

24089

S/185/60/002/006/014/026
A051/A129

The application of continuous

(Sr*, Ba*) is precipitated by adding 15 ml of fuming HNO_3 (98 %) while cooled on ice for 15 minutes and mixing. The $\text{Pb}(\text{NO}_2)_2$ solution is dissolved in 1 ml of H_2O and a second precipitation of $\text{Pb}(\text{NO}_2)_2$ is performed. The combined solutions containing the sum of the rare earth fragments UX_1 , other separation fragments and $\text{UO}_2(\text{NO}_3)_2$ are evaporated to 2 ml. After mixing with water up to 15 ml, 20 mg of Zr-carrier are introduced into the solution and the precipitation of CeF_3 is carried out with a mixture of $\text{HF-NH}_4\text{F}$. After washing the fluorides with water they are dissolved in a mixture of H_2BO_3 and 6 ml of HNO_3 . 2 gr of KBrO_3 is added to the obtained solution for acidifying $\text{Ce}(\text{III})$ to $\text{Ce}(\text{IV})$, 3 mg $\text{Fe}(\text{III})$ -carrier is added and precipitation of $\text{Ce}(\text{IO}_3)_4(\text{UX}_1)$ is carried out with 15 - 17 ml of 0.35 n HIO_3 , while cooling on ice and mixing for 10 minutes. The solution containing $\text{Fe}(\text{III})$, the sum of the rare earth fragments, K^+ , IO_3^- , BrO_3^- is heated and a careful precipitation of $\text{Fe}(\text{OH})_3$ is carried out with concentrated NH_4OH . The $\text{Fe}(\text{OH})_3$ residue containing the rare earth elements is washed twice with hot water and dissolved in 4 ml of concentrated HCl , after which $\text{Fe}(\text{III})$ is removed with a four-fold extraction of the iron-chloride complex in amylacetate. The experimentally

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determined yield of the rare earth fragments was found to be 60 %. The time required for the radiochemical separation of the rare earth fragments without a carrier was 2.5 hours. The addition of Fe^(III) before the precipitation of Ce(IO₃) reduced the losses. The possibility of using the extraction of iron diethylcarbamate into ether from 0.1 n HCl for removal of the iron in the last stages was investigated and was found to be unsuitable, since products of the thermal decomposition of diethyldithiocarbamate remained behind. The electrophoretic separation of the rare earth sum fragments and the apparatus used for the procedure shown in Figure 1 are described. The apparatus is being reconstructed at present in order to decrease the time of the separation of the sum of the rare earth fragments. The final yield of the rare earth fragments without a carrier in radiochemical and subsequent electrophoretic separation was determined by means of Y⁹⁰ (T = 64.3 hours), Pm¹⁴⁷ (T = 2.65 years) and Eu^{152,154} (T = 16 years), and was found to be about 45 - 50 %. There are 3 figures and 8 references: 7 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English language publication reads as follows: K. E. Ballou, Radiochemical Studies: The Fission Product, 9, 3, 306, 1951.

SUBMITTED: July 6, 1959.

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21090
S/186/60/002/006/015/026
A051/A129

26.2541

AUTHORS: Shvedov, V. P.; Fu I-Bey

TITLE: Separation of radioactive isotopes on a mercury cathode
IV. A study of the Pm¹⁴⁷ separation

PERIODICAL: Radiokhimiya, v. 2, no. 6, 1960, 715 - 719

TEXT: The authors attempted to find the optimum conditions for the separation of Pm 147 using various additives and adding lithium carbonate to the electrolyte. Experiments using tartaric, succinic, citric and lactic acids were conducted to establish the best additive for Pm¹⁴⁷ separation by the electrolysis method. The action of the acidity of the medium on Pm¹⁴⁷ was investigated at a constant concentration of the additives of $1.33 \cdot 10^{-3}$ M. The results obtained show the optimum concentrations of the additives and the pH of the medium for the given additive. The experimental conditions were as follows: voltage in the bath 9 v, current density on the cathode 4.2 ma/cm^2 , temperature 30°C, quantity of mercury 177 g, volume of the investigated solution 10 ml, pH of the medium 7.0, concentration of lactic acid $4 \cdot 10^{-3}$ M, duration of the experiment 30 minutes.

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An increase in the current density on the cathode raises the Pm^{147} yield. Further studies were made of the medium's temperature values in the separation of Pm^{147} . It is seen that the Pm^{147} yield at a temperature of $40^{\circ}C$ and over increases somewhat. This behavior is explained by the change of the stability of amalgam with temperature by the instability constant of the complexes and the diffusion value of the ions of mercury in the solution. Optimum conditions for the Pm^{147} separation were found to be: current density 5 ma/cm^2 , temperature of the medium $70^{\circ}C$, volume of solution 10 ml, pH of the medium 7, concentration of Li_2CO_3 $4.5 \cdot 10^{-3} \text{ M}$. It was established that the best yield is obtained with lactic acid, and a somewhat lower yield with citric and tartaric acids. With lactic acid as the additive 99 % of Pm^{147} was deposited. There are 7 tables, 2 figures and 4 references: 3 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English language publication reads as follows: J. Marinsky, Z. Glendenin a. C. Coryell, J. Am. Chem. Soc., 69 11, 2781, 1947.

SUBMITTED: September 12, 1959.

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24091

S/186/60/002/006/016/026
A051/A129

21.4200

AUTHORS: Shvedov, V. P.; Fu I-Bey

TITLE: Radioactive isotopes separation on a mercury cathode
V. A study of Nb⁹⁵ deposition without a carrier

PERIODICAL: Radiokhimiya, v. 2, no. 6, 1960, 720 - 722

TEXT: The authors conducted experiments in the laboratory as a preliminary check of the electrolysis of sulfuric and hydrofluoric solutions containing niobium on a mercury cathode. No niobium deposit was noted within a wide range of the acidity of the medium from pH = 2 to 5 n of H₂SO₄ at a current of 0.5 to 5 a and electrolysis duration of 2 1/2 hours. The experiments conducted subsequently showed that the electrolysis of a hydrofluoric solution did not produce a niobium deposit. An attempt was made to produce niobium on a mercury cathode from solutions of organic compound salts. The experimental method used was described by Shvedov (Ref. 6: V. P. Shvedov, Fu I-Bey, Radiokhimiya, 2, 1, 57, 1960) and the experimental conditions used were: current density 4.2 ma/cm², quantity of mercury taken as the cathode 177 g, temperature 30°C, volume of the investigated solution 10 ml, pH of the medium 7.0, duration of experiment 30 min. Nb was

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21,4200

AUTHORS: Shvedov, V. P.; Musayev, Sh. A.

TITLE: A study of the separation of La¹⁴⁰-Y⁹¹, La¹⁴⁰-Pm¹⁴⁷ and Sr⁹⁰-Y⁹⁰ mixtures on a tri-valent cerium iodate precipitate.

PERIODICAL: Radiokhimiya, v. 2, no. 6, 1960, 723 - 727

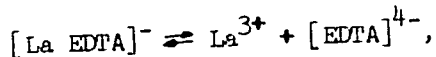
TEXT: A study was made of the coprecipitation of La¹⁴⁰, Pm¹⁴⁷, Y⁹¹ and Sr⁹⁰ + Y⁹⁰ on a cerium iodate precipitate in the absence of trilon B, based on the theories of the three types of "homogeneous precipitation". The three different cases are given as: 1) "homogeneous precipitation" with gradual reduction of the solution acidity in the presence of an excess of the precipitating agent; 2) "homogeneous precipitation" with gradual decomposition of the complex lution; 3) "homogeneous precipitation" with gradual decomposition of the complex compounds. The complete capture of La¹⁴⁰, Pm¹⁴⁷ and Y⁹¹ in a saturated solution of KIO₃ led to the assumption that not only La³⁺, and Pm³⁺, but also Y³⁺ do not form soluble anion complexes with KIO₃. A study of the solubility of lanthanum and yttrium iodates at various concentrations of KIO₃ up to saturation showed that

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no noticeable soluble complex compounds of La^{3+} , Y^{3+} with KIO_3 are formed under the given conditions. The following equilibrium is derived:



where $[\text{EDTA}]^{4-}$ is the anion part of trilon B. The experiment was carried out under the following conditions: 0.40 ml of a buffer solution (8 ml of 98 % acetic acid plus 7.2 ml of 2.25 n NaOH plus 0.8 ml water) was added to 2.2 ml of trilon B (20 mg of trilon B, pH = 8.0) containing the corresponding radioactive isotope, the obtained solution was mixed and left to stand for 10 minutes. Then 17.4 ml of a saturated solution of KIO_3 was added while mixing and the solution was left to stand again for about 10 minutes, after which 150 mg of crystallized KIO_3 was added. After mixing for 30 minutes, a fresh precipitate of cerium iodate (III) was introduced, containing 5 mg of Ce^{3+} ; there is complete capture of La^{140} , Pm^{147} , Y^{90} and Sr^{90} by iodate precipitate of trivalent cerium in the saturated solution of KIO_3 . Thus, it was shown experimentally that with the gradual decomposition of the cerium complex compound with trilon B in the presence of KIO_3 conditions are created for the "homogeneous precipitation" of $\text{Ce}^{(III)}$ iodate and for the se-

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paration of La¹⁴⁰-y⁹¹ and Sr⁹⁰-y⁹⁰ mixtures on this precipitate. There are 6 figures, 1 table and 21 references: 5 Soviet-bloc, and 16 non-Soviet-bloc. The references to the four most recent English language publications read as follows: A. M. Feibusch, K. Rowley a. L. Gordon, Anal. Chem., 30, 10, 103, 1958; J. A. Hermann, Ch. A., 52, 10, 7921, 1958; L. Gordon a. L. Ginsburg, Anal. Chem., 29, 1, 38, 1957; L. Gordon, K. Rowley, Anal. Chem., 29, 1, 34, 1957.

