

ZEDGINIDZE, Ye.N.; IOSELIANI, T.P.

Testing the hydraulic activity of the blast-furnace slag of the
Transcaucasian Metallurgical Plant. Trudy Inst. prikl. khim.
i elektrokhim. AN Gruz. SSR no. 1:171-175 '60. (MIRA 14:2)
(Slag cement)

ZEDGINIDZE, Ye.N.; PIRTSKHALAVA, Ye.A.; MAMULASHVILI, N.K.; BAGATUROVA,
I.A.

Studying laterite clays of the Tsetskhlauri deposit. Soob.AN Gruz.
SSR 25 no.5:539-542 N '60. (MIRA 14:1)

1. Akademiya nauk GruzSSR, Institut prikladnoy khimii i elektro-
khimii, Tbilisi. Predstavleno akademikom R.I.Agladze.
(Kobuleti District--Laterite)

KUTATELADZE, K.S.; ZEDGINIDZE, Ye.N.; PIRUMOVA, R.A.

Carborundum tips with nitride bonding for immersion thermocouples.
Stal' 22 no.3:237 Mr '62. (MIRA 15:3)

1. Nauchno-issledovatel'skiy institut promstroymaterialov
Gruzinskoy SSR. (Thermocouples)

37231

S/131/62/000/005/002/004
B105/B138

24.5500
15.2210

AUTHORS: Kutateladze, K. S., Zedginidze, Ye. N., Nozadze, T. V.

TITLE: Sheaths for immersion thermocouples for measuring the temperature of molten metals

PERIODICAL: Ogneupory, no. 5, 1962, 223-225

TEXT: The quartz sheaths used to protect the junctions of thermocouples only last for a single immersion in molten steel. Alumina sheaths with an admixture of 1% TiO₂, made in the Podol'skiy zavod ogneupornykh izdelyiy (Podol'sk Plant of Refractory Materials), will stand two immersions, and zirconium dioxide sheaths made in the Institut metallurgii Ural'skogo filiala AN SSSR (Institute of Metallurgy of the Ural Branch of the AS USSR) can be kept in molten steel for 40-50 min. Those made by the process developed by the Leningradskiy tekhnologicheskii institut im. Lensoveta (Leningrad Technological Institute imeni Lensovet) last for 15 short immersions in molten steel at 1650-1720°C. This article presents the experimental results obtained for sheaths which stand
Card 1/2

X

Sheaths for immersion thermocouples ...

S/131/62/000/005/002/004
B105/B138

repeated immersion in molten metals. They were produced from a mixture of 87.5% kaolin and 12.5% aluminum powder, dried out, and burned at 1400°C in purified nitrogen. Refractoriness was 1850°C, bulk weight 1.8 g/cc, porosity 38.4% and water absorption 21.32%. Experiments in molten steel, pig iron, ferromanganese, aluminum, zinc, cadmium, lead, tin, and bismuth showed that the sheaths could stand repeated immersions at temperatures ranging from 1620° for the steel to 350° for zinc. The technology suggested is simple, and the starting materials are inexpensive. There are 4 figures.

ASSOCIATION: NII Promstroymaterialov SNKh Gruzinskoy SSR (NII of Promstroy Materials of the SNKh, Gruzinskaya SSR)

Card 2/2

KUTATELADZE , K.S.; ZEDGINIDZE, Ye.N.

Nitration of kaolin. Zhur.prikl.khim. 36 no.2:283-287 F '63.

(MIRA 16:3)

(Kaolin)

(Nitration)

KUTATELADZE, K.S.; ZEDGINIDZE, Ye.N.; KARUMIDZE, R.A.

Thermocouple tips for measuring temperature of liquid aluminum.
TSvet. met. 38 no.9:53-54 S '65.

(MIRA 18:12)

A L 10255-66 EWP(e)/EWT(m)/ETC/EPF(n)-2/EMG(m)/T/EWP(t)/EWP(b) IJP(c)
 ACC NR: AP6000757 JD/WW/JG/WH SOURCE CODE: UR/0131/65/000/017/0008/0013

AUTHOR: Kutateladze, K. S.; Zedginidze, Ye. N.; Karumidze, R. A.

ORG: Tbilisi Scientific Research Institute of Building Materials (Tbilisskiy nauchno-issledovatel'skiy institut stroitel'nykh materialov)

TITLE: Aluminonitrosilicothermic preparation of nitride refractories

SOURCE: Ogneupory, no. 12, 1965, 8-13

TOPIC TAGS: refractory product, corundum refractory, refractory compound, refractory oxide, silicon compound, nitride, thermal stability, high temperature material, corrosion resistance

ABSTRACT: A new type of corundum refractory containing silicon nitride binder has been prepared by the aluminonitrosilicothermic method proposed by the authors. The method which is described consisted of firing at 1400C a mixture of finely ground clay and aluminum powder in a stream of purified nitrogen. Under the given conditions, aluminum reduces silica from the clay to silicon and is oxidized itself to form Al_2O_3 . Then, nitrogen reacts with silicon to form Si_3N_4 . Samples of the new refractory contained 13-20% Si_3N_4 and combined high refractoriness and thermal stability, high resistance to molten metals, and acid-resistance with low oxidability in the air. The refractoriness was 160C higher than that of the starting clay material and the yield point was above 1600C under a 2 kg/cm² load. The samples remained unaffected after 50 thermal cycles. Crucibles made of the new refractory were

Cord 1/2

UDC: 666.76:661.55

L 10255-66

ACC NR: AP6000757

not wetted by molten ferrous and nonferrous metals even after 40 hr contact. Tubular tips made of the same material were unaffected by molten zinc, tin, lead, bismuth, or cadmium after 200 immersions, and by molten aluminum after 600. Orig. art. has: 7 figures and 5 tables. ^{44.55} [JK]

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 009/ OTH REF: 002/ ATD PRESS: 4461

DC
Card 2/2

PROCESSIES AND PROPERTIES INDEX

M

*Phenomena of Fracture of Two-Phase Alloys on Deformation. D. G. Butomo, N. I. Zelin, and S. A. Kuzbakevitch (Moshary (Mosharyia), 1934, (9), 61-63).—[In Russian.] The mechanism of the deformation of zinc containing 0-14 and 1-15% iron and of $\alpha + \beta$ brass indicates that the less plastic phase is fractured first, fracture being preceded by the formation of lines of slip. The development of fracture is definitely connected with the proportion of the less plastic phase, the degree of deformation, and the ratio between the plasticities of the two phases. Fracture of the plastic phase is caused by the instantaneous increase in stress at the moment of fracture of the inclusions of the brittle phase.—N. A.

METALLURGICAL LITERATURE CLASSIFICATION

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PROCESS AND PROPERTY INDEX

7

Phenomenon of inverse segregation in brasses. M. P. Slavinskii, N. I. Zedlin, A. K. Konstantinov and P. G. Kusmatsev. *Trans. Leningrad Inst. No. 4, Sect. Met. Eng. No. 1, 3-8* (in English 8-9) (1930).—Brass alloys as well as bronze display the phenomenon of inverse segregation. For a brass of 70:30 compn., cast at 1100° into a cold mold, the Cu content is 70.8% in the center of the ingot and 68.20% on the surface. The difference is less pronounced if the mold is preheated. The formation of point inclusions, drops and similar pptns. on the surfaces of large brass ingots is caused by the squeezing of streams of liquid metal out of the inner part into the outer strata through the solidified crystals. The amts. of crystals dissolved in the streams det. the compns. of the inclusions.
John Livak

