"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

82674
S/072/60/000/009/004/007
B021/B058

18.7400

AUTHORS: Appen, A. A., Antonova, Ye. A., Kuznetsova, L. A.

TITLE: Heat-resistant Coatings on Cast-iron Products

PERIODICAL: Steklo i keramika, 1960, No. 9, pp. 22-26

TEXT: As a consequence of heating, cast-iron products are destroyed owing to gas corrosion. An increase of their volume takes place in this connection, as can be seen from the paper by N. A. Aleksandrov. G. T. Bakhvalov and A. Z. Turkovskaya ascertained that an increase in volume sets in and the strength of the metal is reduced with alternative heating and cooling. In the study under review, the authors tried to reduce gas corrosion of cast iron at high temperatures by providing its surface with a heat-resistant glass-metal coating according to the enameling process. The coatings were produced from mixtures of finely disperse metal powders with silicate binding agent. Glass of the following composition was used as binding agent: 28.6% SiO_2; 4.9% B_2O_3; 0.8% Al_2O_3; 23.0% Cr_2O_3; 1.9% MnO_2; 33.7% BaO; 3.8% ZnO; 2.7% CaO; 1.0% CoO. The

Card 1/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

Heat-resistant Coatings on Cast-iron Products

82674

S/072/60/000/009/004/007
B021/B058

following mixture of powders was used as metal component: 20% Cr; 70% Ni; 5% B; 5% Si. The degree of dispersion of the metal powders determined by means of sedimentation is given in Table 1. The protective coatings were fired in a special electric furnace in argon atmosphere at a temperature of from 1000 to 1100°C. The results of experiments with cast-iron samples as to heat resistance at 900°C in air are given in Table 2. Oxidation curves of cast-iron samples in air at 900°C are given in Fig. 1. The difference between the coefficients of thermal expansion for the coating and the cast iron decreases with the increase of the amount of the metal component in the protective coating (Table 3). The thermal-expansion curves of the glass-metal coatings investigated are shown in Fig. 2. The cross section of the cast-iron samples with coating can be seen from the polished sections (Figs. 3 and 4). In conclusion, it is stated that a glass-metal coating is to be considered as an effective protection for cast iron in air at a temperature of up to 900°C. The coatings are molten on in neutral atmosphere (argon, nitrogen) at a temperature of from 1000 to 1100°C. There are 4 figures, 3 tables, and 8 references: 3 Soviet and 3 US.

Card 2/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

BORISENKO, Anatoliy Isidorovich; APPEN, A.A., doktor khim. nauk, otv. red.; SUSHKOVA, T.I., red. izd-va; GALIGANOVA, L.M., tekhn. red.

[Protection of niobium from high temperature gas corrosion] Zashchita niobiia ot vysokotemperaturnoi gazovoi korrozii. Otvet. red. A.A.Appen. Moskva, Izd-vo Akad.nauk SSSR, 1961. 39 p. (MIRA 15:1)

(Niobium—Corrosion) (Protective coatings)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APPEN, A.A.

Method of determining the characteristics of glass. Stek.i ker. 18 15-16 My '61. (MIRA 14:5)

(Glass)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

15-2250
15-2260

27064
S/080/61/034/003/004/017
A057/A129

AUTHORS: Sazonova, M. V., Sitnikova, A. Ya., Appen, A. A.

TITLE: Protection of carbon and graphite from oxidation at temperatures of up to 1,200°C

PERIODICAL: Zhurnal prikladnoy khimii, v. 34, no. 3, 1961, 505-512

TEXT: The preparation and application of high-quality glass-carbide-silicide coatings effective as protection of various carbon-graphite products from oxidation at 1,200°C during more than 100 hours is described. The considerable effect of the composition of the binder on the properties of the coating is demonstrated. Thus properties may be regulated by changing the composition of the binder. It was observed that the suitability of the binder cannot be estimated by considering data on wetting properties obtained by the drop-spilling method. More accurate information can be obtained by applying a mix of powdered glass on the surface of the sample and determining the wetting properties. The present investigations were necessary since literature data concerning protection of carbon-graphite products against corrosion at high temperature are patents, e.g., US patent 2449254, June 5, 1956, or West German patent 1009093, December 21,

Card 1/7

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

1957, and do not contain any detailed information on the efficiency or composition of the described protective coatings, like data given by R. G. Higginbotham and M. Y. Kemp [Ref. 5: Ceram. Age. 71, 2, 28-31, 42 (1958)]. In the present experiments glass-silicide, glass-carbide and glass-carbide-silicide coatings were investigated, which were applied on various carbon and graphite samples (20 x 10 x 5 mm) with a porosity of 11 to 35%. The coating was prepared with molybdenum disilicide, silicon carbide (particle size 50-63) and vitreous binders of a different composition (Table 1). To improve the wetting of the surface with the mix, the samples were preliminarily prepared by vacuum-treatment at 1,100° - 1,200°C or by rubbing with water. Since both treatments showed good results, the latter was used in the present experiments. The samples were first dried at 110 - 150°C and then sintered in an argon atmosphere at 1,200 - 1,600°C for 3-4 minutes. Three layers of the mix were applied and thus 0.1 - 0.2 mm protective coatings were manufactured. Heat-resistance of the latter was tested (by heating to 700 - 1,200°C for a certain time), as well as the coefficient of linear thermal expansion (measured at 20° - 1,000°C on a dilatometer), microstructure (on a МИМ-6 (MIM-6) microscope), thermal stability (by thermal shock tests 20 - 1,200 - 20°C) etc. Compositions of the coatings and optimum sintering temperature are presented in Table 2. Glass-silicide coatings were applied on

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

27064
S/080/61/034/003/004/017
A057/A129

graphite samples of the type ЭГ-2У (EG-2U) and a considerable effect of the composition of the mix on properties of the coating was observed. Thus a decreasing content of glass increased the thermal resistance and heat-resistance, but deteriorated adhesion of the coating on the sample. Thus coatings no. 1-3 showed low thermal and heat-resistance while coating no. 4 (containing only 10% less binder than no. 1) had 4-fold improved values of heat and thermal resistance, maintaining even the macrostructure of the covered sample after 100 hours holding time at 700°C. On the other hand coatings no. 18-23 did not adhere on the carbon-graphite samples, while coating no. 17 (having only 10% more binder than no. 18-20) showed good adhesion on the sample. In coatings no. 8, 12, 16 (containing 40-60% binder) formation of gas bubbles was observed after heat-resistance tests, while in no. 6, 20, and 14 no bubbles were detected. Best results were obtained with coating no. 6, In the microstructure of the latter a decrease of the $MoSi_2$ particle size from 50 - 63 to 4-6μ was observed after heat-resistance tests. Also the amount of the vitreous phase increased with the duration of the test. With coatings no. 4, and 6 good results were obtained on 18 different carbon and graphite types. No coatings with good properties were obtained with barium glass. $MoSi_2$ apparently reacts with the latter during sintering. For practical use coatings no. 6, 10, 14 were suggested by the authors, especially

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

no. 10 and 14 for higher temperatures. Determinations of the linear thermal expansion demonstrated that coatings with binders no. 238 and 366 have similar values ($\alpha = 5.97 - 6.62 \cdot 10^{-6}$) in spite of the different values of the binders ($238 - \alpha = 6.67 \cdot 10^{-6}$, and $366 - \alpha = 3.88 \cdot 10^{-6}$). The high value of α for the binder no. 238 indicates a considerable content of non-vitrified quartz. Glass-carbide coatings no. 24-31 did not show any protective properties against oxidation for carbon and graphite at higher temperatures. Glass-carbide-silicide coatings no. 32-35 had properties better than the last-mentioned, but worse than glass-silicide coatings. Considering the considerable influence of the vitreous binders on the property of the coating, the wetting property of the binder was estimated by the drop-spilling method. Ball-shaped pieces (0.01 cm^3) of the investigated binder were placed on samples of EG-2V graphite, $MoSi_2$ and SiC_2 and heated in air or argon atmosphere to 1,500°C. The obtained results (Fig. 4) demonstrate no wetting ability of the binder no. 238, while barium glass showed good wetting on $MoSi_2$ and SiC_2. Since high-quality coatings were obtained with 238 binder while barium glass binders showed low properties, this test is insufficient. More accurate results were obtained by melting the powdered binder on the surface of the sample and estimating the formation of a thin glass film. These tests showed best results with binder 238 and 2010 being in agreement with the

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

27064
S/080/61/034/003/004/017
A057/A129

Protection of carbon and graphite ...

protective property of coatings based on these binders. There are 4 figures, 3 tables and 8 non-Soviet-bloc references. The reference to the English-language publication reads as follows: R. G. Higginbotham and M. Y. Kemp, Ceram. Age, 71, 2, 28-31, 42 (1958).

ASSOCIATION: Institut khimii silikatov AN SSSR (Institute of Silicate Chemistry AS USSR)

SUBMITTED: July 8, 1960

Table 1: Composition of the vitreous binders
Table 2: Composition of the investigated coatings and sintering temperatures

Table 1:

T. 1.

Binder Связка	Content of oxides Содержание окислов (вес. %) (%) by weight)										
	SiO_2	Al_2O_3	B_2O_3	TiO_2	ZrO_2	La_2O_3	CoO	BeO	BaO	ZnO	CaO
238	80	2.5	17.5	—	—	—	—	—	—	—	—
366	59	3	20	6	3	2	5	6	—	—	—
2010	48.5	31.5	—	—	—	—	20	—	—	—	—
Barium glass Бариевое стекло*	37.5	1.0	6.5	—	2.5	—	—	—	44	5	3.4

*containing 1 part by weight Co_2O_3

Card 5/7

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APPEN, A.A.; KOZLOVSKAYA, Ye.I.; GAN' FU-SU [Kan Fu-hsi]

Investigation of the elastic and acoustic properties of silica glasses. Zhur. prikl. khim. 34 no.5:975-981 My '61. (MIRA 16:8)

(Glass)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APPEN, A. A. and KAYALOVA, S. S.

