5(2) SOV/78-4-7-37/44

AUTHORS: Klygin, A. Ye., Smirnova, I. D., Nikol'skaya, N. A.

TITLE: The Equilibria in the System $UO_2(JO_3)_2$ - KJO_3 - H_2O (Ravnovesiya v sisteme $UO_2(JO_3)_2$ - KJO_3 - H_2O)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 7, pp 1674-1676 (USSR)

ABSTRACT: The investigation was carried out for the purpose of determining the optimum conditions for the precipitation of uranium as uranyl iodate. Table 1 gives the investigation results at 25°, and table 2 those at 60°. The solubility of $UO_2(JO_3)_2$ decreases with increasing concentration of the KJO_3 because of salting out and attains the minimum value at $[JO_3^-] = (1.00 \pm 0.18)^{-1}$ mol/l. A further increase of the potassium iodate concentration (up to $2.09.10^{-1}$ mol/l) increases solubility as a result of complex formation. The dissociation constants of the ion $UO_2(JO_3^-)_3$, the compound $UO_2(JO_3)_2$, and the solubility product for $UO_2(JO_3)_2$ are calculated. Precipitation of uranium as

Card 1/2

The Equilibria in the System $UO_2(JO_3)_2 - KJO_3 - H_2O$ SOV/78-4-7-37/44

$UO_2(JO_3)_3$ cannot be used for a quantitative analytical determination because of the high solubility of the precipitate. There are 2 tables and 5 references, 3 of which are Soviet.

SUBMITTED: April 7, 1958

Card 2/2

5(2) 05887
SOV/78-4-11-40/50

AUTHORS: Klygin, A. Ye., Smirnova, I. D., Nikol'skaya, N. A.

TITLE: Investigation of the System $UO_2(NO_3)_2$ - Ethylene-diamine-tetraacetic Acid - Water by the Solubility Method

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 11, pp 2623-2629 (USSR)

ABSTRACT: A short publication survey (Refs 1-6) shows that the ethylene-diamine-tetraacetic acid (H_4R) yields solid compounds with many metal ions, but not with the uranyl ion. According to H. Brintzinger and O. Hesse (Ref 3), however, uranyl nitrate forms with H_4R the compound $UO_2.H_2R.H_2O$ to be solved with difficulty. The authors tried to determine the solubility product of this compound and the instability constant of the complex ions within the range of pH = 2,0 - 8.0. In the theoretical part, the computation of pH, for which a maximum yield of UO_2H_2R is to be expected, as well as of the solubility product and of the instability constant is carried out on the basis of N. P. Komar's data (Ref 7). The existence of the compound $UO_2H_2R.H_2O$ is

Card 1/3

05887

Investigation of the System $UO_2(NO_3)_2$ - Ethylene- SOV/78-4-11-40/50
diamine-tetraacetic Acid - Water by the Solubility Method

experimentally confirmed, and the solubility product is determined at pH = 3.0 - 4.5 (range of maximum yield). The equilibrium in the system uranyl nitrate - ammonium salt of H_4R only occurs after nine days. The content of H_4R was determined by the potentiometer of type PPTV-1. Table 1 shows that the solubility product is constant in the interval of hydrogen ion concentration from 1.10^{-3} to $2.5.10^{-5}$ and amounts to $(2.3\pm0.2).10^{-6}$ at 25°. In solutions with pH >5, the solubility of UO_2H_2R increases rapidly due to the formation of complex compounds. The instability constant of the complex compound UO_2HR^- is $(7.4\pm0.4).10^{-5}$ at 25°. Other complex compounds do not develop. The negative charge of this ion was confirmed by adsorption on the cation exchanger KU-2. It is concluded from the experimental results: as the complex ion UO_2HR^- only forms at pH >3, various ions can be determined by means of RH_4 in solutions with a lower pH. The computation

Card 2/3

5(3), 5(4)

AUTHORS: Klygin, A. Ye., Pavlova, V. K.

SOV/75-14-2-4/27

TITLE: Investigation of the Arsenazo (Benzene-2-arsonic Acid-(1-azo-2)-1,8-dihydroxynaphthalene-3,6-disulphonic Acid) Dissociation (Issledovaniye dissotsiatsii arsenazo (benzol-2-arsonovaya kislota-(1-azo-2)-1,8-dioksinaftalin-3,6-disul'fokislota)

PERIODICAL: Zhurnal analiticheskoy khimii, 1959, Vol 14, Nr 2, pp 167-173 (USSR)

ABSTRACT: The investigations of the dissociation of arsenazo were carried out by potentiometric and spectrophotometric methods. The optical densities were measured in a non-recording quartz-spectrophotometer SF-11. The potentiometric titration and the measurement of the concentration of hydrogen ions were carried out electrometrically using the potentiometer PPTV-1, a saturated calomel electrode as comparative electrode, and a quinhydrone- or glass electrode. The accuracy of measurements was ±0.05 pH-units. The experiments were performed at 20±0.5°. The potentiometric titration with potash lye showed that the end point corresponds to the neutralization of three hydrogen ions. Arsenazo is a weak hexabasic acid. The first three dissociation constants are closely adjacent and are of the

Card 1/3

Investigation of the Arsenazo (Benzene-2-arsonic Acid-(1-azo-2)-1,8-dihydroxynaphthalene-3,6-disulphonic Acid) Dissociation

order of magnitude 10^{-2} - 10^{-3}; the fourth constant differs distinctly from the first three and the last two constants - $K_4 = 10^{-8}$. The two last dissociation constants again are closely adjacent and are of the order of magnitude 10^{-11} - 10^{-12}. Since the first three and the last two dissociation constants are closely adjacent they could not be quantitatively determined by the potentiometric method. For this reason the further investigations were carried out spectrophotometrically. It was found that the spectrophotometric method is well suited for the determination of dissociation constants if the corresponding anions have different molar extinction coefficients. The curves of optical density - pH value at the wave lengths of 370, 500, 520 and 570 mμ were recorded. These four wavelengths permitted the investigation in the range of the absorption maxima and in those sections of the spectrum which are especially sensitive to changes in the concentrations of the acid and alkaline form of the anions of arsenazo. From the optical densities and the corresponding pH values the authors computed the molar extinction coefficients and the dissociation constants of the reagent. They used the method

Investigation of the Arsenazo (Benzene-2-arsonic Acid-(1-azo-2)-1,8-dihydroxynaphthalene-3,6-disulphonic Acid) Dissociation

suggested by Komar' (Ref 7). The equations for the computations are given in this paper. The results of these computations are shown in three tables. The data of measurement (optical densities and pH values at 370, 500, 520 and 570 mμ) are summarized in three tables. In a further table the optical densities are given which were computed from the dissociation constants and the extinction coefficients for the ranges of existence of the individual anions. These data are in good agreement with the values read from the curves. There are 5 figures, 8 tables, and 7 references, 6 of which are Soviet.

SUBMITTED: September 18, 1957

Card 3/3

PHASE I BOOK EXPLOITATION SOV/5117

Markov, V. K., A. V. Vinogradov, S. V. Yelinson, A. Ye. Klygin, and I. V. Moiseyev

Uran, metody yego opredeleniya (Uranium, Methods of Detection) Moscow, Atomizdat, 1960. 262 p. Errata slip inserted. 6,000 copies printed.

Ed. (Title page): V. K. Markov, Doctor of Chemical Sciences; Ed.: Ye. I. Panasenkova; Tech. Ed.: Ye. I. Mazel'.

PURPOSE: This book is intended for technical personnel of the uranium industry.

COVERAGE: The book contains systematized material on the determination and separation of uranium. Chemical, luminescence, and radiometric methods for qualitative detection of uranium in various media are described in detail. The description of methods for the separation of uranium includes, among others, precipitation, extraction, and cation and anion exchange. The

Card 1/11

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S/078/60/005/05/32/037
B004/B016

5.2200(A)

AUTHORS: Klygin, A. Ye., Kolyada, N. S.

TITLE: Uranyl Thiosulfate

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 5, pp. 1170 - 1171

TEXT: It was the purpose of the present paper to clarify whether uranium forms complex compounds with thiosulfates, to which the analytical rapid method according to K. B. Yatsimirskiy and Ye. N. Roslyakova (Ref. 1) would be applicable. They determined the solubility in the system $UO_2S_2O_3$ - $Na_2S_2O_3$ - H_2O at 25°. The dissolved uranium was determined volumetrically, the uranium in the solid phase gravimetrically, the thiosulfate always iodometrically. The pH was measured on a PPTV-1 potentiometer and an LU-2 tube amplifier. The results are presented in table 1. The solid phase always consisted of $UO_2S_2O_3.H_2O$. No complex compounds are formed. The solubility product of uranyl thiosulfate was found to be $(3.83\pm0.27).10^{-4}$. There are 1 table and 5 references, 4 of which are Soviet.

