SOV/20-123-5-21/50

A Morphological Description of the Microbe Population of the Seas and Oceans

for microbiology and for the purpose of investigating and indicating the presence of Oceanic Currents. There are 1 figure, 1 table, and 10 Soviet references.

ASSOCIATION: Institut mikrobiologii Akademii nauk SSSR
(Institute of Microbiology of the Academy of Sciences, USSR)

PRESENTED: May 26, 1958, by A. I. Oparin, Academician

SUBMITTED: May 26, 1958

Card 2/2

KRISS, Anatoliy Yevseyevich; IMSHENETSKIY, A.A., otv.red.; LITVINOV, M.A., red.izd-va; MOSKVICHEVA, N.I., tekhn.red.

[Marine microbiology (deep-sea microbiology)] Morskaia mikrobiologiia (glubokovodnaia). Moskva, Izd-vo Akad.nauk SSSR, 1959. 453 p. (MIRA 12:3)

1. Chlen-korrespondent Akademii nauk SSSR (for Imshenetskiy).
(Marine biology)

KRISS, A.Ye.

Basic trends in research carried out in the laboratory of electron microscopy of the Department of Biological Sciences of the Academy of Sciences of the U.S.S.R. Izv.AN SSSR.Ser. biol. no.3:451-457 My-Je '59. (MIRA 12:9)

1. Laboratoriya elektronnoy mikroskopii Akademii nauk SSSR.
(ELECTRON MICROSCOPY) (BIOLOGICAL RESEARCH)

SOV/50-59-5-3/22

3(9)

AUTHOR: Kriss, A. Ye.

TITLE: Microbiological Method for the Indication of Hydrological Phenomena in Seas and Oceans (Mikrobiologicheskiy metod indikatsii gidrologicheskikh yavleniy v moryakh i okeanakh)

PERIODICAL: Meteorologiya i gidrologiya, 1959, Nr 5, pp 18 - 24 (USSR)

ABSTRACT: With reference to the papers (Refs 1,2,3,13,14), it is stated that an increase in the population of microbes in the zone of convergence of nonuniform water masses is not only caused by the high temperature gradient occurring at the intersection point of warm and cold currents but also by the salt-content gradients due to a mixing of waters from different origins. The observed increase in the biomass of microbes in the zone of the so-called jump of temperature may also serve as an example. As the temperature gradients and the changes in the salt content are very great in those places where anomalies occur in the quantitative distribution of micro-organisms, an attempt is made here to clarify the sensitivity of the bacteriological method for the indication of "disturbances" in hydrologically uniform water

Card 1/4

masses, in order to be able to use this method for the determination of cases with poor heterogeneity in the structure of sea or ocean water. An investigation of this kind could be carried out by the author (Ref 7) on the drifting scientific station "SP-3" in the area of the north pole. This investigation, and the investigations carried out by Butkovich (Ref 3) much more to the south, in the Central Arctic, offered a possibility of ascertaining that even fine features in the stratification of water masses become evident with help of the method of determining the anomalies in the quantitative distribution of micro-organisms. Besides, the micro-organisms can also be used as hydrological indicators in another direction. Thanks to the development of a method for the direct microscopic investigation of the population of microbes in seas and oceans, micro-organisms have been detected which cannot be grown in the laboratory. Well recognizable forms of microbes were found which are peculiar to certain compositions of water. Therefore, these micro-organisms can serve as indicators for the origin of water masses. The investigations carried out in the deep-water areas of the Black

Microbiological Method for the Indication of Hydrological SOV/50-59-5-3/22
Phenomena in Seas and Oceans

Sea showed that the whole hydrogen-sulphide zone of the Black Sea, besides other micro-organisms, also produces some peculiar thread-shaped kinds (Ref 10). They are the original population of the hydrogen-sulphide zone. They get into the higher layers of the Black Sea by the water exchange between the hydrogen-sulphide and the oxygen zones. Due to a long-lasting vertical circulation caused by the intense cooling of surface waters, the quantity of water coming from the hydrogen-sulphide zone with its characteristic microbes is so large that the density of the microbe population in depths of 125 and 150 m is some dozens of times bigger in winter than in summer. How great the importance of the thread-shaped organisms as indicators for hydrological investigation is, can be seen from the fact that with their help a "strange" water was ascertained in the hydrogen-sulphide zone of the Black Sea. This water has another origin than the other water masses in this zone, which is also confirmed by observations made by Kitkin and others. The causes are not clear yet.

Card 3/4

Microbiological Method for the Indication of Hydrological SOV/50-59-5-3/22
Phenomena in Seas and Oceans

There are 3 figures, 1 table, and 14 references, 13 of which are Soviet.

Card 4/4

KRISS, A.; AND OTHERS

Microorganisms as an indicatior of hydrologic phenomena in the seas and oceans. p. 152

ANALELE ROMINO-SOVIETICE. SERIA BIOLOGIE (Academia Republicii Populare
Romine. Institual de Studii Romino-Sovietic
Bucuresti, Rumania
Vol. 13, no. 2, April/June 1959

Monthly list of Easter European Accession Index (EEAI), LC Vol. 8, No. 11
November 1959
Uncl.

KRISS, A.Ye.; MARKIANOVICH, Ye.M.

Utilization of humus contained in sea water by micro-organisms.
Mikrobiologiia 28 no.3:399-406 My-Je '59. (MIRA 13:3)

1. Institut mikrobiologii AN SSSR, Moskva.
(SEA WATER--BACTERIOLOGY) (HUMUS)

KRISS, Anatoliy Yevseyevich, doktor biolog.nauk, laureat Leninskoy premii;
STAROSTENKOVA, M.M., red.; SAVCHENKO, Ye.V., tekhn.red.

[Microbes in the depths of the oceans] Mikroby v okeanskikh glubinakh. Moskva, Izd-vo "Znanie," 1960. 39 p. (Vsesoiuznoe obshchestvo po rasprostraneniiu politicheskikh i nauchnykh znanii. Ser.8, Biologiia i meditsina, no.24). (MIRA 14:1)
(Marine microbiology)

KRISS, A.Ye.

Lability of structural elements of phage corpuscles. Izv. AN SSSR. Ser. biol. no.3:443-445 My-Je '60. (MIRA 13:7)

1. Institute of Microbiology, Academy of Sciences of the U.S.S.R., Moscow.

(BACTERIOPHAGE)

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510019-9

KRISS, A.Ye.; ABYZOV, S.S.; LEBEDEVA, M.N.; MISHUSTINA, I.Ye.; MITSKEVICH, I.N.

Geographical distribution of the microbe population (heterotrophic organisms) throughout the ocean. Izv. AN SSSR. Ser. geog. no.5: 34-41 S-O '60. (MIRA 13:10)

(Sea water--Microbiology)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510019-9"

KRISS, A.E. [Krisa, A. Ye.]; MARKIANOVICI, E.M. [Markianovich, Ye. M.]

Utilization of the aquatic humus from sea water by microorganisms.
Analele biol 14 no.1:54-62 Ja-Mr '60.

KRISS, A.Ye.; MITSKEVICH, I.N.; MISHUSTINA, I.Ye.; ABYZOV, S.S.

Hydrological structure of the Atlantic Ocean, the Norwegian and Greenland Seas according to microbiological data. Mikrobiologiia 29 no.6:875-887 N-D '60. (MIRA 14:1)

1. Institut mikrobiologii AN SSSR.
(ATLANTIC OCEAN—WATER—MICROBIOLOGY)
(NORWEGIAN SEA—WATER—MICROBIOLOGY)
(GREENLAND SEA—WATER—MICROBIOLOGY)

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510019-9

KRISS, A.Ye., prof.

Geography of marine micro-organisms. Priroda 49 no. 12:92-95
D '60. (MIRA 13:12)

1. Institut mikrobiologii Akademii nauk SSSR, Moskva.
(Zoogeography) (Marine fauna)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510019-9"

KRISS, Anatoliy Ye.

To be submitted for the International Symposium on Marine Microbiology, Chicago Ill., 20-24 Apr. 1961.

