23760
S/190/61/003/006/001/019
B110/B216

15 8510 1043, 2209, 1572

AUTHOR: Berestneva, G. L., Berestnev, V. A., Gatovskaya, T. V., Kargin, V. A., Kozlov, P. V.

TITLE: Orderly precrystalline structure of polymers

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 6, 1961, 801 - 805

TEXT: Before crystallization, the chain molecules of polymers in the amorphous state may be in an orderly state, even before the occurrence of lang-range order. Crystallization with formation of large structures (spherolites) is therefore often very rapid, requiring little energy, when polymers are converted from the vitreous to the highly elastic state. A mechanical field applied to a polymer with precrystalline orderly structure may destroy the latter. Further elongation leads to the formation of new oriented structures, which are studied in the present work. The rapidly crystallizing polyethylene terephthalate (PETP) was used for the study, crystallization being observed by crystal analysis, thermodynamically, and visually by the turbidity caused by the formation of interfaces.

Card 1/7

Orderly precrystalline ...

The PETP films were heated (I), treated with acetone (II), or elongated at room temperature by 350 and 450 % (III). The structural changes were investigated (A) by optical examination (birefringence), by the compensation method, (B) by thermodynamic studies, sorption of acetone vapor using spring weights at 25°C and (C) determination of the integral heat of wetting in acetone in the adiabatic calorimeter and (D) measurement of density changes by means of graduated tubes. The crystallinity was determined by X-ray analysis. Fig. 1 shows the sorption isotherms of acetone by PETP films. The table gives experimental data of various film samples, obtained by calculation of the specific surface from sorption data obtained by (A), (C) and (D) using the equation of S. Brunauer, P. H. Emmett, E. Teller (BET) (Ref. 11: J. Amer. Chem. Soc., 60, 309, 1938). The increase of the total internal film surface during the first stage of elongation is due to destruction of the orderly and therefore specially dense structure of the isotropic sample formed during film formation. The data presented illustrate that the closely packed, orderly structure changes to a losely packed and less orderly structure during this process (the specific surface increases nearly by a factor of 6). Further elongation leads to a renewed increase ot the packing density of the

Card 2/7

Orderly precrystalline ...

molecules. The specific surface of a maximally elongated film is ~2.5 times larger than the degree of order of the new orderly structure, but somewhat smaller than in the initial film. Fig. 2 represents microphotometric curves of variously treated PETP films. Orientation in the sample produces an order involving much larger elements than the microelements present in the unoriented sample. The density drops during the first stage of elongation and then increases again. Macropores are present in the isotropic amorphous film. The density of PETP samples elongated 450% is higher than that of the initial film, owing to orienting "healing" of pores. This healing which sets in at the very outset of elongation explains the relatively small differences in the density values, as compared to the values for the total surfaces. Healing has no influence on the total surface, since the latter is determined by the presence of closely packed structural microformations. The change in birefringence (table) shows that the destruction of the precrystalline structure is due to changes in the position, characteristic of the initial structure, of the elements. This is confirmed by the diffraction pattern of the elongated sample. The increase of flexibility must lead to crystallization, i. e., to long-range order of the molecule centers, to orientation of the side

Orderly precrystalline ...

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groups and to turbidity of the sample. Accordingly, the acetone-treated sample gave the well-defined diffraction pattern shown in Fig. 2. At higher temperatures, the increased flexibility of the molecular chains facilitates the occurrence of relaxation processes. The latter enable the formation of precrystalline structures and, finally, the crystallization with formation of spherolites. There are 2 figures, 1 table, and 13 references: 10 Soviet-bloc and 3 non-Soviet-bloc. The reference to the English-language publication reads as follows: Ref 13: A. B. Tompson, D. W. Wood, Nature, 176, 78, 1955.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy kino-fotoinstitut (All Union Scientific Research Cinematography and Photography Institute). Fiziko - Khimicheskiy institut im L. Ya. Karpova (Physical Chemical Institute imeni L. Ya. Karpov) - Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute for Tire Industry)

SUBMITTED: February 25, 1960

BERESTNEVA, G.L.; TSVANKIN, D.Ya.; KOZLOV, P.V.

