21119

S/149/61/000/003/002/004
A006/A106

18 1215 1087, 1521 also 1208, 1160

AUTHORS: Nichkov, I. F., Smirnov, M. V.

TITLE: Electrolytic preparation of beryllium-zinc alloys at temperatures below 1,000°C

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Tsvetnaya metallurgiya, no. 3, 1961, 104 - 107

TEXT: Literature data indicate the possibility of obtaining beryllium-zinc alloys, but there is no information available on the nature of interaction of these elements and on the properties of their alloys. The authors studied the nature of interaction of berryllium and zinc at temperatures up to 1,000°C. Alloys of these elements were obtained by electrolysis of berryllium-containing melts with liquid zinc cathode permitting the accurate regulation of the alloy composition and of the rate of supplying one component to the surface of the other one. Alloys from a molten chloride bath were obtained in a closed electrolytic cell (Figure 1) with a molten zinc cathode. The electrolyte temperature was 700 ± 10°C. Prior to electrolysis the melt was blown through with dry hydrogen chloride. After termination of the experiment the alloy was cooled either together with the electrolyte,

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Electrolytic preparation of berryllium-zinc ...

or in air, by pouring the content of the electrolytic cell on a stainless steel griddle. Thermal decomposition of the alloy was studied by placing it into an alundum crucible on the bottom of a hermetically sealed quartz tube in a silit heating furnace. At a constant pressure in the tube of 10^{-2} - 10^{-3} mm Hg, the temperature in the furnace increased at a rate of 350°C per h. After 3 h holding at 1,000 - 1,050°C the unit was cooled down to room temperature. Zinc-beryllium alloys were also prepared by direct alloying of the metals by introducing a piece of beryllium metal into the molten zinc at 800 - 850°C and holding for 9 - 70 h. It was found that at 700 - 900°C beryllium was well wetted with liquid zinc and dissolved in it in small amounts; the solubility of zinc in solid beryllium could not be established. The experiments proved the possibility of preparing bi-phase Zn-Be alloys by deposition of beryllium on a liquid zinc cathode from molten salt electrolytes; it is shown that such alloys are composed of beryllium particles suspended in liquid zinc. Their fluidity is preserved at a content of up to 6 weight % Be. The experiments on the chemical and thermal decomposition in a vacuum of zinc-beryllium alloys show that at over 1,000°C zinc may be entirely sublimated in a vacuum and pure beryllium powder may be obtained. There are 6 figures and 9 references: 4 Soviet-block and 5 non-Soviet-block. [English references: A. R. Kaufman, P. Gordon D. W. Lillie. Trans. Amer. Soc. Metal, 42, 1950; J. G. Beach, C. L. Faust, J.

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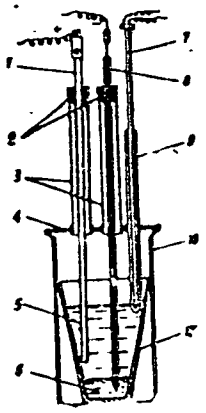
Electrolytic preparation of beryllium-zinc ...

Electrochem. Soc., 100 (6), 276 (1953); G. V. Raynor, J. of the Royal Aeronautical Soc., 50, 390 (1946)]

ASSOCIATION: Ural'skiy politekhnicheskiy institut (Ural Polytechnic Institute)
Fiziko-tekhnicheskiy fakultet (Physicotechnical Division)

SUBMITTED: January 11, 1961

Figure 1:



Schematic drawing of a closed electrolytic cell. 1 - graphite anode; 2 - rubber seals; 3 - glass tubes; 4 - cover; 5 - electrolyte; 6 - zinc cathode; 7 - thermocouple; 8 - molybdenum power connection to the cathode; 9 - thermocouple housing; 10 - porcelain bucket; 11 - alundum crucible.

Card 3/3

NICHKOV, I.F.; RASPOPIN, S.P.; BAZHKOV, Yu.V.

Polarization of a liquid bismuth cathode in chloride melts. Zhur. prikl.khim. 34 no.7:1533-1536 Jl '61. (MIRA 14:7)
(Bismuth) (Polarization (Electricity)) (Chlorides)

S/020/61/141/005/011/018
B103/B110

AUTHORS. Nichkov, I. E., Ryzhik, O. A., and Raspopin, S. P.

TITLE: Interaction of bismuth chloride and chlorides of the alkali metals

PERICODICAL: Akademiya nauk SSSR. Doklady, v. 141, no. 5, 1961, 1113-1116

TEXT: The nature of the interaction of $BiCl_3$ with KCl and NaCl was determined between 700 and 850°C. The equilibrium potentials of metallic bismuth were measured for this purpose in electrolytes of different $BiCl_3$ contents in quartz test tube (Fig.). Electrolytically purified Bi was added after complete fusion of the equimolar chloride mixture. $BiCl_3$ was produced in the electrolyte by anodic dissolution of a part of the Bi contained in the crucible. A molybdenum electrode was placed in the electrolyte contained in the quartz test tube such that the crucible served as diaphragm separating anolyte and catholyte. The test tube was evacuated and filled with purified helium. The Bi potentials were measured related to the chlorine reference electrode by a highly resistant ППТВ-1 (PPTV-1) potentiometer, a galvanometer having a sensitivity of

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Interaction of bismuth chloride

10^{-9} a per scale division was used as null detector. The melt was heated by an autotransformer and its temperature was kept constant by the two measuring instruments. A decrease of the emf-values between the Bi and the Cl electrode was found with decreasing temperature; these values were measured at different temperatures in melts containing 1.13 (1), 3.05 (2), and 12.06 (3) % by weight of Bi. The points experimentally found fall satisfactorily on the straight lines satisfying the following empirical equations: $E_1 = 1.116 - 3.05 \cdot 10^{-4} T$ v; $E_2 = 1.113 - 3.00 \cdot 10^{-4} T$ v; $E_3 = 1.379 - 3.00 \cdot 10^{-4} T$ v. The measured values included besides the electrochemical potential difference desired the thermo-emf between molybdenum and carbon conductors with reversed sign. Its temperature dependence is: $\varepsilon_m = 0.009 - 3 \cdot 10^{-4} T$ v. If the thermo-emf between the graphite bar of the Cl electrode and the Mo conductor to Bi is considered, the Bi equilibrium potentials related to the Cl reference electrode are identical. It is concluded from the values measured that the equilibrium potential of metallic Bi related to the Cl reference electrode is expressed by the thermodynamic Nernst equation. This means that the liquid Bi electrode is reversible as to the Bi^{3+} ions in chloride melts. These

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Interaction of bismuth chloride ...

behave as ideal solutions in the $BiCl_3$ concentration range [illegible]. On the assumption that this ideal behavior continues in the entire $BiCl_3$ concentration range up to pure melted $BiCl_3$, the emf of the cell $Bi|BiCl_3(melt)|Cl_2$, C should be $E_e = 1.3[illegible] - 3.3[illegible]\cdot10^{-4}T$ v, calculated on the basis of the authors' experimental data. The temperature dependence of the emf of such a cell is (calculated on the basis of Ref. 3, see text) $E_T = 1.254 - 5.750\cdot10^{-4}T$ v. The difference $E_e - E_T$ = 0.00[illegible] - [illegible] is mainly due to the fact that the melts cease to be ideal solutions at high $BiCl_3$ concentrations. This means that changes in concentration are accompanied by a regrouping of the Bi ions; the nature of this rearrangement is determined by $E_e - E_T$. It corresponds to the change of the isobaric potential on transition from pure melted $BiCl_3$ to its dilute solutions which behave as ideal solutions: $\Delta Z_{mix} = -3F(E_e - E_T)$ = (-[illegible] - 16.[illegible] cal/mole

It is evident that the mixing of the salts entails an interaction in which heat (ΔH_{mix} = 5.81 kcal) is evolved and the entropy (ΔS = [illegible] cal/deg

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increases. Thus, it is proved that the bonds between the Bi^{3+} ions and the chloride anions become stronger and that complex groups [illegible] type are formed. The short-range order of the [illegible] ions in the melt [illegible] by the Bi^{3+} ions. The remaining Bi^{3+} ions bind the Cl^- ions stronger than this is done by the ions of the alkali metals [illegible]. For this reason Bi is found in dilute solutions mainly in the form of anion complexes of the $BiCl_n^{(n-3)-}$, where $n > $ [illegible]. With regard to the change of the [illegible] potential, known in itself (Ref. [illegible], see below), it is stated that [illegible] value can equally be calculated from ΔZ_{mix} by extrapolation to the [illegible] ture 298°K, whereby the latent heat ([illegible] kcal/mole) and the melting entropy (5.2 cal/deg·mole) have to be considered. $\Delta ZBiCl_3$ was found to be -6.56 kcal/mole. It is [illegible] that [illegible] complex groups in the melts mentioned [illegible]. There are 5 figures and 11 references: 6 Soviet and 5 non-Soviet. The three references to English-language publications read as follows: [illegible] W. [illegible] M. [illegible] B. Rubin, J. Electrochem. Soc. 103, [illegible]; [illegible] J. Am. Chem. Soc., 72, [illegible]; [illegible]

Card 4/5

S/020/61/141/005/011/015
B103/B110

Interaction of bismuth chloride ...

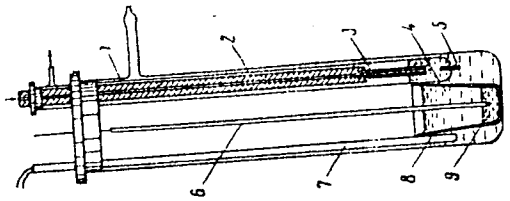
elementov i ikh potentsialy v vodnykh rastvorakh (Oxidative state of elements and their potentials in aqueous solutions), IL, 1954.

ASSOCIATION: Ural'skiy politekhnicheskiy institut im. S. M. Kirova (Ural Polytechnic Institute imeni S. M. Kirov)

PRESENTED: July 14, 1961, by V. I. Spitsyn, Academician

SUBMITTED: July 10, 1961

Fig.



Card 5/5

S/149/62/000/004/001/003
A006/A101

AUTHORS: Nikkov, I. F., Kaspopin, S. P., Golubev, V. I.

TITLE: Anodic dissolving of tantalum in chloride melts

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Tsvetnaya metallurgiya, no. 4, 1962, [illegible]

TEXT: To replace methods of mechanically removing tantalum coatings by the electrolytical method, anodic dissolving of tantalum in KCl-LiCl melts was investigated at 400° - 700°C (Fig. 1). Corrosion of tantalum metal was determined in the melts, to analyze the results of anodic dissolving. Anodic polarization of tantalum metal was experimentally investigated, to evaluate the sequence of anodic dissolving processes. Results: Tantalum corrosion in the melts investigated is low and increases with elevated temperatures. It changes slightly when fluorides are added to the melt. Highest current efficiency is obtained in a chloride bath with a current density below 0.5 amp/cm^2. At an increase of anode current density from 0.03 to 1.0 amp/cm^2 the portion of tantalum ions of higher valence passing into the electrolyte, incr[illegible] as a result the anodic current efficiency drops. Results of measuring the anode potentials show that with a higher anodic current density

Card 1/

S/149/62/000/004/001/00?
A006/A101

Anodic dissolving of tantalum in chloride melts

the anodic potential is shifted toward more positive values (figure 2). The addition of alkali metal fluorides to the elctrolyte shifts the anode potential to the negative side and stabilizes tantalum dissolving, accompanied by the appearance of ions of higher valence. Polarization curves are shifted to the negative side at increasing temperatures due to the presence of Nb in tantalum metal. There are 2 tables and 3 figures.