"Classification of Oxides According to Their Influence on the Surface Tension of Silicate Melts"

report presented at the Sixth International Congress on Glass, 8-14 Jul 62, Wash., D.C.

Institute for Silicate Chemistry, Leningrad

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APPEN, A. A.

50

PHASE I BOOK EXPLOITATION SOV/6060

Vargin, V. V., Professor, ed.

Emalirovaniye metallicheskikh izdeliy (Enameling of Metal Articles). Moscow, Mashgiz, 1962. 546 p. Errata slip inserted. 7500 copies printed.

Reviewer: A. S. Ragozin, Engineer; Ed.: M. V. Serebryakova, Engineer; Eds. of Publishing House: I. A. Borodulina, A. I. Varkovetskaya, and T. L. Leykina; Tech. Ed.: L. V. Shchetinina; Managing Ed. for Literature on Machinery Manufacture (Leningrad Division, Mashgiz): Ye. P. Naumov, Engineer.

PURPOSE: This book is intended for specialists in enameling, technical personnel of plants, and personnel of scientific research laboratories and institutes. It can also be used by teachers and students of schools of higher education.

COVERAGE: The book provides a brief discussion on raw materials and processes for melting enamels, describes in detail furnaces for melting enamels,

Card 1/4

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

20

and offers some recommendations for selection and calculation of furnaces. A special section [Ch. IV, sect. 8] on heat-resistant coatings is included. A flowsheet is given for centralized production of enamels. The properties and preparation of slips are also comprehensively described. The production of new enameled products such as pipelines, architectural and building materials, and aluminum articles is described. Individual chapters were written both by plant personnel and by technical personnel of scientific research institutes and schools of higher eduction. [See: Table of Contents.] No personalities are mentioned. There are 638 references, mainly Soviet, with many English and some German.

TABLE OF CONTENTS [Abridged]:

Foreword 3

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

13

PART I. ENAMELING TECHNOLOGY

Ch. I. Raw Materials and Batch Preparation (V. Ya. Senderovich) 5

Ch. II. Melting of Enamels (V. A. Kuzyak, V. V. Vargin, and V. P. Vaulin) 23

Ch. III. Grinding of Enamels and Slip Preparation (L. D. Svirskiy, and B. Z. Pevzner) 93

PART II. THE TECHNOLOGY OF ENAMELING METAL ARTICLES

Ch. IV. Enameling of Steel Articles (N. S. Smirnov, N. N. Zelenskiy, Ye. M. Oshurkov, B. Z. Pevzner, Ye. A. Antonova, V. V. Luchinskiy, V. P. Vaulin, L. V. Purin, V. V. Vargin, M. M. Karabachinskaya, A. A. Appen and V. Ya. Lokshin) 102

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

S/020/62/145/003/009/013
B101/B144

AUTHORS: Appen, A. A., and Kayalova, S. S.

TITLE: Surface tension of alkali silicate melts

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 145, no. 3, 1962, 592-594

TEXT: The surface tension σ of Li_2O-SiO_2, Na_2O-SiO_2, and K_2O-SiO_2 melts with an Me_2O content of 16-45 mole% was measured by drop weight determination (A. A. Appen, Optiko-mekhanicheskaya promyshlennost', no. 3, 7 (1936), and the effect of the admixture of a second alkali oxide was studied. This method is suited to determine the σ of melts with a viscosity below 3000 poise. Its results are in good agreement with those of other methods (C. W. Parmelee, K. C. Lyon, C. G. Harman, Univ. Illinois Bull., 36, 81, June 6 (1939); L. Shartsis, S. Spinner, J. Res. Nat. Bur. Stand., 46, no.5, 385 (1951)). Results obtained for Rb_2O-SiO_2 at 1300°C (first figure being mole% Rb_2O, second figure being σ, erg/cm^2, third figure being $\Delta\sigma/\Delta t$, erg/cm^2. °C): 17, 200.1, -0.03; 24, 188.0, -0.045; 40, 146.3, -0.087; and

Card 1/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

for Cs_2O-SiO_2 (first figure being mole % Cs_2O_2): 16, 166.1, -0.023; 20, 165.1, -0.026; 44, 120.5, - . With 44% Cs_2O it was impossible to determine $d\sigma/dt$ as the oxide is highly volatile. A 100°C temperature increase reduced σ by 1 - 2%. Glasses composed of 16.7 $Me_2O \cdot 83.3\ SiO_2$ were used to study the effect of a second alkali admixture on σ; Me_2O = Li_2O, Na_2O, or K_2O. Results: Li_2O or Na_2O admixtures caused a slight increase in σ which may be calculated according to the additivity rule. K_2O, Rb_2O, and especially Cs_2O admixtures reduce σ considerably; the curves σ versus concentration are concave. If large quantities (50 mole%) of these oxides are added, σ approaches a constant value independent of the initial surface tension of the melt: 205-215 erg/cm^2 180-187 erg/cm^2, and 138-146 erg/cm^2 with additions of K_2O, Rb_2O, and Cs_2O, respectively. A double alkali effect was not observed. There are 3 figures and 1 table.

ASSOCIATION: Institut khimii silikatov Akademii nauk SSSR (Institute of Silicate Chemistry of the Academy of Sciences USSR)

PRESENTED: March 23, 1962, by P. A. Rebinder, Academician

SUBMITTED: March 22, 1962

Card 2/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APPEN, A.A., doktor khim.nauk

Sixth International Congress on Glass. Vest. AN SSSR 32 no.12:82-83 D '62. (MIRA 15:12)

(Glass—Congresses)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APPEN, A.A.; SHAUSAS, L.[Sausas, L.], red.

[Calculating the properties of silicate glass; instructions for calculating the thickness, the refraction index, mean dispersion, mean linear coefficient of expansion, elasticity modulus, shear modulus, dielectric permeability, and surface tension according to the autnor's method] Raschet svoistv silikatnykh stekol; poiasnitel'nye ukazaniia k raschetam plotnosti, pokazatelia prelomleniia, srednei dispersii, srednego lineinogo koeffitsienta rasshireniia, modulia uprugosti, modulia sdviga, dielektricheskoi pronitsaemosti i poverkhnostnogo natiazheniia po metodu avtora. Vil'nius, TSentr. biuro tekhn. informatsii i propagandy Gos. kom-ta Litovskoi SSR po delam stroit. i arkhit., 1963. 26 p. (MIRA 18:1)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APPEN, A. A.

"Glass formation as the aggregate of double-sided processes."

report submitted for 4th All-Union Conf on Structure of Glass, Leningrad, 16-21 Mar 64.

Silicate Chemistry Inst.

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APPEN, A. A.

"Ways of forming oxidation-resistant inorganic coatings, and problems of adhesion"

(Institute of Silicate Chemistry)

At the Division of Physical Chemistry and Technology of Inorganic Materials, Acad. Sci. USSR, a scientific council on the problem of sitalls has been established. The Council is a coordinating body for basic scientific research on sitalls, glass, fiber glass, stoneware, refractory and superrefractory materials, and coatings. The purpose of the Council is primarily to contribute to the improvement of the strength and impact resistance of existing materials. In 1963, the council held two sessions.

(Steklo i keramika, no. 6, 1964, 48-49)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APPEN, A.A.; SITNIKOVA, A.Ya.

Effect of ceramic metal fillers on the acid resistance of silicate enamels. Zhur. prikl. khim. 37 no.6:1210-1217 Je '64. (MIRA 18:3)

1. Institut khimii silikatov AN SSSR.

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

ACCESSION NR: AP4041792 S/0080/64/037/007/1447/1452

AUTHOR: Sazonova, M. V.; Appen, A. A.

TITLE: Two-layer coatings for protection of graphite from oxidation in air at 1400C

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 7, 1964, 1447-1452

TOPIC TAGS: graphite, graphite oxidation, graphite oxidation prevention, aluminum oxide coating, silicide glass coating, molybdenum dicilicide coating, coated graphite oxidation resistance, graphite oxidation resistance

ABSTRACT: Since silicide-glass coatings do not protect graphite from oxidation at temperatures above 1200C, an attempt has been made to improve the protective ability of these coatings by first applying an underlayer of aluminum oxide (93.20% Al_2O_3, 6.43% SiO_2, and 0.37% Fe_2O_3). A silicide glass layer is then deposited on this underlayer. Six silicide glasses, containing 40, 50, 60, 70, 80, or 90% $MoSi_2$ and a binder (SiO_2, 80%; Al_2O_3, 2.5%; and B_2O_3, 17.5%), were tested. The best results were obtained with an aluminum oxide underlayer

Card 1/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

ACCESSION NR: AP4041792

0.05—0.1 mm thick, coated with a 0.15—0.20 mm thick upperlayer containing 40% $MoSi_2$. The thermal expansion coefficient of this composition was found to be in between those of aluminum oxide and graphite. X-ray diffraction patterns showed that the initial α-Al_2O_3 is transformed in gas flame into γ-Al_2O_3 containing a small quantity of α-Al_2O_3; with increasing temperature it is again transformed into α-Al_2O_3. This combined coating effectively protects graphite from oxidation in air at temperatures up to 1400C for as long as 100 hr and permits graphite to withstand over 100 thermal cycles 20—1300—20C and to resist for a short time a hydrogen-oxygen flame with a temperature of approximately 2000C. The adhesion of both coating layers was found to be entirely satisfactory. Orig. art. has: 5 figures.

