LYAKHOVETSKIY, I.G.

Effect of ultraviolet irradiation on blood glycerophosphatase. Biokhimiia, Moskva 16 no.5:441-443 Sept-Oct 1951. (CLML 21:2)

1. Department of Biochemistry, Khabarovsk State Medical Institute.

LYAKHOVETSKIY, I.G.

Prevention of intoxications with ethylated gasoline. Gig. sanit., Moskva no. 1:24 Jan 1953. (CIML 24:2)

1. Khabarovsk.

LYAKHOVETSKIY, M.

Composite crews. Grazhd.av.13 no.11:31-32 N '56. (MLRA 10:2)

1. Instruktor politotdela Ukrainskogo territorial'nogo upravleniya Grazhdanskogo vozdushnogo flota.
(Aeronautics, Commercial)

LYAKHOVETSKIY, M. (Kiyev)

Agitation flights to operational airports. Grazhd.av. 14 no.7:13 Jl '57. (MLRA 10:9)
(Communist Part of the Soviet Union--Part work)
(Aeronautics in agriculture)

LYAKHOVETSKIY, M.

84-58-2-10/46

AUTHOR: Lyakhovetskiy, M., and Suleymanov, M. (Kiyev)

TITLE: Air Service in the Economic Areas of the Ukraine (Aviatsionnoye obsluzhivaniye ekonomicheskikh rayonov Ukrainy)

PERIODICAL: Grazhdanskaya aviatsiya, 1958, Nr 2, p 7 (USSR)

ABSTRACT: The authors state that the recent elimination of a number of ministries and the creation of economic areas in the Ukrainian SSR has resulted in a new pattern of passenger and freight traffic which also involves air routes. New routes have been created between the Ukrainian cities of Kiyev, Khar'kov, and Odessa, and the Russian industrial centers of Sverdlovsk, Kuybyshev, and Gor'kiy. Within the Ukrainian SSR, a number of new routes have been created, and some routes changed. The centers of all Ukrainian economic areas are now connected with Kiyev and Moscow. Air services are established between Kiyev and all oblast' centers of the Republic. The air networks of economic areas, which comprise several oblast's, has been expanded as a result of increased flying stock. Thus Poltava and Sumy are served from Khar'kov, Vinnitsa, Kirovograd, Krivoy Rog - from Kiyev, Lutsk, Rovno, Ternopol - from

Card 1/2

84-58-2-10/46

Air Service in the Economic Areas of the Ukraine

L'vov, Drogobych - from Stanislav. The local networks to connect cities with the rayons, were considerably expanded by establishing many routes in 1957 which transported over 50,000 passengers. On some of these routes, as those from Khar'kov to Volchansk and to Velikiy Burluk, heavy aircraft had to be used in order to cope with the traffic demand. The upsurge of traffic is partly due to reduction of fares; flights from Kiyev to 17 oblast' centers, for instance, cost the same as in an upholstered railroad coach, or in some cases even less. The reduction of fares is still in progress. The development depends much on a closer cooperation between the aviation units and Soviets of National Economy of the Economic Areas. Conferences of Aviation and Economy representatives have taken place in all big cities, such as those in Chernovtsy, Stanislav, Odessa, and Dnepropetrovsk.

AVAILABLE: Library of Congress

Card 2/2 1. Air transportation - USSR

LYAKHOVETSKIY, M.

Party control in action. Gradzh.av 17 no.2:6-7 F '60.
(MIRA 13:6)
(Aeronautics, Commercial)
(Communist Party of the Soviet Union--Party work)

LYAKHOVETSKIY, M. (Kiyev)

Pioneer of the agricultural aeronautics in the Ukraine.
Grashd. av. 17 no. 11:32 N '60. (MIRA 13:12)
(Serbeko, Aleksandr Tikhonovich)
(Ukraine--Aeronautics in agriculture)

SERGEYEV, L.; SLOBODCHIKOV, N. (Krasnoyarsk); L'VOV, M. (Stalino); PETROSYANTS, Kh.; GOLOVENKOV, M.; LYAKHOVETSKIY, M., (Kherson); FINOGENOV, N., (Petrozavodsk)

Everyday work. Grazhd. av. 17 no.12:17-19 D '60. (MIRA 14:3)
(Aeronautics, Commercial) (Flight crews)

SERGEYEV, A. (g.Kishinev); BAKHMACH, Z.; GRUZDIS, A.; LYAKHOVETSKIY, M.; MEYLAKH, M.; ANIKIN, I. (g.Novorossiysk)

Facts, events, and people. Kryl.rod. 12 no.2:14-15 F '61. (MIRA 14:6)

(Aeronautics)

LYAKHOVETSKIY, M.

For hard-earned rubles. Grazhd.av. 18 no.4:32 '61. (MIRA 14:4)
(Aeronautics, Commercial)

ANTONOV, B. (Tashkent); RYVKIN, P.; KHODKEVICH, E., starshiy inzhener; ABRAMIN, V., inzhener-mekhanik; UKOLOV, N., metodist; LYAKHOVETSKIY, M.

Facts, events, people. Kryl.rod. 13 no.4:22-23 Ap '62. (MIRA 15:5)

1. Nachal'nik Moskovskogo aviamodel'nogo kluba Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu (for Ryvkin). 2. Moskovskaya oblastnaya stantsiya yunykh tekhnikov (for Ukolov).

(Aeronautics)

BIBIKOV, I.; DEREVYANKO, K.; KAZACHKO, V.; KIRICHENKO, I.; KUCHER, N.; MACHUKHO, A.; NABATNIKOV, P.; SOKOLOV, B.; SIVOKON'Ya; US, V.; SHCHIGALEV, V.; BURAVENKO, N.; KOVSHAROV, S.; SOKOLOV, S.; ZAGORUL'KO, E.; TSYBA, M.; FOMENKO, I.; LYAKHOVETSKIY, M.

Let us help farmers grow an abundant crop. Grazhd. av. no.3:3 Mr '61. (MIRA 14:3)

(Aeronautics in agriculture)

LYAKHOVETSKIY, M.

At the sources. Grazhd. av. 20 no.1:13 Ja '63.
(MIRA 16:4)

(Ukraine--Aeronautics, Commercial)

LYAKHOVETSKIY, M.[Liakhovets'kyi, M.]

True stories. Znan. ta pratsia no.2:10-11 F '63.
(MIRA 16:4)

1. Chlen Gosudarstvennogo natsional'nogo ob"yedineniya istorikov prirodovedeniya i tekhniki.

(Aeronautics—Curiosa and miscellany)

LYAKHOVETSKIY, M. (Kiyev)

Airplane looks for fish. Kryl.rod. 14 no.9:25 S '63. (MIRA 16:9)
(Aeronautics in fishing)

LYAKHOVETSKIY, M.

From morning to night. Kryl rod. 15 no.8:14 Ag '64 (MIRA 18:1)

1. Redaktor gazety "Kryl'ya Ukrainy", Kiyev.

LYAKHOVETSKIY, M.

Aerial agitators. Grazhd. av. 21 no.5:5 My '64.
(MIRA 18:4)

LYAKHOVETSKIY, M.

A six-engine passenger plane. Grazhd. av. 21 no.10:26 O '64.
(MIRA 18:3)

LYAKHOVETSKIY, M. [Liakhovets'kyi, M.]

Hello! An automatic apparatus is speaking! Znan.ta pratsia no.1: 7-8 Ja '59. (MIRA 12:10)
(Telegraphone)

LYAKHOVETSKIY, M.M.

Use of matrix calculations in the technical and economic planning of a nonferrous-metal and alloy-processing plant. Trudy LIEI no.53:102-119 '65. (MIRA 18:8)

LYAKHOVETSKIY, M.M.

Economic efficiency of the measures increasing production output through waste reduction. Trudy LIEI no.44:105-108 '63.
(MIRA 17:9)

LYAKHOVETSKIY, M.Z.

Role of intestinal Protozoa in the clinical course of bacillary dysentery. Klin. med., Moskva 30 no. 5:58-61 May 1952. (CLML 22:3)

1. Of the Clinical Infectious Hospital imeni S. P. Botkin, Leningrad.

LYAKHOVITSKIY, F.M., inzh.