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

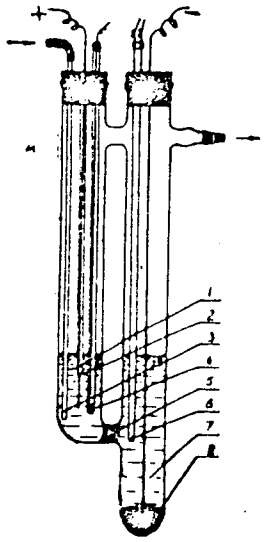
SUBMITTED: January [illegible], [illegible]

Card 2/4

S/149/62/000/004/001/003
A006/A101

Anodic dissolving of tantalum in chloride melts

Figure 1: Electrolyzer



Legend: 1 - anolyte; 2 - tantalum anode, protected by a porcelain tube; 3 - tube for blowing the electrolyte with dry hydrogen chloride; 4 - lead comparison electrode; 5 - asbestos diaphragm; 6 - thermocouple; 7 - catholyte; 8 - bismuth cathode.

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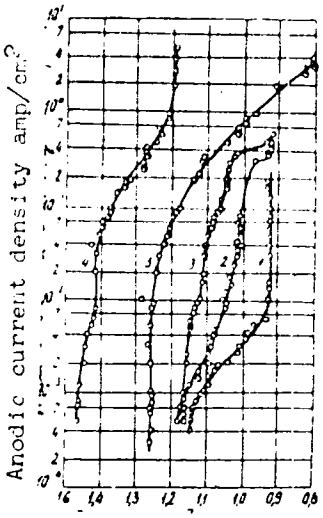
Anodic dissolving of tantalum in chloride melts

S/149/62/000/004/001/003
A006/A101

Figure 2: Dependence of the tantalum anode potential upon current density in a KCl-LiCl melt at 1 - 400°C; 2 - 600°C; 3 - 700°C; 4 - 500°C with addition of 5 weight % LiF to the electrolyte; 5 - at 400°C for a columbium anode in a KCl-LiCl melt.



Anode potential versus chlorine electrode, 8

Card 4/4

S/149/62/000/003/005/011
A006/A101

AUTHORS: Nichkov, I. F., Ryzhik, O. A., Raspopin, S. P.

TITLE: The effect of thorium on electrode potentials of bismuth in alkali-metal chloride melts

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Tsvetnaya metallurgiya, no. 3, 1962, 113 - 116

TEXT: To investigate the effect of the cation of a streng complex-forming salt upon bismuth behavior in alkali metal chloride melts, equilibrium potentials of bismuth were measured in such melts, containing thorium and bismuth, at various temperatures (950 - 1,100 K). An equimolar mixture of potassium and sodium chlorides with 3.1 weight percent $ThCl_4$ and 1.7 weight percent $BiCl_3$ was used as an electrolyte. After melting the mixture was refined by electrolysis. The emf of the cell were measured every 25 - 30 minutes for 6 - 8.5 hours. The electrolyte temperature was maintained within 700 - 850±5°C. After the experiment the thorium and bismuth content of the electrolyte were analyzed. For comparison, the temperature dependence of a bismuth electrode without $ThCl_4$, determined pre-

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viously, is given. It appears that bismuth potentials in a KCl-NaCl-$ThCl_4$-$BiCl_3$ melt are by about 80 mv more positive than corresponding values in the same melts without thorium tetrachloride. The introduction of a strong complex-forming agent, such as thorium, affects the interaction of Bi^{3+} and Cl^- ions, which becomes weaker. The $BiCl_2^+ + 2Cl^- \rightleftarrows BiCl_4^-$ equilibrium is shifted to the left. Consequently the Bi potential in such melts becomes more positive. There is 1 figure.

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

SUBMITTED: December 20, 1961

NICHKOV, I.F.; RASPOPIN, S.P.; GOLUBEV, V.I.

Anodic solution of tantalum in chloride melts. Izv. vys. ucheb. zav.; tsvet. met. 5 no.4:132-136 '62. (MIRA 16:5)

1. Ural'skiy politekhnicheskiy institut.
(Tantalum--Electrometallurgy)

NICHKOV, I.F.; RASPOPIN, S.P.; TSARENKO, A.F.

State of zinc in fused chlorides. Izv. vys. ucheb. zav.; tsvet. met. 5 no.5:89-92 '62. (MIRA 15:10)

1. Ural'skiy politekhnicheskiy institut.
(Zinc—Electric properties) (Fused salts)

S/137/62/000/011/007/045
A052/A101

AUTHORS: Nichkov, I. F., Raspopin, S. P., Devyatkin, V. I.

TITLE: Cathode deposition of Zr from molten U-containing haloids

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 11, 1962, 15, abstract 11G105 ("Tr. Ural'skogo politekhn. in-ta", no. 121, 1962, 16 - 23)

TEXT: Cathode polarization of Mo-cathode in molten haloids containing U and Zr was studied. The experiments were carried out in hard glass electrolyzers at 600 - 700°C with catholyte and anolyte separated by an asbestos diaphragm. It was found tnat at an electrolysis with low D_c (0.1 a/cm^2) Zr was deposited first. Catholyte was a molten equimolar mixture of Na and K chlorides or a eutectic mixture KCl-LiCl to which a certain amount of UF_4 and K_2ZrF_6 was added. There are 12 references.

G. Svodtseva

[Abstracter's note: Complete translation]

Card 1/1

NICHKOV, I.F.; RASPOPIN, S.P.

Electromotive force of thermocouples consisting of nickel graphite, tungsten, and molybdenum at the temperatures from 400 to 1100° C. Trudy Ural.politekh.inst.no.121:104-105 '62. (MIRA 16:5)

(Thermocouples) (Electromotive force)

NICHKOV, I.F.; RASPOPIN, S.P.; TSARENKO, A.F.

Uranium displacement by zinc from chloride melts. Atom. energ. 15 no.4:336-337 O '63. (MIRA 16:10)

[illegible], I.F.; RASPOPIN, [illegible]; KAZANTSEV, G.N.; [illegible]

Equipment for the automatic measurement of electrode polarization during the electrolysis of fused halides. Izv. vys. ucheb. zav.; tsvet. met. 7 no.6:13[illegible]-13[illegible] '64. (MIRA 18:3)

1. Ural'skiy politekhnicheskiy institut.

[illegible], V.A., [illegible], I.[illegible], [illegible]IN, [illegible]

Anodic dissolution of zinc in alkali metal chloride melts.
Izv. vys. ucheb. zav.; tsvet. met. 8 no.4:[illegible] '65.

(MIRA [illegible])

1. [illegible] politekhnicheskiy [illegible] institut.

L 38928-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6017654 (N) SOURCE CODE: UR/0136/66/000/001/0065/0067

AUTHOR: Nichkov, I. F.; Raspopin, S. P.; Babikov, L. G.

ORG: none

TITLE: Electrodeposition of beryllium from chloride-fluoride melts

SOURCE: Tsvetnyye metally, no. 1, 1966, 65-67

TOPIC TAGS: electrodeposition, beryllium, beryllium compound, fluoride, oxyfluoride

ABSTRACT: Experiments involving dissolution of beryllium oxide in chloride-fluoride melts were carried out in open quartz test tubes at 700-850°C. The amount of dissolved oxide was found to increase with the sodium fluoride concentration; apparently, the oxide reacts with the fluoride ion to form complex oxyfluoride groups. In alkali metal chlorides and sodium fluoride, BeO dissolves in amounts up to 0.5% by weight. Beryllium was electrodeposited from melts containing NaF, BeO, and BeF_2 in various proportions, and beryllium metal was obtained in all cases. Low current efficiencies are attributed to the deposition of the alkali metal at the cathode. The most suitable melt for the electrolysis is one containing an admixture of beryllium oxyfluoride. In such electrolytes, the cathodic current efficiency reached 40% for a relatively high initial current density. The effect of the oxide BeO introduced into the melt on the anodic process was determined. A study of the electrode potentials and

UDC: 669.725.054.72

Card 1/2

polarization curves indicates that BeO actually dissolves in the melt, thus changing the ionic composition of the electrolyte. Since this solubility is slight, the discharge of chloride ions is achieved in a relatively short time. Orig. art. has: 2 figures and 1 table.

SUB CODE: 07,11/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 001

L 14849-66 EWT(m)/EWP(t)/ETI LJP(c) ES/JD/WW/JW/JG
ACC NR: AP6017605 (A) SOURCE CODE: UR/0364/66/002/002/0160/0166

AUTHOR: Lebedev, V. A.; Nichkov, I. F.; Raspopin, S. P.

ORG: Ural Polytechnical Institute imeni S. M. Kirov, Sverdlovsk (Ural'skiy politekhnicheskiy institut)

TITLE: Thermodynamics of molten solutions in the uranium-bismuth system

SOURCE: Elektrokhimiya, v. 2, no. 2, 1966, 160-166

TOPIC TAGS: uranium alloy, bismuth alloy, nonferrous liquid metal, galvanic cell, thermodynamic characteristic, solution kinetics, solubility

ABSTRACT: The thermodynamic properties of molten uranium-bismuth solutions are studied by measuring the electomotive force in special galvanic cells with urnaium concentrations ranging from 0.0002 to values close to the maximum solubility at temperatures of 498-788°. The composition of the galvanic cells used in the experiments was U_{sol}|molten electrolyte+5% UCl_3|U-Bi_{liq}. A eutectic mixture of potassium and lithium chlorides was used as the electrolyte up to 698°, and an equimolar mixture of sodium and potassium chlorides was used at higher temperatures. The experiments were done in a helium atmosphere at temperatures held constant within ±1°. It is shown that solutions of uranium in bismuth conform to Henry's law practically up to the limit of solu-

Card 1/2 UDC: 541.13:536.7

L 34849-66

ACC NR: AP6017605

bility for uranium throughout the entire temperature range studied. The effect of temperature on the coefficient of activity for uranium in the alloy with respect to solid uranium is given by the equation $\ln\gamma_0 = 7107 - 3995/T^\circ K$. The thermodynamic characteristics for the formation of liquid alloys from supercooled liquid uranium and liquid bismuth are calculated. It is found that liquid alloys of uranium with bismuth are characterized by extremely strong interaction between the components which decrease somewhat as the temperature is raised. Orig. art. has: 3 figures, 4 tables, 1 formula.

SUB CODE: 11, 20/ SUBM DATE: 26May65/ ORIG REF: 005/ OTH REF: 005

Card 2/2

NICHKOV, I.P.; RASPOPIN, S.P.; TSARENKO, A.F.

State of zinc in fused chlorides. Izv. vys. uchab. zav.; tsvet. met. 5 no.5:89-92 '62. (MIRA 15:10)

1. Ural'skiy politekhnicheskiy institut.
(Zinc—Electric properties) (Fused salts)

L 06532-67 EWT(m)/EWP(t)/ETI IJP(c) JD/WW/JG

ACC NR: AP7000474 SOURCE CODE: UR/0089/66/020/004/0346/0346

41
40
B

LEBEDEV, V. A., NICHKOV, N. F., RASPOPIN, S. P. and BUKREYEV, YU. F.

"Determination of Uranium Solubility in Bismuth by the EMF Method"

Moscow, Atomnaya Energiya, Vol 20, No 4, 1966, p 346

Abstract: Results are presented of the study of the solubility of uranium in bismuth in the 400-800°C range by the EMF method. The results obtained are in excellent agreement with those obtained by the high temperature filtration method. The liquidus line can be represented approximately by two straight lines whose equations have the form:

$$\lg C_U(\text{wt }\%) = 2.480 - \frac{2160}{T,\ ^\circ K} \qquad (400\text{-}480^\circ C);$$

$$\lg C_U(\text{wt }\%) = 3.354 - \frac{2810}{T,\ ^\circ K} \qquad (480\text{-}800^\circ C).$$

The break and increased slope of the liquidus line are observed at 480°C. The deviation from experimental values of solubility does not exceed 3%.

