_2O corresponds to 0.2% P_2O_5 , the removal of the humidity would increase the content of useful substance which again offers further advantages. Superphosphate may, however, not be overheated, as temperatures above 130 - 150° retransform part of the P_2O_5 into a non-assimilable form. The method of the boiling layer suggested in this paper could also be used for the purpose mentioned. The lack of references in this field stimulated this work. In this method the heat exchange takes place

Card 1/4

Drying of Superphosphate in a Boiling Layer

SOV/153-58-3-15/30

intensely and the whole substance scattered over the grating has the same temperature. In the present paper the degree of the drying of superphosphate as dependent on temperature and the duration of the blowing out with air is to be determined, and it is to be made clear to which extent the degree of drying depends on the content of free P_2O_5 . As far as

the ripening represents a bottleneck of modern superphosphate production it would be interesting to find out whether the ripening reaction is not accelerated in the boiling layer. Therefrom it could be concluded which superphosphate (fresh or ripened) is suited better for blowing out by air. The first experimental stage was carried out on a laboratory basis (Fig 1). Then the experiments were continued at the Voskresenskiy Khimkombinat (Voskresensk Chemical Kombinat).

Results obtained showed the authors that the method of the boiling layer is a simple and good means of afterdrying the superphosphate ready for shipment. Especially the waste gases of the sulfuric acid plants (the completely anhydrous ones from contact systems or those with a low water content of the tower systems) may be used for this purpose. The

Card 2/4

Drying of Superphosphate in a Boiling Layer

SOV/153-58-3-15/30

additional expenditure for the afterdrying of the superphosphate is probably the least expensive one with the method of the boiling layer. On the other hand, the transport means are relieved by about 7% and the transport costs of a then more valuable fertilizer per unit of useful substance are decreased. The possibility of simultaneously neutralizing the free P_2O_5 by ammonia seems possible. This would further increase the quality of the fertilizer. The authors draw the following conclusions from their results: The humidity content decreases in superphosphate with the decrease of the content of free P_2O_5 and with the increase in temperature: at 40° the humidity was removed to 50%, at 50° to two thirds. After 5 - 10 minutes the drying is finished. No perceivable variations of the degree of ripening are noticed during the drying of superphosphate. A more intense drying delays the ripening during the subsequent storing. The treatment with air in the boiling layer (without evaporation of the humidity) does also not accelerate the ripening. In spite of a considerable humidity content superphosphate is easily brought into the pseudo-liquefying state. The bigger the amount of

Card 3/4

Drying of Superphosphate in a Boiling Layer

SOV/153-58-3-15/30

superphosphate on the grating the higher is the gas velocity in the apparatus required to form a pseudo-liquefied layer. There are 5 figures.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskii institut imeni D. I. Mendeleeva (Moscow Institute of Chemical Technology imeni D. I. Mendeleev); Kafedra tekhnologii mineral'nykh kislot i soley (Chair of the Technology of Mineral Acids and Salts)

SUBMITTED: October 12, 1957

Card 4/4

GUKHMAN, A. A.; YEFMAKOVA, Ye. A.

"Some results of experimental investigation of the evaporation process from a solid state in vacuum."

report submitted for 2nd All-Union Conf on Heat & Mass Transfer, Minsk, 4-12 May 1964.

Moscow Inst of Chemical-Mechanical Engineering.

ACC NR: AP7002435

SOURCE CODE: UR/0819/66/000/012/0034/0036

AUTHOR: Zakharova, G.V.; Yermakova, Ye. M.; Belyayev, S. Ye.

ORG: none

TITLE: Mechanical properties of niobium and its alloys at low temperatures

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 12, 1966, 34-36.

TOPIC TAGS: niobium, niobium alloy, ^{mechanical} ~~mechanical~~ property, ~~mechanical~~ ^{thermodynamic} property/VN1 niobium alloy, VN2 niobium alloy, VN2A niobium alloy

ABSTRACT: Specimens of VN1 niobium and VN2 and VN2A niobium alloy, as-deformed, stress-relieved at 1100C, or recrystallization annealed at 1200C, were subjected to tensile and impact tests at temperatures from -253 to 20C. It was found that stress relieving had little or no effect on the mechanical properties of VN1 niobium. Recrystallization annealing lowered the tensile strength from 98 to 89 kg/mm², the yield strength from 95 to 88 kg/mm², and increased the elongation from 15 to 21% and the notch toughness from 19 to 25 kg/cm² (tested at -196C), compared to as-deformed alloy. The microstructure of recrystallized VN1 niobium was

Card 1/3

UDC: 620.17:669.293:66.974

ACC NR: AP7002435

uniform and fine-grained. Alloying with molybdenum was found to raise the nil ductility transition temperature. Consequently, the molybdenum content in niobium alloys should not exceed 4%. Additional alloying of niobium-molybdenum alloys with zirconium significantly increased their ductility and notch toughness at -196C. Lowering the test temperature to -253C resulted in increased tensile and yield strength and decreased elongation and notch toughness in NV2A niobium alloy (see Fig. 1). The

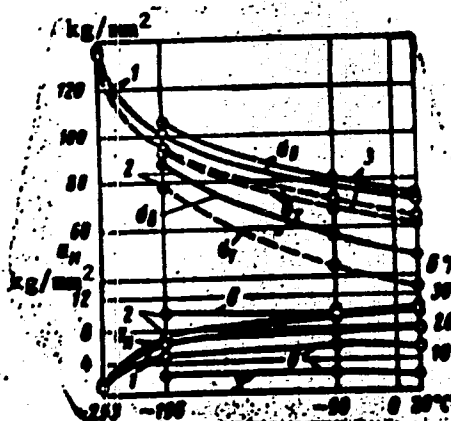


Fig. 1. Low-temperature mechanical properties of VN2A alloy (cold-rolled sheet)

- 1 - Annealed at 1000C for 30 min;
- 2 - annealed at 1300C for 1 hr;
- 3 - as rolled.

Card 2/3

ACC NR: AP7002435

sharp change in mechanical properties between -196 and -253C indicates that the alloy has a tendency to embrittlement. Fracture of VN2 alloy specimens was ductile at 20 and -196C, and brittle at -253. The results of tests showed that VN2A niobium alloy can be used in structures operating under multiaxial stresses at high and low temperatures.

[WA-88]

[TD]

SUB CODE: 11/ SUBM DATE: none/ ATD PRESS: 5114

Card 3/3

YERMAKOVA, Ye. Ya.

Mbr., Infection Clinic, Inst. Pediatrics, Dept. Clinical Med., Acad. Med. Sci., -1948-.

Mbr., Base Hospital in Rusakov, -1948-.

"Tests on the Application of Serum Purified According to the Method of the Central
Institute of Epidemiology and Medicine, in the Treatment of Diphtheria," *Pediatrics*,
No. 2, 1948;

"Age Characteristics of the Course of Serum Sickness and Its Prophylaxis," *ibid.*,
No. 5, 1948.

YERMAKOVA, YE. YA.

USSR/Medicine - Serum Sickness, Pathology
Medicine - Prophylaxis, Effects

Sep/Oct 48

"Age Characteristics of the Course of Serum Sickness and Its Prophylaxis," SH. I.
Derechinskaya, G. S. Voskresenskaya, YE. YA. Yermakova, Infectious Diseases Sector, Inst of
Pediatrics, Acad Med Sci USSR at Base Hosp Imeni Rusakov, 6 $\frac{1}{2}$ pp

"Pediatriya" No 5

Reports observations made during several years at Institute. Tabulates and discusses results.
Concludes that purified serum, TsIEM (Cen Inst of Experimental Med) preparation, used for
prophylaxis of serum. It lowers degree of anaphylactic reaction.

PA 34/49T56

YERMAKOVA, Ye. A.

USSR .

The heat exchange during sublimation of ice in porous
A. A. Gukhman and E. A. Yermakova. *24th. Publ. No. 31*
1967-75 (1963). The speed of sublimation was measured by
the weight of the amount suspended from a spring balance
in the vacuum of the ice. The method of sublimation of the

"APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001962810010-3

20-44 sub. A, p. 11, l. 40-41.

APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001962810010-3"

YERMAKOVA, Ye. Ya.

YERMAKOVA, Ye. Ya. - "The development of antitoxic immunity to experimental diphtheria of the eyes in guinea pigs". Moscow, 1955. Acad Med Sci USSR.
Inst of Epidemiology and Microbiology imeni Homerary Academician N. F. Gamaleya
(Dissertation for the Degree of Candidate of Medical Sciences).

SO: Knishnaya Letopia No. 46, 12 November, 1955 Moscow

YERMAKOVA, Z. D.

Cotton Carding

How I plan my work. Tekst. prcm., 12, No. 6, 1952.

Monthly List of Russian Accessions, Library of Congress, October 1952 UNCLASSIFIED.

ZMURAVLEV, S.V.; YERMAKOVA, Z.I.

Some methods of synthesizing 10-(\sqrt -chloropropyl)-2-chlorophenethiazine. Zhur. prikl. khim. 38 no.5:1174-1176 My '65.
(MIRA 18:11)

1. Institut farmakologii i khimioterapii AMN SSSR.

ZHURAVLEV, S.V.; GRITSENKO, A.N.; YERMAKOVA, Z.I.

Synthesis in the phenothiazine series. Part 7: Synthesis of 10- γ -chloropropyl derivatives of phenothiazine, 2-chloro-, 2-acetyl-, and 2-propionylphenothiazine. Zhur.ob.khim. 32 no.6:1912-1914 Ja '62. (MIRA 15:6)

1. Institut farmakologii i khimioterapii Akademii meditsinskikh nauk SSSR.

(Phenothiazine)

ZHURAVLEV, S.V.; YERMAKOVA, Z.I.; GRITSENKO, A.N.

Synthesis in the phenothiazine series. Part 9: Synthesis of
10- γ -[4-(β -hydroxyethyl)-1-piperazinyl]-propyl-phenothiazine
and its 2-chloro-, 2-acetyl-, and 2-propionyl-substituted analogs.
Zhur.ob.khim. 32 no.7:2244-2248 J1 '62. (MIRA 15:7)

1. Institut farmakologii i khimioterapii Akademii meditsinskikh
nauk SSSR.

(Phenothiazine)

PARIYSKAYA, L.V.; KOGAN, P.N.; KALACHEVA, A.P.; CHEREDNICHENKO, G.S..

Prinimali uchastiye: PASHNINA, V.I.; KOROBKOVA, T.N.; BURYAKOVA, G.I.; AGASHKINA, N.S.; AMFOKHINA, G.N.; AMUROVA, V.Ya.; BOBINA, M.L.; YERMAKOVA, Z.P.; YEFREMOV, Yu.A.; POLUTSKAYA, L.G.; SHISHKINA, V.O.; LAPTIYEV, P.P., otv.red.; ROGOVSKAYA, Ye.G., red.; SERGEEV, A.N., tekhn.red.