Propagation velocity of longitudinal waves in granular media.
Trudy Gidroproekta 3:319-325 '60. (MIRA 13:7)

1. Otdel geologicheskikh izyskaniy Vsesoyuznogo proyektno-izyskatel'skogo i nauchno-issledovatel'skogo instituta imeni S.Ya. Zhuka.
(Seismometry) (Soil mechanics)

LYAKHOVITSKIY, N.S., dots.; VOSKRESENSKAYA, G.A.

Asymptomatic trichomoniasis in men [with summary in English]. Vest.derm. i ven. 32 no.1:67-69 Ja-F '58. (MIRA 11:4)

1. Iz kafedry dermato-venerologii (zav.-prof. A.I.Kartamyshev) TSentral'nogo instituta usovershenstvovaniya vrachey (dir. V.P. Lebedeva) i otdela mikrobiologii (zav.-prof. N.M.Ovchinnikov) TSentral'nogo kozhno-venerologicheskogo instituta (dir.-kandidat meditsinskikh nauk N.M.Turanov) Ministerstva zdravookhraneniya RSFSR.
(TRICHOMONIASIS
asymptomatic, in men (Rus)

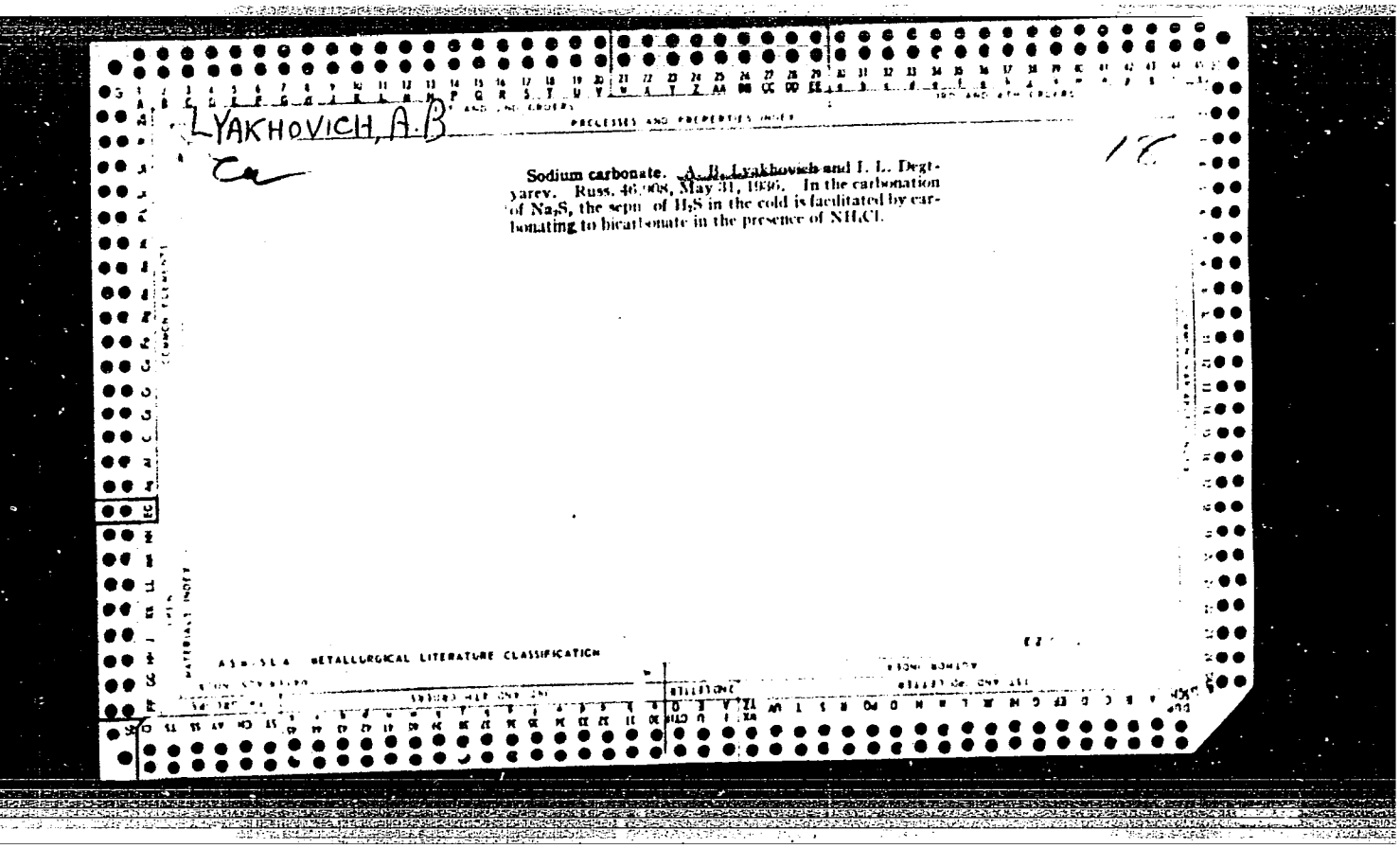
LYAKHOVITSKIY, S.I., kand.tekhn.nauk

Dynamic calculation of shaking screens. Izv. vys. ucheb. zav.; gor. zhur. no.2:153-155 '61. (MIRA 14:3)

1. Dnepropetrovskiy gornyy institut imeni Artema. Rekomendovana kafedroy stroitel'noy mekhaniki Dnepropetrovskogo gornogo instituta.
(Screens(Mining))

LYAKHOVICH, A., inzh.

Economical bricklaying. Stroitel' no.3:12 Mr '59.
(MIRA 12:6)
(Bricklaying)



LYAKHOVICH, A.B

Ca

17

Sodium carbonate. A. B. Lyakhovich and I. L. Degtyarev. Russ. 46,908, May 31, 1936. In the carbonation of Na_2S, the sepn. of H_2S in the cold is facilitated by carbonating to bicarbonate in the presence of NH_4Cl.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Lyakhovich A.B.

USSR /Chemical Technology. Chemical Products and Their Application I-5

Soda Industry

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 31232

Author : Belov I.A., Lyakhovich A.B., Gromova Ye. T.

Inst : All-Union Institute of the Soda Industry

Title : Carbonization of Ammonized Solutions of Common Salt at Elevated Pressure of Carbon Dioxide

Orig Pub: Tr. Vses. in-ta sodovoy prom-sti, 1955, 8, 50-55

Abstract: Increase of CO_2 pressure to 30 atmospheres, gauge pressure, in the lower stages of carbonization (up to 120%) increases sharply the rate of absorption; with increasing degree of carbonization, acceleration of the process slows down. On

Card 1/2

USSR /Chemical Technology. Chemical Products and Their Application I-5

Soda Industry

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 31232

increase of CO_2 pressure above 30 atmospheres, gauge pressure, during the lower stages of carbonization, the rate of absorption decreases. Increase of CO_2 pressure at the same temperature level, raises the extent of utilization of Na. On increase of pressure in carbonization columns by 1 atmosphere, gauge pressure, extent of utilization of Na is increased by about 1%, while the rate of absorption is increased by 1.5 times.

Card 2/2

LYAKHOVICH, I. A.

USSR

Autoclaving structural materials made of granulated slags. S. M. Lerner and I. A. Lyakhovich. *Stroitel. Prom.* 33, No. 2, 32-3(1955).—Slag comp.: SiO_2 40.6, Al_2O_3 6.38, FeO 0.77, CaO 43.82, MgO 3.41, SO_3 3.01, and MnO 2.11% was ground to the fineness of cement, mixed with 0-75% sand and 20% water, molded, and autoclaved at 3 atm. for 7 hrs. Blocks so made showed a crushing strength of 100-241 kg./sq. cm., the latter being attained with a 50:50 mixt. Cementing characteristics of the ground slag checked in making structural blocks and panels using a sand-lime-stone aggregate were found satisfactory. J. D. Cat

Lyakhovich, I.

USSR/Chemical Technology -- Chemical Products and Their Application. Silicates. Glass. Ceramics. Binders, I-9

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 1670

Author: Lerner, S., Lyakhovich, I., Puzanova, L., and Khvorostanskaya, Ye.

