

82681

On the Quantitatively Possible Combination of S/079/60/030/008/006/008
Radicals Bound to the Central Atom. I. Organic B004/B064
Tin Compounds

compound cannot be realized, the authors carried out experiments to find out which radicals are apt to replace bromine in trimesityl tin bromide. The compounds given in a table, produced by the authors $[C_6H_2(CH_3)_3]_3SnR$

(R = CH_3 , C_2H_5 , $n-C_3H_7$, $n-C_4H_9$, $n-C_6H_{13}$, $n-C_8H_{17}$, $i-C_3H_7$, $i-C_4H_9$, $i-C_5H_{13}$, C_6H_5) as well as the compounds tri-(2-methoxy-naphthyl-1)-tin bromide and the corresponding ethoxy compound led to the following conclusions: organic tin compounds containing three aryl radicals di-ortho-substituted by low-molecular groups (CH_3 , CH_3O , C_2H_5O), or three β -substituted naphthyl radicals, can add as fourth radical, besides halogens, only not yet ortho-substituted aryl radicals, primary alkyl radicals (also with long chain), and secondary alkyl radicals. On the basis of these results the authors conclude that in trimesityl tin bromide the three mesityl radicals lie on the surfaces of a three-sided pyramid, whose edges form an angle of approximately 120° . The tin atom is on the vertex of the pyramid. This steric configuration is favored by the conjunction of the tin electrons with the π -electrons of the aromatic rings. X

Card 2/3

LAPKIN, I.I.; BELANOVICH, M.I.

Reactions of metal halide alcoholates. Part 10: New method of
synthesizing monoöxytriarylmethanes. Zhur.ob.khim. 31 no.10:
3182-3187 0 '61. (MIRA 14:10)

1. Permskiy gosudarstvennyy universitet.
(Methane)

LAPKIN, I. I.; MUKHINA, R. G.

Chemical activity sterically unhindered. Part I: Reaction of halo-
magnesium aryls with chloro-substituted ethers. Zhur.ob.khim. 31
no.12:4001-4006 D '61. (MIRA 15:2)

1. Permskiy gosudarstvennyy universitet.
(Magnesium organic compounds)
(Ethers)

LAPKIN, I.I.; PANOVA, N.I.

Reactions of metal halide alcoholates. Part 11: New method of
synthesizing thio ethers of the aromatic series. Zhur.ob.khim.
32 no.3:745-748 Mr '62. (MIRA 15:3)

1. Permskiy gosudarstvennyy universitet.
(Sulfides)

36065
S/079/62/032/004/006/010
D204/D301

15.8170

AUTHORS: Lapkin, I.I., and Povarnitsina, T.N.

TITLE: Studies of organosilicon compounds. III. Compounds containing alkoxyphenyl radicals

PERIODICAL: Zhurnal obshchey khimii, v. 32, no. 4, 1962, 1314-1318

TEXT: Interactions of o-alkoxyphenyl magnesium bromides with SiCl_4 were studied, as organosilicon compounds containing alkoxyphenyl groups are virtually unknown. The reactions took place in ether, over 3 hours, with heating. With molar ratios, (n), of the Grignard to SiCl_4 equal to 3 : 1 or 5 : 1 the first product was a di-(o-alkoxyphenyl)-dichlorosilane which, on further heating, reacted with the 3rd mole of the Grignard to give a di-(o-alkoxyphenyl)-phenoxy-chlorosilane. The alkyl group in the above compounds was Et, n-Pr, iso-Pr, n-Bu and iso-Bu. o-Anisyl magnesium bromide reacted anomalously, giving at n = 3 : 1, 4 : 1, 5:1 85 % yields of o-anisyl-di-phenoxy-chlorosilane. Hydrolysis of these products was also carried out to give the corresponding di-(o-alkoxyphenyl)-phenoxy-hydroxy-
Card 1/2 X

L 10665-63

EPF(c)/EWP(j)/EWT(m)/BDS--ASD--Pr-l/Pc-l--RM/WW
S/079/63/033/004/006/010 ⁶⁴/₆₃

AUTHOR:

Lapkin, I.I., Povarnitsina, T.N.

TITLE:

Research in the field of silicoorganic compounds.
II. Compounds containing alkoxyphenyl radicals

PERIODICAL:

Zhurnal obshchey khimii, v. 33, no. 4, 1963,
1289-1292

TEXT:

This work contains a description of the results of a study of the reactions of aryltrichlorosilanes with bromo-magnesiumalkoxyphenyls and is a continuation of an investigation of silicoorganic-containing alkoxyphenyl radicals. It is established that the final product of the reaction of bromo-magnesium-o-alkoxyphenyls with aryltrichlorosilanes under the ordinary conditions of Grignard reactions is aryl-o-alkoxyphenyl-phenoxychlorosilanes. These latter compounds when heated with water hydrolyze easily to form aryl-o-alkoxyphenylphenoyhydroxy-silanes.

Card 1/2/ ASSOCIATION: Perm' State University

L 19494-65 EPF(c)/EPR/EWP(j)/EWT(m)/T Pc-4/Pr-4/Ps-4 RPL RM/WW/JW/JYS/JWD

ACCESSION NR: AP5002074

8/0079/62/032/006/1967/1969

AUTHOR: Lapkin, I. I.; Yuzhakova, G. A.

TITLE: The maximal number of radicals⁷ attached to a central atom other than carbon. II. Organoboron compounds⁷

SOURCE: Zhurnal obshchey khimii, v. 32, no. 6, 1962, 1967-1969

TOPIC TAGS: organoboron compound, organoboron spatial configuration, hetero-organic structure, aromatic boron compound, trimesityl boron, alkoxynaphthyl boron

ABSTRACT: In a continuation of previous work on the relationship between the structure of radicals and their placement around a central hetero-element, the authors synthesized and investigated trimesitylboron, dimesitylboric acid and 8 different tri/2-alkoxynaphthyl-1/ boron compounds. The latter were synthesized from BF_3 in ether and the appropriate alkoxynaphthyl-magnesium. Attempts to synthesize di/2-alkoxynaphthyl-1/ boric acid or di/2-alkoxynaphthyl/ boron fluorides failed due to immediate symmetrization to the tri/2-alkoxynaphthyl-1/ boron compounds. These results, which are reported in a table giving the name, empirical formula, % boron and yield of each compound, demonstrated the possible placement of 3 di-ortho-substituted aryl and 2-alkoxynaphthyl groups around a central boron
Card 1/2

L 19494-65

ACCESSION NR: AP5002074

atom. The yields were not decreased by increasing the molecular weight or complexity of the alkoxy group. This fact, as well as an analysis of the bond distances, indicated that the aryl radicals must be arranged perpendicular to the plane of the tri/2-alkoxynaphthyl/ boron. These compounds, which were stable in air at room temperature, were also unable to form complexes with ammonia, amines or esters due to their inability to assume a tetrahedral configuration. Orig. art. has: 1 table and 1 figure.

2

ASSOCIATION: Permskiy gosudarstvennyy universitet (Perm State University)

SUBMITTED: 26Jun61

ENCL: 00

SUB CODE: 0C

NO REF SOV: 004

OTHER: 002

LAPKIN, I.I.; ANDREYCHIKOV, Yu.S.

Synthesis of esters of secondary α -hydroxy acids of the
acetylenic series. Zhur. ob. khim. 34 no.10:3183-3185 0 '64.
(MIRA 17:11)

1. Permskiy gosudarstvennyy universitet.

LAPKIN, I.I.; MUKHINA, R.G.

Sterically unhindered chemical activity, Part 2: Mechanism of
acid halide reactions with organomagnesium compounds. Zhur. ob.
khim. 34 no.11:3575-3579 N *64 (MIRA 18:1)

1. Permskiy gosudarstvennyy universitet.

LAPKIN, I.I. DUMLER, V.A.

Possible quantitative conformation of radicals attached to
the central elementary atom. Part 3: Organotin compounds.
Zhur. ob. khim. 34 no.11:3690-3693 N '64 (MIRA 16:1)

1. Permskiy gosudarstvennyy universitet.

LAPKIN, I.I.; ANDREYCHIKOV, Yu.S.

Synthesis of esters of α -keto acids of the acetylene series.
Zhur.org.khim. 1 no.3:480-483 Mr '65. (MIRA 18:4)

1. Permskiy gosudarstvennyy universitet.

LAPKIN, I.I.; YEVSTAFYEVA, N. Ye.; ORIOVA, L.D.

Reactions of α -chlorinated ethers in the presence of zinc.
Part 2: New methods of synthesizing diarylmethanes, stilbenes,
and β -chloro-*d, d*-di(alkoxyaryl)ethanes. Zhur. org. khim. 1
no. 12:2169-2172 D '65 (MIRA 19:1)

1. Permskiy gosudarstvennyy universitet. Submitted December 14,
1964.

L 61481-65 EWT(m)/EPF(c)/EPR/EWF(j) Pc-4/Pr-4/Ps-4 RPI. WR/JAJ/EM

ACCESSION NR: AP5016412

UR/0079/65/035/006/1083/1086
861.718.4

AUTHOR: Lapkin, I.I.; Yuzhakova, G.A.

