SOV/124-58-7-8139 D

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 7, p 117 (USSR)

AUTHOR: Ninua, N.A.

TITLE: On the Calculation of Unbraced Trusses (K raschetu bezraskosnykh ferm)

ABSTRACT: Bibliographic entry on the author's dissertation for the degree of Candidate of the Technical Sciences, presented to the Tbilissk. in-t inzh. zh.-d. transp. (Tbilisi Institute for Rail Transportation Engineering), Tbilisi, 1957

ASSOCIATION: Tbilissk. in-t inzh. zh.-d. transp. (Tbilisi Institute for Rail Transportation Engineering), Tbilisi

1. Beams--Mathematical analysis

Card 1/1

SOV/124-58-10-11716

Translation from: Referativnyy zhurnal. Mekhanika, 1958, Nr 10, p 141 (USSR)

AUTHOR: N.nua, N. A.

TITLE: Calculation of Trusses Without Diagonals (K raschetu bez askosnykh ferm)

PERIODICAL: Nauchn. soobshch. Tbilissk. in-t zh.-d. transp., 1957, Nr 12, 51 pp, ill.

ABSTRACT: Calculation of equi-paneled trusses without diagonals with horizontal chord members of equal rigidity and vertical posts is studied under the action of a concentrated force acting on one of the joints of the frame which has previously been resolved into its symmetrical and skew-symmetric components relative to the horizontal axis. One of the possible basic systems of the method of forces is chosen - a series of three-hinged frames - in which the calculation is reduced to a system of three-term equations by grouping the principal unknowns relative to the vertical axis of symmetry of the frame. By neglecting the deformations caused by longitudinal and transverse forces the number of the fundamental unknowns is equal to the number of panels in the truss. Explicit expressions for the

Card 1/2

Calculation of Trusses Without Diagonals

fundamental unknowns are given for the application of the concentrated force at different joints as well as graphs and tables for the terminal bending moments in the war ous panels. Construction of the influence lines is studied. Some allowable simplifications in calculations are pointed out.

A. A. Gorin

NIKUA, N. Ye., Doc Tech Sci (diss) -- "Theoretical principles of the working process, methods of computation and design of a regenerative rotary air-heater with a movable ball cover". Moscow, 1959. 23 pp (Min Transportation USSR, Moscow Order of Lenin and Order of Labor Red Banner Inst of Railroad Transport Engineers im I. V. Stalin), 150 copies (KL, No 21, 1959, 114)

18(5) SOV/128-59-9-8/25

AUTHOR: Nimua, N.Ye., and Kumskov, V.T., and Aksenov K.F., Candidates of Technical Sciences

TITLE: Regenerative Air Heating in Cupolas

PERIODICAL: Liteynoye proizvodstvo, 1959, Nr 9, pp 27-29 (USSR)

ABSTRACT: Utilization of cupola outlet gases represents one of the most important factors in increasing foundry productivity. The Iron Foundry imeni Voykov has introduced an air-heating process whereby the outlet gases having a temperature of 500° - 800°C are passing through a number of balls placed in a cylinder (Fig 6). The air-heater is provided with a rotor that has 12 sectors and serves for rotation of the balls. The optimum diameter of balls may vary from 3 to 10 mm depending on the cleanliness of gases passing through them. The function of the air-heater consists of an alternating admission of hot gases and cool air into the cylinder. The gases entering the air-heater are giving a part of their heat to the balls which, in turn, heat up the air passing through the cylinder. Thus, the gases cool off from 800°C to 250°, while the air becomes heated up to 400° - 420°C. Rotation

Card 1/2

Regenerative Air Heating in Cupolas

of balls intensifies the process of heat-exchange between the gases and the balls, and favors the rate of air-heating. At the same time, the air-heater serves as a cleaning medium purifying the cupola outlet gases. There are 4 graphs, 6 diagrams and 2 Soviet references.

Card 2/2

MINUA, M.Ya.

Heat transfer and resistance in a regenerative rotary air preheater with a movable ball-type capping. Trudy MIIT no.139:119-121 '61. (MIRA 16:4)

1. Gruzinskiy politekhnicheskiy institut.
(Air preheaters)

NIKUA, Nikolay Yermolayevich; KOMAROV, V.T., red.

[Regenerative rotary air preheaters] Regenerativnyi vrashchaiushchiisia vozdukhopodogrevatel'. Moskva, Vysshaia shkola, 1965. 105 p. (MIRA 18:7)

NIKZHBADGAR, S.

Data on earthquakes on the territory of the Mongolian People's Republic. Biul. Sov. po seism. no.6:33-35 '57. (MIRA 11:3)

1. Komitet nauk Mongol'skoy Narodnoy Respubliki, Ulan-Bator.
(Mongolia--Earthquakes)

NI'O, N., Ml. nauchen sutrudnik.

Colorimetry and its application in pharmaceutic analysis.
Farmatsiia, Sofia 4 no.3:6-9 May-June 54.
(COLORIMETRY,
in pharmaceutic analysis)

NIOFITOV, Z., starshiy leytenant; BUKIN, V., leytenant

Solution of problems Nos. 9-12 on preparation fire published in no.9. Voen.vest. 38 no.12:74-75 D '58. (MIRA 12:1)
(Shooting, Military) (Tank warfare)

BUACHIDZE, V.G.; BALUASHVILI, A.A.; NIORADZE, T.N.; LATSABIDZE, L.L.

Effect of exercise therapy on the restoration of impaired coordination of movements in some forms of neurasthenia (with vestibulopathy). Trudy Tbil.GIDUV 6:203-210 '62.
(MIRA 16:2)

(EXERCISE THERAPY) (NEURASTHENIA)

L 38313-66

ACC NR: AP6027981 SOURCE CODE: CZ/0024/66/000/004/0104/0106

AUTHOR: Hipl, Zdenek (Engineer); Krudenc, Jaroslav (Engineer)

ORG: Institute of Geodesy and Cartography, Pardubice (Ustav geodezie a kartografie)

TITLE: Preparation of a sectoral summary of cultural areas in accordance with the data of real estate registers

SOURCE: Geodeticky a kartograficky obzor, no. 4, 1966, 104-106

TOPIC TAGS: punched card, computer, economic system

ABSTRACT: Experience in preparation of the summary by means of punched-card machinery is described. Summaries were prepared of all the subtypes of production and of the total values of parcels by kinds. Agricultural cooperatives were classified in groups according to their areas. Processes used in a surveying department and in a computer center are discussed. Orig. art. has: 2 tables. [Based on authors' Eng. abst.] [JPRS: 36,844]

SUB CODE: 09, 05 / SUBM DATE: none

Card 1/1 UDC: 347.235.11(437)"1965" : 528.5

PAN'KO, Ivan Kallistratovich; MAKHACHOV, Aleksandr Yakovlevich; NIFONKO, Yu. I., red.

[Economic regions of the Ukraine] Ekonomichni raiony Ukrainy. Kyiv, Politvydav Ukrainy, 1965. 94 p. (MIRA 18:8)

POLAND/Chemical Technology. Chemical Products and Their Application. Industrial Organic Synthesis H-15

Abs Jour : Ref Zhur - Khim., No 24, 1958, No 82559

Author : Miraz S.
Inst :
Title : $Fe_2(SO_4)_3$ as Catalyst in the Synthesis of Dibutylphthalate

Orig Pub : Roczn. chem., 1957, 31, No 3, 1047-1048

Abstract : In the synthesis of dibutylphthalate (I) byesterification of C_4H_9OH (II) with phthalic anhydrite (III), catalysts (K) normally employed are: organic or mineral acids, inorganic salts, or ion exchange resins. The use of mineral acids (particularly H_2SO_4) results in the formation of tar and requires neutrolisation of the product. The use of organic acids requires, in addition to the neutrolization, separation of the product, which, at times imposes undue difficulties. Majority of the inorganic acid salts must be employed in rather large quantities. $Fe_2(SO_4)_3$ (IV) may be used conveniently as a catalyst. It has not been employed,

Card : 1/2

NIRAZ, S.

1

(High-boiling esters. Politechnika Swietokrzyska (by Antoni Zielinski and Seweryn Niraz). Pol. 41,060, July 5, 1958. $FeSO_4$ and $Fe_2(SO_4)_3$, anhyd. or hydrated, prevent excessive corrosion when used instead of H_2SO_4 to catalyze formation of high-boiling esters in the standard esterification process. Crude esters are almost [illegible] and [illegible] and can be dried without [illegible]

3
1-JAS(WA)

NIRENBLAT, S., mgr inz.

Thermal cracks and breaks in massive concrete blocks. Gosp wodna 24 no. 4:131-135 Ap '64.

1. Energoprojekt, Warsaw.

NIRENBURG, V.L.; POSTOVSKIY, I.Ya.; CHERTKOVA, E.I.

1-aryl-5-alkylmercaptotetrazole and 1-aryl-5-alkylsulfonyltetrazole and their antituberculosis activity. Izv.vys.ucheb.zav.; khim. i khim.tekh. 8 no.2:258-261 '65. (MIRA 18:8)

1. Ural'skiy politekhnicheskiy institut imeni Kirova i Sverdlovskiy nauchno-issledovatel'skiy institut tuberkuleza.

NIRAZ, Seweryn; CHODKOWSKI, Edward

Diminishing the polychlorobenzene content in the continuous chlorination process of benzene in liquid phase. Chemia stosow 8 no. 1:117-128 '64.

1. Department of Biochemistry, College of Agriculture, Szczecin (for Niraz). 2. Department of Organic Chemical Technology, Technical University, Szczecin.

NIRENBERG, L.

Some aspects of linear and nonlinear partial differential equations. Usp. mat. nauk 18 no.4:101-118 Jl-Ag '63. (MIRA 16:9)

BOBROVA, L.A.; MIRKNBERG, M.A.