SUBMITTED: July 6, 1959

Card 1/1

S/078/60/005/007/029/043/XX
B004/B060

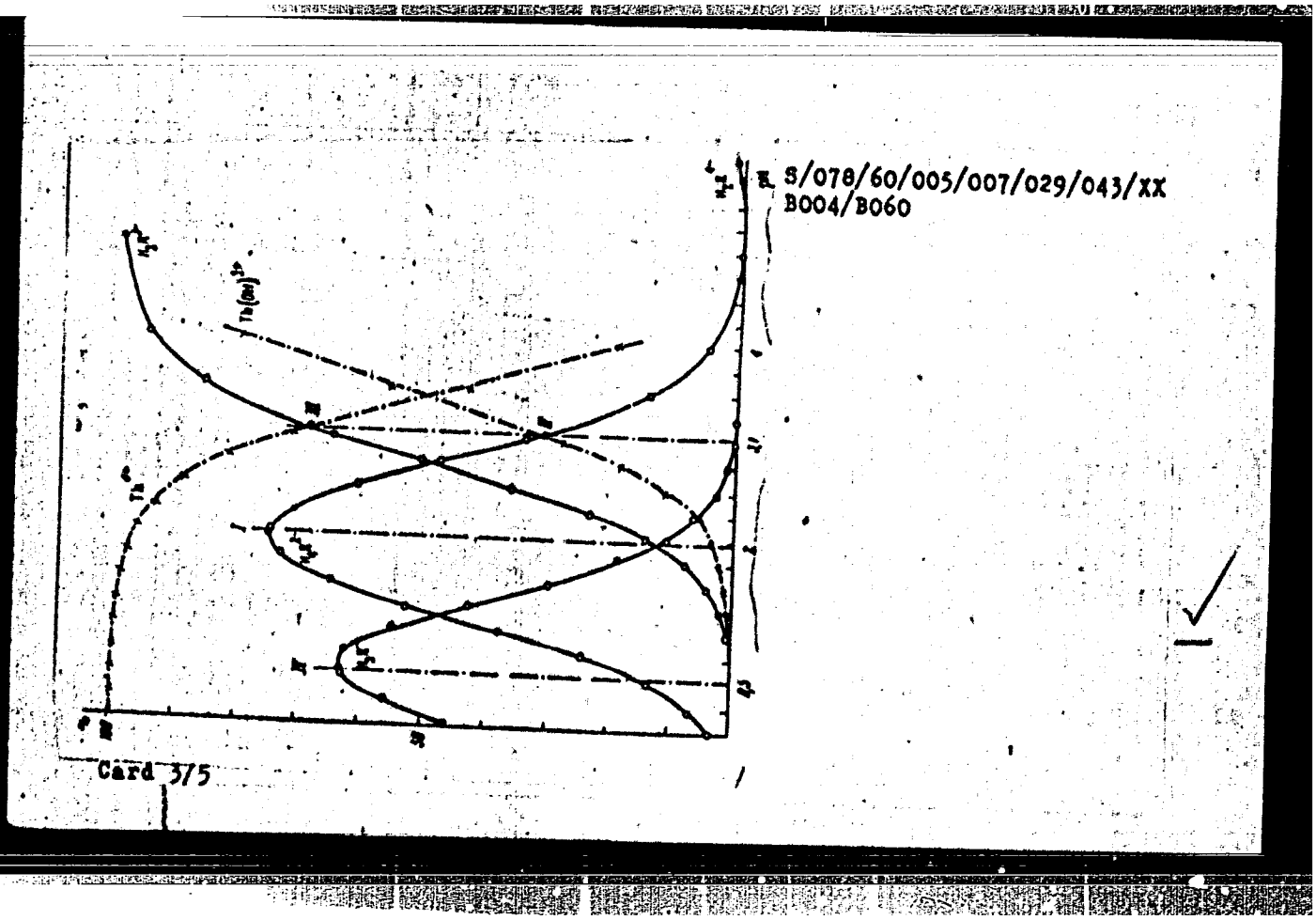
AUTHORS: Klygin, A. Ye., Pavlova, V. K.

TITLE: Spectrophotometric Study of the Reaction of Complex Formation of Thorium With Benzene-2-arsonic-acid-(1-azo-2)-1,8-dihydroxy-naphthalene-3,6-disulfonic Acid (Arsenazo)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 7, pp. 1516 - 1521

TEXT: The authors made use of spectrophotometry to study the optical density D in the $ThCl_4$ - H_6R - HCl - H_2O system by means of an SF-11 (SF-11) spectrophotometer at 20°C (H_6R - arsenazo). The concentration of $ThCl_4$ was $7.9 \cdot 10^{-3}$ moles, and that of arsenazo $4.73 \cdot 10^{-3}$ moles. The pH of the solution was measured on a glass- and quinhydrone electrode by a [illegible]-1 (PPTV-1) potentiometer. As is shown by Fig.1, the absorption maximum of arsenazo lies at 500 mμ, and at 580 mμ that of its reaction product with Th^{4+}. Experiments further showed that at pH = 1.4 there is a

Card 1/5



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B004/B060

Card 3/5

Spectrophotometric Study of the Reaction of Complex Formation of Thorium With Benzene-2-arsonic-acid-(1-azo-2)-1,8-dihydroxy-naphthalene-3,6-disulfonic Acid (Arsenazo)

S/078/60/005/007/029/043/XX
B004/B060

The following possible reactions were established: $Th^{4+} + H_4R^{2-} = ThH_4R^{2+}$, $pH_{max} = 1.9$ (1); $Th(OH)^{3+} + H_4R^{2-} = Th(OH)H_4R^{+}$, $pH_{max} = 3.1$ (2); $Th^{4+} + H_3R^{3-} = ThH_3R^{+}$, $pH_{max} = 3.1$ (3). For pH = 1 - 3, the following equilibria are written down: $Th^{4+} + H_2O = Th(OH)^{3+} + H^{+}$, $K_4 = 4.0 \cdot 10^{-4}$(4); $H_6R = H_5R^{-} + H^{+}$, $K_1 = 8.5 \cdot 10^{-1}$ (5), $H_5R^{-} = H_4R^{2-} + H^{+}$, $K_2 = 6.9 \cdot 10^{-2}$ (6), and $H_4R^{2-} = H_3R^{3-} + H^{+}$, $K_3 = 1.9 \cdot 10^{-3}$ (7). pH_{max} was calculated for the complex formation from equilibria (4) - (7) and reactions (1) - (3). $pH_{max} = 1.85$ was found, which corresponds to reaction (1). This was confirmed by the calculation of equilibrium constants $K_{5,1}$, $K_{5,2}$, and $K_{5,3}$ (Tables 2-4). Thus, thorium reacts with arsenazo according to equation $Th^{4+} + H_4R^{2-} = ThH_4R^{2+}$. Maximum absorption takes place at pH = 1.9, the

Card 4/5

Spectrophotometric Study of the Reaction of Complex Formation of Thorium With Benzene-2-arsonic-acid-(1-azo-2)-1,8-dihydroxy-naphthalene-3,6-disulfonic Acid (Arsenazo)

S/078/60/005/007/029/043/XX
B004/B060

complex formation constant is $7.0 \cdot 10^6$, the molar extinction coefficients are: $\varepsilon_{590\ m\mu} = 2.26 \cdot 10^4$, $\varepsilon_{600\ m\mu} = 1.92 \cdot 10^4$. On the strength of these values, the authors recommend arsenazo as an indicator for the complexometric determination of thorium. Optimum concentration of arsenazo for pH = 1 - 2 is $1 \cdot 10^{-4}$ moles/l. Papers by V. I. Kuznetsov and A.F.Kuteynikov are mentioned. There are 4 figures, 4 tables, and 11 Soviet references.

SUBMITTED: March 10, 1959

Card 5/5

S/078/61/006/001/012/019
B017/B054

AUTHORS: Klygin, A. Ye., Kolyada, N. S.

TITLE: Study of the Reaction of Uranyl With Copperon by Spectrophotometry and Solubility Determinations

PERIODICAL: Zhurnal neorganicheskoy khimii, 1961, Vol. 6, No. 1, pp. 216 - 221

TEXT: The authors studied the composition and the formation constant of uranyl copperonates and the solubility product of ammonium uranyl copperonate. Investigations were made on an СФ-4 (SF-4) spectrophotometer. The pH value of solutions was measured by a ППТВ-1 (PPTV-1) potentiometer. The spectrophotometric studies showed that in the system UO_2Cl_2 - $C_6H_5N_2O_2H$ - H_2O soluble uranyl copperonate $UO_2(C_6H_5N_2O_2)_2$ is formed which has a formation constant $K_o = (1.1 \pm 0.5)\cdot 10^{11}$. Fig.1 shows the optical density as a function of the wavelength of solutions of uranyl chloride, copperon, and their reaction products. Complex $UO_2(C_6H_5N_2O_2)_2$ was

Card 1/2

found by determining the optical density at 370 mμ. Fig.3 shows the optical density as a function of the pH value of the solution. Complex formation and stoichiometric coefficients were determined by the method of I. I. Ostromyslenskiy (Ref.4) and N. P. Komar' (Ref.5). Table 1 gives data for calculating the molar absorption coefficient of compound $UO_2(C_6H_5N_2O_2)_2$ at pH = 4.9 and 370 mμ. Table 2 gives data and results of calculation of the formation constant of uranyl copperonate at 25°C. On addition of excess copperonate, the uranyl copperonate is transformed into difficultly soluble ammonium uranyl copperonate of the composition $NH_4UO_2(C_6H_5N_2O_2)_3$ and the solubility product $P = [NH_4^+][UO_2(C_6H_5N_2O_2)_2][C_6H_5N_2O_2^-] = (5.8 \pm 2.5)\cdot 10^{-10}$. Table 3 gives experimental data and results of calculation of the solubility product of ammonium uranyl copperonate at 25°C. The solubility of ammonium uranyl copperonate depends on the pH value of the solution. Quantitative precipitation of uranium as ammonium uranyl copperonate is achieved in a pH range between 4 and 7. There are 3 figures, 4 tables, and 11 references: 9 Soviet and 1 Czechoslovakian.

SUBMITTED: October 2, 1959

S/078/61/006/005/002/015
B121/B208

AUTHORS: Klygin, A. Ye., Pavlova, V. K.

TITLE: Spectrophotometric study of complex formation of tetravalent plutonium with arsenazo

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 6, no. 5, 1961, 1050 - 1054

TEXT: The complex formation of plutonium(IV)-chloride with arsenazo (benzene-2-arsonic acid(1-azo-2)1,8-dihydroxy-naphthalene-3,6-disulfo acid) was studied spectrophotometrically. The optical density of the solutions was determined by the СФ-11 (SF-11) quarts spectrophotometer in the wave range from 350 - 800 mμ. The pH of the solutions was determined with the РНТВ-1 (PPTV-1) potentiometer using saturated calomel, glass, and quinhydrone electrodes. The ratio of the stoichiometric coefficients in the complex formation was determined by the method of I. I. Ostromyslenskiy (Ref. 8: Ber., 44, 268 (1911)), improved by N. P. Komar' (Ref. 9: Zh. fiz. khimii, 26, 686 (1952)). A complex with a ratio of 1 : 1 of the components plutonium : arsenazo was found to be formed at pH 1,02 and 2,5. The molar absorption coefficient E_λ of the reaction products is expressed

Card 1/3

S/078/61/006/005/002/015
B121/B208

Spectrophotometric study of ...

by the equation

$$E_\lambda = \frac{1\,(D_i - B\,D_k)}{1\,(c_i - B\,c_k)},$$

where 1 = layer thickness of the colored solution in cm, D_i and D_k = optical density of the solutions, and c_i and c_k = initial concentration in mole/l. The following values were obtained for the molar coefficients: $E_{590\ m\mu} = 2{,}20 \cdot 10^4$ and $E_{600\ m\mu} = 2{,}17 \cdot 10^4$. The following formation constants were obtained for the compounds $Pu(OH)H_4R^+$ and $Pu(H_5R)^+$: $3{,}6 \cdot 10^6$ and $4{,}8 \cdot 10^7$. The optimum range of complex formation lies at pH 2,20; with a high arsenazo excess the optical density remains constant in the pH range 2 - 6. A method of determining plutonium(IV) with arsenazo in the pH-range 2 - 5 was devised. The determination is carried out as follows: In a 50 ml measuring flask certain quantities of plutonium(IV)--chloride or - nitrate solutions with a plutonium content of 1 - 100 µg were mixed with 5 ml of a $1 \cdot 10^{-3}$ M aqueous arsenazo solution, and the

Card 2/3

S/078/61/006/005/002/015
B121/B208

Spectrophotometric study of ...

pH value of the solution was adjusted to 2 - 5 by ammonia. The solution in the flask is made up to 50 ml with water. After 5 - 40 min the optical density is spectrophotometrically determined at 590 mμ. The accuracy of the method is 0,02 μg Pu/ml. There are 3 figures, 2 tables, and 12 references: 10 Soviet-bloc and 2 non-Soviet-bloc. The reference to an English language publication reads as follows: K. A. Kraus, F. Nelson, J. Amer. Chem. Soc., 72, 3901 (1950).