TITLE: Possible quantitative combination of radicals linked to a central hetero atom.
Part 4. Organoboron compounds

SOURCE: Zhurnal obshchey khimii, v. 35, no. 6, 1965, 1083-1086

TOPIC TAGS: organoboron compound, organoboron spatial structure, heteroorganic complex formation

ABSTRACT: This article is a continuation of a study of the spatial arrangement of aryl radicals around a central boron atom. By synthesizing boron tris (o-alkoxyphenyls) whose alkoxyphenyl groups contained increasingly longer alkyl radicals, and drawing appropriate conclusions regarding the three

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Card 1/2



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L 61481-65

ACCESSION NR: AP5016412

and pyridine. The formation of unstable complexes with o-toluidine which easily decompose during crystallization and the lack of interaction with diortho-substituted aromatic amines (mesidine) definitely support the above conclusions. Orig. art. has: 1 table.

ASSOCIATION: Permskiy gosudarstvennyy universitet (Perm State University)

SUBMITTED: 28Apr64

ENCL: 00

SUB CODE: OC

NO REF SOV: 003

OTHER: 003

df
Card 2/2

LAPKIN, I.I.; ANDREYCHIKOV, Yu.S.

Chemistry of acetylenic keto acid esters. Part 1: Addition of primary amines to phenylethynylglyoxylic acid esters. Zhur. org. khim. 1 no.7:1212-1214 JI '65.

(MIRA 18:11)

1. Permskiy gosudarstvennyy universitet imeni A.M.Gor'kogo.

LAPKIN, I.I.; POVARNITSYNA, T.N.; ANVAROVA, G.Ya.

Organosilicon compounds. Part 4: Reaction of triethylsilane
with α -chlorinated ethers and aldehydes. Zhur. ob. Khim. 35
no.10:1835-1839 0 '65. (MIRA 18:10)

1. Permskiy gosudarstvennyy universitet.

ACC NR: AP7012416

SOURCE CODE: UR/0079/66/036/011/1952/1954

AUTHOR: Lapkin, I. I.; Anvarova, G. Ya.; Povarnitsyna, T. N.

ORG: Perm State University (Permskiy gosudarstvennyy universitet)

TITLE: Organoberyllium compounds and their chemical transformations. I

SOURCE: Zhurnal obshchey khimii, v. 36, no. 11, 1966, 1952-1954

TOPIC TAGS: organoberyllium compound, halide, keto alcohol

SUB CODE: 07

ABSTRACT: A method was devised for synthesizing organoberyllium compounds of the type of beryllium acyl halides $\left(\text{R}-\overset{\text{O}}{\parallel}{\text{C}}-\text{BeX} \right)$, by reaction of beryllium with

acid chlorides, bromides, and iodides. The compounds were not isolated in pure form, but their chemical reactions were studied. The reaction with water resulted in aldehydes, that with acid chlorides yielded alpha-diketones, and the reaction with ketones yielded alpha-ketoalcohols. Five alpha-diketones and two alpha-ketoalcohols were synthesized and characterized.

Orig. art. has: 1 formula and 1 table. [JPRS: 40,422]

Card 1/1

UDC: 547.254.5

0932 1350

LAPKIN, I.I.; YUZHAKOVA, G.A.

Possible quantitative conformation of radicals attached to the central elementary atom. Part 2: Organoboron compounds. Zhur.ob.khim. 32 no.6: 1967-1969 Je '62. (MIRA 15:6)

1. Permskiy gosudarstvennyy universitet.
(Boron organic compounds)

PROCESSES AND PROPERTIES INDEX

4

The salt-water springs of the Zherbetz River valley in the Northern Donbas. I. Yu. Lapkin. *Soviet Geol.* 4, No. 3, 244-5 (1938).—Water arising from the sand-colored clays of this valley contains in soln. NaCl 30.65%, CaO 3.00, MgO 0.37, SiO₂ 1.20, K₂O 0.88, HCO₃⁻ 0.04, SO₄ 0.04% and is free of Al₂O₃ and Fe₂O₃. The dome structure indicates addnl. possibility of oil deposits in this region. F. H. Rathmann

METALLURGICAL LITERATURE CLASSIFICATION

E2

LAPKIN, I. Yu.

"Some New Data on the Geology of the Krasno-oskol Dome, on the North-western Margins of the Donets Basin," Dokl. Ak. Nauk SSSR, 30, No. 4, 1941.

Geol. Inst. Khar'kov State Univ.

LAPKIN, I. Yu.

"Some Notes on the Variegated Deposits of the Donets Basin,"
Dokl. Ak. Nauk SSSR, 46, No. 8, 1945.

Inst. Geol. Sci., Acad. Sci.

LAPKIN, I. Yu.

BURKSER, E. S. And LAPKIN, I. Yu., "Output of Calcium-Chloride Waters in the Valley of the River Zherebets in the North Western Region of the Donbase." Records of the Khar'kov' Agricultural Institute, Vol V, 1946 (67-71).
(Meteorologiya i Hidrologiya, No 6 Nov/Dec 1947)

SO: U-3218, 3 Apr 1953

SAVICH-ZABLOTSKIY, K.N.; LAPKIN, I.Yu.

Origin of copper sandstones in the Donets Basin. Biul. MOIP. Otd.
geol. 24 no.1:56-76 '49.

(Donets Basin--Sandstone)

(MIRA 11:5)

LAPKIN I. YU.; CHERPAK, S. E.; CHIEVINSKAYA, M.V.

Ukraine - Geology, Structural

Tectonic schema of the eastern part of the Ukrainian S.S.R. *Biul.MOIP.Otd. geol.* 27, No. 2, 1952

MONTHLY LIST OF RUSSIAN ACCESSIONS. Library of Congress. November 1952. UNCLASSIFIED

LAPKIN, I. YU., KIRBYEVA, G. D.

Geology. Stratigraphic - Permian; Paleontology - Permian.

Schwagerina strata in the Pre-Donets fold. Dokl. AN SSSR 82 no. 6, 1952. Nauchno-Issledovatel'skiy Institut. Prirodnikh Gazov. rcd. 9 Dec. 1951.

SO: Monthly List of Russian Accessions, Library of Congress, July 1952 ~~1953~~, Uncl.

POPOV, V.S.; LAPKIN, I.Yu.

Principal features of the geological structure of the northern margin of the
Donets Basin. Biul.MOIP. Otd.geol. 28 no.3:3-27 '53. (MIRA 6:11)
(Donets Basin--Geology, Structural) (Geology, Structural--Donets Basin)

LAPKIN, I. Yu.

Limestone-dolomite series of the Donets Permian. *Biul. MOIP. Otd. geol.*
29 no. 4:37-50 JI-Ag '54. (MLRA 7:9)
(Bakhmut Basin--Dolomite) (Dolomite--Bakhmut Basin)

SAVICH-ZABLOTSKIY, K.H.; LAPKIN, I.Yu.

"Experimental research on the problem of accumulation of copper in
sedimentary rocks." *Bull.MOIP. Otd.geol.* 29 no.5:75-76 S-0 '54.
(Iakovleva, M.N.) (Copper ores) (MLRA 8:1)

LAPKIN, I. Y.

USSR/ Geology - Salt strata

Card 1/1 Pub. 22 - 31/46

Authors : Bilyk, A. A.; Blank, M. I.; Vorobyev, B. S.; Lapkin, I. Yu.; Palets, L. S.;
and Gherpak, S. Ye.

Title : New data about the saliferous formation of Donets River Permian deposits

Periodical : Dok. AN SSSR 103/1, 113-115, Jul 1, 1955

Abstract : Geological data are presented on the salt-bearing strata found among the Permian deposits of the Donets River basin. Twelve Russ. and USSR references (1863-1949).

Institution :

Presented by : Academician N. M. Strakhov, January 25, 1955

KOPELIOVICH, A.V.; LAPKIN, I.Yu.; TEMIN, L.S.

The Donets - Northern Caucasus Hercynian folding region. Dokl.AN
SSSR 105 no.3:537-540 II '55. (MLRA 9:3)

1. Predstavleno akademikom S.I. Mironovym.
(Astrakhan District--Geology, Stratigraphic)

LAPKIN, I.Yu.; STERLIN, B.P.; TOKARSKIY, D.Ya.

Geology of gas-bearing formations of the lower Permian in the Dnieper-
Donets Lowland. Gaz.prom.no.3:4-6 Mr '56. (MIRA 10:1)
(Dnieper Lowland--Petroleum geology)
(Donets Basin--Petroleum geology)

LAPKIN, I.Yu.; STERLIN, B.P.