1. Included in the program is a list of titles and authors of papers scheduled for presentation at subject Symposium are the following:

USSR	KRISS, Anatoliy Ye., Institute of Microbiology, Academy of Sciences USSR - "Immediate tasks of marine microbiology" (Section V)
	KUZNETSOV, Sergey I., Institute of Microbiology, Academy of Sciences USSR - "The role of micro-organisms in the genesis and weathering of sulphur deposits" (Section II)
	LEBEDEVA, M. N., [illegible], E. Y., and [illegible], Yu. A., Sevastopol Biological Station - "Distribution of heterotrophic bacteria in some seas of the Mediterranean basin" (Section V) (To be presented by M. N. LEBEDEVA)
	LANSKAYA, L. A., Sevastopol Biological Station - "The division rates of plankton algae of the Black Sea in cultures" (Section I)
	PSHENIN, L. N., Sevastopol Biological Station - "Distribution and ecology of azotobacter in the Black Sea" (Section IV)
	ZHUKOVA, A. I., Central Research Institute, All-Union Institute of Marine Fishing and Oceanography, Moscow - "Quantitative value of bacteria in the nutrition of marine invertebrates" (Section VI)
	ZHUKOVA, A. I., and FEDOSOV, M. V., Central Research Institute, All-Union Institute of Oceanography, Moscow - "Role of microorganisms of the upper sediment layer of a shallow water basin in the transformation of organic substances" (Section VI) (To be presented by A. I. ZHUKOVA)

KRISS, A.Ye.; MITSKEVICH, I.N.

Distribution of filiform and cluster-like micro-organisms (Krassilnikoviae) in sea and ocean depths. Mikrobiologiia 30 no.1:110-112 Ja-F '61. (MIRA 14:5)

1. Institut mikrobiologii AN SSSR.
(SEA WATER—MICROBIOLOGY)

KRISS, A.Ye.

Taxonomy of microorganisms isolated from the sea. Mikrobiologiia 30 no.5:791-798 S-O '61. (MIRA 14:12)

1. Institut mikrobiologii AN SSSR.
(MICRO-ORGANISMS—CLASSIFICATION)
(SEA WATER—MICROBIOLOGY)

KRISS, A.Ye.

Usefulness of Nansen bathometers for taking water samples from seas and oceans for microbiological research. Mikrobiologiia 31 no.6:1067-1075 N-D '62. (MIRA 16:3)

1. Institut mikrobiologii AN SSSR.
(MARINE MICROBIOLOGY—RESEARCH) (BATHOMETER)

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510019-9

ZEMTSOVA, E.V.; KRISS, A.Ye.

Survival of marine micro-organisms (heterotrophs) during cultivation under laboratory conditions. Dokl. AN SSSR 142 no.3:695-698 Ja '62. (MIRA 15:1)

1. Institut mekrobiologii AN SSSR. Predstavleno akademikom A. I. Oparinym.

(SEA WATER--MICROBIOLOGY)
(BACTERIOLOGY--CULTURES AND CULTURE MEDIA)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510019-9"

KRISS, A.Ye.

Distribution of heterotrophic bacteria in the waters of the Pacific Ocean. Dokl. AN SSSR 146 no.6:1422-1425 O '62.
(MIRA 15:10)

1. Predstavleno akademikom A.I. Oparinym.
(Pacific Ocean—Bacteria)

KRISS, A.Ye.

Quantitative distribution of microbiological population in water column of the Pacific Ocean. Okeanologiia 3 no.1:157-168 '63. (MIRA 17:2)

KRISS, A.Ye.; MISHUSTINA, I.Ye.; MITSKEVICH, I.N.; ZEMTSOVA, E.V.; IMSHENETSKIY, A.A., akademik, otv. red.; GOL'DIN, M.I., red.izd-va; GUSEVA, A.P., tekhn. red.; KISELEVA, A.A., tekhn. red.

[Microbial population of the Pacific Ocean; species and geographical distribution] Mikrobnoe naselenie mirovogo okeana; vidovoi sostav, geograficheskoe rasprostranenie. Moskva, Izd-vo "Nauka," 1964. 295 p. (MIRA 17:1)

KRISS, A. Ye.

Distribution of unstable and stable forms of organic matter in the water mass of the world ocean. Mikrobiologiia 32 no.1: 103-112 '63 (MIRA 17:3)

1. Institut mikrobiologii AN SSSR.

IMSHENETSKIY, A.A.; KRASIL'NIKOV, N.A.; KRISS, A.Ye.; MEYSEL', M.N.;
MISHUSTIN, Ye.N.; RAUTENSHTEYN, Ya.I.; SKRYABIN, G.K.

Boris IAkovlevich El'bert, 1890-1963; an obituary.
Mikrobiologiia 33 no.2:378-379 Mr-Ap '64. (MIRA 17:12)

KRISS, A.Ye.

Oceanic microbiology; some general results of research in this field. Okeanologiia 5 no.1:22-31 '65. (MIRA 18:4)

1. Institut mikrobiologii AN SSSR.

ACC NR: AP6036764 (N) SOURCE CODE: UR/0020/66/171/001/0209/0211

AUTHORS: Mitskevich, I. N.; Kriss, A. Ye.

ORG: Institute of Microbiology, Academy of Sciences SSSR (Institut mikrobiologii Akademii nauk SSSR)

TITLE: The high-pressure tolerance of Pseudomonas sp., strain 8113, isolated from the bottom of a deep-sea depression in the Black Sea

SOURCE: AN SSSR. Doklady, v. 171, no. 1, 1966, 209-211

TOPIC TAGS: microbiology, atmospheric pressure, hydrostatic pressure, bacterial genetics

ABSTRACT: The high-pressure tolerance of Pseudomonas sp, strain 8113, obtained from a depth of 1900 meters in the Black Sea, was determined experimentally. Some cultures in a modified Rana medium and held in special glass flasks were placed in steel cylinders filled with water and were subjected to various hydrostatic pressures for 2--3 days at 28-29°; the rest were kept under the same conditions except at atmospheric pressure. With the aid of a Goryayev camera and an FEKN-57 nephelometer, the concentration and number of bacteria were determined. Results indicated that at pressures between 25 and 400 atmospheres bacterial growth exceeded growth at atmospheric pressure. At 600 atmospheres a repression of growth and reproduction

UDC: 576.8.095.12

Card 1/2

ACC NR: AP6036764

occurred. Pressures which were favorable for reproduction also produced an increase in cell length as compared with that of the control group. This article was presented by Academician A. A. Imshenetskiy on 18 April 1966. Orig. art. has: 1 table and 1 graph.

SUB CODE: 06/ SUBM DATE: 04Apr66/ ORIG REF: 003/ OTH REF: 002

Card 2/2

KRISS, CH. KH.

KRISS, CH. KH.: "Investigation of the xanthogenates of certain metals in connection with the purification of the solutions of zinc sulfate." Acad Sci Ukrainian SSR. Inst of General and Inorganic Chemistry. Kiev, 1956. (Dissertation for the Degree of Candidate in Chemical Sciences.)

SO: Knizhnaya Letopis', No. 26, 1956

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510019-9

AID Nr. 995-19 21 June

LUMINESCENCE AND STIMULATED EMISSION OF NEODYMIUM-ACTIVATED GLASS (USSR)

Feofilov, P. P., A. M. Bonch-Bruyevich, V. V. Vargin, Ya. A. Imas, G. O. Karapetyan, Ya. Ye. Kriss, and M. N. Tolstoy. IN: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 27, no. 4, Apr 1963, 466-472. S/048/63/027/004/002/026

Studies of luminescence and induced emission of neodymium-doped glass have been carried out, and optimum glass composition was determined. Glasses were developed which are superior to those used by E. Snitzer. Absorption and luminescence spectra were obtained, and the dependence of the duration of luminescence on concentration was determined. Induced emission was observed both in glass fibers encased in glass and in highly homogeneous glass cylinders. The dependence of time characteristics and spectral composition of induced emission on pumping energy was established. The prospects of application of the material to practical lasers and to study of induced emission phenomena are discussed. [BB]

Card 1/1

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510019-9"

GAL'PERIN, Ye.R., redaktor; GODELEVICH, V.P.; YEVTYANOV, S.I., redaktor;
KRISS, R.Zh.; KUNINA, S.L.; POPOV, I.A.; SHTEYN, B.B., redaktor;
VOLKOVA, T.V., redaktor; VEYNTRAUB, L.B., tekhnicheskiy redaktor.

[Problems on radiobroadcasting installations] Zadachnik po radioperedaiushchim ustroistvam. Pod red. S.I.Evtianova i E.R.Gal'perina. Moskva, Gos. izd-vo lit-ry po voprosam sviazi i radio, 1951. 175 p. [Microfilm] (MLRA 7:12)

(Radio--Problems, exercises, etc.)