A.S.M. S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

FROM SOURCE

100 AND 4TH ORDERS

100 AND 4TH ORDERS

COMMON ELEMENTS

COMMON YARNBELL NOTS

OPEN

MATERIALS INDEX

A.S.M. S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

FROM SOURCE

100 AND 4TH ORDERS

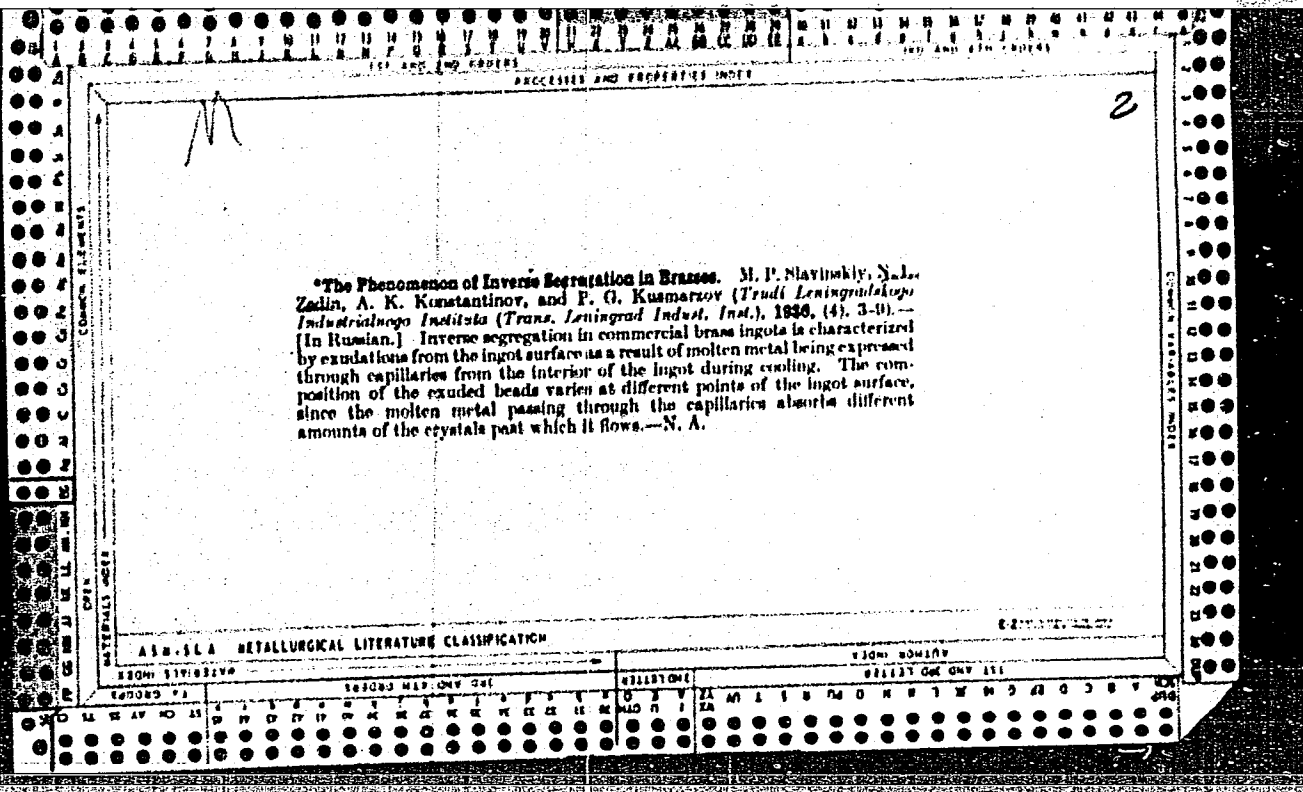
100 AND 4TH ORDERS

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COMMON YARNBELL NOTS

OPEN

MATERIALS INDEX



ZEDIN, N. I.

A. P. SMIRYAGIO, Tsvet. Metally, 1940 (1), 96-105; (2), 72-79

ZEDIN, N. I.

PHASE I Treasure Island Bibliographical Report

AID 231 - I

BCCX

Call No.: TN693.C925

Author: ZEDIN, N.I. and ZHOLOBOV, V.V.

Full Title: METALLOGRAPHICAL ATLAS OF COPPER AND COPPER ALLOYS

Transliterated Title: Metallograficheskiy atlas po medi i mednym splavam

Publishing Data

Originating Agency: None

Publishing House: State Publishing House of Scientific and Technical
Literature on Ferrous and Nonferrous Metallurgy

Date: 1949

No. pp.: 187

No. of copies: 2,000

Editorial Staff

Editor: Gagen-Torn, V.O., Professor

Tech. Ed.: None

Ed.-in-Chief: None

Appraiser: None

Text Data

Coverage: This atlas covers the macro- and microstructure of copper and its ternary and binary alloys (brasses and bronzes). Diagrams and photos given are explained in a detailed introduction discussing characteristics and physical properties of various alloys under differing conditions.

This is a useful compilation, but it is based on non-Russian sources, and presents no new data.

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Card 2/2

AID 231 - I

Call No.: TN03.0925

Full Title: METALLOGRAPHICAL ATLAS OF COPPER AND COPPER ALLOYS

Text Data

Purpose: Intended for a wide circle of engineers, technicians and scientific workers connected with the production and application of copper and its alloys.

Facilities: None

No. of Russian and Slavic References: 36 out of 81 (1904-1947). The authors emphasize that they based their material on works by:
Prof. M.P. Slavinskiy, Prof. V.O. Gagen-Torn, Eng. D.G. Butomo,
K.V. Gagen-Torn, I.E. Garshkov, B.F. Grashchenko, S.A. Kushakevich
and M.I. Makushenko.

Available: Library of Congress.

BUTOMO, D.G.; ZEDIN, N.I.

Cracks in rods of the alloy Kunial A. TSvet. met. 26 no.2:58-62
Mr-Ap. '53. (MIRA 10:9)

1. Zavod "Krasnyy Vyborzhets."
(Copper-nickel-aluminum alloys)

SOV/136-58-8-13/27

AUTHORS: Butomo, D.G., Zedin, N.I. and Krym, I.A.

TITLE: Investigation of the Influence of Conditions of Rolling and Annealing on the Residual Stresses in Copper (Issledovaniye vliyaniya usloviy prokatki i otzhiga na ostatochnyyenapryazheniya v medi).

PERIODICAL: Tsvetnyye Metally, 1958, Nr.8, pp.57-60 (USSR)

ABSTRACT: In the course of rolling copper with high degrees of reduction the residual stresses may be eliminated on account of the heat produced in the rolling. Attempts to measure the temperatures produced in rolling having failed to give stable results the authors adopted the indirect method of comparing the extent of residual stresses (lattice deformation) of copper after deformation with large reductions and after annealing. For investigating the influence of rolling factors on the residual stresses two strips were rolled from 3 to 0.5 mm, one in 3 passes with the minimal interval between passes, the other in ten with time for cooling between passes. After each pass specimens were taken for X-ray and metallographic investigation and

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SOV/136-58-8-13/27

Investigation of the Influence of Conditions of Rolling and Annealing on the Residual Stresses in Copper.

determination of mechanical properties, including micro-hardness (Table 1). The residual stresses were found from the intensity of the (331) line (Fig.1). The details of the X-ray method used are given by S.O. Tsobkallo and V.V. Latsh in "Trudy Leningradskogo Politeknicheskogo instituta im. M.I. Kalinina" 1955, Nr.180. Yu.P. Korolev participated in this work. The copper used contained 99.92% Cu, 0.002% Ni, 0.003% Pb, 0.002% Fe, traces of As, Sb, P, 0.07% O₂. To find what annealing conditions were equivalent to rolling with large reductions per pass as regards removal of residual stresses, a similar investigation was made of specimens rolled with large and with small reductions per pass and annealed for one hour at 100, 200, 250, 300, 350 and 400°C (Fig.2). It was found that with large reductions the structure-modifying effect of the heat evolved is equal to that of annealing at 100°C. This is one of the reasons for the ability of copper to be rolled with large reductions without intermediate annealing. With small reductions the residual stresses continually grow with

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SOV/136-58-8-13/27

Investigation of the Influence of Conditions of Rolling and Annealing
on the Residual Stresses in Copper.

increasing deformation. There are 2 figures and 2 tables.

1. Copper--Processing
2. Copper--Heat treatment
3. Rolling mills
- Performance
4. Stress analysis

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SOV/136-59-6-16/24

AUTHORS: Butomo, D.G., Ginsburg, N.G., Zedin, N.I. and
Sergeyev, L.N.

TITLE: Cracking of Aluminium Bronze During Tests in an
Ammonia Atmosphere (Rastreskivaniye alyuminiyevoy
bronzы pri ispytanii v ammiachnoy atmosfere)

PERIODICAL: Tsvetnyye metally, 1959, Nr 6, pp 84-85 (USSR)

ABSTRACT: Season cracking of brass in ammonia is due to preferential attack of zinc by NH_3 . Practically no data are available on the possibility of failure of aluminium bronze products by the same method. However, some investigators note that aluminium bronze is inclined to crack as a result of corrosion in the presence of internal stresses (Ref 3). Aluminium bronze is comparable with brass both in structure and in behaviour in ammonia atmosphere. Aluminium, like zinc, must displace copper from its ammoniate solution. Thus, it can be concluded that stressed aluminium bronze products will crack in an ammonia atmosphere in the same way as brass. This assumption was verified with tubular specimens made from the alloy BrA5 containing 4.67% Al and