On the Dnieper-Donets graben. Dokl.AN SSSR 108 no.1:135-138
My '56. (MLRA 9:8)

1. Ukrainskoye otdeleniya Vsesoyuznogo nauchno-issledovatel'skogo
geologo-razvedochnogo neftyanogo instituta. Predstavleno akade-
mikom S.I. Mironovym.
(Dnieper Valley--Faults (Geology)) (Donets Valley--Faults (Geology))

LAPKIN, I.Yu. ; LYUTKEVICH, Ye.M.

On differences existing between the geological structure of the Polesk and the Dnieper-Donets depressions. Dokl. AN SSSR 108 no.5:927-930
Je '56. (MIRA 9:10)

1. Ukrainskoye otdeleniye Vsesoyuznogo nauchno-issledovatel'skogo
geologorazvedochnogo neftyanogo instituta. Predstavleno akademikom
N.M. Strakhovym.
(Polesk--Geology, Structural) (Dnieper Valley--Geology, Structural)

LAPKIN, I. Yu.

LAPKIN, I. Yu.; STERLIN, B.P.

Dnieper-Donets Lowland. Trudy VNIGRI no.101:266-295 '57.

(MLRA 10:9)

(Dnieper Lowland--Geology) (Donets Basin--Geology)

LAPKIN, I.Yu.; STERLIN, B.P.

Oil- and gas-bearing prospects of the Dnieper-Donets Lowland.
Trudy VNIIGRI no.111:148-161 '57. (MIRA 11:6)
(Dnieper Lowland--Petroleum geology)
(Dnieper Lowland--Gas, Natural--Geology)
(Donets Basin--Petroleum geology)
(Donets Basin--Gas, Natural--Geology)

AUTHORS: ~~Lapkin, I. Yu.,~~ Temin, L. S. SOV/20-120-4-50/67

TITLE: On the Role of the Ukrainian Massif in the Formation of the Paleozoic Structure in the South of the European Part of the USSR (O roli Ukrainского massiva v formirovanii paleozoyskoy struktury yuga Yevropeyskoy chasti SSSR)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol.120, Nr 4, pp.869-872 (USSR)

ABSTRACT: This massif stands out as the main element in the tectonic plan of the Russian Platform (Russkaya platforma) (Refs 4, 7) which is a prerequisite of the correct understanding of the geology of southern Russia (Rossiya) (Ref 7). The views taken by different authors concerning the nature of the massif diverge (Refs 1, 11, 13). Until recently the questions concerning the eastern extension of the massif and the Donets chain (Donets) connected with it and the geotectonic conditions of its formation remained open. The authors describe the most recent results of drillings in that and neighboring regions (Refs 1-3, 5, 6, 8, 10, 12). They arrive at the conclusion, that the Ukrainian (Ukrainskiy) crystalline massif is a permanent element of the Upper Paleozoic, which pre-

Card 1/4

SOV/20-120-4-50/67

On the Role of the Ukrainian Massif in the Formation of the Paleozoic Structure in the South of the European Part of the USSR

determined the main trends of the development of the Hercynian structure of the southern parts of the Russian Platform. In agreement with reference 4 A. D. Arkhangel'skiy (Ref 1), D. N. Sobolev (Ref 10) and others connected the Hercynian dislocations of Central Asia (Srednyaya Aziya) and of the Ural with western Europe (Zapadnaya Yevropa).

Kielce-Sandomierz Ridge (Swietokrzyskie Gory)

along a strip, which is limited by Karpinskiy's lines. This strip apart from the Donets (Donetskiy) chain also comprises the Dnepr-Donets (Dneprovsko-Donetskaya) depression. The evidence available now proves that the Upper Paleozoic synclinal projected only with its north-western Donets ramification into the interior of the Russian Platform. The development of the Donets-North Caucasus (Kavkazskaya) synclinal was as a whole determined by the relatively stable position of the Ukrainian massif. To the South and to the West from the latter the geosynclinal downwarping and later on the Hercynian corrugated area was formed. Hence, the connection between the Hercynides of Central Asia and the Ural with Central Europe is not indicated to take the direction of the

Card 2/4

SCV/20-120-4-50/67

On the Role of the Ukrainian Massif in the Formation of the Paleozoic Structure in the South of the European Part of the USSR

"lines of Karpinskiy", but to pass much farther to the South, that is to say by the Upper Paleozoic Folds of the North Caucasus, of the Crimea (Krym) and the Dobrudja (Dobrudzha), by-passing the Ukrainian Massif. By this the possible discovery of to a high degree metamorphosed Caledonides stratified below is not excluded. Common features were also observed in the structure of the Epi-Hercynian Platforms of the North Caucasus (together with the eastern prolongation of the Donets basin) and of Transcaspia (Zakaspiy) and West Siberia (Sibir⁶) (Ref 9).

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut prirodnogo gaza
(All Union-Scientific Research Institute of Natural Gas)

PRESENTED: February 17, 1958, by D. V. Nalivkin, Member, Academy of Sciences, USSR

Card 3/4

SOV/20-120-4-50/67
On the Role of the Ukrainian Massif in the Formation of the Paleozoic
Structure in the South of the European Part of the USSR

SUBMITTED: January 17, 1958

1. Mountains--Geophysical effects 2. Geology--USSR 3. Geological
time--Determination 4. Geophysics

Card 4/4

BILYK, Oleg Denisovich; KANSKIY, Nikolay Yeliseyevich; MAKRIDIN, Vladimir Petrovich; STERLIN, Boris Pavlovich; SUKHORSKIY, Roman Filippovich; LAPKIN, I. Yu., otv.red.; KURILOVA, T.M., red.; BELOKON', V.V., tekhn.red.

[Facies and paleogeography of Jurassic sediments in the oil- and gas-bearing area of the eastern Ukraine] *Fatsii i paleogeografiia iurskikh otlozhenii Vostochno-Ukrainskogo gazoneftennogo basseina. Khar'kov, Izd-vo Khar'kovskogo gos.univ., 1960. 71 p.*
(MIRA 14:4)

(Ukraine--Paleogeography) (Ukraine--Geology, Stratigraphic)

LAPKIN, I.Yu.

Tectonics of the Donets Basin through. Sov.geol. 4 no.7:51-
67 J1 '61. (MIRA 14:10)

1. Ukrainskiy filial Vsesoyuznogo nauchno-issledovatel'skogo
instituta prirodnogo gaza.
(Donets Basin--Geology, Structural)

LAPKIN, I. Yu.

Lower Permian stratigraphy in the south of the Russian Platform.
Dokl. AN SSSR 137 no. 1:143-145 Kr-Ap '61. (MIRA 14:2)

1. Ukrainskiy filial Vsesoyuznogo nauchno-issledovatel'skogo
instituta prirodnogo gaza. Predstavleno akademikom N.S.
Shatskim.

(Russian Platform--Geology, Stratigraphic)

GLUSHENKO, N.V.; IVANOV, V.K.; LAPKIN, I.Yu.; PODOBA, B.G.; SHCHEGOLEV, A.K.

Flora of the red sill in the Schwagerina strata of the Donets
Permian. Dokl.AN SSSR 145 no.1:157-159 JI '62. (MIRA 15:7)

1. Ukrainskiy filial Vsesoyuznogo nauchno-issledovatel'skogo
instituta prirodnogo gaza. Predstavleno akademikom A.L.Yanshinym.
(Bakhmut region--Paleobotany, Stratigraphic)

VOROB'YEV, B.S.; LAPKIN, I.Yu.; PAN'KIV, A.M.; STERLIN, B.P.; TKHORZHEVSKIY, S.A.

Geology of the southern slope of the Voronezh massif in the Ghar'kov region. *Sov. geol.* 6 no. 4: 129-133 Ap '63. (MIRA 16:4)

1. Trest "Khar'kovneftegazrazvedka" i Ukrainskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta gaza i iskusstvennogo zhidkogo topliva.

(Gharkov region—Geology)

AGISHEV, A.P.; KLITOCHEVKO, I.F.; LAPKIN, I.Yu.; PALIY, A.M.; STERLIN, B.P.;
TKHORZEVSKIY, S.A.; TKACHISHIN, S.V.

New gas-bearing area in the southeastern section of the Dnieper-
Donets Lowland. Gaz. prom. 8 no.12:4-6 '63 (MIRA 18:2)

LAPKIN, I.Yu.

Early Permian of the Mugodzhar trough. Dokl. AN SSSR 161 no.5:1169-
1172 Ap '65. (MIRA 18:5)

1. Ukrainskiy filial Vsesoyuznogo nauchno-issledovatel'skogo
instituta prirodnykh gazov. Submitted August 13, 1964.

GIUSHENKO, N.V.; IVANOV, V.K.; LAPKIN, I.Yu.; PODOBA, B.G.; REDICHKIN, N.A.