SUBMITTED: April 8, 1960

Card 3/3

88585

S/075/61/016/001/018/019
B013/B055

21.3000

AUTHORS: Klygin, A. Ye., Nikol'skaya, N. A., Kolyada, N. S., and Zavrazhnova, D. M.

TITLE: Complexonometric Determination of Tetravalent Uranium Using Arsenazo I as Indicator

PERIODICAL: Zhurnal analiticheskoy khimii, 1961, Vol. 16, No. 1, pp. 110-112

TEXT: This brief communication describes a method suggested for determining uranium(IV) by titration with Complexone III which does not require removal of excess reducing agent. The minimum pH at which complexonometric titration of $5 \cdot 10^{-4}$ M solutions of uranium(IV) can be performed with an accuracy of up to 0.1% was calculated at $pH_{min} = 1.15$, using the equation by K. B. Yatsimirskiy (Ref. 1). Arsenazo I was chosen as indicator for optical end-point determination. Arsenazo I forms a blue compound with uranium(IV). Compound formation is a maximum between pH 1.7 and 0.1. At a pH outside this range, values obtained for uranium are low. Reduction of

Card 1/3

88585

Complexonometric Determination of Tetravalent Uranium Using Arsenazo I as Indicator

S/075/61/016/001/018/019
B013/B055

uranyl salts to uranium(IV) can be effected with sodium acid sulfite, or, preferably, with formamidine sulfinic acid $H_2NC(NH)SO(OH)$ (Ref. 5). 0.2 g of formamidine sulfinic acid in 0.25 N sulfuric acid at boiling-point reduces approximately 200 mg of uranyl ions. Table 1 summarizes the results of determining uranium in solutions of its salts in the presence of foreign substances. The gravimetrically and the complexonometrically obtained data are compared in Table 2. The suggested method permits accurate and sufficiently reproducible determination of uranium in its oxides, salts, alloys with aluminum, silicon, iron, and beryllium, as well as in aqueous and tributyl phosphate solution.

Al^{3+}, Ni^{2+}, Co^{2+}, Zn^{2+}, Cd^{2+}, Mg^{2+}, Mn^{2+}, Cr^{3+}, Be^{2+}, La^{3+}, and Ce^{3+} in quantities comparable with uranium content, as well as up to 30 mg of tartaric acid, up to 35 mg of citric acid, up to 2 g of sodium sulfate, up to 1 g of sodium nitrite, and up to 100 mg of hydrazine- or hydroxylamine sulfate do not interfere in the determination of 2 - 115 mg of uranium. Th^{4+}, Sc^{3+}, In^{3+}, Zr^{4+}, Hf^{4+}, PO_4^{3-}, F^-, and $C_2O_4^{2-}$ interfere.

The authors thank V. A. Golovnya and G. T. Bolotova for supplying data

Card 2/3

88585

Complexonometric Determination of Tetravalent Uranium Using Arsenaso I as Indicator

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B013/B055

on the properties of formamidine sulfinic acid and on the experimental conditions of uranium reduction. There are 2 tables and 8 references: 3 Soviet, 1 Swiss, 1 German, and 2 US.

SUBMITTED: January 15, 1960

X

Card 3/3

23594
S/075/61/016/003/005/007
B106/B208

21.3100

AUTHORS: Klygin, A. Ye., Zavrashnova, D. M., and Nikol'skaya, N. A.

TITLE: Separation of uranium in the form of ammonium uranyl phosphate, and its gravimetric determination by annealing it to $U_2O_5P_2O_7$

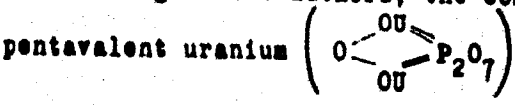
PERIODICAL: Zhurnal analiticheskoy khimii, v. 16, no. 3, 1961, 297-302

TEXT: The authors determined the product of solubility of ammonium uranyl phosphate ($NH_4UO_2PO_4 \cdot 3H_2O$), and devised a method for the gravimetric uranium determination by annealing this compound to $U_2O_5P_2O_7$. The evaluation of the thermogravigram of the compound $NH_4UO_2PO_4 \cdot 3H_2O$, taken by Ye. P. Cherstvenkova, disclosed that the following processes take place during pyrolysis:

Card 1/10

Separation of uranium ...

Temperature range of the conversion, °C	Process	Weight loss, % found	Weight loss, % calculated
20-120	$NH_4UO_2PO_4 \cdot 3H_2O \rightarrow NH_4UO_2PO_4 + 3H_2O\uparrow$	12.42-12.46	12.36
275-350	$NH_4UO_2PO_4 \rightarrow UO_2HPO_4 + NH_3\uparrow$	4.46- 4.85	4.45
500-700	$2UO_2HPO_4 \rightarrow (UO_2)_2P_2O_7 + H_2O\uparrow$	2.55- 2.52	2.32
700-1100	$2(UO_2)_2P_2O_7 \rightarrow 2(U_2O_5)P_2O_7 + O_2\uparrow$	2.30- 2.19	2.24

The compound $U_2O_5P_2O_7$ is easily obtained by annealing ammonium uranyl phosphate, uranyl hydrophosphate, or uranyl pyrophosphate at 900°C. Further temperature rise does not change the composition of this compound. $U_2O_5P_2O_7$ is yellow-green, not hygroscopic, contains 68.21% uranium, and is homogeneous, as was indicated by X-ray structure analysis. Only this compound is suitable for weighing out in the gravimetric uranium determination. When heated in 85% phosphoric acid, it dissolves with green color. It was determined by oxidimetric titration that 50% of the uranium was present in its tetravalent form in the solution. According to the authors, the compound $U_2O_5P_2O_7$ is the pyrophosphate of pentavalent uranium  , which

Card 2/10

Separation of uranium ...

disproportionates to UO_2^{2+} and U(IV), when dissolved in phosphoric acid. In the determination of the solubility product of $NH_4UO_2PO_4 \cdot 3H_2O$ the pH values were measured with a quinhydrone electrode on a ПНТВ-1 (PPTV-1) potentiometer. The solubility product P was calculated from the equation $P = [NH_4^+][UO_2^{2+}][PO_4^{3-}] = C_1 \cdot C_2 \cdot C_3 \cdot K_1 \cdot K_2 \cdot K_3 \cdot [H^+]/(K_H + [H^+]) \cdot ([H^+]^3 + K_1[H^+]^2 + K_1K_2[H^+] + K_1K_2K_3)$ (3) (C_1 - equilibrium concentration of uranium; C_2 - equilibrium concentration of the phosphate; C_3 - equilibrium concentration of the ammonium ion). The hydrolysis of the uranyl ion ($K_H = 6.4 \cdot 10^{-5}$) and the dissociation of phosphoric acid in three steps ($K_1 = 7.51 \cdot 10^{-3}$, $K_2 = 6.23 \cdot 10^{-8}$, $K_3 = 4.8 \cdot 10^{-13}$) were considered in this connection. The hydrolysis of the ammonium ion could be neglected in the pH range studied. Table 1 gives the results. The mean value of the solubility product at 25°C is $P = (3.6 \pm 0.4) \cdot 10^{-26}$. The quantitative precipitation of uranium in the form of

23594
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B106/B208

Separation of uranium ....

ammonium uranyl phosphate is possible in solutions with pH > 3. In weakly acid solutions, however, sparingly soluble phosphates of other metal ions coprecipitate with ammonium uranyl phosphate. By adding ethylene diamine tetraacetic acid the selectivity of the uranium separation may be considerably increased. Table 2 shows the permissible concentrations of interfering metal ions which still permit a selective $NH_4UO_2PO_4 \cdot 3H_2O$ precipitation. Finally, an instruction is given for the preparation of an easily filterable precipitate of ammonium uranyl phosphate and for the subsequent gravimetric uranium determination. Table 3 gives the results of this method in the analysis of synthetic mixtures. The method provides correct and well reproducible results. The uranium losses on filtration of the precipitate do not exceed 0,1 mg. Table 4 presents the results of the analysis of natural materials by the method described. The method is useful for the uranium determination in industrial uranium salts, oxides, concentrates, and alloys. An analyst is able to carry out 10-12 uranium determinations within 6 hours. There are 1 figure, 4 tables, and 8 references: 3 Soviet-bloc and 5 non-Soviet-bloc.

SUBMITTED: March 8, 1960

Card 4/10

KLYGIN, A.Ye.; KOLYADA, N.S.; ZAVRAZHNOVA, D.M.

Reaction of pentavalent molybdenum with (ethylenediamino) tetraacetic acid. Zhur. anal. khim. 16 no. 4:442-447 Jl-Ag '61. (MIRA 14:7)
(Molybdenum) (Acetic acid)

S/032/61/027/001/004/037
B017/B054

AUTHORS: Klygin, A. Ye. and Kolyada, N. S.