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SOV/136-59-6-16/24

Cracking of Aluminium Bronze During Tests in an Ammonia Atmosphere

94.92% Cu. Tests were carried out by keeping the specimens, which had been degreased and etched, in an exsiccator, the bottom of which was covered with a 20% ammonia solution, for 24 hours. After the tests, transverse cracks formed on the tube surfaces, which are characteristic of residual tensile stresses along the rolling direction of the tube (Fig 1). Even more convincing were the results of experiments with elastically deformed loops made from a strip of BrA5 alloy, 0.7 mm thick. From twenty specimens cut out of this strip, ten were annealed at 600°C for one hour, the other ten were tested in the work-hardened condition. Tests were carried out for 24 and 72 hours. After 24 hours, 50% of the annealed loops and 90% of the work-hardened ones had failed. After 72 hours, all the loops failed. The microstructure of the specimens which had failed in the ammonia tests was studied (Fig 2a and b). As can be seen, the propagation of cracks in both cases

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Cracking of Aluminium Bronze During Tests in an Ammonia
Atmosphere

is not along the grain boundaries. In this behaviour the alloy BrA5 differs from brass, in which failure is intercrystalline, particularly if the alloy is in the annealed condition. Experiments were carried out in which the chemical composition of the corrosion products of the tubes of the BrA5 alloy was analysed after ammonia tests. The results prove that selective solution of aluminium occurs during corrosion of the stressed BrA5 alloy, similar to the selective solution of zinc in brass. It is concluded that, in general, stressed articles made of copper alloys in which the alloying elements are capable of displacing copper from its ammoniate solutions and forming solid solutions with copper, will fail when exposed to ammonia atmospheres if the concentration of the solid solution and the magnitude of the tensile stresses are sufficiently great. There are

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Cracking of Aluminium Bronze During Tests in an Ammonia
Atmosphere

2 figures and 3 references, 2 of which are Soviet and
1 English.

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S/136/60/000/011/009/013
E193/E483

AUTHORS: Butomo, D.G., Zedin, N.I. and Firkovich, I.A.

TITLE: Anisotropy of Mechanical Properties of Chromized Bronze¹⁸
BrKh 0.5 Strip

PERIODICAL: Tsvetnyye metally, 1960, No.11, pp.65-69

TEXT: The object of the present investigation was to study the relationship between the form in which chromium is present in chromium bronze and the mechanical properties of this alloy after heavy deformation. The experimental alloy (in the form of hot-rolled sheet, 13 mm thick) contained 99.08% Cu, 0.78% Cr (0.27% of which was in solid solution), 0.05% Fe and traces of Ni and Pb. Strips of this material were held for 1h at 700, 850 and 1000°C, after which half of the specimens were quenched from each of the annealing temperatures and the other half were furnace-cooled to room temperature. Then all the heat-treated specimens (including a sample of the starting, hot-rolled material) were cold-rolled in the direction normal to the direction of hot rolling, the total reduction in thickness attained (without any intermediate annealing) being 95.4%. The cold-worked specimens were then annealed at temperatures ranging from 200 to 900°C, after which they were
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S/136/60/000/011/009/013
E193/E483

Anisotropy of Mechanical Properties of Chromized Bronze BrKh
0.5 Strip

subjected to tensile tests (determination of the U.T.S. and elongation in the direction parallel and at 45° to the direction of cold rolling), deep drawing tests, metallographic examination and X-ray diffraction analysis. It was concluded that an increased content of chromium in solid solution, attained by quenching from 1000°C, inhibits the subsequent development of preferred orientation in heavily deformed chromium bronze and improves the mechanical properties of cold-worked and subsequently annealed material. Heavy (95%) deformation of this alloy (preliminarily annealed by heating to 700 to 800°C and furnace-cooled) followed by an annealing treatment, yields material characterized by pronounced recrystallization texture and by inferior mechanical properties. There are 4 figures and 6 Soviet references.

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28948
S/136/61/000/010/002/003
E193/E435

AUTHORS: Butomo, D.G., Zedin, N.I. and Suturin, G.I.
TITLE: Development of a method of production of thin chromium bronze (alloy БрХ (BrKh)) sheet with a finely-crystalline structure

PERIODICAL: Tsvetnyye metally, no.10, 1961, 69-76

TEXT: Up till the middle of 1960, heat treated chromium bronze sheet was produced by a method entailing a solution treatment at 980 to 1000°C, work-hardening by cold-rolling and ageing at 450°C. Some batches of material produced in this manner were found to have a coarsely-granular structure which caused frequent intercrystalline cracking during the subsequent forming operations. Hence the present investigation whose object was to determine the effect of various factors on the grain-size of chromium bronze sheet, treated to possess hardness not lower than 120 kg/mm². Three grades of chromium bronze, containing 0.54, 0.66 and 0.79% Cr, were used in the experiments which consisted in measuring hardness (at room temperature and at 600°C), grain-size, electrical conductivity and oxidation resistance of specimens quenched from 800, 850, 900, 950 and 1000°C, deformed by cold-rolling to 40, 50, Card 1/4

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E193/E435

Development of a method ...

60 and 70% reduction in thickness, and aged at 300, 400, 450 and 500°C. The results obtained can be summarized as follows:

- 1) The grain-size of thermally and mechanically treated chromium bronze depends on its chromium content. Grain growth in alloys containing 0.5 and 0.65% Cr, begins at 850 and 900°C respectively, whereas an alloy with 0.8% Cr retains its finely crystalline structure even at 950°C.
- 2) The quantity of chromium retained in solid solution was approximately 0.2% irrespective of whether the solution treatment was carried out at 1000, 950 or 900°C.
- 3) For practical purposes, a separate solution treatment can be replaced by rapid cooling after hot-rolling without a significant decrease in the quantity of chromium retained in solid solution. This method was used in a large scale trial in which 3 tons of 4 to 5 mm thick sheet was produced. The last hot-rolling operation was finished at 850 to 880°C after which the alloy was quenched from this temperature, 0.2 to 0.24% Cr being retained in solid solution. After cold-rolling (67 to 73% reduction in thickness) and ageing, the metal had the following properties:

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JK

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E193/E435

Development of a method ...

UTS - 45 to 49 kg/mm²; Brinell hardness - 120 to 148 kg/mm²; elongation - 14 to 17%; electrical conductivity - 65 to 71% of the electrical conductivity of copper.

4) Maximum hardness is attained by quenching from 1000°C and ageing at a temperature (400 to 450°C) depending on the preliminary cold deformation and duration of ageing.

5) The higher the degree of deformation after the solution treatment, the higher is the hardness after ageing; at the same time, a high degree of deformation brings about a decrease in the recrystallization (softening) temperature.

6) UTS of chromium bronze at high (600°C) temperatures is independent of the chromium content but decreases with decreasing temperature of the solution treatment. The optimum strength (UTS > 20 kg/mm²) at 600°C is attained after a solution treatment at 1000°C followed by cold-rolling to 70% reduction and ageing at 400°C.

7) Electrical conductivity of chromium bronze is independent of its chromium content and varies (in the aged condition) between 75 and 80% of the electrical conductivity of copper. In the case of the
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Development of a method ...

solution treated material, electrical conductivity decreases with increasing temperature of the solution treatment, being approximately 34 and 47% after quenching from 1000 and 900°C respectively.

8) The thickness of the surface layer in which chromium becomes oxidized at elevated temperatures depends on time at the given temperature. The thickness of the oxidized layer in an 8 mm thick strip held at 1000°C was 0.18, 0.26 and 0.59 mm after 15 min, 1 hour and 4 hours at the temperature, respectively. There are 3 figures, 4 tables and 2 Soviet references.

Card 4/4

BUTOMO, D.G.; ZAMOTORIN, M.I.; ZEDIN, N.I.; SOMOVA, Ye.P.

Earing of copper strip. TSvet. met. 36 no.7:77-81 J1 '63.

(MIRA 16:8)

(Copper) (Rolling (Metalwork))

SLIOZBERG, S.K.; GINZBURG, S.K.; MIRKINA, L.M.; BUTOMO, D.G.; ZEDIN, N.I.

Chromium bronze for electrodes of resistance welding machines.
Avtom. svar. 18 no.5:32-34 My '65. (MIRA 18:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut elektrosvarochnogo
oborudovaniya (for Slizberg, Ginzburg, Mirkina). 2. Zavod "Krasnyy
vyborzhets" (for Butomo, Zedin).

L 23010-66 EWP(s)/EWT(m)/EWP(v)/T/EWP(t) JD/HM

ACC NR: KP6007667

SOURCE CODE: UR/0413/66/000/003/0039/0039

AUTHOR: Butomo, D. G.; Zedin, N. I.; Slizberg, S. K.; Sokolov, M. P.

ORG: none

TITLE: Alloy for electrodes of resistance welders. Class 21, No. 178426 [announced by the All-Union Scientific Research Institute of Welding Equipment (Vsesoyuznyy nauchno-issledovatel'skiy institut elektrosvarochnogo oborudovaniya)]

59
B

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 3, 1966, 39

TOPIC TAGS: alloy, electrode, welding electrode, resistance welding

ABSTRACT: An Author Certificate has been issued describing an alloy for electrodes containing copper and magnesium for resistance welders. In order to increase the strength of the electrode in resistance welding of aluminum and its alloys; the electrode alloy is supplemented with ~0.1% boron, the other compounds are magnesium (up to 0.30%), and the balance is copper.