ASSOCIATION: Institut khimii silikatov im I. V. Grebenshchikova AN SSSR (Institute of the Chemistry of Silicates, AN SSSR)

SUBMITTED: 28Aug62 ATD PRESS: 3086 ENCL: 00

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

Card 2/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APPEN, A.A.; ARTEM'YEV, V.I.

Reaction of iron with two and three-component silicate melts.
Zhur. prikl. khim. 37 no.10:2107-2112 O '64.

(MIRA 17:11)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

L 19051-65 EWP(e)/EPA(s)-2/EWT(m)/EPF(c)/EPF(n)-2/EPR/EPA(w)-2/EWP(t)/EPA(bb)-2/
EWP(b) Pr-4/Ps-4/Pi-10/Pu-4/Pab-10 IJP(c) WW/WH/JD/JG

ACCESSION NR: AP5000511 S/0080/64/037/011/2515/2517

AUTHOR: Appen, A. A.; Sitnikova, A. Ya.

TITLE: Effect of metalloceramic fillers on the alkali resistance of silicate enamels

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 11, 1964, 2515-2517

TOPIC TAGS: vitreous enamel, silicate enamel, enamel resistance, alkali-resistant enamel, metalloceramic filler

ABSTRACT: A conventional silicate enamel to which up to 30% of molybdenum, titanium and chromium silicides, molybdenum, titanium, zirconium and silicon borides, titanium, zirconium, chromium and silicon oxides, and powdered silicon and zirconium had been separately added was tested for alkali resistance by boiling in 10% NaOH. The resistance was markedly increased by less than 10% metallic zirconium, somewhat improved by zirconium boride, and slightly increased by ZrO_2, Cr_2O_3 and increased by TiO_2, while the rest of the additives have no effect. Orig. art. has: 4 figures and 1 table.

ASSOCIATION: none

Card 1/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

ACCESSION NR: AP5000511

SUBMITTED: 31Dec63 ENCL: 00 SUB CODE: MT

NO REF SOV: 010 OTHER: 001

Card 2/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

L 32661-65 EWG(j)/EWT(e)/EWT(m)/EPF(c)/EWA(d)/EWP(t)/EPR/EWP(b) Pq-4/Pr-4/
Ps-4 IJP(c) JD/WB/AH

ACCESSION NR: AP5005570 S/0080/65/038/002/0409/0411

AUTHOR: Artem'yev, V. I.; Appen, A. A.

TITLE: The interaction of iron with three-component silicate melts

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 2, 1965, 409-411

TOPIC TAGS: iron corrosion, silicate melt, metal oxide, three component glass

ABSTRACT: The corrosive action of silicate melts of the general formula 16 $Na_2O \cdot 20\ MeO \cdot 64\ SiO_2$ on Armco iron was determined experimentally at 1200-1400C to define the behavior of such melts under metallurgical and related conditions. The MeO component was CdO, PbO, CuO, NiO, MnO, FeO, CoO, TiO_2 or CaF_2, added in the required molar ratio to a sodium silicate glass, and the corrosive activity in 10-180 minutes was measured by a radiotracer technique. The most reactive melts were those containing the oxides of cadmium and lead, but all other melts with the exception of MnO- and CaF_2-glasses also dissolved iron at a much higher rate than alkali silicates or other types of three-component silicate systems, including those of the alkaline earth metals. The corrosion rate in cadmium or lead containing glass was two to three orders of magnitude higher than in the other studied

Card 1/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

L 32661-65
ACCESSION NR: AP5005510

systems. Corrosiveness of melts was shown not to be related systematically to melt viscosity. Orig. art. has: 2 figures.

ASSOCIATION: Institut khimii silikatov imeni I. V. Grebenshchikova AN SSSR (Silicate chemistry institute, AN SSSR)

SUBMITTED: 28Jul64 ENCL: 00 SUB CODE: MM, MT

NO REF SOV: 006 OTHER: 000

Card 2/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

BORISENKO, A.I., doktor tekhn. nauk, otv. red.; TOROPOV, N.A., red.; IVANOV, V.Ye., red.; APPEN, A.A., doktor khim. nauk, red.; GORBUNOV, N.S., doktor khim. nauk, red.; KLEVTSUR, S.A., doktor tekhn. nauk, red.; NECHIPORENKO, Ye.P., doktor tekhn. nauk, red.

[Heat-resistant coatings; transactions] Zharostoikie pokrytiia; trudy. Leningrad, Nauka, 1965. 233 p. (MIRA 18:9)

1. Seminar po zharostoykim pokrytiyam, Leningrad, 1964.
2. Chlen-korrespondent AN SSSR (for Toropov, Ivanov).

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APPENIN, I.I.

CA

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

The oxidation-reduction potential of iodine. A. I.

Rotinyan and I. I. Appenin. *J. Gen. Chem.* (U. S. S. R.) 10, 1524-5(1940); cf. *C. A.* 34, 940[1].—The object of the expts. was to det. why the oxidation-reduction potentials of the system I_2-I^-, investigated by Rusanova (*C. A.* 33, 4854[3]), are consistently more electropos. by approx. 10 mv. than those found in the Landolt-Börnstein-Roth-Scheel Tabellen. The e. m. fs. of the cell Pt/C_{I_2}, C_{I_2} | 0.1 *N* KCl/0.1 *N* KCl, Hg_2Cl_2/Hg at 25° ± 0.2 and 10.5 ± 0.1° were measured with an accuracy of ±0.1 mv. The initial concns. of I_2 and KI in mols./l. and the obtained $+E_H$ in mv. (at 25°) are, resp.: 5.08×10^{-4}, 1.108×10^{-4} and 607.8; 5.00×10^{-4}, 1.108×10^{-4} and 563.0; 7.22×10^{-4}, 1.108×10^{-4} and 530.1; 5.00×10^{-4}, 1.108×10^{-4} and 500.4; 4.58×10^{-4}, 1.012×10^{-4} and 585.0; 4.58×10^{-4}, 1.00 and 420.2; 7.55×10^{-4}, 2.128×10^{-4} and 680.1. It is concluded that the results of Rusanova are erroneous, probably owing to some systematic error in the measurements. Five references.

W. R. Henn

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

Kinetics of oxidation-reduction potentials. IV. A. L. Rotinyan, I. I. Appenin, and V. G. Tkachenko. *J. Gen. Chem. (U.S.S.R.)* 16, 1599-1612(1946)(in Russian); cf. *C.A.* 34, 9458.—(1) Reproducible potential-time curves in the Tl^{+++}/Tl^{+} system (e.g. $Tl_2(SO_4)_3$ 2.50×10^{-4} *M*, Tl_2SO_4 6.25×10^{-5} *M*, H_2SO_4 0.174 *M*) could be obtained after repeated "training" of the Pt-foil electrode (consisting of alternating successive cathodic polarizations in H_2SO_4 (50 ma. for 20 min.) and immersions in the oxidation-reduction system), the better the higher the concn. in Tl^{+++} and the less the exposure of the electrode to air between expts. Abnormal rates of establishment of the equil. potential occurred either due to passivation, manifesting itself in an induction period at around +0.9 v. and removable by thorough rinsing, or due to activation by O, especially by anodic polarization or immersion in HNO_3 or CrO_4^{2-}. "Training" of the electrode evidently suppresses both passivation and activation; with trained Pt, the rate of establishment of the potential is practically unaffected by stirring of the soln. (2) At const. $[Tl_2SO_4]$ = 3.125×10^{-5} *M* and const. $[H_2SO_4]$ = 0.174 *M*, the period τ of establishment of the equil. potential increased with decreasing $[Tl_2(SO_4)_3]$, example, 6.25×10^{-4}, 2.188×10^{-4}, 0.625×10^{-4} *M*, τ = 2.4, 3.6, 12,5 min. and 1.5, 2.0, 7.3 min., with Pt foil 0.1 and 0.05 mm. thick, resp. On the other hand, 100-fold variation of $[Tl_2SO_4]$ at const. $[Tl_2(SO_4)_3]$ had no effect on τ. On diln., at const. Tl^{+++}/Tl^{+} and const. acidity, the variation of τ is detd. solely by $[Tl_2(SO_4)_3]$, example, Pt 0.1 mm. thick, initial $[Tl_2(SO_4)_3]$ 1×10^{-4} *M*, $[Tl_2SO_4]$ 0.25×10^{-5} *M*, diln. 1:1, 1:8, 1:32, τ = 1.9, 6.6, 23.0 min. (at H_2SO_4 0.174 *M*). With increasing acidity, the reaction is slowed down, faster than linearly. Rising temp. accelerates it linearly, example, Pt 0.1 mm., $Tl_2(SO_4)_3$ 2.5×10^{-4} *M*, Tl_2SO_4 0.625×10^{-4} *M*, 0, 12.5, 25, 35°, τ = 10.6, 7.7, 4.6, 2.2 min. (3) The normal equil. potential Tl^{+++}/Tl^{+} at 25° is E_0 = +1.191 v., its variation between 0 and 25°, E_0 = 1.132 + 0.0024 *t*, between 25 and 35°, the temp. coeff. is 0.0020 v./degree, higher than for the nitrates (0.0015 v./degree). (4) Kinetic curves (potential against time) are of two types, both starting with a steeply rising linear portion up to about +0.9 v. coinciding with beginning adsorption of O; this is followed, in curves of the first type, observed with the thinner Pt foils (0.05 mm.), by a less steep linear branch of a slope proportional and a length inversely proportional to $[Tl^{+++}]$; the second type of curve (0.1 mm. thick Pt) has a branch convex to the time axis. (5) Empirically, $\tau = a[Tl^{+++}]^{-b}$; however, even with equal thickness of the Pt foil, and all other conditions being equal, *a* and *b* vary from series to series; hence, the differences of rate found with various thicknesses of Pt are not due to diffusion of H but to differences in the surface condition. (6) The rate-detg. step is most probably the removal of adsorbed H by $Tl^{+++} + 2H \rightarrow Tl^{+} + 2H^{+}$. N. T.