Card 1/2 UDC: 541.135

L 06532-67

ACC NR: AP7000474

The use of different alkaline metal chloride melts as well as their mixtures, as electrolytes permitted the authors to estimate the effect of alakline metals on solubility. These metals enter the uranium-bismuth alloy from the melt of the salts, forming stable compounds with bismuth. Potassium and sodium increase the solubility of uranium in bismuth. Thus, when the K content in the alloy is 0.05% at .%, an increase of 10% is observed in the uranium solubility. When the K content is increased to 0.5 at. %, solubility is increased by 42%. Approximately the same increase in solubility was observed when 0.11 at. % K and 0.20 at. % Na were present in the alloy.
[JPRS: 37,111]

ORG: none

TOPIC TAGS: solubility, molten metal, uranium alloy, bismuth alloy

SUB CODE: 11, 07 / SUBM DATE: 29Jul65 / OTH REF: 002

Card 2/2 egh

NESTEROV, M.; KHONKAYURI, P.; RODNOV, V.; VAL'FORS, V.; NICHKOV, V.; VALDEN, Yu.

Favorable prospects of Soviet-Finnish trade. Vnesh.torg. 30 no.6:29-31 '60. (MIRA 13:6)

1. Predsedatel' Prezidiuma Vsesoyuznoy torgovoy palaty (for Nesterov). 2. Predsedatel' finsko-sovetskoy torgovoy palaty, general'nyy direktor Aktsionernogo obshchestva "Rauma-Repola" for Khonkayuri). 3. Predsedatel' Vsesoyuznogo Ob"yedineniya "Mashinoeksport" (for Rodnov). 4. General'nyy direktor Aktsionernogo obshchestva "Vyartsila-kontsern," chlen pravleniya finskosovetskoy palaty (for Val'fors). 5. Predsedatel' Vsesoyuznogo Ob"yedineniya "Eksportles" (for Nichkov). 6. Direktor-rasporyaditel' Aktsionernogo obshchestva "Ob"yedinennyye bumazhnyye fabriki," chlen pravleniya finsko-sovetskoy torgovoy palaty (for Valden).
(Russia--Commerce--Finland) (Finland--Commerce--Russia)

NICHKOV, V.N.; PETROV, B.S., prof., red.; ANDREYEV, O.N., red.izd-va; RASSUZHDAYEV, A.V., red.izd-va; PAVLOVSKIY, A.A., tekhn.red.

[Development of Soviet lumber export] Razvitie sovetskogo lesnogo eksporta. Moskva, Vneshtorgizdat, 1959. 293 p. (MIRA 12:7)

(Lumber trade)

RODNOV, V.I.; MARTYNOV, B.P.; VASIL'YEV, N.V.; NIKOLAYENKO, B.Z.; GUROV, Ye.P.; VOLCHKOV, Ye.P.; NICHKOV, V.N.; MARKELOV, I.A.; GUBANOV, M.V.

What does you association offer for the 43d anniversary of the Great October? Chiefs of all-union associations speak. Vnesh. torg. 30 no.10:28-33 '60. (MIRA 13:10)

1. Predsedatel' Vsesoyuznogo ob"yedineniya "Mashinoeksport" (for Rodnov). 2. Predsedatel' Vsesoyuznogo ob"yedineniya "Mashonoimport" (for Martynov). 3. Predsedatel' Vsesoyuznoye ob"yedineniye "Mashpriborintorg" (for Vasil'yev). 4. Predsedatel' Vsesoyuznogo ob"dineniya "Tekhnopromimport" (for Gubanov). 5. Ispolnyayushchiy obyasannosti predsedatelya Vsesoyuznogo ob"yedineniya "Soyuzpromeksport" (for Nikolayeko). 6. Predsedatel' Vsesoyuznogo ob"yedineniya "Soyuznefteeksport" (for Gurov). 7. Predsedatel' Vsesoyuznogo obyedineniya "Promsyr'yeimport" (for Volchkov). 8. Predsedatel' Vsesoyuznogo ob"yedineniya "Eksportles" (for Nichkov). 9. Predsedatel' Vsesoyuznogo ob"yedineniya "Raznoeksport" (for Markelov).
(Russia--Commerce)

NICHKOV, G.V.

Economy of metal is a most important factor in reducing the cost of seamless tubes. Izv. vys. uchet. zav.; chern. met. 7 no.8:205-209 '64. MIRA

1. Ural'skiy politekhnicheskiy institut.

NICHKOVA, G.V.

Work of the Public Bureau of economic analysis at ferrous metallurgy enterprises of the Middle Ural Economic Council. Izv. vys. ucheb. zav.; chern. met. 8 no.2:202 '65.

(MIRA 18:2)

L 9960-65 EWT(m)/T/EWP(k)/EWP(b) Pf-4 ASD(m)-3/ASD(f)-2 JD/EM/MLR
ACCESSION NR: AT4048814 S/0000/64/000/000/0331/0335

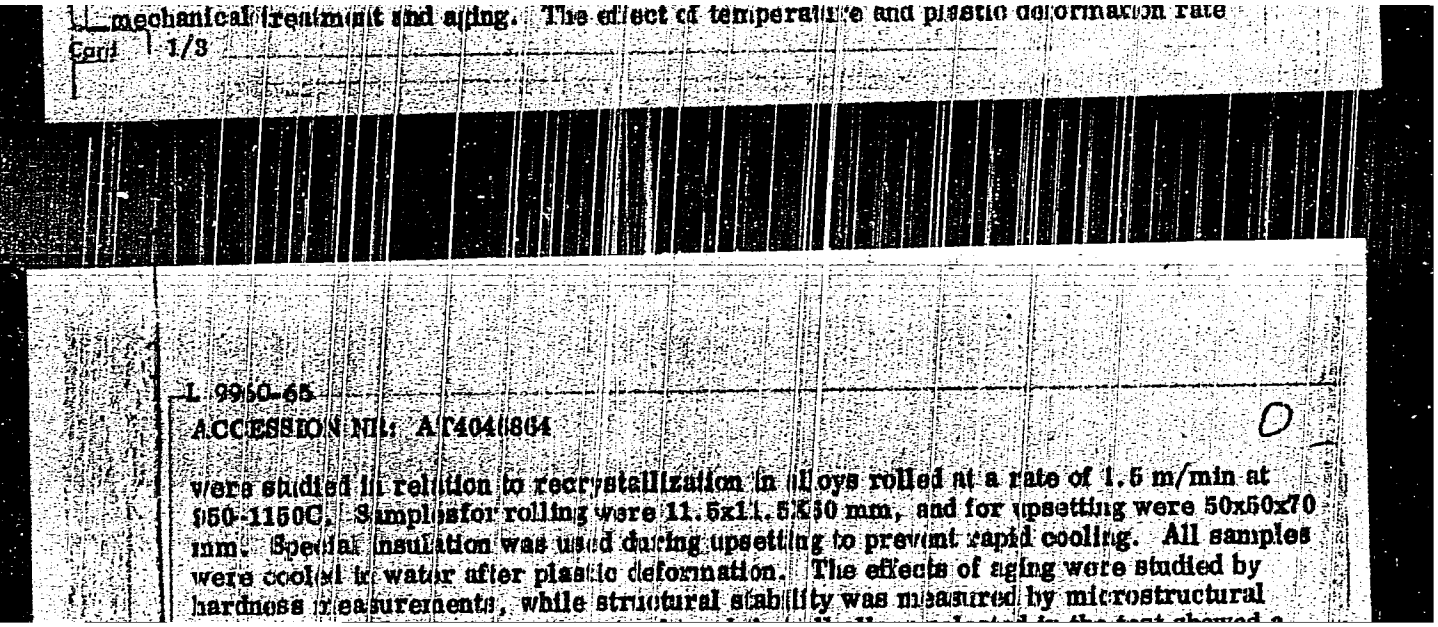
AUTHOR: Sokolkov, Yu. N., Sadovskiy, V.D., Surkov, Yu. P., Chuprakova, N.P., Nichkova, M.M.

TITLE: Investigation of the hardening and structural stability of austenitic alloys after high-temperature thermomechanical treatment

SOURCE: AN SSSR. Nauchnyy sovet po probleme zharoprochnykh splavov. Issledovaniya staley i splavov (Studies on steels and alloys). Moscow, Izd-vo Nauka, 1964, 331-335

TOPIC TAGS: thermomechanical treatment, alloy hardening, alloy structure, alloy crystallization, austenite, alloy heat resistance, alloy hardness, plastic deformation, alloy steel, austenitic steel

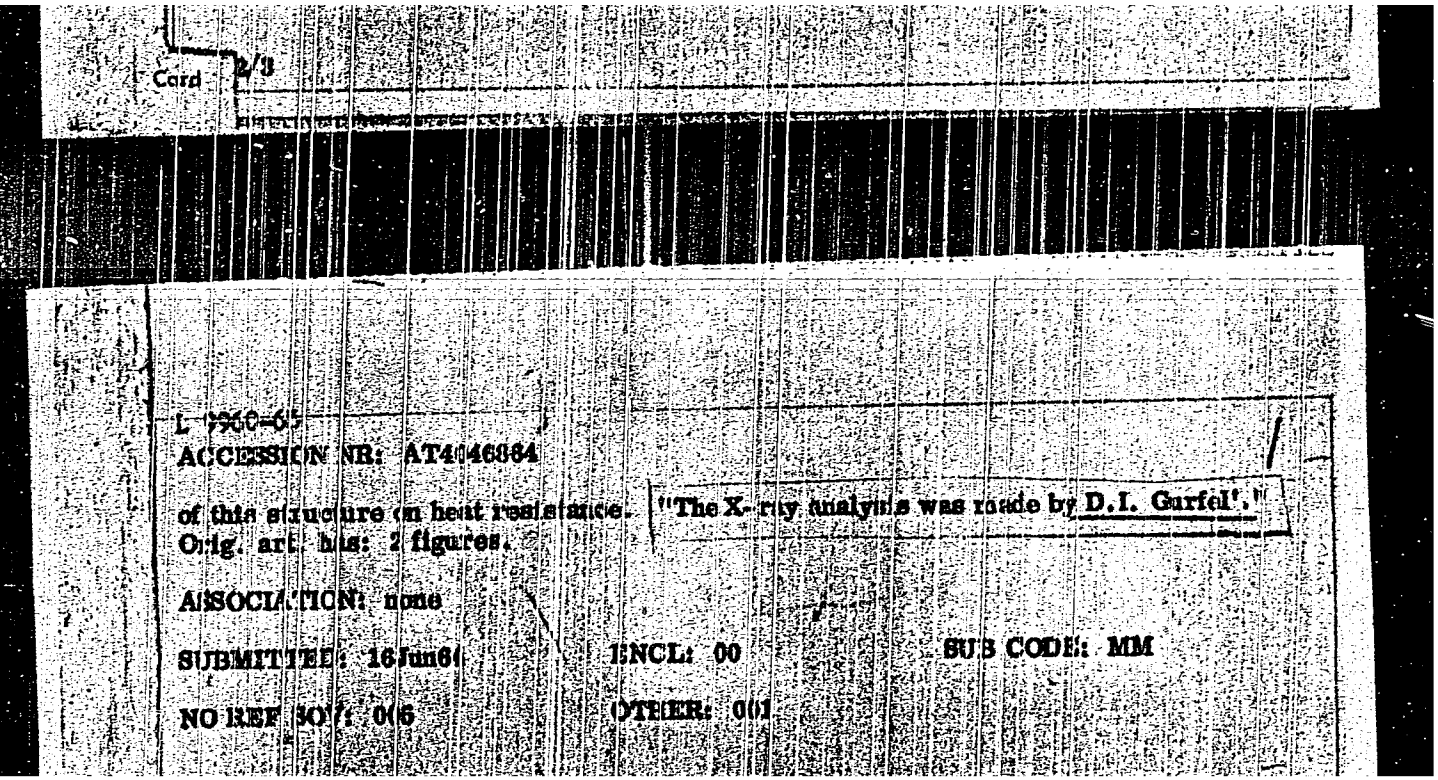
ABSTRACT: Improvement of heat resistance by high-temperature thermomechanical treatment is based on the creation of a special structure in the material during hot plastic deformation and its fixation by cooling which prevents recrystallization. The present article investigates the features of hardening of chromium-nickel-manganese