Institution: None

Title: The Production of Large Blocks from Vibrated Mixtures

Original Periodical: Stroit. materialy, izdeliya, i konstruktsii, 1956, No 4, 26-28

Abstract: The production of large blocks from vibrated (Tr. Note: blended) silicate mixtures, consisting of sand, lime, and finely ground additives, has been investigated. The particle size distribution of the sand was 30% 1.2-0.6 mm and 70% -0.6 mm. The optimum activated lime content was 5-6% and the moisture 9-11%. Silica brick dust, granulated slag, or flue dust from steam heat electric power stations can be used as finely ground additives (in amounts not exceeding 20%). Vibration was carried out by means of electromechanical vibrators with a frequency of 3,000 cycles per minute and an amplitude of one mm.

Card 1/2

USSR/Chemical Technology -- Chemical Products and Their Application. Silicates. Glass. Ceramics. Binders, I-9

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 1670

Abstract: Heating was carried out in an autoclave at 8 atm. The heating time for solid blocks was 18.5 hours (including 12 hours soaking at 8 atm); the heating time for hollow blocks was 11.5 hours (including 8 hours soaking at 8 atm). The product dimensions were: length 735-2,190 mm, thickness 300-500 mm.

Card 2/2

SERKOVA, Zinaida Vasil'yevna; LERNER, Lyudmila Konstantinovna; LYAKHOVICH, Iosif Abramovich; MUKHIN, Viktor Zakharovich; POLUBNEVA, V.I., inzh., red.

[Manufacturing panels for series 1-468r apartment houses of dense and cellular lime concrete; practices of the Kuryazh Silica Brick Plant and the No.3 Reinforced Concrete Structural Element Plant] Proizvodstvo panelei domov serii 1-468r iz plotnogo i iacheistogo silikatnogo betona; opyt Kuriazhskogo zavoda silikatnogo kirpicha i zavoda zhelezobetonnykh konstruktsii no.3 (Khar'kovskaia oblast'). Moskva, Gosstroiizdat, 1963. 28 p. (MIRA 17:3)

1. Akademiya stroitel'stva i arkhitektury SSSR. Nauchno-issledovatel'skiy institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu. 2. Rukovoditel' laboratorii silikatnykh materialov Yuzhnogo nauchno-issledovatel'skogo instituta promyshlennogo stroitel'stva Gosstroya SSSR (for Serkova). 3. Rukovoditel' gruppy laboratorii silikatnykh materialov Yuzhnogo nauchno-issledovatel'skogo instituta promyshlennogo stroitel'stva Gosstroya SSSR (for Lerner). 4. Glavnyy inzhener zavoda zhelezobetonnykh konstruktsii No.3 (for Mukhin). 5. Glavnyy tekhnolog laboratorii silikatnykh materialov Yuzhnogo nauchno-issledovatel'skogo instituta promyshlennogo stroitel'stva Gosstroya SSSR (for Lyakhovich).

ALEKSEYEV, S. N., kand. tekhn. nauk; LYAKHOVICH, I. A., inzh.;
SERKOVA, Z. V., inzh.

Using KAP mesh reinforced foam concrete slabs as coverings.
Prom stroi 41 no. 12:30-31 D '63. (MIRA 17:5)

L 44581-66 EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NR: AP6015675 (A) SOURCE CODE: UR/0413/66/000/009/0077/0077

INVENTOR: Borovikova, S. M.; Lyakhovich, I. S.; L'vov, B. S.; Solov'yev, A. M.

28
B

ORG: none

TITLE: Preparation of glass fiber-filled thermoplastic resins. Class 39, No. 181296 [announced by the State Scientific Research Institute of Plastics (Gosudarstvennyy nauchno-issledovatel'skiy institut plasticheskikh mass)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 9, 1966, 77

TOPIC TAGS: resin, thermoplastic resin, filler, glass fiber filler

ABSTRACT: This Author Certificate introduces a method for making glass-fiber-filled thermoplastic resins by introducing the filler into the resin melt prepared for the melting equipment. To simplify the process, the glass-fiber filler is introduced into the corner head of the melting

Card 1/2 UDC: 678.046.073:666.189.211

L 44581-66

ACC NR: AP6015675

O

tank or extrusion press. The glass-fiber filler is a bundle of basic, straight (not twisted) glass threads. [Translation] [LD]

SUB CODE: 11/ SUBM DATE: 18Nov63/

Card 2/2

LYAKHOVICH, K.G.; SOBOLEVA, K.P.; STARIKOVA, K.S.; TARKOV, M.I.; CHERNYAVSKAYA, R.M.; SHOR, R.S.

Causes of the low survival rate of diphtheria bacteria. Zdravookhranenie 3 no.2:29-33 Mr-Ap '60. (MIRA 13:7)

1. Iz Moldavskogo instituta epidemiologii, mikrobiologii i gigiyeny (direktor N.N. Yezhov) i infektsionnoy bol'nitsy g. Kishineva (glavnyy vrach Z.P. Kiseleva).
(DIPHTHERIA--BACTERIOLOGY)

18(3) PHASE I BOOK EXPLOITATION SOV/1703

Gol'dshteyn, Ya.Ye., Candidate of Technical Sciences, L.S. Lyakhovich, Candidate of Technical Sciences, L.L. Pyatakova, Engineer, and G.M. Trusenev, Engineer

Mikrolegirovaniye stali 45 dobavkoy bora (Boron Additives for Microalloying of 45 Steel) Moscow, AN SSSR, 1956. 13 p. (Series: Informatsiya o nauchno-issledovatel'skikh rabotakh. Tema 1, no.I-56-217) 870 copies printed.

Sponsoring Agencies: USSR. Gosudarstvennyy komitet po novoy tekhnike, and Akademiya nauk SSSR. Institut nauchnoy i tekhnicheskoy informatsii. Filial.

Exec. Ed.: A.I. Okuneva, Engineer; Ed.: L.M. Gopman, Engineer; Tech. Ed.: V.A Ponomarev.

PURPOSE: This book is intended for scientists and engineers working in the field of metallurgy.

Card 1/2

Boron Additives for Microalloying (Cont.) SOV/1703

COVERAGE: The booklet gives the results of an investigation of the properties of boron-containing 45R steel developed by the Central Laboratory of the Chelyabinsk Tractor Plant in cooperation with the Department of Metallurgy of the Chelyabinsk Polytechnical Institute. At present, this steel finds wide application in the manufacture of critical parts of S-80 tractors. Active participation in the investigations was taken by TsNIIChERMET (Central Scientific Research Institute of Ferrous Metallurgy), and this organization was responsible for introducing 45R steel to industry. There are 5 references, of which 3 are Soviet and 2 English.

TABLE OF CONTENTS: None given. This book is divided into the five following sections:

(1) Composition of the Steel 4
(2) Hardenability 5
(3) Mechanical Properties 8
(4) Characteristics of Quenching Crankshafts of 45R Steel by Means of High Frequency 11
(5) Conclusion 14

AVAILABLE: Library of Congress

Card 2/2

GO/ad
6-18-59

KONTOROVICH, I.Ye., professor, doktor tekhnicheskikh nauk; LYAKHOVICH, L.S. dotsent, kandidat tekhnicheskikh nauk.

Joint effect of chromium and manganese on the isothermal transformations of austenite. Trudy MATI no.30:150-160 '56. (MLRA 10:2)
(Austenite) (Chromium steel)

AUTHOR: Gol'dshteyn, Ya.E., Lyakhovich, L.S., Candidates of Technical Sciences. 133-5-17/27

TITLE: Properties of steel 45 containing boron. (Svoystva stali 45 s borom)

PERIODICAL: "Stal'" (Steel), 1957, No.5, pp. 449-452 (U.S.S.R.)