[Agroclimatic reference book on Chita Province] Agroklimatechskii spravochnik po Chitinskoj oblasti. Leningrad, Gidrometeor.izd-vo, 1959. 131 p. (MIRA 13:2)

1. Chita. Gidrometeorologicheskaya observatoriya. 2. Starshiy inzhener-agrometeorolog Chitinskoy gidrometeorologicheskoy observatorii (for Pariyskaya). 3. Chitinskaya gidrometeorologicheskaya observatoriya (for Kogan, Kalacheva, Cherednichenko). (Chita Province--Crops and climate)

TSYGODA, I.M.; KAZAKOV, V.N.; KOLESHNIKOV, N.A.; BRYUKHANOV, N.G.; BURBA, A.A.; SADYKOV, V.I.; PIGAREV, A.D.; Primali uchastiy: PECHENKIN, S.N.; GLAZACHEV, G.M.; KHVESYUK, F.I.; KODINTSEV, A.V.; YERGALIYEV, E.Ye.; YERMAKOVA, Z.S.; NOVAK, I.V.; KHIL'KO, I.Ye.; LYASHEVSKIY, R.A.; PROKHOROV, A.I.; CHERTOVA, N.G.; URUBKO, V.N.; KUGUCHEV, V.V.

Industrial testing of a flow sheet for the processing of Altai complex metal ores along the lines of the flow sheet used at the Mednogorskii Combine. TSvet. met. 36 no.12:12-15 D '63. (MIRA 17:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy gorno-metallurgicheskiy institut tsvetnykh metallov (for Pechenkin, Glazachev, Khvesyuk, Kodintsev). 2. Irtyshskiy polimetallicheskiy kombinat (for Yergaliyev, Yermakova). 3. Mednogorskiy medno-sernyy kombinat (for Novak, Khil'ko, Lyashevskiy, Prokhorov, Chertova, Urubko, Kuguchev).

YERMAKOVICH, D. V.,

"Study of Mechanical Properties of Nonrigid Toppings of Automobile Roads on the Basis of Measurement of Sags and Stresses." (Dissertation for Degree of Candidate for Technical Sciences) Min Higher Education USSR, Khar'kov Automobile Roads Inst. Khar'kov 1955

SO: M-1036 28 Mar 56

YERMAKOVICH, D.V., kand.tekhn.nauk

Rheological phenomena in stabilized soils caused by
loading. Avt.dor.i dor.stroi. no.1:32-36 '65.

(MIRA 18:11)

BIRULYA, Aleksandr Konstantinovich, prof.; GOVORUSHCHENKO, Nikolay Yakovlevich, dots., kand. tekhn. nauk; YERMAKOVICH, Dmitriy Vladimirovich, dots., kand. tekhn. nauk; YAKOVLEVA, A.I., red.; GOVRIZHNYKH, L.P., red.; GALAKTIONOVA, Ye.N., tekhn. red.

[Highways and their use] Ekspluatatsionnye kachestva avtomobil'nykh dorog. Moskva, Nauchno-tekhn.izd-vo M-va avtomobil'nogo transp. i shosseinykh dorog RSFSR, 1961. 133 p. (MIRA 15:2)
(Transportation, Automotive) (Roads)

BIRULYA, A.K.; YERMAKOVICH, D.V.

Laboratory investigating of mechanical properties of soil-
cement pavement models. Trudy Khar. avt.-dor. inst. no.28:
13-25 '62. (MIRA 17:2)

YERMAKOVICH, D.V.; KUPRIN, B.D.

Device for measuring deformations in road structures. Trudy
Khar. avt.-dor. inst. no.28:26-29 '62. (MIRA 17:2)

YERMAKOVICH, V. starchiy kinomekhanik.

More attention to the lubrication of projectors. Kinomekhanik no.6:31-32
Je '53. (MLHA 6:8)

(Moving-picture projectors)

YERMAKOVICH, V.K., inzh.

Converters using germanium diodes. Avtom., telem. i svyaz' 3
no.12:31-32 D '64. (MIRA 18:1)

1. Laboratoriya signalizatsii i svyazi Vostochno-Sibirskoy dorogi.

VERMILLAN, H. I.
ZABOLOTNYY, Ivan Prokof'yevich; POLONSKIY, Mikhail Isaakovich; PAVLOV,
K.V., kand.tekhn.nauk, retsenzent; LYAKHOV, G.M., kand.tekhn.nauk,
retsenzent; YERMALENKO, M.I., gornyy inzh., retsenzent; SOSEDOV,
O.O., gornyy inzhener; AVSEYENOK, A.P., otv.red.; SIPYAGINA, Z.A.,
red.isd-va; ISLENT'YEVA, tekhn.red.; PROZOROVSKAYA, tekhn.red.

[Mining engineering; for miners of underground integrated brigades]
Gornorudnoe delo; dlia gornorabochikh podzemnykh kompleksnykh
brigad. Moskva, Gos.nauchno-tekhn.isd-vo lit-ry po gornomu delu,
1960. 384 p. (MIRA 13:3)

(Mining engineering)

YERMALINSKAYA, E.A.

Extrauterine pregnancy at a late term. Zdrav. Belor. 6 no.8:71-72
Ag '60. (MIRA 13:9)

(PREGNANCY, EXTRAUTERINE)

YERMALENSKIY, A.F.

Possible complications in the use of the adrenocorticotrophic hormone.
Zdrav. Belor. 5 no.3:33-35 Mr '59. (MIRA 12:7)

1. In Lyubanskoy rayonnoy bol'nitsy (glavnyy vrach N. Ye. Karelin).
(AGTH)

YERMALINSKIY, A.F.

Pathogenesis of infectious nonspecific polyarthritia. Zdrav.
Belor. 5 no.8:27-29 Ag '59. (MIRA 12:10)

1. Iz Lyubanskoy rayonnoy bol'nitsy (glavnyy vrach N.Ye.Karelin).
(BLOOD--SERUM) (ARTHRITIS, RHEUMATOID)

YERMALINSKIY, A.F.

Skin reaction in rheumatism and the therapeutic effect. Zdrav.
Bel. 7 no.10:21-26 0 '61. (MIRA 14:11)

1. Iz Lyubanskoy rayonnoy bol'nitsy (ispolayayushchiy obyazannosti
glavnogo vracha N.I.Zhaleyko). Nauchnyy rukovoditel' - prof. I.D.
Mishenin.

(GAMMA GLOBULIN)

(SKIN)

(RHEUMATIC HEART DISEASE)

YERMALINSKIY, A.F.

Specific antigen in the blood serum in infectious nonspecific
polyarthrits and rheumatism. Zdrav. Bel. 8 no.6:15-16 Je'62.
(MIRA 16:8)

1. Iz Lyubanskoy rayonnoy bol'nitsy (glavyy vrach N.Ye.
Karelin).

(RHEUMATISM) (ARTHRITIS) (ANTIGENS AND ANTIBODIES)

YERMALINSKIY, A.F.

Effectiveness of gamma globulin in rheumatic fever. Zdrav. Bel.
9 no.3:82-83 Mr'63 (MIRA 16:12)

1. Iz Lyubanskoy rayonnoy bol'nitsy. Nauchnyy rukovoditel' raboty - prof. I.D.Mishenin.

YERMAN, B. A.; MYL'NIKOVA, N. Ye. (Sverdlovsk)

Pathomorphology and histochemistry of poliomyelitis in children
vaccinated with Salk vaccine. Arkh. pat. no.12:11-16 '61.
(MIRA 15:7)

1. Iz Sverdlovskogo nauchno-issledovatel'skogo instituta po
profilaktike poliomiylita (dir. G. F. Bogdanov)

(POLIOMYELITIS) (BRAIN) (SPINAL CORD)

YERMAN, B.A.

Result of an investigation of the brucellosis ticks *Dermacentor
nutalli*, collected in Chita Province. Preliminary report. Izv.
Irk.gos.nauch.-issl.prirodoveden.iest. 14:165-168 '57.

(MIRA 13:7)

(CHITA PROVINCE--TICKS AND CARRIERS OF DISEASE)
(BRUCELLOSIS)

YERMAN, B.A.

Quality of Hottinger's agar in relation to the length of preservation. Izv. Irk. gos. nauch.-issl. protivechun. inst. 20:331-334
'59. (MIRA 13:7)

(BACTERIOLOGY--CULTURES AND CULTURE MEDIA)
(AGAR)

17(2,3,4)

304/16-59-6-20/46

AUTHOR: Yerman, B.A.

TITLE: The Morphological and Some Histochemical Changes (Glycogen, Alkaline Phosphatase and Ribonucleic Acid) in Guinea Pigs During Infection Caused by Clostridium Oedematiens

PERIODICAL: Zhurnal mikrobiologii, epidemiologii i immunobiologii, 1959, ³⁰Nr 6, pp 95-104 (USSR)

ABSTRACT: The aim of the present work was, first, to study the morphological development of anaerobic gangrene caused by Clostridium oedematiens in doses which killed the animals in approximately the same time that it takes to kill patients with the acute or fulgurant form of gas gangrene and, second, to study the metabolic disturbances, particularly the content of glycogen, alkaline phosphatase and ribonucleic acid in the cells and tissues of the animals at various stages of gas gangrene. The pathological anatomy of gas gangrene has been studied by A.N. Chistovich, V.I. Krasichkova, A.Z. Dyagileva, A.V. Smolyannikov and Ya.L. Rapoport. Disturbance in the carbohydrate metabolism was noted by Z.N. Kazimirova, Ts.S. Kagan, Yu.M. Geftter, A.N. Shatalova, Rubel', Yu.A. Arshinova, M.K. Gesberg, F.M. Shapiro, M.V. Glikina and O.A. Levin. B.V. Kdrovskiy,

Card 1/3

SCV/16-59-6-20/46

The Morphological and Some Histochemical Changes (Glycogen, Alkaline Phosphatase and Ribonucleic Acid) in Guinea Pigs During Infection Caused by Clostridium Oedematiens

D.L. Ferdman, E. Bolludin, etc., have discussed the importance of alkaline phosphatase and ribonucleic acid on the metabolic processes. For the present tests, guinea pigs weighing 350-400 g were injected with 0.01 (death in 48 hours) and 0.1 ml (death in 24 hours) two-day broth culture of Clostridium oedematiens. The guinea pigs were then killed off at regular stages after infection and various tissue specimens subjected to histochemical examination. Glycogen was determined by the Shabadash method, alkaline phosphatase by the Gomori method, ribonucleic acid by the Brachet method, fat by the Goldman method, adrenalin by Weasel's, fibrin by Weigert's, collagen by van Gieson's method and the impregnation of the argyrophil fibers by Foot's method. The tests showed that the muscle fibers and polymorphonuclear leukocytes lost glycogen. The lymph, monocytoïd and histiocytic cells lost ribonucleic acid. The nodes on the control (non-injected) side developed a hyperplastic process with an increase in the number of lymphoblasts, lymphocytes and reticular cells saturated with ribonucleic acid. Foci of fatty degeneration were noted in the liver, kidneys and myocardia. The hepatic cells lost glycogen. A weakening of alkaline phosphatase activity was noted in the kidneys

Card 2/3

80V/16-59-6-20/46

The Morphological and Some Histochemical Changes (Glycogen, Alkaline Phosphatase and Ribonucleic Acid) in Guinea Pigs During Infection Caused by Clostridium Oedematiens

with irregular appearance of glycogen in the epithelial cells of the nephritic canaliculi. No noticeable change could be detected in the amount of ribonucleic acid in the liver or the pancreas. There are: 6 photos and 26 references, 20 of which are Soviet, 2 German, 1 French and 3 English.

ASSOCIATION: Institut epidemiologii i mikrobiologii imeni Gamalei AMN SSSR (Institute of Epidemiology and Microbiology imeni Gamaleya of the AMN, USSR)

SUBMITTED: November 13, 1958

Card 3/3

YERMAN, B. A., Cand Med Sci — (diss) "Morphological and certain histochemical changes in relation to glycogen, adrenalin, ribonucleic acid and alkaline phosphatase in non-immune and immune guinea pigs during anaerobic gangrene caused by Cl oedematiens," Moscow, 1960, 13 pp (Academy of Medical Sciences USSR)
(KL, 38-60, 110)

YERMAN, B.A.