L 9950-65
ACCESSION NR: AT4041864

mechanical treatment and aging. The effect of temperature and plastic deformation rate
Card 1/3

were studied in relation to recrystallization in alloys rolled at a rate of 1.5 m/min at 950-1150C. Samples for rolling were 11.5x11.5x50 mm, and for upsetting were 50x50x70 mm. Special insulation was used during upsetting to prevent rapid cooling. All samples were cooled in water after plastic deformation. The effects of aging were studied by hardness measurements, while structural stability was measured by microstructural



Card 2/3

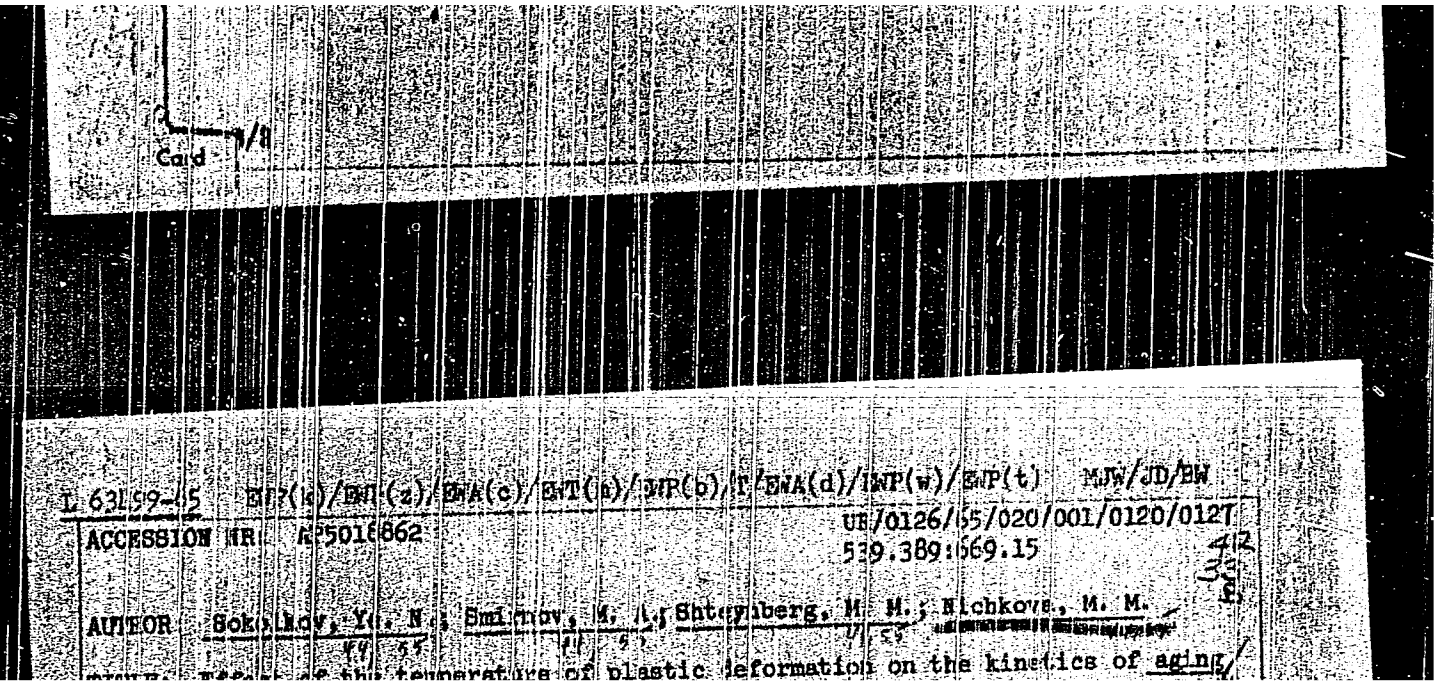
L 7900-65
ACCESSION NR: AT4046064

of this structure on heat resistance. "The X-ray analysis was made by D.I. Gurfel'."
Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 16Jun64 ENCL: 00 SUB CODE: MM

NO REF SOV: 006 OTHER: 001



Card 1/2

L 63159-65 EWT(m)/EWT(z)/EWA(c)/EWT(b)/EWP(b)/T/EWA(d)/EWP(w)/EWP(t) MJW/JD/EW

ACCESSION NR: AP5016862 UR/0126/65/020/001/0120/0127

539.389:669.15

AUTHOR: Sokolov, Yu. N.; Smirnov, M. A.; Shteynberg, M. M.; Nichkova, M. M.

TITLE: Effect of the temperature of plastic deformation on the kinetics of aging

of heat-resistant austenitic steel strengthened by carbide precipitation

SOURCE: Fizika metallov i metallovedeniye, v. 20, no. 1, 1965, 120-127

TOPIC TAGS: steel treatment, thermomechanical treatment, austenitic chromium steel, nickel containing steel, manganese containing steel, carbide precipitation strengthened steel /EI481 steel

ABSTRACT: The effect of the temperature of plastic deformation on the kinetics of aging of heat-resistant austenitic EI481 steel [0.36% C, 12.4% Cr, 7.5% Ni, 8.9% Mn, 1.23% Mo, 1.25% V, 0.25% Ni, and 0.5% Si] has been investigated. The steel was austenitized at 1180C, cooled rapidly to 1100—900C or to room temperature, rolled with reductions of up to 28%, and immediately water quenched. This was followed by aging for 1—250 hr at 650, 700, 750, and 800C. It was found that plastic deformation at all the investigated temperatures intensified decomposition of austenite and coagulation of the carbide phase and facilitated recrystallization during subsequent aging. The

Card 1/2

L 63109-65

ACCESSION NR: AP5016862

lower the deformation temperature, the more intense the austenite decomposition, e.g., after aging for 1 hr at 650, austenite decomposition was 30% in the metal deformed at 20C compared with 11% in conventionally quenched metal. On cooling from the austenitizing temperature (1180C) to 1100—700C, a partial decomposition of the solid solution occurred. In specimens quenched from these temperatures without deformation, a noticeable decrease in the strengthening effect of aging at 700—800C was observed. Plastic deformation at 20C and at 1100—400C produced noticeable strengthening only by aging at 650C. With increasing aging temperature (700—800C) an appreciable increase in strengthening as compared with conventional heat treatment was obtained only after deformation in the 900—400C range. It is concluded that in steels such as E1461, which are strengthened by carbide precipitation, no significant strengthening by thermomechanical treatment can be obtained owing to an intensive coagulation of the precipitated carbide phase. On the contrary, in steels such as E1612K, in which an intermetallic compound is precipitated, a higher degree of strengthening can be obtained by changing the kinetics of aging since the

coagulation of the strengthening phase proceeds at a substantially [MS]
art. has: 5 figures and 2 tables.

ASSOCIATION: Institut fiziki metallov AN SSSR (Institute of Metals Physics AN SSSR); Ural'skiy politekhnicheskiy institut im. S. M. Kirova (Ural Polytechnical Institute)

Card 2/3

L 63499-65

ACCESSION NR: AP5018862

SUBMITTED: 11Jul64 ENCL: 00 SUB CODE: AM, MM

NO REF SOV: 004 OTHER: 000 ATD PRESS: 4673

Card 3/3

PUSHIN, G.A.; NICHKOVA, Z.S.

Organization of medical care for industrial workers by an open system in Sverdlovsk. Zdrav.Ros.Fed. 3 no.10:22-26 O '59. (MIRA 13:1)

1. Iz Sverdlovskogo gorzdravotdela (zav. - kand.med.nauk Ye.I. Milyutina).

(SVERDLOVSK--MEDICAL CARE)

ACC NR: AT6033313 (N) SOURCE CODE: UR/0000/66/000/000/0091/0094

AUTHOR: Gronskiy, Ya. I. (L'vov); Nichoga, L. A. (L'vov); Oleg, V. I. (L'vov)

ORG: none

TITLE: Comprehensive apparatus for the production and investigation of short acoustic pulses

SOURCE: AN UkrSSR. Voprosy prikladnoy akustiki i vibratsionnoy tekhniki (Principles of applied acoustics and vibration technology), Kiev, Naukova dumka, 1966, 91-94

TOPIC TAGS: acoustic equipment, pulse generator, sound transmission, acoustic signal, electroacoustics

ABSTRACT: The authors describe transmitting-receiving apparatus for large pulsed currents, aimed at producing the electrohydraulic effect (Fig. 1). The apparatus operates on a principle similar to that of the hydraulic ram, using the synchronized charging and discharging of capacitors. Pulses of several microseconds, at voltages up

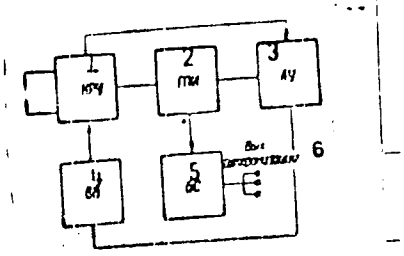


Fig. 1. Diagram of acoustic pulse generator. 1 - Charge-discharge unit, 2 - triggering pulse generator, 3 - automatic control unit, 4 - high-voltage rectifier, 5 - synchronization block, 6 - synchronization output.

Card 1/2

ACC NR: AT6033513

to 30 kv and at energies up to 1.3×10^3 J, are generated. The control circuit triggering the discharge of the capacitors and production of the samples also starts and stops a tape recorder. The apparatus weighs 550 kg and consumes approximately 1200 W. Orig. art. has: 2 figures.

SUB CODE: 20, 09/ SUBM DATE: 19May66/ ORIG REF: 002

Card 2/2

MI YUK, L. Ya.; MICHAGA, V. A.

Electrical parameters of the inducti n type low frequen y magnetic receivers with ferromagnetic cores. Geofiz. prib. no.24 [illegible] 62. (MIRA 18.5)

1. Fiziko-mekhanicheskiy institut AN Ukr SSR, Lvov.

L 02285-67

ACC NR: AT6020479 (A) SOURCE CODE: UR/0000/65/000/000/0101/0110

AUTHOR: Mizyuk, L. Ya. (L'vov); Nichoga, V. A. (L'vov)

ORG: none

TITLE: Evaluation of the efficiency of low frequency magnetic induction receivers

SOURCE: AN UkrSSR. Teoriya i elementy sistem otbora geofizicheskoy informatsii (Theory and elements of systems for selecting geophysical information). Kiev, Naukova dumka, 1965, 101-110

TOPIC TAGS: circuit design, electric measuring instrument

ABSTRACT: The authors discuss problems in designing low frequency magnetic induction receivers. Losses due to the ferromagnetic core of the coils may be calculated from the known magnetic permeability of the ferromagnetic core. Two cases are considered: in the first, the receiver has a passive coil, i. e., its geometry and the position of the core within the frame as well as its internal magnetic field are neglected. In the second case, these factors are taken into account. It is shown mathematically that the expected efficiency of the passive coil exceeds by many times the value obtained experimentally. On the other hand, the theoretical efficiency of the active coil is nearly that obtained experimentally. Orig. art. has: 26 formulas, 1 figure, 1 table.