Key section of the Lower Permian Assel' stage in the south of the
Russian Platform. *Biul. MOIP. Otd. geol.* 39 no.2:81-84. *Mr-Ap '64.*
(MIRA 19:1)

LAPKIN, K.I.

USSR / Farm Animals. General Problems

U-1

Abs Jour : Referat Zhur - Biologiya, No 16, 1957, No 72024

Author : Lapkin, K.I., L'vovich, A.K.

Title : The Problems of Animal Husbandry in the Golodnaya Steppe.

Orig Pub : Soc. S. Kh. Uzbekistana, 1956, No 11, 47-51

Abstract : No abstract.

Card 1/1

- 1 -

LAPKIN, Kuz'ma Ivanovich; KAYUMOV, Favaris Kadyrovich; ARKAD'YEVA, A.,
red.; SALAKHUTDINOVA, A., tekhn. red.

[Possibilities for increasing the production of cotton and
meat and decreasing their cost] Rezervy uvelichenia proizvodstva
khlopka i miasa i snizhenia ikh sebestoimosti. Tashkent,
Gosizdat UzSSR, 1962. 111 p. (MIRA 16:6)
(Ukraine--Cotton) (Ukraine--Stock and stockbreeding)

GENIN, N.M., kand.med.nauk; LAPKIN, K.V.; LEVANT, A.D.

Single-stage surgical removal of mitral, aortic and tricuspid stenoses using the left approach. Vest.khir. no.1:134-136 '62.
(MIRA 15:1)

1. Iz Instituta grudnoy khirurgii (dir. - prof. S.A. Kolesnikov, nauchn. rukovod. - prof. A.N. Bakulov) AMN SSSR. Adres avtorov: Moskva, ~~Leningkiy pr., d:8,~~ Institut grudnoy khirurgii AMN SSSR.
(~~HEART--VALVES--SURGERY~~) (~~AORTA--SURGERY~~)
(TRICUSPID VALVE)

KOLESNIKOV, S.A.; TSUKERMAN, G.I.; LEVANT, A.D.; LAPKIN, K.V.

Methods of tricuspid commissurotomy. Grudn. khir. 4. no.5:6-11
S-0*62 (MIRA 17:3)

1. Iz otdeleniya priobretennykh porokov serdtsa (zav. - prof. S.A. Kolesnikov) Instituta serdechno-sosudistoy khirurgii (dir. prof. S.A. Kolesnikov, nauchnyy rukovoditel' - akademik A.N. Bakulev) AMN SSSR. Adres avtorov: Moskva, V-49, Leninskiy prospekt, d.8, Institut serdechno-sosudistoy khirurgii AMN SSSR.

LAPKIN, K.V. (Moskva, Sredne-Pervomayskaya ul., d. 29, kv. 34)

New dilator with a flexible cable for mitral commissurotomy.
Gruzn. khir. 4 no.5:115-117 S-0'62 (MIRA 17:3)

1. Iz Instituta serdechno-sosudistoy khirurgii (dir.- prof.
S.A. Kolesnikov, nauchnyy rukovoditel' -- akademik A.N. Bakulev).
AMN SSSR.

LIKUMOVICH, A.G.; ZAKHAROVA, N.V.; LAPKIN, L.M.; ANDREYEVA, L.N.;
RAZUMOVSKAYA, L.V.; UVAROVA, Ye.D.; VOLOSHKO, S.G.

Chromatographic analysis at the Sterlitamak Plant of Synthetic
Rubber. Zav.lab. 28 no.5:637 '62. (MIRA 15:6)

1. Sterlitamakskiy zavod sinteticheskogo kauchuka.
(Sterlitamak--Rubber, Synthetic) (Chromatographic analysis)

ZHUKHOVITSKIY, A.A.; LAPKIN, L.M.; DITSKEVICH, A.A.

Zero line in vacantochromatography as a basis of continuous doseless analysis. Dokl. AN SSSR 162 no.5:1089-1091 Je '65. (MIRA 18:7)

1. Moskovskiy institut stali i splavov. Submitted November 30, 1964.

LAPKIN, M.M.

Left-sided diaphragmatic hernia in a newborn. Khirurgiia Supplement:8
'57. (MIRA 11:4)

1. Iz Onilyakovskoy bol'nitay Odesskoy oblasti.
(DIAPHRAGM--HERNIA)

LAPKIN, M.Yu.

GITNIK, S.M., inzh.; LAPKIN, M.Yu., inzh.

Precast prestressed reinforced concrete frames for single-story
industrial buildings. Nov.tekh. i pered.op. v stroi. 19 no.6:6-9
Je '57. (MIRA 10:10)
(Industrial buildings)
(Prestressed concrete construction)

MES'KIN, V.S.; LAPKIN, N.I.

On the effect of high-temperature annealing and reheating on the magnetic properties of steels used in electrical engineering.
Fiz.mst.i metalloved. 1 no.1: 158-166 '55. (MLRA 9:3)

1. Leningradskiy institut aviatsionnogo priborostroyeniya i Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov.
(Sheet steel--Magnetic properties)

✓ The deformability of transformer steel during cold-rolling.
 G. N. Shubin, V. A. Shadrin, and N. I. Lapkin. *Fiz. Metal. i Metalloved., Akad. Nauk S.S.S.R., Ural. Pribl. 1*, No. 1, 189-4(1955); (*Bratcher Transl. No. 3627*).—Specimens of Si steels contg. 3.08, 3.58, and 4.10% Si 2.5 X 50 mm. in cross section were given an anneal at the optimum temp., 500°, pickled in a H₂SO₄ soln., and then rolled 1 det. the specific pressure, P_s , required to produce deformation, as a function of total reduction, $\Delta h/h_0$. At $\Delta h/h_0 = 0.4$, P_s was 58 kg./sq. mm. for a low-C steel, 63 for the 3.08 Si steel, 69 for 3.58 Si, and 81 for 4.10 Si. All 3 Si steels attained a value $\Delta h/h_0$ of at least 0.7. Because of the heat generated during deformation, the resistance to deformation as a function of $\Delta h/h_0$ of single-pass reductions went through a max. at about 50% reduction and then decreased. Tests on preheated specimens showed that the resistance to deformation was a min. at 100° and increased rapidly at temps. above 200° because of friction.

A. G. Guy

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1301-112/114
SOKOLOV, Konstantin Nikandrovich; SHMYKOV, A.A., doktor tekhn.nauk, retsenzent;
RUSTEN, S.L., kand.tekhn.nauk, retsenzent; SAMOSHIN, I.G., kand.tekhn.
nauk, retsenzent; ARZAMASOV, B.N., kand.tekhn.nauk, retsenzent;
LAPKIN, N.I., kand.tekhn.nauk, red.; DUGINA, H.A., tekhn.red.

[Equipment of heat-treating shops] Oborudovanie termicheskikh
tsekhov. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry,
1957. 420 p. (MIRA 11:4)

1. Kafedra termicheskoy obrabotki metallov Moskovskogo vysshego
tehnicheskogo uchilishcha im. Baumana (for Samoshin, Arzamasov)
(Metals--Heat treatment)

137-58-6-12777

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 226 (USSR)

AUTHOR: Lapkin, N.I.

TITLE: Production of Steel for Electrical Applications With Refractory Dielectric Coating (Proizvodstvo elektrotekhnicheskikh staley s ognepornymi elektroizolyatsionnymi plenkami)

PERIODICAL: Byul. nauchno-tekhn. inform. Ural'skiy n.-i. in-t chernykh metallov, 1957, Nr 3, pp 80-92

ABSTRACT: During annealing (800-1300°C) of sheet steel for electrical applications the sheets are coated with coatings (C) which prevent their sticking and welding together. The materials for C, their properties, and the methods of application to make them serve as dielectric films were studied. Water paint made of freshly burned lime was selected, which, after wet grinding in a vibrating ball-and-shell mill, has a particle size $\leq 10\mu$. It is heated to 85-90° and dusted onto the pickled sheets, also heated to 80-120° by purified air at 3-4 atmospheres. The concentration of water lime paint is 100-300 g/liter. The consumption is 7-15 liter/ton of sheets 0.355 mm thick. The quality of the coating is better when annealing is done in hydrogen, rather

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137-58-6-12777

Production of Steel for (cont.)

than in a vacuum, and is better with shorter holding periods and on cold-rolled than on hot-rolled steel. The magnetic properties of sheets with this coating remain unchanged. The resistivity of the coating decreases with an increase of the contact pressure during tests. Magnesia paint, applied with the same technique, proved also suitable. During annealing in a reducing atmosphere, oxides and hydroxides of Fe, Ca, or Mg in the paint are partially reduced, and the H₂O vapors and CO₂ promote formation of a dielectric oxide layer of complex silicates exhibiting shades from gray to brown.

A.S.