[illegible]

Y Y

GORENBEYN, E.Ya.; KRISS, E.E.

Physicochemical studies of solutions of some alkali acetates in acetic acid as the solvent. Ukrain.Khim.Zhur. 15, 390-402 '49. (MLRA 5:6)
(CA 47 no.16:7865 '53)

2

CA KRISS, Ye.Ye.

Physicochemical studies of concentrated solutions. X. Fused systems sodium bromide-aluminum bromide and potassium bromide-aluminum bromide. E. Ya. Gorenbein and E. E. Kriss. *Zhur. Obshchei Khim.* (J. Gen. Chem.) 19, 1978-85(1949); cf. *C.A.* 43, 6898i.—Cond., viscosity, vol., and d. detns. were made 110-170° within concn. ranges 11.15-16.17 wt. % for the NaBr-$AlBr_3$ system, and 12.00-18.215% for the KBr-$AlBr_3$ system. Within these ranges the fusions may be considered to consist, resp., of the electrolyte complexes NaBr.Al_2Br_6 and KBr.Al_2Br_6 and the nonelectrolyte $AlBr_3$. A viscosity correction factor was applied to the measured molar cond.: $\mu_1 = \mu\eta/\eta_0$, where η is the viscosity of the melt, η_0 the viscosity of pure $AlBr_3$, μ is the molar cond., and μ_1 is the corrected molar cond. An empirical formula relating changes in the corrected values of the molar cond. with changes in vol. was found applicable. $\mu_1 = \mu_0 - k[(v - v_0)/(v_0)]$, where μ_0 is the corrected molar cond. for the individual constituents in their molten state; v_0 the corresponding gram mol. vol. in liters, v the vol. of the melt in liters, and k a const. In the NaBr-$AlBr_3$ system μ_1 is noticeably higher than that in the KBr-$AlBr_3$ system over the entire range of concn. and corresponding vol.; μ_1 ranges in value from 78.6 to 103.3, corresponding to NaBr concns. ranging from 11.15 to 16.17 wt. %. In the KBr-$AlBr_3$ system μ_1 ranges in value from 61.5 to 81.2.

A. Leviton

USSR/Chemistry - Antimony Compounds
Aluminum Compounds

Aug 51

"Physicochemical Investigation of Concentrated Solutions. XI. The System $SbBr_3 \cdot AlBr_3$-CBr_4," Ye. Ya. Gorenbeyn, Ye. Ye. Kriss, Lab of Nonaq Solns, IONKh, [Inst of General and Inorganic Chemistry], Acad Sci Ukrainian SSR

"Zhur Obshch Khim" Vol XXI, No 8, pp 1387-1392

Study of elec cond, viscosity, sp gr of system $SbBr_3 \cdot AlBr_3$-CBr_4 at 85, 90, 95, 100°C for concns of 50-100% $SbBr_3 \cdot AlBr_4$ showed that max of elec cond occurs due to increase of viscosity with increase of concn of $SbBr_3 \cdot AlBr_4$. Proposed eq for dependence of the

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USSR/Chemistry - Antimony Compounds
(Contd)

Aug 51

product of mol elec cond and viscosity on concn. Highest cor mol elec cond corresponds to cor elec cond of individual electrolyte.

18829

KRISS, Ye. Ye.

KRISS, YE. YE.

USSR/Chemistry - Electrical Conductivity; Arsenic Bromide as a Solvent Jul 51

"Investigation of Concentrated Solutions of $SbBr_3 \cdot AlBr_3$ in Arsenic Bromide as the Solvent," Ye. Ya. Gorenbeyn, Ye. Ye. Kriss, Acad Sci Ukrainian SSR, Kiev

"Zhur Fiz Khim" Vol XXV, No 7, pp 791-797

Investigated elec cond, viscosity, sp gr of system contg electrolyte $SbBr_3 \cdot AlBr_3$ (in liquid form a conductor) and solvent $AsBr_3$ (dielec). From elec cond at different temps from 60 to 120°C and viscosity at different temps from 80 to 120°C found that (a) elec cond increases with higher concn

206T20

USSR/Chemistry - Electrical Conductivity (Contd) Jul 51

and viscosity to max, then at high concns decreases with increase of concn; (b) highest corrected elec cond of system corresponds to that for individual electrolyte. $SbBr_3 \cdot AlBr_3$ complex forms no compd with $AsBr_3$. Formulated dependence of anomalous mol elec cond on diln.

206T20

KRISS, Ye. Ye

Mar 52

USSR/Chemistry - Electrolytes

"Investigation of Concentrated Solutions of Electrolytes in Arsenic Tribromide as a Solvent. System $ZnBr_2.Al_2Br_6$ - $AsBr_3$," Ye. Ya. Gorenbeyn, Ye. Ye. Kriss, Kiev Vet Inst.

"Zhur Fiz Khim" Vol XXVI, No 3, pp 346-351

Investingated the elec cond, viscosity, and sp wts in the system $ZnBr_2.Al_2Br_6$ - $AsBr_3$ at temps of 100, 110, 120, 130, and 140° within the concn range 32-100% electrolyte. Established some general relationships on the basis of the data obtained.

PA 213T29

USSR/ Chemistry - Physical chemistry

Card 1/1 Pub. 116 - 4/30

Authors : Nazarenko, Yu. P., and Kriss, Ye. Ye.

Title : Isotopic Cu-exchange between its mono- and divalent forms

Periodical : Ukr. khim. zhur. 21/3, 300-304, June 1955

Abstract : Experiments were conducted to determine the isotopic exchange of Cu between cuprous oxide or halides of cuprous oxide and cupric salt solutions in homo- and heterogeneous media. Results obtained are described in detail. Eight references: 3 USA, 3 USSR, 1 French and 1 German (1914-1951). Tables.

Institution : Acad. of Sc., Ukr. SSR, Inst. of Gen. and Inorg. Chem.

Submitted : July 3, 1954

SHEKA, Z.A.; KRISS, Ye.Ye.

Study of the formation of cobaltic xanthogenate. Zhur.neorg. khim. 1 no.3:586-597 Mr '56. (MLRA 9:10)

1. Laboratoriya khimii kompleksnykh soyedineniy Instituta obshchey i neorganicheskoy khimii Akademii nauk URSR.
(Cobalt xanthates)

SHEKA, Z.A.; KRISS, Ye.Ye.

Role of copper ions in the removal of copper from zinc solutions using the xanthate method. TSvet.met. 29 no.11:43-47 N '56.
(MLRA 10:1)

(Zinc—Metallurgy) (Xanthic acid) (Cobalt)

SHEKA, Z.A.; KRISS, Ye.Ye.

Determining the solubility of xanthogenates of certain heavy metals.
Zhur. neorg. khim. 2 no.12:2819-2823 D '57. (MIRA 11:2)

1. Institut obshchey i neorganicheskoy khimii AN USSR, Kiyev.
(Solubility) (Xanthic acids)

KRISS, Ye. Ye.

KRISS Ye. Ye.

5(4)

AUTHORS:	Vasil'yev, V. P., Karableva, V. D., Yatsimirskiy, K. B.	SOV/153-58-3-30/30
TITLE:	Conference Discussion on the Methods of Investigating the Complex Formation in Solutions (Soveshchaniye-diskussiya po metodam izucheniya kompleksoobrazovaniya v rastvorakh)	
PERIODICAL:	Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 3, pp 173 - 174 (USSR)	

ABSTRACT: From February 18 to 21, 1958 a conference discussion took place at the town of Ivanovo; it dealt with the subjects mentioned in the title. It was called on a decision of the VIIth All-Union Conference on the Chemistry of Complex Formations. More than 200 persons attended the conference, among them 103 delegates from various towns of the USSR. At the conference methods of determining the composition of the complexes in solutions were discussed, as well as the methods of calculating the instability constants according to experimental data and problems concerning the influence of the solvent upon the processes of complex formation.

[illegible] In the lecture by A. K. Babko and N. N. Yasenayko, "Physical and Chemical Analysis of the Systems With 3 Colored Complexes in the Solution", the results of a systematic investigation in copper-quinoline-salicylate, as well as in copper-pyridine-salicylate systems by means of the optical method were dealt with. In the lecture by Ya. A. Fialkov the idea of a further investigation of the complex formation processes in solutions was developed. Besides the determination of the composition and stability of the complexes also the physical and chemical properties, the chemical nature and the structure of the complex compounds must be investigated . . . . . .