SUB CODE: 09/ SUBM DATE: 10Nov65/ ORIG REF: 005

L 30356-66

ACC NR: AT6008318 SOURCE CODE: UR/0000/65/000/000/0104/0110

AUTHOR: Nicnoga, V.A. (L'vov)

ORG: none

TITLE: The optimum form of bar cores of induction magnetoreceivers

SOURCE: AN UkrSSR. Elementy sistem otbora i peredachi informatsii (Elements of systems for selecting and transferring information). Kiev, Naukova dumka, 1965, 104-110

TOPIC TAGS: magnetic detection, magnetic core

ABSTRACT: In the design of highly efficient induction magnetoreceivers it is important to assure the achievement of optimum characteristics. This is particularly important for electrical geophysical exploration utilizing low (20 cps to 20 kc) frequencies requiring the maximum possible reduction in size of the necessary equipment. The present article discusses the choice of the optimum shape of the induction magnetoreceiver core, i.e., the shape for which the relative length of the core secures the largest magnetoreceiver constant. The results of the theoretical study are summarized in two graphs, one of which gives the optimum relative length as a function of the magnetic properties of the magnetic material (up to $\mu/\mu_0 = 10^4$). Orig. art. has: 12 formulas and 3 figures.

SUB CODE: 09 / SUBM DATE: 06Nov65 / ORIG REF: 008 /

Card 1/1

ACC NR: AT6003003 (N) SOURCE CODE: UR/3175/65/000/025/0040/0044

AUTHOR: Nichoga, V. A.

ORG: FMI AN UkrSSR

TITLE: Determination of critical relative length of cylindrical ferromagnetic cores

SOURCE: USSR. Gosudarstvennyy geologicheskiy komitet. Osobove konstruktorskove byuro. Geofizicheskaya apparatura, no. 25, 1965, 40-44

TOPIC TAGS: magnetic core, magnetic permeability, asymptotic property, demagnetization, ferromagnetic structure

ABSTRACT: A method for determining the critical ratio of length to diameter, (i.e. relative length) of cylindrical ferromagnetic cores, is discussed with respect to the design of low frequency magnetic receivers. The critical relative length is that length at which the specific permeability of the core reaches an asymptotic value. This value is always smaller than the chosen value of relative length. It is shown that the critical value can be determined from a formula for the demagnetization coefficient (which is relative-length dependent) and from the value of

Card 1/2

ACC NR: AT6003003

material permeability. The method uses the asymptotic values of specific permeability and leads to an expression for the critical relative length. Because the resulting equations are in transcendental form, a graphic method of solution must be employed. For material permeability less than 10^4, an approximation formula has been derived to replace the graphic method. Orig. art. has: 3 figures, 5 formulas.

SUB CODE: 09/ SUBM DATE: 00/ ORIG REF: 004/ OTH REF: 002

Card 2/2

ACC NR: AT6003005 (A,N) SOURCE CODE: UR/3175/65/000/025/0079/0098

AUTHOR: Mizyuk, L. Ya.; Nichoga, V. A.

B+1

ORG: FMI AN UkrSSR

TITLE: Calculation of demagnetization coefficients of hollow cylindrical cores

SOURCE: USSR. Gosudarstvennyy geologicheskiy komitet. Osoboye konstruktorskoye byuro. Geofizicheskaya apparatura, no. 25, 1965, 79-98

TOPIC TAGS: magnetic core, ferromagnetic structure, demagnetization, magnetic permeability

ABSTRACT: Replacement of solid cylindrical cores by equivalent hollow cylindrical cores leads to reduction of core weight. This is especially important in low-frequency instruments using large coils. This paper explains in detail how to calculate demagnetization coefficients of such cores. Analytic equations used for solid core design are modified to account for cavity effects. Curves based on these equations are graphed to show the relationship between various design parameters. Several examples are considered where the use of these parameters is made and the

Card 1/2

ACC NR: AT6003C05

computed results are tabulated. In the case where magnetic permeability of the material approaches infinity, the demagnetization coefficient is a function of only cavity size and the relative length of the cylinder. Orig. art. has: 4 figures, 1 table, 59 formulas.

SUB CODE: 09,20I SUBM DATE: 00/ ORIG REF: 009/ OTH REF: 000

Card 2/2

L 25210-65 EWI(m)/EPF(c)/EWP(j)/T/EWA(c) Pc-4/Pr-4 RPL JM/RM

ACCESSION NR: AP5001487 S/0065/64/000/012/0024/0027

AUTHOR: Yakushkin, M. I.; Nichugovskaya, K. M.

TITLE: Synthesis of the higher molecular weight secondary N-benzyl-n-alkylamines

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 12, 1964, 24-27

TOPIC TAGS: benzylalkylamine, organic synthesis, hydrogenation, Shiff's base, high molecular weight amine

ABSTRACT: Recently N-benzylalkylamines have been used as highly effective extragents of uranium from sulfuric acid solutions by producing quaternary ammonium bases. They can be used in the petroleum fuels and lubricants. Consequently it is important to find efficient methods for their synthesis. The investigation was directed at synthesis of higher N-benzylalkylamines by hydrogenation of Shiff's bases and selection of optimum conditions to carry out these reactions. As starting materials use was made of benzaldehyde, n-octylamine, n-decylamine and n-dodecylamine. The secondary amines were obtained in two stages:

Card 1/2

L 25270-65

ACCESSION NR: AP5001487

1. Synthesis of Shiff's bases to condensation of benzaldehyde with aliphatic amines

$$RNH_2 + OHCC_6H_5 \longrightarrow R\text{-}N = CH - C_6H_5 + H_2O \text{ and}$$

2. Hydrogenation of the obtained Shiff's bases to corresponding N-benzylalkylamines

$$R - N = CH = C_6H_5 + H_2 \longrightarrow R\text{-}NH - CH_2 - C_6H_5$$

The optimum conditions for synthesis were: hydrogenation temperature--100 C, pressure--50 kg/cm^2, amounts of catalyst-- 5-10% of the weight of amine, molar ratio of amine: benzaldehyde = 1:1 and n-heptane as solvent. Orig. art. has: 3 tables

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskoy promyshlennosti (All-Union Scientific Research Institute of the Petrochemical Industry)

SUBMITTED: 00 ENCL: 00 SUB CODE: OC, GC

NR REF SOV: 004 OTHER: 006

Card 2/2

S/120/62/000/003/013/048
E075/E436

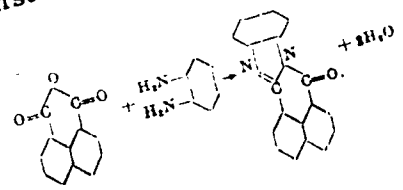
9.6150

AUTHORS: Mikhal'chenko, G.A., Nichugovskiy, G.F., Rozhanovskaya, L.P.

TITLE: Plastic scintillators with the maximum luminescence in the region of 500 millimicrons

PERIODICAL: Pribory i tekhnika eksperimenta, no.3, 1962, 66-70

TEXT: The authors describe preparation and purification of 1,2-perinaphthalene-benzimidazole (I) and 1,2-(perinaphthalene-3'-acetyloxy)-benzimidazole (II). The luminescent properties of the compounds dissolved in polystyrene were studied. I was obtained by condensation of naphthalic anhydride with orthophenylene diamine

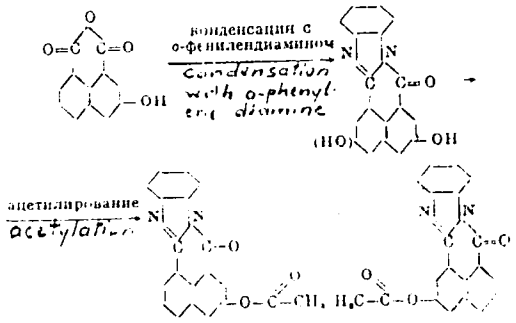


Card 1/3

S/120/62/000/003/013/048
E075/E436

Plastic scintillators ...

II was obtained by the reaction



It was shown that the relative luminescent yield increased with the initial concentration of the compounds up to 1.0×10^{-2} to 1.5×10^{-2} g per 1 g of polystyrene. Maximum luminescence corresponded to the wavelength $\lambda_{max} = 495$ mμ. When the concentration of I changed from 0.91×10^{-4} to 2.3×10^{-2} per g of polystyrene, the maximum shifted from ~ 490 to ~ 505 mμ.

Card 2/3

Plastic scintillators ...

The presence of para-terphenyl in the solution (2% weight) increased the internal yield of luminescence by 2.8 times, whilst not changing the position of the maximum. The maximum luminescence given by the compounds corresponds well to the region of maximum eye sensitivity (507 mμ) under conditions of poor illumination. The compounds studied can be utilized for the visual recording of ionizing irradiations. There are 4 figures and 1 table.

ASSOCIATION: Leningradskiy tekhnologicheskiy institut
(Leningrad Technological Institute)

SUBMITTED: October 20, 1961

Card 3/3

BR

ACCESSION NR: AP4020058 S/0186/64/006/001/0104/0107

AUTHOR: Shvedov, V. P.; Nichugovskiy, G. F.

TITLE: Separation of alkali elements by the electrophoresis method. I. Separation of rubidium and cesium ions with ammonium paratungstate

SOURCE: Radiokhimiya, v. 6, no. 1, 1964, 104-107

TOPIC TAGS: rubidium, cesium, separation, electrophoresis, electrophoretic cell, ion mobility, ammonium paratungstate, alkali element separation

ABSTRACT: The construction of an electrophoretic cell with quartz sand as the porous filler is described (fig. 1). In this apparatus the apparent degree of mobility of ions can be determined within 5%. Solutions of ammonium paratungstate which was prepared by dissolving stoichiometric amounts of tungstic acid with ammonia can be used for separation of Rb and Cs ions by the electrophoretic method. Optimum paratungstate concentration is in the 1×10^{-3} to 5×10^{-3}M range (based on weight). In the example Rb and Cs were separated with 3.5 x

Card 1/3

ACCESSION NR:AP4020058

10^{-3} M ammonium tungstate in 18 minutes with a gradient potential of 19 v./cm. Strong electrolytes may be added to the ammonium paratungstate solution to increase the mobility of the Rb and Cs ions. This increase in mobility effect increases in the following series of monovalent ions: Li, Na, NH_4, K, Rb, Cs, H. Orig. art. has: 4 figures and 1 table.

ASSOCIATION: None

SUBMITTED: 10Jul63 DATE ACQ: 31Mar64 ENCL: 01

SUB CODE: GC NO REF SOV: 002 OTHER: 008

Card 2/3

ACCESSION NR: AP4020058

ENCLOSURE: 01

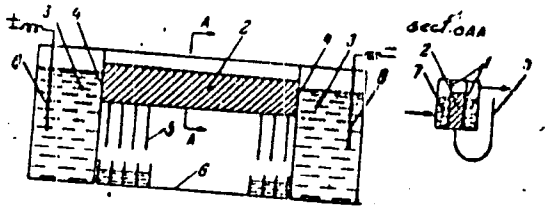


fig. 1

Electrophoretic cell diagram

1. plexiglas membranes
2. quartz sand
3. electrode container
4. porous dividers
5. flexible tubes for removing samples
6. receiver
7. housing
8. platinum electrodes

Card 3/3

ACCESSION NR: AP4020059 S/0186/64/006/001/0107/0110

AUTHOR: Shvedov, V. P.; Nichugovskiy, G. F.