SUBMITTED: December 18, 1959.

Card 3/3

SHVEDOV, V.P.; YAKOVLEVA, G.V.; ZHILKINA, M.I.

Dose of external γ -radiation from radioactive fallout in 1959.
Atom.energ. 9 no.4:323-324 0 '60. (MIRA 13:9)
(Gamma rays) (Radioactive fallout)

5.5700

77741

SOV/75-15-1-3/29

AUTHORS: Shvedov, V. P., Ten Ten, Stepanov, A. V.

TITLE: Separation of Some Isotopes by Focusing Ion-Exchange

PERIODICAL: Zhurnal analiticheskoy khimii, 1960, Vol 15, Nr 1, pp 16-19 (USSR)

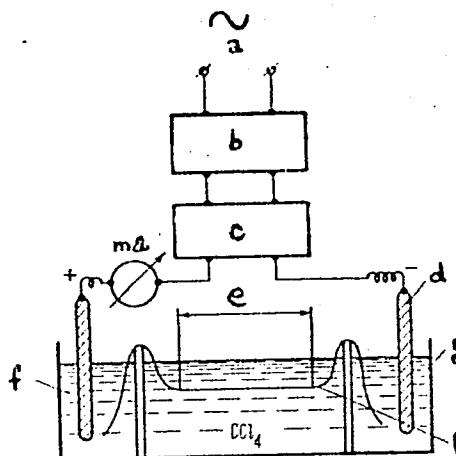
ABSTRACT: Application of focusing ion-exchange method to the separation of fission products, such as $Sr^{90}-Y^{90}$; $Sr^{90}-Y^{90}-Ce^{144}$; $Ce^{144}-La^{140}$, without carriers, as well as of the mixture Ce-Pr, was studied. Description of the method is given in a series of articles published previously (Kolin, A., Proc. Nat. Acad. Sci. USA, 41, 101, 1955, and others). A diagram of the installation is shown in Fig. 3. A few drops of the radioactive solution containing the isotopes to be separated are placed on a strip of filter paper (with pencil lines 2-3 mm apart); the ends of the strip are dipped into the electrode vessels

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Fig. 3. Scheme of separating installations:
(a) line, (b) rectifier,
(c) electronic stabilizer,
(d) carbon electrode, (e)
ion separation zone,
(f) anodic solution (HCl),
(g) cathodic solution
(complex forming compound),
(h) paper strip.



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and the central part of the paper is immersed into CCl_4 in the central container. Now the current (260-280 v (20-30 v/cm) is switched on. After 2-5 minutes the concentration gradient is established, and after 2-3 minutes the elements are separated and concentrated. Position of the zones is found by direct measurement of radioactivity of the paper strip or by autoradiographic method (autoradiographs are given). Identification of the elements is done by measuring the maximum β -radiation or according to the half life periods. Conditions of the experiments and the results are shown in Tables 1 and 2. The following conclusions were made: mixtures $\text{Sr}^{90} + \text{Y}^{90}$; $\text{Sr}^{90} + \text{Y}^{90} + \text{Ce}^{144}$; and $\text{Ce}^{144} + \text{La}^{140}$ can be separated by the above method, using complexon III or citric acid, in 5 minutes. The complete separation of a mixture of Ce and Pr in concentrations up to 0.5 mg/ml cannot be reached when complexon III is used. Better results are obtained by the use of a mixture of

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complexon III and citric acid. There are 2
tables; 7 figures; and 9 references, 5 U.S.,
3 Swiss, 1 Soviet. The 5 U.S. references are:
Sato, T. R., Diamond, H., Norris, W. P., J. Am.
Chem. Soc., 74, 6154 (1952); Sato, T. R., Norris,
W. P., Strain, H. H.; Analyt. Chem., 26, 267 (1954);
Sato, T. R., Norris, W. P., Strain, H. H., Analyt.
Chem., 27, 521 (1955); Kolin, A., Proc. Nat. Acad.
Sci. USA 41, 101 (1955); Hoch, H., Barr, G. H.,
Science, 122, 243 (1955).

ASSOCIATION:

Lensovet Institute of Technology, Leningrad
(Leningradskiy tekhnologicheskij institut imeni
Lensoveta)

SUBMITTED:

July 29, 1958

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BELYAYEV, L.I.; GEDEONOV, L.I.; SHVEDOV, V.P.; YUZEFOVICH, A.A.

[Intensive radioactive fallout in Simeiz (Crimea) as a result of the nuclear explosion of Feb. 13, 1960 in the Sahara] Inter-
~~aktivnoe~~ radioaktivnoe vypadenie v Simeize (Krym) v rezul'tate iadernogo vzryva v Sakhare 13 fevralia 1960 g. Moskva, Gos. Kom-t Soveta Ministrov SSSR po ispol'zovaniiu atomnoi energii, 1961. 36 p. (MIRA 15:1)

(Simeiz--Radioactive fallout)

S/049/61/000/004/008/008
D257/D306

AUTHORS: Shvedov, V.P., and Gedeonov, L.I.

TITLE: A conference on the problems of actinometry, atmospheric optics and nuclear meteorology (Nuclear Meteorology Section)

PERIODICAL: Akademiya nauk SSSR, Izvestiya. Seriya geofizicheskaya, no. 4, 1961, 630 - 632

TEXT: At the end of June 1960 a conference on actinometry, atmospheric optics and nuclear meteorology was convened in Vil'nyus by the Institut geologii i geografii AN Litovskoy SSR (Institute of Geology and Geography, Academy of Sciences, Lithuanian SSR - referred to as IGG). Nuclear meteorology was discussed at the plenary session of the Conference and at sectional sessions: the papers presented dealt with the work carried out at the IGG at the Institut prikladnoy geofiziki AN SSSR (Institute of Applied Geophysics, Academy of Sciences, SSSR - referred to as IAG) and at the Radiye- ✓

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vyv institut im. V.G. Khlopina AN SSSR (Radium Institute im. V.G. Khlopin, Academy of Sciences, USSR - referred to as RI). Representatives of these three institutes took part in the discussion, as well as workers from the Institut atomnoy energii AN SSSR im. I.V. Kurchatova (Atomic Energy Institute im. I.V. Kurchatov, Academy of Sciences, USSR), from the Institut geokhimii i analiticheskoy khimii AN SSSR im. V.I. Vernadskogo (Institute of Geochemistry and Analytical Chemistry im. V.I. Vernadskiy, Academy of Sciences, USSR), from the Glavnoye upravleniye gidrometeorologicheskoy sluzhby SSSR (Main Administration of the Hydrometeorological Service of the USSR) and from other organizations. At the plenary session B.I. Styro reviewed studies of the atmospheric radioactivity and investigations of meteorological processes using radioactive substances in the atmosphere; he also indicated future directions of studies. L.V. Kirichenko (IAG) reported that the concentration of natural radioactive substances in the atmosphere decreases exponentially with height except at discontinuities. The highest concentrations were found in clouds, fog and smoke which act as collectors of radioac-

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tive particles. V.Yu. Potsyus (IGG) discussed the radioactivity of clouds. T.N. Nedvetskayte and B.I. Styro reported daily variations in the concentration of α -emitters in the lowest layers of the atmosphere. L.D. Solodikhina (IAG) dealt with simultaneous measurements of the natural radioactivity of atmospheric precipitation at 3200 and 2200 m; the differences between the activity of rain water at these two levels were used to find the "washing-out" coefficient. Solodikhina reported also that in 1959 precipitation over dry land was about four times more active than above the open ocean. I.L. Karol' and S.G. Malakhov reviewed global studies of the radioactive impurities (including Sr^{90}) in the atmosphere and on the earth's surface. The radioactive contamination of the lowest layers of the atmosphere was discussed also by V.P. Shvedov, Z.G. Gritchenko and M.I. Zhilkina (RI). S.G. Malakhov (IAG) reported measurements of the contamination in the lowest layers of the atmosphere due to nuclear weapon tests; it was found that between 1955 and 1959 the concentration of β -active aerosols in air increased very considerably and this concentration was used to find the amount of Sr^{90} in

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the atmosphere. The mechanism of self-purification of the lower layers of the troposphere was the subject of a paper by V.P. Shvedov, L.I. Gedeonov, Z.G. Gritchenko and G.V. Yakovleva; these four workers confirmed that atmospheric precipitation is the main purification process. B.I. Styro, Ch.A. Garbalyauskas, T.N. Nedvetskayte, I.S. Tomkus and K.K. Shopauskas reported measurements of the atmospheric radioactivity with long decay periods. Ch.A. Garbalyauskas (IGG) discussed settling of radioactive dusts and estimated the effective time for reducing the radioactive contamination in the troposphere to one half its original value. Among papers on the experimental methods were those of V.P. Matulyavichus on a multichannel device for recording of the atmospheric radioactivity, and of V.P. Shvedov, Z.G. Gritchenko, M.I. Zhilkina and G.V. Yakovleva, who described a technique of continuous measurement of the concentrations of long-lived radioactive substances near the earth's surface. The Conference discussed and approved the following subjects for future work: Development of a theory of global transport of artificially produced radioactive substances,

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a study of natural conditions of formation of radioactive aerosols and their behavior under various meteorological conditions, kinetics of the processes of contamination and self-purification of the troposphere. Appearance of B.I. Styro's book on "The problems of nuclear meteorology" was noted with approval. It was resolved to convene a conference on nuclear meteorology in 1962 in Lenin-grad.