2

Lab. Phys. Chem., Novocherkassk Ind. Inst.

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APPENIN, I. I.

APPENIN, I. I. — "The Effect of Temperature on Anodic Polarization in the Case of Electrolysis of Hydrochloric Acid and of Its Mixtures with Perchloric Acid." *(Dissertations For Degrees In Science and Engineering Defended at USSR Higher Educational Institutions)(30) Min Higher Education USSR, Novocherkassk Polytechnic Inst imeni Sergo Ordzhonikidze, Chair of Physical and Colloidal Chemistry, Novocherkassk, 1955

SO: Knizhnaya Letopis' No 30, 23 July 1955

* For the Degree of Candidate in Chemical Sciences.

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

Appenin, I.I.

SEMCHENKO, D.P., prof., doktor tekhn. nauk; APPENIN, I.I., assist.

Anodic oxidation of chlorine and hypochlorous acid. Trudy NPI 27: 181-186 '56. (MIRA 10:12)

1. Kafedra fizicheskoy i kolloidnoy khimii Novocherkasskogo politekhnicheskogo instituta.

(Oxidation, Electrolytic)
(Chlorine) (Hypochlorous acid)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APPENIN, I. I.

USSR/Physical Chemistry. Electrochemistry. B-12

Abs Jour : Ref Zhur - Khimiya, No 7, 1957, 22480.

Author : D. P. Semchenko, I. I. Appenin, K. L. Ushakova.
Inst : Not given
Title : Electroconductivity of chlorous acid solutions.

Orig Pub : Nauch. tr. Novocherkas. politekhn. in-ta. 1956, 34(48) 47-50.

Abstract : Specific electroconductivities of aqueous solutions of $HClO_4$ in a wide concentration range at temperatures of 0.25 and 50° are measured. The dependence of $\varkappa$ and temperature coefficient on $HClO_4$ concentration is expressed in a curve with a msximum observed in a 36% concentration of $HClO_4$ ($HClO_4 \cdot 10\ H_2O$).

Card 1/1

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

5(4)

AUTHOR: Appenin, I. I. SOV/76-33-2-20/45

TITLE: On the Kinetics of Anodic Processes (O kinetike anodnykh protsessov). II. The Anodic Polarization of the Smooth Platinum Electrode in Perchloric Acid Solutions (II. Anodnaya polyarizatsiya gladkogo platinovogo elektroda v rastvorakh khlornoy kisloty)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 2, pp 367 - 373 (USSR)

ABSTRACT: The investigations reported here concerning the anodic polarization in perchloric acid solutions were prompted (Refs 6,8) by the observations in (Refs 1-4) that in the anodic oxidation of the Cl^- ion in hydrochloric acid solutions chloric acid is produced and this affects the anodic reaction. The experimental section of this paper was carried out in 1952 in the kafedra fizicheskoy i kolloidnoy khimii Novocherkasskogo politekhnicheskogo instituta im. S. Ordzhonikidze (Chair for Physical and Colloid Chemistry Novocherkassk Polytechnic Institute imeni S. Ordzhonikidze). Using the existent working technique (Ref 8) polarization curves

Card 1/4

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

On the Kinetics of Anodic Processes. II. The Anodic Polarization of the Smooth Platinum Electrode in Perchloric Acid Solutions SOV/76-33-2-20/45

of 6.37 and 9.84 m $HClO_4$ solutions were plotted over the temperature interval 0 to 70°C. The diagrams obtained show a hysteresis in the coordinates φ - lg i (Fig 1) as well as three sections of curves. The first and third sections of curve are straight lines which follow the equation of Tafel' (1). The constant a and the angular coefficient b of the Tafel' equation vary linearly with the temperature (Fig 2) in the second section of the curve. Their values for 6.37 m $HClO_4$ are: a = 3.27 - 0.0037 t, b= 0.140+0.002 t; and for 9.84 m $HClO_4$ a= 3.21 - 0.026 t, b= 0.153+0.0007 t. It was assumed that the change in the direction of the curve is due to a change in the structure of the binary electrical layer, and for this reason measurements on the capacity of the smooth platinum electrode were carried out using the method of T. I. Borisova, B. V. Ershler, and A. N. Frumkin (Ref 17) in 5 n $HClO_4$ solutions up to a polarization of 3.1 volts (Fig 3) (the measurements were made in 1953 in the laboratory of Professor B. N. Kabanov in the Institut fiziches-

Card 2/4

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

On the Kinetics of Anodic Processes. II. The Anodic Polarization of the Smooth Platinum Electrode in Perchloric Acid Solutions SOV/76-33-2-20/45

koy khimii AN SSSR (Institute for Physical Chemistry AS USSR) and are reported separately). At a potential of 0.8 volt a minimum capacity can be observed corresponding to the low Pt oxides. A maximum in the capacity is observed at a potential of 2.2 volts, which corresponds to the beginning of the jump in potential on the φ- lg i curve. The possibility of applying the equation $\lg i = f(T^{-1})$ is indicated (Fig 4) and the data in regard to this by V. A. Karnitskiy (Ref 20) are mentioned. The curve of the activation energy as a function of the polarization potential (Fig 5) possesses a maximum at 2.9 volts which corresponds to the end of the wave in the curve φ- lg i. It is concluded from the experimental results that the potential of the zero charge for the oxidized platinum surface must lie in the potential range 2.2 - 2.9 volts. At the end data of E. O. Ayazyan (Ref 24), V. L. Kheyfets and B. S. Krasikov (Ref 25), Ya. M. Kolotyrkin and L. A. Medvedeva (Ref 26) and B. N. Kabanov, I. G. Kiseleva and D. I. Leykis (Ref 27) are given, and B. N. Kabanov and D. P. Semchenko are thanked. There are

Card 3/4

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

On the Kinetics of Anodic Processes. II. The Anodic Polarization of the Smooth Platinum Electrode in Perchloric Acid Solutions SOV/76-33-2-20/45

5 figures, 1 table, and 28 references, 26 of which are Soviet.

SUBMITTED: July 11, 1957

Card 4/4

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APPL, H.; MALY, L.

Electric meter and fuse boxes. p.230

ELEKTROTECHNIK((Ministerstvo tezkeho strojirenstvi)
Praha, Czechoslovakia
Vol.14, no.7, July 1959

Monthly List of East European Accessions (EEAI) LC, Vol.8, no.11
Nov. 1959
Uncl.

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

EYZEN, O.G.; KIVIRYAKHK, S.V.; KOGERMAN, A.P.; LAUS, T.N.; APPO, I.Kh.

Chemical composition of tar from dictyonemic shale. Khim.i tekh.topl. i masel 5 no.9:37-42 S '60. (MIRA 13:9)

1. Institut khimii AN ESSR.
(Estonia—Oil shale)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

40501
S/263/62/000/013/004/015
I007/I207

26.2191

AUTHOR: Appolonov, G. F.

TITLE: Dc hot-wire anemometer with feedback

PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk. 32. Izmeritel'naya tekhnika, no. 13, 1962, 39, abstract 32.13.284. (Tr. Leningr. politekhn. in-ta, no. 217, 1961, 176–179)

TEXT: A hot-wire anemometer is described for measuring average air-flow velocities (up to 120 m/sec) and intensities of velocity fluctuations up to 10 kcps. Thermal inertia of the wire is compensated by a feedback amplifier which, by adjusting the heating current, automatically maintains the wire resistivity at a constant level. The device contains a special amplifier to rectify the nonlinear dependence of the signal on the velocity of the stream coming from the wire. The root mean square value of velocity fluctuations is measured by a system composed of a fluctuation amplifier, a vacuum thermocouple, and a thermal-emf amplifier. There are 5 references.

[Abstracter's note: Complete translation.]

Card 1/1

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APPOLONOV, G.F.

A d.c. hot-wire anemometer with feedback. Trudy LPI no.217: 176-179 '61. (MIRA 15:3)

(Anemometer)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APPOLLONOVA, A.N.

STARIK, I.Ye.; STARIK, F.Ye.; APPOLLONOVA, A.N.

Fluoride method for isolating small quantities of uranium and its subsequent polarographic determination. Trudy Radiev.inst.AN SSSR 7:107-110 '56. (MLRA 10:5)

(Uranium)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APPOLLONOVA, A. N.

5(2); 21(5) PHASE I BOOK EXPLOITATION SOV/1900

Akademiya nauk SSSR. Komissiya po analiticheskoy khimii

Primenenie radioaktivnykh izotopov v analiticheskoy khimii (Use of Radioactive Isotopes in Analytical Chemistry) Moscow Izd-vo Nauka, 1958. 366 p. (Series: Its: Trudy, t. 9 (12)) Errata inserted. 3,000 copies printed.

Resp. Ed.: I.P. Alimarin, Corresponding Member, USSR Academy of Sciences; Ed. of Publishing House: A.N. Yermakov; Tech. Ed.: T.V. Pelyakova.