TITLE: Separation of alkali elements by the method of electrophoresis. 2. Separation of rubidium and cesium ions in solutions of potassium ferrocyanide

SOURCE: Radiokhimiya, v. 6, no. 1, 1964, 107-110

TOPIC TAGS: electrophoresis, cesium, rubidium, ion, separation, alkali elements, cesium rubidium separation, ion mobility, potassium ferrocyanide, ferrocyanic acid anion

ABSTRACT: The dependence of the mobility of Rb and Cs ions on the equilibrium concentration of ferrocyanic acid anions in potassium ferrocyanide solutions was investigated (see Enclosure). The conditions for separating Rb and Cs improve with an increase in ferrocyanide concentration. The dissimilar stability of the associated ions formed leads to different mobilities. Cs and Rb ions in a solution of 0.034 M $K_4Fe(CN)_6$ + 0.052 M KNO_3 were completely separated in 30 minutes with a gradient

Card 1/2

ACCESSION NR: AP4020059

potential of 8.5 v/cm. The hypothesis is presented that the basic reasons for the weakening of the association of the Rb and Cs ions is the dissimilar degree of the association of these ions with those of ferrocyanic acid. Orig. art. has: 2 figures and 3 equations.

ASSOCIATION: None

SUBMITTED: 10Jul63 DATE ACQ: 31Mar64 ENCL: 01

SUB CODE: CH NO REF SOV: 007 OTHER: 003

Card 2/3

SHVEDOV, V.P.; NICHUGOVSKIY, G.F.

Cell for measuring the mobility of ions by the application of radioactive indicators. Zhur. fiz. khim. 39 no.4:1030-1034 Ap '65. (MIRA 18:4)

1. Leningradskiy tekhnologicheskiy institut. Submitted Jan. 1, 1964.

22018

18 7500 1145, 1418

S/145/61/000/003/003/006
D205/D304

AUTHOR: Nichushkin, V.V., Aspirant

TITLE: Installation for testing the fusion of metals and alloys in vacuum

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, mashinostroyeniye, no. 3, 1961, 58 - 63

TEXT: Metal fusion is an essential property for many technological processes, for instance, in the manufacture of bimetals by cold diffusion or by ultrasonic welding. Fusion depends on the following factors: temperature; contact pressure; surface states of the interacting metals; time of interaction; duration, amplitude and frequency of ultrasonic vibrations (if applied). The influence of these on the process can be studied experimentally by means of the described apparatus designed to ensure the following: 1) Regulation of pressure vector on the specimen in contact; 2) Creation

Card 1/5

Installation for testing ...

of vacuum; 3) Control of temperature on the contacting surfaces; 4) Application of ultrasonic vibrations. Construction of the installation is explained with reference to Fig. 2. The working chamber is enclosed by hood 1 and a plate resting on a horizontal table and fitted with a vacuum rubber for sealing. The hood can be raised or lowered on guides 2 by means of screw 3 and handle 4. A vacuum is obtained with the aid of pump type RVN of 200 l/min capacity and a second stage pump type TsVL-100S of 100 l/sec capacity. Vacuum of $1 \cdot 10^{5}$ mm Hg can be reached and is measured by valve 5 type LT-2 down to 10^{-3} mm Hg and by an electro-magnetic manometer 6, type MM-5. Normal loads are applied by means of weights 7 and 8 and the tangential ones by screw 13 and rod 14. Bellows 15, 16, 17 and 20 serve as seals. For measuring loads two precision dynamometers type DS-0.2 for loads up to 200 kg, and type DK-5 for loads up to 3000 kg are used. Ultrasonic vibrations can be applied to the specimen from vibrator 19 through concentrator 18, the geometry (length and radius) of which is chosen experimentally. A 10 kW ul-

Installation for testing ...

trasonic generator UZG-10 is used. Screws 21, 22 and handles 23, 24 enable the concentrator to be manipulated and the amplitude of vibrations is measured with the help of Green's binocular microscope and window 25. The lower specimen is mounted on slider 27 on table 26. 28 is an electric heater and 30 is a movable chromel-alumel thermocouple. Specimens can be flat, 10 mm thick or cylindrical 15 mm in diameter and 15 to 20 mm long or cylindrical with a spherical end for point contacts. Before testing, specimens are polished, washed in gasolene and then in a water solution of soda and sodium nitrate (15 % Na_2CO_3, 5 % $Na\ NO_2$) at 30-40°C. When a vacuum is generated, the specimens are heated to and held at a temperature according to Table No. 1 given by M.G. Lozinskiy (Ref. 10: Vysokotemperaturnaya metallografiya (High Temperature Metallography) M. 1956). This further cleans and normalizes the surfaces. The specimens are then cooled to the test temperature and brought into contact ready for testing. For application of ultrasonic vibrations, both specimens are mounted on table 1 and concentrator 7

Card 3/5

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S/145/61/000/003/003/006
D205/D304

Installation for testing ...

is applied to the upper specimen. Pressure is then exerted by load 8. By means of the described apparatus the influence of normal and tangential forces and temperature on the processes of fusion can be studied in various combinations. There are 3 figures and 13 references: 12 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: A.E. Roach, Scoring Characteristics of Bearing Materials, Product Engineering, 1954, vol. 25, November, No. 11, p. 171 - 175.

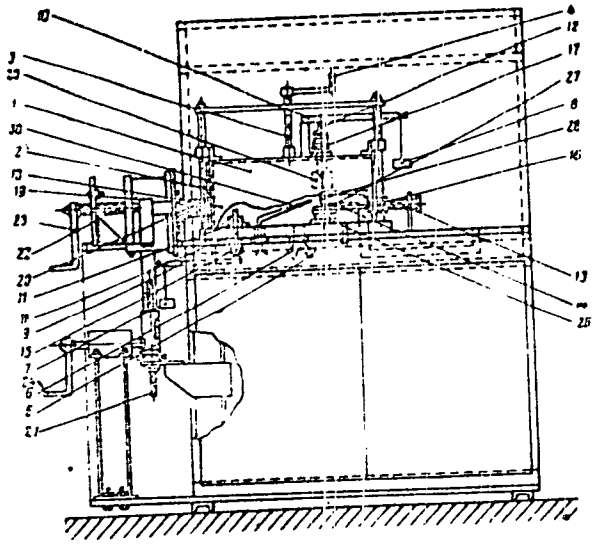
ASSOCIATION: MVTU im. N.E. Baumana (Moscow Technological College (MVTU) im. N.E. Bauman)

SUBMITTED: March 11, 1960

S/145/61/000/003/003/006
D205/D304

Installation for testing ...

Fig. 2.



Card 5/5

L 63979-65 EWT(m)/EWP(b)/T/EWA(d)/EWP(w)/EWP(t) IJP(c) EM/GD

ACCESSION NR: AP5013073 UR/0149/65/000/001/0132/0135

AUTHOR: Chernyavskaya, S. G.; Velichkin, V. S.; Kachalova, O. A.; Kedrin, L. D.; Nichushkin, V. V.; Ushchenko, V. G.

TITLE: Use of audio frequency vibrations for aging aluminum alloys

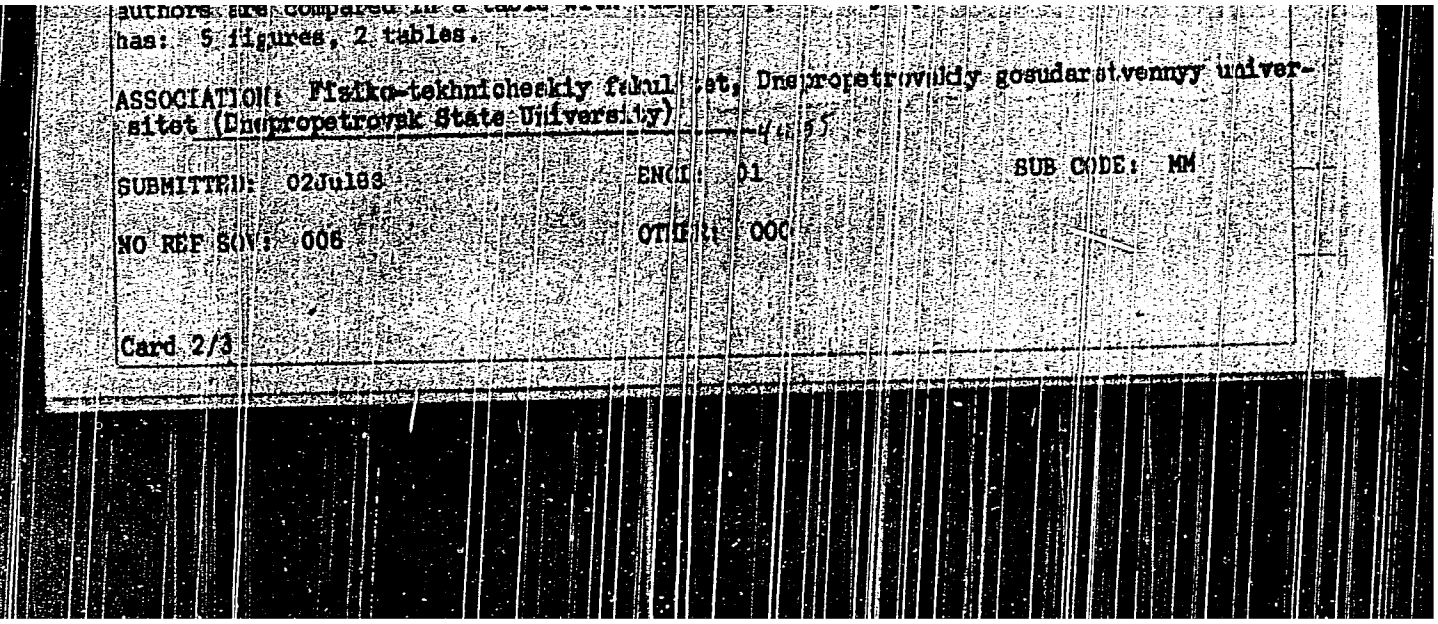
SOURCE: IVUZ. Tsvetnaya metallurgiya, no. 1, 1965, 132-135

TOPIC TAGS: mechanical testing, fatigue testing, aluminum alloy

ABSTRACT: The effect of audio frequency vibrations on aging of aluminum alloys was studied. The results indicate that this method may be used to determine the mechanical properties of alloys in close agreement with data obtained in industry. A considerably shorter time is required than when using presently accepted methods. The tests were made on 4 aluminum alloys (see table 1 of the Enclosure). The samples were heat-treated in salt baths, quenched in water and immediately placed

L 63979-65
ACCESSION NR: AP5013073

the vibration cycle. The schematic diagram of the electrical vibrator and a picture of the mechanical vibrator are shown. The test results are represented in 3 graphs: yield stress vs. vibration frequency; ultimate strength vs. frequency; yield stress vs. vibration amplitude. For comparison on each graph are given also



authors are compared in a table. has: 5 figures, 2 tables.