Morphological and histochemical changes following immunization of guinea pigs with a *Cl. oedematiens* anatoxin. Zhur. mikrobiol. epid. i immun. 32 no.7:77-81 Je '61. (MIRA 15:5)

1. Iz Instituta epidemiologii i mikrobiologii imeni Gamalei AMN SSSR. (CLOSTRIDIUM OEDEMATIENS) (TOXINS AND ANTITOXINS)

YERMAN, B. A.; ESSEL', A. Ye.; BRONITSKAYA, Ye. Yu.; SHUBINA, S. B.; MYASNIKOVA, A. T.

"Tsitofotometricheskoye opredeleniye sodержaniya rnk v kletkakh ner-2, zarazhennykh rnk-soderzhashchim virusom."

report presented at Symp on Virus Diseases, Moscow, 6-9 Oct 64.

Institut virusnykh infektsiy, Sverdlovsk.

YERMAN, B.A.; PLOTNIKOV, N.P.; KADKINA, Ye.V.; MYASNIKOVA, A.T.; SHUBINA,
S.B. (Sverdlovsk)

Morphology and cytochemistry of the cells of the HEp-2 tissue
culture under normal conditions and in enterovirus infections.
Arkhn. pat. 26 no.9:47-55 '64. (MIRA 18:4)

1. Sverdlovskiy nauchno-issledovatel'skiy institut virusnykh
infektsiy (dir. G.F.Bogdanov).

BUR'YAN, Yu.L.; BYTNSKIY, M.G.; DOLOPOLOV, N.M.; EPSHTAYN, O.M.; YERMAN, B.I.

Gelatin extraction. Patent U.S.S.R. 77,271, Dec.31, 1949.
(CA 47 no.19:10262 '53)

TERMAN, D.

NEDIVAL, A; YERMAN, D; SPICER, F.

Epidemic of typhoid fever in the hospital in Vinkovci during
1952-53. Higijena, Beogr. 6 no.3-4:261-272 '54.

1. Higijenski savod, Osije, Opca bolnica, Vinkovci.
(TYPHOID FEVER, epidemiology,
epidemic in hosp.)

YERMAN, L.K. (Moskva)

Medical workers during the period before and during the
December armed revolt of 1905. Klin. med. 34 no.1:3-9 Ja '56.

(MIRA 9-5)

(MEDICINE

in Russia, medical workers during December armed
revolt in 1905)

YERMAN, L.Ya.; GAL'PERINA, Ye.I.

New data on the crystalline structure of $\text{Bi}_2\text{O}_3 \cdot 2\text{MoO}_3$.

Zhur.neorg.khim. 11 no.1:221 Ja '66.

(MIRA 19:1)

1. Submitted May 20, 1965.

KUTEPCV, D.F.; YERMAN, L.Ya.; GOL'DER, G.A.; GAL'PERIN, Ye.L.; DUBOV, S.S.

Structure of some derivatives of urea and guanidine. X-ray
study of diureides and diguanyls of cyclohexanediene and
diaryl urea. Zhur. strukt. khim. 5 no.4:646-649 Ag '64.
(MIRA 18:3)

KABANOV, P.I., doktor ist. nauk; YERMAN, P.K., kand. ist. nauk;
KUZNETSOV, N.V., kand. ist. nauk; USHAKOV, A.V., kand.
ist. nauk; ANTONOV, V., red.; ZAKHAROVA, G., mlad. red.;
NOGINA, N., tekhn.red.

[Outline of the history of the Russian proletariat,
1861-1917] Ocherki istorii Rossiiskogo proletariata;
1861-1917. [By] P.I.Kabanov i dr. Moskva, Sotsekgiz,
1963. 388 p. (MIRA 16:11)
(Labor and laboring classes)

BARBANKL', R.I.; YERMANOK, M.Z.

Technological features in the production of panels extruded
from a flat container. TSvet. met. 38 no.1:74-79 Ja '65
(MIRA 18:2)

KABANOV, Petr Ivanovich; YERMAN, ~~Rafa'il Konstantinovich~~; SEMENYUK,
G.F., red.; KOZLOVSKAYA, N.D., ~~transl.~~

[Morozov strike of 1885] Morozovskaia stachka 1885 goda;
posobie dlia uchitel'ia. Moskva, Uchpedgiz, 1969. 113 p.
(MIRA 16:9)

(Moscow--Strikes and lockouts--Textile industry)

YERMAN, S.S. (Moskva)

Protecting the health of children in rural areas during the first
year of life. Fel'd. i akush. 26 no.4:36-38 Ap '61. (MIRA 14:3)
(INFANTS—CARE AND HYGIENE)

YERMAN, V.L. (Moskva); SOBOLEV, O.K. (Moskva); TSATURYAN, K.T. (Moskva)

Problems concerning the theory of self-adjusting control
systems. Izv. AN SSSR. otd. tekhn. nauk. tekhn. kib. no.3:103-
111 My-Je '63. (MIRA 16:7)

(Automatic control)

YERMANOK, I. P.

"Investigation of the Influences of Cement Exothermal."

Report submitted for the Conference on Heat and Mass Transfer,
Minsk, USSR, June 1961.

YERMANOK, M.Z.

PAVLOV, I.P.; SHEVAKIN, Yu.P.; YERMANOK, M.Z.

Increasing the productivity of mills for the cold rolling of
pipes. Trvet.net. 28 no.6:41-50 N-D '55. (MIRA 10:11)
(Rolling (Metalwork)) (Pipe)

ACC NR: AP700C596

(N)

SOURCE CODE: UR/0129/66/000/011/0054/0055

AUTHOR: Grishkovets, Ya. G.; Yermanok, M. Z.; Pinskaya, L. I.

ORG: none

TITLE: Mechanical properties of D1 alloy tubes

SOURCE: Metallovedeniya i termicheskaya obrabotka metallov, no. 11, 1966, 54-55

TOPIC TAGS: aluminum alloy tube, aluminum alloy ^{metal} tube, cold drawing, ^{annealing,} ~~aluminum alloy~~
~~tube~~, property, ~~aluminum alloy tube~~, structure/D1 alloy
^{mechanical} ^{grain}

ABSTRACT: A method for improving the structure and mechanical properties of D1 aluminum alloy tubes has been investigated. Cold-rolled tubes, 55 mm in outside diameter with a wall 2 mm thick, were cold drawn without a mandrel to 54—34 mm in diameter, annealed at 500C for 40 min, quenched, and naturally aged. Depending on the reduction, the tensile strength varied from 36.8 to 43.8 kg/mm², the yield strength from 22,3 to 27.2 kg/mm², and the elongation from 18 to 23.5%. The minimum strength properties and the largest grain were observed in specimens drawn with 5—12.5% reduction; the strength increased with increasing reduction. Annealing in a saltpeper bath increased the strength by 1.5—3.0 kg/mm² and reduced the elongation by 0.5—3.0% as compared to furnace annealing. Annealing with rapid heating high frequency induction improved somewhat the strength properties and structure of cold-drawn tubes. Orig. art. has: 2 figures.

SUB CODE: 11, 13/ SUBM DATE: none/

Card 1/1

UDC: 680.17:669.717

YERMANOK, M. Z.

136-3-13/25

AUTHORS: Shevakin, Yu. F., Candidate of Technical Sciences and
Yermanok, M. Z.

TITLE: ~~Organization of the~~ Production of Specially Thin-Walled
Aluminium-Alloy Tubes. ~~Osvoyeniye~~ proizvodstva osobo
tonkostennykh trub iz alyuminiyevykh splavov).

PERIODICAL: ~~Dvetsnyye~~ Metally, 1957, No.3, pp.66-74 (USSR)

ABSTRACT: The purpose of the present work was to study conditions
for the production of cold rolling and drawing without a
mandrel of very thin-walled (down to 0.20-0.23 mm)
aluminium-alloy tubes and to compare this with other methods.
In the experiments pass design was calculated by a method
developed by Shevakin and rolling pressures were measured.
Direct and derived curves are given showing the inter-
relation of rolling factors and photographs of tubes with
different defects are shown. The operating characteristics
of cold-rolling mills with different alloys, data showing
the influence of wall thickness on thickening during drawing
without a mandrel and recommended drawing and rolling
conditions are tabulated. Compared with ordinary methods
the recommended procedure secures higher yields of sound
tubes with less effort: the productivity of mills for cold
rolling very thin-walled tubes is 2-3 times higher than that

1/2

136-3-13/25
Organization of the Production of Specially Thin-Walled Aluminium-Alloy Tubes.

2/2 of TsNIITMash-design roller machines.
There are 7 figures and 4 tables and 3 Slavic references.

AVAILABLE: Library of Congress

YERMANOK, M.Z.; KILYMERNOV, V.F.

**Efficient technology for the production of rectangular aluminum
tubes. Tsvet. met. 30 no.5:85-90 May '57. (MLBA 10:6)
(Aluminum) (Extrusion (Metalwork))**

AUTHOR: Yermanok, M.Z.

SOV/149-58-4-20/26

TITLE: ~~Variation of the Wall Thickness in Mandrel-less~~
Drawing of Aluminium Alloy Tubes (Izmeneniye toleshchiny
stenki pri bezopravochnom volochenii trub iz
alyuminiyevykh splavov)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya
Metallurgiya, 1958, Nr 4, pp 142-152 (USSR)

ABSTRACT: Cold rolling used in conjunction with free drawing
constitutes a most efficient method of making thin-
walled tubes. However, the wall thickness of the tube
is usually altered during the latter operation, the
magnitude of this effect being proportional to the
total reduction of the tube diameter. When close
dimensional tolerances are aimed at, it is essential
to know how the variation of the wall thickness is
affected by various factors and it was in order to
provide such data that the present investigation was
instigated. Tubes made of aluminium alloys D16 and
AMG (both in the hard and annealed condition), 30 mm
diameter and 1 mm wall thickness were used in the

Card 1/4

SOV/149-58-4-20/26

Variation of the Wall Thickness in Mandrel-less Drawing of
Aluminium Alloy Tubes

experiments. The characteristic dimensions of the drawing; dies made of steel Y8 were: Die entry angle - 12, 20, 30 and 40°; length of the cylindrical bearing section - 2 and 15 mm. Two ranges of drawing speeds were employed: 150-250 mm/min and 25-45 m/min. (In the discussion of the results the following terms are used: Total reduction of the tube diameter $\Delta D = D_K - D_N$, where D_K and D_N are the final and the initial diameters of the tube respectively. Elongation per pass $\mu = D_N/D_K$. Variation of the wall thickness $\Delta t = t_K - t_N$, where t_K and t_N denote the final and initial wall thickness. Back tension = Q/F kg/mm²). It was found that when the operating conditions in free drawing are such that the tube is deformed in die only, Δt is proportional to ΔD (Fig.1 and 2) and t_N (Fig.4 and 5), but is not affected by variation of D_N (Table 1). With increasing μ the value of Δt decreases (Fig.1 and 2). Δt is the same for both hard and annealed materials and it is not affected by application of two-stage drawing (Table 4).