Effect of stretching on the structure and properties of polyethylene-terephthalate films. Part 5: X-ray diffraction studies of crystallization processes occurring in uniaxially oriented films. Vysokom.-soed. 3 no.12:1787-1793 D '61. (MIRA 15:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut i Institut elementoorganicheskikh soyedineniy AN SSSR.
(Ethylene polymers) (Crystallization)

MUSAYELYAN, I.N.; BERESTNEVA, G.L.

Structure of films prepared on the basis of a mixture of components. Izv.AN SSSR. Ser.khim. no.1:155-157 Ja '64. (MIRA 17:4)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

ACCESSION NR: AP3000199 S/0115/63/000/005/0054/0057

AUTHOR: Malkova, E. M.; Radovskaya, T. L.; Belozerova, M. P.; Borastnova, Z. T.

TITLE: Methods for testing the checking gas mixtures

SOURCE: Izmeritel'naya Tekhnika, no. 5, 1963, 54-57

TOPIC TAGS: low oxygen analysis, colorimetric analysis

ABSTRACT: A well-known colorimetric method for determing very low concentrations (0.001 - 1% by volume) of oxygen involves oxidation of a monovalent-copper ion into a bivalent-copper ion by the oxygen contained in the gas being tested. A pipetting device with a sampling cell was made by the authors. The device and the working procedure are described in detail. Another method for the same purpose was investigated by Brooks (Analytical Chemistry, No 3, 1952) and involved diethyl-dithiocarbamic acid whose colored solution had a colloidal nature. Hence, the color-intensity measurements required a photometer or a turbidimeter whose readings were less accurate and less convenient to take than those of a photocolorimeter. To avoid this difficulty, the use of thiosemicarbazide is suggested. Orig. art. has: 2 figures.