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S/081/62/000/011/024/057
E071/E192

AUTHORS: Shvedov, V.P., Rosyanov, S.P., and Orlov, Yu.F.

TITLE: Determination of the products of radiolysis of triphenylphosphate

PERIODICAL: Referativnyy zhurnal, Khimiya, no.11, 1962, 283, abstract 11 Zh 350. (Tr. Leningr. tekhnol. in-ta im. Lensovet, no.55, 1961, 59-63).

TEXT: Using ultraviolet spectroscopy and paper chromatography it was shown that radiolysis of crystalline triphenylphosphate (I) by γ -rays of Co^{60} (1200 curie) in the presence of air, yields substances similar to mono- and di-phenylphosphoric acids, as well as an easily hydrolysed substance, the spectrum of which in 0.05N NaOH has maxima at 235 and 287 m μ . The formation of these substances is ascribed to the appearance of free radicals on irradiation of (I). The total yield of phosphorus containing radiolysis products amounts to 0.77 mole/100 ev of the energy absorbed at an irradiation dose of 3.5×10^{21} ev/g, which indicates a high stability of (I) to γ -irradiation in comparison with that of trialkylphosphates. The ultraviolet spectra of (I) and its radiolysis products are given.

[Abstractor's note: Complete translation.]

S/081/62/000/002/014/107
B149/B102

AUTHORS: Shvedov, V. P., Rosyanov, S. P., Semenyuk, E. Ya.

TITLE: Some data on the effect of water on the radiolysis of phosphoric acid esters

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 2, 1962, 80. abstract 2B572 (Tr. Leningr. tekhnol. in-ta im. Lensoveta, no. 55, 1961, 64 - 66)

TEXT: The effect of the molecular ratios of trialkyl phosphate (TAP): water on the yield of phosphorus-containing products (PP) during radiolysis by the action of Co^{60} gamma radiation was studied. The yield of PP decreased with increasing molar proportions of water in the mixtures both in the case of tributyl phosphate (TBP) and of triethyl phosphate (TEP). For mixtures TBP-water the yield deviated considerably from that calculated by the law of averages. In the case TEP - water this was not observed. The authors presume that this behavior of the mixtures may be due to the formation (in the case of TEP) of unstable compounds and also of various complex compounds of TAP and water. [Abstracter's note: Complete translation. ~~Co-60~~]

03/03/00/000/011/000
B151/B144

AUTHORS: Masayev, Sh. M., Sayedov, V. F.

TIFFS: Coprecipitation of yttrium and lanthanum iodate in "homogeneous" precipitation

PERIODICAL: Referativnyi zhurnal. Khimiya, no. 3, 1968, 54, Abstract 3E,30 (Zh. Leningr. tekhnol. in-ta. Leningrad, no. 99, 1968, 98-101)

TEXT: The coprecipitation of Y with lanthanum iodate is studied. It is shown that in "homogeneous" precipitation with KIO_3 from 1 N HNO_3 , by neutralizing the acid to pH 4 as a result of the hydrolysis of urea during 5 hr at $92^\circ C$, somewhat purer precipitates of $La(IO_3)_3$ are obtained than by the usual method of precipitating with an excess of KIO_3 at pH 4.

With repeated precipitation the coprecipitation of Y^{91} drops from 40-50% in the first precipitation to 5 - 6% in the third. The addition of a complex-forming agent, K_2CO_3 , at the end of the precipitation process

considerably reduces the coprecipitation of Y^{91} (from 40 - 50% to 20 - 25%). [Abstracter's note: Complete translation.]

S/031/62/000/005/004/112
B158/B110

AUTHORS: Shvedov, V. P., Strunin, A. V.

TITLE: Investigation of coprecipitation of yttrium with cerium pyrophosphate

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 5, 1962, 42, abstract 5B249 (Tr. Leningr. tekhnol. in-ta im. Lensoveta, no. 55, 1961, 102 - 107)

TEXT: Coprecipitation of Y with Ce pyrophosphate is studied both on prepared Ce pyrophosphate precipitates and with formation of Ce pyrophosphate from a solution containing Y. A study of the rate at which equilibrium is established with the prepared Ce pyrophosphate precipitate and of the effect on coprecipitation of overcharging of the Ce pyrophosphate surface and of the presence in the solution of impurity ions has shown that coprecipitation of Y occurs by way of secondary adsorption. The degree of coprecipitation of the Ce pyrophosphate increases from 2 to 93% with increase in pH from 1 to 4.5 (coprecipitation on prepared pyrophosphate) and from 10 to 98% with increase in pH from 1 to 2.5 (coprecipitation from

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solution with Y). At low pH values (~ 1.4) temperature does not affect coprecipitation. With increase in pH, the degree of coprecipitation increases with temperature. Increase in Y concentration causes a reduction in its coprecipitation. Addition of excess $\text{Na}_4\text{P}_2\text{O}_7$ initially increases coprecipitation, then causes its reduction (complex formation).

[Abstracter's note: Complete translation.]

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E051/E135

71.7200

AUTHORS:

Shvedov, V.P., Zhilkina, M.I., and Zinov'yeva, V.K.

TITLE:

The radiochemical determination of Cs¹³⁷ in samples with low levels of radioactivity

PERIODICAL:
TEXT:

Radiokhimiya, v.3, no.6, 1961, 732-736
The determination of Cs¹³⁷ in rain or snow and in aerosols is made difficult by the low level of activity

(10^{-8} - 8×10^{-7} curies) and by the presence of other elements and organic compounds in the samples. By the use of an isotope dilution method with added carrier, Cs¹³⁷ has been determined at low levels. Rain or snow was collected in a large, high walled, porcelain tank and one month's sample (30-60 g) was evaporated. Air was filtered and the filters ignited. Cs carrier (10-15 mg) and carriers of Rb, Zr, Ce, Y and Sr (~ 5 mg each) were added to the residues. The mixture was heated with 20-25 ml of concentrated HCl in a porcelain dish and mixed thoroughly, then evaporated to dryness and baked at 100-110 °C for one hour to dehydrate SiO₂. This treatment was carried out two or three times. X

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The residue was heated with 0.5N HCl and centrifuged. The solution thus obtained contained Cs together with Fe, Al, Ca, Mg, Na, K, Co, Cu, Ni, etc. Fe, Al and rare earth hydroxides were precipitated by the addition of 5-10% NH₄OH solution. After centrifuging the precipitate was washed two or three times with hot distilled water. To the supernatant solution combined with the washings was added (NH₄)₂CO₃ solution to precipitate alkaline-earth carbonates. The filtrate from the carbonate precipitation contained Cs, Mg, Na, K, Co, Cu, Ni and traces of other elements. The solution was acidified with HCl, 5 mg each of Fe, Ce, Y, Sr and Zr carriers was added and, after careful mixing, NH₄OH added to precipitate the hydroxides. This step was repeated three times. After the third hydroxide precipitation, the remaining solution was evaporated to low volume on a water bath and the residue treated with concentrated HNO₃ to decompose NH₄⁺ salts. The dry residue contained Co, Cu, Ni, K, Mg, Na and Cs. This was treated three to four times with concentrated HCl to convert the nitrates to chlorides and then

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dissolved in 2-3 ml of distilled water. 7-10 ml of glacial acetic acid was added, the solution stirred and centrifuged. The residue was washed 2-3 times with 2 ml portions of glacial acetic acid and the supernatant liquid and washings combined. 2-3 ml KBiI_4 solution (5 g Bi_2O_3 and 17 g KI in 50 ml glacial acetic acid) was added and the solution heated to boiling. After standing 40-60 minutes the precipitate was separated by centrifuging and washed with glacial acetic acid until the washings were no longer yellow. After a final wash with alcohol the precipitate was dried at 140-160 °C to constant weight. The chemical purity of the $\text{Cs}_3\text{Bi}_2\text{I}_9$ was checked by spectrographic analysis and showed no contamination by any likely radioactive element or Co and Cu. Traces of Ni, Mg, K and Na in quantities less than 1% were present. After reprecipitation of the $\text{Cs}_3\text{Bi}_2\text{I}_9$ none of these elements could be detected. The radiochemical purity of the recovered Cs^{137} was checked by β -decay curves and by γ -spectrometry. Following the β -decay curve over 12-20 months showed that no activity with a half-life of less than 5 years was present. γ -spectrometry was carried out using a single channel Card 3/ 5

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scintillation counter with a sodium iodide crystal, measuring the 0.662 KeV Cs¹³⁷ peak. The activity of Cs¹³⁷ in the original sample was calculated using the formula

$$A = c \cdot n \cdot \frac{P}{p} e^{-\lambda t}$$

where: A - absolute activity in microcuries; C - counter efficiency in dis/min per microcurie for a given weight of precipitate; P - weight of Co carrier added to the original sample; p - weight of carrier recovered; λ - decay constant for Cs¹³⁷, t - mean time from collection of sample. Chemical yields were of the order of 60-70%. Using the procedure outlined it proved possible to determine 10⁻¹⁰ curie amounts of Cs¹³⁷, or greater, the whole procedure taking 5-8 hours. Acknowledgments are expressed to Yu.M. Tolmachev for his assistance.

There are 2 figures, 1 table and 8 references: 6 Soviet-bloc, 1 Russian translation from a non-Soviet-bloc publication, and 1 non-Soviet-bloc.
Card 4/5

X

33187

The radiochemical determination ... S/186/61/003/006/007/010
E051/E135

The English language reference reads as follows:
Ref. 7: H. Tadishi, Bull. Inst. Chem. Res., Kyoto Univ.,
v. 37, 2, 126 (1959).

SUBMITTED: November 17, 1960

Card 5/5

X

SHVEDOV, V.P.; MUSAYEV, Sh.A.