Card 2/4

SOV/149-58-4-20/26

Variation of the Wall Thickness in Mandrel-less Drawing of
Aluminium Alloy Tubes

While Δt is not affected by variation of the length of the cylindrical bearing section of the die (Table 2), it varies considerably when the entry angle α is altered (Fig.6). When $\alpha = 12^\circ$ the wall of the tube becomes thicker after a drawing operation; when $\alpha = 40^\circ$, Δt is negative i.e. the wall thickness decreases. (The combined effect of α and t on Δt is shown on Fig.7) Similar effect is observed when back tension is applied (Fig.8), i.e. with increasing Q/F the value of Δt linearly decreases. If t_0 = increase of the wall thickness in the absence of back tension, A = back tension corresponding to $\Delta t = 0$, then the following formula can be used: $\Delta t = t_0 - t_0/A \times Q/F$. The last two effects are attributed to the fact that at high values of α and Q/F , deformation of the tube takes place also outside the die. It was concluded that the best way of minimising Δt is application of back tension and heavy drafts. Application of large

Card 3/4

SOV/149-58-4-20/26

Variation of the Wall Thickness in Mandrel-less Drawing of
Aluminium Alloy Tubes

die entry angles is not to be recommended for industrial applications owing to the fact that the tube becomes unstable in the deformation region, particularly if heavy drafts are employed. There are 8 figures, 4 tables and 5 Soviet references.

ASSOCIATION: Moskovskiy Institut Tsvetnykh Metallov i Zolota.
Kafedra Obrabotki Metallov Davleniyem (Moscow Institute of Non-Ferrous Metals and Gold, Chair for Shaping of Metals by Pressure)

SUBMITTED: 30th December 1957.

Card 4/4

SOV/136-58-5-12/22

AUTHOR: Yermanok, M. Z.

TITLE: Investigation of the Process of Mandrel-less Drawing
of Aluminium Alloy Tubes (Issledovaniye
bezopravochnogo volocheniya trub iz alyuminiyevykh splavov)

PERIODICAL: Tsvetnyye Metally, 1958, nr. 5, pp 70 - 77 (USSR)

ABSTRACT: Tubes of the alloys D16 and AMG were investigated in the annealed state as well as after cold rolling. The compositions of the alloys and their mechanical properties are entered in Table 2; the annealing regime consisted of heating for 90 min at 400 °C, whereby one of the alloys was cooled in air and the other was allowed to cool down in the furnace to 200 °C with a speed of 30 °C per hour and then in air. Tubes of 30 mm dia and wall thicknesses of 1, 2, 3 and 4.5 mm and also tubes of 18, 24, 35 and 51 mm dia. with wall thicknesses of 1 and 2 mm were used in the experiments. The degree of deformation during rolling of the tubes with various wall thicknesses was approximately the same. For reducing the difference between the longitudinal and transverse wall thicknesses, the rolling was effected at reduced rates of feed. The drawing was carried out by means of a 5-ton test machine with a speed of 150-250 mm/min. and on a 5-ton drawing stand with a speed

Card1/3

SOV/136-58-5-12/22

Investigation of the Process of Mandrel-less Drawing of
Aluminium Alloy Tubes

of 25 and 45 m/min. Dies made of the steel U8 with a cone opening of 12, 20, 30 and 40° and widths of the calibrating strip of 2 and 15 mm were chosen. The tube dimensions were measured with a micrometer with an accuracy of 0.1 mm. The wall thickness at each cross-section was measured in 10 to 15 points along the perimeter. On the basis of the obtained results, which are tabulated in graphs, the following conclusions are arrived at: 1) the dependence of the drawing force on the rate of deformation per pass is linear; 2) the stress at the boundary between the elastic and plastic zones of deformation is a parabolic function of the degree of preliminary deformation; 3) with increasing cone angle of the drawing die, the drawing force will increase the more intensively the thicker the original wall thickness of the tube; 4) the initial tube diameter does not affect the drawing force. Formulae are derived interrelating the degree of thickening of the walls with the basic parameters

Card 2/3

SOV/136-58-5-12/22

Investigation of the Process of Mandrel-less Drawing of Aluminium Alloy Tubes

of the process; the distribution of the rate of reduction in the case where the tube sinking is effected in two stages does not influence the changes in the wall thickness; a technology has been evolved which reduces the increase in the wall thickness of the tubes during the process of sinking.

The work described in this paper was carried out under the leadership of Professor I.L. Perlin. A. Shaller participated in the experiments.

There are 9 figures, 7 tables and 12 references, 11 of which are Soviet and 1 English.

ASSOCIATION: Mintsvetmetzoloto

Card 3/3

1. Aluminum tubing--Production 2. Aluminum alloys--Applications

YERMANOK, M.Z.

Strains in the elasticity zones of the deformation center
and the friction factor during the deep drawing of pipes. Izv.
vys.ucheb.zav.; tevet.met. 2 no.6:166-177 '59.
(MIRA 13:4)

1. Krasnoyarskiy institut tevetnykh metallov, kafedra
obrabotki metallov davleniyem.
(Deep drawing (Metalwork)) (Friction)

YERMANOK, M. Z., Cand Tech Sci (diss) -- "Investigation of certain parameters for drawing and cold-rolling of pipe of aluminum alloys", Moscow, 1960. 23 pp (Min Higher and Inter Spec Educ RSFSR, Krasnoyarsk Inst of Nonferrous Metals im M. I. Kalinin, Chair of "Pressure-Processing of Metals"), 150 copies (KL, No 15, 1960, 134)

86689

1.1200

S/136/60/000/012/009/010
E193/E183

AUTHORS: Barbanel', R.I., and Yermanok, M.Z.

TITLE: Investigation of Stresses During Extrusion of Ribbed
Aluminium Alloy Components

PERIODICAL: Tsvetnyye metally, 1960, No. 12, pp. 74-80

TEXT: For both technical and economic reasons, extrusion is
widely employed in the manufacture of ribbed components used in the
aircraft and allied industries. The cross-section of some
components of this type is illustrated below. The object of the
present investigation was to determine the parameters required for
analytical determination of the extrusion pressure for the case of
a non-cylindrical (rectangular) container and experimentally to
check the validity of the theoretical formula derived. The
extrusion pressure, P , for the case of a rectangular container, can
be calculated from a formula due to Professor I.L. Perlin (Ref. 2).

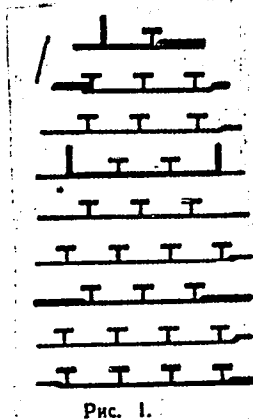
Card 1/7

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E193/E183

Investigation of Stresses During Extrusion of Ribbed Aluminium Alloy
Components

Fig. 1



Card 2/7

86689

S/136/60/000/012/009/010
E193/E183

Investigation of Stresses During Extrusion of Ribbed Aluminium Alloy Components

For a rectangular container with radiused edges, which was used by the present authors, this formula becomes:

$$P = 2[\pi r + (a - 2r)] L_{se} \cdot K_{kp} + [\pi r^2 + (a - 2r) \cdot 2r] \cdot \ln \mu \cdot \frac{1}{\sin \alpha} \cdot (K_{m.c} + \beta \cdot \alpha \cdot S_{d.c}) + F_{k.p} \cdot \eta \cdot f_N \cdot S_{d.k} \quad (1a)$$

The unknown quantities in this formula include K_{kp} (stress, kg/mm², due to friction between the extruded metal and the container walls), $S_{d.c}$ (the mean value of the resistance to deformation, kg/mm², of the extruded metal in the deformation region), and $S_{d.k}$ (resistance to deformation of the extruded metal after leaving the deformation region). However, the present authors show that the formula given above can be used only for the values of S_d (resistance to deformation in the various cross-sections of

Card 3/7

86689

S/136/60/000/012/009/010
E193/E183

Investigation of Stresses During Extrusion of Ribbed Aluminium Alloy Components

the deformation region) known. These can be determined from the true stress/strain diagram constructed from experimentally determined load/strain curves for a given material. However, the values of S_d , determined in this manner, can be used in formula (1a) only if the duration of the deformation process during the tensile tests is equal to the duration, τ_d , deformation during extrusion. To calculate τ_d it is necessary to know the volume, V , of the deformation region of the extruded component, and the present authors derived a formula for V for the case of thin strip extruded from a rectangular container:

$$V = \frac{5}{6} \pi b_1^2 \cdot a_2 \quad (2a)$$

where a_2 is the width of the extruded strip and b_1 is the thickness of the extrusion billet. All other relevant parameters of the extrusion process and the tensile tests being known, the present authors were able to calculate the correct rate of strain

Card 4/7

86689

S/136/60/000/012/009/010
E193/E183

Investigation of Stresses During Extrusion of Ribbed Aluminium Alloy Components

to be used during tensile tests, from the results of which the true stress/deformation diagrams were constructed for the aluminium alloy Al6 (D16), deformed at 350, 400 and 450 °C. Unfortunately, only values of $S_{d.H}$ (resistance to deformation of metal that has just entered the deformation region) could be determined directly from these diagrams. It was found, however, by application of the method of minimum squares, that the diagrams could be represented with sufficient degree of accuracy in the form of straight curves, from which the values of $S_{d.c}$ and $S_{d.k}$ could be found by extrapolation. In addition, the values of $S_{d.c}$ were calculated with the aid of formulae derived by several other workers. Since these calculations gave widely differing results, it was decided to check experimentally which of the formulae used gave the most accurate results. To this end, the alloy D16 was extruded in the form of rod, with the aid of a cylindrical container and a conical die ($\alpha = 65^\circ$), the extrusion pressure, P , was measured,

Card 5/7

86689

S/136/60/000/012/009/010
E193/E183

Investigation of Stresses During Extrusion of Ribbed Aluminium Alloy Components

and from the values of P , the magnitude of $S_{d.c}$ was determined for various extrusion conditions. The values of $S_{d.c}$ obtained in this manner were much lower than any calculated from the true stress/deformation diagrams, approaching most closely those obtained with the aid of a formula due to I.L. Perlin (Ref.6). In the final stage of the present investigation, the magnitude of P in extruding three types of ribbed components was determined experimentally. The values obtained were considerably lower than those calculated with the aid of formula (1a), in which the values of $S_{d.c}$ and K_{kp} , determined from data on extrusion of rods from a cylindrical container, were used. This discrepancy was found to be due to the fact that the calculated values of K_{kp} were considerably higher than its true magnitude. When correct values of K_{kp} (determined directly from data on extrusion of ribbed components) were used in formula (1a), the difference

X

Card 6/7

AUTHORS: Grinev, A. N., ~~Yermakova, V. N.~~, SOV/20-121-5-27/50
Terent'yev, A. P., Corresponding Member, AS USSR

TITLE: Synthesis of 1-Benzyl-2-Methyl-5-Methoxy Tryptamine (Sintez
1-benzil-2-metil-5-metoksitriptamina)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 121, Nr 5,
pp. 862-864 (USSR)

ABSTRACT: E. Shaw (Ref 1, 1955) synthesized 1-benzyl-2-methyl-5-methoxy-
-indole-3- acetic acid from the substituted phenyl-hydrazone
of the methyl ether of levulinic acid by means of the Fischer
(Fisher) reaction. Owing to the reduction of the amide of this
acid by means of lithium-aluminium hydride, 1-benzyl-2-methyl-
-5-methoxy tryptamine (VII) was produced. Clinical investiga-
tions have shown that the latter substance being a benzyl ana-
log of serotonin (BAS) has a higher physiological activity
than its antimetabolite (Refs 2 - 5). A scheme of the synthe-
sis of the substance (VII) carried out by the authors is
given. The condensation of p-benzoquinone with the ethyl-ether
of the N-benzyl- β -amino-crotonic acid with respect to
1-benzyl-2-methyl-3-carbethoxy-5-oxy indole (I) has only been

Card 1/2

Synthesis of 1-Benzyl-2-Methyl-5-Methoxy Tryptamine

SOV/20-121-5-27/50

achieved under conditions which deviate from the conditions of production of other nitrogen-substituted 5-oxy indolines (Refs 6-9). The methylation of the oxy-group of indole (I) takes place smoothly under the influence of dimethyl sulfate in an alkaline medium. The splitting off of the carbethoxy group from 1-benzyl-2-methyl-3-carbethoxy-5-methoxy indole (II) most probably passes through a stage of formation of a form of indoline in connection with an action of H_2SO_4 in acetic acid solution. The other stages of the process are carried out according to methods analogous to those given in publications (Refs 10,11). There are 11 references, 5 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova
(Moscow State University imeni M.V. Lomonosov)

SUBMITTED: March 21, 1958

Card 2

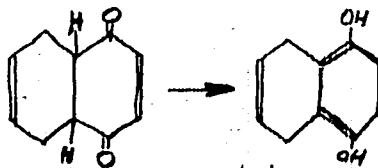
SOV/79-29-1-19/74

AUTHORS: Grinev, A. N., Yermakova, V. N., Terent'yev, A. P.