Adsorption of methane from a hydrazoic mixture using zeolites.
Neftepar. i neftekhim. no.2:32-33 '64. (MIRA 17:8)

1. Ufimskiy neftyanoy institut, Salavatskiy kombinat.

NIRENBERG, M.D., inzh.

Work practices in controlling the carrying out of regulations. Bezop. truda v prom. 8 no.12:35 D '64. (MIRA 18:3)

1. Upravleniye Moskovskogo gorodskogo okruga Gosudarstvennogo komiteta pri Sovete Ministrov RSFSR po nadzoru za bezopasnym vedeniyem rabot v promyshlennosti i gornomu nadzoru.

NIRENBLAT, S., mgr., inż.

On cost abatement and shortening of the time of construction of hydroelectric power stations. Gosp wodna 21 no.8:317-320 Ag '61.

1. "Energoprojekt" - USSR.

NIRENBIATT, S., mgr inz.

Determination of earth pressure on buttresses put on nonrocky soil foundations. Gosp wodna 24 no. 1: 11-16 Ja '64.

1. Energoprojekt, Warszawa.

NIRENBLAT, Saloma, mgr inż

Cementation of rocky and alluvial soils in the construction of dams and power tunnels. Gosp wodna 23 no.2:60-67 F '63.

1. Energoprojekt, Warszawa.

NIRENBURG, V. L.

79-1-42/63

AUTHORS: Nirenburg, V. L., Poutovskiy, I. Ya., Cherkasov, V. N.

TITLE: On Some Aryl Derivatives of Cyanogen Thiourea (O nekotorykh arilproizvodnykh tsiantionochevviny)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol.28, Nr 1, pp.198-203 (USSR)

ABSTRACT: In publications a number of thiourea compounds were described which possess biological activity. A large number of these papers was recently devoted to the derivatives of aminothiourea (thiosemicarbazide), among whom compounds of an antituberculous activity were found. Other derivatives of thiourea could also be of interest, thus e.g. those with the physiologically active cyanogen group. Thus it was attempted to synthesize some N-aryl-N'-cyanogen-thioureas (Ar-NH-CS-NH-C≡N). The easily accessible 5-imino-3-thion-1,2,4-dithiazolidine (isopersulfocyanic acid, "hydroxanthane") formula (I) served as initial product. This product which had already been obtained by Wöhler 1821 (reference 3) forms from potassium thiocyanate and sulfuric acid in the cold. In the conversion of 5-imi-

Card 1/3

79-1-42/03

On Some Aryl Derivatives of Cyanogen Thiourea

no-3-thion-1,2,4-dithiazolidine with aromatic amines the heterocycle splits with elimination of elementary sulfur and forms 1-aryldithiobiurates. Dithiobiurate easily oxidizes and is again converted to a cyclic dithiazolidine compound (III) "thiuret" which under the influence of a caustic potash solution is subject to splitting, where N-aryl-N'-cyanogen-thiourea manifests itself as a potassium salt of the isoform (IV). Thus the potassium salts and the methyl ethers of the isoform N-aryl-N'-cyanogen-thiourea were synthesized. It was found that, in contrast to aromatic formic acids, α-aminopyridine and α-aminopyrimidine split up "hydrxanthane", under which conditions thiocyanogen-hydrogen-salts of heterocyclic amines (not of dithiobiurates) form. It was shown that the potassium salts of cyanamidodithiocarbonic acid and N-aryl-N'-cyanisothioureas with various metals yield precipitates insoluble in water. On examination in vitro the A-aryl-N'-cyanisothiourea-salts proved to be inactive against the tuberculosis bacteria. There are 2 tables, and 10 references, 1 of which is Slavic.

ASSOCIATION: Ural Polytechnic Institute (Ural'skiy politekhnicheskiy institut)

Card 2/3

NIRENBURG, V.L.; POSTOVSKIY, I.Ya.

Cyanoethylation of 1-phenyl-5-tetrazolinethione. Zhur. ob. khim. 34 no.10:3200-3203 O '64. (MIRA 17:11)

1. Ural'skiy politekhnicheskiy institut imeni S.M. Kirova, Sverdlovsk.

5(3)

AUTHORS: Postovskiy, I. Ya., Mirenburg, V. L. SOV/156-59-2-29/48

TITLE: Thiosemicarbazide Derivatives of Imino-di-acetic Acid (Tiosemikarbazidnyye proizvodnyye iminodiuksusnoy kisloty)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya tekhnologiya, 1959, Nr 2, pp 330-332 (USSR)

ABSTRACT: The derivatives of imino-di-acetic acid have gained considerable importance as complex-forming compounds. Some of them, the so-called "complexons" are not only applied in analytical chemistry but also in medicine as detoxicators promoting the separation of detrimental metal compounds. Substances containing another group beside the residue of imino-di-acetic acid appeared to be of interest for biological experiments. For this purpose thiourea was chosen as it shows - as well as some of its derivatives - reactions together with various metal salts; apart from this thiourea derivatives are also bactericides and fungicides. The compounds

$$R\text{-}NH\text{-}C(=S)\text{-}NH\text{-}N(CH_2\text{-}COOH)(CH_2\text{-}COOH)$$

($R = C_6H_5$, $p\text{-}ClC_6H_4$, $p\text{-}CH_3OC_6H_4$,

Card 1/2

Thiosemicarbazide Derivatives of Imino-di-acetic Acid

1-$C_{10}H_7$) were synthesized. Tables 1 and 2 show the physical data of these compounds. The reactivity of the sodium salts with respect to compler formation with metals was polarographically examined. Soluble complexes form with Co^{2+} at pH 2.4-12.0. There are 1 table and 4 references, 1 of which is Soviet.

PRESENTED BY: Kafedra organicheskoy khimii Ural'skogo politekhnicheskogo instituta im. S. M. Kirova
(Chair of Organic Chemistry, Ural Polytechnic Institute imeni S. M. Kirov)

SUBMITTED: July 22, 1958

Card 2/2

POSTOVSKIY, I.Ya.; NIRENBURG, V.L.

Aminomethylation of 1-aryl-5-tetrazolinethiones and the structure of the bases obtained. Zhur. ob. khim. 34 no. 8:2517-2521 Ag '64. (MIRA 17:9)

1. Ural'skiy politekhnicheskiy institut imeni S.M. Kirova.

NIRENBURG, Ya. L.

PHASE I BOOK EXPLOITATION 951

Sverdlovsk, Russia. Institut istorii partii

Sotsialisticheskoye stroitel'stvo na Urale; sbornik statey (Socialist Construction in the Ural Industrial Area; Collection of Articles) [Sverdlovsk] Sverdlovskoye knizhnoye izd-vo, 1957. 345 p. 5,000 copies printed.

Ed. (front of book): Zuykov, V.N., Candidate of Historical Sciences; Ed. (back of book): Getling, Yu.; Tech. Ed.: Pal'mina, N.

PURPOSE: This collection of articles is intended for the general reader.

COVERAGE: The collection contains reports on the economic growth of the Ural Industrial Area, including the development of farming. Particular attention is given to the role played by this region during the 2nd World War. Relatively little space is devoted to the current Five Year Plan. There are 20 photographs in the text, some of which show industrial objects.

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Buzunov, V.Ye. Defeat of the International Intervention and of the Kolchak Movement in the Ural Region 5

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Mirenburg, Ya.L. Restoration and Consolidation of Soviet Power in the Ural Region Following the Defeat of Kolchak (1919-1920) 45

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Zuykov, V.N. The Ural Party Organizations in the Struggle for the Victory of Collective Farming (1927-1934) 177

Nesterenko, M.S. Heroic Feats of Ural Workers During the Great Patriotic War 211

PREDVODITELEVA, A.D., kand.tekhn.nauk; DUBROVSKAYA, M.P., inzh.; [illegible], B.Z., inzh.

Using new kinds of synthetic fibers in the knit goods industry. Leg. prom. 18 no.7:20-22 Jl '58. (MIRA 11:9)
(Knit goods industry) (Textile fibers, Synthetic)

NIRENSHTEYN, B.Z., inzh.; KOBLENTS, S.G., inzh.

Improving the quality of "Chlorin" yarn. Tekst.prom. 19
no.10:70-72 O '59. (MIRA 13:1)
(Yarn) (Knit goods)

MIRENSHTEYN, B.Z., nauchnyy sotrudnik; PREDVODITELEVA, A.D., nauchnyy sotrudnik PARSHINA, N.N., nauchnyy sotrudnik; AGAPOVA, A.D., nauchnyy sotrudnik; RAPOPORT, K.A., nauchnyy sotrudnik KOBLENTS, S.G., inzh.

Manufacture of chlorin knit underwear and its therapeutic use. Tekst.prom. 21 no.6:71-73 Je '61. (MIRA 15:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut trikotazhnoy promyshlennosti (for Mirenshteyn, Predvoditeleva, Parshina, Agapova).
2. Institut obshchey i kommunal'noy gigiyeny (for Rapoport).
3. Trikotazhnaya fabrika "Krasnaya Zarya" (for Koblents).
(Knit goods industry)
(Underwear)

LEVENSON, L., professor; [redacted], L., inzhener.

Full utilization of an absorption cold storage plant for the production of Ruberoid. Khol.tekh. 31 no.4:20-25 O-D '54.
(MLRA 8:1)
(Refrigeration and refrigerating machinery) (Roofing)

MIRENSHTEYN, Z.N.

Using hydraulic horizontal crushers in making roofing paper.
Stroi. mat. 7 no.2:25-26 F '61. (MIRA 14:3)

1. Nachal'nik tekhnicheskogo otdela Odesskogo ruberoydnogo zavoda.
(Roofing)

MIRENSHTEYN, Z. Sh., inzh.