Card 1/2

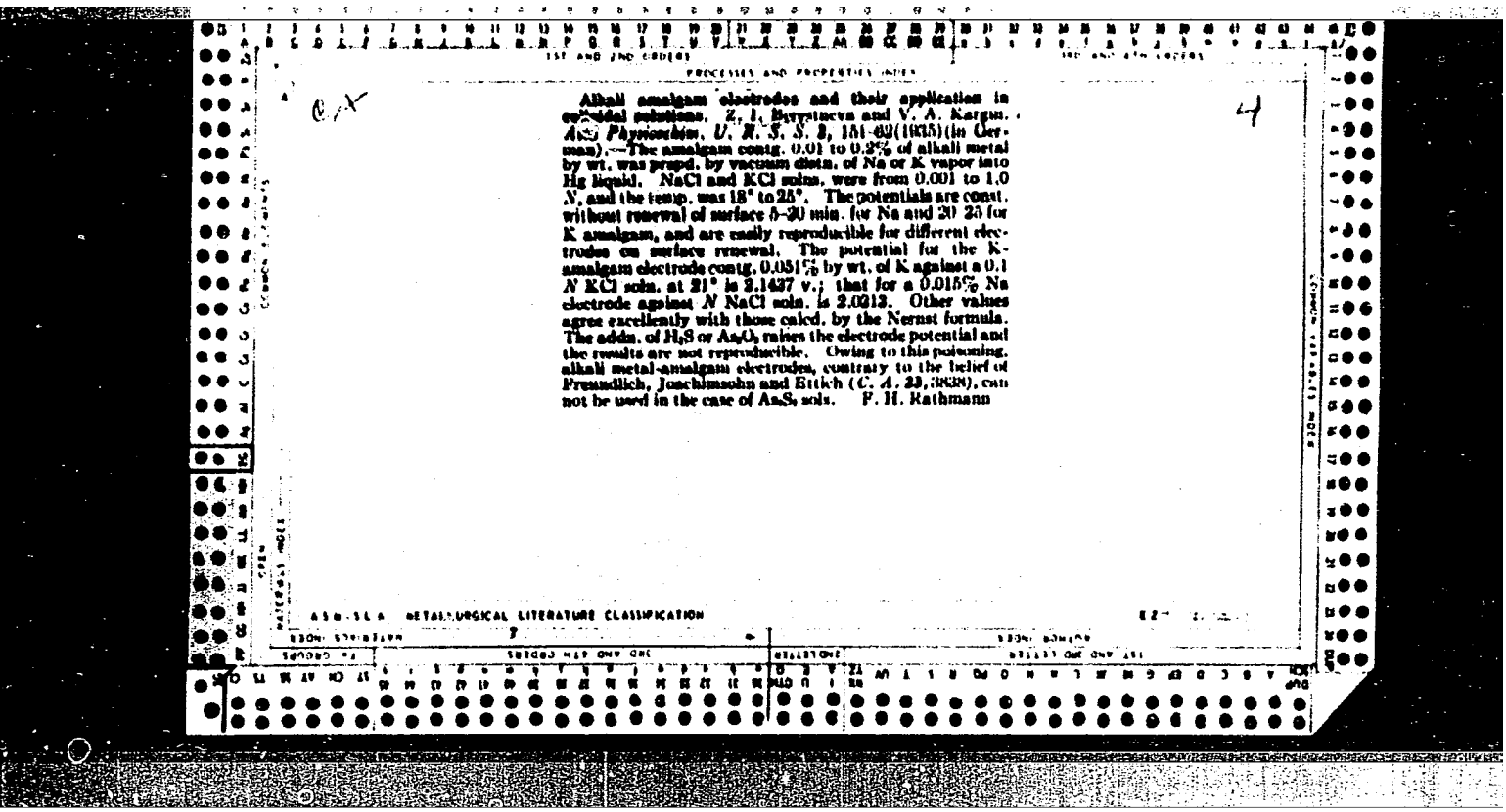
ACCESSION NR: AP3000199

ASSOCIATION: none