TITLE: Complexometric Method of Determining Zirconium With Xylenol Orange as Indicator

PERIODICAL: Zavodskaya laboratoriya, 1961, Vol. 27, No. 1, pp. 23-24

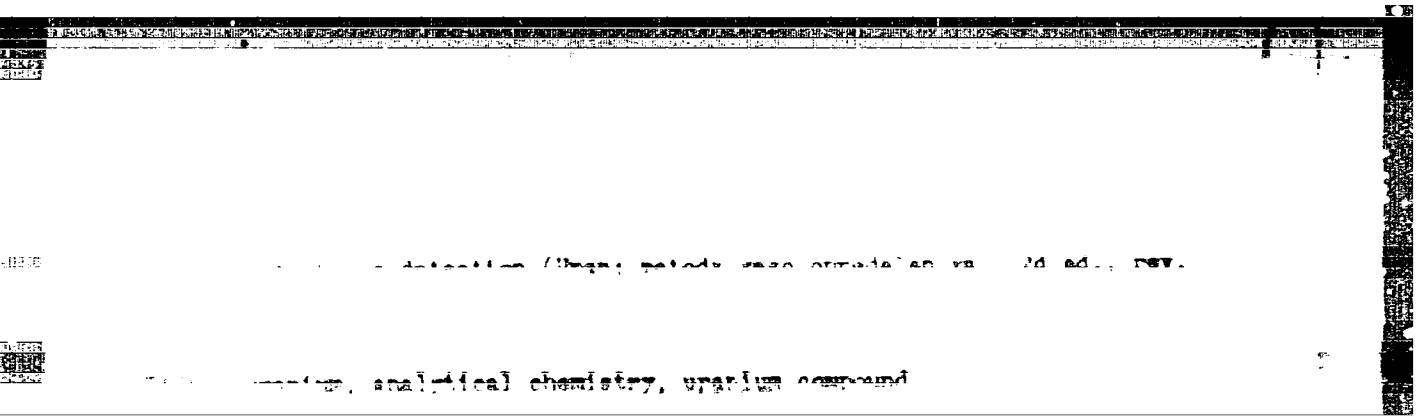
TEXT: The titration of zirconium with Complexon using xylenol orange as indicator is very accurate. A 0.25 molar sulfuric acid solution is the optimum. A figure shows the optimum density of the zirconium complex with xylenol orange as dependent on the sulfuric acid concentration. Excess Na_2SO_4 favors a rapid color change in the point of equivalence. The authors give the accurate course of zirconium determination in alloys. The zirconium alloy is decomposed either by concentrated hydrochloric acid in the presence of H_2O_2 or by sodium bisulfate at 600-800°C. An aliquot part (2-20 mg of zirconium) is mixed in a 250 ml flask with 50 ml of 1 N sulfuric acid and subsequently with 1.5 g of sodium sulfate and 80 ml of water, and the sample is boiled. 1 ml of 0.05% xylenol orange solution is

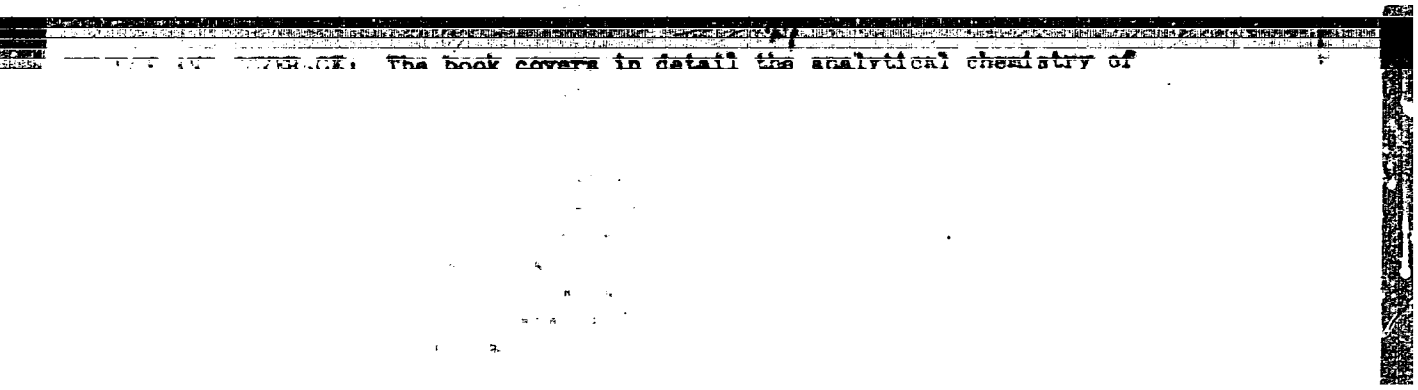
Card 1/2

added to the hot solution, and titration is conducted with a $2 \cdot 10^{-2}$ molar Trilon B solution until the cherry-red color turns to yellow. Table 1 shows the results of determination of zirconium in solutions prepared from zirconium salt in the presence of uranium, aluminum, and iron. The method permits a determination of 1.5 - 20 mg of zirconium in the presence of 200 mg of uranium, 200 mg of aluminum, and 5 mg of iron. The zirconium determination is not disturbed by the following cations: Fe, In, Sc, Th, Y, Ni, Co, Al, La, Ce, Zn, Cd, Mn, Mg. The ions PO_4^{3-}, $C_2O_4^{2-}$, F^-, and Ti^{3+} disturb. There are 1 figure, 2 tables, and 3 references: 1 Soviet, 1 US, and 1 Czechoslovakian.

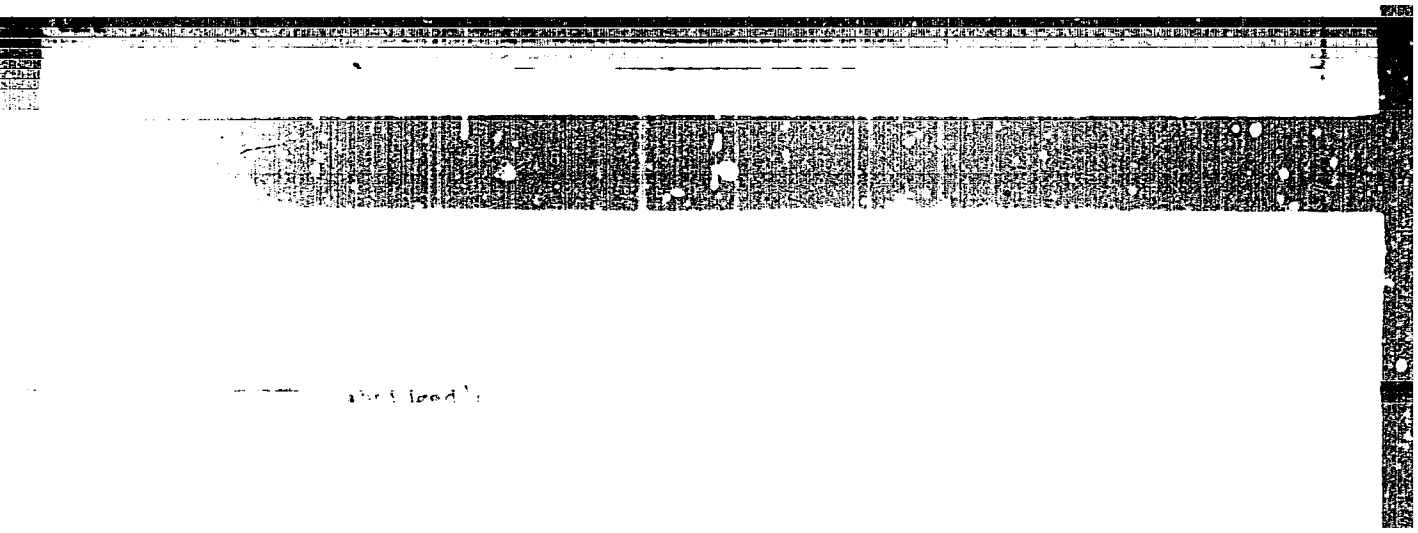
KLYGIN, A.Ye.; SMIRNOVA, I.D.

Solubility of 1,2-diaminocyclohexanetetraacetic acid in ammonia and hydrochloric acid. Zhur.ob.khim. 32 no.4:1259-1262 Ap '62. (MIRA 15:4)
(Cyclohexanetetracarboxylic acid) (Ammonia) (Hydrochloric acid)





[redacted]. The book covers in detail the analytical chemistry of



APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000723310002-3"

KLYGIN, A.Ye.; ZHURAVLEV, G.I.; SMIRNOVA, I.D.

Protolytic equilibrium of neutral red in hydrochloric acid solutions. Zhur. anal. khim. 19 no.6:657-659 '64.
(MIRA 18:3)

ACC NR: AP6036392 (A, N) SOURCE CODE: UR/0032/66/032/011/1389/1392

AUTHOR: Klygin, L. P.; Zakharov, V. Z.

ORG: none

TITLE: Investigation of the adhesive strength of the layers in bimetallic sheets under repeated static loads

SOURCE: Zavodskaya laboratoriya, v. 32, no. 11, 1966, 1389-1392

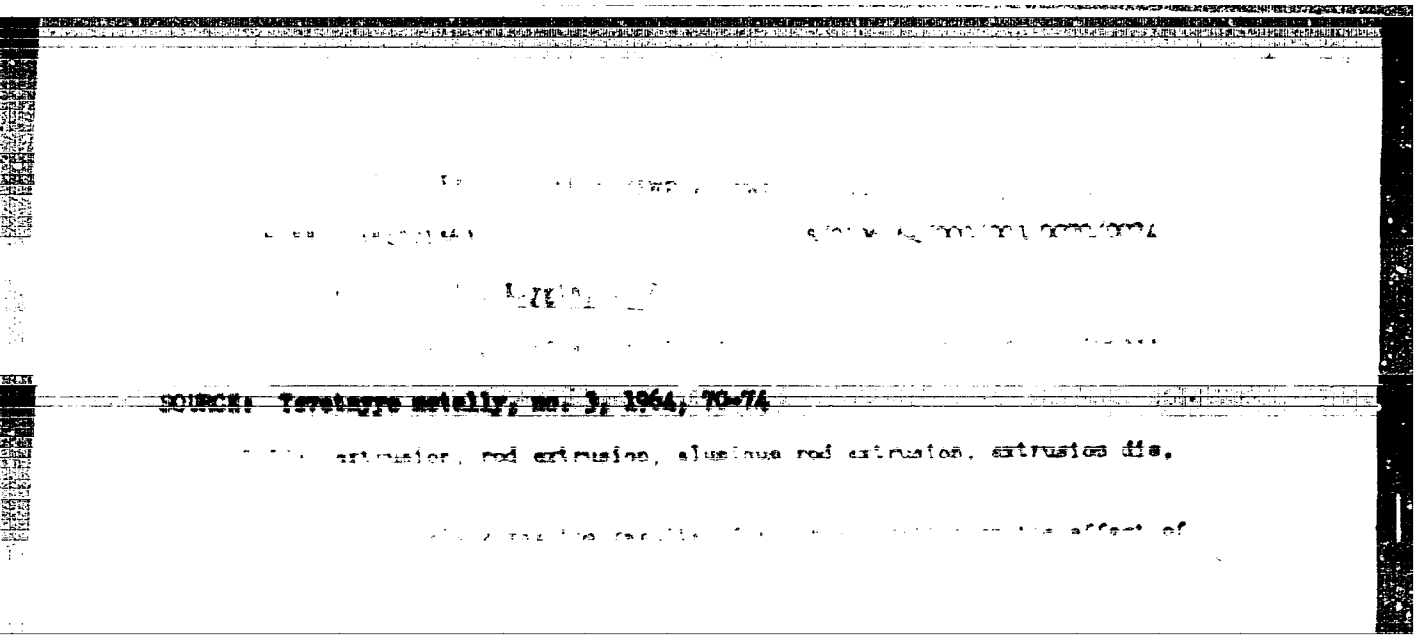
TOPIC TAGS: metal cladding, adhesive bonding, aluminum containing alloy