Card 2/16

I. I. Alekseyeva and K. B. Yatsimirskiy in their lecture "Investigation of the Polymerization of Iso-Poly Acids in Solutions" mentioned experimental results of the investigation of the polymerization in solutions of molybdic acid. The authors proved that especially the molybdic acid within a certain range of the pH values and the concentrations exists as a number of compounds that can be expressed by an overall formula $MoO_4(HMoO_4)^{n-2}$. In the lecture by E. V. Aksel'rud and V. B.

Card 4/16

Spivakovskiy investigation results on basic salts taking into account the complex formation in solutions by means of the potentiometric method were mentioned for systems with zinc, cadmium and indium. In the evaluation of their results the authors employed the method of the table difference. The calculation of the consecutive constants was carried out according to the interpolation formula by Newton. N. A. Chepelevetskiy held a lecture on "pH Measurement Method of the Solutions in Combination With the System Analysis of the Solubility Diagram of the System Cu^{2+}-HCl - H_2O in Investigating Complex Copper Compounds in Saturated Solutions". It was found that the substance at the bottom of the liquid is more basic than the solution; furthermore, the increased acidity of the solution from the viewpoint of the formation of hydroxy-chloro complexes in the solution was explained. V. I. Kuznetsov opened the discussion with his lecture; he pointed out the necessity of utilizing the concepts worked out in the investigations of the polymerization in organic chemistry in the chemistry of polynuclear complexes. A. A. Grinberg thinks that the new approach of the hydrolysis

Card 5/16

[illegible] The lecture delivered by I. A. Sheka and Ye. Ye. Kriss "Employing the Method of the Dielectric Constant for Investigating Complex Compounds of the Type of Crystal Solvates in Solutions" dealt with the investigation of the solvates of lanthanum and cerium chlorides with ketones, as well as with the study of the compounds formed in heterogeneous systems with tributyl phosphate and nitric acid.

SOV/136-58-10-11/27

AUTHORS: Sheka, Z.A. and Kriss, Ye. Ye.

TITLE: Reaction of Cobalt Salts with Potassium Xanthates (Vzaimodeystviye soley kobal'ta s ksantogenatom kaliya)

PERIODICAL: Tsvetnyye Metally, 1958, Nr 10, pp 53 - 5 (USSR)

ABSTRACT: The authors comment on the views of I.A. Kakovskiy (Tsvetnyye Metally, 1958, Nr 7) on the processes occurring during the removal of cobalt from zinc-electrolysis solutions with the aid of potassium xanthate. They maintain that the method used by Kakovskiy to study the composition and properties of xanthates of various metals is not applicable to cobalt xanthate: their more careful repetition of Kakovskiy's experiments showed (table) that the reaction of soluble cobalt salts with potassium xanthate is not the simple exchange assumed by Kakovskiy. They indicate that this author contradicted himself and based his conclusions on erroneous experimentation which also distorted his thermo-dynamic treatment of the subject. The authors refer to their own work (Refs 4, 9) which showed that copper can advantageously be replaced by their oxidising agents, in particular, hydrogen peroxide as used at the Elektrotsink Works; they do not

Card 1/2

SOV/136-58-10-11/27

Reaction of Cobalt Salts with Potassium Xanthates

admit Kakovskiy's criticism of their views on the role of copper in the precipitation of cobalt.
There are 1 table and 12 references, 5 of which are Soviet, 4 English, 1 French, 1 Italian and 1 German.

Card 2/2

KRISS, Ye. Ye.

5(1,4)

PHASE I BOOK EXPLOITATION SOV/3413

Akademiya nauk Ukrainskoy SSR. Institut obshchey i neorganicheskoy khimii

Raboty po khimii rastvorov i kompleksnykh soyedineniy, vyp. 2 (Papers on the Chemistry of Solutions and Complex Compounds, Nr 2) Kiyev, 1959. 229 p. Errata slip inserted. 2,000 copies printed.

Resp. Ed.: Ya.A. Fialkov (Deceased) Corresponding Member, Ukrainian SSR, Academy of Sciences; Ed. of Publishing House: Z.S. Pokrovskaya; Tech. Ed.: M.I. Yefimova.

PURPOSE: This book is intended for research scientists, teachers in schools of higher education and technical schools, aspirants, and students of advanced chemistry courses.

COVERAGE: The collection contains 9 articles which review work conducted at the Institute for General and Inorganic Chemistry, Ukrainian Academy of Sciences, on electrolytic aqueous and nonaqueous solutions, the chemistry of complex compounds.

Fialkov, Ya.A. and Yu.P. Nazarenko. Study of Inorganic Halides on the Basis of Isotope Exchange Reactions 116

Sheka, Z.A., and Ye.Ye. Kriss. Metal Xanthates 135

Sheka, Z.A. Physicochemical Analysis of Solutions on the Basis of Dielectric Properties 163

Babko, A.K., and T.Ye. Get'man. Spectrophotometric Study of Complexes of Low Stability During Complex Formation 186

Babko, A.K., and T.V. Nazarchuk. Study of Metal Compounds Dyed With Oxyanthraquinones 199

Markov, B.F. Electromotive Forces of Chemical Bonds With Individual Fused Salts 216

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510019-9

SOV/78-4-2-33/40

5(2)

AUTHORS: Fialkov, Ya. A. (Deceased), Shaka, Z. A., Kriss, Ye. Ye.

TITLE: On Cobalt Xanthogenate (O ksantogenate kobal'ta)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 2, pp 472-477 (USSR)

ABSTRACT: The interaction of potassium xanthogenate with cobalt sulfate in aqueous solutions, depending on the pH of the solution, was investigated. The transformation was determined by physico-chemical and chemical analyses. Upon the interaction in a slightly alkaline medium a precipitate is formed which can be extracted by benzene. The formula of cobalt xanthogenate, recrystallized from benzene, is $Co(C_2H_5OCS_2)_3$. After extraction of cobalt xanthogenate a black residue remains which is insoluble in benzene and other organic solvents. The analysis of the residue showed ~34% cobalt and ~18% sulfur. The black residue is a mixture of several compounds which are formed upon the interaction of cobalt ions with decomposition products of potassium xanthogenate. The interaction of the aqueous solutions of potassium xanthogenate with cobalt sulfate is not a simple

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On Cobalt Xanthogenate

exchange reaction but is accompanied by secondary reactions. The optical density of the system cobalt sulfate - potassium xanthogenate was determined. At the same time the formation of the compound $Co(C_2H_5OCS_2)_3$ was determined. Xanthogenate decomposes quickly in acid solutions, at the same time the optical density decreases without the formation of a maximum of the curve composition - optical density. The decomposition velocity of xanthogenate rises with the increase of the concentration of the acid and the increase of the duration of the interaction of the components. The results show that physico-chemical analyses of the system potassium-xanthogenate-cobalt salts in aqueous solutions give no satisfactory results because of secondary reactions. There are 3 figures, 2 tables, and 15 references, 8 of which are Soviet.

SUBMITTED: December 12, 1957

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5(2) SOV/78-4-8-17/43

AUTHORS: Sheka, Z. A., Kriss, Ye. Ye.

TITLE: On Compounds of the Chlorides of Lanthanum and Cerium With Ethyl Alcohol and Ketones (O soyedineniyakh khloridov lantana i tseriya s etilovym spirtom i ketonami)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 8, pp 1809-1813 (USSR)

ABSTRACT: No data are available in publications on the complex compounds of $CeCl_3$ with ethyl alcohol. For the lanthanum complex $LaCl_3 \cdot 2C_2H_5OH$ is mentioned in reference 6. Since $NdCl_3$ which has similar properties as $LaCl_3$ forms the complex $NdCl_3 \cdot 3C_2H_5OH$, the same was also assumed for the lanthanum and cerium complexes. These complexes were produced for test purposes. Table 1 shows that their composition is $LaCl_3 \cdot 3C_2H_5OH$ and $CeCl_3 \cdot 3C_2H_5OH$. These compounds are little stable and separate from alcohol already at room temperature and at longer standing. Table 2 shows the solubility of the chlorides of lanthanum and cerium in ketones. The solubility was determined

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On Compounds of the Chlorides of Lanthanum and Cerium With Ethyl Alcohol and Ketones

by means of radioactive isotopes. The examination of the complex formation was carried out by measuring the dielectric constant. The results for the system $LaCl_3 - (CH_3)_2O$ are shown in table 3 and figure 1. The reaction with other ketones is shown by figure 2 and table 4. One or two alcohol molecules of the solvate shell were substituted in the complexes $LaCl_3 \cdot 3C_2H_5OH$ according to the chemical activity of the ketones. Benzoin and acetophenone react most energetically. $CeCl_3$ reacts with ketones weaker than lanthanum salts. The energy of the ketones is not sufficient to substitute all three alcohol molecules. With pyridine (Fig 3, Table 5), however, compounds with a ratio $LaCl_3 : Py = 1 : 2.7$ could be determined which approximately corresponds to the composition $LaCl_3 \cdot 3Py$. The determination of the dielectric constant made possible a comparative qualitative characteristics of the complex compounds. There are 3 figures, 5 tables, and 9 references, 3 of which are Soviet.