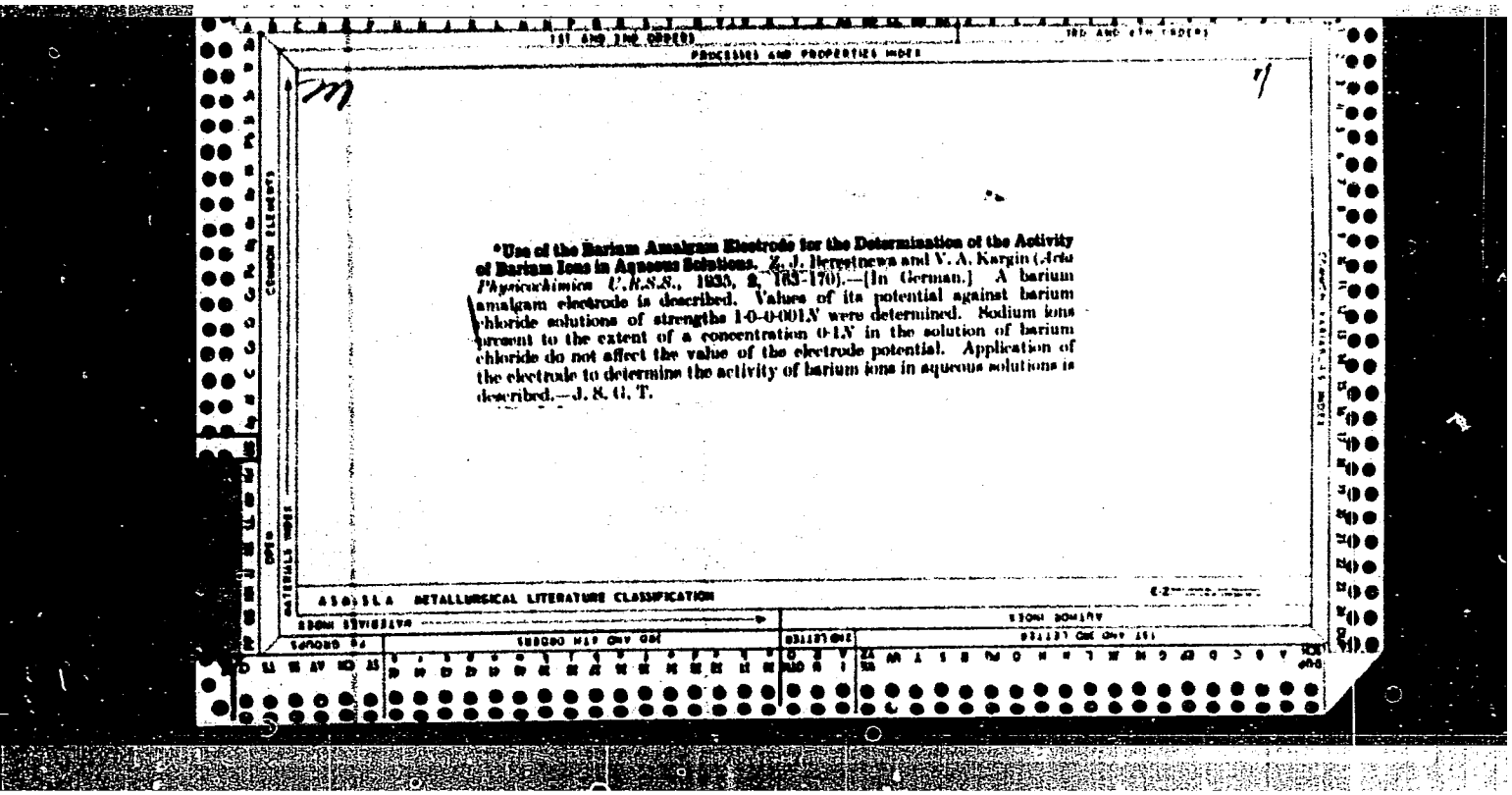
SUBMITTED: 00 DATE ACQ: 12Jun63 ENCL: 00