Methods for calculating time required for drying roofing paper. Stroi. mat. 6 no.3:33-35 Mr '60. (MIRA 13:6)
(Roofing)

NIRENSHTEYN, Z.Sh., kand. tekhn. nauk

Use of double-walled steel cylinders in drying roofing paper.
Stroi. mat. 10 no.11:26-27 N '64.
(MIRA 18:1)

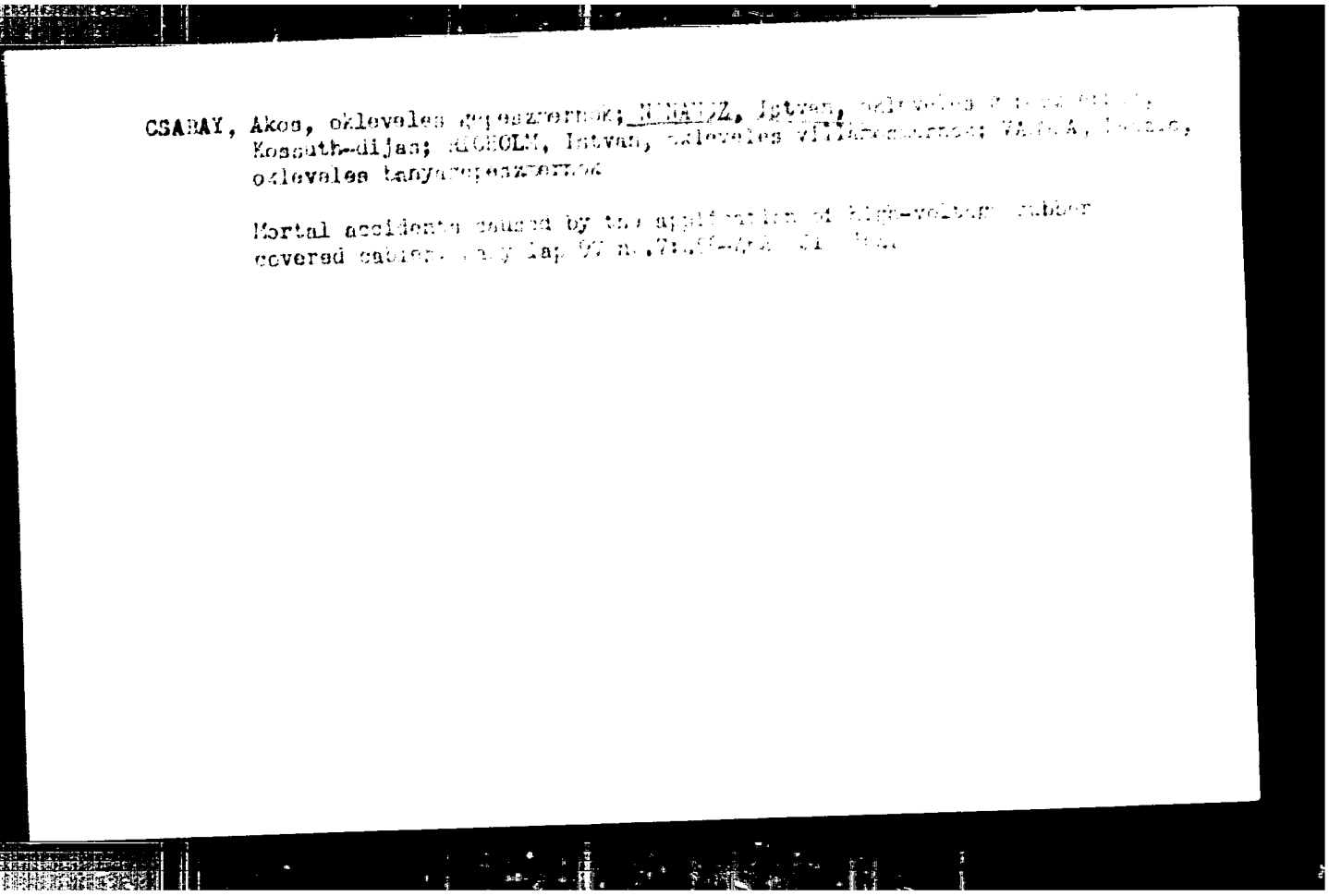
DARKANBAYEV, T.B.; LYSENKO, M.K.; MIRETINA, K.V.

Effect of boron, molybdenum, and manganese on some quality indices of tomatoes. Trudy Inst.bot.AN Kazakh.SSR 20:144-155 '64.
(MIRA 18:1)

NIRENSHTYEN, Z.Sh.

Radiation dryer for cardboard. Bum.prom. 36 no.1:20-21 Ja '61.
(MIRA 14:3)

1. Nachal'nik tekhnicheskogo otdela Odesskogo ruberoidnogo zavoda.
(Cardboard—Drying)



CSABAY, Akos, oklevelez gyogyszeresz; KISS, Istvan, oklevelez [illegible]; Kossuth-dijas; KOKOLY, Istvan, oklevelez villamosmernok; VASS, [illegible], oklevelez tanyagyogyszeresz

Mortal accidents caused by the application of high-voltage rubber covered cables [illegible]

PA 167T72

USSR/Metals - Gas Cutting Aug 50

"Cutting Torches Operating on Gases Other Than Acetylene," A. K. Minburg, Engr, VNIIAVTOGEN (All-Union Sci Res Inst of Autogenous Welding)

"Avtogen Delo" No 8, pp 22-23

VNIIAVTOGEN developed two cutting torches, RZP-49 and URZ-49, for oxygen cutting using illuminating gas, coke-oven gas, and methane for preheating. Torches have two changeable injectors and five removable tips. Gives operating characteristics. Experiments showed possibility of cutting low-carbon steels from 5 to 250 mm thick. Speeds were similar

167T72

USSR/Metals - Gas Cutting (Cont'd) Aug 50

to those of oxyacetylene cutting, but cost is considerably lower.

167T72

MINBURG, A. K., Engr

USSR/Engineering - Flame Cutting, Feb 51
Equipment

"Methods for Designing Injecting Torches Operating on Substitutes for Acetylene," A. K. Minburg, Engr, VNIIAvtogen

"Avtogen Delo" No 2, pp 9-13

Used methane and synthetic coke gas. Studied detn of optimum ratio of gases in preheating mixt; detn of conversion coeff between acetylene and substitute gas; permissible speeds of fuel mixt flow from tips; consumption of oxygen and fuel; orifice dimensions for fuel mixt; detn

185T20

USSR/Engineering - Flame Cutting, Feb 51
(Contd)

of hole-diams in injector and mixing chamber. Steel up to 250 mm thick may be cut efficiently by torches of this design.

185T20

NINBURG, A. K.

USSR/Engineering - Flame Cutting, Processes — Oct 51

"Effect of Oxygen Purity on the Process of Surface Oxygen Cutting," A. K. Ninburg, Engr, VNIIavtogen

"Avtogen Delo" No 10, pp 13-16

Describes expts with oxygen of 8 grades from 85.5 to 99.4% pure. Surface cutting of low-carbon steel is impossible with oxygen of purity less than 95%. There is optimum cutting rate for each value of oxygen purity. At this rate max productivity of operation and min oxygen consumption are attained.

202T41

NIKBURG, A. E.

"Investigation of the Parameters of Surfaces of Oxygen Cutting and Methods of Torch Design for this Process With the Use of Various Gases." Sub 13 Sep 51, Moscow Order of the Labor Red Banner Higher Technical School imeni Bauman

Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55

USSR/Engineering - Flame Cutting, Fuel May 52

"Replacing Acetylene by Other Fuel Gases in Oxyacetylene Cutting," A. K. Minburg, Engr, VNII avtogen