ABSTRACT: The subject of the investigation were sheets of Steel Kh18N10T-aluminum alloy AMg6, produced by hot rolling at 375-390°C. The billets were made of sheets of steel and aluminum alloy, clad with aluminum. The thickness of the aluminum cladding of alloy AMg6 before rolling in sheets was 1.5-2 mm. The thickness of the aluminum sublayer in the finished bimetallic sheets was not less than 0.2 mm. The total thickness of the bimetallic sheet was 10 ± 1 mm; the thickness of the AMg6 alloy was 4.95 mm, and that of steel Kh18N10T was 5.6 mm. The rolled sheets before trimming were subjected to annealing at 335°C for 2-3 hours. The experimental data are plotted on curves showing the distribution of the life of the samples as a function of the probability of failure under repeated static loads. It was established that the transition layer in bimetallic sheets of Kh18N10T steel AMg6 alloy has a considerable reserve of ductility under shear stress. Orig. art. has: 3 figures.

Card SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 001/ OTH REF: 001 UDC: 620.172:620.176

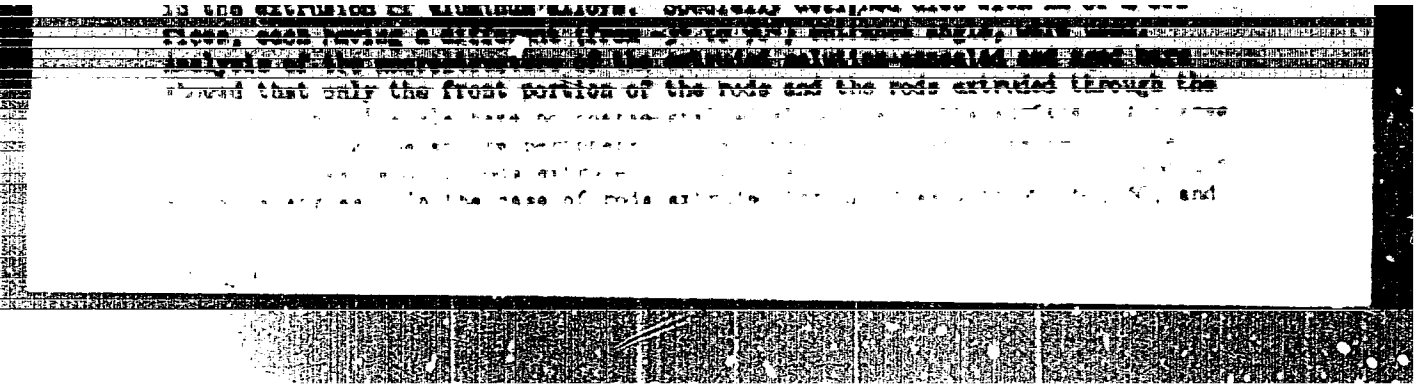
KLYGIN, L.P.; STEPNOV, M.N.; ZAKHAROV, V.Z.

Fatigue resistance and static crack strength of parts extruded from the AV alloy of varying purity. Metalloved. i term. obr. met. no.3:5-8 Mr '65. (MIRA 18:10)



SOURCE: Tsvetnyye metally, no. 3, 1964, 70-74

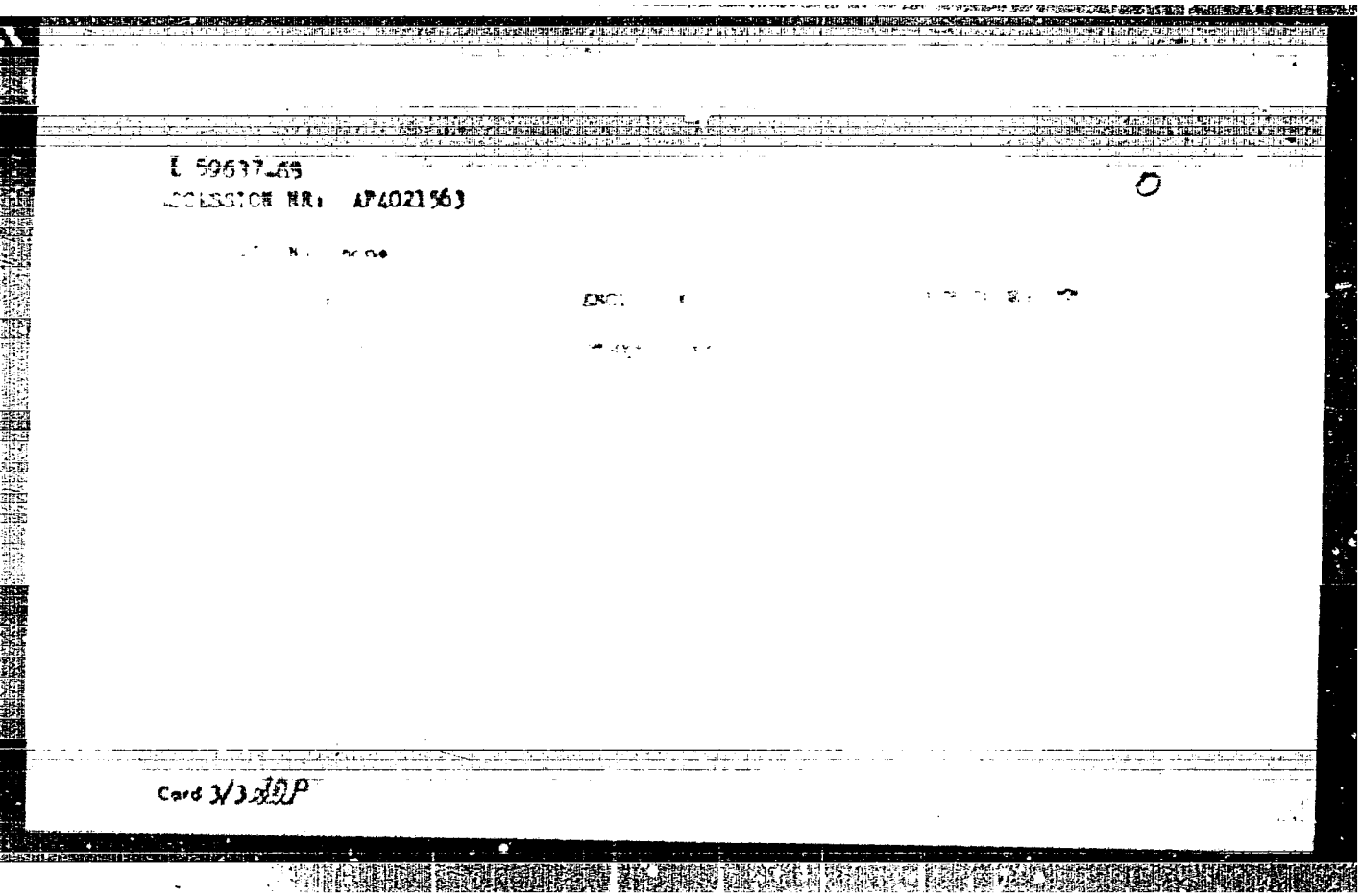
extrusion, rod extrusion, aluminum rod extrusion, extrusion die,



...rated through dies with -3, 10, 15, 20, 25, 30, and 40° angle, which is the

considerably reduced strength [illegible] by the formation of [illegible] mum thickness macrocrystalline rim. It was also determined that the difference in the flow rate does not depend upon the deformation of the ingot in the container [illegible] depends only upon the shape of the die orifice. These tests also showed [illegible] forms in all cases in the die [illegible]

[illegible]



KLYGIN, N.

Using a navigator's ruler for solving astronomical problems.
Mor. i rech.flot 14 no.9:5 S '54. (MLRA 7:10)
(Nautical astronomy--Problems, exercises, etc.)

S/081/61/000/021/006/094
B102/B138

AUTHORS: Klygo , K. I., Bogdanov, L. I.

TITLE: Dielectric and absorption coefficients of oleic acidr determined in the field of 3-cm electromagnetic waves

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 21, 1961, 17, abstract 21B122 (Uch. zap. Mosk. obl. ped. in-ta, v. 92, 1960, 171 - 178)

TEXT: The temperature dependences of the real parts of the dielectric constant and absorption coefficients of oleic acid were determined at temperatures ranging from -20 to +100°C, in the cm-waveband. For various different frequencies both quantities had maxima between 20 and 60°C. From the data found the total, atomic and orientational polarizations of oleic acid were determined. Relaxation times were determined at different wavelengths: $0.20 \cdot 10^{-10}$ sec at λ = 3.18 cm, $0.8 \cdot 10^{-10}$ sec at 64 cm, and $1.3 \cdot 10^{-10}$ sec at 1.5 m. The molecular volume was $8.6 \cdot 10^{-24}$ cm³. The authors consider that oleic acid is associated to a considerable degree and that the range of maximum absorption lies in the centimeter

Card 1/2

KLYCO, K.I.; BOGDANOV, L.I.