SUB CODE: CH NR REF SOV: 002 OTHER: 001

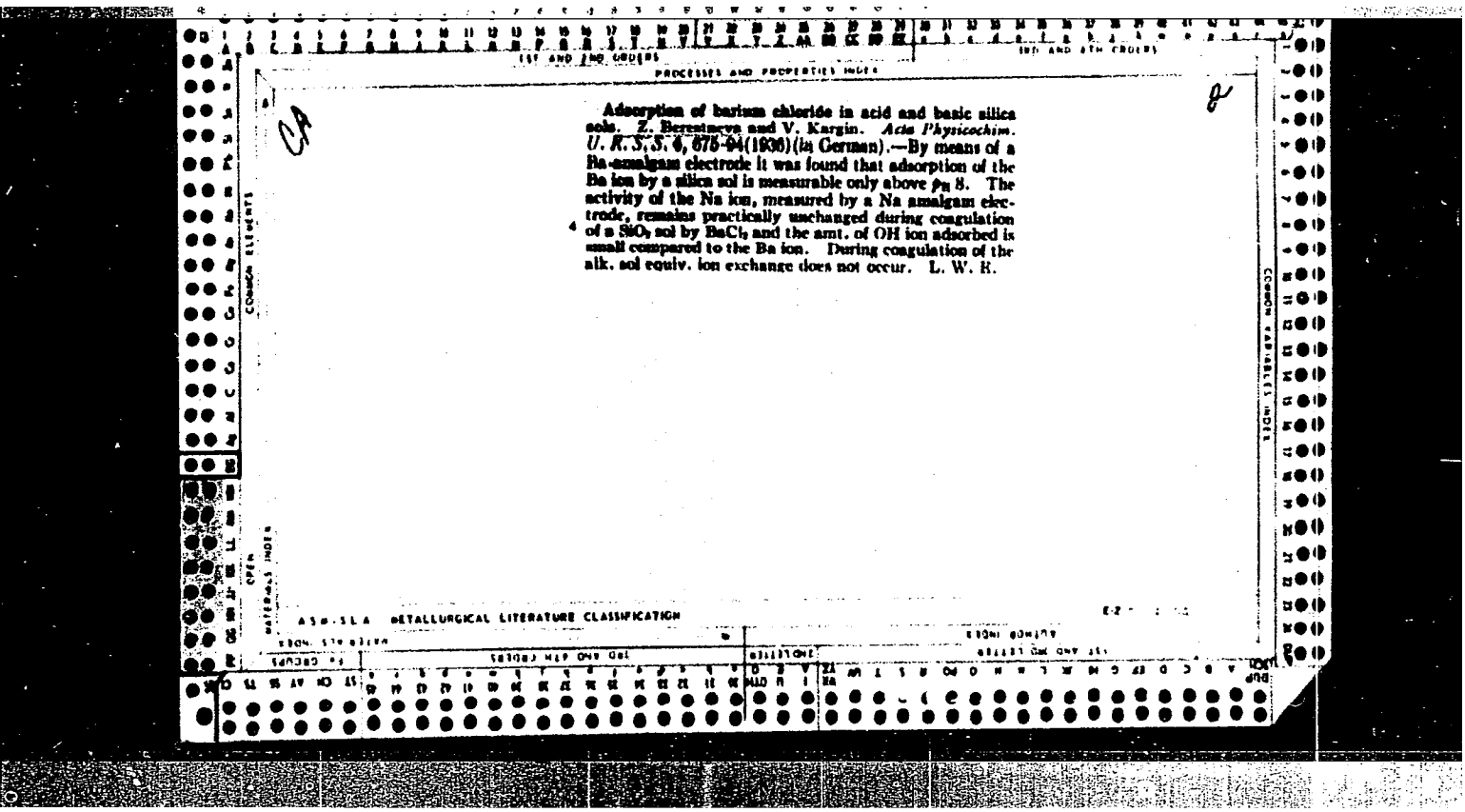
Card 2/2



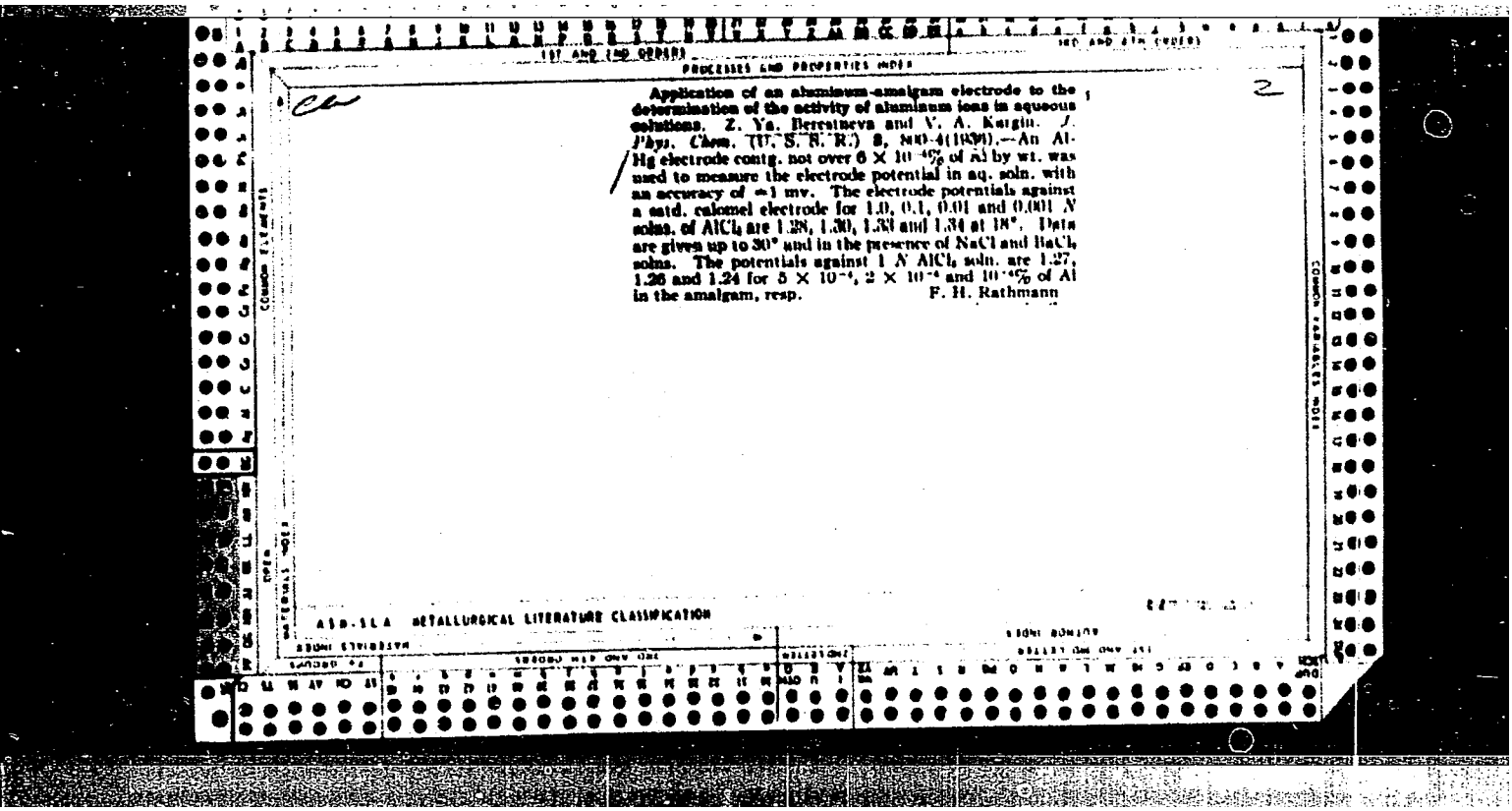
Alkali amalgam electrodes and their application in colloidal solutions. Z. I. Bayramova and V. A. Kargin. *Acta Physicochim. U. R. S. S.* 3, 151-60(1935)(in German).—The amalgam contg. 0.01 to 0.2% of alkali metal by wt. was prepd. by vacuum distn. of Na or K vapor into Hg liquid. NaCl and KCl solns. were from 0.001 to 1.0 *N*, and the temp. was 18° to 25°. The potentials are const. without renewal of surface 5–30 min. for Na and 20–25 for K amalgam, and are easily reproducible for different electrodes on surface renewal. The potential for the K-amalgam electrode contg. 0.051% by wt. of K against a 0.1 *N* KCl soln. at 21° is 2.1427 v.; that for a 0.015% Na electrode against *N* NaCl soln. is 2.0213. Other values agree excellently with those calcd. by the Nernst formula. The addn. of H_2S or As_2O_3 raises the electrode potential and the results are not reproducible. Owing to this poisoning, alkali metal-amalgam electrodes, contrary to the belief of Freundlich, Jonckhmsohn and Ettisch (*C. A.* 23, 3838), can not be used in the case of As_2S_3 sols. F. H. Rathmann



•Use of the Barium Amalgam Electrode for the Determination of the Activity of Barium Ions in Aqueous Solutions. Z. J. Herasimova and V. A. Kargin (*Acta Physicochimica U.R.S.S.*, 1935, 2, 165-170).—[In German.] A barium amalgam electrode is described. Values of its potential against barium chloride solutions of strengths 1·0-0·001*N* were determined. Sodium ions present to the extent of a concentration 0·1*N* in the solution of barium chloride do not affect the value of the electrode potential. Application of the electrode to determine the activity of barium ions in aqueous solutions is described.—J. S. G. T.