1. Steel--Heat treatment
2. Steel--Coatings
3. Refractory materials--Applications
4. Dielectric films--Materials

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LAP Kin. n. I. 124
AUTHOR: Dorochek, S.I.; Lapkin, N.I. and Shubin, G.N.
TITLE: Change of the plasticity of transformer steel during the process of cooling. (Izmenenie plastichnosti transformatornoy stali v protsesse okhlazhdeniya.)
PERIODICAL: "Fizika Metallov i Metallovedenie" (Physics of Metals and Metallurgy), 1957, Vol.IV, No.1 (10), pp.171-176 (U.S.S.R.)

ABSTRACT:

Certain problems of the kinetics of the change of the plasticity of hot rolled transformer steel during cooling after low temperature annealing, without a protective atmosphere, were studied. The influence of the speed and the temperature range of cooling on the plasticity of the transformer steel was established by the method of step-wise cooling. The investigations were carried out on 0.5 x 30 x 250 mm specimens of transformer steel containing 4.0 to 4.2% Si and minimum contents of harmful admixtures. After heating to a given temperature between 750 and 850 °C and holding for two hours the individual packets were furnace cooled at the rate of 5 °C/hr and 10, 20, 40 and 60 °C/hr to specific temperatures, which was followed by subsequent cooling in air. The temperature from which the specimens were cooled in air was arbitrarily called "fixation temperature". The results plotted in Fig.1 indicate that the initial point of rapid cooling influences considerably the plasticity of transformer steel. The toughness of high alloyed trans-

126-3-13/34

AUTHORS: Lapkin, N. I., Shubin, G.N. and Doroshek, S.I.

TITLE: Critical range of brittleness of electrical steels.
(Kriticheskiy interval khrupkosti elektrotekhnicheskikh staley)

PERIODICAL: "Fizika Metallov i Metallovedeniye" (Physics of Metals and Metallurgy), 1957, Vol.4, No.3, pp. 478-482 (U.S.S.R.)

ABSTRACT: The ductility was determined in the temperature range -80 to +300 C of dynamo and transformer steels from commercial open hearth melts containing 1.08 to 4% Si and also for transformer steel containing 4.8 to 5.8% Si produced in an induction furnace. The change in the ductility was determined from the measured impact strength, number of bends until failure, stretching and pressing in accordance with Ericssen. The graph, Fig.1, gives the measured results of the change in the impact strength as a function of temperature for 1.0, 2.26, 3.56 and 4% Si contents; the graph, Fig.2, gives the influence of the Si content on the plastic properties at room temperature; Fig.3 gives the change in the number of bends (until failure) of high alloy transformer steel as a function of the test temperature; the graph, Fig.4, gives the anisotropy of transformer steel before and after high temperature annealing in vacuum for the temperature range -20 to +300 C, by plotting the respective

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126-3-13/34

Critical range of brittleness of electrical steels. (Cont.)
values in the direction of rolling as well as transverse to the direction of rolling. The critical brittleness temperature range of electrical steels changes within wide limits (between -80 and +250 C) depending on the Si content. Change over from the tough to the brittle state with increasing temperature is continuous inside a relatively large temperature range. Of great importance on the tendency of electrical steels to develop brittleness is the character of the deformations, the direction of rolling and the heat treatment regime. The anisotropy of the impact strength is more pronounced in the tough state than in the brittle state and can be appreciably reduced by high temperature annealing. Utilisation of low temperature heating permits increasing the ductility of transformer steel 15 to 20 times and represents a high quality reserve for influencing the technological properties of this steel, both during its production in the steel-works as well as during actual working in engineering works. Electrical steels are subject to the known phenomenon of blue brittleness. Plastic deformation accelerates and increased Si content decelerates processes responsible for developing blue brittleness.

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126-3-13/34

Critical range of brittleness of electrical steels. (Cont.)
There are 4 figures, 1 table and 4 references, one of which
is Slavic.

SUBMITTED: May 11, 1956.

ASSOCIATION: Ural Ferrous Metals Scientific Research Institute.
(Ural'skiy Nauchno-Issledovatel'skiy Institut Chernykh
Metallov).

AVAILABLE: Library of Congress

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SOV/126-5-4-24/34

AUTHORS: Iepkin, N.I.,
Dubrov, N.F.

TITLE: Cold Rolled Dynamo Steel (Kholodnokatanaya dinamaya stal')

PERIODICAL: Fizika Metallov i Metallovedeniye, 1958, Vol 6,
Nr 4, pp 739-744 (USSR)

ABSTRACT: Data are given on the features of manufacture and on improving the magnetic properties of the first batch of cold rolled dynamo steel manufactured by the Magnitogorsk Metallurgical Combine. The steel was smelted in an arc furnace and its composition was as follows: 0.02% C; 0.10% Mn; 1.35% Si; 0.012% P; 0.008% S; 0.02% Cr; 0.10% Ni. The steel was cast by means of a syphon into ingots weighing seven tons which, after heating to 1220-1280°C, was rolled into slabs of 100 x 800 mm cross section. The slabs, weighing 950 to 1100 kg, were heated in 3-zone holding furnaces from an initial 20°C. The temperature in the holding zone was 870 to 930°C and the temperature in the soaking zone was 1275-1320°C. Then the slabs were rolled to a thickness of 2.2 mm on a 10-stand continuous hot mill, the rolls

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Cold Rolled Dynamo Steel

of which were 800-500 mm dia. with a barrelled length of 1450 mm. The rolling temperature after passing the rough rolling stands was 1140 to 1160°C, the temperature at the end of the rolling was 870-905°C; the slabs were left in the furnace for 90 minutes. The hot rolled strips of 2.2 x 800 mm, weighing 900 to 1000 kg, were etched continuously in sulphuric acid at a speed of 25 m/min at 45 to 90°C with a concentration of the etching solution of 15 to 20%. After etching, the greased hot rolled coils were rolled on a 3-stand mill with a diameter of the rolls of 450 mm and a barrelled length of 1450 mm down to a thickness of 1.0 mm. The speed of the first cold rolling was 3.5 m/sec. In contrast to the present manufacturing technology of cold rolled transformer steel, the 1.0 mm thick dynamo steel was coiled and without intermediate bright annealing it was subjected to a second cold rolling, to a thickness of 0.50 mm, on a 6-roll reversing stand (roll diameter 185 mm, barrelled length 850 mm). Individual strips were rolled on the reversing mills down to a thickness of 0.35 mm in five passes. A

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Cold Rolled Dynamo Steel

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distinguishing feature of the manufacture of this batch of dynamo is the absence of decarburisation annealing, cold rolling from 2.2 down to 0.50 and even 0.35 mm without intermediate bright annealing and final low temperature annealing inside a protective gas. Individual sheets or packets of the cold rolled dynamo steel were subjected to high temperature annealing in vacuum for the purpose of eliminating harmful admixtures and for obtaining a coarse grain structure. As was shown in earlier work of the authors (Ref.1), high temperature annealing in hydrogen, in deep vacuum or in neutral gases bring about a considerable increase of the magnetic induction in weak fields and a reduction in the coercive force even in low alloy (hot rolled) dynamo steel, in spite of the α to γ transformations which take place. The applied heat treatment regimes of the cold rolled dynamo steel are entered in Table 1, p 740. In Table 2 the specific losses and the magnetic induction in strong fields are entered for a dynamo steel which was subjected to a final low temperature

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Cold Rolled Dynamo Steel

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annealing inside a protective gas. It can be seen that the specific losses of such a steel are relatively high. The influence of heat treatment and of the thickness of the sheets on the specific losses of cold rolled dynamo steel containing 1.35% Si is graphed in Fig.1. In Fig.2 the influence is graphed of the heat treatment regime on the magnetic induction of cold rolled dynamo steel. In Fig.3 the dependence is graphed of the specific losses of electrical steels on the Si content. In Fig.4 curves of the magnetic anisotropy of cold rolled dynamo steel after various heat treatment regimes are graphed. The author summarises his conclusions thus:

1. After low temperature annealing in a neutral gas (without applying decarburisation and intermediate annealing), low alloy cold rolled dynamo steel has a higher magnetic induction and a higher filling coefficient than hot rolled dynamo steel, the specific losses being equal in both cases.
2. The specific losses of this steel after high temperature annealing in vacuum decreases to the level

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Cold Rolled Dynamo Steel

of that pertaining to medium alloy hot rolled transformer steel. Thereby, a considerable growth of the grains takes place and an increase in the magnetic induction in weak and medium fields.

3. Reduction of the sheet thickness from 1.0 to 0.35 mm leads to a reduction to half of the specific losses of coarse grain cold rolled dynamo steel. A further reduction of the specific losses can be achieved by increasing the silicon content and eliminating harmful admixtures.