Electric properties of linolenic acid in a field of electromagnetic microwaves. Uch. zap. MOPI 92:179-184 '60. (MIRA 14:9)
(Linolenic acid--Electric properties) (Electromagnetic waves)

RAYEVSKIY, K.S.; LYUBIMOV, B.I.; KLYOUL', T.A.

Pharmacology of triphtasine. Zhur. nevr. i psikh. 64 no. 12: 1868-1876 '64. (MIRA 18:1)

1. Institut farmakologii i khimioterapii AMN SSSR, Moskva.

VIKHLYAYEV, Yu.I.; KLYGUL', T.A.

Experimental characteristics of the spectra of pharmacological activity of tranquilizers. Zhur.nevr. i psikh. 66 no.1:123-129 '66. (MIRA 19:1)

1. Otdel po vyyavleniyu fiziologicheskoy aktivnosti novykh produktov khimicheskogo sinteza (zaveduyushchiy - kand.med. nauk Yu.I.Vikhlyayev) Instituta farmakologii i khimioterapii AMN SSSR, Moskva. Submitted June 11, 1965.

KLYK, F.

High-capacity centrifugal ventilators. Pt.1. p.126.
GAZ, WODA I TECHNIKA SANITARNA (Polskie Zrzeszenie Gazowników, Wodociągowców i Techników Sanitarnych) Warszawa

So. East European Accessions List Vol. 5, No. 9 September 1956

TIMOFEYEVA, T. Ye.; SMOLYAK, L.I.; KLYKACHEV, V.A.; BOGOMOLOV, G.I.

EKS-1 radiotelemetric double-channel electrocardiospirograph.
Trudy VNIIMIO no.3:134-145 '63 (MIRA 18:2)

GORSHIN, S.N.; KLYKOV, A.A.

Adjustment of agricultural sprinkling equipment for spraying log piles and checking the effectiveness of sprinkling saw logs. Nauch. trudy TSNIIMOD no.12:80-91 '62. (MIRA 16:12)

KLYKOV, Andrei

KLYKOV, Andrei. Po beregam Kaspiia (Ot Apsherona do Tereka). Moskva, Rabotnik prosveshcheniia, 1930. 70 p. (Ot nashego kraia v shirokii mir, no. 1.)
DLC: Unclassified

SO: LC, Soviet Geography, Part II, 1951, Unclassified

KLYUCH, A. I.

Fishing - Implements and Appliances. New fishing method. Nauka i zhizn' 19 no. 6, 1952.

9. Monthly List of Russian Accessions, Library of Congress, September 1952, Uncl.

KLYKOV, A., kandidat biologicheskikh nauk.

[redacted] of fish to new water reservoirs. Nauka i zhizn' 20 no.9:36 S '53. (MLRA 6:11)
(Fish culture)

KLYKOV, A.

Netherlands - Trade-Unions

Storm-resisting fishing net. Tekh. molod. 20 No. 8, 1952.

9. Monthly List of Russian Accessions, Library of Congress, December 1952, Uncl.

KLYKOV, A.A.

SAMARIN, D.A.; ARKHANGEL'SKIY, V.V., redaktor; KLYKOV, A.A., redaktor; KRUNDYSHEV, B.A., redaktor; SIMONOV, I.F., redaktor; KHERSONSKIY, Kh.N., redaktor; SHEYNIN, L.P., redaktor; PETROVSKAYA, Ye.K., redaktor; DOTSENKO, A.A., tekhnicheskiy redaktor

[Anglers; an almanac] Rybolov-sportsmen; al'manakh. Moskva, Gos. izd-vo "Fizkul'tura i sport," Vol.7. 1957. 264 p. (MLRA 10:7)
(Fishing)

KLYKOV, A.A

AUTHOR: Klykov, A.A., Candidate of Biological Sciences 25-1-46/48

TITLE: An Important Problem (Vashnaya problema)

PERIODICAL: Nauka i Zhizn', 1958, # 1, p 79 (USSR)

ABSTRACT: This article deals with problems of fish conservation in various rivers where dams constructed for new power-plants hinder seasonal fish migration.

AVAILABLE: Library of Congress

Card 1/1

KLYKOV, Andrey Alekseyevich; SMIRNOVA, N.P., red.; TYUTYUNNIK, S.G., red.kart; GOLOVKO, B.N., tekhn.red.

Volga. Moskva, Gos.uchebno-pedagog.izd-vo M-va prosv. RSFSR, 1959. 119 p. (MIRA 12:8)
(Volga Valley--Description and travel)

KLYKOV, A.A.

"From the history of ichthyological research for scientific and practical purposes in seas and fresh-water bodies of the U.S.S.R." by P.G. Borisov. Reviewed by A.A. Klykov. Vop. ikht. 1 no.3:590 '61. (MIRA 14:11)

(Fisheries—Research)
(Borisov, P.G.)

KLYKOV, A. P.

KLYKOV, A. P. "On the Sources of Infection and Localization of the Pathogen of Black Bacteriosis in Cereals," Doklady Vsesoiuznoi Akademii Sel'skokhoziaistvennykh Naukimeni V. I. Lenina, vol. 6, no. 1, 1941, pp. 15-19. 20 Akl

SO: SIRA SI - 19-53, 15 December 1953

KLYKOV, A. P.

KLYKOV, A. P. "Viability of the Organism (Bacterium translucens) of Black Bacteriosis in Wheat Seeds," Mikrobiologiia, vol. 14, no. 6, 1945, pp. 413-414. M582

SO: SIRA SI - 19-53, 15 December 1953

CA

115

Tyrosinase enzyme in the causative agent of the black bacteriosis of cereals. A. P. Kishen. *Compt. rend. acad. sci. U.R.S.S.* 47, 507; *Doklady Akad. Nauk S.S.S.R.* 47, 521(1945); cf. E. F. Smith, *J. Agr. Research* 10(1917). The phenomenon (of black bacteriosis of cereals) may be due to the effect of the oxidation enzyme, *tyrosinase*, upon the product of hydrolytic protein splitting, tyrosine, which is present in plants in large quantities. To demonstrate the presence of tyrosinase enzyme in the causative agent of black chaff, a special agar medium was prepd. to which 0.5% of tyrosine was added. This medium was sown with 20 strains of *Bact. translucens*. After several days the medium assumed shades varying from the deepest black to normal yellow. Sowing was repeated and gave analogous results. It was found that different strains of the same bacterial species do not contain equal quantities of the tyrosinase enzyme and that there are cases where the enzyme is almost altogether [illegible]. Leonard Karel

ASD-SLA METALLURGICAL LITERATURE CLASSIFICATION

1. KLYKOV, A.P.

2. USSR (600)

7. "Measures for Combatting Cotyledon Bacteriosis of Soy", Kratkiye Itogi Nauchnoy Raboty za 3 Goda Vsesoyuzn. Nauchno-Issl. In-ta Soi i Klesbchevinv (Brief Summary of the Work of the All-Union Science-Research Institute of Soy and the Castor Plant During Three Years), 1951, pp 167-173.

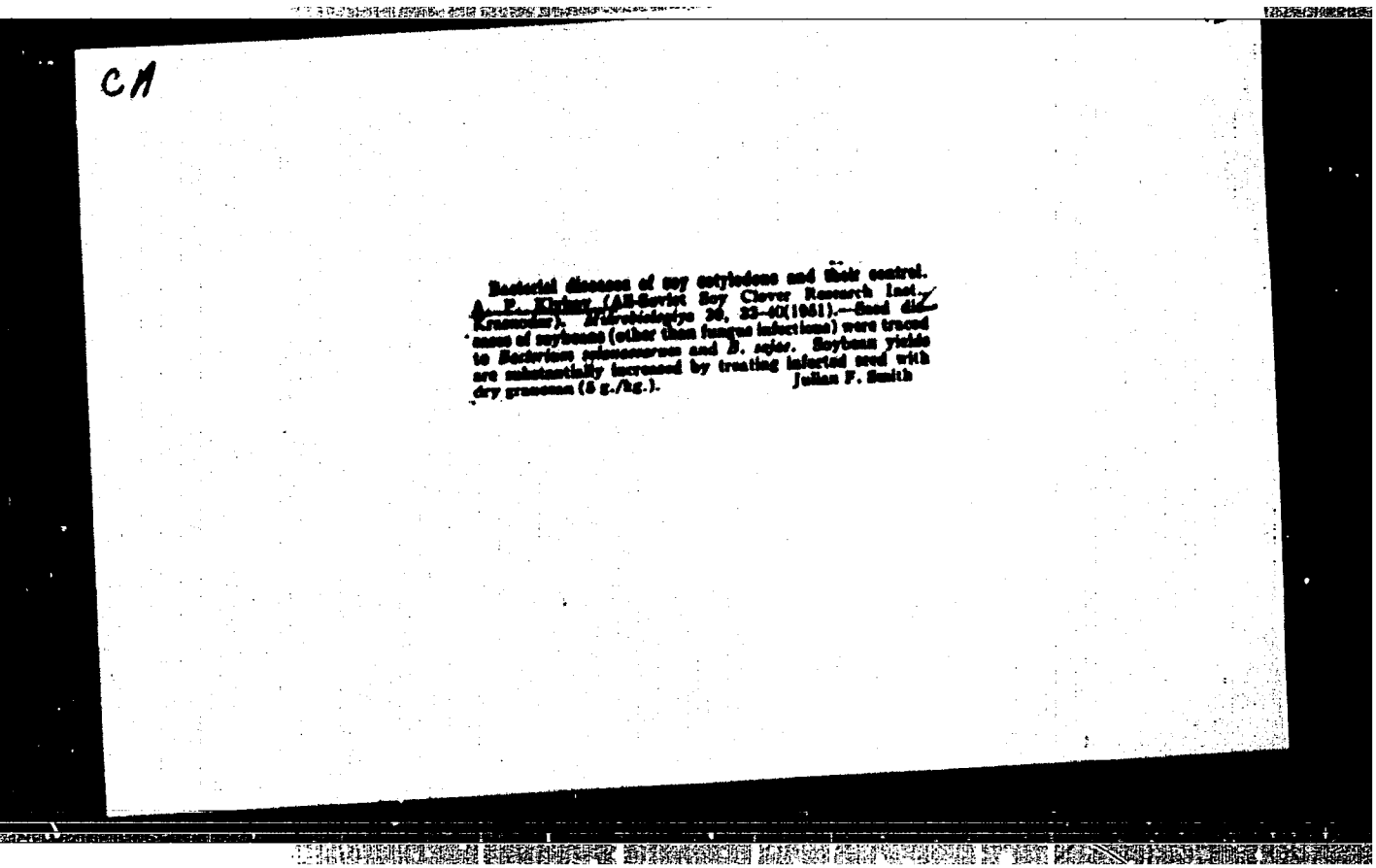
9. Mikrobiologiya, Vol XXI, Issue 1, Moscow, Jan-Feb 1952, pp 121-132. Unclassified.