ABSTRACT: The properties of steel 45P (developed by TsZLChTZ and Chelyabinsk Polytechnical Institute (Chelyabinskiy Politekhnicheskiy Institut) and widely used in the tractor industry were compared with the properties of the same steel 45 without boron and steel 45Г2 which has an increased manganese content (1.4-1.8%). According to ГОСТ 1050-52 the composition of steel 45 is as follows %: C 0.42-0.50, Si 0.17-0.37, Mn 0.5-0.8, Cr ≤ 0.3, Ni ≤ 0.3, S ≤ 0.045, P ≤ 0.040. Steel 45P has the same composition with 0.002 - 0.006% of boron. Steel was made in 5 ton electric and 60 ton open hearth furnaces. Ferro-boron or ferro-boral was introduced into the liquid metal when 1/3 - 1/2 of the ladle was filled or placed on the bottom of the ladle. Preliminarily the metal was deoxidised with aluminium and titanium so that their contents were 0.04-0.06% Al and 0.03 - 0.04% Ti which ensured the presence of the effective boron in the metal, which entered the composition of α- or γ -solution or formed (when in excess) boron-containing

Card 1/2

phase on grain boundaries (Fig. 1). The hardenability of the specimens from the above steels is shown in Fig. 2. The dependence of mechanical properties of steel specimens on the temperature of tempering in Figs. 3 and 4; the dependence of cyclic toughness on thermal treatment in Fig. 5; mechanical properties of specimens from crankshafts before hardening with high frequency currents in the table; the distribution of hardness along the depth of hardened layer - Fig. 6; and the micro-structure of the boundary zone between hardened and base metal in Fig. 7. It is concluded that steel 45 with boron can be recommended for the production of crankshafts and other responsible parts submitted to hardening with high frequency currents. There are 7 figures, 1 table and 2 Slavic references.

AVAILABLE:

Card 2/2

PHASE I BOOK EXPLOITATION SOV/3845

Lyakhovich, Lev Stepanovich, and Abram Izrailevich Komissarov

Osnovy tekhnologii termicheskoy obrabotki sortovogo prokata (Fundamentals of Heat Treatment of Merchant Steel Bars) [Chelyabinsk] Chelyabinskoye knizhnoye izd-vo, 1959. 90 p. 2,000 copies printed.

Ed.: G.O. Obramovich; Tech. Ed.: V.I. Kolbichev.

PURPOSE: This book is intended for workers in heat treatment shops, inspection departments, and laboratories of metallurgical plants. It may also be useful to students in metallurgical departments of tekhnikums and institutes.

COVERAGE: The authors describe experience gained in recent years by metallurgical plants in the southern Urals, especially experience in heat treatment of merchant bars at the Chelyabinsk metallurgical plant. Theoretical problems of heat treatment are not discussed here, since they are treated elsewhere in special literature. Heat treatment regimes are covered thoroughly, and methods of inspection of merchant bar microstructure are also outlined. No personalities are mentioned. There are 20 references, all Soviet.

Card 1/3

Fundamentals of Heat Treatment of Merchant Steel Bars SOV/3845

TABLE OF CONTENTS:

Introduction 3

1. Basic Characteristics of Heat Treatment of Merchant Bars 4
2. Heat Treatment of Steels for Ball Bearings 6
3. Heat Treatment of Tool Steels 29
4. Annealing of Constructional Steels 55
5. Annealing of Stainless Steels 70
6. Heat Treatment of Magnet Steels 73
7. Certain Characteristics of Furnaces Used for Heat Treatment of Merchant Bars 78

Card 2/3

8. Layout and Work Flow in Shops for Heat Treatment of Merchant Bars 81

9. Quality Inspection of Merchant Bars After Heat Treatment 84

Appendixes

References

AVAILABLE: Library of Congress (TS340.L48)

Card 3/3

VK/wbc/mas
7-28-60

S/148/60/000/008/008/018
A161/A029

AUTHORS: Lyakhovich, L.S.; Pyatakova, L.L.

TITLE: The Effect of Boron on the Grain Size of Medium-Carbon Steel

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. - Chernaya metallurgiya, 1960, No. 8, pp. 120 - 127

TEXT: The effect of boron on some steel properties is not yet sufficiently studied and the conclusions drawn in some works are contradictory (Refs. 1 - 6, 7, 8, 9, 10). The investigation described was carried out with different boron contents and different preliminary oxidation of steel by titanium. Steel was smelted in laboratory, and open-hearth steel from Zlatoustovskiy metallurgicheskiy zavod (Zlatoust Metallurgical Works) was also used. Boron was added with ferroboral (6.75% B; 4.85% Si; 5.5% Al; 0.06% C; 0.04% S, remainder Fe) after deoxidation with aluminum. The chemical composition of all samples contained 0.070 - 0.020% Cr; 0.09 - 0.12% Ni and an equal quantity of Al. The article includes microphotographs (Fig. 1). In the authors' opinion boron addition drastically changes the nature (and maybe also the quantity) of the nonmetallic phase, boron compounds appear and the quantity of other inclusions decreases. Appar-

Card 1/3

The Effect of Boron on the Grain Size of Medium-Carbon Steel

ently, the boron compounds dissolve more easily in austenite grain at heating. The distribution of boron in grain and on the boundaries is uneven, and this explains the large difference in the size of separate grains. Titanium addition seems to change the nature of boron phases making them more stable and inhibiting growth. It is also possible that titanium simply raises the quantity of stable compounds preventing growth. The following conclusions were drawn: 1) Boron addition to medium-carbon steel raises considerably the tendency to growth of austenite grain and causes "heterograinity". 2) Additional deoxidation of steel by titanium reduces the effect of boron on austenite grain growth in the studied temperature range (860 to 1,300°C). The effect of titanium is strongest at low boron content, and drops with growing boron content. 3) The experimental results prove that preliminary deoxidation of boron-containing steel by titanium is necessary to obtain steel with fine grain. There are 7 figures, 3 tables and 11 references: 8 Soviet and 3 English.

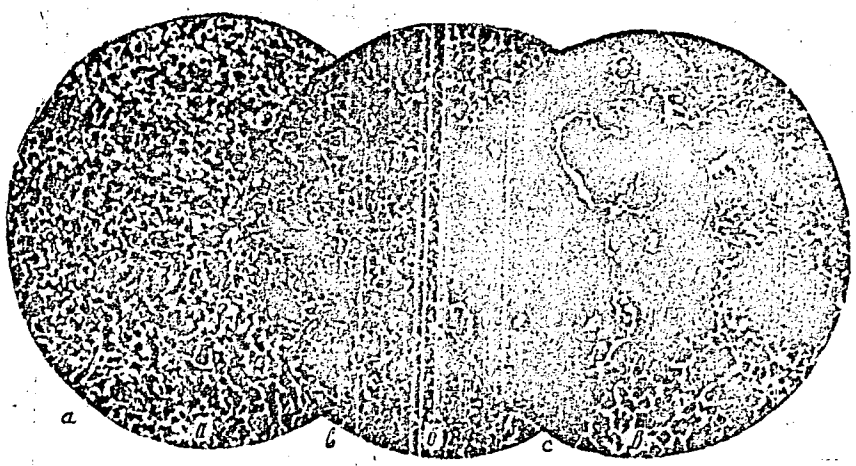
ASSOCIATION: Chelyabinskiy politekhnicheskiy institut (Chelyabinsk Polytechnical Institute)

SUBMITTED: July 9, 1959

S/148/60/000/008/008/018
A161/A029

The Effect of Boron on the Grain Size of Medium-Carbon Steel

Figure 1. The Effect of Boron on the Grain Size of Austenite in Heating Steel to 930°C and Holding it for 3 Hours. a - without boron; b - 0.0013% B; c - 0.003% B. x 100.



Card 3/3

S/148/60/000/009/023/025
A161/A030

AUTHORS: Lyakhovich, L.S., and Shilkova, T.S.

TITLE: The effect of phosphorus and boron on reversible brittleness in low-carbon nickel steel

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no. 9, 1960, 167-168

TEXT: The combined effect of phosphorus and boron on steel brittleness was studied in steel from two heats :

Heat	Designation (own)	Components content, in %							
		C	Si	Mn	Cr	Ni	S	P	B
No.1	15-H-1 15-H-2 15-H-3	0.12	0.19	0.73	0.11	1.30	0.026	0.012 0.060 0.114	-

Card 1/5

The effect of phosphorus and boron ...