4. The recrystallisation texture and the magnetic anisotropy of cold rolled dynamo steel are insignificant

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Cold Rolled Dynamo Steel

SOV/126-6. 24/54

and decrease with increasing annealing temperature.
There are 4 figures, 2 tables and 4 references of which
3 are Soviet and 1 German.

ASSOCIATION: Ural'skiy Nauchno-Issledovatel'skiy Institut
Chernykh Metallov (Ural Scientific Research Institute
of Ferrous Metals)

SUBMITTED: 4th January 1957 (Initially)
3rd April 1957 (after revision)

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24 (3)

AUTHORS:

Lapkin, H. I., Mos'kin, V. S.

SOV/42-23-3-3/31

TITLE:

On the Influence of High Temperature Annealing on the Magnetic Properties of Magnetically Soft Alloys (O vliyaniya vysokotemperaturnoy otzhig na magnitnyye svoystva magnitno yagshchikh sployav)

PERIODICAL:

Izvestiya Akademii Nauk SSSR. Seriya Fizicheskaya, 1959, Vol 25, No 3, pp 288-291 (USSR)

ABSTRACT:

In the present paper the authors investigated the following iron-nickel-alloys: 50% permalloy 50N and 50NiKhS as well as molybdenum-permalloy M79M4. The dependence of the magnetic properties of the Fe-Ni-alloys on the temperature of annealing (up to 1350°) are given in figures 1, 2, and 3. As may be seen all properties are considerably improved also in the case of annealing in argon. A further improvement of the properties is attained by the annealing in the refined medium; in this case in the vacuum with gas absorbers. The total effect of the refining medium in the case of Fe-Ni-alloys is smaller than with Fe-Si. The effect of the medium on the maximum permeability which increases with rising temperature (Fig 2) is apparently due to the fact

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On the Influence of High Temperature Annealing on the SOV/48-23-3-3/34
Magnetic Properties of Magnetically Soft Alloys

that the maximum permeability of the Fe-Ni-alloys compared to the nonmetallic phases is extremely sensitive. The high absolute values of the magnetic properties which are obtained after high temperature annealing in the refining medium are especially striking (Table). The curves of magnetic permeability for 0.5 mm thick bands of 50K after the annealing at different temperatures in the vacuum by means of gas absorbers are shown in figure 3. Figure 4 shows the magnetization curves for cold rolled dynamo steel after the annealing at 850° in the protective gas and at 1120° in the vacuum. The fact that the anisotropy of the cold rolled dynamo steel after the annealing at 1120° is lower than after the annealing at 850° is especially striking (Fig 5). The difference in the texture after the annealing at 850 and 1120° probably depends on the fact that the former is below and the latter above the temperature of phase transformation in the dynamo steel with 1.35 % Si (Ref 3)

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On the Influence of High Temperature Annealing on SOV/48-23-3-3/31
the Magnetic Properties of Magnetically Soft Alloys

Figure 6 shows the influence of the annealing temperature on the properties of hot rolled transformer steel. It appears from laboratory experiments, conducted by G. A. Zykov (Fig 6a) that in weak fields induction increases, while losses decrease. The induction B_{25} as was shown already earlier - (Refs 4, 5) somewhat decreases. The properties (except B_{25}) change in the same direction also at a temperature increase up to 1160° after the shop annealing (Fig 6b) at a residual pressure of 40-50 mm torr. The absolute values - especially in weak fields - are considerably higher after the annealing under laboratory conditions which can be explained by the stronger refining effect of the medium. There are 6 figures, 1 table, and 5 references, 4 of which are Soviet.

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85037

S/126/60/010/004/003/023
E073/E535

9.4300 (1137, 1138, 1143)

AUTHORS: Lapkin, N.I., Bukhvostova, N. G. and Falaleyev, G.A.TITLE: Influence of Heat Treatment on the Magnetic Properties
of Nickel-Zinc FerritesPERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol.10, No.4,
pp. 521-526

TEXT: The influence was investigated of the annealing (ferritizing) temperature of the mass and of the sintering temperature of components on the initial permeability μ_0 , $\text{tg } \delta$, the coercive force H_c , the residual induction B_r and the Curie point θ of nickel-zinc ferrites of the following composition by weight: Fe_2O_3 - 66.0%, NiO - 12.0%, ZnO - 22.0%. The process of production of the specimens is briefly described. μ_0 and $\text{tg } \delta$ were measured by means of a Maxwell bridge at 1000 cps, H_c , B_r and B_m were measured by a ballistic method. In the experiments over 500 toroidal specimens with an average diameter of 20 mm and a height of 5 mm were investigated. The first series of experiments were made for the purpose of determining the dependence of the magnetic properties and also the porosity of the tested nickel-zinc ferrites on the sintering temperature (1000 to 1350°C) for a constant

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Influence of Heat Treatment on the Magnetic Properties of Nickel-Zinc Ferrites

ferritizing temperature (1050°C) and a constant duration of the sintering process (4 hours). For a sintering temperature of 1100°C the magnetic properties proved very low (Fig.1). With increasing sintering temperature, up to 1250°C, the maximum induction and the initial permeability increased considerably and the coercive force and the loss angle tangent decreased. X-ray structural and metallographic analyses indicate that for a sintering temperature of 1250°C a solid solution of nickel-zinc ferrite is formed. Further increase in the sintering temperature leads to a change in the phase composition, namely, a decomposition of the zinc ferrite, an increase in porosity (Fig.2) and poorer magnetic properties. The second series of experiments was made for determining the influence of the annealing temperature on the magnetic properties of ferrites sintered at 1250, 1300 and 1350°C; the results are plotted in Fig.3. The ferritizing process has a considerable influence on the shrinkage, the magnetic induction, the initial magnetic permeability and the loss angle. The coercive force is

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Influence of Heat Treatment on the Magnetic Properties of Nickel-Zinc Ferrites

only slightly affected by changes in the annealing temperature. Comparison of the results obtained on the influence of the annealing temperature of the mass and the sintering temperature of the finished components (Fig.4) indicates that the process of ferritizing has a considerable influence on the magnetic properties of ferrites. The Curie point, 160°C , is determined by the chemical composition and does not depend on the heat treatment. The following optimum temperatures were determined: annealing 1050 to 1150°C , sintering not exceeding 1250°C . After annealing at 1050°C and sintering at 1250°C the tested ferrites had an initial permeability of 1000 to 1100 gauss/Oe, $\text{tg}\delta$ equalled 0.5 to 0.6 . Such ferrites proved suitable as cores for surge transformers with surge durations of 0.6 to 1.0 μsec . For shorter pulses, ferrites with lower initial permeabilities and loss angles have to be used. Comparative tests with surge transformers have shown that ferrite cores are superior to cores of the magnetically soft alloys $79\text{H}5\text{M}$ ($79\text{N}5\text{M}$) and 50H (50N). By using ferrite cores it proved possible to reduce the weight and size of surge transformers by a Card $3/4$

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Influence of Heat Treatment on the Magnetic Properties of Nickel-Zinc Ferrites

factor of 15 to 20, considerably reducing their cost and ensuring the obtaining of stable, square topped pulses with steep fronts. There are 4 figures and 4 references: 3 Soviet and 1 English.

ASSOCIATION: Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov (Ural Scientific Research Institute of Ferrous Metals)

SUBMITTED: November 14, 1959

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85961

S/126/60/010/005/005/030
E073/E535

18.1141

AUTHORS: Krasnoperov, G. V. and Lapkin, N. I.

TITLE: Investigation of Heat Treatment of ¹Iron-Aluminium
Magnetically Soft Alloys 14 18

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol.10, No.5,
pp.668-671

TEXT: The aim of the investigations was to find methods of heat treatment which ensure high magnetic properties in hot rolled sheets of iron alloyed with 16% Al. The alloy ~~10~~ 16 (Yul6), ¹⁴ corresponding to the American "alphenol", was produced in an open 100 kg capacity induction furnace using as charge materials pure iron and refined grades of Al. Prior to alloying with Al, the melt was treated with a vacuum of 10 to 15 mm Hg col. for the purpose of decarburization and deoxidation. The metal was poured into metallic moulds and heated to 500°C. To eliminate thermal stresses and cracks, the ingots were cooled from 800°C with a speed of 80 to 90°C/hour. The specimens had the following composition in percent: C 0.009, Si 0.38, Mn 0.03, S 0.002, P 0.004, Cr traces, Ni 0.04, Cu 0.02, Al 15.7. The hot rolling was by means of a 2-high mill in packets consisting of sheets of dynamo steel and of the Card 1/4