Separation of cerium (IV) iodate and the determination of cerium
(IV) in it. Izv.vys.ucheb.zav; khim.i khim.tek. 4 no.5:727-733
'61. (MIRA 14:11)

1. Leningradskiy tekhnologicheskij institut imeni Lensoveta,
kafedra tekhnologii iskusstvemykh radioelementov.
(Cerium iodate) (Cerium--Analysis)

SHVEDOV, V.P. (Leningrad); STEPANOV, A.V. (Leningrad)

Instrument for continuous electrophoresis. Zhur. fiz. khim. 35
no.1:217-219 Ja '61. (MIRA 14:2)
(Electrophoresis)

216100 1138,

S/076/61/035/003/008/023
B121/B203

AUTHORS: Shvedov, V. P. and Rosyanov, S. P.
TITLE: Effect of gamma radiation of Co^{60} on phosphoric esters
PERIODICAL: Zhurnal fizicheskoy khimii, v. 35, no. 3, 1961, 569-573

TEXT: The authors identified the reaction products of radiolysis of triethyl phosphate, tripropyl phosphate, and tributyl phosphate. The specimens were irradiated at room temperature in glass ampuls with Co^{60} of an activity of 1200 curies at a dose of 78-200 r/sec. The reaction products were determined by paper chromatography. The phosphorus content was spectrophotometrically determined with an ФЕК-M (FEK-M) photocolormeter. Several zones were observed in the chromatograms of trialkyl phosphates: five zones with tributyl phosphate, four zones with tripropyl phosphate, and three zones with triethyl phosphate. Dialkyl phosphoric acids and monoalkyl phosphoric acids were found to be the principal products of radiolysis of trialkyl phosphates. The yield in these products depends on the radiation dose. Monoalkyl phosphoric acid forms in places of high-density radiation energy. The authors thank S. V. Aver'yanov and V. F. Yevdokimov, scientific co-work-

Card 1/2

PHASE I BOOK EXPLOITATION SOV/6299

Shvedov, V. P., Professor, and S. I. Shirokov, eds.

Radioaktivnyye zagryazneniya vneshney sredy (Environmental Radioactive Contamination). Moscow, Gosatomizdat, 1962. 274 p. Errata slip inserted. 4000 copies printed.

Ed.: T. P. Kalyuzhnaya; Tech. Ed.: S. M. Popova

PURPOSE: This book is intended for geophysicists, biophysicists, dosimetrists, radiochemists, biologists, physicians, and agronomists.

COVERAGE: Methods of selecting samples and of determining, identifying, and measuring the activity of cumulative fission products and individual isotopes are discussed in detail. The composition, distribution, global fallout, and migration of artificial radioactive substances in the external environment are examined, and a dosimetric evaluation of radioactivity produced by heavy-nuclear fission is given. No personalities are mentioned.

Card 1/8 /

00008

S/186/62/004/001/008/008
E075/E456

217200
AUTHORS

~~Shvedov~~ V.E. Ankudinov, Ye.P., Bunin B.G.
Maksimova A.M., Ivanova L.M.

TITLE

Determination of low levels of radioactive impurities
in water

PERIODICAL

Radiokhimiya, v.4, no.1 1962, 110-116

TEXT

The authors outlined briefly sampling methods, concentration measurement and investigation of radioactivity of aqueous samples. The samples (1 to 1.5 litres) were taken from different depths or surface of a given water source, the adsorption of the active species on the walls of the sample holder being prevented by the addition of HCl. Subsequently, the radioactive products were concentrated by evaporation, coprecipitation, filtration, electrolysis, ion-exchange, etc. Since in 1960 there was a marked lowering in the specific radioactivity of water from different sources as compared with 1958 and 1959, it was necessary to use a counting device with the background of 0.5 to 1 imp/min for the measurement and determination of the weak absolute radioactivities. For the identification of isotopes and

Card 1/3

Determination of low levels

S/186/62/004/001/008/008
EC75/E436

determination of their absolute activity. Calibration of a γ spectrometer was carried out using energies of known mono-chromatic γ radiators and absolute activities measured by a 4π counter. Investigation of the artificial radioactivity in water proceeded in two directions: a) the total radioactivity was determined for a given water source every three months and b) absolute radioactivity was determined of some of the isotopes derived from fragmentation with special attention being paid to long lived Sr^{90} . To determine fragmentation activity radiochemical, radiometric and γ spectrometric analysis methods were used. For example Sr^{90} content was determined by carrying out radiometric analysis of Y^{90} with the subsequent measurement of its disintegration with a counter having the minimum background. For other isotopes derived from fragmentation determinations were made of Ce^{144} ($T = 284.5$ days), Pr^{144} ($T = 17.5$ min) and Rh^{106} ($T = 366.6$ days) - Rh^{106} ($T = 30$ sec). Residues after evaporation of the samples were examined using the spectrometer with all the scale of discriminator displacement. Such an examination gave the regions of β spectrum which revealed the

Card 1/3

Determination of low levels

S/186/62/004/001/008/008
E075/E436

presence of the activity. In conclusion, the authors indicated that the possibility of determining the radioactivity of water is dependent on the amount of radioactive materials present in the water source, the nature of isotopes (half-life period, energy of irradiation, disintegration pattern) and sensitivity of the method of irradiation used. X

SUBMITTED: February 8, 1961

Card 3/3

S/186/62/004/004/002/004
E071/E433

AUTHORS: Shvedov, V.P., Fu I-pei

TITLE: A study of the separation of radioactive isotopes of rare earth elements on a mercury cathode
II. Separation of Ce and Pm from Lu; Eu from Ce and La

PERIODICAL: Radiokhimiya, v.4, no.4, 1962, 457-461

TEXT: The electrolytic separation of cerium and promethium from lutecium was based on the previously found optimum conditions for the separation of cerium and promethium on a mercury cathode. The experiments were carried out under the following conditions: current density on the cathode 6.1 mA/cm^2 , temperature of the medium 35°C , pH 7.0, concentrations of lithium and citrate ions 4.5×10^{-3} and 2×10^{-3} M respectively. Pm^{147} , Ce^{144} and Lu^{177} without carriers were used for the experiments. It was found that under these conditions Ce and Pm separate on the cathode while Lu remains in the solution. It is considered that under certain conditions the separation on a mercury cathode of elements of cerium group from members of yttrium group with the exception of yttrium and ytterbium should be possible. The separation of
Card 1/2

A study of the separation ...

S/186/62/004/004/002/004
E071/E433

europium from lanthanum and cerium was based on a previous observation that the concentration of the citrate ion has a strong influence on the separation of these elements on the potassium amalgam formed during the electrolysis. Isotopes of $\text{Eu}^{152-154}$, La^{140} and Ce^{144} were used for the experiments in which the dependence of the yield of La and Ce on the molar ratio of $\text{M}^{3+}:\text{Cit}^{3-}$ in the presence of potassium ion in the solution was investigated. It was found that at a molar ratio of 1:36 for lanthanum and 1:4 for cerium, lanthanum and cerium remain completely in the solution. In subsequent experiments the separation of europium from lanthanum and europium from cerium at optimal molar concentrations was carried out with satisfactory results. There are 10 figures and 3 tables.

SUBMITTED: July 3, 1961

Card 2/2

S/186/62/004/004/001/004
E071/E333

AUTHORS: Shvedov, V.P. and Fu I-pei

TITLE: A study of the separation of radioactive isotopes
of rare-earth elements on a mercury cathode
I. Separation of Y, Yb and Lu

PERIODICAL: Radiokhimiya, v. 4, no. 4, 1962, 451 - 457

TEXT: An electrolytic separation of radioactive yttrium,
ytterbium and lutecium from an acetate-citrate solution, based
on differences in their ability to form amalgams under certain
conditions, was investigated. At first, the dependence of the
yield of each of the above elements on the acidity of the medium
and concentration of added ions (citrate in the presence of either
lithium or sodium ions) was studied since it was omitted from
previous investigations. Radioactive isotopes Y⁹¹, Yb¹⁶⁹, Er¹⁶⁹
and Lu¹⁷⁷ were used. It was found that in the presence of
lithium ions in the electrolyte, yttrium and ytterbium were
completely separated on the cathode, while erbium and lutecium
remained completely in the solution under all conditions tested. ✓
Only ytterbium was completely separated in the presence of sodium
ions in the electrolyte. A method of separation of the above
Card 1/2

A study of the separation

S/186/62/004/004/001/004
E071/E333

elements was developed based on these results and tested on synthetic mixtures with satisfactory results (since the behaviour of ¹⁷⁷Lu and lutecium during the electrolysis was similar, only ¹⁷⁷Lu was used in the experiments). There are 9 figures and 1 table.

SUBMITTED: July 3, 1961

Card 1/2

SHVEDOV, V.P.; GRITCHEVKO, Z.G.; GEDEONOV, L.I.

Be⁷ concentration in the surface layer of the air and in atmospheric precipitations. Atom. energ. 12 no.1:64-66 Ja '62. (MIRA 15:1)
(Beryllium) (Atmosphere)

IVANOVA, L.M., SHVEDOV, V.P.

Separation of radioactive cesium from seawater. Part 2: Separation
of cesium as a compound with alkaline earth ferrocyanides.
Radiokhimiia 5 no.2:185-189 '63. (MIRA I6:10)

L 11298-63 EWP(k)/EWP(q)/BDS/EWT(m)--AFPTC/ASD--Pf-4--JD
ACCESSION NR: AP3003683 S/0186/63/005/003/0342/0346

59

AUTHOR: Shvedov, V. P.; Antonov, P. G.