TITLE: Investigations in the Field of Quinones (Issledovaniya v oblasti khinonov) XXIV. Isomerization of the Adducts of p-Quinones With Diene Hydrocarbons (XXIV. Izomerizatsiya adduktov p-khinonov s diyenovymi uglevodorodami.)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 1, pp 86-89 (USSR)

ABSTRACT: An important method of synthesis of the substituted hydroquinones is the isomerization of the p-quinone adducts with diene hydrocarbons:



In this connection the authors suggest to carry out the isomerization of the adducts by boiling with acetic acid as they had already done in the case of synthesis of 2-methyl-5,8-dihydro-5,8-endoethylene naphtho-hydroquinone (Ref 6). This method permits the condensation of the quinones by diene hydrocarbons, as well as the isomerization of the adducts formed,

Card 1/3

S07/79-29-1-19/74

Investigations in the Field of Quinones. XXIV. Isomerization of the Adducts of p-Quinones With Diene Hydrocarbons

into the substituted hydroquinones without separation of the adducts. In the present paper the following hydroquinones were synthesized: 5,8-dihydro naphthohydroquinone (I), 6-methyl-5,8-dihydro naphthohydroquinone (II), 2-methyl-5,8-dihydro naphthohydroquinone (III), 6,7-dimethyl-5,8-dihydro naphthohydroquinone (IV), 2-chloro-5,8-dihydro naphthohydroquinone (V), 2,3-dichloro-5,8-dihydro naphthohydroquinone (VI), 2,3-dichloro-6-methyl-5,8-dihydro naphthohydroquinone (VII), 2,3-dimethyl-1,4-dihydro anthrahydroquinone (VIII), 2,3,5-trimethyl-1,4-dihydro anthrahydroquinone (IX), 2,3,6-trimethyl-1,4-dihydro anthrahydroquinone (X) and 6-methyl-1,4-dihydro-1,4-endo-ethylene anthrahydroquinone (XI). The quantity of reagents, reaction duration, melting points, yields and analyses of these hydroquinones are given in table 1. For the first time the adducts of 5-methyl naphthoquinone were synthesized with 2,3-dimethyl butadiene (XII), the adducts of 6-methyl naphthoquinone with 2,3-dimethyl butadiene (XIII) and the adducts of 6-methyl naphthoquinone with cyclohexadiene (XIV). Table 2 gives yields, melting points and analyses of the adducts

Card 2/3

S07/79-29-1-19/74

Investigations in the Field of Quinones. XXIV. Isomerization of the Adducts of p-Quinones With Diene Hydrocarbons

mentioned. There are 2 tables and 9 references, 6 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: November 16, 1957

Card 3/3

SOV/79-29-1-20/74

AUTHORS: Grinev, A. N., Yermakova, V. N., Terent'yev, A. P.

TITLE: Investigations in the Field of Quinones (Issledovaniya v oblasti khinonov) XXV. Synthesis of Naphthoquinones and Dihydro Anthraquinones (XXV. Sintez naftokhinonov i digidroantra-khinonov)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 1, pp 90-92 (USSR)

ABSTRACT: In one of the earlier papers the authors showed that the easiest way to obtain 1,4-naphthoquinone and 2-methyl-1,4-naphthoquinone is from p-benzoquinone (toluquinone) and divinyl in which case the reaction takes place without separation of adducts and hydroquinones obtained from their isomerization (Ref 1). According to this method 6-methyl naphthoquinone (I) and 5-methyl naphthoquinone (II) were found in the present work. 6,7-dimethyl-8,4-naphthoquinone (III) was obtained in high yield by the oxidation of 6,7-dimethyl-5,8-dihydro-naphtho hydroquinone (Ref 2). 2,3-dichloro-p-naphthoquinone (IV) was obtained from 2,3-dichloro-p-benzoquinone and divinyl. Apart from this several quinones already characterized in the previous paper were oxidized in an acid medium with potassium

Card 1/2

SOV/79-29-1-20/74

Investigations in the Field of Quinones. XXV. Synthesis of Naphthoquinones and Dihydro Anthraquinones

bromate. The following anthraquinones were obtained: 6-methyl-1,4-dihydro-1,4-endoethylene anthraquinone (V), 6,7-dimethyl-1,4-dihydro-1,4-endoethylene anthraquinone (VI), 2,3-dimethyl-1,4-dihydro anthraquinone (VII), 2,3,5-trimethyl-1,4-dihydro anthraquinone (VIII) and 2,3,6-trimethyl-1,4-dihydro anthraquinone (IX). The table gives the experimental results of the synthesis of dihydro anthraquinones.

There are 1 table and 5 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: November 14, 1957

Card 2/2

5(3) SCV/79-29-8-74/81
 AUTHORS: Grinev, A. N., Yermakova, V. N., Vrotek, Ye., Terent'yev, A. P.
 TITLE: Investigations in the Field of Quinones. XXVIII. Synthesis of
 the 5-Oxyindole Derivatives
 PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 8,
 pp 2777 - 2782 (USSR)
 ABSTRACT: The authors were interested in the synthesis of serotoninine
 analogues (Ref 6) and the growth stimulants of plants (Refs 7,8)
 based on 5-oxyindole derivatives, and continued their previous-
 ly not quite successful investigations (Refs 1-5) by trying
 to increase the indole derivative yield. They presupposed that
 the water forming in the course of the condensation process
 hydrolyzes the β -aminocrotonate (Scheme 1). The separation
 of ammonia and the amines, however, effects a polymerization
 of the initial quinone and other side reactions. In order to
 bind the water which has a detrimental effect, the anhydride
 of acetic acid and zinc chloride were used, but did not lead
 to a higher indole yield. In order to remove the water from
 the reaction mass, the azeotropic distillation with dichloro-

Card 1/2

Investigations in the Field of Quinones. XXVIII. Synthesis SOV/79-29-8-74/81
of the 5-Oxyindole Derivatives

ethane was used in the reaction process which led to a considerably higher yield. Compounds (I) - (VII) were obtained. In the methylation of (VI) with dimethylsulphate (VIII) was obtained. In order to achieve the synthesis of new growth stimulants of plants, the reaction of 5-oxyindoles with chloroacetic acid and a bromoacetate was tried. Under the influence of the acid on (II) in the presence of a 40% soda solution a good yield of compound (IX) was achieved. The condensation of the other 5-oxyindole derivatives only resulted in the initial indoles and in resins similar to polyglycol. The reaction of the phenolates of the 5-oxyindole derivatives with ethylbromoacetate is normal. A high yield of the substituted esters (X), (XI), and in the hydrolysis of esters, of the indolyl-5-oxyacetic acids (XII), (XIII), (XIV) was obtained. The table shows the derivatives of 5-oxyindole. There are 1 table and 10 references, 9 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: July 2, 1958
Card 2/2

GRINEV, A.N.; YERMAKOVA, V.N.; TERENT'YEV, A.P.

Synthesis of 2-alkyl-5-methoxygramine derivatives. Zhur.
ob. khim. 31 no. 2:490-495 F '61. (MIRA 14:2)

1. Moskovskiy gosudarstvennyy universitet.
(Inodle)

GRINEV, A.N.; YERMAKOVA, V.N.; MEL'NIKOVA, I.A.; TEREENT'YEV, A.P.;

Quinones. Part 37: Condensation of p-benzoquinone with anilides
of β -aminocrotonic acids. Zhur.ob.khim. 31 no.7:2303-2306 J1
'61. (MIRA 14:7)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.
(Benzoquinone) (Crotonic acid) (Anilides)

USSR / Human and Animal Physiology. Carbohydrate Metabolism.

T

Abs Jour : Ref Zhur - Biol., No 15, 1958, No. 69844

Author : Yermakova, V. P.

Inst : Azerbaydzhani Medical Institute

Title : The Influence of "Istis" on the Content of Sugar and Phosphorus in the Blood in Experimental Liver Damage

Orig Pub : Sb. tr. Azerb. med in-ta, 1956, No 3, 71-76

Abstract : Hepatitis of varying severity was produced in rabbits by subcutaneous injections of CCl_4 in a solution of apricot oil. One group of animals was given 0.3 ml CCl_4 per kg body weight for a period of three days; a second group was given twice the dose for twice the length of time. Along with the CCl_4 injections, the experimental rabbits received "Istis" mineral water for 15 days in doses of ten ml per kg body weight, while control animals received the same dose of

Card 1/2

USSR / Human and Animal Physiology. Carbohydrate Metabolism.

T

Abs Jour : Ref Zhur - Biol., No 15, 1958, No. 69844

tap water. In all animals, studies were made of the glycemic curve following glucose challenge and of the content of inorganic phosphorus in the blood. The "istis" was noted to exert a marked therapeutic effect. The hyperglycemic and postglycemic coefficients for animals following CCl_4 poisoning and treated with "istis" at the end of the experiment differed little from those prior to the injection of CCl_4 . In the second group of animals, with more severe poisoning of the liver, this effect was somewhat weaker. No clear-cut rule for the changes of content of inorganic phosphorus in the blood could be seen. --
L. A. Kashchevskaya

Card 2/2

YERMAKOVA, V.V.

**[Machine-tractor station's workers' committee; the work practices
of the trade union at the Kovyagi machine-tractor station]
Robithychyi komitet MTS; Z dosvidu roboti profororganizatsii
Kov'iagiv's'koi MTS. Kharkiv, Kharkivs'ke Oblasne Vid-vo, 1956.
41 p. (MIRA 10:4)**

(Machine-tractor stations) (Ukraine--Trade unions)

YERMAKOVA, V.V.

Terrigenous sediments in the Jivet and Frasnian stages in the southwestern Zhiguli Hills. Izv. vys. ucheb. zav.; reft' i gaz 5 no.6:21-24 '62. (MIRA 16:5)

1. Saratovskiy gosudarstvennyy universitet imeni N.G.Chernyshevskogo. (Zhiguli Hills--Geology, Stratigraphic)

YERMAKOV, B.S.; YERMAKOVA, V.Ye.