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Investigation of Heat Treatment of Iron-Aluminium Magnetically Soft Alloys

alloy Yul6. Discs of 30 and 20 mm diameter were stamped from hot rolled 0.35 x 600 x 1200 mm pickled sheets. The specimens, consisting of 20 sheets, were air annealed in a silite furnace in the temperature range 800 to 1200°C, followed by cooling at a rate of 100°C to the quenching temperature, held at that temperature for 30 min and then quenched in a 20% NaOH solution, water or transformer oil. The magnetic properties were measured ballistically, the electric properties were measured by means of resistance bridges. For determining the influence of the annealing temperature on the magnetic properties, the specimens were cooled at the rate of 100°C/hr and then quenched in the alkali from 600°C. An increase in the annealing temperature from 850 to 1050°C brings about an improvement of the magnetic properties. On increasing this temperature further, the magnetic properties will become somewhat poorer. An increase in the annealing temperature leads to some burning off of the Al. The quenching medium and the quenching temperature have a considerable influence on the permeability and on the coercive force; the highest μ_0 values were obtained after oil quenching from 650°C

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Investigation of Heat Treatment of Iron-Aluminium Magnetically Soft Alloys

(annealing at 950°C) and 700°C (annealing at 1050°C). An increase in the annealing temperature shifts towards higher temperatures the optimum quenching temperature from the point of view of μ_0 . The initial permeability is considerably lower for specimens quenched in alkali and water. For obtaining high maximum permeabilities it is necessary to quench the alloy from 650°C (after annealing at 950°C) and 600°C (after annealing at 1050°C). An increase in the annealing temperature and the quenching speed leads to a decrease in the optimum quenching temperature. In the case of oil quenching, the coercive force decreases with temperature up to 650-700°C. It was found that an increase in the quenching temperature and the cooling speed leads to an increase in the electric resistance and, consequently, to a decrease in the degree of ordering. An increase in the soaking time from 15 min to 3 hours during annealing and also of the cooling rate from 50 to 200°C/hr does not affect greatly the magnetic properties. The results show that with this alloy magnetic properties can be obtained which compare favourably with those obtained for an iron alloy with a 50% Ni content. Acknowledgments

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E073/E535

Investigation of Heat Treatment of Iron-Aluminium Magnetically Soft Alloys

are made to the personnel of the Precision Alloy Laboratory of the Ural Scientific Research Institute for Ferrous Metals (I. A. Gorlach, N. A. Krasil'nikov and A. S. Matyugin) and to the student, L. N. Polovnikova for producing the specimens and for assistance with the heat treatment and the magnetic tests. There are 2 figures, 1 table and 5 references: 1 Soviet and 4 English.

ASSOCIATION: Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov (Ural Scientific Research Institute for Ferrous Metals)

SUBMITTED: May 7, 1960

Card 4/4

S/126/61/011/003/015/017
E032/E514

AUTHORS: FALALEYEV, G.A. and Lapkin, N. I.
TITLE: The Effect of Neutron Bombardment on the Magnetic Properties of Cores Made from the 79HM (79NM) Alloy
PERIODICAL: Fizika metallov i metallovedeniye, 1961, Vol.11, No.3, pp. 473-474

TEXT: The present authors have measured the frequency dependence of the magnetic properties of the 79NM alloy before and after neutron bombardment. The following quantities were measured: initial permeability μ_0 , amplitude and inductive maximum permeabilities $\bar{\mu}_m$, μ_{zm} and the tangent of the loss angle at these points $\tan \delta_0$, $\tan \delta_m$. Wound-tape core specimens (42 x 30 x 5 mm) made from a ribbon 0.08 mm thick were used. The specimens were irradiated with a neutron beam of 10^6 neutrons/cm²sec. The total dose was 5×10^9 neutrons/cm². The results obtained are summarized in the figure, in which the full curves refer to the magnitudes of the parameters before the irradiation and the dashed curves to the magnitude after irradiation. In this figure μ is in Gauss/Oe (vertical axis) and the magnetization reversal frequency in sec⁻¹ (horizontal axis). There are 1 figure and Card 1/2

The Effect of Neutron ...

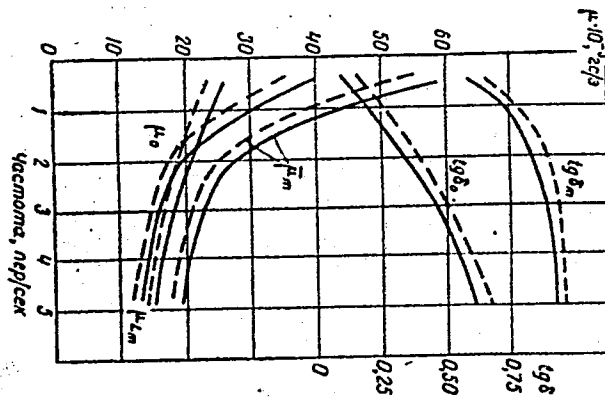
S/126/61/011/003/015/017
E032/E514

4 references: 1 Soviet and 3 non-Soviet.

ASSOCIATION: Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov (Ural Scientific Research Institute for Ferrous Metals)

SUBMITTED: August 5, 1960

Figure



Card 2/2

18.1141

22961
S/126/61/011/005/006/015
E073/E335

AUTHORS: Lapkin, N.I. and Krasnoperov, G.V.

TITLE: Influence of Heat-treatment on the Temperature Stability and Ageing of the Alloy Yul6 (Yul6)

PERIODICAL: Fizika metallov i metallovedeniye, 1961, Vol. 11, No. 5, pp. 693 - 697

TEXT: The authors investigated the influence of heat-treatment on the temperature dependence of the permeability, coercive force and the magnetic induction of a hot-rolled high-ordering alloy Yul6 (16% Al, rest Fe) in the temperature range -80 to +200 °C. They also investigated the influence of ageing on the magnetic and electrical properties of this alloy. According to earlier results of the authors and their team (Ref. 1 - Byulletin TsNIChM, 1960, 34, No. 23; Ref. 2 - Fiz. met. i metallovedeniye, 1960, Vol. 10, No. 5, p.668) this alloy possesses very favourable magnetic properties after quenching from the temperature range 700 - 500 °C and as a result of this the alloy may prove to be in an unstable state. The specimens
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Influence of Heat-treatment S/126/61/011/005/006/015
E073/E335

were produced from hot-rolled, heat-treated 0.35 mm thick sheet. Various heat-treatments were applied to stabilise their magnetic properties, i.e. various temperatures of annealing and quenching and various cooling speeds. The magnetic hysteresis properties were measured ballistically in the temperature range -80 to $+200$ °C, using a thermostat. A mixture of liquid nitrogen and gasoline was used as a quenching medium. Prior to the magnetic measurements, individual specimens were subjected to artificial ageing (at 50, 100, 200 and 250 °C for 24 hours) and natural ageing (15-20 °C for 2 880 and 5 040 hours). For all the investigated heat-treatments (annealing at 950 and 1 050 °C for one hour; quenching from 700, 650, 600, 500 and 450 °C in an alkali, water and oil) the magnetic properties changed considerably on changing the test temperature. The induction at $H = 13$ Oe is highest at low temperatures (-80 °C) and this drops rapidly with increasing test temperature, indicating a low Curie point. The residual induction as well as the permeability and the coercive force change with the test

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Influence of Heat-treatment

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E073/E335

temperature and the appropriate curves show a pronounced maximum (or minimum). The residual induction has a maximum at 20 - 40 °C and shows little dependence on the heat-treatment conditions. At low quenching temperatures (400 - 500 °C) and high cooling speeds, the magnitude and the temperature stability of the magnetic properties are low. The highest initial and maximum permeabilities were obtained in tests at 100-120 and 40-60 °C after annealing followed by oil-quenching. Artificial ageing at 50 - 100 °C resulted in an improvement in the magnetic properties by 5-20%. The results have shown that heat-treatment, which leads to improved magnetic properties of the alloy, brings about a decrease in the temperature stability of these properties. An increase in the cooling speed during quenching narrows the range of operating temperatures; at 150-180 °C an irreversible deterioration in the magnetic properties will occur. Artificial ageing at 50 and 100 °C improves, and artificial ageing at 200-250 °C reduces the magnetic properties of the investigated alloy. Natural ageing for periods of four and

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Influence of Heat-treatment S/126/61/011/005/006/015
E073/E335

seven months also results in a deterioration of the magnetic properties. There are 3 figures, 1 table and 5 Soviet references. X

ASSOCIATION: Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov (Ural Scientific-research Institute for Ferrous Metals)

SUBMITTED: August 6, 1960

Card 4/4

KHOREV, V.N.; BARANOVA, N.A.; GORLACH, I.A.; KVASOV, Ye.I.; KRAMARENKO, I.S.;
MIRONOV, L.V.; PRIVALOV, S.S.; LYASKO, M.V.; DUBROV, N.F.;
MIRONOV, L.V.; KOKSHAROVA, I.K.; MIKHALEV, M.S.; LAZAREV, E.M.;
KUZNETSOVA, I.R.; LAPKIN, N.I.; KRASIL'NIKOV, N.A.; GOL'DSHTEYN, M.I.;
GUTERMAN, S.G.; ODINOKOV, Yu.I.; SKRYABIN, N.P.; KORSHCHIKOV, V.D.