Heat	Designation (own)	Components content, in %							
		C	Si	Mn	Cr	Ni	S	P	B
No.2	15-HP-1 15-HP-2 15-HP-3	0.13	0.25	0.58	0.13	1.17	0.03	0.025 0.063 0.103	0.0015

Ingots were forged into rods 32 mm in diameter and cut into blanks, and quenched from 950°C. All specimens were hardened throughout; no ferrite was found; austenite grain was of size 8. Tempering was at 450, 500, 550, 600 and 650° ; tempering for 1.5 hr; cooling by water quenching, and with the furnace (with 50°/hr). The results are shown in two graphs (Fig.1 and 2). As seen from the curves, P content of 0.114 drastically decreased the impact strength, and the cooling rate had an effect, particularly after tempering at 600°. The presence of boron increased the impact strength, which is most clear in steel with the highest P content. The impact streng was lower in steel with lower P content in temperature range 550-600°

Card 2/5

The effect of phosphorus and boron ...

in the presence of B, thus boron assisted the appearance of reversible temper brittleness. It is mentioned that an analogous effect of boron combined with phosphorus had been stated by the authors previously in medium-carbon steel (0.3% C). Conclusions: 1) The increased content of phosphorus in nickel steel assists the appearance of reversible temper brittleness; 2) The addition of boron into steel with higher phosphorus content assists reversible temper brittleness, but with a low phosphorus content, boron has no such effect. There are 2 figures.

ASSOCIATION: Chelyabinskiy politekhnicheskiy institut (Chelyabinsk Polytechnical Institute)

SUBMITTED: 27 February 1960

Card 3/5

The effect of phosphorus an boron ...

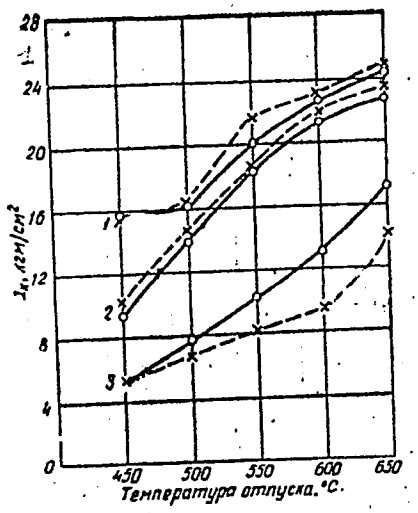


Fig. 1 - The effect of tempering temperature and phosphorus content on the impact strength (in kg/cm^2 ; tempering temperature up to 650°C).

1 - 15H-1 steel; 2 - 15H-2 ;
3 - 15H-3; ——— rapid cooling (in water); ------ slow cooling (50°/hr, with furnace)

Card 4/5

The effect of phosphorus and boron...

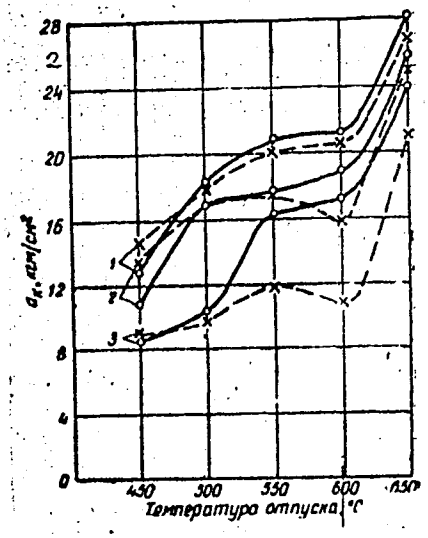


Fig. 2 - The effect of the tempering temperature and phosphorus content on the impact strength of steel:

1 - 15HP-1 steel;
2 - 15HP-2;
3 - 15HP-3

Card 5/5

LYAKHOVICH, L.S.; BELYAYEV, V.I.; ROMAN, O.V., kand.tekhn.nauk, dots., retsenzent; AKALOVICH, N.M., red.; KONCHITS, Ye.P., tekhn. red.

[Nitriding steel by heating with high frequency currents] Azotirovanie stali nagrevom tokami vysokoi chastoty. Minsk, Izd-vo M-va vysshego, srednego spetsial'nogo i professional'nogo obrazovaniia BSSR, 1961. 44 p. (MIRA 15:7)
(Case hardening) (Induction heating)

LYAKHOVICH, L.S.

Calculations for the stability of frame systems. Izv. vys.uch.zav.; stroi. i arkhit. 5 no.4:31-43 '62. (MIRA 15:9)

1. Novosibirskiy inzhenerno-stroitel'nyy institut imeni Kuybysheva.
(Structural frames)

S/277/63/000/001/007/017
A052/A126

AUTHORS: Lyakhovich, L. S., Pyatakova, L. L.

TITLE: Some specific effects of boron on structural steel properties

PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk, 48. Mashinostroitel'nyye materialy, konstruktsii i raschet detaley mashin, no. 1, 1963, 7, abstract 1.48.53 (In collection: "Novoye v metalloved. i tekhnol. term. obrabotki stali". Chelyabinsk, 1962, 48 - 95)

TEXT: The effect of B on annealability, austenite grain size and the tendency of steel to overheating was studied. It is pointed out that micro-alloying with B raises the annealability of structural steel. B can be used as a substitute for a number of alloying elements and also for improving the properties of carbon or low-alloy steel grades in a low-tempered state. When using B-containing steels it is necessary to take into account the negative effect of B on steel properties (tendency to grain growth, overheating, stony fracture, reduction of notch toughness, etc.). There are 32 references.

[Abstracter's note: Complete translation]

Card 1/1

S/276/63/000/002/018/052
A052/A126

AUTHORS: Lyakhovich, L.S., and Voskoboynikova, N.A.

TITLE: Effect of isothermic hardening on the properties of 40X(40Kh) steel with boron

PERIODICAL: Referativnyy zhurnal, Tekhnologiya mashinostroyeniya, no. 2, 1963, 64, abstract 2B297 (In collection:"Novoye v metalloved. i tekhnol. term. obrabotki stali". Chelyabinsk, 1962,211-219)

TEXT: The investigation was carried out on Menapse-type impact samples and on blanks 40mm in diameter and 150mm long made of 40 x 40 x P (40 x 40 x R) steels. The samples were heated for hardening in a well reduced bath of the following composition: 60-70% Na_2CO_3 and 40-30% NaCl. The temperature of heating for hardening was 860 ± 10°C, the holding for the samples was 5 min and for the blanks 40mm in diameter, 18 min. Isothermic hardening was carried out in an alkali bath (100% NaOH) with a mechanical stirring at 330, 350, 400, 430 and 450°C for impact samples and at 330°C for the blanks 40mm in diameter. The holding in the hardening medium for impact samples was 15, 20 and 30 min and for the blanks 40mm in dia-

Card 1/2

meter, 20 min. The cooling after isothermic hardening was made in water. The toughness and hardness of the steels at different holdings and cooling temperatures was determined. The fracture of the steels after isothermic hardening and their microstructure were analyzed. There are 3 figures and 5 referances.

T. Kislyakova

(Abstracter's note: Complete translation.)

S/137/63/000/002/028/034
A006/A101

AUTHORS: Lyakhovich, L. S., Shilkova, T. S.

TITLE: The effect of phosphorus, boron and carbon upon the ductility and temper brittleness of nickel steels

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 2, 1963, 65 - 66, abstract 21373 (In collection: "Novoye v metalloved. i tekhnol. term. obrabotki stali", Chelyabinsk, 1962, 107 - 129)

TEXT: The authors studied the effect of B admixture (0.0015%) and the P content (within 0.01 - 0.1%) upon the ductility and reversible temper brittleness of improved Ni 15 H (15N) and 30 H (30N) steels (in both steel grades the Ni content is about 1%). Forged rods, 15 mm in diameter, were produced from laboratory heats. The rods were quenched from 950°C (15N) and 850°C (30N). Tempering was performed at 450 - 650°C during 1.5 hours. It is shown that the nature of the effect of P upon ductility and temper brittleness of the investigated steels is the same: P reduces the ductility and promotes the appearance of temper brittleness. The higher the C content in the steel, the stronger the ef-

Card 1/2

fect of P. The addition of B increases also the effect of P. The nature of the C effect upon ductility does not change in dependence on B and P. However, the intensity of its effect depends also upon the amount of P and, possibly, B. In low-carbon steels B increases the ductility and reduces same in medium carbon steels. This effect is connected also with the P content: it appears only at a higher P content. In all steels B promotes the appearance of reversible temper brittleness. It is assumed that in steels, pure in respect to P, this effect is very insignificant. There are 15 references.