Setting of adventitious roots in the green cuttings of grape.
Biul. Glav. bot. sada no.55:99-106 '64. (MIRA 18:11)

1. Moskovskaya sel'skokhozyaystvennaya akademiya imeni K.A.
Timiryazeva.

DERGUNOVA, A.A.; MIROMOV, A., professor, retsenzent; YERMAKOVA, Ya., inzhener,
retsenzent; MIRKIN, Kh., kandidat tekhnicheskikh nauk, spetsredaktor;
IVANOVA, N.M., redaktor; YAROV, N.M., tekhnicheskij redaktor

[Sausage casing production] Kishchnoe proizvodstvo. Moskva,
Pishchepromizdat, 1956. 103 p. (MIRA 10:2)
(Sausage casings)

YERMAKOVA, Ye.A.

Investigating temperature distributions during the evaporation
from solid state in a vacuum. Inzh.-fiz. zhur. 7 no.5:39-44 My '64.
(MIRA 17:6)

1. Institut khimicheskogo mashinostroyeniya, Moskva.

YERMAKOVA, Ye.A.

Mechanism of heat and mass transfer during sublimation of ice
in a vacuum. Inzh.-fiz.shur. no.11:73-79 N '58.

(MIRA 12:1)

1. Tekhnicheskiiy institut rybnoy promyshlennosti i khosyay-
stva imeni A.I. Mikhoyana, g. Moskva.

(Sublimation (Physical sciences))

(Heat--Transmission) (Mass transfer)

YERMAKOVA, Ye.A.

Experimental investigation of heat exchange during the sublimation of ice [with summary in English]. Inzh.-fiz.sbur. no.12:54-58 '58. (MIRA 11:12)

1. Tekhnicheskiy institut rybnoy promyshlennosti i khosyaystva imeni A.I. Mikoyana, g. Moskva.
(Heat of vaporisation) (Ice)

ACCESSION NR: AP4037996

S/0170/64/000/005/0039/0044

AUTHOR: Yermakova, Ye. A.

TITLE: Study of the temperature distributions during sublimation in vacuum

SOURCE: Inzhenerno-fizicheskiy zhurnal, no. 5, 1964, 39-44

TOPIC TAGS: Sublimation, convective heat transfer, heat conduction, heat exchange

ABSTRACT: The temperature fields in the chamber of a sublimator were studied for the case of evaporation of water from the solid state in vacuum for different temperatures of the walls of the sublimator. A comparison of relative distribution curves shows that heat conduction cannot be the only mechanism of heat transfer. Balance calculations based on experimentally constructed isothermal surfaces and an analysis of the configuration of experimental temperature distribution curves indicate a substantial influence of convection on the rate of heat exchange in vacuum. The role of convection in heat transfer gradually diminishes with increasing distance from the sample. Orig. art. has: 4 figures.

Card 1/2

ACCESSION NR: AF40 37996

ASSOCIATION: Institut khimicheskogo mashinostroyeniya, Moscow (Institute of
Chemical Machinery)

SUBMITTED: 17Jun63

DATE ACQ: 09Jun64

ENCL: 00

SUB CODE: TD

NO REF SOV: 000

OTHER: 000

Card 2/2

YERMAKOVA, Ye. A.

YERMAKOVA, Ye. A. -- "Investigation of Heat and Mass Exchange in Drying by Sublimation." Sub 11 Jun 52, Moscow Technological Inst of Food Industry (Dissertation for the Degree of Candidate in the Technical Sciences)

SO: VECHERNAYA MOSKVA, JANUARY-DECEMBER 1952

YERMAKOVA, Ye. A.

EXERPTA MEDICA Sec 2 Vol 11/7 Physiology July 58

2857. METHOD OF QUANTITATIVE DETERMINATION OF AMINO-ACIDS ON COMPLETELY NINHYDRIN-DEVELOPED CHROMATOGRAMS (Russian text)
Ermakova E. A. Uzbek Res. Sanit. Inst., Tashkent, USSR - BIOKHIMIYA 1957, 22/5 (917-923) Graphs 2 Tables 2 Illus. 5

To avoid adsorption losses of amino-acids and reduction of the colour yield, standard solutions of various amino-acids were chromatographed under the same conditions as protein hydrolysates. The amino-acid spots thus obtained are eluted with water and standardization curves constructed from the extinction values of the eluates. The amount of amino-acid in each spot of the ninhydrin-developed chromatogram of the protein hydrolysate was determined photometrically from the respective standardization curves. The mean error of the determinations is $\pm 4\%$.

YERMAKOVA, Ye.A., Cand Chem Sci -- (diss) "Method of ^{ch}
quantitative ^{detection} ~~definition~~ of amino acids in chromatograms
completely developed with ninhydrin (Nutritive evaluation
of ^{cereals} ~~grains~~ and leguminous vegetables of ~~the~~ Uzbekistan
according to their amino acid composition)." Tashkent
1958, 14 pp (Min of Higher Education USSR. Middle Asian
~~by~~ Polytechnic Inst) 200 copies, bibliography: ~~in~~ p. 14
(16 titles) (KL, 42-58, 113)

- 7 -

~~YERMAKOVA, Ye. A.~~

Evaluation of proteins from cereals and leguminous plants in
Uzbekistan according to their amino acid content. [with summary
in English]. Vop.pit. 17 no.4:35-41 Je-Ag '58 (MIRA 11:7)

i. Iz Uzbekskogo nauchno-issledovatel'skogo sanitarnogo instituta,
Tashkent.

(AMINO ACIDS, determination.
in cereals & leguminous plants (Rus))
(CEREALS,
amino acid content (Rus))
(VEGETABLES,
same)

5(1)

AUTHORS:

Kuz'minykh, I. N., (Deceased),
Yakhontova, Ye. L., Rodionov, A. I.,
Yermakova, Ye. I.

SOV/153-58-3-15/30

TITLE:

Drying of Superphosphate in a Boiling Layer (Podsuushka
superfosfata v kipiyashchem sloye)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i
khimicheskaya tekhnologiya, 1958, Nr 3, pp 80 - 85 (USSR)

ABSTRACT:

The superphosphate produced in Soviet factories from apatite (continuous method) contains 19.3 - 19.9% assimilable P_2O_5 , including 10 - 12% H_2O . As 1% H_2O corresponds to 0.2% P_2O_5 , the removal of the humidity would increase the content of useful substance which again offers further advantages. Superphosphate may, however, not be overheated, as temperatures above 130 - 150° retransform part of the P_2O_5 into a non-assimilable form. The method of the boiling layer suggested in this paper could also be used for the purpose mentioned. The lack of references in this field stimulated this work. In this method the heat exchange takes place

Card 1/4

Drying of Superphosphate in a Boiling Layer

SOV/153-58-3-15/30

intensely and the whole substance scattered over the grating has the same temperature. In the present paper the degree of the drying of superphosphate as dependent on temperature and the duration of the blowing out with air is to be determined, and it is to be made clear to which extent the degree of drying depends on the content of free P_2O_5 . As far as

the ripening represents a bottleneck of modern superphosphate production it would be interesting to find out whether the ripening reaction is not accelerated in the boiling layer. Therefrom it could be concluded which superphosphate (fresh or ripened) is suited better for blowing out by air. The first experimental stage was carried out on a laboratory basis (Fig 1). Then the experiments were continued at the Voskresenskiy Khimkombinat (Voskresensk Chemical Kombinat).

Results obtained showed the authors that the method of the boiling layer is a simple and good means of afterdrying the superphosphate ready for shipment. Especially the waste gases of the sulfuric acid plants (the completely anhydrous ones from contact systems or those with a low water content of the tower systems) may be used for this purpose. The

Card 2/4

Drying of Superphosphate in a Boiling Layer

SOV/153-58-3-15/30

additional expenditure for the afterdrying of the superphosphate is probably the least expensive one with the method of the boiling layer. On the other hand, the transport means are relieved by about 7% and the transport costs of a then more valuable fertilizer per unit of useful substance are decreased. The possibility of simultaneously neutralizing the free P_2O_5 by ammonia seems possible. This would further increase the quality of the fertilizer. The authors draw the following conclusions from their results: The humidity content decreases in superphosphate with the decrease of the content of free P_2O_5 and with the increase in temperature: at 40° the humidity was removed to 50%, at 50° to two thirds. After 5 - 10 minutes the drying is finished. No perceivable variations of the degree of ripening are noticed during the drying of superphosphate. A more intense drying delays the ripening during the subsequent storing. The treatment with air in the boiling layer (without evaporation of the humidity) does also not accelerate the ripening. In spite of a considerable humidity content superphosphate is easily brought into the pseudo-liquefying state. The bigger the amount of

Card 3/4

Drying of Superphosphate in a Boiling Layer

SOV/153-58-3-15/30

superphosphate on the grating the higher is the gas velocity in the apparatus required to form a pseudo-liquefied layer. There are 5 figures.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskii institut imeni D. I. Mendeleeva (Moscow Institute of Chemical Technology imeni D. I. Mendeleev); Kafedra tekhnologii mineral'nykh kislot i soley (Chair of the Technology of Mineral Acids and Salts)

SUBMITTED: October 12, 1957

Card 4/4

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ACC NR: AP7002435

SOURCE CODE: UR/0819/66/000/012/0034/0036

AUTHOR: Zakharova, G.V.; Yermakova, Ye. M.; Belyayev, S. Ye.

ORG: none

TITLE: Mechanical properties of niobium and its alloys at low temperatures

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 12, 1966, 34-36.

TOPIC TAGS: niobium, niobium alloy, ^{mechanical} ~~mechanical~~ property, ~~mechanical~~ ^{thermodynamic} property/VN1 niobium alloy, VN2 niobium alloy, VN2A niobium alloy

ABSTRACT: Specimens of VN1 niobium and VN2 and VN2A niobium alloy, as-deformed, stress-relieved at 1100C, or recrystallization annealed at 1200C, were subjected to tensile and impact tests at temperatures from -253 to 20C. It was found that stress relieving had little or no effect on the mechanical properties of VN1 niobium. Recrystallization annealing lowered the tensile strength from 98 to 89 kg/mm², the yield strength from 95 to 88 kg/mm², and increased the elongation from 15 to 21% and the notch toughness from 19 to 25 kg/cm² (tested at -196C), compared to as-deformed alloy. The microstructure of recrystallized VN1 niobium was

Card 1/3

UDC: 620.17:669.293:66.974

ACC NR: AP7002435

uniform and fine-grained. Alloying with molybdenum was found to raise the nil ductility transition temperature. Consequently, the molybdenum content in niobium alloys should not exceed 4%. Additional alloying of niobium-molybdenum alloys with zirconium significantly increased their ductility and notch toughness at -196C. Lowering the test temperature to -253C resulted in increased tensile and yield strength and decreased elongation and notch toughness in NV2A niobium alloy (see Fig. 1). The

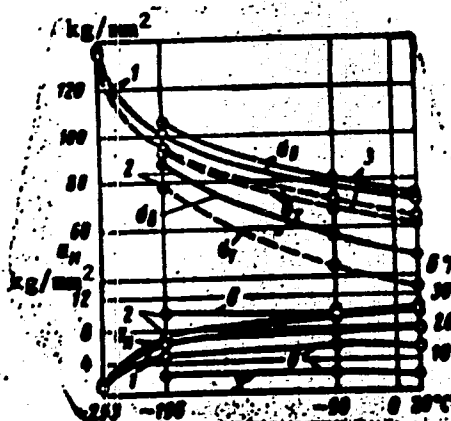


Fig. 1. Low-temperature mechanical properties of VN2A alloy (cold-rolled sheet)

- 1 - Annealed at 1000C for 30 min;
- 2 - annealed at 1300C for 1 hr;
- 3 - as rolled.