Research by the Ural Ferrous Metal Research Institute. Stal'
22 no. 7: 621, 623, 638-639, 670 JI '62. (MIRA 15:7)
(Metallurgical research)

S/276/63/000/002/014/052
A052/A126

AUTHORS: Lapkin, N.I., Krasnoperov, G.V., and Bukhvostova, N.G.

TITLE: Investigation of heat treatment of soft magnetic alloys

PERIODICAL: Referativnyy zhurnal, Tekhnologiya mashinostroyeniya, no.2, 1963, 61, abstract 2B270 (Tr. Ural'skogo n.-i. in-ta chern. metallov, 1, 1961, 160-175)

TEXT: Heat treatment of Fe-Ni 50H (50N), 79HM (79NM) and Fe-Al Ю16 (Yu16) soft magnetic alloys was investigated. Fe-Ni alloys were hot rolled on a 300 merchant mill. 50N and 79NM alloys after normalizing (heating to 1,050°C, holding 710 min, air cooling) and etching were cold rolled on a 6-roll mill with 87.5% reduction in area without intermediate annealing. The heat treatment of these alloys was carried out in an inertialess MIB-2 (MPV-2) vacuum furnace under different conditions: the annealing temperature was varied from 950 to 1,350°C, the holding from 0.25 to 3 hours, the rate of cooling in the 1,350-600°C range from 50 to 500°C/hour. From the temperature of 600°C the samples were cooled in a switched-off furnace at a rate from 100 to 5°C/min. Yu16 alloy was rolled to 0.35mm thickness on a

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Investigation of heat treatment...

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A052/A126

2-roll hot rolling mill and then annealed in a saltpeter bath without protecting atmosphere under following conditions: temperature 800, 900, 1,000, 1,100 and 1,200°C, holding 1 hour, cooling to hardening temperature at a rate of 100°C/hour. The hardening temperature of Yu16 alloy was varied from 450 to 700°C. As hardening media water, 20% caustic soda solution and transformer oil were used. The effect of annealing and hardening temperature on the magnetic properties of 50N, 79NM and Yu16 alloys was determined as well as the effect of heat treatment on the thermal stability and ageing of these alloys. As a result of the investigations it has been established that the highest values of magnetic permeability can be reached for 50N alloy at an annealing temperature of 1,200-1,250°C and for 79NM alloy at 1,150-1,300°C. Tempering at ordering temperature (480°C) reduces the heterogeneity and increases the thermal stability of magnetic properties of 79NM alloy. The temperature of secondary recrystallization in 50N alloy is in the 1,200-1,400°C range. Yu16 alloy has the highest magnetic properties after annealing at 950-1,050°C and oil hardening at 650°C. There are 7 figures and 6 references.

T. Kislyakova

(Abstracter's note: Complete translation.)

Card 2/2

DUBROV, Nikolay Fedorovich; LAPKIN, Nikolay Iosifovich. Primal
uchastiye ZASUKHA, P.F.; KOROBEKA, B.A., retsenzent;
MIRONOV, Leonard Vladimirovich; KRYZHOVA, M.L., red. izd-va;
BEKKER, O.G., tekhn. red.

[Electrical steels] Elektrotekhnicheskie stali. Moskva, Metal-
lurgizdat, 1963. 383 p. (MIRA 16:7)
(Steel--Magnetic properties)

ACCESSION NR: AR4011111

S/0137/63/000/012/V039/V039

SOURCE: RZh. Metallurgiya, Abs. 12V291

AUTHOR: Gorlach, I. A.; Kvasov, Ye. I.; Lapkin, N. I.

TITLE: Vacuum melting of self-magnetic alloys

CITED SOURCE: Tr. Ural'skogo n.-i. in-ta chern. met, v. 2, 1963, 219-230

TOPIC TAGS: soft magnetic alloy, alloy vacuum melting, arc vacuum melting, induction vacuum melting, nickel manganese alloy melting

TRANSLATION: A study was made of the effect of the methods of vacuum melting on the chemical composition and magnetic properties of the most typical magnetic-soft alloys (50N, 79NM, 80NKhS). The alloys were melted in a 300 kg open induction furnace with a magnesite crucible. Consumable electrodes in the form of billets 95-100 mm in diameter were used for arc vacuum remelting (AVR). The AVR was carried out at a pressure of 10^{-2} mm Hg. Induction vacuum melting (IVM) involving weights up to 5 kg was carried out in a crucible from Al_2O_3 or ZrO_2 at

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ACCESSION NR: AR4011111

pressures of $4-8 \times 10^{-2}$ mm Hg. In all, 9 meltings were carried out in the open induction furnace, 5 in an H_2 atmosphere, and 13 IVM and 19 AVR were performed. The properties of the soft-magnetic alloys melted under vacuum were found to have higher values than those of alloys melted in air, and the properties of the alloys obtained by AVR had higher values than those of the alloys made by IVM. IN AVR, the volatilization of Ni amounted to an average 1.4%, and that of Mn, to 30-40%. D. Kashayeva.

DATE ACQ: 09Jan64

SUB CODE: ML

ENCL: 00

Card 2/2

S/133/63/000/003/006/007
A054/A126

AUTHORS: Doroshek, S.I., Lapkin, N.I., - Engineers

TITLE: At the Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov (Ural Scientific Research Institute of Ferrous Metals)

PERIODICAL: Stal', no. 3, 1963, 252 - 253

TEXT: New compositions for high-precision hairspring steel grades and the corresponding technological processes have been established for the Beloretskiy zavod (Beloretsk Plant) and the Chelyabinskiy chasovoy zavod (Chelyabinsk Watch Factory). The new dispersed solidifying Fe-Ni-Cr alloy [H41 XT (N41KhT) grade] is hardened in hydrogen at 800°C (formerly 1,000°C), final reduction is carried out up to 96%, then follows thermal stabilization in a titanium hydride atmosphere at 690 - 700°C with 1-h holding time and cooling to 50° in 40 - 50 min. In the new alloy the isochronous distortion was reduced from 31.5 to 19.4 sec/24 h (at the interval of vibration amplitude 270 - 180°C) and flawless output was raised from 40 to 63.5%. Tests were made to improve the new (N41KhT) alloy by adding Al, Ti, Mo, and Co in various amounts. Finally three new variants were

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At the Ural'skiy nauchno-issledovatel'skiy

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A054/A126

accepted: 1) H42X TM (N42KhTM) grade, with 0.5% Mo, ensuring a low (less than 0.1 sec/C · 24 h) temperature error of the clock movement, that is practically independent of thermal stabilization; 2) H42XTD 2 (N42KhTYu2) with 1.3% Al, displaying improved elasticity and other mechanical properties, and 3) H39XTT3 (N39KhTG3) grade with a lowered reactivity against magnetism (of a voltage up to 200 e). The new alloys ensure an average isochronous distortion of 7 - 12 sec/24 h (instead of 19.4) and a flawless output (with regard to properties) of 85% (against 63.5%).

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LAPKIN S. K.
EXCERPTA MEDICA Sec 5 Vol 12/1 Gen Pathology Jan 59

277. MORPHOLOGY OF THE SYMPATHETIC AND INTERVERTEBRAL GANGLIA AND OF THE SPINAL CORD IN HYPERTENSION IN MAN AND EXPERIMENTAL ANIMALS (Russian text) - Lapin S. K. - TRUDY I MOSK. MED. INST. 1956, 1 (19-30)

The upper and middle cervical, stellate and lower thoracic ganglia of the sympathetic trunk on both sides, intervertebral ganglia of upper and lower thoracic segments on both sides, and spinal cord at the same levels were examined in 13 cases of hypertension, 2 cases of chronic nephritis, and 2 cases of experimental renal hypertension in dogs induced by wrapping the kidneys in cellophane. Marked dystrophic changes in the neurons were noted, accompanied by ganglion cell necrosis and disintegration of nerve conductors. Compensatory and regenerative processes took place at the same time: nerve cells divided amitotically. In chronic nephritis the changes were less pronounced; the least, and reversible changes were observed in the sympathetic and intervertebral ganglia and spinal cord in experimental renal hypertension in dogs. Most susceptible were the visceroreceptor nerves and vegetative nuclei of the spinal cord. The efferent preganglionic fibres became involved in the pathological process later. Postganglionic fibres were preserved intact for a long time; in experimental hypertension the fine nonmyelinated fibres showed a normal structure. The most damaged of the sympathetic ganglia were the stellate ganglia. There was no direct relationship between the height of the arterial pressure and the severity of the dystrophic changes in the nervous system. A hypertension of long standing resulted in reduction of the numbers of functioning neurons, and a sclerosis of peripheral nerve ganglia. (S)

278. COMPENSATORY CHANGES OF THE NERVOUS SYSTEM IN HYPERTENSION