[LD]

SUB CODE: 11, 13/ SUBM DATE: 04Jan65/

Card 1/1 *plu* UDC: 621.791.763.037.2

Zedin, N.N.

ALEKSEYEV, N.S.; BELYAYEV, A.P.; BUGAREV, L.A.; BUTOMO, D.G.; VASIL'YEV, Z.V.;
VERIGIN, V.N.; VOROB'YEV, G.M.; GAYLIT, A.A.; GOL'SHTEYN, P.M.;
GOKHSHEYN, M.B.; ZHOLOBOV, V.V.; ZEDIN, N.N.; IVANOV-SKOBNIKOV, M.I.;
KUTEPOV, Ya.V.; LANDIKHOV, A.D.; MARAYEV, S.Ye.; MILLER, L.Ye.;
OL'KHOV, N.P.; PERLIN, I.L.; POSTNIKOV, N.N.; ROZOV, M.M.; CHERNYAK, S.N.;
CHUPRAKOV, V.Ya.; TSENER, Ya.A.

Vladimir Oskarovich Gagen-Torn; obituary. TSvet.met. 27 no.5:67-68
S-O '54.

(MIRA 10:10)

(Gagen-Torn, Vladimir Oskarovich, 1888-1954)

VRUBEL, F.; VITEK, J.; ZEJDA, V.

Reproperitoneal lipomas. Rozhl.chir. 39 no.11:748-752 N'60.

1. I. chirurgická klinika v Brně, přednosta prof. dr. J.Podlaha.
(RETROPERITONEAL SPACE neopl)
(LIPOMA surg)

ZEDLMAYR, KURT

HUNGARY/Cultivated Plants - Technical Oleaceae, Sugar Plants

M-7

Abs Jour : Ref Zhur - Biol., No 1, 1958, No 1678

Author : Kurt Zedl'mayr

Inst : Not Given

Title : Role of the Polyploid in the Selection (of Sugar Beets).

Orig Pub : Magyar tud. akad. agrartud oszt. kozl., 1956, 9, No 1-3,
177-193, hozzas zolasok 194-215

Abstract : In order to obtain polyploid beets, colchicine was applied to the top bud of young plants; in a particular bud fissure, every day for two weeks, a 0.2% aqueous colchicine solution was dropped in. The plants treated showed deformed foliage formation. With cooperation of selectioners and cytologists, a hybrid triploid beet was created. Tetraploids cannot be farmed, since they are inferior in yield to the diploid varieties. The solution of the problem could only be achieved by means of triploid hybrids, by way of freely selective crossing, with a careful choice of partners, and with increased heterosis. Examples are cited showing that polyploidation is characterized by definitely directed and progressive

Card : 1/2

HUNGARY/Cultivated Plants - Technical Oleaceae, Sugar Plants

M-7

Abs Jour : Ref Zhur - Biol., No 1, 1958, No 1678

anatomical, morphological and biological changes. It is stressed that action of colchicine brings about the breaking down of heredity, the formation of more flexible initial specimens, and the elimination of the crossing difficulties.

Card : 2/2

ZEDNICEK, Miloslav

The navigation system Transit. Letecky obzor 6 no.11:363-365
'62.

SECRET

SECRET

... in which the ...
... of the ...
... to high ...
... and corrosion.
... law to ...
... metals and
... of metals are also

Handwritten signature
MST

ZEDNIK, Karel

Carrying out the graphical timetable of railway transportation. Zel
dop tech 10 no. 3:66-67. '62.

BA

516

Gas in pig iron and their influence on the quality of raw materials and castings. U. Zednik (*Vlastnick Listy*, 1950, 8, 445-449, 483-495; *Iron Steel Inst.*, 1951, 100, 57).—The gas contents of hematite pig Fe from Hungarian blast furnaces and of Czech and foreign pig irons were determined and the influence of remelting on the gas content, graphitization, and structure was studied. The composition and gas contents of the various pig irons, and their H₂, O₂, and N₂ contents at various stages of remelting in a cupola and a high-frequency furnace are given, with pictures of the microstructures and fractures of the specimens. There are considerable differences in the gas contents even with specimens taken at successive intervals from the same melt. Older samples have high gas contents due probably to the absorptive activity of ferritic Fe. Remelting has a favourable influence on gas content. The most serious difficulties occur with ferritic Fe and irons with a tendency to overcooling; these, however, are often due to incorrect inoculation and not to gas content. A H₂ content of 2 cu. mm. per 100 g., considered critical by Riley for castings high in Si, is not considered critical with grey-Fe castings.

R. B. CLARKE.

I. 34530-66

ACC NR: AF6024772

SOURCE CODE: CZ/0014/65/000/007/0245/0246

AUTHOR: Zednik, Robert; Zitko, Frantisek

ORG: none

TITLE: Automatic recording of the responses of semiconductor devices and means of the BAK II recorder

SOURCE: Sdelovaai technika, no. 7, 1965, 245-246

TOPIC TAGS: recording equipment, semiconductor electron tube/BAK II recording equipment

ABSTRACT: The article describes the principle of automatic recording with the BAK II for determining the real as against the rated parameters of semiconductors to be used in equipment being designed. The principle can also be used to determine the parameters of electron tubes, etc. Orig. art. has: 11 figures. [JPRS]

SUB CODE: 14, 09 / SUEM DATE: none

Card 1/1

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ZEDNIK, V.

ZEDNIK, V.

Magnetic properties of cast steel. (to be contd.) p. 193 (Slevarenstvi. Praha.
Vol. 2, no. 7, July 1954)

SO: Monthly List of East European Accessions, (EEAL) LC, Vol. 4, No. 6,
June 1955, Uncl.

ZEDNIK, V.

ZEDNIK, V.

Magnetic properties of cast steel. Conclusion) p. 231 (Slevarenstvi. Praha. Vol. 2,
no. 8, Aug. 1954)
SO: Monthly List of East European Accessions, (EEAL), IC, Vol. 4, No. 6,
June 1955, Uncl.

ZEDNIK, V.

ZEDNIK, V., KADERAVEK, Z.

"Fracture Mechanism in Pearlite," p 211.
(Hutnicke Listy, Vol.6, No.5, May 1951, Brno.)

SO: Monthly List of East European Accessions, Vol.2, No.9, Library of Congress, September
1953, Uncl.

CZECHOSLOVAKIA/Metals - Steel
Deoxidation
Nov 49

161T105
"Problem of Inclusions in Steel," Prof Vl. Zednik,
Dr Eng, 3 1/2 pp

"Hutnicke listy" Vol IV, No 11

Combination of present insufficiently specialized
metallographic, extraction, microchemical, and mi-
crocentrifugical methods is now required to
determine character and amount of inclusions in
steel. More research is needed on deoxidation
processes, especially in relation to sulfur content
of steel. Claims smelting process and erosive

161T105

CZECHOSLOVAKIA/Metals - Steel (Contd) Nov 49

effect of steel on refractories have considerable
influence on number and dispersion of inclusions.
Microphotographs show behavior of inclusions in
steel deoxidized by addition of calcium-silicon.

ZEDNIK, PROF. VL.

161T105

PROCESSES AND PROPERTIES

18

A Contribution to the Problem of Non-Metallic Inclusions in Steel. V. Zelnik. (Hutnická Listy, 1949, vol. 4, Oct., pp. 319-324; Rov., pp. 360-363). (In Czech). Qualitative and quantitative determination of inclusions in steel is only possible by combining metallographic, extraction, microchemical, and cathode-ray methods. To obtain data for further research work on non-metallic inclusions, tests have been carried out in the Research Laboratories of the Vítkovice Steelworks. The non-metallic inclusions in several typical heats of steel were analysed by the modified Dicken's method and by microchemical and cathode-ray methods. Five mechanically separated relatively large non-metallic inclusions, and two specimens from a faultless test bar were examined. The results of microanalysis of these inclusions are given. The MnO and FeO contents of forged test pieces and of specimens cast direct from the ladle into ingot moulds have also been determined in order to obtain data on the variation of the content of these oxides resulting from the relatively large surface of the molten metal in contact with the air during the casting process. There was not much difference between the analyses of very fine and of relatively large inclusions, which indicates that the process of their formation is the same. The relatively high CaO and MgO contents indicate that the inclusions are partly due to corrosive and erosive action of the steel on the furnace lining. Deoxidation has only an indirect influence, or none at all, on the formation of non-metallic inclusions, but it does affect the viscosity of the steel. Inclusions obtained from deoxidized cast specimens were high in MnO, and contained no CaO or MgO, whilst the Al₂O₃ content depended on the method of

A.I.B.S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

E-2

deoxidation. Micrographs are presented to show the manner in which inclusions in steel deoxidized with calcium silicide reacted with etching reagents.—11. 9.