1. KLYKOV, A.P.

2. USSR (600)

7. "Soy Smut", Kratkiye Itogi Nauchnoy Rayoty za 3 Goda Vsesoyuznogo Nauchno-Issled. In-ta Soi i Kleshchevviny (Brief Summary of the Work of the All-Union Science-Research Institute of Soy and the Castor Plant During Three Years), 1951, pp 182-183.

9. Mikrobiologiya, Vol XXI, Issue 1, Moscow, Jan-Feb 1952, pp 121-132. Unclassified.



CM

Bacterial diseases of soy soybeans and their control. A. P. Kiprianov (All-Soviet Soy Clover Research Inst., Krasnodar). Mikrobiologiya 30, 33-40(1961).—Bact. diseases of soybeans (other than fungus infections) were traced to Bacterium sojaecolum and B. sojae. Soybean yields are substantially increased by treating infected seed with dry granosan (5 g./kg.). Julian F. Smith

KLYKOV, A. P.

Soybean

Hereditary variations in soya sprouted at lowered temperatures. Agrobiologiia, No . 4, 1952.

Monthly List of Russian Accessions, Library of Congress, November 1952. Unclassified.

1. KLYKOV, A. P.

2. USSR (600)

4. Soybean

7. Selecting slow-swelling soybean seeds as a method for improving the variety. Sel. i sem. 20, No. 4, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953. Unclassified.

KLYKOV, A.P., kandidat biologicheskikh nauk.

Appearance of nodule bacteria in connection with the acclimatization of soybeans in the non-Chernozem zone. Agrobiologiia no.6:35-40 N-D '56. (MLRA 10:1)

1. Ryazanskiy sel'skokhozyaystvennyy institut imeni P.A.Kostycheva.
(Micro-organisms, Nitrogen-fixing)

KLYKOV, A.P., kand. biol. nauk.

Important problem. Nauka i pered. op. v sel'khoz. 7 no.12:23-26 D '57. (MIRA 11:1)

1. Ryazanskiy sel'skokhozyaystvennyy institut imeni P.A. Kostycheva. (Soybean)

KLYKOV, A.P., kand.biol.nauk

Time of appearance of nodules on soy bean roots under cultivation on new uninoculated soil. Agrobiologiia no.4:87-90 Jl-Ag '58. (MIRA 11:9)

1. Ryazanskiy sel'skokhozyaystvennyy institut im. P.A. Kostycheva.
(Soy bean)

COUNTRY : USSR
CATEGORY : PLANT DISEASES. Diseases of Cultivated Plants. 0
ABS. JOUR : Ref Zhur -Biologiya, No. 2, 1959, No. 6570
AUTHOR : Klykov, A.P.
INST. : --
TITLE : A Single Fungicide for Both Corn and Soya.

ORIG. PUB.: Kukuruza, 1958, No.5, 54

ABSTRACT : To control diseases and pests in mixed sowings of corn and soya, treatment with mercuran is recommended. A single dosage of the insecticide was established for treating the corn and soya seed mixture at the rate of 200 grams per hectare.

CARD: 1/1

KLYKOV, A.P., kand.biolog. nauk

Development of new forms of soybean during its acclimatization in the non-Chernozem zone. Agrobiologiia no.3:385-390 My-Je '63. (MIRA 16:7)

1. Velikolukskiy sel'skokhozyaystvennyy institut.
(Soybean--Varieties)

KLYKOV, A.P., kand. biolog. nauk

Bacterial diseases of soybean. Zashch. rast. ot vred. i bol. 8 no.6:35-36 Je '63. (MIRA 16:8)

1. Velikolukskiy sel'skokhozyaystvennyy institut.
(Soybean—Diseases and pests)
(Bacteria, Phytopathogenic)

KLYKOV, I. A.

Organization of therapeutic service in the province (territory). Sov.zdrav. 14 no.1:20-24 Ja-F 55. (MLRA 9:4)

1. Glavnyy terapevt Tomskogo oblastnogo otdela zdravookhraneniya.
(PUBLIC HEALTH,
in Russia, rural organiz.)
(RURAL CONDITIONS,
publ. health in Russia)

POPIY, M.P., inzh.; KURNIKOV, D.A., tekhnik; KLYKOV, I.S., tekhnik; ANFINOGENOV, I.F., tekhnik; SEDOV, B.P., tekhnik; KHAN, R.A., tekhnik

Profiling vertical mine shafts from a permanent base. Shakht. stroi. 7 no.8:25-28 Ag '63. (MIRA 16:11)

1. Leninogorskoye shakhtostroyupravleniye.

IVANOV, V.D., dots.; POKOTILO, V.P., dots.; KONOPLEV, P.S., st. prepod.; AKSENOV, A.A., assis.; KLYKOV, K.S., assis.; MART'YANOVA, L.I., tekhn. red.

[Reference book on sawing lumber materials] Posobie po raskroiu pilovochnogo syr'ia. Arkhangel'sk, Arkhangel'skoe knizhnoe izd-vo, 1962. 104 p. (MIRA 16:4)

1. Nauchno-tekhnicheskoye obshchestvo lesnoy promyshlennosti. Arkhangel'skoye oblastnoye pravleniye. 2. Kafedra lesopil'no-strogal'nykh proizvodstv Arkhangel'skogo lesotekhnicheskogo instituta (for all except Mart'yanova).
(Hardboard)

S/799/62/000/002/002/011

AUTHORS: Belynskiy, V. V., Ivanov, L. V., Klykov, L. V.

TITLE: Impulse-shaping networks of elements of digital machines.

SOURCE: Akademiya nauk SSSR. Institut elektronnykh upravlyayushchikh mashin. Tsifrovaya tekhnika i vychislitel'nyye ustroystva. no. 2. 1962, 19-31.

TEXT: The paper describes the development of pulse-producing networks for computers in which the potential-impulse system of elements is employed. The pulse-producing network performs a variety of functions, amplification of cadence pulse, amplification of pulses transmitted by cable, delay lines, register (sender) gates, and other amplifiers. The shaping and gating of pulses was investigated in detail in the course of the development. Gating investigated was by diode, transformer, diode-transformer with amplifying triodes, various types of triode gates. Concurrently with this work, several versions of the utilization of elements in the logical networks of computing machines were examined. Following these preliminary steps, it was concluded that only two types of pulse-type elements were suitable for utilization in this system: The trigger-starting gate and the shaper gate. The two differ characteristically in that the starter gate is a pulse network which operates on a potential network, whereas the shaper gate is a pulse network which

Card 1/2

KLYKOV, M. A.

Klykov, M. A. -- "Immediate and remote results of the climatic treatment of bone and joint tuberculosis in children at the Tomsk "Gorodok" sanatorium," Sborn'k trudov (Tomskiy obl. nauch.-issled. in-t fiz. metodov lecheniya i kurorotologii), Vol. VI, 1949, p. 226-37

SO: u-5241, 17 December 1953, (Letopis 'zhurnal 'nykh Statey, No. 26, 1949).

KLYKOV, M.A., dots. (Tomsk)

"Teaching amputee how to walk on artificial legs" by P.I. Belousov, N.V. Stupkina. Reviewed by M.A. Klykov. Ortop.travm. i protez. 19 no.5:90 S-O '58 (MIRA 11:12)

(APUTEES--REHABILITATION, ETC)
(BELOUSOV, P.I.)
(STUPKINA, N.V.)

KLYKOV, M.A., dotsent

Significance of end weight-bearing of the stump in effective utilization of the phantom for prosthesis application. Ortop.travm. i protez. 20 no.4:55-59 Ap '59. (MIRA 13:4)

1. Iz kafedry khirurgii (zav. - prof. K.N. Cherepina) sanitarno-gigiyenicheskogo fakul'teta Tomskogo meditsinskogo instituta.
(ARTIFICIAL LIMB
significance of end weight of stump in rational use of phantom for prosth. application (Rus))

RYBAKOV, V.A.; KLYKOV, M.V.; POGONYAILO, P.F.

Potentialities for improving excavator performance in strip mines of the "Magnesit" Plant. Ogneupory 31 no.1:10-13 '66.
(MIRA 19:1)

1. Nauchno-issledovatel'skiy i proyektno-konstruktorskiy institut po dobyche poleznykh iskopayemykh otkrytym sposobom.

KRASAVIN, Aleksandr Pavlovich; POPOV, Nikolay Nikolayevich; BOGUSLAVSKIY, Emil' Iosifovich. Prinimali uchastiye: TISHCHENKO, V.I.; KLYKOV, M.V.; YEROKHIN, G.M., red. izd-va; LAVRENT'YEVA, L.G., tekhn. red.

[Mine worker] Zaboishchik na rudnikakh. Moskva, Gosgortekhizdat, 1963. 150 p. (MIRA 16:8)
(Mining engineering)

ZAVALISHIN, A.: HANNYEV, S.: VOINOV, Yu.; FEDOROV, S.; KLIKOL, K.; TIMOSHEV, A. ANISIMOV, V.; KOL'CHUGIN, M.P., redaktor; PULIN, L.I., tekhnicheskiy redaktor.

[Chairman of collective farms speak about their experiences] Predsedateli kolkhozov o svoem opyte [Tula] Tul'skoe knizhnoe izd-vo, 1956. 79 p. [Microfilm] (MLRA 10:5)

(Collective farms)

KLYKOV, N.A.

Conference of Chelyabinsk welders. Avtom. svar. 18 no.8:78 Ag '65. (MIRA 18:11)

KLYKOV, Nikolay Alekseyevich; NIKONOV, I.P., kand.tekhn.nauk, retsenzent; YES'KOV, K.A., dotsent, red.; DENISOV, Yu.A., insh., red.; MARCHENKOV, I.A., tekhn.red.