SUBMITTED: May 27, 1958

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05865
SOV/78-4-11-18/50

5(2)
AUTHORS: Sheka, Z.A., Kriss, Ye. Ye.

TITLE: On the Interaction Between Nitric Acid and Tributyl Phosphate

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 11, pp 2505 - 2510 (USSR)

ABSTRACT: The tributyl phosphate (TBPh) used for the extraction of lanthanides and actinides forms compounds when interacting with nitric acid which have been investigated by several authors (Refs 1-6), among them V.V. Fomin and Ye.P.Mayorova (Ref 5) who detected the formation of HNO_3.TBPh and $2HNO_3$.TBPh. This complex formation has hitherto been investigated primarily on the basis of the distribution of nitric acid among the aqueous and nonaqueous phase. The authors studied the complex formation directly in the nonaqueous phase by measuring the dielectric constant of a solution of HNO_3 - TBPh in carbon tetrachloride (Table 1). They measured isomolar series of HNO_3-TBPh and series with varied additions of HNO_3. Data indicate the formation of the

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On the Interaction Between Nitric Acid and Tributyl Phosphate

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compounds HNO_3TBPh and $3HNO_3$.TBPh, furthermore another compound $nHNO_3$.TBPh with $n > 3$ which could not be detected under the present experimental conditions. The formation constants for HNO_3.TBPh and $3HNO_3$.TBPh were calculated according to the distribution of HNO_3 among the aqueous and the nonaqueous phase (Table 3). Comparison of the experimental distribution curve of HNO_3 with that calculated for the two complexes (Fig 3) shows that the first complex compound predominates at concentrations of up to 4 moles/l of HNO_3 in water approximately, while the second one is formed not before higher concentrations (at 9 moles/l of HNO_3 approximately) have been attained. Beyond the latter value, nonchemical dissolution of nitric acid takes place in the nonaqueous phase besides the formation of a still higher complex compound. There are 3 figures, 3 tables, and 14 references, 10 of which are Soviet.

SUBMITTED: July 24, 1958

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S/078/60/005/012/013/016
B017/B064

AUTHORS: Kriss, Ye. Ye., Sheka, Z. A.

TITLE: Extraction of Rare Earth Elements With Di- and Tributyl Phosphate

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 12, pp. 2819-2823

TEXT: The distribution coefficients of nitrates of lanthanum, neodymium, yttrium, and ytterbium were determined in extractions with n-dibutyl phosphate and tributyl phosphate in dependence on the nitric acid concentration and the concentration of rare earths, and compared. Extractions were carried out at 20-21°C in a shaking funnel for 25-30 minutes. Carbon tetrachloride was used as solvent for di- and tributyl phosphate. The rare earth content in the aqueous and organic phases was determined by means of radioactive analyses with the isotopes La^{140}, Nd^{147}, Y^{91}, Ho^{166}, and Yb^{175}. The distribution coefficients were found to decrease in the extraction with dibutyl phosphate when the nitric acid concentration and the concentration of nitrates of rare earths increased in the aqueous phase,

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Extraction of Rare Earth Elements With Di- and Tributyl Phosphate

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B017/B064

whereas in the extraction with tributyl phosphate, when the concentration of nitrates of rare earths increased, the distribution coefficients were found to increase. Separation of rare earths at low acidity of the solution is easier when tributyl phosphate is used. Tables give a good survey of the results obtained. Table 1 gives the results of the nitrate extractions of some rare earths and of yttrium with one-molar solutions of tributyl phosphate and n-dibutyl phosphate in CCl_4 in dependence on the nitric acid concentration. Tables 2 and 3 show the distribution coefficients of nitrates of rare earths in solutions of tributyl phosphate and n-dibutyl phosphate in CCl_4 in dependence on the concentration of the lanthanidene nitrates $Ln(NO_3)_3$. To compare the efficiency of extractions, Table 4 shows the results of nitrate extractions of some rare earths with di- and tributyl phosphate, and with dioctyl phosphate. The varying effect of the nitric acid concentration upon the extraction of rare earths with dibutyl phosphate and tributyl phosphate is probably due to different stabilities of complex compounds of nitrates of rare earths with dibutyl phosphate and tributyl phosphate. The complex compounds of rare earths with dibutyl phosphate are assumed to be decomposable at higher nitric acid concentrations, whereas the complex compounds of rare earths with

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Extraction of Rare Earth Elements With Di- and Tributyl Phosphate

S/078/60/005/012/013/016
B017/B064

tributyl phosphate are also stable at higher nitric acid concentrations. A. A. Sorokina is mentioned. There are 4 tables and 29 references: 14 Soviet, 11 US, 3 British, 1 Danish, 1 French, and 1 Italian.

SUBMITTED: July 9, 1959

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Card 3/3

SHEKA, Z.A.; KRISS, Ye.Ye.; KHEYFETS, I.M.

Removal of cobalt impurities from zinc solutions by the xanthogenate method with the use of hydrogen peroxide. Ukr. khim. zhur. 26 no.5:658-662 '60. (MIRA 13:11)

1. Institut obshchey i neorganicheskoy khimii AN USSR.
(Zinc) (Cobalt) (Xanthic acid)

SHEKA, Z.A.; KRISS, Ye.Ye.

Complexing in the systems containing rare earth nitrates and tri- or dibutyl phosphate. Zhur.neorg.khim. 6 no.8:1930-1935 Ag '61. (MIRA 14:8)

(Rare earth nitrate) (Butyl phosphate)

24053
S/020/61/138/004/014/023
B103/B203

5.2300 1087

AUTHORS: Kriss, Ye. Ye. and Sheka, Z. A.

TITLE: Interaction of some rare earths with dibutyl phosphate and their separation by extraction

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 138, no. 4, 1961, 846-849

TEXT: The authors studied the complexes formed in the interaction of ions of rare earths with acid dibutyl phosphate $(C_4H_9O)_2HPO_2$ (HDBP), determined their instability constants, and separated some pairs of rare earths by this method. On the basis of published data they concluded that dialkyl phosphates (R_2HPO_4)(R = alkyl radical), particularly HDBP, are superior to tributyl phosphate for such a separation. The distribution coefficients (q_m) for extraction with HDBP decrease with increasing concentration of nitrates of rare earths. With the use of R_2HPO_4, the separation coefficient of adjacent lanthanides varies between 1.95 (light lanthanides) and 2.6 (heavy ones), whereas it lies between 1 and 2 with tributyl phosphate.

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B103/B203

Interaction of some rare earths with ...

Metal ions react with R_2HPO_4 according to the scheme

$$M^{n+} + nHA \rightleftharpoons MA_n + nH^+ \qquad (1),$$

where HA is a monobasic acid, in this case HDBP. The value of n is determined as tangent of the angle of inclination of the curve log q_m; log [HDBP] and denotes the number of HDBP molecules interacting with the metal ions. $q_m = [M]\ org/[M]_{water}$. n = 3 was found for neodymium and praseodymium. DBP is dimerized in nonpolar solvents: $M[H(DBF)_2]_3$. The authors used the following methods: (1) fractional extraction of the metal from aqueous solutions by HDBP solutions in CCl_4; (2) isolation of the compounds and their chemical analysis; (3) determination of the solubility of individual compounds in HDBP solutions in CCl_4, and of the distribution of rare earths between the aqueous and the non-aqueous phase. Ad (1): The authors found that the entire yttrium was extracted by the non-aqueous phase when reaching the ratio $\frac{\text{HDBP (g-mole)}}{\text{Y (g-at)}}$. Hence, they conclude that

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the resulting compound $M(DBP)_3$ is not solvated unless there is an HDBP excess. Ad (2): Some solid neodymium and ytterbium compounds were prepared by mixing solutions of the corresponding nitrates with HDBP or its alcoholic solution. In a dry state, they also had the composition $M(DBP)_3$. These experiments did not confirm the formation of complex compounds of rare earths with a ratio of molecule numbers higher than 1:3. Ad (3): The authors studied the solubility of $M(DBP)_3$ in HDBP solutions in CCl_4 with the use of radioactive Yb^{175}. They found that the solubility of $Yb(DBP)_3$ increased with increasing HDBP concentration. This suggests the interaction $Yb(DBP)_3 + n(HDBP)_2 \rightleftharpoons Yb[H(DBP)_2]_3$ (2). They calculated the equilibrium constant of the complex formation and determined the number of HDBP molecules entering reaction (2). Hence, they conclude that a compound $Yb(DBP)_3 3HDBP$ or $Yb[H(DBP)_2]_3$ is formed with an excess of complex former. They measured the molecular electrical conductivity of the saturated solution of $Nd(DBP)_3$ ($6.2 \cdot 10^{-4}$ moles/l) at 20°C; it was 235.5.