"Avtogen Delo" No 5, pp 9-13

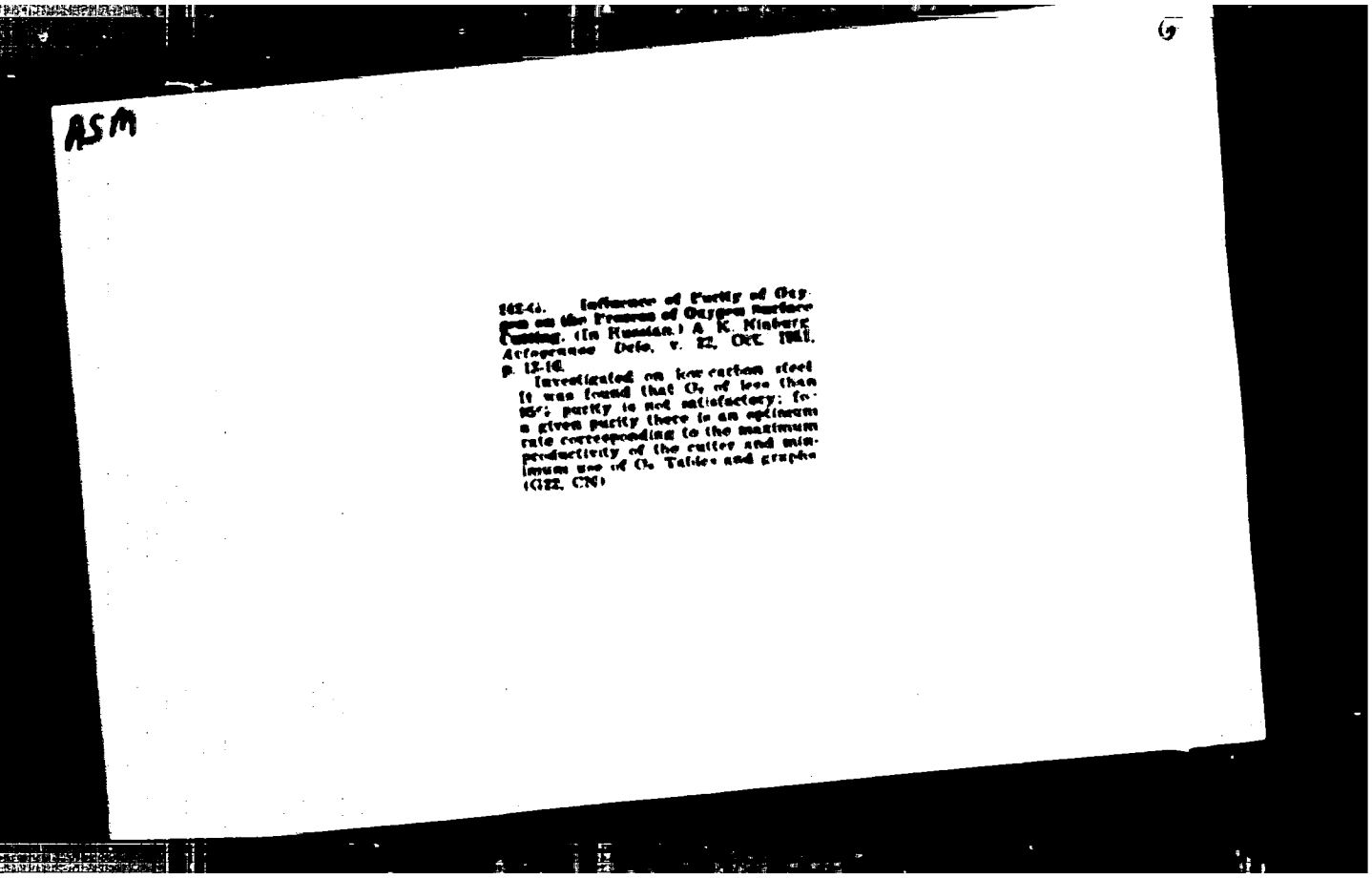
Develops method for detg technological parameters of fuel mixt, such as oxygen-gas ratio and coeff of substituting other gases for acetylene, and for calcg orifice diams and permissible rate of mixt flow. Method gives all data necessary for designing

21T39

tips of cutting torches and permits detg possibility for utilizing given gas in oxygen cutting. Only knowledge of gas compn is required, calorimetric measurements being eliminated.

21T39

[redacted], A. K. (ENGR)



ASM

162-44. Influence of Purity of Oxygen on the Process of Oxygen Surface Cutting. (In Russian.) A. K. Kinbarg. Avtogennoe Delo, v. 22, Oct. 1951. p. 12-16.

Investigated on low carbon steel it was found that O_2 of less than 95% purity is not satisfactory; for a given purity there is an optimum rate corresponding to the maximum productivity of the cutter and minimum use of O_2. Tables and graphs (GZZ, CN)

ACCESSION NR: AP4019234 S/0056/64/046/002/0671/0672

AUTHOR: Miri, Yu.

TITLE: The positive pion plus proton to two pions plus nucleus reaction near the threshold

SOURCE: Zhurnal eksper. i teor. fiz., v. 45, no. 2, 1964, 671-672

TOPIC TAGS: Integral Low equations, algebraic Low equations, scattering amplitude, scattering amplitude expansion, unitarity condition, crossing relations, N/D method, Salzman method, Low equation solution

ABSTRACT: Reactions in which two pions are produced by collision between a positive pion and a proton are considered near threshold, and the differential cross sections of these reactions are obtained accurate to third-order terms in the relative momenta of the produced particles. This is a refinement of earlier work by V. V. Anisovich, A. A. Ansel'm, and V. N. Grivov (ZhETF, v. 24, 224, 1962), who carried out the calculations to second-order terms inclusive only. The results obtained serve as a first-order correction to

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ACCESSION NR: AP4019234

to the previous results. The total probability of the three-particle reaction can be obtained by summing the earlier results and those obtained in the present paper. "In conclusion I am deeply grateful to A.A. Ansel'm for help with the work." Orig. art. has: 7 formulas.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR (Physicotechnical Institute AN SSSR)

SUBMITTED: 10Jul63 DATE ACQ: 27Mar64 ENCL: 00

SUB CODE: PH NO REF SOV: 003 OTHER: 002

Card 2/2

NIKI, Yu.

The $\pi^+ + p \rightarrow \pi^+ \pi^+ n$ reaction near the threshold. Zhur. eksp. i teor. fiz. 46 no.2:671-672 F '64. (MIRA 17:9)

1. Fiziko-tekhnicheskiy institut imeni A.F. Ioffe AN SSSR.

CHERNYKH, Vladimir Petrovich; MIRIZIVA, N.T., red.

[Effect of specialization upon the level of labor productivity] Vliianie spetsializatsii na uroven' proizvoditel'nosti truda. Moskva, Ekonomika, 1965. 99 p. (MIRA 18:9)

BONDARENKO, N.A., inzh.; RATNER, A.M., inzh.; SOKOLOV, K.A., inzh.; GUBANOV, N.P., inzh.; SORIN, N.M., inzh.; TARAKANOV, O.P., inzh.; IVANOV, S.M., inzh.; MIRK, A.D., inzh.; NOVKAKH, S.Ye., kand.tekhn. nauk; FILIPPOV, V.V., inzh.; KHAYKIS, L.B., kand.tekhn.nauk; LEBEDEV, V.I., inzh.; VELICHKIN, Ye.A., inzh., red.; KHITROV, P.A., tekhn.red.

[Handbook for mechanics of a construction project] Spravochnik mekhanika stroitel'nogo uchastka. Pod red. K.A.Sokolova. Moskva, Vses.izdatel'sko-poligr.ob"edinenie M-va putei soobshcheniia, 1960. 619 p. (MIRA 14:3)
(Mechanical engineering) (Road machinery)
(Railroads--Construction)

89813

S/193/60/000/006/002/015
A004/A001

1.2300

AUTHORS: Nirk, A.D., Muller, M.Z.

TITLE: Automatic for the Welding of Reinforcement Mesh

PERIODICAL: Byulleten' tekhniko-ekonomicheskoy informatsii, 1960, No. 6, pp. 10 - 12

TEXT: The Bushevetskiy stankoremontnyy zavod (Bushevets Machine Tool Repair Plant) has produced in 1959 a welding automatic with a capacity of 3,500 welding spots/hour for the welding of reinforcement mesh up to 4.5 m wide and of practically unlimit length. The welding machine is a design of the inventor P.I. Beletskiy and was projected by the design office o Glavstroymekhanizatsiya of the Ministerstvo transportnogo stroitel'stva (Ministry of Transport Construction). The automatic welding machine operates in the following way: Actuated by a rope drive, a welding transformer with electrode panel is traveling along the welded bed structure, while the carriage with the upper shunting clamps travels along a girder. Drive 1 with the aid of cam 2, levers 3, pull 4 and squeezing springs displaces the upper beam upwards and downwards, while drive 5 with the aid of

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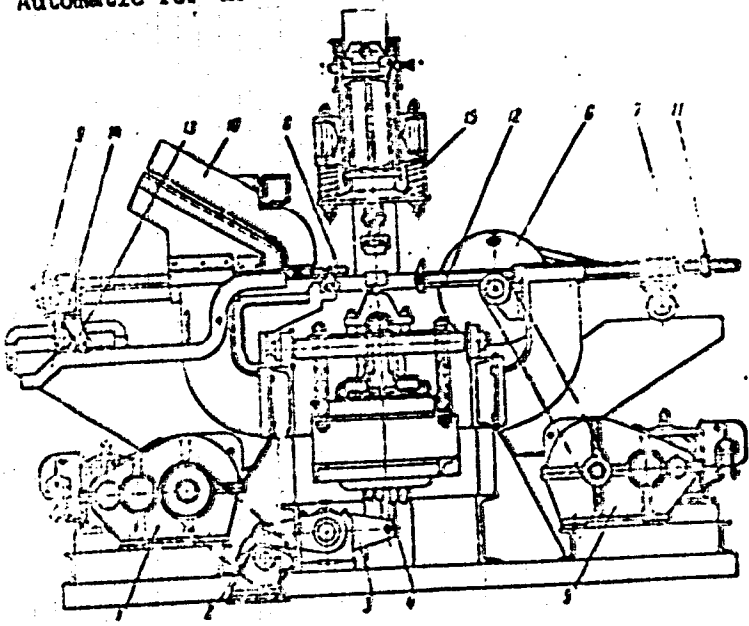
Automatic for the Welding of Reinforcement Mesh



crankshaft 6 makes frame 7 carry out reciprocating movements in the horizontal plane. The indexing rods 8, actuated by a special magnet and gear with rack 9, can rotate around their longitudinal axis. Loading installation 10 is mounted on the bed. The slot width of this installation can be regulated according to the bar diameter of the mesh being welded. Prior to welding, the bars are straightened, then the longitudinal bars are placed in special jig holes located at a definite distance from another. The transverse bars are placed into the slots of the loading device. The

Card 2/4

Automatic for the Welding of Reinforcement Mesh

longitudinal pitch of the automatic is set by displacing the stop bushes on grip rods 12. The working cycle of the automatic begins with the frame of the feed mechanism being moved towards the loading device, the notches in the indexing rods tallying with the slot of the loading device and roll 13, while the left end of lever 14 rises. The right end of the lever is lowered and a transverse bar falls into the notch of the indexing hook - the utmost left position of the crankshaft. Then the frame with the transverse bar is displaced towards the reverse direction, i.e. in the direction of the electrodes. When the transverse bar has reached the welding line, the frame stops automatically and the transverse bar is fixed over the electrodes. Then springs 15 with the upper shunting clamps are pressing the bars against the lower electrodes. The time of preliminary pressing and welding time is controlled by an electron time relay. After having welded a whole row of spots, the welding transformer stops in one of the utmost positions, the feed mechanism is actuated and the frame together with the indexing rods is traveling again towards the loading device. The ready mesh is lifted with the aid of a special winch, which rotates in synchronization with the feed drive of the automatic. The following technical data are presented: dimensions of the mesh honeycombs - from 80 x 100 to 250 x 400 mm; mesh adjustment interval - 20 - 25 mm; number of spots welded simultaneously - 2 or 4; diameter combination of rods

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Automatic for the Welding of Reinforcement Mesh

being welded; of smooth profile steel - from 3 + 3 to 16 + 16 mm, of steel with changing profile - from 6 + 6 to 8 + 8 mm; duration of the automatic cycle (when operating with four electrodes and a mesh width of 4,400 mm and a pitch of 100 mm) 44 seconds; welding delay - 0.04 - 1.4 sec; beam pressing force - 800 - 1,200 kg, power of welding transformer - 107 kva; necessary power - 62 kw; water consumption for cooling the welding spot - 0.25 m^3/h; overall dimensions (length x width x height) - 6,663 x 2,300 x 1,900 mm; weight - 4,400 kg. There is 1 figure.