PURPOSE: The book is intended for chemists and chemical engineers concerned with work in analytical chemistry.

COVERAGE: The book is a collection of the principal papers presented in Moscow at the Second Conference on the Use of Radioactive Isotopes. The problems discussed at the Conference included coprecipitation, aging, and solubility of precipitates, determination of the instability constants

Card 1/10

of complex compounds, separation of rare earth metals, and ion-exchange chromatography. No personalities are mentioned. There are 351 references, 175 of which are Soviet, 33 German, 19 French, 8 Swedish, 2 Hungarian, and 2 Czech.

TABLE OF CONTENTS:

Use of Radioactive Isotopes (Cont.) SOV/1900

Turkevich, Yu. N., and G.G. Besproskurnov. Quantitative Determination of an Element by Its Known Added Quantity with the Aid of a Tagged Reagent 226

Zimakov, I. Ye., and G.S. Rozhavskiy. Method of Multiple Radioactive Dilution for the Determination of Small Quantities of Admixtures 231

Gaydadymov, V.B., and L.I. Il'ina. Analysis of Tantalumniobium Binary Alloys by the β-radiation Reflection (Reverse Scattering) Method 240

Irving, G. Determination of Indium by the Radioactivation Method 249

Starik, I. Ye., P. Ye. Starik, and A.N. Appollonova. The Carbonate Method for Separation of Microquantities of Uranium from Iron 264

Card 7/10

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APPOLONOVA, V.

The worries of sportsmen. Sov.shakht. 11 no.6:40-41 Je '62. (MIRA 15:6)

1. Zaveduyushchaya uchebnoy chast'yu Shakhtinskogo Dvortsa fizkul'tury i sporta.
(Coal miners) (Physical education and training)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

Apollov, B. A.

SE-66 551.509.58:551.579.4

Apollov, B. A. and Linchenko, V. P.. Printsipial'nye vozmozhnosti kratkosrochnogo fonovogo prognoza nachala vesennego polovodi'ia na malykh rekakh. [Principal possibilities of short range forecasting of spring floods for small rivers.] *Leningrad. Tsentral'nyi Institut Prognozov, Tru*, 2(29):45-64, 1947. 7 figs., 9 tables, 10 eqs. DLC.—In spite of the absence of water gage points in small river basins, there is need of forecasting spring floods for the security of people and industries located in these areas. The author discusses the possibility of organizing such a forecast and presents the theory and practical methods of carrying it out. The questions of forecasting; the time of spring flood onset, depending on temperature rise and snow density, the statistical methods of determination; the water level variations during spring floods and the height of spring high water are theoretically and practically discussed on basis of Oka River spring flood data for the period 1933-1940. *Subject Headings:* 1. Flood forecasting 2. Spring floods 3. Oka River, U.S.S.R. —A.M.P.

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APOLLOV, B.A., professor.

Problems of the Caspian Sea. Priroda 46 no.4:17-26 Ap '57.
(MLRA 10:5)

1. Institut okeanologii Akademii nauk SSSR (Moskva)
(Caspian Sea)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APPOLLOV, B.A.

Conference on the Caspian Sea problem. Biul. Okean. kom. no.1:37-38 '58. (MIRA 11:9)

1. Institut okeanologii AN SSSR.
(Caspian Sea--Oceanographic research)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

S/136/61/000/002/001/006
E021/E335

AUTHOR: Apollonov, V.K.

TITLE: The Practical Workings and Technical Achievements of Molybdenum Factories

PERIODICAL: Tsvetnyye metally, 1961, No. 2, pp. 5 - 10

TEXT: Two processes are described - the preparation of molybdenum ores and the flotation of molybdenum - containing copper ores. The scheme for sulphide flotation is given in Fig. 1. In this process an improvement was made by introducing an intermediate bunker and a feed with a regulated flow before the crushing operation. This gave continuous and uniform flow increasing the production. The process was also improved by introducing two-stage grinding. The extraction of molybdenum by this process has increased by 9% in ten years, although the Mo content of the ore decreased by over 40%. A scheme for oxide flotation was also introduced in 1950. A lime-soda medium is used together with oleic acid (0.08 g/t), kerosene (0.18 g/t), waterglass (1.8 g/t) and flotation oil (0.01 g/t). The scheme is given in Fig. 5. The molybdenum

Card 1/5

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

content in the concentrate has improved from 3 - 5% to 10 - 15% in ten years. In 1959, a group of IGDAN workers under the direction of Candidate of Technical Sciences V.I. Tyurnikova proposed an improvement of this scheme, replacing the oleic acid by sodium oleate. As a result, the extraction of molybdenum in the semiproduct nearly doubled. However, trouble in the filtration slowed down the practical use of this method.
The flotation of molybdenum - containing copper ores is briefly mentioned. The extraction of molybdenum from this source has increased by 16% in the last ten years.
There are 6 figures and 9 Soviet references.

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

Key to Fig. 1 - Technological Scheme for Sulphide Flotation:

1 - Initial pulp; 2 - Basic Flotation; 3 - Concentrate; 4 - Tailings; 5 - Control Flotation; 6 - 1st Purification; 7 - Crushing and Classification; 8 - Tailings of Sulphide Flotation; 9 - 2nd Purification; 10 - Pyritic tailings; 11 - Steaming; 12 - Hydrocyclone; 13 - Concentrated Product; 14 - Overflow; 15 - 3rd Purification; 16 - 4th Purification; 17 - To Section for Flotation of Cu-Mo Concentrate; 18 - 5th Purification; 19 - Molybdenum Concentrate.

Key to Fig. 5 - Technological Scheme for Oxide Flotation

1 - Tailings of Sulphide Flotation; 2 - Basic Flotation; 3 - Rejected; 4 - Tailings; 5 - Concentrate; 6 - 1st purification; 7 - Concentration; 8 - Overflow; 9 - Concentrated Product; 10 - Steaming with Waterglass; 11 - Filtration; 12 - Repulping the Cake; 13 - 2nd Purification; 14 - 3rd Purification; 15 - 4th Purification; 16 - Intermediate Product.

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

The Practical Workings ....

Fig. 1:

S/136/61/000/002/001/006
E021/E335

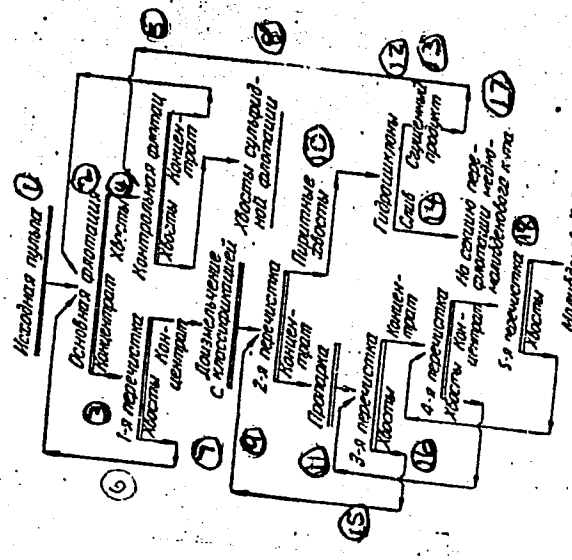

Рис. 1. Технологическая схема сульфидной флотации

Card 4/5

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

The Practical Workings ....

S/136/61/000/002/001/006
E021/E335

Fig. 5:

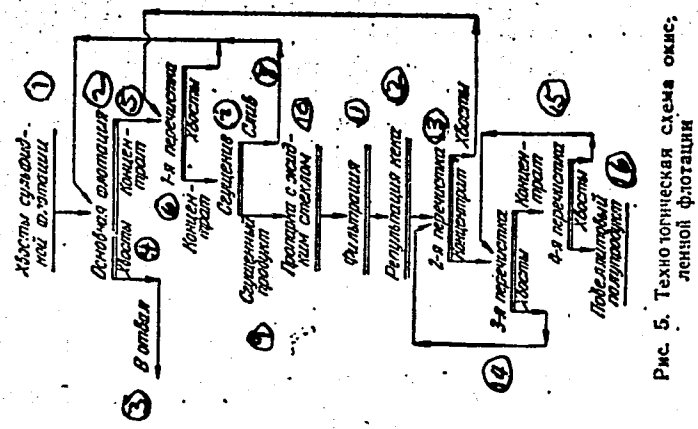

Рис. 5. Технологическая схема окисленной флотации

Card 5/5

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APPOLONOV, K.A.

Problems of labor productivity and business accounting in signaling and communication districts. Avtom., telem. i sviaz' 8 no.7:39-40 Jl '64. (MIRA 17:12)

1. Starshiy inzh.-ekonomist sluzhby signalizatsii i svyazi Kazakhskoy dorogi.

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APPOLONSKIY, M. F.

CA

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

22

Request for a change of standards for mineral oils. M. F. Appolonskii and R. K. Levina. *Kauchuk i Rezina* 1941, No. 6, 44-5; *Chem. Zentr.* 1942, II, 2448.—It is suggested to add to the standards for mineral oils for carbon black manuf. data concerning C content, boiling range, viscosity in degree Engler and Conradson C. The C content shall not be below 87%, and 96% of the oil shall boil below 350°. The viscosity shall not be more than 1.07 and the Conradson test 0.3%. Heinz Heinemann

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APPONYI, A.; STEINER, E.

Treatment of cotton lots 4 and 5 when spinning thick and medium yarn in the spinning mills of the December 30 Factories. p. 137.