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Interaction of some rare earths with ...

This suggests a strong dissociation of the complexes of rare earths with DBP. Considering this, the authors derive the equation for the equilibrium constant: $\log K = \log q_m - 3 \log [A^-] - 3 \log [HA]$ (7). Besides, they determined the values of log. K for the complexes of praseodymium, neodymium, and ytterbium of the type $M[H(DBP)_2]_3$; they were 15.0, 15.3, and 18.5, respectively. The great difference in the stability of complexes between yttrium and cerium elements in the extraction with HDBP may be utilized for their separation. The separation coefficients depend on the position of elements in the lanthanide group, the content of HNO_3 in the aqueous phase, the HDBP concentration in the non-aqueous phase, and the quantitative ratio of the elements to be separated in their mixture. The coefficient varies between 1.9 and 2.4 for the pair Nd—Ho. In the re-extraction of elements from the non-aqueous phase, an additional separation may be attained by utilizing the different stability of complexes with HDBP. Thus, cerium elements are precipitated by oxalic acid, and additionally separated from the yttrium elements. The latter can be precipitated by NaOH from the solution in HDBP. There are 2 tables and 17 references: 3 Soviet-bloc and 14 non-Soviet-bloc. The 3 references to

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B103/B203

Interaction of some rare earths with ...

the English-language publications read as follows: Ref. 3: D. F. Peppard et al. J.Inorg. and Nucl.Chem.4,344 (1957); 5,141 (1957); Ref. 12: D. F. Peppard, J.R. Faris et al. J.Phys.Chem., 57,294 (1953); Ref. 13: D. Scargill, K. Alcock et al. J.Inorg. and Nucl.Chem., 4,304 (1957).

ASSOCIATION: Institut obshchey i neorganicheskoy khimii Akademii nauk USSR (Institute of General and Inorganic Chemistry of the Academy of Sciences UkrSSR)

PRESENTED: January 5, 1961, by I. I. Chernyayev, Academician

SUBMITTED: December 31, 1960

X

Card 5/5

EWT

NR: AT3002324

AUTHORS: Sheka, Z. A.; Kriss, Ye. Ye.

TITLE: Extraction of rare-earth elements and complex formation processes resulting thereby

SOURCE: AN UkrRSR. Instytyt zahal'noyi ta neorhanichnoyi khimiyi. Raboty po khimii rastvorov i kompleksnykh soyedineniy, no. 3, 1962. Khimiya rastvorov redkozemel'nykh elementov, 29-96.

TOPIC TAGS: rare-earth element, fission product, lentanoid, alcohol, ether, tributylphosphate, dialkylphosphoric acid, synergistic action

ABSTRACT: In the technology of nuclear materials, extraction is used extensively for precipitating and separating fission products and for purifying rare-earth elements (REE). Complex formation is treated extensively in this study on REE extraction, its dependence on the properties of the extractant and of additives, on stability of complexes formed, on concentration and components in aqueous and non-aqueous phases and on the atomic number of the lantanoids. Although a universal method for separation of all the REE has not been

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ACCESSION NR: AT3002324

developed, extractive methods for individual compounds and pairs of closely-related lantanoids have been plant-tested. An extensive analysis of data from literature and original work is presented. This analysis includes:

(a) extraction with neutral extractants (alcohols and ethers);
(b) extraction with organic acids (chelating agents);
(c) compounds with organic cations (basic extractants);
(d) extraction of lantanoids with tributyl phosphate (TBP)
(e) extraction of lantanoids with dialkylphosphoric acid;
(f) extraction of REE with other organophosphorus compounds.

Phosphonates, phosphinates, phosphine oxides, and pyrophosphoric acid derivatives having different branched chains [illegible] have been reported effective in extracting REE, but very little work has been done. Recent work on REE extraction with alkylphosphoric acid noted synergistic action of neutral organophosphorus reagents whose synergism intensified with increasing basicity of the phosphoryl oxygen: $(RO)_3PO<R(RO)_2PO<R_2(RO)PO<R_3PO$. In extracting Y, e.g., the n-butyl derivative of these phosphoric acids increased the distribution coefficient of dialkylphosphoric acids 4, 12, 25, and 50 times, respectively. Synergistic mixtures have not been found yet for all

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ACCESSION NR: AT3002324

REE; in still unpublished work on the use of amines for REE extraction, this question is important.

ASSOCIATION: none

SUBMITTED: 00
DATE ACQ: 25May63
ENCL: 00
SUB CODE: NS, CH, MA
NO REF SOV: 060
OTHER: 109

Card 3/3

KRISS, Ye. Ye.; SHEKA, Z. A.

Complex compounds of lanthanide nitrates with nitric acid.
Radiokhimiia 4 no.3:312-322 '62. (MIRA 15:10)

(Lanthanum nitrate) (Nitric acid)
(Lanthanum compounds)

34867
S/078/62/007/003/014/019
B110/B138

18.1295

AUTHORS: Sheka, Z. A., Kriss, Ye. Ye.

TITLE: Compounds of rare-earth elements with dibutyl phosphoric acid

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 7, no. 3, 1962, 658 - 664

TEXT: Compounds resulting from the synthesis of rare-earth elements and yttrium with di-n-butyl phosphoric acid (DBP) were investigated. Specified volumes of a $Y(NO_3)_3$ solution of constant concentration were mixed with equal volumes of DBP in CCl_4 for 10 - 15 min, and the residual Y was determined as oxalate in the aqueous phase. YA_3 formed if there was no DBP excess. Where there was excess DBP or $Nd(NO_3)_3$ the precipitates were washed out and analyzed with oxalate or $Y(NO_3)_3$. The analyses of the dried precipitates revealed MA_3 compounds in all cases. Lanthanide compounds in DBP are well soluble in organic substances containing DBP. YbA_3 in CCl_4 dissolves to $1\cdot10^{-7}$ mole/liter, and in 1 mole of a DBP solution in CCl_4 to $4{:}5\cdot10^{-2}$ mole/liter according to $MA_3 + nH_2A_2 \rightleftharpoons MA_3(HA)_{2n}$.

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The complex formation constant reads: $K_s = S/[MA_3][H_2A_2]^n$. n, the slope of the straight line log S - log$[H_2A_2]$, was 1 1/2, which indicated the presence of $Yb(HA_2)_3$. The equilibrium constant reads: $K' = S/[H_2A_2]^n = 0.13 \pm 0.04$. The radioactive isotopes Pr^{143}, Nd^{147}, and Yb^{175} were extracted by means of DBP solutions in CCl_4. From $M^{n+} + nA^- + nHA \rightleftharpoons MA_n(HA)_n$ it follows: $K' = [MA_3\ (HA)_3]_o/[M^{3+}]_B [A^-]^3_B [HA]^3_B$. Since practically complete dissociation was established from the electrical conductivity, $K = q_m/[A^-]^3_B [HA]^3_B$, where q_m = coefficient of metal distribution between the anhydrous and the aqueous phase. The logarithm of concentration of the monomer form of DBP in water reads: $\log[HA]_{aq} = 1/2(\log C_A - \log K_2 - 2 \log K_d - \log 2)$, where C_A = total initial DBP concentration in the anhydrous phase, K_2 = dimerization constant of DBP in the anhydrous phase, and K_d = distribution constant of DBP. At 0.36 - 0.18 mole/liter HNO_3 concentration and a DBP content in the anhydrous phase between 0.125 and

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B110/B138

Compounds of rare-earth...