Card 4/4

NIRK, A.D.

Make small machinery available to the construction of transportation systems. Trans. stroi. 13 no.12[illegible] D'63 (MIRA 17:?)

1. Glavnyy inzh. Glavnogo upravleniya mekhanizatsii stroitel'stva.

MIRKA, Ye.A., starshiy prepodavatel'.

Academic practice conference of chemistry teachers of Moldavian schools. Khim.v shkole 14 no.5:92-93 S-O '59. (MIRA 12:12)

1. Kafedra khimii Tiraspol'skogo gospedinstituta im. T.G. Shevchenko.
(Moldavia--Chemistry--Study and teaching)

NIMAN, S.A., laborant

Making films from the succulent layer of the onion. Zdrav.Bel. 8 no.2:56 F '62. (MIRA 15:11)

1. Kafedra obshchey biologii Vitebskogo meditsinskogo instituta (zav. kafedroy - dotsent E.M.Zubina).
(PLANT CELLS AND TISSUES)

L 02271-67

ACC NR: AP6028254

uniform in the first approximation and to be given in succeeding approximations by the solution of the diffusion equation for the total flux calculated in the preceding approximation. The results of the computations are compared with those given by the simple diffusion theory, and it is concluded that the curvature of the ion trajectory significantly affects the charging current only when the radius of the sphere is less than 10^{-5} cm, and that the simple diffusion theory is adequate when the radius of the sphere is greater than 0.5×10^{-5} cm. The fluctuations of the number of ions on the sphere are calculated by treating the charging of an ensemble of spheres as a Markov process. It is concluded that the fluctuations are negligible when the radius of the sphere exceeds 0.5×10^{-4} cm, but that they increase with decreasing radius of the sphere and are appreciable when the radius is of the order of the ion mean free path. The sources of error in the fluctuation calculations are discussed. The methods of the present paper can also be employed to treat the charging of dielectric spheres provided it can be assumed that the charge is uniformly distributed over the surface. Orig. art. has: 28 formulas, 6 figures, and 1 tables.

SUB CODE: 20 SUBM DATE: 17May65 ORIG. REF: 004 OTH REF: 002

Card 2/2 vmb

NIS: A.Ye.

Results of medical and sanitary care for participants in the 1959 Spartakiada of Mogilev Province. Zdrav. Belor. 6 no. 7:52-53 Je'60. (MIRA 13:8)

1. Glavnyy vrach Mogilevskogo oblastnogo vrachebno-fizkul'turnogo dispansera.
(MOGILEV PROVINCE—SPORTS—HYGIENIC ASPECTS)

NISAN, G.I.

Treatment of pulmonary tuberculosis of the inferior lobe in adults. Probl. tub. 42 no.10:14-20 '64. (MIRA 18:11)

1. 2-ye terapevticheskoye otdeleniye (zav.- doktor med. nauk I.S. Sergeyev) Moskovskogo nauchno-issledovatel'skogo instituta tuberkuleza (direktor-kand. med. nauk T.P. Kochalova; zamestitel' direktora po nauchnoy chasti - prof. D.D. Aseyev) Ministerstva zdravookhraneniya RSFSR.

POPOV, A.; ALEKSIEV, B.; NISANJAN, P. [redacted]

Oil of the fruit Ailanthus glandulosa Desf. Doklady BAN 15 no.2:143-146 '62.

1. Chemisch-technologisches Institut, Sofia, und Institut für organische Chemie der Bulgarischen Akademie der Wissenschaften, Sofia. Vorgelegt von Akademiemitglied G. Rankov.

ALEXIEV, B. [Alekseev, B.]; NISANJAN, P. [illegible]

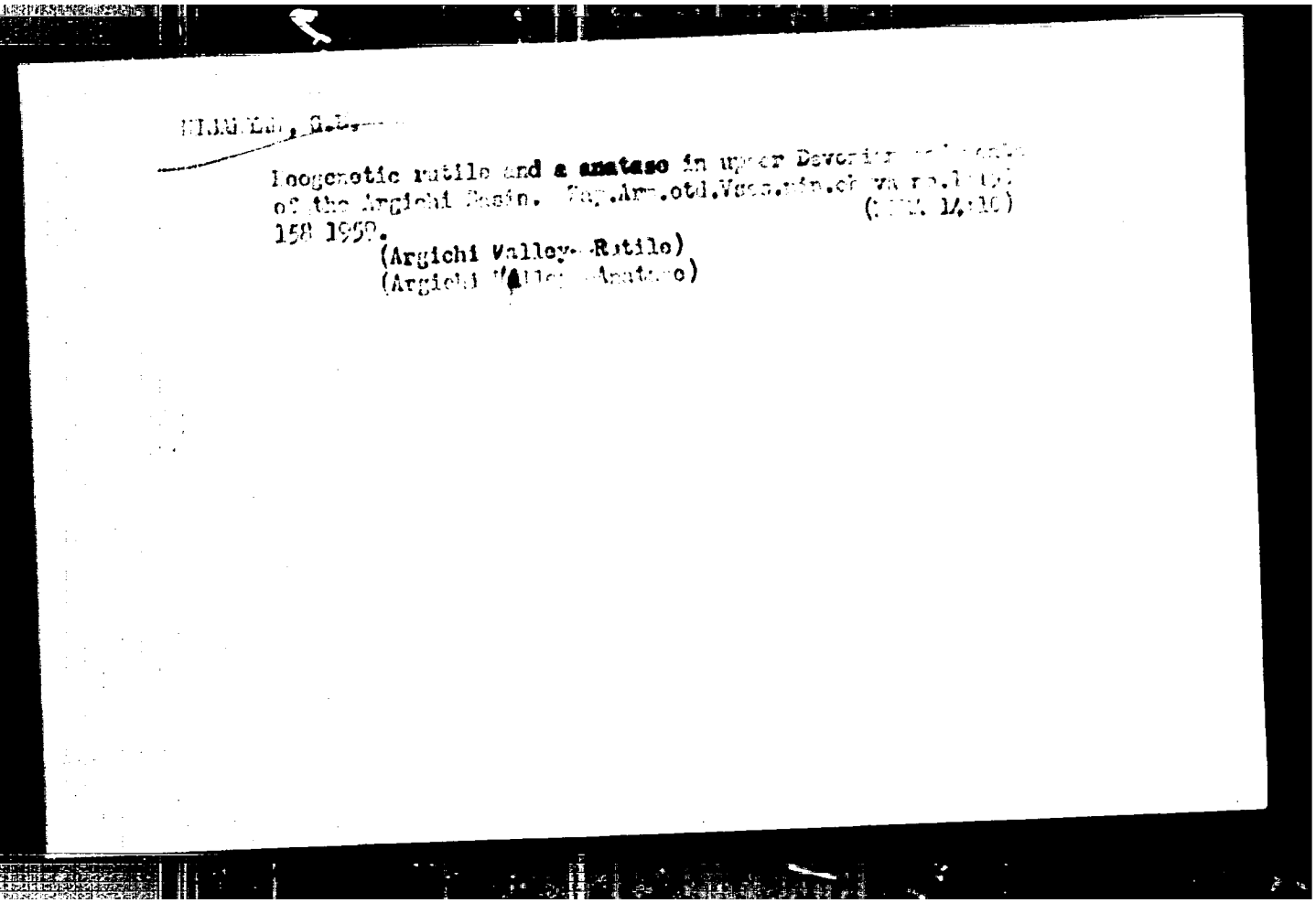
On the nitrating of substituted alkylaryl indones. Doklady BAN 15 no.8:845-848 '62.

1. Chemisch-technologisches Institut, Sofia. Vorgelegt von Akademiemitglied D. Ivanoff [Ivanov, D.].

ALEKSIEV, B. [Alekstev, B.]; NISANJAN, P. [Nishanian, P.]

Nitration of certain 2,3-diaryl-substituted indones. Doklady BAN 16 no.2:169-172 '63.

1. Chemisch-technologisches Institut, Sofia. Vorgelegt von Akademiemitglied D. Ivanoff [Ivanov, D.]



Hiller, G.

Neogenetic rutile and **anatase** in upper Devonian [illegible] of the Argichi Basin. Trudy Arm. otd. Vses. min. ob-va, [illegible] (MIRA 14:10) 158 1959.

(Argichi Valley--Rutile)
(Argichi Valley--Anatase)

MISAKYAN, G.B.; PETROSOV, I.Kh.