Card 2/3

ACC NR: AP7002435

sharp change in mechanical properties between -196 and -253C indicates that the alloy has a tendency to embrittlement. Fracture of VN2 alloy specimens was ductile at 20 and -196C, and brittle at -253. The results of tests showed that VN2A niobium alloy can be used in structures operating under multiaxial stresses at high and low temperatures.

[WA-88]

[TD]

SUB CODE: 11/ SUBM DATE: none/ ATD PRESS: 5114

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PA 34/49T56

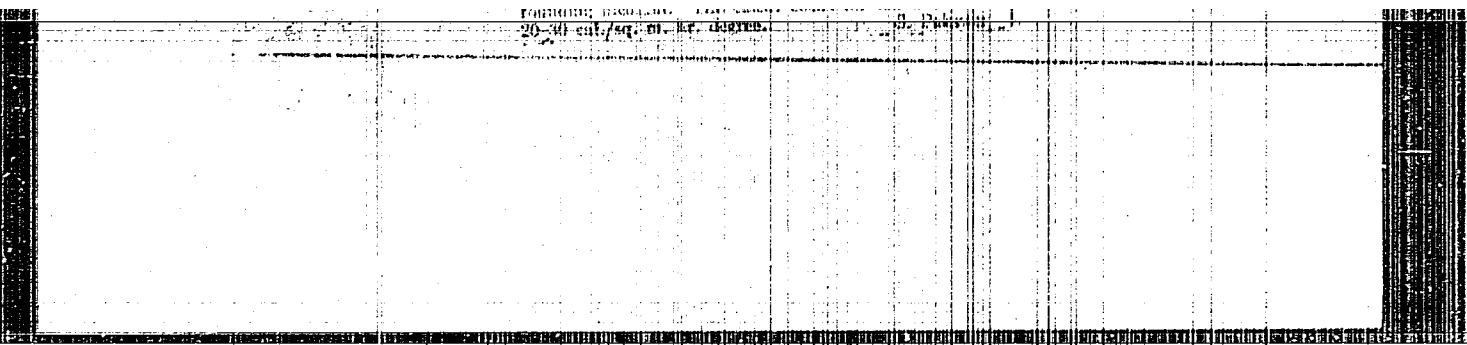
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CIA-RDP86-00513R001962810010-3



APPROVED FOR RELEASE: 03/20/2001

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(AGAR)

17(2,3,4)

304/16-59-6-20/46

AUTHOR: Yerman, B.A.

TITLE: The Morphological and Some Histochemical Changes (Glycogen, Alkaline Phosphatase and Ribonucleic Acid) in Guinea Pigs During Infection Caused by Clostridium Oedematiens

PERIODICAL: Zhurnal mikrobiologii, epidemiologii i immunobiologii, 1959, ³⁰Nr 6, pp 95-104 (USSR)

ABSTRACT: The aim of the present work was, first, to study the morphological development of anaerobic gangrene caused by Clostridium oedematiens in doses which killed the animals in approximately the same time that it takes to kill patients with the acute or fulgurant form of gas gangrene and, second, to study the metabolic disturbances, particularly the content of glycogen, alkaline phosphatase and ribonucleic acid in the cells and tissues of the animals at various stages of gas gangrene. The pathological anatomy of gas gangrene has been studied by A.N. Chistovich, V.I. Krasichkova, A.Z. Dyagileva, A.V. Smolyannikov and Ya.L. Rapoport. Disturbance in the carbohydrate metabolism was noted by Z.N. Kazimirova, Ts.S. Kagan, Yu.M. Geftter, A.N. Shatalova, Rubel', Yu.A. Arshinova, M.K. Gesberg, F.M. Shapiro, M.V. Glikina and O.A. Levin. B.V. Kdrovskiy,

Card 1/3

SCV/16-59-6-20/46

The Morphological and Some Histochemical Changes (Glycogen, Alkaline Phosphatase and Ribonucleic Acid) in Guinea Pigs During Infection Caused by Clostridium Oedematiens

D.L. Ferdman, E. Bolludin, etc., have discussed the importance of alkaline phosphatase and ribonucleic acid on the metabolic processes. For the present tests, guinea pigs weighing 350-400 g were injected with 0.01 (death in 48 hours) and 0.1 ml (death in 24 hours) two-day broth culture of Clostridium oedematiens. The guinea pigs were then killed off at regular stages after infection and various tissue specimens subjected to histochemical examination. Glycogen was determined by the Shabadash method, alkaline phosphatase by the Gomori method, ribonucleic acid by the Brachet method, fat by the Goldman method, adrenalin by Weasel's, fibrin by Weigert's, collagen by van Gieson's method and the impregnation of the argyrophil fibers by Foot's method. The tests showed that the muscle fibers and polymorphonuclear leukocytes lost glycogen. The lymph, monocytoïd and histiocytic cells lost ribonucleic acid. The nodes on the control (non-injected) side developed a hyperplastic process with an increase in the number of lymphoblasts, lymphocytes and reticular cells saturated with ribonucleic acid. Foci of fatty degeneration were noted in the liver, kidneys and myocardia. The hepatic cells lost glycogen. A weakening of alkaline phosphatase activity was noted in the kidneys

Card 2/3

80V/16-59-6-20/46

The Morphological and Some Histochemical Changes (Glycogen, Alkaline Phosphatase and Ribonucleic Acid) in Guinea Pigs During Infection Caused by Clostridium Oedematiens

with irregular appearance of glycogen in the epithelial cells of the nephritic canaliculi. No noticeable change could be detected in the amount of ribonucleic acid in the liver or the pancreas. There are: 6 photos and 26 references, 20 of which are Soviet, 2 German, 1 French and 3 English.

ASSOCIATION: Institut epidemiologii i mikrobiologii imeni Gamalei AMN SSSR (Institute of Epidemiology and Microbiology imeni Gamaleya of the AMN, USSR)

SUBMITTED: November 13, 1958

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(INFANTS—CARE AND HYGIENE)

YERMAN, V.L. (Moskva); SOBOLEV, O.K. (Moskva); TSATURYAN, K.T. (Moskva)

Problems concerning the theory of self-adjusting control
systems. Izv. AN SSSR. otd. tekhn. nauk. tekhn. kib. no.3:103-
111 My-Je '63. (MIRA 16:7)

(Automatic control)

YERMANOK, I. P.

"Investigation of the Influences of Cement Exothermal."

Report submitted for the Conference on Heat and Mass Transfer,
Minsk, USSR, June 1961.

YERMANOK, M.Z.

PAVLOV, I.P.; SHEVAKIN, Yu.P.; YERMANOK, M.Z.

Increasing the productivity of mills for the cold rolling of
pipes. Izvet.net. 28 no.6:41-50 N-D '55. (MIRA 10:11)
(Rolling (Metalwork)) (Pipe)

ACC NR: AP700C596

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SOURCE CODE: UR/0129/66/000/011/0054/0055

AUTHOR: Grishkovets, Ya. G.; Yermanok, M. Z.; Pinskaya, L. I.

ORG: none

TITLE: Mechanical properties of D1 alloy tubes

SOURCE: Metallovedeniya i termicheskaya obrabotka metallov, no. 11, 1966, 54-55

TOPIC TAGS: aluminum alloy tube, aluminum alloy ^{metal} tube, cold drawing, ^{annealing,} ~~aluminum alloy~~
~~tube~~, property, ~~aluminum alloy tube~~, structure/D1 alloy
^{mechanical} ^{grain}

ABSTRACT: A method for improving the structure and mechanical properties of D1 aluminum alloy tubes has been investigated. Cold-rolled tubes, 55 mm in outside diameter with a wall 2 mm thick, were cold drawn without a mandrel to 54—34 mm in diameter, annealed at 500C for 40 min, quenched, and naturally aged. Depending on the reduction, the tensile strength varied from 36.8 to 43.8 kg/mm², the yield strength from 22,3 to 27.2 kg/mm², and the elongation from 18 to 23.5%. The minimum strength properties and the largest grain were observed in specimens drawn with 5—12.5% reduction; the strength increased with increasing reduction. Annealing in a saltpeper bath increased the strength by 1.5—3.0 kg/mm² and reduced the elongation by 0.5—3.0% as compared to furnace annealing. Annealing with rapid heating high frequency induction improved somewhat the strength properties and structure of cold-drawn tubes. Orig. art. has: 2 figures.

SUB CODE: 11, 13/ SUBM DATE: none/

Card 1/1

UDC: 680.17:669.717

YERMANOK, M. Z.

136-3-13/25

AUTHORS: Shevakin, Yu. F., Candidate of Technical Sciences and
Yermanok, M. Z.

TITLE: ~~Organization of the~~ Production of Specially Thin-Walled
Aluminium-Alloy Tubes. ~~Osvoyeniye~~ proizvodstva osobo
tonkostennykh trub iz alyuminiyevykh splavov).

PERIODICAL: ~~Dvetsnyye~~ Metally, 1957, No.3, pp.66-74 (USSR)

ABSTRACT: The purpose of the present work was to study conditions
for the production of cold rolling and drawing without a
mandrel of very thin-walled (down to 0.20-0.23 mm)
aluminium-alloy tubes and to compare this with other methods.
In the experiments pass design was calculated by a method
developed by Shevakin and rolling pressures were measured.
Direct and derived curves are given showing the inter-
relation of rolling factors and photographs of tubes with
different defects are shown. The operating characteristics
of cold-rolling mills with different alloys, data showing
the influence of wall thickness on thickening during drawing
without a mandrel and recommended drawing and rolling
conditions are tabulated. Compared with ordinary methods
the recommended procedure secures higher yields of sound
tubes with less effort: the productivity of mills for cold
rolling very thin-walled tubes is 2-3 times higher than that

1/2

136-3-13/25
Organization of the Production of Specially Thin-Walled Aluminium-Alloy Tubes.

2/2 of TsNIITMash-design roller machines.
There are 7 figures and 4 tables and 3 Slavic references.

AVAILABLE: Library of Congress

YERMANOK, M.Z.; KILYMERNOV, V.F.

**Efficient technology for the production of rectangular aluminum
tubes. Tsvet. met. 30 no.5:85-90 May '57. (MLBA 10:6)
(Aluminum) (Extrusion (Metalwork))**

AUTHOR: Yermanok, M.Z.

SOV/149-58-4-20/26

TITLE: ~~Variation of the Wall Thickness in Mandrel-less~~
Drawing of Aluminium Alloy Tubes (Izmeneniye toleshchiny
stenki pri bezopravochnom volochenii trub iz
alyuminiyevykh splavov)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya
Metallurgiya, 1958, Nr 4, pp 142-152 (USSR)

ABSTRACT: Cold rolling used in conjunction with free drawing
constitutes a most efficient method of making thin-
walled tubes. However, the wall thickness of the tube
is usually altered during the latter operation, the
magnitude of this effect being proportional to the
total reduction of the tube diameter. When close
dimensional tolerances are aimed at, it is essential
to know how the variation of the wall thickness is
affected by various factors and it was in order to
provide such data that the present investigation was
instigated. Tubes made of aluminium alloys D16 and
AMG (both in the hard and annealed condition), 30 mm
diameter and 1 mm wall thickness were used in the

Card 1/4

SOV/149-58-4-20/26

Variation of the Wall Thickness in Mandrel-less Drawing of
Aluminium Alloy Tubes

experiments. The characteristic dimensions of the drawing; dies made of steel Y8 were: Die entry angle - 12, 20, 30 and 40°; length of the cylindrical bearing section - 2 and 15 mm. Two ranges of drawing speeds were employed: 150-250 mm/min and 25-45 m/min. (In the discussion of the results the following terms are used: Total reduction of the tube diameter $\Delta D = D_K - D_N$, where D_K and D_N are the final and the initial diameters of the tube respectively. Elongation per pass $\mu = D_N/D_K$. Variation of the wall thickness $\Delta t = t_K - t_N$, where t_K and t_N denote the final and initial wall thickness. Back tension = Q/F kg/mm²). It was found that when the operating conditions in free drawing are such that the tube is deformed in die only, Δt is proportional to ΔD (Fig.1 and 2) and t_N (Fig.4 and 5), but is not affected by variation of D_N (Table 1). With increasing μ the value of Δt decreases (Fig.1 and 2). Δt is the same for both hard and annealed materials and it is not affected by application of two-stage drawing (Table 4).