[Assembling and welding work] Sborochno-svarochnye raboty. Pod red.K.A.Es'kova. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1960. 48 p. (Nauchno-populiarnaia biblioteka rabochego-svarshchika, no.24). (MIRA 14:3)
(Electric welding)

L 07432-67 EWP(k)/EWT(m)/EWP(w)/EWP(v)/EWP(t)/ETI JD/HM

ACC NR: AP6030270 (A) SOURCE CODE: UR/0125/66/000/008/0033/0037 31 B

AUTHOR: Klykov, N. A.

ORG: Chelyabinsk Polytechnical Institute (Chelyabinskiy politekhnicheskiy institut)

TITLE: Use of concentrated (point) heating for increasing the fatigue strength of welded joints A

SOURCE: Avtomaticheskaya svarka, no. 8, 1966, 33-37

TOPIC TAGS: welding, fatigue strength, stress concentration, heating, WELD HEAT TREATMENT

ABSTRACT: The author considers the mechanism of interaction between temporary and permanent stresses induced by point heating on the one hand with the residual stresses due to welding on the other as a basis for evaluating the use of point heating for increasing the fatigue strength of welded joints. Formulas are derived for determining the location of the stress concentrator which reduces residual stresses from welding. It is shown that heating conditions should be selected so that the concentrator is located in the sector of ±45° with respect to the axis perpendicular to the action of external loads and as close as possible to this axis and to the plastic deformation zone. A comparison of theoretical and experimental data shows that local point heating is an extremely effective method for increasing the fatigue strength of welded joints when the parameters are properly selected. Orig. art. has: 4 figures, 1 table, 11 formulas.

SUB CODE: 13/ SUBM DATE: 10Nov65/ ORIG REF: 010/ OTH REF: 002

Card 1/1 UDC: 621.791.011.530.4.001.24

S/125/62/000/007/005/012
D040/D113

AUTHORS: Bakshi, O.A., and Klykov, N.A.

TITLE: Investigation of temperature fields and residual stresses when arc welding a hole in flat steel sheets

PERIODICAL: Avtomaticheskaya svarka, no. 7, 1962, 31-35

TEXT: The described experiments confirmed the feasibility of theoretically calculating residual stresses in steel sheets around holes filled by arc welding. The calculation method, previously suggested by Bakshi and based on the theoretical assumption that the linear heat source is immobile, is explained, and the experimental techniques described. The material used was 8 mm thick 500 x 100 mm sheets of annealed low-carbon steel, with one drilled hole of 8 mm diam in the center. The holes were filled by automatic arc welding with an immobile welder and a time relay ensuring that the time of arc burning was constant. The mean heat quantity introduced into the sheet at given conditions was measured, and the liberating arc energy oscillographed; the temperature in spots at different distances from the hole was measured by thermocouples. The distribution of radial

Card 1/2

BAKSHI, O.A.; KLYKOV, M.A.

Investigating temperature fields and residual stresses during the welding-up by electric arc of openings in flat steel sheet. Avtom. svar. 15 no.7:31-35 Jl '62. (MIRA 15:7)

1. Chelyabinskiy politekhnicheskiy institut (for Bakshi).
2. Nauchno-issledovatel'skiy i proyektno-tekhnologicheskiy institut avtomatizatsii i mekhanizatsii mashinostroyeniya
(Sheet steel—Welding) (Thermal stresses)

KLYKOV, N.A.

Effect of residual stresses on the fatigue strenght of welded structures. Avtom.svar. 15 no.10:22-31 O '62.
(MIRA 15:11)

1. Nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya Chelyabinskogo soveta narodnogo khozyaystva.
(Thermal stresses) (Metals--Fatigue)

KLYKOV, N.I., insh.

Maximum static force on drum rims of mine hoisting machines. Izv. vys.ucheb.zav.; gor.zhur. no.8:88-92 '59. (MIRA 13:5)

1. Tomskiy ordena Trudovogo Krasnogo Znameni politekhnicheskiy institut. Rekomendovana kafedroy gornoy mekhaniki.
(Hoisting machinery)

KLYKOV, N. I., Cand Tech Sci -- "Study of ~~the trommels~~ mechanisms of transportation of trommels ~~arrangement mechanisms~~ of mine elevators." Tomsk, 1961. (Min of Higher and Sec Spec Ed RSFSR. Tomsk Order of Labor Red Banner Polytech Inst im S. M. Kirov) (KL, 8-61, 244)

KLYKOV, N.V., ZHERDECHENKO, P.G., STARKOV, P.M., and KARPOVICH, O.A.

"Changes in the Functions of the Central Nervous System in Experimental Hypothermia," published in the Proceedings of the Eighth All-Union Congress of Physiologists, Biochemists, and Pharmacologists, Moscow, 1955.

Abstract 1091961

KLYKOV, N. V., Cand Med Sci (diss) -- "The development of hypothermy in various methods of supercooling the organism and some data on the reflex regulations of this process". Krasnodar, 1957. 20 pp (Min Health RSFSR, Kuban State Med Inst im Red Army), 200 copies (KL, No 13, 1960, 122)

USSR/Human and Animal Physiology - Thermoregulation. T-3

Abs Jour : Ref Zhur - Biol., No 7, 1958, 31534

Author : Klykov, N.V.
Inst : -
Title : Obtaining Hypothermia by the Method of Extracorporeal Cooling of the Blood.

Orig Pub : Nauch. Tr. Kubansk. med. in-ta, 1957, 15 (28), 71-81.

Abstract : No abstract.

Card 1/1

USSR / Human and Animal Physiology. Thermoregulation. T

Abs Jour : Ref Zhur - Biol., No 15, 1958, No. 69951

Author : Klykov, M. Ya.
Inst : Not given
Title : The Development of Hypothermia with Direct Cooling of the Brain through the Skull and Scalp

Orig Pub : Byul. Eksper. Biol. i Med., 1957, Vol 44, No 11, 41-45

Abstract : Cats were subjected to cooling by enveloping the head in a rubber sac through which circulated water at three-five degrees, for 90 minutes. At different levels of the brain, copper-nickel needle thermocouples were inserted. A part of the experiments involved measurements of the temperature of the venous blood flowing from the head through the jugular vein. Recordings were made of the pressure in the carotid artery and of respirations. The experiments were carried out under ether anesthesia. Recovery was induced

Card 1/2 Chair of Normal Physiology, Kuban Med Inst.

KLYKOV, N.V.

Changes in reflex fluctuations in arterial pressure and respiration during various types of induction of hypothermia. Biul. eksp.biol. i med. 47 no.6:14-18 Je '59. (MIRA 12:8)

1. Iz kafedry normal'noy fiziologii (zav. - prof.P.M.Starkov) Kubanskogo meditsinskogo instituta, Krasnodar. Predstavlena deystvitel'nym chlenom AMN SSSR V.N.Chernigovskim.
(HYPOTHERMIA, eff.
on blood pressure & resp., eff. of mode of induction (Rus))
(BLOOD PRESSURE, physiol.
eff. of hypothermia induced by various methods (Rus))
(RESPIRATION, physiol.
same)

KLYKOV, P., agronom

Mechanized planting of vegetable seedlings on the "Bol'shevik" State farm. Tekh.v sel'khoz. 19 no.5:16-18 My '59. (MIRA 12:7)

(Planters(Agricultural machinery))

PANCHENKO, N.I.; KLYKOV, P.P.; MUZYCHKIN, Ye.T., kandidat sel'skokhozyaystvennykh nauk.

Work practices in obtaining high potato yields in Rostov Province. Zemledelie 4 no.6:48-52 Je '56. (MLRA 9:8)

1. Agronom kolkhoza imeni Stalina Batayskogo rayona (for Panchenko); 2. Direktor Batayskoy mashinno-traktornoy stantsii (for Klykov); 3. Pochvennyy institut Akademii nauk SSSR (for Muzychkin).
(Rostov Province--Potatoes)

KLIKOV, P. P.: Cand. Master Agric Sci (diss) -- "Experience in introducing the mechanization of irrigated fruit-growing (under the conditions of the Batay MTS, Rostov Oblast)". Leningrad, 1958. 16 pp (Min Agric USSR, Leningrad Agric Inst), 150 copies (KL, No 5, 1959, 153)

Card 1/1

KLYKOV, P. P., Candidate Agric Sci (diss) -- "The cultivation of fruit crops on the furrowed-terraced surface of soil (under conditions of the area of activity of the former Batay MTS, Rostov Oblast)". Leningrad-Pushkin, 1959. 17 pp (Min Agric RSFSR, Leningrad Agric Inst), 140 copies (KL, No 24, 1959, 145)

KLYKOV, P.P., kand.sel'skokhozyaystvennykh nauk (Serpukhovskiy rayon);
RYNDINA, T.I., agronom (Serpukhovskiy rayon)

Chemical weed control on the "Bol'shevik" State Farm. Zashch. rast. ot vred. i bol. 7 no.3:11-12 Mr '62. (MIRA 15:11)
(Weed control)

KLYKOV, SEMEN IVANOVICH

461

PHASE I BOOK EXPLOITATION

Klykov, Semen Ivanovich

Telegrafiya. Ch. 3: Fototelegrafnaya svyaz' (Telegraphy. Pt. 3: Facsimile Telegraphy) Moscow, Svyaz'izdat, 1957. 172 p. 10,000 copies printed.

Resp. Ed.: Tomashevskiy, B. A.; Ed.: Kokosov, L. V.; Tech. Ed.: Firsova, A. G.

PURPOSE: This book is approved as a textbook for students attending facsimile telegraphy courses at communication tekhnikums by the Upravleniye uchebnymi zavedeniyami Ministerstva svyazi Soyuza SSR (School Administration of the Ministry of Communication, USSR).

COVERAGE: Special attention is paid to the fundamentals of facsimile transmission and reception and to certain aspects of lighting engineering, optics, electron devices and so forth. Methods of signal transmission by wire and radio channels, as well as amplitude-phase and aperture distortions and methods for their correction, are reviewed. The basis for standards of permissible amplitude-phase distortion is set forth and a short description is given of the systems used for facsimile transmission. According to the author, this is the first textbook in this field. Some Soviet-made equipment is discussed. No personalities are

Card 1/9

Telegraphy. Pt. 3: Facsimile Telegraphy

mentioned. There are 9 references, all of them Soviet.

TABLE OF CONTENTS:

Card 2/9