ASSOCIATION: Fiziko-tekhnicheskiy fakul'tet, Dnepropetrovskiy gosudarstvennyy universitet (Dnepropetrovsk State University)

SUBMITTED: 02Jul63 ENCL: 01 SUB CODE: MM

NO REF SOV: 006 OTHER: 000

Card 2/3

ACC NR: AP7001206 (N) SOURCE CODE: UR/0407/65/000/05-/0154/0159

AUTHOR: Kazakov, N. F. (Moscow); Nichushkin, V. V. (Moscow)

ORG: none

TITLE: Determination of the conditions of vacuum-diffusion bonding of VT1-1 titanium

SOURCE: Elektronnaya obrabotka materialov, no. 5-6, 1965, 154-159

TOPIC TAGS: titanium, vacuum diffusion , titanium diffusion bonding, diffusion bonding condition, bonded joint strength/VT1 titanium

ABSTRACT: Specimens of VT1-1 commercial-grade titanium were diffusion bonded in a vacuum of 10^{-1}—10^{-4} tor at a temperature of 650—1000C under a specific pressure of 0.1—1.5 kg/mm^2 with a holding time of 1—25 min and cooled to 100—400C in vacuum. The results of tension tests showed that the joints bonded in a vacuum of 10^{-3} tor in the 750—950C range under a specific pressure of 0.2—0.35 kg/mm^2 have a tensile strength of 55—57 kg/mm^2, equal to that of the base metal annealed at the respective bonding temperature. The maximum tensile strength (60 kg/mm^2) was achieved with bonding in a vacuum of 10^{-3} tor at 800C under a specific pressure of 0.7 kg/mm^2, a holding time of 8—10 min, and cooling to 200C in vacuum. The strength of the joint is determined mainly by the specific pressure and temperature of the bonding process. Generally, the specific pressure is 60—70% of the yield strength at the

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ACC NR: AP7001206

bonding temperature. The diffusion-bonded VT1-1 parts tested to destruction failed in the base metal. Orig. art. has: 8 figures. [MS]

SUB CODE: 13/ SUBM DATE: none/ ORIG REF: 005/ ATD PRESS: 5110

Card 2/2

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136830

GAWRONSKI, J.; KARCH, Z.; LANG, I.; NICIECKI, Fr.; KRZEKOTOWSKI, L.

Grinding drawn sheet glass in the Kunice Glassworks. Szklo 13 no.4:97-107 Ap '62.

NICIFOROVIC, A.

"Roadside improvement."

p. 53 (Put I Saobracaj) No. 4, Apr. 1957
Belgrade, Yugoslavia

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4, April 1958

YUGOSLAVIA

Dr A. NICK [Affiliation not given]

"Dr Josip Medved."

Zagreb, Lijecnicki Vjesnik, Vol 85, No 3, 1963; pp 367-368.

Abstract: Necrology and brief biographical sketch of this physician and dentist, former Head of the City Department of Public Health of Zagreb, who died in 1962 at age 73. Photograph.

1/1

On the Metallurgy of High Quality Cast Irons with Compact or Spheroidal Graphite Formation. [illegible] and E. G. Nickel. (*Giesserei*, 1955, 42, July 21, 385–393; Aug. 4, 412–419). Overheating of the melt and deoxidation is first considered as a method of producing high-quality cast irons. Next the use of basic melting together with overheating the melt is discussed. The degasification of cast-iron melts may be effected with purging gases. High vacuum may be used for gas purification of cast-iron melts. Finally the use of reaction mixtures and metallic materials for extensive deoxidation is described, the aim being a compact graphite distribution in the cast iron. The thermodynamics and chemical reactions likely to proceed in each method are described. (31 references).

NICKLAS, A.

Stock, A., Wiberg, E., Marini, H. and Nicklas, A.

Boron hydrides. XVII. Electrolysis of solutions of boron hydrides in liquid ammonia.

Ber. Vol. 65B, 1932, pp. 1711-24

Chem. Abs., Vol. 27, p. 911

B_2H_6 is dibasic and B_4H_{10} tetrabasic in liquid NH_3. During electrolysis aminization takes place first with evolution of H_2. The anion radicals of the intermediate salts then react with NH_3, retrieving the NH_2 deriv. of the hydride with an accompanying evolution of N_2. Analysis of the residue after electrolysis shows that 2 H atoms are replaced by NH_2 in B_2H_6, from 4 to 6 in B_4H_{10}. The same 2 reactions take place with $B_{10}H_{14}$. The aminization is fast and almost complete, 12 or more H atoms being replaced by NH_2.

NICKOLAYEVA, Z. V. PA 3/49T21

USSR/Chemistry - Cyanides, Determination of Aug 48
Chemistry - Analysis

"Determination of Small Concentrations of Cyanides in the Presence of Inhibiting Substances," Ya. Yu. Lur'ye, Z. V. Nikolayeva, Inst Vodgeo, 8 pp

"Zavod Lab" Vol XIV, No 8

Existing methods of analysis cannot be applied to determine cyanides in dilute solutions containing simple and complex cyanides, thiocyanides, sulfides, organic compounds, etc. Authors describe their own method.

FDB 3/49T21

NICKOLIC, V.

NICKOLIC, V. Safety measures for road transportation. p. [illegible].

Vol. 4, No. [illegible], Aug./Sept. 1956.
[illegible]
[illegible]
Zagreb, Yugoslavia

SO: East European Accession, Vol. 6, No. [illegible], February 1957

NICMAN, Zdzislaw

Oil-hydraulic plastic presses. Mechanik 35 no.5:310 My '62.

USSR/Farm Animals - Large Horned Cattle.

Abs Jour : Ref Zhur - Biol., No 18, 1958, 83335

Author : Dzelme, J., Lusnevska, O., Niemane, A., Zalite, I., Anisenko, A., Stabina, S.

Inst : Latvian Academy of Agriculture.

Title : Effects of Corn Silage upon the State of Health of Milch Cows.

Orig Pub : Tr. Latv. s.-kh. akad., 1957, vyp. 6, 267-272.

Abstract : Disturbances of the organism's physiological functions were found to exist in cows which were fed increased amounts of corn silage (40-50 kg). These disturbances were expressed in changes of alkalinity reserves and appearance of acetone in the urine of the cows.

Card 1/1

FODOR, C., prof.; BARBARINO, Fedora, dr.; GEORGESCU, E., dr.; NICOARA, A., dr.; [illegible], I., dr.

Critical appraisal of the value of the methods of liver function test using BSP. Studies of BSP in serum, bile, urine and of the separate chromatographic fractions. Med. intern. (Bucur.) 17 no.4: 309-312 Ap '65.

1. Lucrare efectuata in Clinica a III-a medicala, Institutul medico-farmaceutic, Cluj (director: prof. C. Fodor).

NICOARA, E.

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scopied

The action of carotenoids in the processes of autoxidation and polymerization. I. The autoxidation of benzaldehyde in the presence of α- and β-carotene. C. Bodea, E. Nicoară, and I. Gross (Agron. Inst., Cluj, Romania). *Acad. Rep. Populare Romîne (Cluj), Studii cercetări științ.* 4, No. 3/4, 51-60(1953).—The action of small amts. of α- and β-carotene on the photochem. autoxidation of BzH was examd. in a 5% soln. of BzOH in acetone by measuring the vol. of O_2 consumed and by titrating the BzOH formed. The 2 measurements agreed well. Both carotenes prevent the autoxidation of BzH until decoloration of the soln. shows that they have been used up completely. It is postulated that the carotenes react with the radical $C_6H_5C(O)OO$, which is the first step in the autoxidation of BzH, and thus interrupt the chain. The carotenes are oxidized by attack on the double bonds with formation of ethylene oxide.

Werner Jacobson

NICOARĂ, E.

MD Preparation of α- and β-carotene from vegetables. C. Bodea, E. Nicoară, and F. Grau (Univ. Cluj, Rumania). *Acad. Rep. Populare Romîne, Studii Cercetări Stiinț.* 5, 73–81 (1954) (French summary).—α- and β-Carotenes were extd. from various carrot varieties, Guinea pepper (*Capsicum annuum*) and *Cucurbita maxima*. The isomers were sepd. chromatographically by means of a mixt. of MgO and fine sand. Highest carotene content was found in Chantenay, Bulgarian, and Nantes carrots. A semiindustrial extn. installation from these was described.

Gary Gerard

(2)

Nicoara, E.

The autoxidation of carotenoids. I. The autoxidation mechanism of α- and β-carotene. C. Bodea and E. Nicoară (Univ. Cluj, Romania). *Acad. rep. populare Romîne, Studii cercetări chim.* 3, 81-91(1955)(French summary).—The autoxidation of α- (I) and β-carotene (II) in org. solvents proceeds by the following mechanism: on contact with air O is taken up at the 3 and 3' C of the ionone rings to form peroxide groups that then give up one O atom to the system of conjugated double bonds. The transformation of caroteues to xanthophylls *in vitro* is thus explained. The autoxidation of I and II is caused apparently not by their unsatd. character but rather by the existence of a secondary C that becomes electropos. by displacement of the electronic d. in the conjugated double bond system. The action of carotenoids in autoxidation and polymerization reactions. III. The autoxidation of some trivalent radicals in the presence of α- and β-carotene. C. Bodea and M. Florescu. *Ibid.* 93-101.—In the autoxidation of the systems $Ph_2C_4Ph_8$-Ph_3C (III) and PhCHOHCOPh-($PhCO)_3$-KOH (IV) in the presence of small amts. of I and II the radical with the trivalent C is autoxidizable under formation of peroxide radical which eventually gives up one O to the carotenes; as a result I and II are decolorized rapidly. The absorption of O by III is retarded by the presence of I or II, whereas that by IV is not affected. The decoloration of I and II within a short period may serve to identify peroxide radicals formed in various autoxidation reactions. IV. The autoxidation and polymerization of cyclohexene in the presence of α- and β-carotene. *Ibid.* 103-11.—Cyclohexene (V) autoxidizes in air to form peroxidic radicals that give up one O to I and II, causing their decoloration. The O absorption and polymerization of V, without catalysts, at 40 and 70° was inhibited by small amts. of I or II. The autoxidation of I or II is a short chain reaction initiated by the numerous peroxide radicals in V.

Gary Gerard

NICOARA, E.

Autoxidation and mechanism of [illegible] of carotene. C. Bodea, E. Nicoara, M. Florescu and J. Gross (*Rev. Chim., Bucharest*, 19[illegible], 1, No. 1, 133—142).—It is deduced from the bleaching of iodine by solutions of α- or β-carotene in presence of air, and the inhibition of the autoxidation of aldehydes until the carotene is decolorised, that carotene reacts with air to form a hydroperoxide. This hydroperoxide then reacts with further carotene to form an epoxide and a hydroxy deriv. Chromatographic analysis of the air oxidation products of β-carotene (I) suggests that the primary product is I-8-monohydroperoxide which reacts with I to give I mono- and di-epoxides (II) and 8-monohydroxy-I (kryptoxanthin) (III). II then isomerize to the furanoids mutachrome, luteochrome and aurochrome. III forms a further hydroperoxide which reacts as above giving the numerous xanthins which have been identified. The function of carotene in plants is to be a peroxide buffer, acting either as a donor or acceptor of active oxygen. (16 references.)

A. E. Denshaw

BODEA, C.; NICOARA, E.

Chlorination of β-carotin. Studii cerc chimie Cluj 10 no.2:347-352 '59. (EEAI 9:9)

1. Academia R.P.R. - Filiala Cluj, Institutul de chimie si Institutul agronomid "Dr. P.Groza" - Cluj, Catedra de chimie si fizica.
(Carotene) (Chlorination) (Carbon disolfide)

BODEA, C.; NICOARA, E.

Partial syntheses of the carotenoids with the application of lead tetracetate. Rev chimie 7 no. 1: 79-84 '62.