TITLE: Separation of praseodymium and neodymium²⁷ by electrolysis with a mercury cathode

SOURCE: Radiokhimiya, v. 5, no. 3, 1963, 342-346

TOPIC TAGS: rare earths, praseodymium, neodymium, separation, electrolysis, mercury cathode, electrolysis output, praseodymium acetate, complexing agent, lithium tartrate, rare-earth amalgam, separation factor

ABSTRACT: Outputs and separation factors in the electrolysis of aqueous solutions of praseodymium and neodymium acetates in the presence of lithium tartrate complexing agent have been determined. Electrolysis was carried out in a cell described by I. A. Maxwell and R. P. Graham (Chem. Rev., 46, 3, 471 (1950)) with a mercury cathode and platinum anode. The electrolyte was maintained at 20C and pH 6-7. The praseodymium concentration was 0.02 M in all electrolytes. The Nd concentration varied from 2×10^{-5} to 0.02 M. The cathodic potential and specific activity of radioactive tracers in the electrolyte were measured periodically

Card 1/82

L 11298-63

ACCESSION NR: AP3003683

during electrolysis for 30 or 60 min. The rare-earth elements in the amalgam and the electrolyte were determined gravimetrically after each experiment. The effects of lithium tartrate concentration in the 0.1—0.833 M range, cathodic current density in the 7.7—57 mamp/cm² range, and Pr/Nd concentration ratio in the electrolyte were studied. It was found that 1) output for Nd and Pr decreased unequally with increasing lithium tartrate concentration, so that separation of Nd and Pr was possible; 2) the separation factor for Nd and Pr was not affected by variations in the Pr/Nd concentration ratio in the electrolyte; and 3) current-density variations at 0.63-M lithium tartrate significantly affected the output and separation factor of Nd and Pr, as shown in Figs. 1 and 2 of the Enclosure. These data together with data obtained at different lithium tartrate concentrations, show that separation factors of 30—60 and over were achieved, as compared to a maximum factor of 3 obtained previously by E. I. Onstott (Anal. Chem., 33, 10, 1470 (1961)). The optimum operating conditions at 0.02-M Pr and 0.002-M Nd are as follows: lithium tartrate concentration, 0.34 M; current density, 7.7 mamp/cm²; electrolysis time, 60 min; temperature, 20C. Orig. art. has: 3 tables and 3 figures.

ASSOCIATION: none
SUBMITTED: 27Apr62
SUB CODE: CH

DATE ACQ: 07Aug63
NO REF SOV: 002

ENCL: 01
OTHER: 006

Card 2/32

SHVEDOV, V.P.; KOTEGOV, K.V.

Electromigration method for determining the physicochemical constants of the compounds in a state of extreme dilution. Part 1: Determination of the path of ions and of the nature of electrolyte flow during continuous electrophoresis on a porous filler. Radiokhimiia 5 no.3:369-374 '63. (MIRA 16:10)

(Ions—Migration and velocity)
(Electrophoresis)

SHVEDOV, V.P.; KOTEGOV, K.V.

Electromigration method for determining the physicochemical constants of the compounds in a state of extreme dilution.
Part 2: Determination of the series of physicochemical values of Tc and Re compounds. Radiokhimiia no.3:374-378 '63. (MIRA 16:10)

(Technetium) (Rhenium compounds) (Electrophoresis)

SHVELOV, V.P.; ANTONOV, P.G.

Separation of samarium from neodymium and praseodymium by electrolysis
on a mercury cathode. Radiokhimiia 5 no.5:616-618 '63.

(MIRA 17:3)

SHVEDOV, V.P.; SUSOROVA, N.A.

Oxalate-zirconates of alkaline earth metals. Zhur.neorg.khim.
8 no.4:893-895 Ap '63. (MIRA 16:3)
(Zirconium oxalates) (Alkaline earth compounds)

BELYAYEV, L.I.; GEDRONOV, L.I.; GRITCHENKO, Z.G.; MAKSIMOVA, A.M.;
SHVEDOV, V.P.; YAKOVLEVA, G.V.

Radioactive fallout in the Crimea in 1960-1961 Atom. energ. 15
no.3:264-265 S. '63. (MIRA 16:10)

(Crimea--Radioactive fallout)

POLIKARPOV, Gennadiy Grigor'yevich; SILVEKOV, V.P., doktor khim.
nauk, prof., red.; ANKRSYENKO, Z.L., red.

[Radiocology of marine organisms; accumulation and
biological effect of radioactive substances] Radioekologiya
morskikh organizmov; nakoplenie i biologicheskoe deistvie
radioaktivnykh veshchestv. Moskva, Atomizdat, 1964. 294 p.
(MIRA 17:7)

SHVEDOV, V. I.; STEPANOV, A. V.; GORDELY, N. I.

Study of the separation of strontium from the prevailing amounts of calcium by the method of continuous electrophoresis. Radiokhimiia 5 no. 6:690-694 '63.
(MIRA 17:7)

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_4FeCN_6 + 0.052 M KNO_3 were completely separated in 30 minutes with a gradient

Card 1/3

L 16300-65 EPA(s)-2/EWT(m)/EWA(d)/EWP(t)/EWF(b) Pt-10 1JP(c)/ESD(gs)/AFETR/
ACCESSION NR: AP4047844 RAEM(a) JD/JG/WB S/0186/64/006/005/0581/0585

AUTHOR: Shvedov, V. P.; Antonov, P. G.

TITLE: A study of the conditions for the formation of amalgams of gadolinium, terbium, dysprosium and holmium during electrolysis on a mercury cathode

SOURCE: Radiokhimiya, v. 6, no. 5, 1964, 581-585

TOPIC TAGS: gadolinium, terbium, dysprosium, holmium, amalgam formation, mercury cathode, electrolysis, rare earth amalgam

ABSTRACT: The authors note that in the electrolysis of aqueous solutions containing acetates of the rare earth metals and lithium citrate as a complexing agent, the elements of the cerium subgroup and ytterbium readily form amalgams. Reference is made to studies which have shown that the elements beginning with gadolinium show little or no inclination to the formation of amalgams. The purpose of the present article was to establish the capacity of gadolinium, terbium, dysprosium and holmium for amalgam formation by means of the electrolysis, on a mercury cathode, of solutions containing the acetates of these elements and lithium citrate as a complexing agent. The authors do not describe the experimental procedure employed. Basically, however, the quantity of rare earth elements in the amalgam and in the electrolytic phase was determined by weighing the

Card 1/2

L 16300-65

ACCESSION NR: AP4047844

oxides obtained by the calcination of the precipitated hydroxides and oxalates. The error in the gravimetric analysis was $\pm 0.5\%$, and in the radiometric analysis: $\pm 2-5\%$. The principle conditions of the experiment may be summarized as follows: concentration of Gd, Tb, Dy and Ho: 0.01 M; electrolytic volume: 15 ml; mercury volumes: 8 ml; current density: 30 ma/cm²; cathode area: 20 cm²; time of electrolysis: 2 hours. The authors established that Gd, Tb, Dy and Ho have the ability to form amalgams during the electrolysis of aqueous acetate-citrate solutions. The amalgamation of these substances depends to a marked extent on the concentration of lithium citrate and of the rare earth element in the electrolyte. Optimum conditions for amalgam formation by these elements are presented in the article. Rare earth amalgams were obtained with the following percentages by weight of mercury: Gd - 0.15, Tb - 0.075, Dy - 0.055, Ho - 0.018. Orig. art. has: 4 figures.

ASSOCIATION: none

SUBMITTED: 20Jun63

ENCL: 00

SUB CODE: IC

NO REF SOV: 003

OTHER: 005

Card 2/2

SHVEDOV, V.I.; ORLOV, Yu.F.

Extraction of rare-earth elements with phenylbutyl phosphates.
Zhur. neorg. khim. 10 no.3:693-696 Mr 165. (MIRA 18:7)

Leningradskiy tekhnologicheskii Institut imeni Lencovola.

ACC NR: AT6024974 (N) SOURCE CODE: UR/0000/65/000/000/0198/0204

AUTHOR: Shvedov, V. P.; Makarov, D. F. 64
61

ORG: none

TITLE: Study of the separation of K from Rb, K from Na, K from Cs, Rb from Na, Rb from Cs, and Na from Cs

SOURCE: AN SSSR. Otdeleniye obshchey i tekhnicheskoy khimii. Zashchitnyye metallicheskiye i oksidnyye pokrytiya, korroziya metallov i issledovaniya v oblasti elektrokhimii (Protective metallic and oxide coatings, corrosion of metals, and studies in electrochemistry). Moscow, Nauka, 1965, 198-204

TOPIC TAGS: potassium, rubidium, cesium, sodium, carbonate, electrolysis

ABSTRACT: The potentials of deposition of alkali metals on mercury from 0.1 N aqueous solutions of their carbonates were determined: Cs, -2.022 V; Na, -2.030 V; Rb, -2.054 V; K, -2.060 V. The dependence of the transfer of alkali metals into mercury on the cathode potential was established; from this dependence, the half-wave potentials of alkali metals were obtained: Cs, -2.096 V; Na, -2.104 V; Rb, -2.122 V; K, -2.138 V. The separation factors of a series of alkali metal pairs (Rb and K, Na and K, Cs and K, Na and Rb, Cs and Rb, Na and Cs) on a mercury cathode were determined for the electrolysis of 0.1 N aqueous solutions of carbonates of these metals at a constant cathode potential. These factors were found to be small: even in the most favorable case, in

Card 1/2

ACC NR: AI6024974

which the deposition potentials of the Cs-K pair differ by 0.04 V, the separation factor is only 4.25. This shows that under the conditions studied, the separation of alkali metals by electrolysis is very difficult, and a more complete separation can be achieved only in a multistage cascade process. Orig. art. has: 3 figures and 1 table.