1.0 mole/liter, the following values were found for the $M(HA_2)_3$ complexes of Pr, Nd, and Yb: log K = 15.0; 15.4 ± 0.2; 18.6 ± 0.4. These values fitted those of europium: log K = 16.8. DBP forms stable compounds with rare-earth ions. However, the complexes forming with excess of DBP are not stable. There are 2 figures, 5 tables, and 18 references: 4 Soviet and 14 non-Soviet. The four most recent references to English-language publications read as follows: D. F. Peppard et al. Inorg. Nucl. Chem., 4, 334 (1957); G. Duykaerts et al. J. Inorg. Nucl. Chem. 13, 332 (1960); C. F. Baes et al. J. Phys. Chem., 62, 129 (1958); T. V. Healy et al. J. Inorg. Nucl. Chem., 10, 128 (1959).

SUBMITTED: March 15, 1961

Card 3/3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510019-9"

S/186/62/004/003/010/022
E075/E436

AUTHORS: Kriss, Ye.Ye., Sheka, Z.A.

TITLE: Complex compounds of lantanide nitrates with nitric acid

PERIODICAL: Radiokhimiya, v.4, no.3, 1962, 312-322

TEXT: Interaction between certain lantanide nitrates and nitric acid was studied by the electromigration method and absorption by ion exchanger, in view of the widespread application of the systems for the extractive isolation and separation of lantanides. Results of the electromigration studies show that in solutions with a high concentration of nitric acid the stability of anionic complexes decreases with the increasing atomic number of the elements, whilst the stability of the cationic complexes increases, although their absolute concentration in the solutions is negligible. The stability of neutral complexes increases markedly with the atomic number. Results of ion-exchange on anionite ЭДЭ-10П (EDE-10P) confirm that the stability of anionic nitrate complexes of the rare earth elements decreases in the order La > Pr > Nd > Sm > Dy > Yb. It was found that anionic

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S/186/62/004/003/010/022
E075/E436

Complex compounds of lantanide ...

complex $La(NO_3)_3 - HNO_3$ forms in 7N HNO_3. For HNO_3 concentrations up to 1 to 1.5M, cationic lantanide predominates; for 3 to 4 M HNO_3 neutral complexes predominate; at higher concentrations of HNO_3 (up to 7 M), elements of the Ce group form anionic complexes and elements of the Yb group remain in the form of neutral complexes. Constants for the formation of cationic complexes were determined in order to evaluate distribution of a metal between cationic and electrically neutral forms. This work was carried out with cation exchanger КУ-2 (KU-2) in its hydrogen form and calculation made using the method of S.Fronaeus. From the results obtained it was inferred that the high concentration of HNO_3 in the solutions favours extraction of the lantanides with tributylphosphate. The heavy elements are extracted with larger distribution coefficients than the light elements. At the high solution acidity there is a difference between the composition of the heavy and light metal ions, the former forming electrically neutral complexes and the latter anionic complexes. Apparently the neutral complexes can form $M(NO_3)_3 \cdot 3TBF$, in which form the lantanides are extracted. There are 6 figures and 12 tables.

SUBMITTED: April 20, 1961

Card 2/2

SHEKA, Z.A.; KRISS, Ye.Ye.

Stability of cation nitrate complexes of neodymium and ytterbium. Radiokhimiia 4 no.6:720-725 '62. (MIRA 16:1)
(Neodymium nitrate) (Ytterbium nitrate) (Complex compounds)

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EWT(1)/EPF(c)/EWT(m)/BDS--ESD-3--Pr-4/Pc-4--RM/WW

S/0078/63/008/006/1505/1511

64

ACCESSION NR: AP3001222

AUTHOR: Kriss, Ye. Ye.

TITLE: Dependence of the solubility of rare earth element dialkylphosphates on
the concentration of dialkylphosphoric acid in benzene

SOURCE: Zhurnal neorganicheskoy khimii, v. 8, no. 6, 1963, 1505-1511

TOPIC TAGS: solubility, rare earths, dialkylphosphates, neodymium, ytterbium, di-
n-octyl-phosphate, di-n-butyl phosphate, equilibrium constants

ABSTRACT: The solubility of neodymium and ytterbium di-n-octyl- and di-n-butyl
phosphates (MA sub 3) in various concentration solutions of the corresponding
dialkyl-phosphoric acids (HA) in benzene was determined. The Nd complex solubility
was greater than that of Y; the octyl phosphates were more soluble than the butyl;
solubility of branched-chain compounds was less than that of corresponding linear
chain compounds. Solubility of MA sub 3 increases with increased concentration of
the calculated equilibrium constants indicate formation of the complex MA sub
MA. The solubility of Nd di-n-butylphosphate at different concentrations was
independent of temperature. Preliminary runs showed MA sub 3 to be 2-3 times more
soluble in carbon tetrachloride than in benzene. Orig. art. has: 6 tables, 8

Cord 1/2

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L 10640-63

ACCESSION NR: AP3001222

equations, 1 figure.

ASSOCIATION: none

SUBMITTED: 24Mar62

DATE ACQD: 01Jul63

ENCL: 00

SUB CODE: 00

NO REF SOV: 004

OTHER: 015

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Card 2/2

L 10648-63
[illegible]/EWT(m)/BDS--ESD-3--Pr-4/Pc-4--RM/WW

ACCESSION NR: AP3001223 S/0078/63/008/006/1512/1515

64

AUTHOR: Kriss, Ye. Ye.;

TITLE: Solubility of neodymium di-n-butylphosphate in mixtures of di-n-butylphosphoric acid with different diluents.

SOURCE: Zhurnal neorganicheskoy khimii, v. 8, no. 6, 1963, 1512-1515

TOPIC TAGS: neodymium di-n-butylphosphate, di-n-butylphosphoric acid, carbon tetrachloride, hexane, isooctane, benzene, diethyl ether, formic acid, dichloroethane, octanol, butane, propanol, pyridine, ethanol.

ABSTRACT: The solubility of neodymium di-n-butylphosphate in mixtures of 1 mol of di-n-butylphosphoric acid in the following solvents was found to decrease in the following order: carbon tetrachloride; n-hexane; isooctane; benzene, diethyl ether; formic acid; dichloretane; n-octanol; n-butanol; n-propanol, pyridine, ethanol. The acid "reacts" with the solvents due to permanent or induced dipoles or actual H bond formation, thus competing with the Nd salt for solvent molecules. The greater the reactivity, the faster the Nd(di-n-butylphosphate) sub 3. 3(di-n-butylphosphoric acid) complex is broken down and the less [illegible] the Nd salt. Orig. art. has: 2 tables and 1 formula.

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510019-9

KRISS, Ye.Ye.

Complex formation of rare-earth elements with glycine. Ukr.khim. zhur. 31 no.2:153-158 '65. (MIRA 18:4)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510019-9"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510019-9

[illegible] amino acids, proline, valine [illegible]

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[illegible] of the investigated amino acids. The greatest stability was displayed by compounds of lanthanum with aspartic and glutamic

ENCL: 00 SUB CODE: IC, OC

KRISS, Ye.Ye.; YATSIMIRSKIY, K.B.

Kinetic method of studying reactions between iron (III)
and deoxyribonucleic acid. Zhur.neorg.khim. 10 no.11:2436-
2440 N '65. (MIRA 18:12)

1. Submitted April 11, 1964.

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510019-9

KRISS, Yulius Zhakovich; NOVOSELOV, D.V., retsenzent; KOROVKIN, I.F., dotsent, retsenzent; PEL'TINOVICH, N.G., inzh., red.; TIKHOMIROV, O.N., red.

[Setting up production standards in the printing industry; a practical handbook] Tekhnicheskoe normirovanie v poligrafii; prakticheskoe posobie. Pod obshchei red. N.G.Pel'tinovicha. Moskva, Gos.izd-vo "Iskusstvo," 1959. 247 p. (MIRA 13:5)
(Printing industry—Production standards)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510019-9"

KRIST, E.

Carbonic conglomerations of the Bindt-Budnany facies in the northern part of the SpisGemer Ore Mountains. p.77

GEOLOGICKE PRACE, CZECHOSLOVAKIA

No. 36, 1954.

SOURCE: East European Accessions List (EEAL) Library of Congress. Vol, 5, No. 1, January, 1956.

KRIST, E.

"Geologic and petrologic situation of the area between Prencov and Beluj, south of Banska Stiavnica". P. 152

GEP:PGOCLE PRACE, ZPRAVU. (Slovenska akademia vied. Geologicky ustav Dionyza Stura) Bratislave, Czechoslovakia, No. 4, 1955.