CA

The problem of nonmetallic inclusions in steel. V. *Zednik-Hulnicki Listy 4, 319-24, 300-3(1949).*—The nonmetallic inclusions of several typical steel melts were analyzed by suitable microchem. and microcathode ray methods. Two specimens taken from faulty spots of forgings were analyzed by the modified Dickens method, 5 specimens consisted of mechanically separated relatively large nonmetallic inclusions, and 2 specimens were taken from a faultless test rod. The latter two specimens were handled very carefully as they were also used for purposes of checking in the cathode-ray microanalysis of the other specimens. The results of microanalysis of these nonmetallic inclusions are given. The MnO and FeO contents of specimen forgings and specimens cast from the ladle directly into test ingot molds have also been detd., to obtain data on the variation of the content of these oxides resulting from the relatively large contact surfaces between the stream of the molten metal and the air during the casting process. There was no considerable difference between the results of analysis of very fine and of relatively large inclusions, which indicates that the process of their formation is the same. The relatively high CaO and MgO contents indicate that the inclusions are partly due to corrosive and erosive action of the steel on the furnace lining. Deoxidation has only an indirect influence or none at all on the formation of nonmetallic inclusions, but it does influence the viscosity of steel. Inclusions obtained from cast specimens with expl. deoxidation had a considerably higher SiO₂ content, absence of CaO and MgO, and showed a remarkable sensitivity of the Al₂O₃ content on the method of deoxidation. Inclusions in steel satisfactorily deoxidized with CaSi showed an interesting behavior to various etching agents and this is shown on several photographs. Eugene Gros

CA

The application of fractography for evaluation of steel of low carbon content. Vh. Zelnik and Z. Kadefávek. *Hutnické listy* 5, No. 2, 45-51 (1950).—Fractographic photographs of ferritic C steel show the possibility of evaluating various degrees of plasticity in relation to its technological and thermal history. The fracture is intracryst. In the brittle state fracture occurs along 3 planes, perpendicular to each other, or rarely at 45° angle. The grain boundaries do not represent a place of weakness. The seat of brittleness is probably the crystal imperfections within the grains. The soft-tempered state shows the characteristic formation of twin pattern. In the hard-tempered state the fracture proceeds along a great no. of sliding planes in various directions. J. Lederer

CA

9

Gases in pig iron and their influence on the quality of raw materials and castings. Vladimir Zednik. *Hutnické Listy*

5, 445-9, 485-92, discussion, 492-8(1960).--The present knowledge on the influence of gases in pig iron on the quality of castings is reviewed, and expts. in the Vitkovice Steel Works are described. The gas contents of 3 different tapplings of hematite pig iron from the current production of blast furnaces and also of other similar Czech and foreign pig irons were detd., and the influence of remelting on the gas content, graphitization, and structure was investigated. Informative metallographical analysis and a detailed chem. and spectral analysis were also made on most of the raw materials. Specimens of foreign pig iron included Russian pig of 1913 and current, English, Polish, and Swedish pig irons. The chem. compn. and the gas contents of the individual pig irons and the chem. compn. and H, O, and N contents of the material at the various stages of remelting in a cupola and in a high-frequency lab. furnace are given. Pictures of the microstructure and fracturing surfaces of the individual specimens are included. Z. emphasizes that there is a contradiction between the relation of the O soly. in Fe and the temp. and the thermodynamic equil. of oxidation. Investigation revealed considerable differences in the gas contents even in specimens taken at successive intervals from the same melt. Older samples showed high gas contents, which were probably due to absorption by graphitic C. Both lab. and works tests showed that remelting has a favorable influence on gas content. The most serious difficulties occur in the case of ferritic iron and irons with a tendency to overcooling, but very frequently gas content is wrongly assumed as being the cause of failure in cases where such failure is due to other causes, such as improper inoculation or improper use of cooling areas. A H content of 2 cc./100 g., considered crit. by Riley for castings with a high-Si content, is according to Z., not crit. in the case of gray iron castings. E. Gros

CA

7

Magnetic properties of cast steel. V. Zelený (Staatl. Montan. Hochschule, Ostrava, Czech.). *Schweis. Arch. angew. Wiss. u. Tech.* 16, 65-75 (1960). - Statistical evaluation of industrial heats and of specially deoxidized charges showed that no simple function exists between magnetic induction and alloying components, but that the composite effect is very complicated. This is particularly true in the presence of carbide-forming elements, such as Mn and Cr. The relation of the amt. of such elements to the C and the thermal history of the steel, to the extent as it affects their distribution between ferrite and carbide, are of great importance. Small and uniformly distributed inclusions affect the induction much less than dissolved impurities in the ferrite lattice. Proper deoxidation is of great importance. A slight excess of Al reduces the ductility of the steel but does not affect the induction.

L. Pessel

13

B

13826* The Mechanism of Fracture of Pearlite. (In Czech.)
 Vladimir Zednik and Zdenek Kaderavek. *Hutnické Listy*, v. 6,
 May 1951, p. 211-220.

Fracture mechanism in pearlite subjected to shock strains was studied fractographically on notched samples of eutectoid carbon steel in the range -195+150°C. In the first stage of the fracture, cracks appear selectively on the boundaries of ferrite and cementite plates in a number of grains with a favorable orientation of lamellar to normal stress. It appears, therefore, that for inception of fracture, cohesion of pearlite components is the deciding factor. In the second stage of fracture, interlamellar fusion of microcracks and concentration of stress resulting in translamellar fracture in neighboring grains occurs. Includes numerous fractographs.

ASSOCIATED METALLURGICAL LITERATURE CLASSIFICATION

CA

9

The mechanism of fracture of pearlite. V. Zednik and N. Kadelač. *Hutnická Listy* 6, 311-10(1961).—Tests were conducted to det. the cause of brittleness of eutectoidal C steels with a lamellar pearlitic structure. The investigations were carried out by fractographic and metallographic analysis of notched specimens of eutectoidal C steel fractured by impact at 20, 150, -78, and -193°. In the 1st stage of the fracture, individual selective cracks occur on the boundaries of ferrite and cementite in a no. of grains in which the direction of the stress relative to the grain orientation is favorable for crack formation. Stress concns. occur at the bottom of the microscopic cracks, which form in

the first stage of fracture, reducing the effective cross section and facilitating the progress of further disruption in the 2nd stage of fracture. The test results indicate that the cohesion between the ferrite and cementite lamellae controls the initiation of crack formation; this is illustrated particularly by results on the specimens fractured at 20 and at -193°. In the 2nd stage of fracture an interlamellar connection of the microcracks and stress concns. apparently occur, which bring about translamellar fractures in the adjacent grains. Crystallographic changes and grain size also have an influence on the fracture formation. Interlamellar cohesion depends on the dispersion of the eutectoidal components, and this explains the differences in behavior of pearlitic structures as a function of the heat-treatment history of the steel concerned. It can be assumed that submicroscopical cracks occur in cold-worked pearlitic steel, which would explain the lower rupturing stress detd. by others for fractures at low temp. of cold-worked pearlitic steels. This method of investigation is suitable for investigating the causes of formation of any type of fracture.

E. Gros

ZEDNICEK, J.

Filter texture for ceramic production. (To be contd.) p.145.
(Sklar A Kermik, Vol. 7, No. 5, May 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, No. 9, Sept. 1957. Uncl.

ZEDNICEK, J.

Filter texture for ceramic production. (Conclusion) p.201.
(Sklar A Kermik, Vol. 7, No. 7, July 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, No. 9, Sept. 1957. Uncl.

CZECHOSLOVAKIA/Chemical Technology - Chemical Products and Their Application. Ceramics. Glass. Binding Materials. Concretes. H-13

Abs Jour : Ref Zhur - Khimiya, No 17, 1958, 58164

Author : Svedova Jarmila, Zednicek Jaromir

Inst : -

Title : Filter Fabrics for Ceramics.

Orig Pub : Sklar a keramik, 1957, 7, No 7, 201-202.

Abstract : Rules for the storage, drying, washing and emding of filter linens of synthetic fiber (LSF) for ceramic plants are cited. LSF should be preserved in compartments with a relative air humidity of $\sim 70\%$; protected from the direct action of sun and ultra-violet rays; not dried after washing; and in case of necessity, the temperature fo drying must not be $> 20^{\circ}$; do not use brushes during washing; mand LSF only with synthetic

Card 1/2

5.

Mechanism of Fracture of Pearlite. V. Zednik and Z. Kaderavsk. (Municke Listy, 1951, 6, May, 211-220). (In Czech).