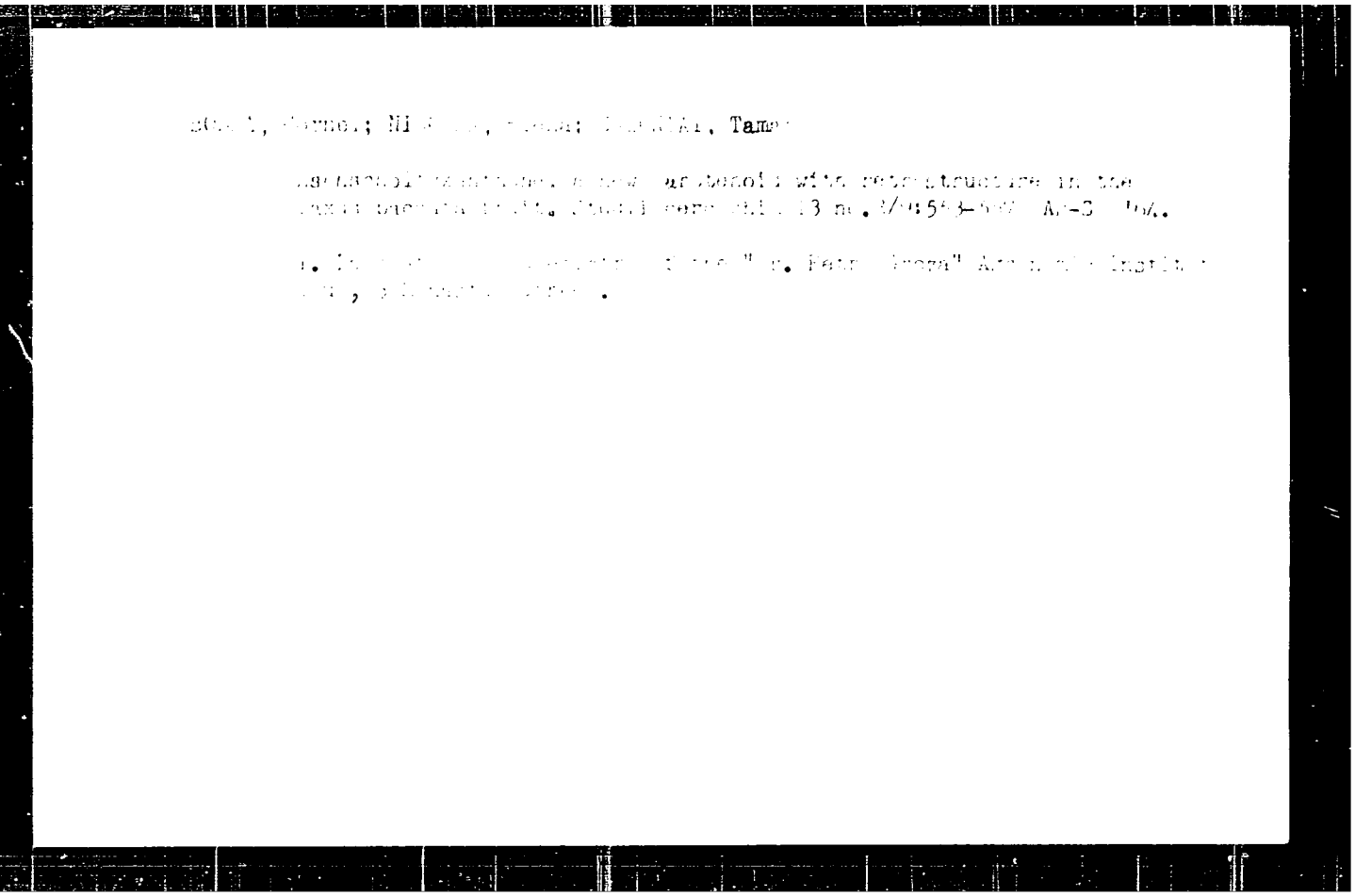
1. Biochemisches Laboratorium der Landwirtschaftlichen Hochschule, Cluj.

BODEA, Cornel; NICOARA, Elena; [illegible]

Eschscholtzxanthone a new carotenoid with retrostructure from the Taxus baccata fruit. Rev chimie Roum 9 no.8/9:517-521 Ag-S '64.

1. Laboratory of Chemistry, Institute of [illegible], Cluj.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136830(



NICOARA, Eugen, laureat al Premiului de Stat

A method of calculating the stability of poles rigidly fixed at one end and with some elastic support at the other. Constr mas 16 no.10:548-551 O '64.

L 31738-66

ACC NR: AF6021171 SOURCE CODE: RU/0007/65/016/03-/0197/0209

10
B

AUTHOR: Nicoara, E. (Engineer)

ORG: none

TITLE: 53-meter 'A'-type mast

SOURCE: Petrol si gaze, v. 16, no. 3-4, 1965, 197-209

TOPIC TAGS: well drilling machinery, petroleum industry equipment

ABSTRACT: A discussion of A-shaped revolving masts for offshore depth drilling. The author briefly describes such masts in use in other countries as well as the Rumanian equipment with which the masts would be used in Rumania and analyzes the design, operation, yield and safety of some variants of 53-meter A-shaped rotating masts. Orig. art. has: 12 figures and 4 tables. [JPRS]

SUB CODE: 13 / SUBM DATE: none / ORIG REF: 002 / OTH REF: 001

Card 1/1 GD

L 64350-65 EWP(w) EM

ACCESSION NR: AP5023498 RU/0018/64/000/010/0548/0551

AUTHOR: Nicoara, Eugen (State prize winner)

TITLE: Method of calculating the stability of poles rigidly fixed at one end and with any type of elastic support at the other

SOURCE: Constructia de masini, no. 10, 1964, 548-551

TOPIC TAGS: mechanical engineering, structure stability

ABSTRACT: [Author's English summary modified]: The author describes a method which uses a characteristic equation in conjunction with a table of constants for various values of the angle of inclination for the calculation of the stability of poles that are fixed at one end and supported elastically at the other end. The simplicity and accuracy of the method allow the calculation of several possible variations in order to select the optimal solution.

Orig. Art. Incl.: 3 figures, 4 formulas and 2 tables.

FODOR, O., conf.; POPESCU, C., dr.; NICOARA, Gh., dr., CIUNCHEA, V., dr.

Autoimmune manifestations in chronic hepatitis. Med. intern., Bucur 12 no.7:1045-1051 Jl '60.

1. Clinica a III-a medicala, I.M.F. Cluj.
(HEPATITIS, complications) (ANEMIA, etiology)
(IMMUNOLOGY)

FODOR, O., conf.; STANESCU, L., dr.; BARBARINO, F., dr.; SCWARTZ, M., dr.; NICOARA, Gh., dr.; BAN, A., dr.;

Observations on splenic sarcomas. Med. intern. 13 no.11:1549-1553 N '61.

1. Lucrare efectuata in Clinica a III-a medicala I.M.F., Cluj.

(SPLEEN neoplasms) (SARCOMA)

PARAU, N., dr.; NICOARA, Gh., dr.; FODOR, O., prof.

Value and significance of certain tests used in the diagnosis of autoimmune diseases of the blood. Clinical and serological correlations. Med. intern. 13 no.12:1679-1690 D '61.

1. Lucrare efectuata in Clinica a III-a medicala, I.M.F. Cluj.
(BLOOD DISEASES diagnosis) (LEUKOPENIA diagnosis)
(THROMBOPENIA diagnosis) (IMMUNITY)

PARAU,N., dr.; NICOARA, Gh., dr.; FODOR, O., prof.

Critical appraisal of some immunological tests in chronic evolutive polyarthritis. Med. intern. 16 no.2:169-178 F '64.

1. Lucrare efectuata in Clinica a III-a medicala, I.M.F., Cluj.

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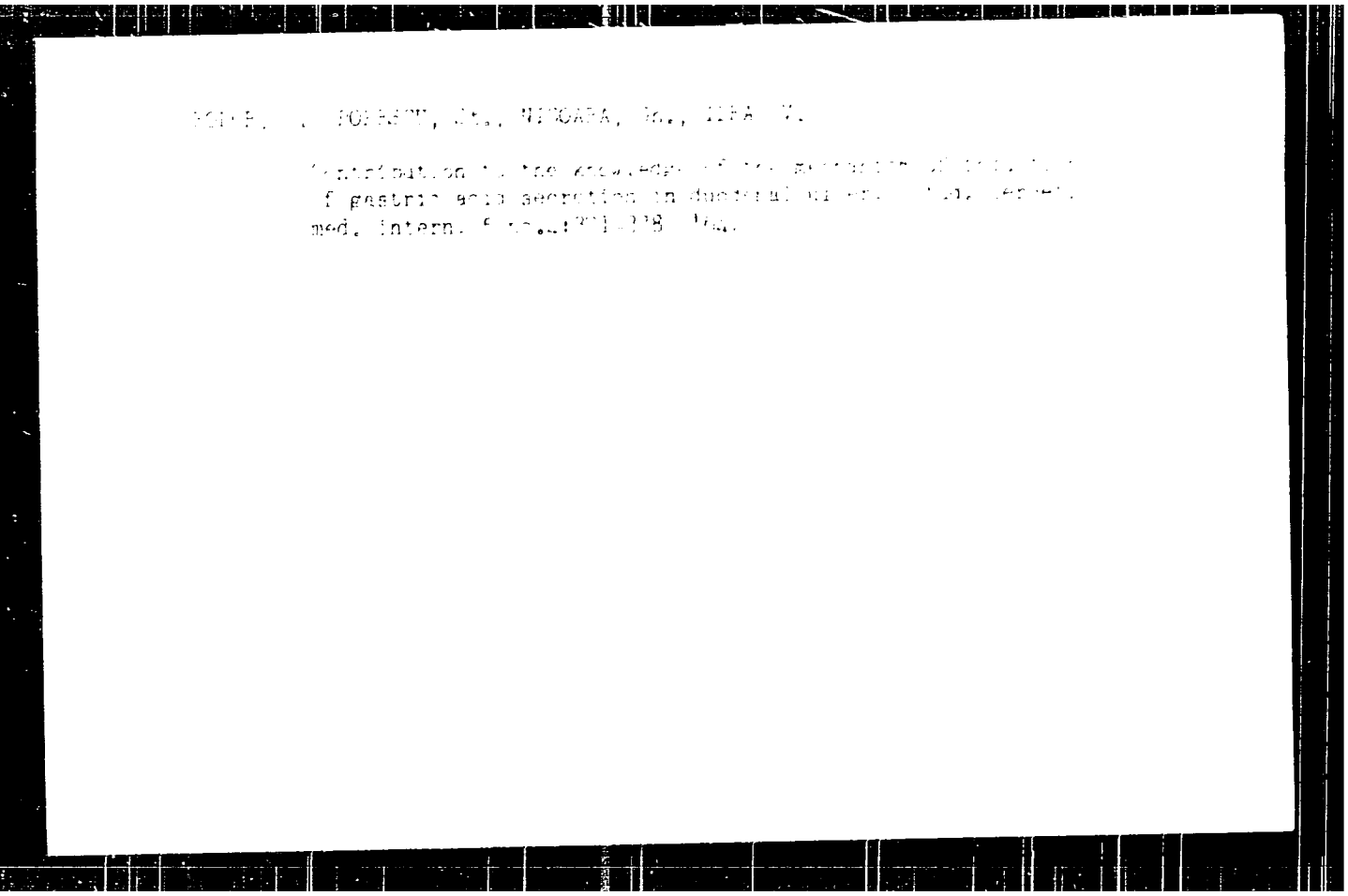

NICOARA, I.

Aspects of industry development in the Chinese People's Republic.
Probleme econ 16 no.10:129-131 O '63.

NICOARA, I.

Poland's economy in the [illegible] years since liberation. Probleme econ 17 no.7:113-117 Jl '64.