SUB CODE: 07/1/ SUBM DATE: 04Feb64/ ORIG REF: 002/ OTH REF: 005

Card 2/2

blg

STEPANOV, A.V. SHVEDOV, V.P..

Electromigration method for studying hydrolysis of cerium (III)
in nitric acid solutions. Zhur.neorg.khim. 10 no.4:1000-1002
Ap '65.

(MIRA 18:6)

L 59236-65 EWT(m)/EWP(j)/T/EWP(t)/EWP(b) Pc-l IJP(o) JD/JG/RM

ACCESSION NR: AP5015016

UR/0078/65/010/008/1379/1387
661.865.67 + 661.866.17

25
B

AUTHOR: Stepanov, A. V. ; Shvedov, V. P. ; Rozhnov, A. P.

TITLE: Complex compounds of cerium (III) and europium (III) with tartaric acid

SOURCE: Zhurnal neorganicheskoy khimii, v. 10, no. 6, 1965, 1379-1387

TOPIC TAGS: cerium compound, europium compound, tartaric acid, complex tartrate, polynuclear complexing

ABSTRACT: Complexes of Ce(III) and Eu(III) formed in tartaric acid solutions were studied by the electromigration and potentiometric methods, which supplement each other and thus permit the study of low concentrations. Another objective was to determine the role of polynuclear complexing in separation processes associated with the use of complexing agents. A rare earth element — tartaric acid system was taken as an example. It was shown that in acid solutions of tartaric acid, Ce(III) and Eu(III) form complexes whose composition de-

depends not only on the concentration of the addend, but also on the total concentration of the metal in solution:

$$c_M < 10^{-6} \text{ mol/l} \begin{cases} [Ce tar]^{+} k_1 = (2,9 \pm 1,0) \cdot 10^6; & [Ce tar_2]^{-} k_2 = (7,4 \pm 3,0) \cdot 10^6 \\ [Eu tar]^{+} k_1 = (1,3 \pm 0,5) \cdot 10^6; & [Eu tar_2]^{-} k_2 = (1,7 \pm 0,5) \cdot 10^6 \end{cases}$$

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L 59236-65

ACCESSION NR: AP5015016

The instability constant of the complex $[Ce_2tar_2]^{2+}$ was found to be 6×10^{10} ($\alpha = 0,1$, $t = 25C$). The instability constant of the complex $[Ce_2tar_3]^{10}$ was found to be 5×10^{14} . It was shown that when the concentration of one of the rare earth metals is greater $10^{-6} M$, cerium and europium may form mixed dinuclear tartrate complexes which prevent a complete separation of these two metals by electrophoresis, chromatography, etc. The electrophoretic separation was complete, however, at concentrations of both rare earths below or equal to $10^{-6} M$. Orig. art. has: 5 figures, 5 tables and 12 formulas.

ASSOCIATION: None

SUBMITTED: 03Jan64

NO REF SOV: 013

ENCL: 00

OTHER: 005

SUB CODE: IC

dm
Card 2/2

L 43022-65 EWT(m)/EPF(c)/EWP(t)/EWP(b)
ACCESSION NR: AP5008915

Pr-4 IJP(c) JD/WH
S/0076/65/039/003/0756/0757

19
18
B

AUTHOR: Shvedov, V. P.; Ivanov, I. A.

TITLE: Transference numbers of sodium and potassium cations in fused sodium and potassium hydroxide

SOURCE: Zhurnal fizicheskoy khimii, v. 39, no. 3, 1965, 756-757

TOPIC TAGS: sodium hydroxide, potassium hydroxide, transference number, ion migration, ion mobility

ABSTRACT: In connection with a study of the migration of ions in molten media under the influence of an electric field, the authors measured the transference numbers of Na and K ions in the corresponding hydroxides using the diaphragm method. The numbers obtained were found to be independent of the current intensity, quantity of electricity passed through the melt, or duration of electrolysis; i.e., they were constant for a given melt. The results also show that the transference numbers in fused sodium and potassium hydroxide are much smaller than in fused potassium or sodium nitrate, nitrite, and chloride, and that the transference number (mobility) of the sodium ion is greater than that of the potassium ion. "In conclusion, the authors thank Prof. A. I. Avgustinnik, head of the Kafedra tekhnologii

Card 1/2

L 43022-65

ACCESSION NR: AP5008915

keramiki (Department of Ceramics Technology), and their coworkers in this department and in the Kafedra tekhnologii ogneporov Leningradskogo tekhnologicheskogo instituta imeni Lensovetu (Department of Refractory Technology, Leningrad Institute of Technology), for assistance in the preparation of the porous membranes." Orig. art. has: 1 table and 1 formula.

ASSOCIATION: Leningradskiy tekhnologicheskii institut im. Lensovetu (Leningrad Institute of Technology)

SUBMITTED: 18Feb64

ENCL: 00

SUB CODE: IC

NO REF SOV: 004

OTHER: 008

Card

2/2 *ee*

L 54466-65 EWT(m)/EWP(t)/EWP(b)/EWA(h) IJP(c) JD/JG/GS

ACCESSION NR: AT5013644

UR/0000/65/000/000/0108/0113
543.53:546.36:551.577

AUTHOR: Shvedov, V. P.; Zhilkina, M. I.; Gritchenko, Z. G.; Gedeonov, L. I. 30
8+

TITLE: Behavior of ¹³⁷Cs in the course of analysis of samples of atmospheric precipitation

SOURCE: AN SSSR. Otdeleniye obshchey i tekhnicheskoy khimii. Radiokhimicheskiye metody opredeleniya mikroelementov (Radiochemical methods for determining trace elements); sbornik statey. Moscow, Izd-vo Nauka, 1965, 108-113

TOPIC TAGS: rain analysis, ¹³⁷fallout analysis, radiocesium determination, radioactive aerosol, Gamma spectroscopy

ABSTRACT: The aim of this work was to study the behavior of the radioactive isotope ¹³⁷Cs in the course of decomposition by mineral acids of dry residues from the evaporation of rain and aerosol samples collected in the vicinity of Leningrad in 1958-1961). A scintillation gamma spectrometer with a multichannel pulse analyzer was used in determinations of ¹³⁷Cs. An analysis of the extraction of ¹³⁷Cs by H₂O, and aqueous solutions of HCl, HNO₃, HF of various strengths and

Card 1/2

L 54466-65

ACCESSION NR: AT5013644

their mixtures led the authors to conclude that in the samples studied, part of this isotope enters into the structure of various silicate compounds; this was confirmed by a 100% dissolution of Cs¹³⁷ when the samples were decomposed by mixtures of the concentrated acids HF + HCl and HF + HNO₃. When either of these two mixtures is employed, the radioactive nuclides Cs¹³⁷, Sb¹²⁵, Ce¹⁴¹, Ce¹⁴⁴, Ru¹⁰³, Ru¹⁰⁶, Zr⁹⁵, Nb⁹⁵, Be⁷ and other γ -emitting components of radioactive fallout pass into solution. At the same time, SiO₂ is removed, whose content in some samples makes up 50% of the total weight. This procedure makes it possible to avoid errors caused in the radiochemical determination of Cs¹³⁷ by its incomplete dissolution when weaker solutions of HCl, HNO₃, and HCl are used. Orig. art. has: 3 figures and 1 table.

ASSOCIATION: None

SUBMITTED: 14Jan64

NO REF SOV: 004

ENCL: 00

SUB CODE: IC, ES

OTHER: 001

BBB

Card 2/2

L 51842-65 EWT(m)/EPF(n)-2/EWP(t)/EWP(b) Pu-4 IJP(c) JD/JG

ACCESSION NR: AP5011810

UR/0080/65/038/004/0756/0760

546.49+621.3.035.222+621.357.9+546.34+546.32+546.36

AUTHOR: Shvedov, V. P.; Makarov, D. F.

40
39
B

TITLE: Separation of Li from K and Li from Cs

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 4, 1965, 756-760

TOPIC TAGS: electrolysis, electrolytic extraction, lithium, potassium, cesium

ABSTRACT: The object of the work was to separate alkali metals at the mercury cathode during controlled cathode-potential electrolysis of their halides. The deposition potentials of Li, K, and Cs on the mercury cathode were determined in an electrolysis cell consisting of a modified Hildebrand cell, in which the cathode potential was kept constant automatically by means of a potentiostat. In 0.1 N solutions of LiI, KI, and CsI, the deposition potentials were -2.26 V for Li, -2.06 V for K, and -2.02 V for Cs. Li and Cs were separated at a cathode potential of -2.08 V, and Li and K were separated at -2.10 V. The recovery of Cs in the amalgam was 88.0%, as determined by titration of CsOH; the yield of I, determined from the increase in the weight of the anode, was 95.0%. These yields were respectively 93.6%

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L 51842-65

ACCESSION NR: AP5011810

and 104.1% in the separation of Li and K. The large yield of iodine at the anode as compared to the yields of Cs and K which passed into the amalgam is apparently due to the fact that a partial evolution of hydrogen on mercury during the electrolysis and particularly at its end causes the evolution of an equivalent amount of iodine at the anode, together with an increase to 8-9 in the pH of the solution. Orig. art. has: 7 figures.

ASSOCIATION: none

SUBMITTED: 10Dec63

NO REF SOV: 000

ENCL: 00

OTHER: 009

SUB CODE: MM, GC

Card 2/2

L 63083-65

ACCESSION NR: AP5017781

UR/0080/65/038/007/1605/1606

542.61+546.65

879

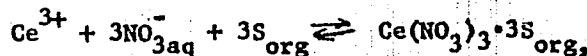
AUTHOR: Shvedov, V. P.; Orlov, Yu. F.