Monthly List of East European Accessions (EEAI), LC, Vol 8, No. 8, August 1959.

KRIST, E.; KODERA, M.

Geologic and petrographic conditions in the area south of Zvolen and Viglas. p.28. (GEOLOGICKE PRACE; ZPRAVY, No. 9, 1956, Bratislava, Czechoslovakia.)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 12, December 1957. Incl.

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510019-9

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510019-9"

KRIST, E. A.

KRIST, E. A.

Mbr., Chemical and bacteriological
laboratory, Ashkhabad meat packing combine

"Seasonal variation in the weight of
endocrine glands of cattle," Izv. Turk. fil.
AN SSSR, no. 2:69-73 1949 (Submitted Jan. 1947)

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510019-9

KRIST, M., inzh.; SYROMYATNIKOV, Ye., inzh.; VOYEVODIN, V., inzh.

Construction of 6E drilling rigs following a new work schedule.
Neftianik 6 no.2:7-8 F '61. (MIRA 14:10)

1. Kuybyshevskiy sovet narodnogo khozyaystva.
(Oil well drilling rigs)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510019-9"

KRIST, Z.; SVABENSKY, J.

Experiences with production and use of large-seized brick blocks. p. 256.

STAVIVO. (Ministerstvo stavebnictvi) Praha, Czechoslovakia. Vol. 37, no. 8, Aug. 1959.

Monthly list of East European Accessions (EEAI), LC, Vol. 8, no. 10, Oct. 1959. Uncl.

SIMIONESCU, N.; ABUREL', V.; KURKIANU, I.; MARIN, D.; KRISTA, I.

Arterial segments of the human kidney. Arkh. anat. gist. i embr.
36 no.5:71-78 My '59. (MIRA 12:7)

1. Otdel anatomii Bukharestskogo mediko-farmatsevticheskogo instituta.
(KIDNEYS, blood supply
arterial segments (Rus))

KRISTA, Kostial.

The role of sodium, potassium, calcium, magnesium and lead ions in synaptic transmission. Arh.hig. rada 6 no.3:193-200 1955.

1. Institut za medicinska istrazivanja Jugoslavenske akademije znanosti i umjetnosti, Zagreb. Toxicology Department, Institute of Industrial Hygiene, Zagreb.

(SYNAPSES, eff. of drugs on
calcium, lead, magnesium, potassium & sodium ions on
synaptic transmission (Ser))
(CALCIUM, effects,
on synaptic transm. (Ser))
(MAGNESIUM, effects,
same)
(LEAD, effects,
same)
(POTASSIUM, effects,
same)

KRISTA, Kostial; BOZOVIĆ, Lj.

The adaptation to muscular work and adrenalin in rats. Arh. hig. rada 6 no.3:201-203 1955.

1. Institut za medicinska istrazivanja Jugoslavenske akademije znanosti i umjetnosti i Zavod za fiziologiju Medicinskog fakulteta, Zagreb. Toxicology Department, Institute of Industrial Hygiene, Zagreb. Department of Physiology, Medical Faculty, University of Zagreb, Zagreb.

(EXERCISE, effects,
  on eosinophil count in rats, adaptation (Ser))
(EOSINOPHIL COUNT,
  eff. of epinephrine & exercise in rats, adaptation (Ser))
(EPINEPHRINE, effects,
  on eosinophil count in rats (Ser))

KRISTACH, Misha

Fifth Congress of the Trade Unions of Albania. Vsem. prof. dvizh. no.8:35-36 Ag '61. (MIRA 14:8)

1. Sekretar' TSentral'nogo soveta profsoyuzov Albanii.
(Albania--Trade unions--Congresses)

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510019-9

NEJEDLY, Bedrich; KRISTAL, Antonin; PADEVET, Miroslav

New urine test. Cas. lek. cesk. 97 no.22:689-691 30 May 58.

1. Ustredni laborator OUNZ v Kladne, prednosta MUDr. Bedrich Nejedly.
B. N., Kladno, OUNZ.
(URINE
urinalysis, new technic (Cz))

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510019-9"

KRISTAL, I.Ya.

Intestinal pneumatosis. Sov. med. 18 no.12:36-37 D '54. (MLRA 8:2)

1. Iz khirurgicheskogo otdeleniya Polotskoy oblastnoy bol'nitsy
(glavnyy vrach M.A.Korenevskiy)
(INTESTINES, diseases
pneumatosis cystoides, diag. & ther.)

KRISTAL, I.Ya; KRAPUNOVICH, B.L.

Multiple stomach perforations in cencer of the pancreas.
Zdrav. Bel. 9 no.1:83 J'63. (MIRA 16:8)

1. Iz khirurgicheskogo otdeleniya (zav. I.Ya. Kristal) Polotskoy bol'nitsy (glavnyy vrach Ye.M.Polygalina)
(PANCREAS—CANCER) (STOMACH—ULCERS)

KRISTAL, I.Ya.; FIKHMAN, I.I.

Tuberculosis of the thyroid gland. Prob. tub. no.1:86-87 '65.
(MIRA 18:12)

1. Khirurgicheskoye otdeleniye Polotskoy gorodskoy bol'nitsy (glavnyy vrach A.M. Lebedeva).

FIKHMAN, I.I.; KRISTAL, I.Ya.; STEPANENKO, R.I. (Polotsk)

Role of emergency examination in industrial accidents. Sovet. zdravookhr. 5:21-22 '63 (MIRA 17:2)

[illegible]

SHVARTS, Galina Lazarevna; KRISTAL', Minna Mironovna; TAIROVA, A.L., red.
izd-va; MATVEYEVA, Ye.N., tekhn.red.

[Carrosion of chemical equipment; corrosive disintegration and ways of preventing it] Korroziia khimicheskoi apparatury; korrozionnoe rastreskivanie i metody ego predotvrashcheniia. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit, lit-ry, 1958. 203 p. (MIRA 11:4)

(Corrosion and anticorrosives)
(Chemical apparatus)

SOV/137-59-9-21035

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 9, pp 298 - 299 (USSR)

AUTHORS: Kristal', M.M., Zil'berfarb, M.I., Garetovskaya, M.P.

TITLE: Comparative Corrosion Resistance 18 of Various Steels and Diffusion Chrome Coating in Media of Liquid Fuel Synthesis

PERIODICAL: Sb. statey, Vses. n.-i. i konstrukt. in-t khim. mashinostr., 1958, Nr 25, pp 145 - 150

ABSTRACT: The authors present results of investigations into corrosion resistance of 3, NL2, 18 Kh5M, 18 1Kh13, 18 1Kh18Kh9T 18 steel specimens and diffusion Cr- 17 coatings (I) in media of artificial liquid fuel containing aliphatic acids and CO_2. The tests were carried out in laboratories and under industrial conditions simultaneously. The duration of laboratory tests was 500 hours and 3,600 and 4,300 hours in the industrial tests. It was stated that 3, 16 NL2 and Kh5M steel grades were not resistant to corrosion in water and in synthesis products under operation conditions of the synthesis shop equipment. 1Kh13 grade steel was resistant in CO_2-saturated water at 150°C to the liquid phase and less resistant to the vapor phase. 1Kh13 steel was corrosion-resistant in recovery water, containing only a ✓

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SOV/137-59-9-21035

Comparative Corrosion Resistance of Various Steels and Diffusion Chrome Coating in Media of Liquid Fuel Synthesis

small amount of CO_2 at 200°C and in CO_2-saturated condensate at $\sim 60^\circ C$. Corrosion resistance of 1Khl3 steel in reaction water containing aliphatic acids is somewhat lower than that of 1Khl8N9T steel and I. Corrosion resistance of 1Khl8N9T steel is high in synthesis shop media. I is resistant (corrosion rate is 0.001 mm/year) in CO_2-saturated water at 60°C and at 150 - 200°C. This coating is also resistant in reaction water containing aliphatic acids at 150 - 200°C. As a result of investigations on the manufacture of devices for the synthesis shop, the authors recommend the use of 1Khl3, two-layer 20 + 08Khl3 steels. To protect internal and external "3"-steel pipe surfaces, the authors recommend to use I.

M.K.

Card 2/2

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510019-9

KRISTAL', M.M., inzh.

Studying corrosion resistance of materials in sulfate salt baths. Trudy NIIKHIMMASH no.27:102-109 '59. (MIRA 14:8)
(Steel--Corrosion)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826510019-9"