Vol. 6, no. 4, Apr. 1955
INDUSTRIA TEXTILA
Bucuresti, Rumania

Source: East European Accession List. Library of Congress
Vol. 5, No. 8, August 1956

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APRAKHAMIAN, G.

Effect of meteorological conditions on a group of workers. Suvrem. med., Sofia 7 no.4:67-70 1956.

1. Iz Katedrata po Khigiena pri VMI I. P. Pavlov--Plovdiv (Zav. Katedrata: prof. Iv. S. Naidenov).
(WEATHER, effects,
on occup. dis. incidence (Bul))
(OCCUPATIONAL DISEASES, statistics,
climatic aspects (Bul))

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APRAKHAMIAN, G.

Analysis of certain basic properties and dynamics of occupational trauma in the Plovdiv region during 1953-54. Suvrem. med., Sofia 7 no.4:70-77 1956.

1. Iz Katedrata po Khigiena pri VMI I. P. Pavlov--Plovdiv (Zav. Katedrata: prof. I v. S. Naidenov).
(ACCIDENTS, INDUSTRIAL, statistics, in Bulgaria (Bul))

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

BULGARIA/Chemical Technology. Chemical Products and Their Application. Safety and Sanitation H-6

Abs Jour : Ref Zhur - Khim., No 24, 1958, No 82190

Author : Naydenov I., Brzeva L., Aprakhanyan G.
Inst : -
Title : Effects of Working Methods Employed in the Mines on the Sanitary Conditions

Orig Pub : Sb. tr. Vissh. med. in-t,-Plovdiv, 1954-1955 (1957), 9, 1-8

Abstract : The dry and wet mining methods (with differently constructed ventilation systems) were investigated during 1953-1955 in the mines of the Rodopskiy mineral region. It was established that improved sanitary conditions (particularly such factors as lower dust content of the air, temperature, humidity, and composition of the air) result from the use of the wet method in conjunction with the improved ventilation.

Card : 1/1

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

DIMCHEV,D.; BURZEVA,L.; APRAKHAMIAN,G.; APOSTOLOV,L.; TSONEV,I.; PANITSA, D.; PRIKOLOGIN,M.; GENEVA,V.

On causes,appearance, clinical aspects, therapy and prophylaxis of organic phosphate poisoning in the rural industry in the Plovdiv region. Suvrem. med.,Sofia 11 no.2-3:80-89 '60.

1. Iz VMI "I.P.Pavlov" - Plovdiv, i Okruzhnata sanitarno-epidemiologichna stantsiia - Plovdiv.
(PHOSPHATES toxicol.)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

AFRAKSIN, A. I. and SHKLYAR, B. N.

"Lightning Arrestors for Protection from Atmospheric Overvoltages", Gosenergoizdat, 72 pp, 1950.

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

AFANASIN, A.I., AFAN'A'YEV, V.V., AND KRASNOGORODTSEV, S.A.,

Disconnecting Switches (Raz'yedinitely), Gosenergoizdat, 1952, 153 pages.

This book discusses the designation and operating conditions of disconnecting switches; design of repeating, knife, roller, and rocker types; design of manual, electric, and pneumatic drivers; design of individual parts; methods of assembly; and checking, testing, and installation of disconnecting switches.

This book is intended for skilled workmen and others at apparatus building plants and for operating personnel of power establishments.

So: W-30262

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

S/828/62/000/000/002/017
E039/E420

AUTHORS: Korovin, S.S., Reznik, A.M., Apraksin, I.A.

TITLE: The extraction of zirconium and hafnium in a mixer-settler column

SOURCE: Razdeleniye blizkikh po svoystvam redkikh metallov. Mezhvuz. konfer. po metodam razdel. blizkikh po svoyst. red. metallov. Moscow, Metallurgizdat, 1962, 42-47

TEXT: This method of extraction, proposed by E.G.Scheibel (Chem. Eng. Progr. 44, 1948, 681: Ind. Eng. Chem., 42, 1950, 1048), is carried out from nitrate-chloride solutions of Zr and Hf by tributylphosphate in orthoxylol. A materials testing programme is described for the selection of constructional materials resistant to nitric and hydrochloric acid solutions containing organic solvents and possessing the necessary mechanical properties. The selected materials are tantalum, titanium, fluoroplast-4, polyethylene and ebonite. The column is constructed from thickwalled glass tubing (56 mm inner diameter, 68 mm outer diameter) height 1600 mm (height of working section 1200 mm)

Card 1/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

25765

S/153/62/005/001/001/001
E075/E136

11.1000

AUTHORS: Reznik, A.M., Korovin, S.S., and Apraksin, I.A.

TITLE: A rotameter for corrosive liquids

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, v.5, no.1, 1962, 176

TEXT: A rotameter capable of withstanding the action of corrosive liquids, such as HCl, HNO_3, organic solvents saturated with acids, etc. was constructed from "ftorplast-4". Leakproof flanges were the most important parts of the rotameter. The plastic end pieces were joined to rotameter tube KT-3 (KT-3) or KT-3A(KT-3A) and the joints sealed with a polythene sleeve. The float, having a standard form and dimensions, was made of tantalum or "ftorplast". Small pieces of tantalum can be sealed in the plastic floats to change their weight. An ebonite needle valve was used for controlling the liquid flow. There is 1 figure.

Card 1/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

A rotameter for corrosive liquids

S/153/62/005/001/001/001
E075/E136

ASSOCIATION: Kafedra tekhnologii redkikh i rasseyannykh elementov, Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.V. Lomonosova (Department of Technology of Rare and Dispersed Elements, Moscow Institute of Fine Chemical Technology imeni M.V. Lomonosov)

SUBMITTED: October 22, 1960

X

Card 2/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

S/078/62/007/006/024/024
B110/B144

AUTHORS: Korovin, S. S., Reznik, A. M., Apraksin, I. A.

TITLE: Extraction of zirconium in the presence of hydrofluoric acid

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 7, no. 6, 1962, 1483-1484

TEXT: The extraction of zirconium (0.54 moles/liter) from nitrous solutions (6 moles/liter) in the presence of HF was studied. A 50 % solution of tributyl phosphate in o-xylene was used. Results: (1) Up to the ratio F:Zr=0.5:1, the distribution coefficient α_{Zr} increases to 0.92. (2) At 1:1, the distribution coefficient corresponds to that of the extraction from solutions free of fluorine. (3) At $\geqslant$3:1, the distribution coefficient decreases to the constant value 0.04. As the extraction rose when the F ion concentration dropped it is supposed that some mixed zirconium nitrate - fluoride complexes may be extractable also. Optimum extraction occurs when the complex contains one F ion. There are 1 figure and 1 table.

Card 1/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

S/020/62/143/006/024/024
B101/B110

AUTHORS: Reznik, A. M., Rozen, A. M., Korovin, S. S., and Apraksin, I. A.

TITLE: Extraction of zirconium and hafnium from solutions containing nitric and hydrochloric acids

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 143, no. 6, 1962, 1413-1416

TEXT: The extraction of large amounts (5 - 40 g/l) of Zr and Hf from HNO_3, HCl, and HNO_3+HCl solutions (total acidity, 5 moles/l) with a 50% solution of tri-n-butylphthalate (TBP) in o-xylene was studied. On the basis of the reaction $Me^{4+} + 4A^- + 2TBP \rightleftharpoons MeA_4 \cdot 2TBP$ (1), the apparent extraction constants were obtained as $\tilde{K} = \alpha/A^4T^2$, where α is the distribution coefficient; Me stands for Zr or Hf; A^- is the anion concentration, moles/l; and T is the concentration of free TBP. The rapid decrease of $\tilde{K}_{Zr}$ and $\tilde{K}_{Hf}$ with increasing concentration of Zr and Hf

Card 1/4

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

S/020/62/143/006/024/024
B101/B110

Extraction of zirconium and hafnium ...

is attributed to the formation of a non-extractable polymer as a result of chain reaction: $A_1 + A_n \overset{K_n}{\rightleftharpoons} A_{n+1}$, where n = 1,2,3,.... . According to I. Prigogine and R. Defay (Chemical Thermodynamics, London - N. Y. - Toronto, 1954) the following values were obtained: $K_n^{Zr} \approx 8$ and $K_n^{Hf} \approx 29$ in HNO_3, and $K_n^{Zr} \approx 13$ and $K_n^{Hf} \approx 3$ in HCl. A dependence of α_{Zr} and α_{Hf} on the HNO_3: HCl ratio was observed with HNO_3+HCl mixtures (Fig. 3). For constant values of $\tilde{K}_1$ (in HNO_3) and $\tilde{K}_2$ (in HCl) one obtains $\alpha_{Zr} = \left\{ K_1 \left[(H^+) - (Cl^-) \right]^4 + \tilde{K}_2 (Cl^-)^4 \right] T^2$ (A). This equation does not correspond to the experimental course of the curves. It is assumed that besides reaction (1), also the following reaction takes place: $Zr^{4+} + (4-i)NO_3^- + iCl^- + 2TBP \overset{\tilde{K}_i}{\rightleftharpoons} Zr(NO_3)_{4-i}Cl_i \cdot 2TBP$ (i = 1-3). The complexes $Zr(NO_3)_3Cl \cdot 2TBP$ and $Zr(NO_3)_2Cl_2 \cdot 2TBP$ were found in the organic phase. $\tilde{K}_i$ is defined by $\tilde{K}_i = 4!\tilde{K}_1^{i/4}\tilde{K}_2^{/4-i/4}/(4-i)!i!$, where

Card 2/5

$\alpha_{Zr} = \left[(\sqrt[4]{\tilde{K}_1} (NO_3^- + \sqrt[4]{\tilde{K}_2}(Cl^-) \right]^4 T^2$ (2). This equation does not correspond to the experimental data either. When passing over from the apparent constants to thermodynamic constants ($K = \tilde{K}/\gamma_\pm^5$), one obtains Eq. (2), the right-hand side of which is multiplied by $\gamma_\pm^5$. The correctness of attributing the extraction maximum of Zr to an increasing activity coefficient has to be verified by determining $\gamma_{\pm Zr}$ in mixed media. As maximum Zr extraction is accompanied by the extraction of a small amount of hafnium with increasing HCl content, $\beta = \alpha_{Zr}/\alpha_{Hf}$ passes through a maximum: $\beta \sim 85$ at ~ 1.3 mole/l of HCl + ~ 3.7 moles/l of HNO_3. This makes it possible to separate Zr from Hf. There are 4 figures and 1 table.