Fracture mechanisms in pearlite subjected to impact have been studied fractographically on notched samples of eutectoid carbon steel in the temperature range of -195 to +150°. In the first stage of fracture, cracks arise selectively at the boundaries of the ferrite-cementite lamellae in a number of grains having lamellae favourably orientated with respect to the tensile stresses acting on them. It appears that the start of a fracture is conditioned by the strength of the boundary cohesion between the two phases. The stress concentrations in the numerous microcracks so formed facilitate the progress of the second stage in which these cracks extend and coalesce, and which proceeds preferentially across the grains and in directions other than parallel to the lamellae. Crystallographic defects and grain size have observable effects on the character of the spread of fractures. Practical uses of fractography are reviewed.--P. F.

Translate source clipping

ZEDNIK, VL.

Zkouseni kovu. Rukopis pro vyd. pripravil R. Sejnoha. (Vyd. 1.) Praha, Statni nakl. technicke literatury, 1957. 199 p. (Metal testing; a university textbook. 1st ed. illus., bibl., diags., graphs, tables)

SO: Monthly Index of East European Acquisitions (EEAI) Vol. 6, No. 11 November 1957

ZEDNIK, V.

Nemec, J. Testing impact ductility. p. 766.
STROJIRENSTVI, Prague, Vol. 4, no. 10, Oct. 1954.

APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001964210020-6

SO: Monthly List of East European Accessions, (EEAL), LC, Vol.5, No. 6,
June 1956, Uncl.

4231* Effect of Corrosion on the Quality of the Iron and Cast
Iron. The effect of corrosion on the quality of the iron and cast

1. The effect of corrosion on the quality of the iron and cast

ZEDNIK, Zdenek, inz.

Tachogenerator, its design, properties and use. Automatizace 12
no.5:212-215 8 Ag '62.

1. Moravskoslezske elektrotechnicke zavody, n.p., Nachod.

HEJNAL, J.; HRDLICKA, Z.; SCHINDLER, J.; CERVINKA, F., Technicka spoluprace:
Z. Divis, J. Hnatek, M. Hubkova, Z. Linkova, L. Rablova, H. Tazilova,
H. Vidmarova, A. Zednikova.

Antibiotics in preoperative preparation of the large intestine.
Rozhl. chir. 38 no.8:507-515 Aug 59.

1. Ustav klinicke a experimentalni chirurgie v Praze Ustav mikrobiol.
a epidemiol. KU v Praze.
(ANTIBIOTICS, ther.) (COLON, surg.)

ZEEGOFER, O. I., Engr

USSR/Electricity- Transmission Lines Hydroelectric Power Stations

Nov 50

"Super-long-Distance Power Lines," M. Yakovlev

"Nauka i Zhizn" No 11, pp 42, 43

The 1st operating model of the Kuybyshev hydroelec power station, consisting of 2 turbines, 2 generators, and a long-distance transmission line (represented by coils and capacitors), has been built at the Hydroelec Power Eng Lab, (director - Prof T. L. Zolotarev, Dr Tech Sci) of the Moscow Power Eng Inst. The work was directed by V. A. Venikov, Cand Tech Sci, and A. V. Ivanov-Smolenskiy, Cand Tech Sci, and Engineers L. S. Lifshits and O. I. Zeehofer participated. The 2d model, when completed, will be connected into the Moscow Power System in order to study the operating conditions of the Kuybyshev station more thoroughly.

PA 221T39

ZEPHUR, V.V.

Objects and space surrounding the spaceship cabin. Prob. kasm.
No. 33125-129 '64. (NIRA 17.6)

VERDA, V.; ZEFEL'D, V.

Redesigning of operators' stations. Tekh. est. no. 6:15-17
Je '65. (MIRA 18:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut tekhnicheskoy
estetiki.

ZEFEL'D, V.V.

Working area of an operator. Mashinostroitel' no. 1:35-37
Ja '66. (MIRA 19:1)

ZEFFER, Jenó, dr.

Data on the course of deliveries which begin more than 24 hours after rupture of the amnion. Magy. noorv. lap. no.5:316-319 § '61.

1. A Szovetseg utcai Korhaz Rendelointezet Szuleszet Nogyogyaszati osztalyanak kozlemenye.

(LABOR) (AMNION)

ZEFFER, Jenó, dr.

Data on the problem of the prevention of thromboembolism following
gynecological interventions and delivery. Orv. hetil. 103 no.20:
926-929 20 My '62.

1. Szovetség-utcai Kórház, Szülészeti-Nőgyógyászati Osztály.

(THROMBOEMBOLISM prev & control) (PUERPERIUM compl)
(GENITALIA FEMALE surg)

HUNGARY

FORGACS, Jozsef, Dr., RAGALYI, Geza, Dr., SANDOR, Tibor, Dr., and ZEFFER, Jeno, Dr. Tetenyi Road Hospital, Obstetrical and Gynecological Department (Tetenyi Uti Korhaz Szulo es Nobeteg Osztaly), and Szovetseg Street Hospital, Obstetrical-Gynecological and X-ray Department (Szovetseg Utcai Korhaz Szulo-Nobeteg es Rontgen Osztaly), both operated by the Capital Council (Fovarosi Tanacs) in Budapest.

"The Significance of Chromocystoscopy and Secretion Urography in the Preparation of Gynecological Patients for Surgery"

Budapest, Orvosi Hetilap, Vol 107, No 24, 12 Jun 1966, pp 1115-1117.

Abstract: The authors conducted chromocystoscopy and secretion urography in 281 patients prior to elective gynecological surgery. In 6% of the cases the findings contributed to better determination of the surgical procedure to be employed and to better understanding of the patient's recovery course. Thus, chromocystoscopy should be considered a routine operation prior to gynecological surgery and secretion urography should be performed in selected cases prior to gynecological surgery. 8 references, including 1 Hungarian and 7 Western.

1/1

HUNGARY

ZEFFER, Jenó, Dr., Szovetseg Street Hospital, Department of
OBSTETRICS and Gynecology (Szovetseg Utcai Korház, Szulo-Nobeteg Osztaly)
[Location not given] (Physician-in-Chief: FORGACS, Jozsef, Dr.).

"Coitus Injury to the Posterior Vagina Penetrating the Peritoneum"

Budapest, Orvosi Hetilap, Vol 107, No 26, 26 Jun 1966, pp 1238-1239.

Abstract: The author described the case of a married 18-year old female patient suffering from penetration of the peritoneum sustained in the course of injury during coitus performed in the position of extreme flexion. It was noted on the basis of clinical examination that the injury was caused by the position occupied in the course of coitus rather than by the disproportionate sizes of the reproductive organs of the partners involved. 12 references, including 6 Hungarian and 6 German.

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HUNGARY

ZEFFER, Jenó, Dr; Szovetseg Street Hospital, Obstetrical-Gynecological Ward
(chief physician: FORGACS, Jozsef, Dr) (Szovetseg Utcai Korház, Szulo-Nobeteg
Osztaly), Budapest.

"Endometriosis Externa in the Scar of an Episiotomy."

Budapest, Orvosi Hetilap, Vol 107, No 44, 30 Oct 66, pages 2098-2099.

Abstract: [Author's Hungarian summary] A case of endometriosis externa is described which was formed in the scar left by a previous episiotomy. 2 Hungarian, 3 Western references.

1/1

AUTHOR: Zefirov, A.P. and Nevskiy, B.V.

136-4-21/23

TITLE: Research and design organisations of France. (Issledovatel'skie i proektnye organizatsii Frantsii.)

PERIODICAL: "Tsvetnye Metally" (Non-ferrous Metals), 1957, No.4, pp. 88 - 93 (U.S.S.R.)

ABSTRACT: The authors visited organisation in France in 1956 and in this article they describe some of these: the research laboratory of Minerais et Métaux, the testing station and design office of the PIC firm, the research laboratories and design office of SECPIA. The special features of these organisations are given as their broad scope, the fact that they work on a contract basis and the volume of work which they do for non-French interests. There are 6 figures.

AVAILABLE:

Card 1/1

AUTHORS: Zefirov, A.P. and Nevskiy, B.V.

136-7-20/22

TITLE: The production of pure titanium dioxide and titanium tetrachloride in France. (Proizvodstvo chistoy dvyokisi titana i chetyrekhkloristogo titana vo Frantsii).

PERIODICAL: "Tsvetryye Metally", 1957, No.7, pp.91-93 (USSR).

ABSTRACT: The authors give an account of the methods and installations for the production of pure titanium dioxide and tetrachloride which they recently saw in France and discuss some opinions by French technologists.

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There is 1 figure.