Mineralogical composition of Paleozoic clay shales in the south-western part of the Armenian S.S.R. Zap.Arm.otd.Vses.min.ob-va no.2:88-94 '63. (MIRA 16:10)

TSERTSVADZE, Sh.I.; KANDELAKI, O.M.; NISANYAN, G.B.

Agroclimatic conditions of mountain fruit growing in the Armenian S.S.R. Trudy TbilNIGMI no.12:84-101 '63. (MIRA 18:5)

FEDOROV, L.T., kand.tekhn.nauk; LEONT'YEVSKIY, B.B.; GIL'DENBLAT, Ya.D., kand.tekhn.nauk; KONDRATOV, D.V.; ROSSINSKIY, K.I., kand.tekhn. nauk; KUZ'MIN, I.A., kand.tekhn.nauk; KONDRATSKAYA, A.A., insh.; NISAR-MUKHAMEDOVA, G.N., insh.; PANOVA, G.M., insh.; ROZHDESTVENSKIY, G.L., insh.; SMIKOLENOV, A.S., insh.; TSAREVSKIY, S.V., insh.; ZHUKOVA, M.F., insh.; GRISHIN, M.M., retsenzent; KRITSKIY, S.N., doktor tekhn.nauk, red.; MENKEL', M.F., doktor tekhn.nauk, red.; GALAKTIONOV, V.D., kand.geol.-min.nauk, red.; ZAVALISHIN, I.S., insh., red.; MALYSHEV, N.A., insh., red.; MIKHAYLOV, A.V., doktor tekhn. nauk, red.; PETROV, G.D., insh., red.; RAPOPORT, Ya.D., red.; RUSSO, G.A., kand.tekhn.nauk, glavnyy red.; SHVAST'YANOV, V.I., insh., red.; TITOV, S.V., insh., red.; TISHKOVA, O.N., red.; LARIONOV, G.Ye., tekhn.red.

[Hydrology and water economy of the Volga-Don] Gidrologiia i vodnoe khoziaistvo Volgo-Dona. Pod red. S.N.Kritskogo i M.F.Menkelia. Moskva, Gos.energ.izd-vo, 1960. 146 p. (MIRA 13:11)

1. Moscow. Vsesoyuznyy proyektno-izyskatel'skiy i nauchno-issledovatel'skiy institut "Gidroproyekt" imeni S.Ya.Zhuk. 2. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR (for Grishin). (Don River--Water resources development)

NISARBAYEVA, K.S.

USSR/Chemical Technology. Chemical Products and Their Application -- Treatment of natural gases and petroleum. Motor fuels. Lubricants, I-13

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 5498

Author: Ryabova, N. D., Nisarbayeva, K. S.

Institution: Academy of Sciences Uzbek SSR

Title: Hydrocarbons of the Oil Fraction of Khodzhiabadskaya Petroleum

Original Publication: Izv. AN UzSSR, 1956, No 2, 65-70

Abstract: Investigation of the oil fraction of 427-518° (solidification point 40°, η_{50} = 51.0 cSt, flash point 222° Br.) of Khodzhiabadskaya (Ferskaya) petroleum (Sp. Gr. 0.835, MW 218, paraffin content 5.66%). After preliminary separation of solid paraffins the oil was separated in aromatic and paraffin-naphthenic hydrocarbons (H) by stepwise freezing of dichloethane solution. On cooling to -25° paraffin-naphthenic H of MW 407 were separated, having the composition $C_{29.2}H_{57}$, consisting of 30% monocyclic and 70% bicyclic

Card 1/2

BISARBAYEVA, K.S.; KHODZHAYEV, G.Kh.; BUROVA, Ye.G.

Individual aromatic and six-membered naphthene hydrocarbons of the Khodzhiabad gas condensate. Uzb.khim.zhur. no.6:65-73 '59. (MIRA 13:4)

1. Institut khimii AN UzSSR.
(Hydrocarbons) (Naphthenes)

MISAYEVA, Ye.D.

MISAYEVA, Ye.D., inzhener; KONYUSHENKO, A.I., inzhener; BAZANOVA, K.D., [illegible]

Eliminating the causes of destruction of paint on welded seams of agricultural machines. Sel'khozmashina no.1:32-3 of cover Ja '54. (MLRA 7:1)

1. Zavod "Krasnyy Aksay". (Paint--Testing)

Nisnyevich, Ye. D.

OSTRIKOV, N.S.; SHIFRIN, G.Ye.; KORYUKHENKO, A.I.; NISNEVICH, Ye.D.

Causes of the coagulation of prime coat No. 138 in dipping tanks. Sel'khozmashina no.5:29-30 My '56. (MLRA 9:8)

1. Kafedra fizicheskoy i kolloidnoy khimii Rostovskogo gosudarstvennogo universiteta imeni V.M. Molotova i Tsentral'naya laboratoriya zavoda "Krasnyy Aksay". (Paint)

NISELOVSKAYA, L.I.; PADERINA, Ye.M.

Processes of oxidative phosphorylation in the liver of guinea pigs poisoned with staphylococcal toxin. Vop. med. Khim. 9 no. 3:256-260 My-Je '63. (MIRA 17:9)

1. Otdel biokhimii i otdel mikrobiologii Instituta eksperimental'noy meditsiny AMN SSSR, Leningrad.

NISEL'SON, L. A.

NISEL'SON, L. A.: Author's abstract of a dissertation on "The separation of zirconium and hafnium by the method of rectification" submitted toward the academic degree of Candidate in Technical Sciences. Min Higher Education USSR. Moscow Inst of Nonferrous Metals and Gold imeni M. I. Kalinin. Moscow, 1956. (Dissertation for the Degree of Candidate in Technical Sciences)

Knizhnaya letopis', No 39, 1956, Moscow.

L 11279-67 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6031726 SOURCE CODE: UR/0370/66/000/005/0169/0176

AUTHOR: Petrusevich, I. V. (Moscow); Nisel'son, L. A. (Moscow); Belyayev, A. I. (Moscow); Gurevich, M. A. (Moscow)

ORG: None

TITLE: On the problem of producing titanium silicides by simultaneous hydrogen reduction of titanium and silicon tetrachlorides

SOURCE: AN SSSR. Izvestiya. Metally, no. 5, 1966, 169-176

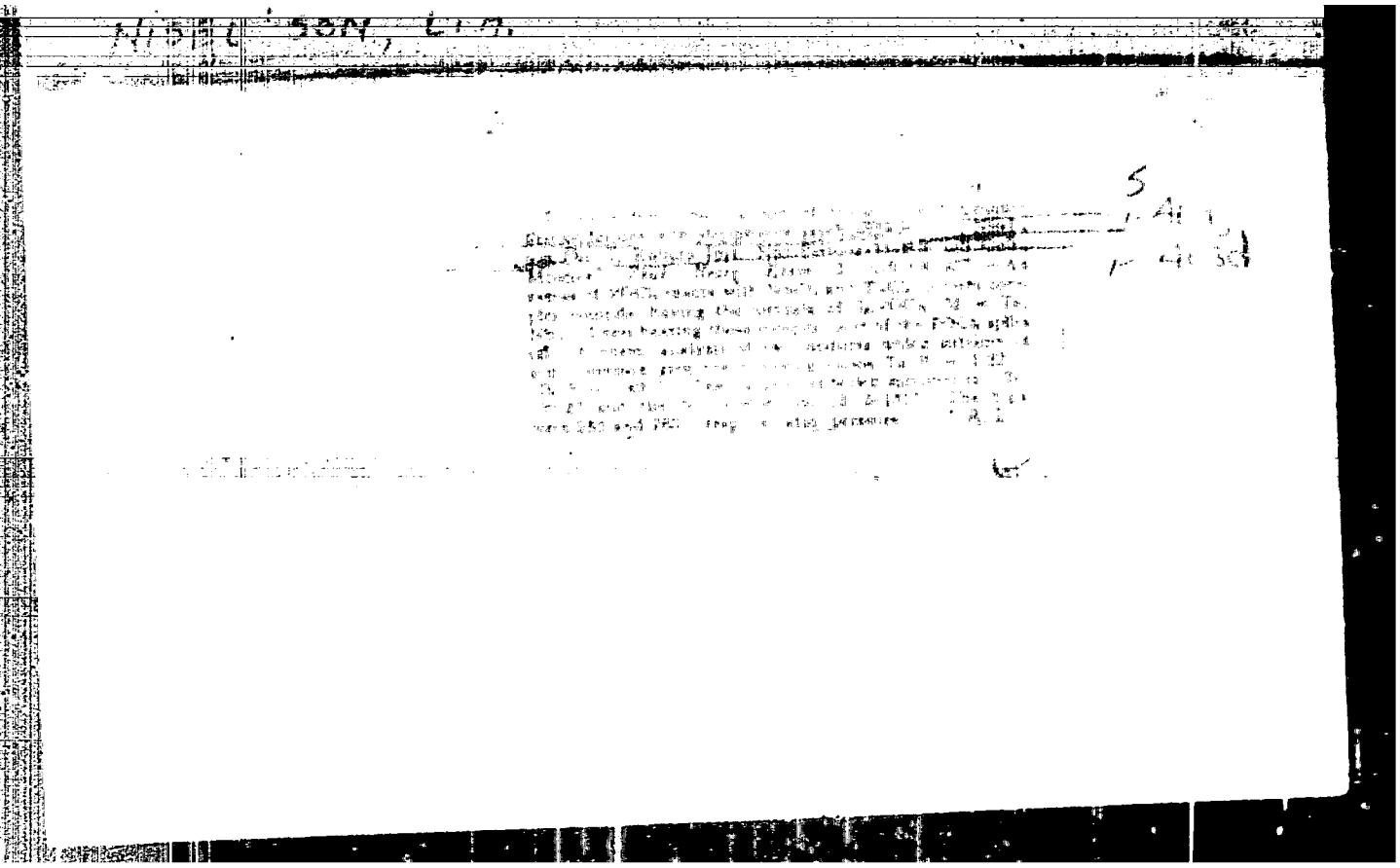
TOPIC TAGS: silicide, chemical reduction, titanium compound, chloride, silicon compound, metal purification

ABSTRACT: 2

This is a continuation of a previous paper on production of titanium silicides by simultaneous hydrogen reduction of titanium and silicon tetrachlorides (Petrusevich, I. V., Nisel'son, L. A., Belyayev, A. I., "On the Production of Titanium Silicides by Simultaneous Hydrogen Reduction of Titanium and Silicon Tetrachlorides", Izv. AN SSSR, Metally, 1965, No 5, 55-57). $TiSi_2$ was deposited on a heated Ta filament 0.7 mm in diameter under the following conditions: $SiCl_4$:$TiCl_4$ ratio in the initial vapor-gas mixture--2:1; hydrogen excess--2200%; rate of hydrogen flow--0.8 l/min and filament temperature--1190-1200°C. A dense silicide deposit was formed with a uniform diameter at a rate of 0.15 g/cm^2·hr or 0.3 mm/hr for radial growth rate. The yield of

UDC: 669.295.311

Card 1/2



32-12-60/71

AUTHORS: Maymind, V.I., Nisel'son, L.A.