L. Yelagina

[Abstracter's note: Complete translation]

ANDRYUSHCHENKO, N.F.; LYAKHOVICH, L.S.; MISHIN, P.A.; FUNSHTEYN, Ya.N.

Surface hardening of the semiaxles of the rear axle of the MAZ-200 and MAZ-205 motortrucks. Avt.prom. 29 no.10:31-33 O '63. (MIRA 16:10)

1. Minskiy avtozavod i Belorusskiy politekhnicheskiy institut.

LYAKHOVICH, L.S.

Some problems of qualitative analysis of the stability of rod systems investigated by a shifting method. Trudy TISI 11:125-132 '64.

Some problems of qualitative analysis of the stability and vibration of rod structures investigated by the basic system of a shifting method. Ibid.:133-137 (MIRA 19:1)

RYAZANOVA, Faina Dmitriyevna, dots.; FUNSHTEYN, Yakov Naumovich, dots.; KHUDOKORMOVA, Rimma Nikolayevna, assistent; LYAKHOVICH, L.S., kand. tekhn. nauk, red.; LEVINA, S.G., red.

[Laboratory manual on metallography and the heat treatment of metals] Laboratornyi praktikum po metallovedeniiu i termicheskoi obrabotke metallov. Minsk, Vysshaia shkola, 1965. 124 p. (MIRA 18:6)

L 63016-65 EWT(m)/EWA(d)/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(c) PE-4 MJW/
JD/HW

ACCESSION NR: AP5015968 UR/0113/65/000/006/0040/0041
629.11.011.6:539.433

AUTHORS: Lyakhovich, L. S.; Mishin, P. A. (deceased); Funshteyn, Ya. M.

TITLE: Strengthening of low-carbon steel sheets by the method of strip hardening

SOURCE: Avtomobil'naya promyshlennost', no. 6, 1965, 40-41

TOPIC TAGS: strip hardening, strip quenching, steel sheet, steel sheet property/St 3 steel, 10KP low carbon steel, 20KP low carbon steel, 25 low carbon steel, 15GS low carbon steel, 14KhGS low carbon steel, 19KhGS low carbon steel

ABSTRACT: To determine the strengthening effects of strip quenching on steel sheet, the strength, stiffness and impact strength of sheet steel specimens (213 x 213 mm) were experimentally determined for untreated specimens and specimens with 15-mm wide hardened strips (61 mm apart in both directions) which were produced by high frequency electric heating and sorbitic phase quenching. Specimens of low carbon steels St3, 10KP, 20KP, 25, 15GS, 14KhGS, 19KhGS were tested. It was found that the tensile strength increased by factors of 1.5-2 (from 38 to 68 kg/mm^2 for St3; 37-77 for 10KP and 20KP; 58-125 for 19KhGS) with corresponding decrease in δ (from 30, 33, and 21% to 7, 3, and 2% respectively for St3, 10KP and

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L 63016-65

ACCESSION NR: AP5015968

2

19KhGS). The stiffness, which was measured by checking the central deflection of perimeter-supported sheets due to central loadings at 0.5-ton intervals, was found to increase by factors of 1.5-2. The impact strength was measured by repeated loads (0.67 kg) at the center of the sheets. It was found that the impact strength increased by factors of $\approx$ 2 (14 494 blows to failure for treated versus 6346 blows for untreated St3; 29 500 versus 15 650 for 15GS) for sheets 3-mm thick. It was concluded that strip strengthening of steel sheet permits thinner sheets and consequent significant material savings in industrial applications. Orig. art. has: 2 tables and 3 figures.

ASSOCIATION: Belorusskiy politekhnicheskiy institut (Belorussian Polytechnical Institute); Minskiy avtozavod (Minsk Automobile Factory)

SUBMITTED: 00 ENCL: 00 SUB CODE: MM, IE

NO REF SOV: 000 OTHER: 000

Card 2/2

L 01198-66 EWT(m)/EWP(i)/T/EWP(t)/EWP(b) JD

ACCESSION NR: AP5014741 UR/0201/65/000/001/0086/0092

AUTHORS: Afanas'yew, M. V.; Lyakhovich, L. S.; Kapel'yan, S. N.; Varashnin, L. R.

TITLE: Influence of pulsed pressures and temperatures on the diffusion process and mechanical characteristics of the hardened layer in the case of a spark discharge

SOURCE: AN BSSR. Izvestiya. Seriya fiziko-tekhnicheskikh nauk, no. 1, 1965, 86-92

TOPIC TAGS: spark discharge, surface hardening, pressure effect, temperature effect, surface diffusion

ABSTRACT: The article presents the results of a study of the influence of the interelectrode medium and of pulsed pressures on diffusion processes and on the change in the microhardness of a hardened surface layer in the case of a condensed spark discharge.

Card 1/3

L 01498-66

ACCESSION NR: AP5014741

The investigations were carried out in air, water, and supersaturated water solution of borax. The pulse pressure was produced by the discharge itself, initiated between iron electrodes (one in the form of a point and the other in the form of a plane) situated in a sealed chamber filled with liquid. The discharge was produced at 2000 volts by a 2000 μF capacitor bank. The microhardness data were processed statistically. The results showed appreciable differences between the pressure indentations of the hardness measuring machine differ. The high-pressure chamber was described elsewhere (DAN BSSR, no. 2, 1964). The microhardness in air was practically doubled to 200 kg/mm^2. In the case of a discharge in water with open surface, further increase in microhardness is observed, to 275 kg/mm^2 for the cathode and 460 kg/mm^2 for the anode. For a discharge in water contained in the sealed chamber, the microhardness increased to 300 kg/mm^2. In the borax solution, the corresponding microhardnesses were 340--400 kg/mm^2 for the open surface, and 500 and 700 kg/mm^2 for the cathode and anode, respectively, in the

Card 2/3

L 01498-66
ACCESSION NR: AP5014741

sealed chamber. The thickness of the borated layer was 100--150 μ for the open surface of borax solution, and 150--200 μ in the case of the closed chamber. The time during which the metal was in the molten state was estimated from the reaction diffusion formulas to be 530 μsec. The results obtained are discussed from the point of view of the pulsed pressures, cooling conditions, and alloying. Orig. art. has: 3 figures and 3 formulas.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NR REF SOV: 007 OTHER: 003

Card 3/3

L 01197-66 EWT(m)/EWA(d)/EWP(t)/EWP(z)/EWP(b) IJP(c) JD/JG

ACCESSION NR: AP5014742 UR/0201/65/000/001/0093/0098

AUTHORS: Lyakhovich, L. S.; Varashnin, L. R.

TITLE: Influence of nickel, copper, and aluminum on borated medium carbon steel

SOURCE: AN BSSR. Izvestiya. Seriya fiziko-tekhnicheskikh nauk, no. 1, 1965, 93-98

TOPIC TAGS: carbon steel, alloy system, surface hardening, boron steel, nickel containing alloy, copper containing alloy, aluminum containing alloy

ABSTRACT: The investigations were made on samples 10 mm in diameter and 20 mm long cut from ingots melted in an induction furnace with acid lining. The investigations were made at 850, 900 and 950C with soaking at 1 and 3 hours. The results show that the depth of boration of the layer increases with the increasing temperature and

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L 01497-66

ACCESSION NR: AP5014742

with the increasing soaking time. The alloying elements exerted a noticeable influence on the depth, structure, and properties of the borated layer. The depth being successively greater for nickel, copper, and aluminum, but not at all concentrations. Typical results are shown in Fig. 1 of the Enclosure. Orig. art. has: 5 figures and 3 tables.