Card 3/5

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov)

PRESENTED: December 18, 1961, by S. I. Vol'fkovich, Academician

SUBMITTED: December 11, 1961

Fig. 3 (a) α_{Zr} as a function of the ratio of HNO_3 to HCl in aqueous phase (HNO_3 + HCl = 5 moles/l); (б) idem for α_{Hf}. Concentration of MeO_2(g/l): (1) 5; (2) 10; (3) 15; (4) 20; (5) 25; (6) 30; (7) 40; ------ = curve according to Eq. (A); -.-.-.- = curve according to Eq. (2). Legend: abscissa, moles/l.

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

S/078/63/008/001/022/026
B124/B186

AUTHORS: Apraksin, I. A., Korovin, S. S., Reznik, A. M., Rozen, A. M.

TITLE: Extraction of hydrochloric acid with n-tributyl phosphate

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 8, no. 1, 1963, 237 - 244

TEXT: The purpose of this study was to determine accurately the solvation number for the extraction of HCl with tributyl phosphate (TBP) and to describe quantitatively the equilibrium. The solvation number was determined for a HCl concentration of 6.0 and 8.8 mole/l in the aqueous equilibrium phase by means of dilution with o-xylene; the distribution of HCl between water and 50% TBP solution in o-xylene for 1 - 10 mole/l HCl in the aqueous phase was also investigated. The formation of HCl·TBP monosolvate was proved, while the formation of disolvate mentioned in publications could not be confirmed. Best agreement of the calculated values for the extraction isotherm with experimental values was reached on the assumption that the hydrosolvate $HCl \cdot TBP \cdot nH_2O$ (n = 2 - 3) is extracted with HCl concentrations in the aqueous phase below 9.0 mole/l, and the solvate 2HCl·TBP with HCl concentrations above 9.0 mole/l in the aqueous phase. This is also

Card 1/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

S/078/63/008/001/022/026
B124/B186

Extraction of hydrochloric...

proved by calculation, it being assumed that initially, at low acidities, the disolvate HCl·2TBP is also formed, besides the monosolvate. The fact that the calculated curve practically agrees with the experimental one obtained for HCl concentrations between 1 and 9 mole/l shows that the agreement mentioned does not in itself prove the validity of the conceptions as to the mechanism of the process. There are 3 figures and 3 tables. The most important English-language references are: H. Irving, D. H. Edgington, J. Inorg. Nucl. Chem., 10, 306 (1959); E. Hesford. H. A. C. Mc Kay, J. Inorg. Nucl. Chem., 13, 156 (1960).

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. Lomonosova, Kafedra khimii i tekhnologii redkikh i rasseyannykh elementov (Moscow Institute of Fine Chemical Technology imeni Lomonosov, Department of Chemistry and Technology of Rare and Dispersed Elements)

SUBMITTED: March 6, 1962

Card 2/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

REZNIK, A.M.; ROZEN, A.M.; KOROVIN, S.S.; APRAKSIN, I.A.

Extraction of zirconium and hafnium with n-tributyl phosphate from solutions containing nitric and hydrochloric acids. Radiokhimiia 5 no.1:49-59 '63. (MIRA 16:2)
(Zirconium) (Hafnium)
(Butyl phosphates)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APRAKSIN, I.A.; KOROVIN, S.S.; REZNIK, A.M.; ROZEN, A.M.

Extraction of hydrochloric acid with n-tributyl phosphate. Zhur.neorg.khim. 8 no.1:237-233 Ja '63. (MIRA 16:5)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni Lomonosova, kafedra khimii i tekhnologii redkikh i rasseyannykh elementov.

(Hydrochloric acid) (Butyl phosphates)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APRAKSIN, I.A.; KOROVIN, S.S.; MUSORIN, V.A.; REZNIK, A.M.; ROZEN, A.M.

Extraction of nitric acid by tributyl phosphate in the presence of hydrobromic acid. Zhur. neorg. khim. 9 no.5: 1295-1296 My '64. (MIRA 17:9)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im. Lomonosova kafedra khimii i tekhnologii redkikh i rasseyannykh elementov.

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APRAKSIN, I.A.; GLUBOKOV, Yu.M.; KOROVIN, S.S.; RE[illegible], A.M.

Extraction of hafnium with n-tributyl phosphate from nitric acid solutions in the presence of a fluorine ion. Zhur. neorg. khim. 9 no.8:2023-2024 Ag '64.

(MIRA 17:11)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni Lomonosova, kafedra khimii i tekhnologii redkikh i rasseyannykh elementov.

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

KOROVIN, S.S.; KOL'TSOV, Yu.I.; REZNIK, A.M.; APRAKSIN, I.A.

Extraction of hydrofluoric acid with tri-n-butyl phosphate. Zhur.neorg.khim. 11 no.1:180-183 Ja '66.

(MIRA 19:1)

1. Kafedra tekhnologii redkikh i rasseyannykh elementov Moskovskogo instituta tonkoy khimicheskoy tekhnologii imeni Lomonosova. Submitted November 10, 1964.

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APRAKSIN, L.; KUZNETSOV, A.; YUDOVICH, Yu., prepodavatel' fiziki (Moskva)

A radio engineering institute helps the school. Radio no.12:10 D '60. (MIRA 14:1)

1. Institut radiotekhniki i elektroniki AN SSSR.
(Radio—Education and training)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APRAKSIN, L., inzh.

Planet-finding radar. Radio no.4:6-8 Ap '64. (MIRA 17:9)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

KOTEL'NIKOV, V.A.; APRAKSIN, L.V.; VOYTOV, V.O.; GOLUBTSOV, M.G.; DUBROVIN, V.M.; ZAYTSEV, N.M.; KORENBERG, Ye.B.; MINASHIN, V.P.; MOROZOV, V.A.; NIKITSKIY, N.I.; PETROV, G.M.; RZHIGA, O.N.; SHAKHOVSKOY, A.M.

Radar system used in the Venus probe of 1961. Radiotekh. i elektron. 7 no.11:1851-1859 N '62. (MIRA 15:11)

1. Institut radiotekhniki i elektroniki AN SSSR.
(Radar)
(Venus probes)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

ACCESSION NR: AP4034534 S/0020/64/155/005/1037/1038

AUTHOR: Kotel'nikov, V. A. (Academician); Apraksin, L. V.; Dubrovin, V. M.; Kislik, M. D.; Kuznetsov, B. I.; Petrov, G. M.; Rzhiga, O. N.; Frantsesson, A. V.; Shakhovskoy, A. M.

TITLE: Radar ranging of the Planet Jupiter

SOURCE: AN SSSR. Doklady*, v. 155, no. 5, 1964, 1037-1038

TOPIC TAGS: Jupiter radar ranging, Jupiter reflection coefficient, radio astronomy, Jupiter, Doppler effect

ABSTRACT: The radar ranging of Jupiter was undertaken in order to investigate the propagation of radiowaves over long distances and for the determination of reflecting properties of Jupiter's surface. The power received by the planet's surface was 13 w. The time for double passage of the signal was 1 hr, 6 sec, and the frequency was about 700 mc. Two consecutive signals differed by 62.5 cycles. The duration of the signals and the pauses was about 4 sec. The Doppler effect caused by the relative motion and rotation of Earth was compensated by an arrangement which linearly changed the heterodyne of the sender. The noise was

Card 1/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

ACCESSION NR: AP4034534

automatically subtracted from the accumulated signal during the absence of the signal. The reflection coefficient of Jupiter was found to be about 10%. "The authors are grateful to B. A. Dubinskiy, G. A. Zhurkina, Yu. N. Marokhovskiy, G. A. Simonor, D. M. Tsvetkov, and V. F. Chernov for participation in the preparations and in making the measurements." Orig. art. has: 1 figure.

ASSOCIATION: Institut radiotekhniki i electroniki Akademii nauk SSSR (Institute of Radio Engineering and Electronics, Academy of Sciences, SSSR)

SUBMITTED: 02Feb64 ATD PRESS: 3050 ENCL: 00

SUB CODE: EC, AA NO REF SOV: 005 OTHER: 000

Card 2/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

L 60859-65 EEC-4/EWG(v)/EWT(1)/FBD GW/WS-4

ACCESSION NR: AP5018071 UR/0020/65/163/001/0050/0053

AUTHOR: Kotel'nikov, V. A.; Aleksandrov, Yu. N.; Apraksin, L. V.; Dubrovin, V. M.; Kislik, M. D.; Kuznetsov, B. I.; Petrov, G. M.; Rzhiga, O. N.; Frantsesson, A. V.; Shakovskoy, A. M.