AVAILABLE: Library of Congress

ZEFIROV, A.P., professor, doktor tekhn. nauk, red.; IVANOV, G.F., kand. tekhn. nauk, red.; NEVSKIY, B.V., kand. tekhn. nauk, red.; SAGURO, M.A., red.; MAZEL', Ye.I., tekhn. red.

[Transactions. Selected reports by foreign scientists] Trudy. [Izbrannye doklady inostrannykh uchenykh] Moskva, Izd-vo Glav. uprav. po ispol'zovaniyu atomnoi energ. pri Sovete Ministrov SSSR. Vol.7. [Technology of atomic raw products] Tekhnologiya atomnogo syr'ia. Pod obshchey red. A.P.Zefirova. 1959. 656 p. (MIRA 14:7)

1. Vtoraya mezhdunarodnaya konferentsiya po mirnomu ispol'zovaniyu atomnoy energii, Zheneva, 1958.
(Uranium) (Thorium)

BOCHVAR, A.A., akademik, obshchiy red.; VINOGRADOV, A.P., akademik, obshchiy red.; YEMEL'YANOV, V.S.; ZEFIROV, A.P., doktor tekhn. nauk, obshchiy red.; ZUBOV, A.I., red.; ZVEREV, G.L., red.; PERSVERZEV, V.V., red.; PCHELINTSEVA, G.M., red.; MAZEL', Ye.I., tekhn.red.

[Proceedings of the Second International Conference on the Peaceful Uses of Atomic Energy, Geneva, 1958] Trudy Vtoroi mezhdunarodnoy konferentsii po mirnomu ispol'zovaniyu atomnoy energii, Zheneva, 1958. (Doklady sovetskikh uchenykh) Moskva, Izd-vo Glav.uprav.po ispol'zovaniyu atomnoi energ. pri Sovete Ministrov SSSR. Vol.3. [Nuclear fuel and reactor metals] IAdernoe goruuchee i reaktornye metally. 1959. 670 p. (MIRA 12:11)

1. International Conference on the Peaceful Uses of Atomic Energy, 2d, Geneva, 1958.
2. Chlen-korrespondent AN SSSR (for Yemel'yanov).
(Nuclear fuels)

ZEFIROV, A.P.; MAKOVETSKAYA, M.A.; ZARGAROVA, M.I.

Present state of lithium technology and its industrial use.
Met. i metalloved. chist. met. no. 2:159-171 '60. (MIRA 13:12)
(Lithium--Metallurgy)

S/089/60/008/06/04/021
B006/B063 82305

21.3200

AUTHORS: Laskorin, B. N., Zefirov, A. P., Skorovarov, D. I.

TITLE: Extraction of Uranium From Solutions and Slimes

PERIODICAL: Atomnaya energiya, 1960, Vol. 8, No. 6, pp. 519-529

TEXT: The present paper gives data on the extraction of uranium from solutions and slimes of sulfuric, nitric, hydrochloric, and phosphoric acids by means of the esters of various acids, liquid cationites, and anionites. The authors discuss mainly methods which can be used in industry. They first describe the extraction of uranium from solutions. They studied the extraction with various organic compounds (e.g. alcohols, ethers, ketones, diketones, and their halogen derivatives, esters of various acids, aliphatic amides, etc.). Alcohols, ethers, and carboxylic acid esters extract uranium from nitric acid solutions. The selectivity of the acetic acid esters increases with their solubility in water, as may be seen from Table 1. The selectivity of the extracting agents decreases in the following order: carboxylic acid

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Extraction of Uranium From Solutions
and Slimes

S/089/60/008/06/04/021
B006/B063 82305

esters, ethers, alcohols (Table 2). Fig. 1 shows the salting-out effect of $\text{Ca}(\text{NO}_3)_2$ in the extraction of uranium by means of isoamyl acetate and dimethyl phthalate. Following this, the authors discuss the extraction by means of phosphoric acid esters. Trialkyl phosphates are well-known selective solvents for the extraction of uranium. The partition coefficient K_p which describes the extractibility, rises with an increase in the hydrocarbon radical up to $\text{C}_5 - \text{C}_6$, after which it drops exponentially. Triaryl phosphates practically do not extract uranium. The selectivity of trialkyl phosphates rises with increasing molecular weight of the extraction solvent. This may be seen from Table 3 which shows the dependence of K_p of uranium on the nature of the hydrocarbon radicals of the phosphoric acid esters. The technological process of the extraction of uranium from nitric acid desorption solutions is schematically represented in Fig. 3. The authors next discuss the extraction of uranium by means of diisoamyl esters of methyl phosphinic acid $[\text{1}(\text{C}_5\text{H}_{11}\text{O})_2\text{POCH}_2]$ (DAMFK). Figs. 4 and 5 show the dependence of K_p on the content of hydrochloric acid and phosphoric acid of the solution from which uranium is extracted. Analogously, the

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Extraction of Uranium From Solutions
and Slimes

S/089/60/008/06/04/021
B006/B063 82305

authors discuss the extractibility of trioctyl phosphin oxide $(C_8H_{17})_3PO$, dialkyl phosphites $[(RO)_2P(OH)]$ with hydrocarbon radicals from C_4 to C_8 , alkyl phosphoric acids, and amines. Alkylamines and alkyl-aryl amines with long chains extract uranium from sulfuric acid solutions and concentrated hydrochloric and nitric acid solutions similarly as ion-exchange resins. The K_p values for U VI are given in Table 4 for numerous amines. Fig. 8 gives the technological scheme for a special case. The last part of the present paper treats the extraction of uranium from ore slimes. The losses of the extraction solvent are discussed, and it is shown that these losses decrease with increasing content of solid substances in the ore slimes or pastes (Fig. 9). The extraction of uranium from an ore paste is schematically shown in Fig. 10 and described. There are 10 figures, 4 tables, and 7 references: 6 Soviet and 1 Yugoslavian.

SUBMITTED: July 18, 1959

Card 3/3

X

ZEFIROV, A.P.; LANIN, A.A.

Production and use of beryllium. Met. i metalloved. chist. met.
no. 2:319-333 '60. (MIRA 13:12)

(Beryllium)

ZEFIROV, A.P., prof., doktor tekhn. nauk; NEVSKIY, B.V.; IVANOV,
G.F.; VORONOVA, A.I., red.; MAZEL', Ye.I., tekhn. red.

[Plants for the processing of uranium ores in capitalist
countries] Zavody po pererabotke uranovykh rud v kapitalisti-
cheskikh stranakh. Pod obshchei red. A.P.Zefirova. Moskva,
Gosatomizdat, 1962. 370 p. (MIRA 15:7)
(Uranium industry)

VERYATIN, U.D.; MASHIREV, V.P.; RYABTSEV, N.G.; TARASOV, V.I.;
ROGOZKIN, B.D.; KOROBV, I.V.; ZEFIROV, A.P., doktor
tekhn. nauk, red.; MURADOVA, A.A., red.

[Thermodynamic properties of inorganic substances; a manual]
Termodinamicheskie svoistva neorganicheskikh veshchestv;
spravochnik. Moskva, Atomizdat, 1965. 459 p. (MIRA 18:12)

AM4024184

BOCK EXPLOITATION

S/0793

Laskorin, B. N.; Zefirov, A. P.; Skorovarov, P. I.

Extraction of uranium from solutions and pulps (Ekstraktsiya urana iz rastvorov i pul'p) Moscow, 1960. 24 p. illus., biblio. No. copies printed not given. (At head of title: Glavnoye upravleniye po ispol'zovaniyu atomnoy energii pri Sovete Ministrov SSSR)

TOPIC TAGS: uranium extraction, uranium ore

PURPOSE AND COVERAGE: Data are presented concerning the extraction of uranium from the sulfate, nitrate, hydrochloric, and phosphate solutions and pulps most frequently encountered in the hydrometallurgy of uranium. Esters of carboxylic, phosphoric, and phosphinic acids, and liquid cation and anion solutions are investigated as extraction agents that are most convenient for industrial application. The process of extracting uranium from thick ore pastes is described for the treatment of high-grade uranium ores.

~~TOP SECRET~~
Cord

SERPOV, Boris Ivanovich; BARASHKOV, Nikolay Aleksandrovich; BYKHANOVA, Etoliya Anatol'yevna; ZEFIROV, Igor' Vasil'yevich; ROSHCHIN, Valentin Alekseyevich; NESTEROV, P.A., inzh., retsenzent; SHAKHOV, A.I., inzh., retsenzent; DOBROLENSKIY, V.P., nauchnyy red.; SMOLEV, B.V., red.; KOROVENKO, Yu.N., tekhn. red.