ASSOCIATION: None

SUBMITTED: 00 SUB CODE: MM ENCL: 01

NR REF SOV: 005 OTHER: 000

Card 2/3

L 01497-66

ACCESSION NR: AP5014742

ENCLOSURE: 01

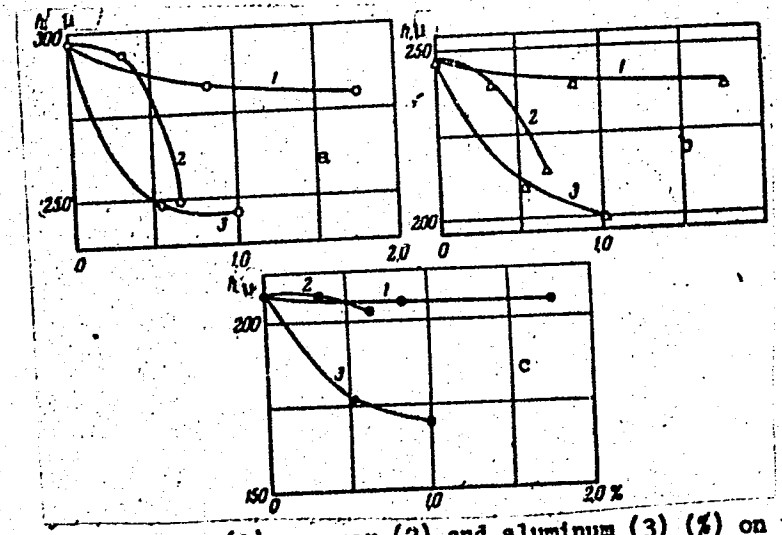


Fig. 1. Efect of nickel (1), copper (2) and aluminum (3) (%) on the depth of the borated layer at 950, 900, and 850C (a, b, and c, respectively).

Card 3/3 alloying with boron

L 12860-66 EWT(m)/EWP(w)/T/EWP(t)/EWP(k)/EWP(b)/EWA(c) JD/HW

ACC NR: AP5027913 SOURCE CODE: UR/0133/65/000/011/1041/1042

AUTHOR: Lyakhovich, L. S.; Mishin, P. A.; Funshteyn, Ya. N.

ORG: none

TITLE: Strengthening of tubes and other hollow cylindrical articles by the circumferential quenching method

SOURCE: Stal', no. 11, 1965, 1041-1042

TOPIC TAGS: high strength steel, plasticity, steel microstructure

ABSTRACT: Experiments were made on thin walled tubes (87 × 2.5) of steel 20 and (73.5 × 20) of steel 15 with chemical composition (in %):

Table 1

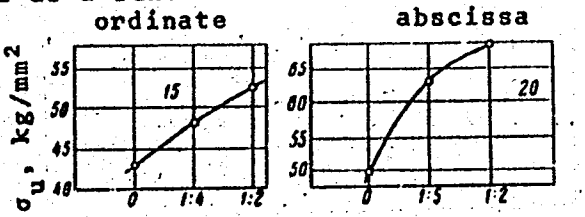
Steel	C	Mn	Si	Cr	S	P
20	0.20	0.5	0.17	0.12	0.020	0.021
15	0.14	-	0.31	-	0.034	0.016

UDC: 621.785.6 : 621.9.462

Card 1/3

L 12860-66
ACC NR: AP5027913

Specimens of 500 mm length were heated to the hardening temperature range (960-980°C) for 4 sec by circumferential inductors having active coil widths of 20 mm. The tubes were then quenched in a water spray (cooling time--5 to 6 sec); i. e., partially quenched portions (15 mm) were alternated with unquenched portions. The ratio of quenched to unquenched lengths varied from 1:5 to 1:2 (the interlengths of the unquenched sections were respectively 75, 60, 45 and 30 mm). The strengths of these processed thin walled tubes were determined for steels 15 and 20, and plotted as a function of the above ratio.



Strength increases with a decrease in the ratio. A 1:0 ratio would approach the ultimate strength values reported in table 1. Microstruc-

Card 2/3

L 12860-66

ACC NR: AP5027913

tures revealed that the unquenched tube had a predominantly ferritic-pearlitic matrix and after hardening, pseudopearlitic. As-quenched hardness ranged between 27 to 32 R_C (262 to 297 VHN). The plasticity drop which occurs may be overcome by alternating hardened strips with unhardened sections. The authors' final conclusion was that an economy could be achieved with this process by means of a 20 to 30% lowering in wall thickness. Orig. art. has: 1 figure, 2 tables.

SUB CODE: 11/ SUBM DATE: 00/ ORIG REF: 002/ OTH REF: 000

Card 3/3

L 22516-66 EWT(m)/T/EWP(t) IJP(c) JD/JG
ACC NR: AP6010202 SOURCE CODE: UR/0201/66/000/001/0055/0061

AUTHOR: Lyakhovich, L. S.; Varashnin, L. R.; Dalmanaw, F. V. 36

ORG: Belorussian Polytechnic Institute (Belorusskiy Politekhnicheskiy Institut) 50

TITLE: The effect of alloying elements on the properties of borated layers

SOURCE: AN BSSR. Vestsi. Seryya fizika-tekhnichnykh navuk, no. 1, 1966, 55-61

TOPIC TAGS: metal diffusion, borate, boride, alloy steel, phase analysis

ABSTRACT: The study deals with the results of the effect of saturation and alloying elements on the depth of the borated layer, its phase compound and properties. It has been established that the process of formation of the borated layer is accompanied not only by the redistribution of carbon (between the boride phases and the parent metal) but alloying elements as well. In the process of saturation, carbide-forming elements diffuse into the transition zone, while nickel, silicon, and manganese -- into the borated phases. While being diffused in the boride and the parent metal, the alloying elements control the relative content of boride phases in the layer. Emphasis is placed upon the effect of alloying elements on borating kinetics and the properties of the borated layers in the process of complex alloying of steel. The chemical composition of the steels tested as well as the other results of tests are given in tabular form. The authors offer recommendations on the selection of steels for borating. Orig. art. has: 4 figures and 3 tables. [Based on author's abstract]
SUB CODE: 11/ SUBM DATE: 20Nov65/ ORIG REF: 003 Diffusion of boron [AM]

Card 1/1

ACC NR: AP7002444 SOURCE CODE: UR/0219/66/000/012/0067/0069

AUTHOR: Voroshnin, L. G.; Lyakhovich, L. S.; Funshteyn, Ya. N.

ORG: Belorussian Polytechnic Institute (Belorusskiy politekhnicheskiy institut)

TITLE: Boronizing of steel using boron-containing powder mixtures

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 12, 1966, 67-69

TOPIC TAGS: boronizing, ~~boronized layer, boronized steel~~ BORON STEEL, METAL POWDER, CORROSION RESISTANT STEEL

ABSTRACT: The process of boronizing steel with boron-containing powders is described. The powders involved were boron carbide, 18% ferroboron and ferroboral (14% B; 7.44% Si; 15.28% Al and the balance iron). Test pieces from 40 grade steel (0.38% C; 0.34% Si; 0.75% Mn; 0.08% Cr; 0.024% S; 0.029% P) measuring 5, 10, and 15 mm in diameter and 20 mm in length were ground, degreased with carbon tetrachloride, and placed in quartz pipes filled with boron-containing powder. The ends of the pipes were sealed off (one by soldering and the other with a heat-resistant paste). The effects of boronizing were then studied

Card 1/2 UDC: 621.785.34:661.65

ACC NR: AP7002444

under various temperature conditions. The following was concluded: Ferroboron and ferroboral used as the powders for boronizing fail to provide an adequate degree of saturation: the boride layer formed did not exhibit sufficient wear-resistance but seemed , however, to have an increased resistance to corrosion and to high-temperature oxidation. It is found that boron carbide used as the boronizing powder provides a maximum degree of surface hardening and that the optimum conditions for boronizing are heating at 1000—1050C for 4—6 hr. Diagrams in the original text show 1) the depth of the boride layer as a function of temperature and time and 2) the effects of alloying elements on the depth of the layer boronized with various powders. Orig. art. has: 3 figures. [LD]

SUB CODE: 11/SUBM DATE: none/CRIG REF: 002/OTH REF: 001/

Card 2/2

STOLOV, M.A., inzh.; LYAKHOVICH, M.G., inzh.; KHZMALYAN, D.M., kand. tekhn. nauk

Increase in the stability and efficiency in burning milled peat.
Elek. sta. 34 no.10:20-23 O '63. (MIRA 16:12)

Lyakhovich, M.L.

LIAKHOVICH, M. L., RABINOVICH, T. I.

Hygienic aspect of toys. Gig. sanit., Moskva No. 7, July 50. p. 33-7

1. Of the Department of Hygiene, Central Scientific-Research Pediatric Institute of the Ministry of Public Health RSFSR.

CLML 19, 5, Nov., 1950

BORBAT, A.M.; LYAKHOVICH, N.G.