TITLE: Radar observations of Venus in the Soviet Union in 1964

SOURCE: AN SSSR. Doklady, v. 163, no. 1, 1965, 50-53

TOPIC TAGS: radio wave reflection, Venus radar observation, radio emission measurement, radar observation, radio astronomy

ABSTRACT: Radar observations of Venus at 40 cm were conducted between 11 and 30 June 1964 by the Institute of Radio Engineering and Electronics of the Academy of Sciences USSR. Frequency modulation and periodic linear frequency modulation of radiated signals were employed. Paramagnetic and parametric amplifiers were used at the receiver output. Signal analysis was performed by means of a 20-channel analyzer with a filter bandwidth of 1.2 cps for each channel. The reflected signal spectrum and measurements of the radial velocity of the motion of Venus were determined on the basis of the Doppler shift of the signal spectrum of the central frequency in relation to the radiation frequency. Frequency manipulation

Card 1/5

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

L 50319-65

ACCESSION NR: AP5018071

0

was effected with the radiating signal shaped as two alternating telegraphic pulse packets at two carrier frequencies differing either by 62.5 or by 2000 cps. At each frequency, pulse duration and the intervals between transmissions were 4.096 sec. Radio wave reflection from the Venusian surface and measurements of the distance to Venus were effected with linear frequency modulation. The results of the measurements of the distance to Venus and of the radial velocity of its motion are shown in Fig. 1 of Enclosure, with the vertical sections showing rms error values, which till 23 June did not exceed 15 km for 5 min of observation (at a deviation of 4 kc) and after 23 June did not exceed 2 km (at a deviation of 32 kc). Measurement error for velocity did not exceed 2.5 cm/sec. Signal propagation time was calculated with an accuracy of ±5 μsec, and Doppler frequency, with an accuracy of ±0.05 cps. The total rms error value for the initial data was ±400 km. The energy distribution of signals reflected from Venus depending on distance ΔR is shown in Fig. 2. The following conclusions are drawn: 1) The width of the Doppler spectrum of the reflected signal caused by the rotation of Venus does not exceed 15 cps. 2) The Venusian reflection factor averages 19%. 3) The energy in the central band of 1 cps is approximately one half of the energy of the whole spectrum. 4) The orientation of the Venusian axis of rotation is practically perpendicular to the orbital plane. Orig. art. has: 4 figures. [DW]

Card 2/5

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

L 60859-65

ACCESSION NR: AP5018071

ASSOCIATION: Institut radiotekhniki i radioelektroniki Akademii nauk SSSR (Institute of Radio Engineering and Electronics, Academy of Sciences SSSR)

SUBMITTED: 12Apr65 ENCL: 02 SUB CODE: DC, AA

NO REF SOV: 003 OTHER: 000 ATD PRESS: 4063

Card 3/5

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

L 10859-65

ACCESSION NR: AP5018071

ENCLOSURE: 01

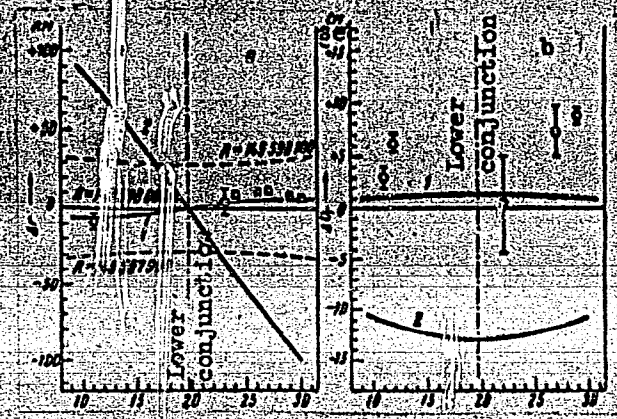

Fig. 1. (a) Variation in the relative calculated value of the distance to Venus and (b) the radial velocity of Venusian motion

Δr - Difference between the measured and calculated distance from the measuring point to the closest point on the surface of Venus; Δv_r - difference between the measured and calculated radial velocity of Venusian reflection center in relation to the measuring point.

Card 4/5

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

L 60859-65

ACCESSION NR: AP5018071

ENCLOSURE: 02

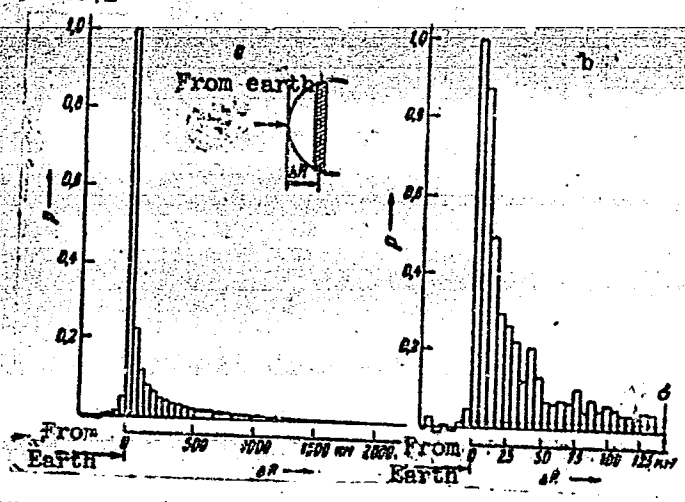

Fig. 2. Energy range distribution of signals reflected from Venus obtained by linear frequency modulation (a) with a deviation of 4 kc (σ = 0.0025 for narrow filters and σ = 0.0014 for wide filters) and (b) with a deviation of 32 kc

Card 5/5

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APRAKSIN, V.I.

Determining cutting forces acting in the cutting of thin shavings.
Trudy LPI no.191:192-201 '57. (MIRA 11:9)
(Metal cutting)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APRAKSINA, A.

"Meat industry" section of the exhibit in 1960. Mias.ind.SSSR 31 no.2:20 '60. (MIRA 13:8)
(Meat industry--Exhibitions)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APRAKSINA, A.; IVANOVA, R.

Special feature exhibition on the mechanization and automation of production processes in the meat industry. Mias.ind. SSSR 34 no.1:39-41 '63. (MIRA 16:4)

1. Vystavka dostizheniy narodnogo khozyaystva SSSR. (Moscow—Exhibitions) (Meat industry—Equipment and supplies)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

KINDYAKOV, P.S. [deceased]; KURTOVA, L.V.; APRAKSINA, G.Z.

Isotherm of the quaternary reciprocal aqueous system consisting of lithium and soldium carbonates and sulfates at 25°. Zhur.neorg.-khim. 6 no.12:2762-2765 D '61. (MIRA 14:12)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni Lomonosova, kafedra analiticheskoy khimii.
(Alkali metal sulfates) (Alkali metal carbonates)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APRAKSINA, Ye.I.; SHEBALIN, Ya.P. (Moskva)

Linking the teaching of mathematics and geography in the 8th grade. Mat. v shkole no.5:44-46 S-O '63. (MIRA 16:11)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APRAKSINA-SVETLOLOBOVA, Ye.I.; SHEBALIN, Ya.P.

Connection between the systems of teaching geography and mathematics. Geog. v shkole 25 no.3:50-52 My-Je '62. (MIRA 15:7)

1. 3-ya spetsial'naya shkola Moskvy.
(Geography--Study and teaching)
(Mathematics--Study and teaching)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APRANOVICH, E.I.; ZORKAL'TSEVA, Ye.N.; BULGAKOVA, N.A.

Correlation between the average diameter of erythrocytes and the percentage of macrocytes. Lab.delo 6 no.3:10-12 My-Je '60.

1. Kafedra patologicheskoy fiziologii (zav. - prof. D.I. Gol'dberg) Tomskogo meditsinskogo instituta.
(ERYTHROCYTES)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APRATOV, I.T., inzh.

Narrow-bite cutter-loader. Mast.ugl. 8 no.9:9 S '59.
(MIRA 13:2)

(Coal mining machinery)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APRATOV, I.I. (g.Stalino)

Industrial testing of a mining machinery unit including a UMK-1 cutter-loader. Ugol' 35 no.2:1-7 F '60. (MIRA 13:5)

(Coal mining machinery--Testing)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

SOLOMAKHIN, N.V.; APRATOV, I.I.

Some problems in narrow range coal mining. Ugol' 36 no.2:7-[illegible] '61. (MIRA 14:2)

1. Donvipromlemash.
(Coal mines and mining)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APRATOV, Ivan Ivanovich; SOLOMAKHIN, Nikolay Vasil'yevich; ABRAMOV, V.I., otv. red.; SABITOV, A., tekhn. red.; BOLDYREVA, Z.A., tekhn. red.

[Practical handbook for a mechanic in a mine section] Prakticheskoe rukovodstvo mekhanika uchastka shakhty. Moskva, Gosgortekhizdat, 1963. 287 p. (MIRA 16:10)
(Coal mining machinery)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APRATOV, I. I.; KANDELYA, Ya. I.; GALKIN, A. V.

Operating practice of the UMK narrow-range unit in the "Proletarskaia-Glubokaia" Mine. Ugol' 38 no.4:34-39 Ap '63. (MIRA 16:4)

(Donets Basin—Coal mining machinery)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APRELENKO, G., master radiolyubitel'skogo sporta; CHEREVKO, V., master radiolyubitel'skogo sporta.

Radio station collective in the competitions. Radio no.10: 11-12 '56. (MLRA 9:11)

(Kiev--Radio, Shortwave--Competitions)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7

APRELEV, V.P., kand. voyenno-morskikh nauk, kapitan 2-go ranga;
GRUZDEV, N.M., kapitan 2-go ranga

A useful manual on navigation. Mor. sbor. 48 no.6:89-92 Je '65.

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101910002-7"