[Laying of a ship hull from scale drawings] Razmetka pri mashtabnoi razbivke korpusa. [By] B.I. Serpov i dr. Leningrad, Sudpromgiz, 1962. 323 p. (MIRA 15:7)
(Laying off (Shipbuilding)) (Photomechanical processes)

SERPOV, B.I., kand.tekhn.nauk; ZEFIROV, I.V., inzh.

Photographic projection apparatuses for the marking-off of ship
hull plate material. Sudostroenie 28 no.2:61-63 F '62.
(MIRA 15:3)

(Lantern projection) (Shipbuilding--Equipment and supplies)

ZEFIROV, Igor' Vasil'yevich; NIKONOV, Sergey Nikolayevich;
PANKRATOV, Vladimir Petrovich; ORLOV, N.L., rabochiy-
razmetchik, retsenzent; RIMMER, A.I., inzh, retsenzent;
SHAKHOV, A.I., inzh., nauchn. red.; LISOK, E.I., red.

[Laying off in shipbuilding] Sudovaia razmetka. Leningrad,
Sudostroenie, 1965. 411 p. (MIRA 18:8)

ZEFIROV, L.N.

Effect of partial surgical exclusion of the pancreas on some
electrocardiographic indices in dogs. Biuleksp.biol.i med. 54
no.11s46-50 N '62. (MIRA 15:12)

1. Iz kafedry normal'noy fiziologii (zav. - prof. I.N.Volkova)
Kazanskogo meditsinskogo instituta. Predstvljena deystvitel'ny
chlenom AMN SSSR A.V.Lebedinskim.
(ELECTROCARDIOGRAPHY) (PANCREAS SURGERY)

ZEFIROV, L. N.

USSR/Medicine - Physiology

FD 245

Card 1/1

Author : Zefirov, L. N. and Kibyakov, A. V.

Title : Role of acetylcholine in the mechanism of tonic contraction of skeletal muscles

Periodical : Fiziol.zhur. 2, 183-190, Mar/Apr 1954

Abstract : After direct current was applied to the nerve of an isolated nerve muscle preparation in frogs it was stimulated 7 to 15 times per second: this produced a slow tonic contraction which started after an appreciable latent period, slowly increasing to a plateau of low amplitude and followed by very slow relaxation after the end of stimulation. Removal of the pancreas abolished this tonic contraction within 6 to 9 days. Subcutaneous injection of acetylcholine (0.5 cc of a concentration 1:10,000) after the 3rd post-operative day and immediately before the experiment had a compensatory effect in that the contraction was obtained in the pancreas-ectomized animals. It was concluded that removal of the pancreas interferes with the synthesis of acetylcholine. A total of 400 experiments were performed. Four illustrations. Thirteen Soviet references are cited.

Institution : Chair of Normal Physiology, Medical Institute, Kazan'

Submitted : June 16, 1953

ZEFIROV, L.N.; POLETAYEV, G.L.

Some electrophysiological data on the contraction of the anterior abdominal wall (d'efense musculaire). Biul. eksp. biol. i med. 41 no.3: 13-18 Mr '56. (MLBA 9:7)

1. Iz kafedry normal'noy fiziologii (zav.-chlen-korrespondent AMN SSSR prof. A.V.Kibyakov) Kazanskogo meditsinskogo instituta. Predstavlena deystvitel'nyim chlenom AMN SSSR V.N.Chernigovskim.

(ABDOMEN, musc.

electromyography of anterior abdom. musc. in dogs)

(ELECTROMYOGRAPHY

anterior abdom. musc. in dogs)

USSR/Human and Animal Physiology. Neuro-Muscular Physiology. T

Abs Jour: Ref Zhur-Biol., No 8, 1958, 36783.

Author : Zefirov, L.N., Kibyakov, A.V.

Inst :

Title : On the Mechanism of Postural Tetanic Contractions and Their Evolution into Tetany.

Orig Pub: Fiziol zh. SSSR 1956, 42, No 6, 470-476.

Abstract: Stimulation of the peripheral end of the femoral nerve of a cat with a weak current (frequency 10 imp/sec) produces synchronic posture tonic contraction of the isolated quadriceps muscle. With intensification of the stimulation, the synchronic contraction passes into dentate tetany of smaller amplitude. Further increase of the stimulation intensifies the amplitude of the tetany. This is evidence of low lability of the neuro-

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T

Abs Jour: Ref Zhur-Biol., No 8, 1958, 36783.

muscular preparation in postural-tonic contractions and of spasmodic increase of lability, surpassing the frequency of stimulation, in the transition to tetanic contraction. As a result of the sharp increase of lability, a temporary pessimum appears, different from the Vvedenski pessimum; under circumstances of low frequency stimulation the conditions for superposition of the muscle contractions become less favorable as a result of their more rapid succession. Polarization of the nerve distally from the stimulating electrodes produces a lowering of lability, which allows the occurrence of postural-tetanic contraction under all intensities of stimulation. In a series of cases an increase of the amplitude of contractions during the transition from tetany to tonic contraction was observed under these

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Abs Jour: Ref Zhur-Biol., No 8, 1958, 36783.

circumstances. The transition into tetany under conditions of slight polarization becomes more difficult, and under condition of intense polarization it fails to occur altogether. In disturbances of acetylcholine synthesis (within 5-9 days prior to the experiment the tail of the pancreas is removed and its duct is ligated) it is easy to obtain postural-tonic contraction with slow rhythmic stimulation and within a wide range of the force of stimulation. In a series of cases serrate tetany was observed with low frequencies. With intensification of the stimulation the postural-tonic contraction passes into smooth tetany without decrease of the amplitude of contractions and without the appearance of the serrate type of tetany. This proves the participation of acetylcholine in the changes in

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Abs Jour: Ref Zhur-Biol., No 8, 1958, 36783.

lability during the transition from tonic to tetanic activity. These observations contradict the hypothesis of Sharipova R.R. and Zhukov, E.K. (Fiziol. zh. SSSR, 1954, 40, 445) of the existence of a special apparatus controlling postural-tonic contractions.

Card : 4/4

USSR/Human and Animal Physiology. Nerve and Muscle Physiology. T-9

Abs Jour: Ref Zhur-Biol., No 12, 1958, 55948.

Author : Zefirov, L.N., Kibyakov, A.V., Orlov, P.S.

Inst :

Title : The Role of Acetylcholine in the Mechanism of the
Skeletal Muscles' Reflectory Tonus.

Orig Pub: Fiziol. zh. SSSR, 1956, #2, No 11, 971-976.

Abstract: A spinocortically dissected frog with exposed sciatic nerves was suspended and the nervation height of the digits was noted. After the nerve was severed, the paw which has lost its reflectory tonus became 4.5-14.0 mm longer. On the 4th to 9th day the removal of the pancreas, which caused an impairment to the formation of acetylcholine (I) in the organism, clearly lowered and even annihilated the tonus of

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Abs Jour: Ref Zhur-Biol., No 12, 1958, 55948.

the muscles (at which time the difference in the length of the paws before and after the severance of the nerve equaled 0.2-0.3 mm). When (I) was administered in order to compensate this impairment, the tonus was completely restored. The flexor reflex was determined by using a fibular nerve specimen, a semitendinosus. On the 4th to 9th day after the removal of the gland, the diapason of effective frequencies was greatly constricted and the nerve centers' reflectory responses diminished. Also, the reflectory after-effects of contractions disappeared (on the 7th day). Thus, (I) should be considered as a factor which determines the functional state of the central nervous system to a great

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USSR/Human and Animal Physiology. Nerve and Muscle Physiology. T-9

Abs Jour: Ref Zhur-Biol., No 12, 1958, 55948.

extent, and which promotes lability and functional stability of the nerve centers.

Card : 3/3

ZEFIROV, L.N.; SHAPIRO, Yu.G.

Tetanic single contractions of the neuromuscular apparatus in the frog following excision of the pancreas [with summary in English].
Biul.eksp.biol. i med. 43 no.1:23-28 Ja '57. (MIRA 10:8)

1. Iz kafedry normal'noy fiziologii (zav. - chlen-korrespondent
AMN SSSR prof. A.V.Kibyakov) Kazanskogo meditsinskogo instituta
(dir. - dotsent P.A.Vyaselev). Predstavlena akademikom L.A.Orbeli.

(NERVE MUSCLE PREPARATION,

tetanic single contractions after pancreatectomy in
frogs (Rus))

(PANCREAS, effect of excision,

tetanic single contractions of nerve musc. prep. in
frogs (Rus))

ZEFIROV, L.N.

Relation between tonelike and postural contractions [with summary
in English]. *Fiziol.zhur.* 43 no.4:344-350 no '57. (MLRA 10:10)

1. Kafedra-normal'noy fiziologii Meditsinskogo instituta, Kazan'.
(REFLEX, POSTURAL,
relation of tonus-like to postural contractions (Rus))
(NERVE-MUSCLE PREPARATION,
same)