TITLE: Short Reports (4) (Korotkiye soobshcheniya).

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 12, pp. 1519-1520 (USSR)

ABSTRACT: In this paper an improved type of magnetic mixing device is recommended, which differs from already known devices of this kind by the fact that here contact between the movable mixer and the walls of the vessel is excluded, and that any sort of disturbance of operation is reduced to a minimum. The mixer is destined for a high number of revolutions of the movable part for any kind of the heterogeneous medium. When it is mounted, special care is taken that the movable bolt of the mixer must fit well into its running socket. For this purpose it is recommended to select the socket and the bolt in such a manner that the motion of the bolt in the socket is nearly jammed, and that by careful subsequent grinding of the bolt the minimum of permitted friction be attained. This is done in order that there is no play whatever between the bolt and the socket. There is 1 figure.

Card 1/2

32-12-60/71

Short Reports (4)

ASSOCIATION: Institute for Biological and Medical Chemistry (Institut biologicheskoy i meditsinskoy khimii)

AVAILABLE: Library of Congress

Card 2/2 1. Magnetic mixes-Device 2. Magnetic mixes-Operation

SOV/163-58-3-49/49

AUTHOR: Nisel'son, L. A.

TITLE: The Separation of Tantalum, Niobium and Zirconium by Fractional Distillation (Razdeleniye tantala, niobiya i tsirkoniya metodom rektifikatsii)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 3, pp 285-285 (USSR)

ABSTRACT: A rapid separation and purification of tantalum and niobium is carried out by the interaction of the pentachlorides with phosphorus oxychloride. The metal sample investigated, which had the composition 22,5% Nb, 59% Ta and 18% Zr, was converted into chlorides and then was treated with phosphorus oxychloride. The following fractions were obtained: 1) Niobium fraction with about 86% Nb and 0,1% Ta. 2) Tantalum fraction with about 81% Ta and 0,015% Nb. Zirconium was not found in these fractions. The intermediate fractions contain tantalum, niobium and zirconium and may be subjected to the fractional distillation another time. The method of the fractional distillation of pentachlorides in the presence of phosphorus oxychloride has some advantages as compared to the fractional distillation of the simple pentachlorides of niobium and tantalum. The reaction products of niobium and tantalum with phosphorus oxychloride are character-

Card 1/2

SOV/163-58-3-49/49

The Separation of Tantalum, Niobium and Zirconium by Fractional Distillation

ized by a higher volatility than the pentachlorides, and they also show a greater difference between boiling and melting temperatures. There is 1 reference, which is Soviet.

ASSOCIATION: Moskovskiy institut tsvetnykh metallov i zolota (Moscow Institute of Non-Ferrous Metals and Gold)

SUBMITTED: January 21, 1958

USCOMM-DC-60,913

Card 2/2

SOV/78-3-8-42/43

AUTHORS: Yagodin, G. A., Pozin, G. S., Nisel'son, L. A.

TITLE: The Determination of the Relative Volatility of the Products of the Interaction Between $ZrCl_4$, $HfCl_4$, and $POCl_3$ (Opredeleniye otnositelnoy letuchesti produktov vzaimodeystviya $ZrCl_4$ i $HfCl_4$ s $POCl_3$)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol. 3, Nr 8, pp. 1971-1972 (USSR)

ABSTRACT: In the present study the amount of the relative volatility of the products of the interaction between $ZrCl_4$ and $HfCl_4$ with $POCl_3$ was determined by means of a re-circulating apparatus. The hafnium content in the samples was determined by radioactive Hf^{181}. The basic materials were purified by means of the sublimation method. The hafnium content in the basic material HfO_2 amounts to 0,8 per cent.
The relative volatility (α) of the materials investigated amounts to 1,160 ± 0,005 at the pressure of one atmosphere. There are 1 figure, 1 table, and 3 references, 1 of which is

Card 1/2

SOV/78-3-8-42/48

The Determination of the Relative Volatility of the Products of the Interaction Between $ZrCl_4$, $HfCl_4$, and $POCl_3$

Soviet.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva (Chemical-Technological Institute imeni D. I. Mendeleyev, Moscow) Moskovskiy institut tsvetnykh metallov i zolota im. M. I. Kalinina (Institute for Non-Ferrous Metals and Gold imeni M. I. Kalinin, Moscow)

SUBMITTED: December 12, 1957

Card 2/2

AUTHORS: Nisel'son, L. A., Perekhrest, G. L. SOV/78-3-9-24/38

TITLE: On the Systems $TiCl_4$-$NbCl_5$ and $TiCl_4$-$TaCl_5$ (O sistemakh $TiCl_4$-$NbCl_5$ i $TiCl_4$-$TaCl_5$)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 9, pp 2150-2155 (USSR)

ABSTRACT: The fusion diagram of the systems $TiCl_4$-$NbCl_5$ and $TiCl_4$-$TaCl_5$ was investigated. The temperatures and the melting heat of $TaCl_5$ and $NbCl_5$ were determined by thermodynamic calculations of the experimental results obtained. It was shown that the pentachlorides of these systems approach in broad concentration ranges the ideal ones. The melting temperatures of tantalum pentachloride and niobium pentachloride were determined by means of extrapolation of the liquidus lines. $TaCl_5$ has its melting point at 216,5°C and $NbCl_5$ at 204,5°C. The melting heat of the pentachlorides of niobium and tantalum, calculated from their solubility, amounts to 9,15 k.cal/mol for tantalum pentachloride and 9,95 k.cal/mol for niobium pentachloride.

Card 1/2

On the Systems $TiCl_4$-$NbCl_5$ and $TiCl_4$-$TaCl_5$

There are 6 figures, 1 table, and 12 references, 5 of which are Soviet.

ASSOCIATION: Moskovskiy institut tsvetnykh metallov i zolota im. M. I. Kalinina (Moscow Institute of Non-Ferrous Metals and Gold imeni M. I. Kalinin)

SUBMITTED: July 8, 1958

SOV/78-3-12-4/36

AUTHOR: Nisel'son, L. A.

TITLE: II. The Separation and Purification of Tantalum and Niobium by the Rectification of Their Pentachlorides (II. Razdeleniye i ochistka tantala i niobiya rektifikatsiyey ikh pentakhloridov)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 12, pp 2603-2617 (USSR)

ABSTRACT: A critical analysis was made of the volatile compounds of niobium and tantalum for the purpose of applying them in the separation and purification of these elements by the rectification method. The pentachlorides appeared to be of great importance in the separation of niobium and tantalum. Theoretical calculations showed that by the rectification of the pentachlorides an effective separation is possible. Accompanying elements, for example Ti, Si, Fe, Zr, V, Pb, W, Mo, P, and others can be separated by the rectification method. Rectification plots were calculated for $TaCl_5$-$NbCl_5$, and these are given in figures 5, 6, and 7. In the present paper the separation of niobium and tantalum and the purification of these elements from the accompanying impurities was carried out by

Card 1/2

II. The Separation and Purification of Tantalum and Niobium by the Rectification of Their Pentachlorides

rectification at atmospheric pressure and using a column with 25 plates. The experiments were carried out using chloride mixtures with varying niobium and tantalum content, and the accompanying elements. For a successful separation it is absolutely necessary that all acid-containing chlorides of niobium and tantalum be absent. For the production of purest chlorides chlorination with CCl_4 at 290 to 310°C or with $SOCl_2$ at 240 to 250° was carried out. The chlorination proceeds according to the following reaction:

$$2NbOCl_3 + CCl_4 \rightarrow 2NbCl_5 + CO_2$$

$$NbOCl_3 + SOCl_2 \rightarrow NbCl_5 + SO_2$$

The boiling temperatures of the pentachlorides of niobium and tantalum under atmospheric pressure were found to be the following: $TaCl_5$ - 254.0± 0.25°, $NbCl_5$ - 248.3± 0.25°.

There are 7 figures, 5 tables, and 37 references, 17 of which are Soviet.

SUBMITTED: August 10, 1957

Card 2/2

SOV/76-4-4-42/44

5(3)

AUTHORS: Nisel'son, L. A., Edel'shteyn, L. E., Ivanov-Emin, B. N.