Card 2/4

SOV/149-58-4-20/26

Variation of the Wall Thickness in Mandrel-less Drawing of
Aluminium Alloy Tubes

While Δt is not affected by variation of the length of the cylindrical bearing section of the die (Table 2), it varies considerably when the entry angle α is altered (Fig.6). When $\alpha = 12^\circ$ the wall of the tube becomes thicker after a drawing operation; when $\alpha = 40^\circ$, Δt is negative i.e. the wall thickness decreases. (The combined effect of α and t on Δt is shown on Fig.7) Similar effect is observed when back tension is applied (Fig.8), i.e. with increasing Q/F the value of Δt linearly decreases. If t_0 = increase of the wall thickness in the absence of back tension, A = back tension corresponding to $\Delta t = 0$, then the following formula can be used: $\Delta t = t_0 - t_0/A \times Q/F$. The last two effects are attributed to the fact that at high values of α and Q/F , deformation of the tube takes place also outside the die. It was concluded that the best way of minimising Δt is application of back tension and heavy drafts. Application of large

Card 3/4

SOV/149-58-4-20/26

Variation of the Wall Thickness in Mandrel-less Drawing of
Aluminium Alloy Tubes

die entry angles is not to be recommended for industrial applications owing to the fact that the tube becomes unstable in the deformation region, particularly if heavy drafts are employed. There are 8 figures, 4 tables and 5 Soviet references.

ASSOCIATION: Moskovskiy Institut Tsvetnykh Metallov i Zolota.
Kafedra Obrabotki Metallov Davleniyem (Moscow Institute of Non-Ferrous Metals and Gold, Chair for Shaping of Metals by Pressure)

SUBMITTED: 30th December 1957.

Card 4/4

SOV/136-58-5-12/22

AUTHOR: Yermanok, M. Z.

TITLE: Investigation of the Process of Mandrel-less Drawing
of Aluminium Alloy Tubes (Issledovaniye
bezopravochnogo volocheniya trub iz alyuminilyevykh splavov)

PERIODICAL: Tsvetnyye Metally, 1958, nr. 5, pp 70 - 77 (USSR)

ABSTRACT: Tubes of the alloys D16 and AMG were investigated in the annealed state as well as after cold rolling. The compositions of the alloys and their mechanical properties are entered in Table 2; the annealing regime consisted of heating for 90 min at 400 °C, whereby one of the alloys was cooled in air and the other was allowed to cool down in the furnace to 200 °C with a speed of 30 °C per hour and then in air. Tubes of 30 mm dia and wall thicknesses of 1, 2, 3 and 4.5 mm and also tubes of 18, 24, 35 and 51 mm dia. with wall thicknesses of 1 and 2 mm were used in the experiments. The degree of deformation during rolling of the tubes with various wall thicknesses was approximately the same. For reducing the difference between the longitudinal and transverse wall thicknesses, the rolling was effected at reduced rates of feed. The drawing was carried out by means of a 5-ton test machine with a speed of 150-250 mm/min. and on a 5-ton drawing stand with a speed

Card1/3

SOV/136-58-5-12/22

Investigation of the Process of Mandrel-less Drawing of
Aluminium Alloy Tubes

of 25 and 45 m/min. Dies made of the steel U8 with a cone opening of 12, 20, 30 and 40° and widths of the calibrating strip of 2 and 15 mm were chosen. The tube dimensions were measured with a micrometer with an accuracy of 0.1 mm. The wall thickness at each cross-section was measured in 10 to 15 points along the perimeter. On the basis of the obtained results, which are tabulated in graphs, the following conclusions are arrived at: 1) the dependence of the drawing force on the rate of deformation per pass is linear; 2) the stress at the boundary between the elastic and plastic zones of deformation is a parabolic function of the degree of preliminary deformation; 3) with increasing cone angle of the drawing die, the drawing force will increase the more intensively the thicker the original wall thickness of the tube; 4) the initial tube diameter does not affect the drawing force. Formulae are derived interrelating the degree of thickening of the walls with the basic parameters

Card 2/3

SOV/136-58-5-12/22

Investigation of the Process of Mandrel-less Drawing of Aluminium Alloy Tubes

of the process; the distribution of the rate of reduction in the case where the tube sinking is effected in two stages does not influence the changes in the wall thickness; a technology has been evolved which reduces the increase in the wall thickness of the tubes during the process of sinking.

The work described in this paper was carried out under the leadership of Professor I.L. Perlin. A. Shaller participated in the experiments.

There are 9 figures, 7 tables and 12 references, 11 of which are Soviet and 1 English.

ASSOCIATION: Mintsvetmetzoloto

Card 3/3

1. Aluminum tubing--Production 2. Aluminum alloys--Applications

YERMANOK, M.Z.

Strains in the elasticity zones of the deformation center
and the friction factor during the deep drawing of pipes. Izv.
vys.ucheb.zav.; tevet.met. 2 no.6:166-177 '59.
(MIRA 13:4)

1. Krasnoyarskiy institut tevetnykh metallov, kafedra
obrabotki metallov davleniyem.
(Deep drawing (Metalwork)) (Friction)

YERMANOK, M. Z., Cand Tech Sci (diss) -- "Investigation of certain parameters for drawing and cold-rolling of pipe of aluminum alloys", Moscow, 1960. 23 pp (Min Higher and Inter Spec Educ RSFSR, Krasnoyarsk Inst of Nonferrous Metals im M. I. Kalinin, Chair of "Pressure-Processing of Metals"), 150 copies (KL, No 15, 1960, 134)

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E193/E183

AUTHORS: Barbanel', R.I., and Yermanok, M.Z.

TITLE: Investigation of Stresses During Extrusion of Ribbed
Aluminium Alloy Components

PERIODICAL: Tsvetnyye metally, 1960, No. 12, pp. 74-80

TEXT: For both technical and economic reasons, extrusion is widely employed in the manufacture of ribbed components used in the aircraft and allied industries. The cross-section of some components of this type is illustrated below. The object of the present investigation was to determine the parameters required for analytical determination of the extrusion pressure for the case of a non-cylindrical (rectangular) container and experimentally to check the validity of the theoretical formula derived. The extrusion pressure, P , for the case of a rectangular container, can be calculated from a formula due to Professor I.L. Perlin (Ref. 2).

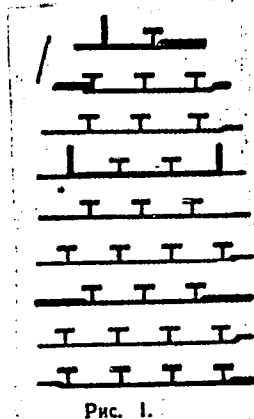
Card 1/7

86689

S/136/60/000/012/009/010
E193/E183

Investigation of Stresses During Extrusion of Ribbed Aluminium Alloy
Components

Fig. 1



Card 2/7

86689

S/136/60/000/012/009/010
E193/E183

Investigation of Stresses During Extrusion of Ribbed Aluminium Alloy Components

For a rectangular container with radiused edges, which was used by the present authors, this formula becomes:

$$P = 2[\pi r + (a - 2r)] L_{se} \cdot K_{kp} + [\pi r^2 + (a - 2r) \cdot 2r] \cdot \ln \mu \cdot \frac{1}{\sin \alpha} \cdot (K_{m.c} + \beta \cdot \alpha \cdot S_{d.c}) + F_{k.p} \cdot \eta \cdot f_N \cdot S_{d.k} \quad (1a)$$

The unknown quantities in this formula include K_{kp} (stress, kg/mm², due to friction between the extruded metal and the container walls), $S_{d.c}$ (the mean value of the resistance to deformation, kg/mm², of the extruded metal in the deformation region), and $S_{d.k}$ (resistance to deformation of the extruded metal after leaving the deformation region). However, the present authors show that the formula given above can be used only for the values of S_d (resistance to deformation in the various cross-sections of

Card 3/7

86689

S/136/60/000/012/009/010
E193/E183

Investigation of Stresses During Extrusion of Ribbed Aluminium Alloy Components

the deformation region) known. These can be determined from the true stress/strain diagram constructed from experimentally determined load/strain curves for a given material. However, the values of S_d , determined in this manner, can be used in formula (1a) only if the duration of the deformation process during the tensile tests is equal to the duration, τ_d , deformation during extrusion. To calculate τ_d it is necessary to know the volume, V , of the deformation region of the extruded component, and the present authors derived a formula for V for the case of thin strip extruded from a rectangular container:

$$V = \frac{5}{6} \pi b_1^2 \cdot a_2 \quad (2a)$$

where a_2 is the width of the extruded strip and b_1 is the thickness of the extrusion billet. All other relevant parameters of the extrusion process and the tensile tests being known, the present authors were able to calculate the correct rate of strain
Card 4/7

86689

S/136/60/000/012/009/010
E193/E183

Investigation of Stresses During Extrusion of Ribbed Aluminium Alloy Components

to be used during tensile tests, from the results of which the true stress/deformation diagrams were constructed for the aluminium alloy D16 (D16), deformed at 350, 400 and 450 °C. Unfortunately, only values of $S_{d.H}$ (resistance to deformation of metal that has just entered the deformation region) could be determined directly from these diagrams. It was found, however, by application of the method of minimum squares, that the diagrams could be represented with sufficient degree of accuracy in the form of straight curves, from which the values of $S_{d.c}$ and $S_{d.k}$ could be found by extrapolation. In addition, the values of $S_{d.c}$ were calculated with the aid of formulae derived by several other workers. Since these calculations gave widely differing results, it was decided to check experimentally which of the formulae used gave the most accurate results. To this end, the alloy D16 was extruded in the form of rod, with the aid of a cylindrical container and a conical die ($\alpha = 65^\circ$), the extrusion pressure, P , was measured,

Card 5/7

86689

S/136/60/000/012/009/010
E193/E183

Investigation of Stresses During Extrusion of Ribbed Aluminium Alloy Components

and from the values of P , the magnitude of $S_{d.c}$ was determined for various extrusion conditions. The values of $S_{d.c}$ obtained in this manner were much lower than any calculated from the true stress/deformation diagrams, approaching most closely those obtained with the aid of a formula due to I.L. Perlin (Ref.6). In the final stage of the present investigation, the magnitude of P in extruding three types of ribbed components was determined experimentally. The values obtained were considerably lower than those calculated with the aid of formula (1a), in which the values of $S_{d.c}$ and K_{kp} , determined from data on extrusion of rods from a cylindrical container, were used. This discrepancy was found to be due to the fact that the calculated values of K_{kp} were considerably higher than its true magnitude. When correct values of K_{kp} (determined directly from data on extrusion of ribbed components) were used in formula (1a), the difference

Card 6/7