Intersection of graduated diagrams of various standards made for the spectrum analysis of aluminum-base alloys. Izv.AN SSSR.Ser. fiz.19 no.2:169-170 Mr-Ap '55. (MLRA 9:1)

1.Kiyevskiy mototsikletnyy zavod.
(Tartu--Spectrum analysis--Congresses)

LYAKHOVICH, P.K.; MITIN, N.Ye.

Formation of the gas and oil pools in the Paleocene-Eocene sediments of central Ciscaucasia. Neftegaz. geol. i geofiz. no.7:29-32 '63. (MIRA 17:10)

1. Ob"yedineniye neftyanoy promyshlennosti Krasnodarskogo kraya.

LYAKHOVICH, P.K.

New data on the prospects for finding gas and oil in the Blagoveshchenskaya area of Taman' Peninsula. Neftegaz, geol. i geofiz. no.11:21-23'63 (MIRA 17:7)

1. Krasnodarskaya geologo-poiskovaya kontora.

42712
S/081/62/000/020/025/040
B168/B101

11.9700

AUTHORS: Goryacheva, V. I., Kalashnikov, V. P., Ladyzhenskaya, I. V., Lyakhovich, R. S., Sidorenko, T. N., Shekhter, Yu. N.

TITLE: An additive for oils based on products of heat-contact cracking of kerosine

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 20, 1962, 450-451, abstract 20M203 (Novosti neft. i gaz. tekhn. Neftepererabotka i neftekhimiya, no. 3, 1962, 3-5)

TEXT: At the "Neftegaz" works in Moscow an antiwear sulfur additive (НГ -103 [NG-103]) and an antioxydant additive containing sulfur and phosphorus (НГ -105 [NG-105], -105a NG-105a], НГ -105б [NG-105b]) for engine oils were developed from the products of heat-contact cracking of kerosine. Products from the cracking of paraffin, distillation residues and kerosine were used for synthesizing the sulfur additive; the 130-250°C cracked kerosine fraction was found to be the best raw material for producing the additive. Sulfuration was carried out in an experimental unit by adding the cracked stock to melted sulfur (15% on cracked stock)

Card 1/3

An additive for oils based on ...

under intense agitation; the temperature was held at 135-150°C, and the reaction time was 2-3 hr. The resulting sulfurated product was held for 8 hr at 150-160°C after which it was washed in a column, at first with a solution of Na_2S and then with NaOH. After passing the copper-plate test the product was charged into a vacuum column and the hydrocarbons which had not taken part in the reaction were distilled off from it at a residual pressure of 5-10 mm Hg; the product was subsequently taken to an ultracentrifuge. The yield of additive was 25-30% of the raw material. Comparative tests on the additive NG-103 showed that as regards antiwear properties it is not inferior to ЭЗ-5 (EZ-5), ОТ-1 (OT-1) or ЛЗ6/9 (LZ6/9) which are made from scarce raw materials, and that it has advantages over them (cheap source material, simple production method, no unpleasant odor). The antioxydant additive was produced from a 75-250°C cracked kerosine fraction with a molecular weight of 198 and a Francis bromine number of 40. In order to produce a stable oil-soluble additive the olefinic hydrocarbons of the cracked stock were first polymerized in the presence of 2 wt.% $AlCl_3$ (on raw material) at 60°C. The mixture obtained

An additive for oils based on ... S/081/62/000/020/025/040
B168/B101

was heated to 100°C and received gradual additions of P_2S_5 (15 wt.% on raw material) with agitation. Upon completion of phosphorosulfuration the temperature of the mixture was raised to 140°C and held there for 7-8 hr. The product was then treated with 5% H_2SO_4 and washed with water. The hydrocarbons which had not undergone reaction were distilled off from the purified product at a pressure of 5-6 mm Hg. The acid additive (NG-105) was neutralized with CaO (NG-105b) or ZnO (NG-105a) and was centrifugalized. The additives so produced were dark brown in colour and had the usual odor of cracked stock; in a thin film they were transparent. The additive yield is 25% of the initial cracked stock. [Abstracter's note: Complete translation.

X

Card 3/3

SHEKHTER, Yu.N.; KALASHNIKOV, V.P.; YEVSTRATOVA, N.Ye.; LYAKHOVICH, R.S.; NIKOLAYEVA, V.M.

Self-emulsifying oils based on water and oil soluble sulfonates. Khim. i tekh. topl. i masel 8 no.4:32-34 Ap '63. (MIRA 16:6)

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Windbreaks, Shelterbelts, Etc.

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Tree planting is the surest means of protecting tracks from snow drifts. Zhel.dor.transp. 37 no.6:65-70 Je '56. (MLRA 9:8)

1. Nachal'nik Novosibirskoy distantsii zashchitnykh lesonasazhdeniy (for Lyakhovich)
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[Mechanization of snow protection and removal on railroads] Mekhanizatsiia snegouborki i snegozashchita na zheleznykh dorogakh. Moskva, Gos.transp.zhel-dor.izd-vo. 1959. 112 p. (Moscow. Vsesoiuznyi nauchno-issledovatel'skii institut zheleznodorozhnogo transporta. Trudy, no.168) (MIRA 12:4)
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LYAKHOVICH, V.B.

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1. Nachal'nik distantsii zashchitnykh lesonasazhdeniy, Novosibirsk.
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For a better improvement felling of trees. Put'i put.khoz. 5 no.5:26-27 My '61. (MIRA 14:6)

1. Nachal'nik distantsii zashchitnykh lesonasazhdeniy, st. Novosibirsk, Tomskoy dorogi.
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Planting protective tree belts along the Tomsk Railroad. Zhel. dor.transp. 43 no.3:71-72 Mr '61. (MIRA 14:3)
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LYAKHOVICH, V.B.

Preventing tree breakage by snow drifts. Put' i put.khoz. 7 no.2: 39 '63. (MIRA 16:2)

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(Windbreaks, shelterbelts, etc.—Maintenance and repair)

LYAKHOVICH, V.B.

Mechanization of labor consuming operations. Put' i put.khoz. 8 no.3:41-42 '64. (MIRA 17:3)

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PA 165T22

LYAKHOVICH, V.V.

USSR/Geology - Potamology 11 Feb 50

"Certain Characteristics of Traprocks in the Basins of the Angara and Podkamennaya Tunguska Rivers," V. V. Lyakhovich

"Dok Ak Nauk SSSR" Vol LXX, No 5, pp 871-873

Describes certain peculiarities in conditions and form of deposition of traprocks in subject area. Submitted 17 Dec 49 by Acad D. S. Belyankin.

165T22

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USSR/Geophysics - Magma Jan/Feb 52

"A Case of Assimilation of Fragments by Granitic Magma," V. V. Lyakhovich

"Iz Ak Nauk SSSR, Ser Geol" No 1, pp 132-144

Considers the relation of granitic magma to fragments of the enclosing rocks included in it. Concludes the assimilation of fragments does not accompany their fusion but proceeds by way of exchange reactions between the substance of the magma and fragments.

205T72

LYAKHOVICH, V.V.

New data on achtaragite. Doklady Alad. Nauk S.S.S.R. 82, 625-8 '52.
(MLRA 5:3)
(CA 47 no.17:8596 '53)

LYAKHOVICH, V.V.

A peculiarity of the contact of granite with hornstone (Northern Caucasus). (In: Akademiia nauk SSSR. Voprosy petrografii i mineralogii. Moskva, 1953. Vol. 1, p.103-112) (MLRA 7:4)
(Kabardia--Granite) (Granite--Kabardia) (Kabardia--Chert) (Chert--Kabardia)

LYAKHOVICH, V. V.

PA 245T51

USSR/Geophysics - Tufogenic Stratum Jan/Feb 53

"Petrography of the Tufogenic Stratum of the Southern Part of Tungus Basin," V. V. Lyakhovich

"Iz Ak Nauk, Ser Geolog" No 1, pp 132-139

Describes macroscopic and microscopic characteristics of tufogenic rocks. Concludes that intrusion and outflow of trappean magma was violent, preceded by outbreaks accompanied by earthquakes, fractures in the earth's crust, and protuberance of tufaceous material.

245T51