TITLE: Investigation of the System Benzene - Silicon Tetraiodide (Izucheniye sistemy benzol-tetrayodid kremniya)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 4, pp 954-956 (USSR)

ABSTRACT: The authors investigated the system SiJ_4-C_6H_6. Silicon tetraiodide in pure state was obtained by distillation. C_6H_6 and SiJ_4 form a system of a simple eutectic type without chemical interaction of the components. The solubility of SiJ_4 in benzene was determined by a visual synthetic method. The data on the solubility virtually form a straight line in the coordinate system 1/T-lgN, where T denotes the absolute temperature, and N the mole number of SiJ_4. The solution heat of SiJ_4 in benzene amounts to 6.2 kcal/mole. The solubility of the iodides PJ_3, Al_2J_6, SbJ_3, HgJ_2 and AsJ_3 in benzene was investigated; the results are contained in table 2. These compounds frequently

Card 1/2

Investigation of the System Benzene - Silicon Tetraiodide

act as impurities in silicon tetraiodide. Single crystallization does not yield purest silicon tetraiodide. The phase equilibrium crystals - liquid in the system SiJ_4-C_6H_6 is characterized in a table. There are 1 figure, 2 tables, and 2 references, 1 of which is Soviet.

ASSOCIATION: Moskovskiy institut tsvetnykh metallov i zolota im. M. I. Kalinina (Moscow Institute of Nonferrous Metals and Gold imeni M. I. Kalinin)

SUBMITTED: November 22, 1958

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gram of $Na_3[Sc(OH)_6].2H_2O$ was taken and is given in figure 8. The dehydration temperature of sodium tetrahydroxoscandiate is higher than the corresponding temperature of the tetrahydroxoindiate, since the polarization effect of the indium ion is greater than that of the scandium ion. The thermal transformation of the hydrate of the sodium hexahydroxoscandiate is given by the following reaction:

$$Na_3[Sc(OH)_6].\ 2H_2O \rightarrow Na_3[Sc(OH)_6] + 2H_2O,$$

$$Na_3[Sc(OH)_6] \rightarrow Na[Sc(OH)_4] + 2NaOH,$$

$$Na[Sc(OH)_4] \rightarrow NaScO_2 + 2H_2O.$$

The corresponding radiographs of $Na[Ga(OH)_4]$, $Na_3[In(OH)_6].2H_2O$, their heating products, and the radiographs of sodium metaindiate $NaInO_2$ and $Na_3[Sc(OH)_6].2H_2O$ and their heating products as well as the thermal dissociation of the sodium metascandiate $NaScO_2$ are given in figures 4,7,and 9. There are 9 figures, 1 table, and 8 references, 5 of which are Soviet.

5.(2)

AUTHORS: Sheka, I. A., Voytovich, B. A., Nisel'son, L. A. SOV/78-4-8-16/43

TITLE: On Compounds of Pentachlorides of Niobium and Tantalum With Phosphoroxychloride (O soyedineniyakh pentakhloridov niobiya i tantala s khlorokis'yu fosfora)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 8, pp 1803 - 1808 (USSR)

ABSTRACT: The investigation of the systems $NbCl_5$ - $POCl_3$ and $TaCl_5$ - $POCl_3$ is of practical importance since the distillable reaction products of these systems may be used for the separation and the purification of tantalum and niobium by rectification (Ref 1). The phase equilibria crystal - liquid and liquid-vapor were investigated. In contrast to the phosphoroxy chloride compounds of $ZrCl_4$ and $HfCl_4$ which are characterized by a strong cooling, $NbCl_5.POCl_3$ and $TaCl_5.POCl_3$ crystallize well. Both systems form monomolecular, thermally easily dissociable compounds in agreement with reference 2. The melting temperature of $NbCl_5.POCl_3$ is 124.5°, that of $TaCl_5.POCl_3$ 152.4°. The

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CHERNYAYEV, V.N.; NISEL'SON, L.A.

Studying the efficiency of retorts of various types for the distillation of silicon halogenides. Izv.vys.ucheb.zav.; tsvet. met. 3 no.2:135-142 '60. (MIRA 15:4)

1. Krasnoyarskiy institut tsvetnykh metallov; problemnaya laboratoriya chistykh metallov, metallicheskikh soyedineniy i poluprovodnikovykh materialov.
(Silicon halides) (Distillation apparatus)

68115

SOV/78-5-1-27/45

5.4110

5(2)

AUTHORS: Nisel'son, L. A., Larionova, L. Ye.

TITLE: On the Interaction of Zirconium Tetrachloride with Phosphorus Pentachloride

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol 5, Nr 1, pp 172-174 (USSR)

ABSTRACT: The authors carried out a thermal analysis of the system $ZrCl_4$ - PCl_5 and determined the relative volatility of the products of reaction of $ZrCl_4$ and $HfCl_4$ with PCl_5. The liquidus temperatures were determined according to V. F. Alekseyev. The temperatures were measured on a PP potentiometer by means of two thermocouples connected in series. The thermograms were recorded by a Kurnakov pyrometer. Results are shown in a table and in figure 1. The congruently melting compound $ZrCl_4 \cdot PCl_5$ (melting point: 365°) is formed. Figure 2 illustrates the dependence of the logarithm of molar concentration of the compounds $ZrCl_4$ and $ZrCl_4 \cdot PCl_5$ upon the reciprocal value of the liquidus temperature. The strong curvature is indicative of

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On the Interaction of Zirconium Tetrachloride With Phosphorus Pentachloride

association of the two components, which is in accordance with the formation of $2ZrCl_4 \cdot PCl_5$ observed at low temperatures. The almost equal composition of the azeotropic and the eutectic point corresponds to the composition of the thermally instable compound $2ZrCl_4 \cdot PCl_5$. The product resulting from reaction of PCl_5 and commercial $ZrCl_4$, which contained 1% of $HfCl_4$, was rectified in inert atmosphere. The separation could not be carried out as completely as in the experiments with $POCl_3$ described in reference 5. If the rectification is carried out without inert atmosphere, lyophobic flakes of zirconium phosphates develop under the action of atmospheric oxygen which clog the rectifying column. The relative volatility of the azeotropic rectification products of $ZrCl_4$ and $HfCl_4$ with PCl_5 was determined to 1.15 and 1.14. There are 2 figures, 1 table, and 7 references, 4 of which are Soviet.

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5.2400(A)

68120
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5(2)

AUTHORS: Fedorov, T. F., Shamray, F. I., Nisel'son, L. A., Petrusevich, I. V.

TITLE: On the Production of Elementary Boron

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol 5, Nr 1, pp 226-228 (USSR)

ABSTRACT: After giving a survey of publications with reference to a paper by F. I. Shamray and V. I. Mikheyev (Ref 6), the authors mention that commercial boron has a purity of about 90%. Boron with a higher degree of purity (99%) is produced only in small quantities. The authors attempted to obtain pure boron by reducing BCl_3 with Zn. Thermodynamic investigation of this reaction (Table, Fig 1) indicates that it may be carried out within a wide temperature range. As boron chloride reacts slowly even with liquid zinc, Zn was evaporated in a device schematically represented in figure 2. The reaction took place in a quartz tube heated to 1000°. It was stopped as soon as the tube was completely filled with the reaction products (Figs 3,4). The latter were decomposed into B, Zn, and $ZnCl_2$ in quartz

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On the Production of Elementary Boron

ampoules by distillation at 1000°. The boron, the purity of which is not given, contained impurities of Fe, Mn, Zn, Al, and Si. There are 4 figures, 1 table, and 16 references, 3 of which are Soviet.

SUBMITTED: May 31, 1959

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68217

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B004/B016

5(2) 5.2200(D)

AUTHORS: Nisel'son, L. A., Petrusevich, I. V.

TITLE: Synthesis of Tantalum- and Niobium Iodides by Interaction of $TaCl_5$ and $NbCl_5$ with Al_2J_6 and SiJ_4

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol 5, Nr 2, pp 249-254 (USSR)

ABSTRACT: The purpose of the present paper was the preparation of pure iodides of Ta and Nb which might be used in the production of pure Ta and Nb. The authors first investigated the reaction between $TaCl_5$ and $NbCl_5$ on the one hand, and Al_2J_6 and SiJ_4 on the other, by means of thermal analysis. The thermal analysis was made in a special vial (Fig 1), the heating curves were recorded by means of a Kurnakov pyrometer. The results are shown in table 1 and figures 2-5. The reactions with $NbCl_5$ proceed more vigorously than those with $TaCl_5$, in which connection $NbCl_5$ reacts with Al_2J_6 at lower temperature and with a higher thermal effect than $TaCl_5$. The synthesis of the iodides of Ta and Nb was carried out with 10% excess Al_2J_6 or SiJ_4 in a vial shown

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Synthesis of Tantalum- and Niobium Iodides by Interaction of $TaCl_5$ and $NbCl_5$ With Al_2J_6 and SiJ_4

in figure 6. The reaction with $NbCl_5$ was made at 300-320°, that with $TaCl_5$ at 400-420°. The volatile chlorides and excess iodides of Al and Si were removed either by heating in vacuum, or by washing out with benzene. All operations were carried out under exclusion of moisture. The analyses of the resultant iodides and their experimental formulas are given in table 2. The iodides transformed into oxides were furthermore investigated spectroscopically, and contained less than 1/100 per cent of Al or Si. The most complete reaction takes place between Al_2J_6 and $TaCl_5$. Chlorine is removed to a practically complete extent by a second treatment of TaJ_5 or NbJ_5 with Al_2J_6. The composition of the iodides corresponded to the formulas $Ta_1J_{4.95-5.0}$ and $Nb_1J_{4.5-4.6}$. The use of Al_2J_6 gives better results than that of SiJ_4. There are 6 figures, 2 tables, and 11 references, 4 of which are Soviet.

ASSOCIATION: Moskovskiy institut tsvetnykh metallov i zolota im. M. I. [illegible] linina (Moscow Institute of Nonferrous Metals and Gold [illegible]

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