TITLE: Separation of rare earth elements by certain phosphorus-containing extracting agents

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 7, 1965, 1605-1606

TOPIC TAGS: cerium, praseodymium, neodymium, organophosphorus compound, extraction, rare earth separation

ABSTRACT: The effect of the composition of a series of organophosphorus extracting agents on the separation of Ce(III) - Pr and Pr - Nd pairs was studied. The separation factors were determined for extraction from an aqueous phase containing a mixture of the two rare earth elements and the salting-out agent, aluminum nitrate. The mechanism of extraction of cerium and probably the other elements may be represented by the reaction:



where S is a molecule of the extracting agent. Constants for this equilibrium

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L 63083-65
ACCESSION NR: AP5017781

(i. e., extraction constants) are given; they constitute a measure of the extracting capacity of the agents employed. In the latter, changes in the nature of the substituents strongly affect the extracting capacity, but have virtually no effect on the separation factors of the Ce(III) - Pr and Pr - Nd pairs. However, when tricyclohexyl and tri-sec-butyl phosphate are used, a certain decrease in separation factors is observed relative to the other extracting agents. Orig. art. has: 1 table and 1 formula.

ASSOCIATION: None

SUBMITTED: 30Nov64

ENCL: 00

SUB CODE: IC

NO REF SOV: 006

OTHER: 001

Card

KG
2/2

SHVEDOV, V.P.; IVANOV, I.A.

Transport numbers of sodium and potassium cations in molten sodium
and potassium hydroxides. Zhur. fiz. khim. 39 no.3:756-757 Mr '65.
(MIRA 18:7)

1. Leningradskiy tekhnologicheskii institut imeni Lensoveta.

KOBELEV, Kim Veniaminovich, PAVLOV, Oleg Nikolayevich, SHVEDOV,
Vladimir Petrovich, KARPOVA, T.V., red.

[Technetium] Tsemetssi. Moskva, Atomizdat, 1965. 119 p.
(MIRA 18:7)

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

Cell for measuring the mobility of ions by the application of
radioactive indicators. Zhur. fiz. khim. 39 no.4:1030-1032
Ap '65. (MIRA 19:1)

Leningradskiy tekhnologicheskii institut. Submitted Jan. 1,
1964.

SHVEDOV, V.P.; IVANOV, I.A.

Transport number and mobility of ions in a fused mixture
of sodium and cesium nitrates. Elektrokimiia 1 no.12:
1479-1481 D '65. (MIRA 19:1)

1. Leningradskiy tekhnologicheskii institut imeni Lensoveta.
Submitted April 3, 1965.

L. 27759-66 ENT (ml/SWP(j)) RM
 ACC NR: AP6018510 SOURCE CODE: UR/0079/65/035/011/2046/2050
 AUTHOR: Orlov, Yu. F.; Ionin, B. I.; Shvedov, V. P.
 ORG: Leningrad Technological Institute im. Lensovet (Leningradskiy tekhnologicheskii institut)
 TITLE: Extraction properties of phosphinic acid esters
 SOURCE: Zhurnal obshchey khimii, v. 35, no. 11, 1965, 2046-2050
 TOPIC TAGS: phosphinic acid, alkyl radical, IR spectrum, electron density, organic phosphorus compound, cerium compound
 ABSTRACT: The extraction of trivalent cerium nitrate by esters of phosphinic acids with alkyl radicals, radicals with multiple bonds and functional groups was investigated. The butyl esters of propylphosphinic, 3-oxobutylphosphinic, allylphosphinic, methylacetylphosphinic, and 1,2-di(carbethoxy)ethylphosphinic acids, as well as the diisoamyl ester of methylphosphinic acid were studied as extraction reagents. The extraction ability of phosphonates was found to be determined chiefly by the inductive effect of the substituents. The presence of acceptor groups in the radical greatly reduces the extraction constant. Of the compounds investigated, the maximum extraction ability was possessed by the diisoamyl ester of methylphosphinic acid, which the authors explain by a
 Card 1/1 UDC: 542.61:547.26:118:546.655

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49
B

L 27759-56

ACC NR: AP6018510

hyperconjugation effect between the methyl and phosphoryl groups, leading to an increase in the electron density on the oxygen in the case of this ester. No strict correlation was detected between the extraction constants and frequencies of the P=O groups in the infrared spectra of the compounds, indicating that such physical data as infrared spectra or dipole moments should be used in evaluating the extraction abilities of organophosphorus compounds only for series of similar compounds. No appreciable interaction of the carbonyl, carboxyl, and unsaturated groups with cerium nitrate was detected. The authors thank K. S. Mingaleva for measuring the dipole moments. Orig. art. has: 2 figures, 1 table and 2 formulas. [JPRS]

SUB CODE: 07,20 / SUBM DATE: 03Jul64 / ORIG REF: 010 / OTH REF: 002

Card

2/2

L 39083-66 E-T(m)/EWP(j)/EWP(t)/ETI IIP(c) RM/JJ/JC

ACC NR: AP6022874

SOURCE CODE: UR/0186/66/008/002/0139/0145

AUTHOR: Orlov, Yu. F.; Shvedov, V. P.

ORG: none

TITLE: Effect of the composition of organophosphorus compounds on the extraction of cerous nitrate

SOURCE: Radiokhimiya, v. 8, no. 2, 1966, 139-145

TOPIC TAGS: organic phosphorus compound, extraction, cerium compound

ABSTRACT: The object of the work was to obtain quantitative data on the extraction of cerous nitrate with fifteen organophosphorus compounds of various structures. The distribution of Ce¹⁴⁴ was studied without adding a carrier under equilibrium conditions at 25°C, with benzene as the diluent. The distribution coefficients of cerium were determined by measuring the activity of both phases. It is shown that in the extraction of cerium (III) by phosphates and phosphonates, the inductive effect of the substituents is of decisive importance. In many cases, however, steric factors have a substantial influence. It was found that the relation between log K (K being the extraction constant of Ce(III)) and the frequency of vibrations of the P=O bond of the extractants is only very roughly linear. Orig. art. has: 7 figures and 1 table.

SUB CODE: 07/ SUEM DATE: 14Dec64/ ORIG REF: 011/ OTH REF: 008

Card 1/1

UDC: 542.61:541.6

L 05135-67 EWT(m)/LWPC(D)/EPI LTB(S) JD/BR

ACC NR: AP6028187

SOURCE CODE: UR/0186/66/008/003/0369/0371

AUTHOR: Shvedov, V. P.; Strizhov, S. G.; Kostikov, V. A.

ORG: none

TITLE: ²¹Phosphate precipitation as a method of purifying weakly radioactive waste waters ¹⁹

SOURCE: Radiokhimiya, v. 8, no. 3, 1966, 369-371

TOPIC TAGS: water purification, phosphate, chemical precipitation, radioisotope, radioactive waste disposal

ABSTRACT: The purpose of the study was to ascertain the applicability of the phosphate precipitation method to the deactivation of weakly radioactive waste waters of complex chemical composition and to determine the purification coefficients thus obtained. In initial experiments on the removal of ^{90}Sr alone, the method was found to be highly effective. The degree of purification increases somewhat (by 20%) when the ratio $\text{PO}_4^{3-}/\text{Ca}^{2+}$ increases from 1 to 5. The amount of Ca^{2+} ion in the mixture affects the purification, and at a ratio $\text{PO}_4^{3-}/\text{Ca}^{2+} = 3:1$, the optimum amount of Ca^{2+} is 300 mg/dm^3 . Phosphate precipitation was then carried out on waste waters containing $\text{Sr}^{89}, ^{90}, ^{91}, \text{Ca}^{45}, \text{S}^{35}, \text{Ba}^{133}$ and $\text{Cs}^{134}, ^{137}$, at a Ca^{2+} concentration of 300 mg/dm^3 , $\text{PO}_4^{3-}/\text{Ca}^{2+} = 5$, and at $\text{pH} = 10.2-10.4$. The results were quite satisfactory. The quantities of fission products removed from the solution were: $\text{Sr}^{89}, ^{90}, ^{99.4}$

Card 1/2

UDC: 628.34

L 05138-67

ACC NR: AP6028187

99.9%; Y90, 91, 99.4-99.9; Ba¹³³, 96.7-99.4; Ca⁴⁵, 99.7-99.8, and S³⁵, 65%. Orig. art. has 3 tables.

SUB CODE: 07,18/ SUBM DATE: 20Sep65/ ORIG REF: 005/ OTH REF: 001

ms
Card 2/2

SHVEDOV, V. Ya.

AID P - 1873

Subject : USSR/Meteorology and Hydrology

Card 1/1 Pub. 71-a - 16/26

Author : Shvedov, V. Ya.

Title : ~~Wedge-type fastening device for temporary flashboards of small gaging spillways.~~
Wedge-type fastening device for temporary flashboards of small gaging spillways.

Periodical : Met. i gidro., no.2, 44-46, 1955

Abstract : A special device for fast insertion and removal of flashboards on spillways used for gaging discharges up to 50 l/sec is described. A schematic design is given.

Institution : None

Submitted : No date

SHVEDOV, Yakov.

On seas and oceans. Sov.mor.16 no.15:9 Ag '56.
(Flerov, Nikolai)

(MIRA 10:1)

SHVEDOV, Ye.I., inzh.

At the All-Union Industrial Exhibition. Sudostroenie 24 no.1:49-53
Ja '58. (MIRA 11:2)
(Moscow--Exhibitions) (Technology--Exhibitions)

ACCESSION NR: AP4042614

S/0229/64/000/006/0057/0059

AUTHOR: Shvedov, Ye. K. (Engineer)

TITLE: Marine propellers

SOURCE: Sudostroyeniye, no. 6, 1964, 57-59

TOPIC TAGS: ship propeller, fiber glass, fiber glass propeller, propeller blade, propeller hub

ABSTRACT: Ship propellers made of fiber glass were shown at the exhibition of synthetic materials in ship building. They were of various diameters and carried demountable blades. Some were mounted on metal hubs, others were wholly of fiber glass, and all were manufactured by hot-pressing. Such propellers are practically equal in strength to those made of carbon steel or bronze, are resistant to vibrations, and do not generate electromagnetic fields. They are four times lighter than metal propellers and are 3-5 times easier to manufacture. Various graphic aids were displayed, explaining fiber glass propeller production.

ASSOCIATION: none

Cards 1/2

ACCESSION NR: APHOL2611

SUBMITTED: 00

ENCL: 00

SUB CODE: IE, FR

NO REF SV: 000

OTHER: 000

shvedov, Ye. P.

GANTMAN, L.V., inzhener; SHVEDOV, Ye. P., inzhener

Industrial production of reactive hydrochloric acid. Khim.prom.
no.4:115-117 Ap '47. (MIRA 8:12)
(Hydrochloric acid)

KHOKHLOV, I.M.; SHVEDOV, Yu.P.; METAL'NIROV, V.A.

Separation of a mixture of α - and β -ionones by high vacuum
fractional distillation in periodic and continuous packed towers.
Trudy VNIVI 8:46-52 '61. (MIRA 14:9)

1. Apparaturno-konstruktorskaya laboratoriya Vsesoyuznogo nauchno-
issledovatel'skogo vitaminного instituta.
(Ionones) (Distillation, Fractional) (Packed towers)

(A)

ACC NR: AP6023016

SOURCE CODE: UR/0095/66/000/004/0015/0018

AUTHOR: Shvedov, Yu. V.

ORG: Ministry of the Gas Industry (Ministerstvo gazovoy promyshlennosti)

21
B

TITLE: New transport vehicles for the pipeline industry

SOURCE: Stroitel'stvo truboprovodov

TOPIC TAGS: transportation equipment, pipeline, road, climate condition, industrial truck, special purpose truck, cargo truck

ABSTRACT: The author discusses the disadvantages of vehicles used at the present time for transporting heavy pipe sections and other apparatus used in pipe building. Experience has shown that vehicles with increased ground mobility and 6x6 axle arrangement such as the ZIL-157K, KRAZ-214 and Ural-375 cannot ensure a reliable and continuous delivery of loads to all construction sites on rough roads and under severe climatic conditions. Special vehicles have been built for 1963-65 with increased ground mobility, an 8x8 axle arrangement and a load capacity of 10-25 tons. These vehicles can transport loads of 20-45 tons along rough roads by using special trailers. The Ministry of the Gas Industry has tested ZIL-135 vehicles, and MAZ-535, MAZ-537 and MAZ-543 vehicles are being road tested at present. Data are given describing the load capacity, axle arrangement and engine rating of various proposed and existing vehicles.

Card 1/2

UDC: 621.643.002.2:656.135

L 025.5-67

ACC NR: AP6023016

The results of the tests show that vehicles based on the ZIL-135 and MAZ-537 chassis can be used for hauling various loads such as pipe sections. These can be used at sites where mass produced vehicles with increased ground mobility are not applicable or can be used only with difficulty. It is shown that the technical and economic indices of ZIL-135 and MAZ-535 vehicles are significantly higher than those of others. The ZIL-135 vehicle can be loaded and unloaded with standard equipment, and the technical characteristics of the MAZ-543 chassis, together with higher ground mobility indices, make it useful for pipeline building operations. The introduction of such vehicles as ZIL-135, ZIL-E167, MAZ-537 and MAZ-543 into the pipeline building industry saves construction time and capital, and increases labor efficiency in hauling loads. Orig. art. has: 7 figures, 3 tables.

SUB CODE: 13/ SUBM DATE: none

Card 2/2 *egh*

EXCERPTA MEDICA Sec 8 Vol 12/4 NEUROLOGY Apr 59

15)

1878. THE EFFICACY OF TREATING CHILDREN WITH TUBERCULOUS MENINGITIS BY A METHOD EXCLUDING THE SUBARACHNOIDAL ROUTE OF INTRODUCING DRUGS (Russian text) - Shvedova A. N. - PEDIATRIYA 1958, 8 (23-25)

Thirty-two patients were treated with isoniazid and PAS per os and streptomycin i.m.; no drugs were administered intrathecally. Improvement of the general condition occurred earlier than usual, intoxication decreased, temperature reverted

1878

to normal, meningeal symptoms disappeared, and the CSF became normal. No complications were noted. (I, 7, 8, 15)

SHVEDOVA, G.N.

Case of pigmented papillary dystrophy of the skin in combination
with cancer of the stomach. Khirurgia 36 no.4:122-124 Ap '60.
(MIRA 13:12)

(STOMACH---CANCER)

(SKIN---DISEASES)

А. П. БУВА, В. И. ПУШКИН, И. В. ПУШКИН, С. А. ПУШКИН, С. А. ПУШКИН

Presentation of the new antibiotic preparations. Fr. 1. Genet. i
perel. krovi 9 no. 10: 12-13, 1961. (MIRA 14: 1)

1. laboratoriya kontrolya preparatov i kharakteristik
ISentral'nogo onkologicheskogo instituta genit. i perelivaniya
krovi (direktor - dokt. A. Ya. Kozlov, Moskva.

DOLGUY, I.Ye.; MESHCHERYAGOV, A.I.; SHVETKOVA, I.I.

Comparative reactivity of alkyl-substituted derivatives of
cyclopropane. Izv. AN SSSR Ser. Khim. no.1:192-194 '65.
(MIRA 18:2)

1. Institut orgaicheskoy khimii im. N.D. Zelinskogo AN SSSR.

YUREVICH, V.M.; MALYSHEV, V.D.; SHVEDOVA, I.S. ...

Methodology of artificial pulmonary ventilation in thoracic
surgery using a special adapter for double intubation tubules.
Nov. med. tekhn. no.3:45-50 '65. (MIRA 19:1)

AVERIN, G.; SHVEIDOVA, L.

All-Union conference of labor researchers of the confectionery
industry. Biul.nauch.inform.: trud i zar.plata no.5:55-58
'59. (MIRA 12:6)
(Confectionery--Production standards)

SHVEDOVA, L.

Study of the work and rest schedule at a bread plant. Biul.nauch.
inform.; trud i zar. plata 4 no.2:27-30 '61. (MIRA 14:3)
(Moscow--Bakers and bakeries)
(Time study)

SHVEDOVA, L.A.; TAREYEV, B.M., doktor tekhn. nauk, prof., red.

[Lectures on the course "Calculation and construction of electrical insulation"] Lektsii po kursu "Raschet i konstruirovaniye elektricheskoi izoliatsii" Moskva, Vses. za-
ochnyi energeticheskii in-t. No.1. [Design of oil-filled
entrances] Raschet naslonapolnennykh vvodov. 1963. 38 p.
(MIRA 17:4)

SHVEDOVA, L.A.; TARSEYEV, B.M., doktor tekhn. nauk prof., red.

[Manual on a course in "Calculation and design of electrical insulation"] Uchebnoe posobie po kursu "Raschet i konstruirovaniye elektricheskoi izoliatsii. Moskva, Vses. nauchnyi energ. in-t. No.2. 1962. 74 p.
(MIRA 19:1)

VASIL'YEV, S.F.; MOSIN, A.M.; LAPIDES, N.A.; Primali uchastiye: MISHENKO,
M.L.; OSTROVSKAYA, L.V.; FOMICHEV, V.F.; GUBBOTINA, G.V.; SHVEDOVA,
L.M.

Oxidative pyrolysis of lower hydrocarbons. Khim.prom. no.4:238-243
Ap '61. (MIRA 14:4)

1. Institut goryuchikh iskopayemykh AN SSSR.
(Hydrocarbons) (Oxidation)

SHVEDOVA, N., inzh.

Efficient procedures in shops and plants producing slag concrete
blocks. Stroi, mat. 4 no.3:8 Mr '58. (MIRA 11:3)
(Slag cement) (Concrete blocks)

SHVEDOVA, N.N.

Treatment of chronic, suppurative mesotympanitis. Vest. otorinolar
Moskva 14 no.1:40-42 Jan-Feb 52. (CJML 21:4)

1. Of the Polyclinical Division of First Moscow Municipal Hospital
amalgamated with the Clinic for Diseases of the Ear, Throat, and
Nose of Second Moscow Medical Institute imeni I.V. Stalin.

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24.5300
11.5000
AUTHORS:

Ilyukhin, V. S., Pokhil, P. F.,
Rozanov, O. K., Shvedova, N. S.

69504
S/020/60/131/04/021/073
B013/B007

TITLE: Measurement of Shock Adiabates of Cast Trotyl, Crystalline
Hexogen, and Nitromethane

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 131, Nr 4, pp 793-796 (USSR)

TEXT: The relatively low susceptibility to shock of the substances mentioned in the title makes it possible to determine their Hugoniot curves if no detonation occurs. For this purpose the authors employed the method of detonation. The experimental arrangement is schematically shown in figure 1. By using the conservation laws for mass and momentum in the passage of the substance through the shock wave and by employing the condition of steadiness at the interface between metal and the substance to be investigated it is possible to determine the pressure and volume of shock compression from the measured velocity of the shock wave in the material under consideration, from the velocity of mass in the metal, and from the shock adiabat. In the experiments carried out the authors used 5 mm thick copper plates as intermediate material between the active charge and the substance to be investigated. By measuring the velocity of motion of the free surface of the metal it is possible to determine the velocity of mass behind the front of the shock wave since the velocity of the

Card 1/3