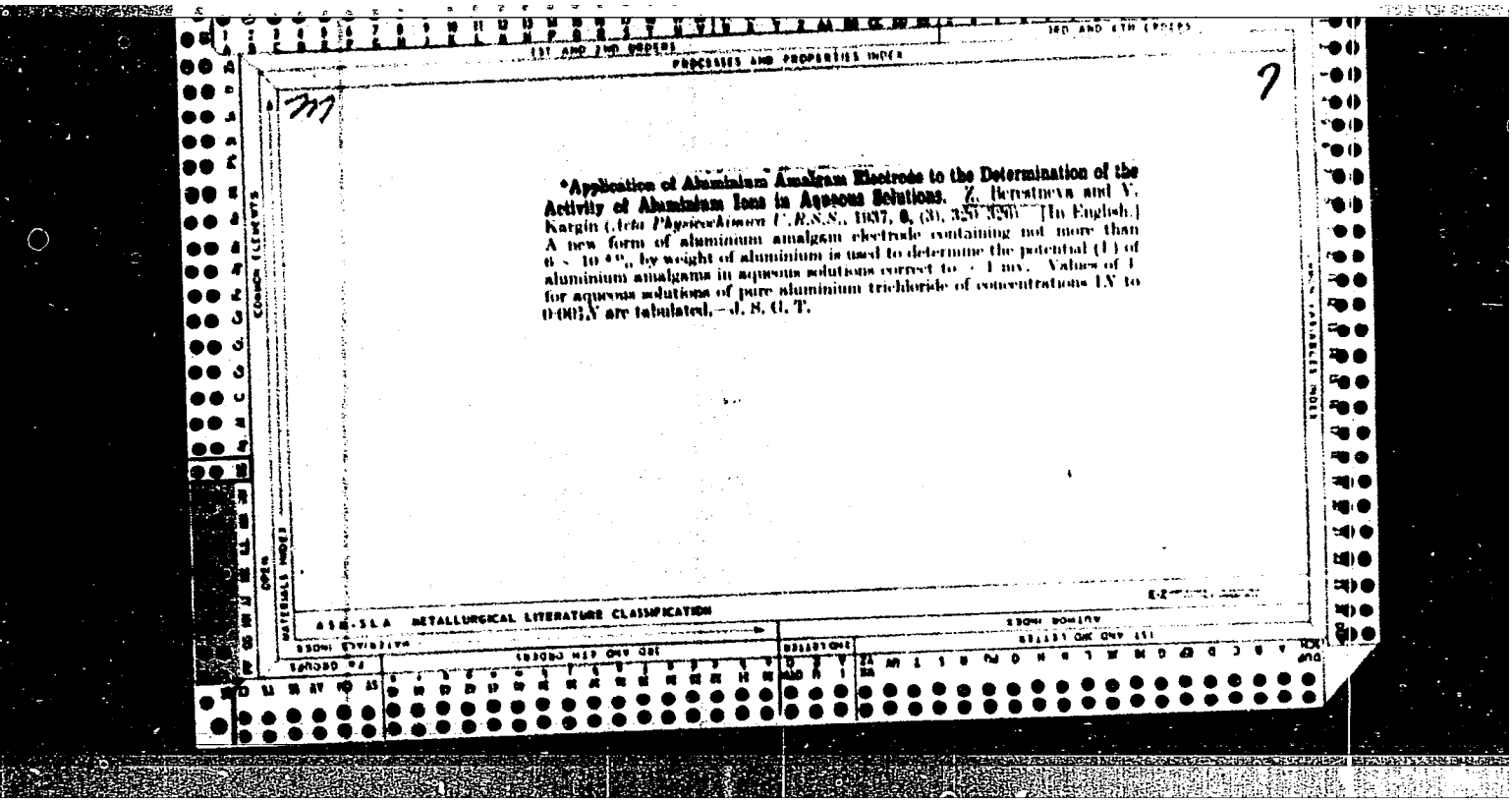
Adsorption of barium chloride in acid and basic silica sols. Z. Berestneva and V. Kargin. *Acta Physicochim. U. R. S. S.* 6, 675-94(1936)(in German).—By means of a Ba-amalgam electrode it was found that adsorption of the Ba ion by a silica sol is measurable only above p_H 8. The activity of the Na ion, measured by a Na amalgam electrode, remains practically unchanged during coagulation of a SiO_2 sol by $BaCl_2$ and the amt. of OH ion adsorbed is small compared to the Ba ion. During coagulation of the alk. sol equiv. ion exchange does not occur. L. W. R.



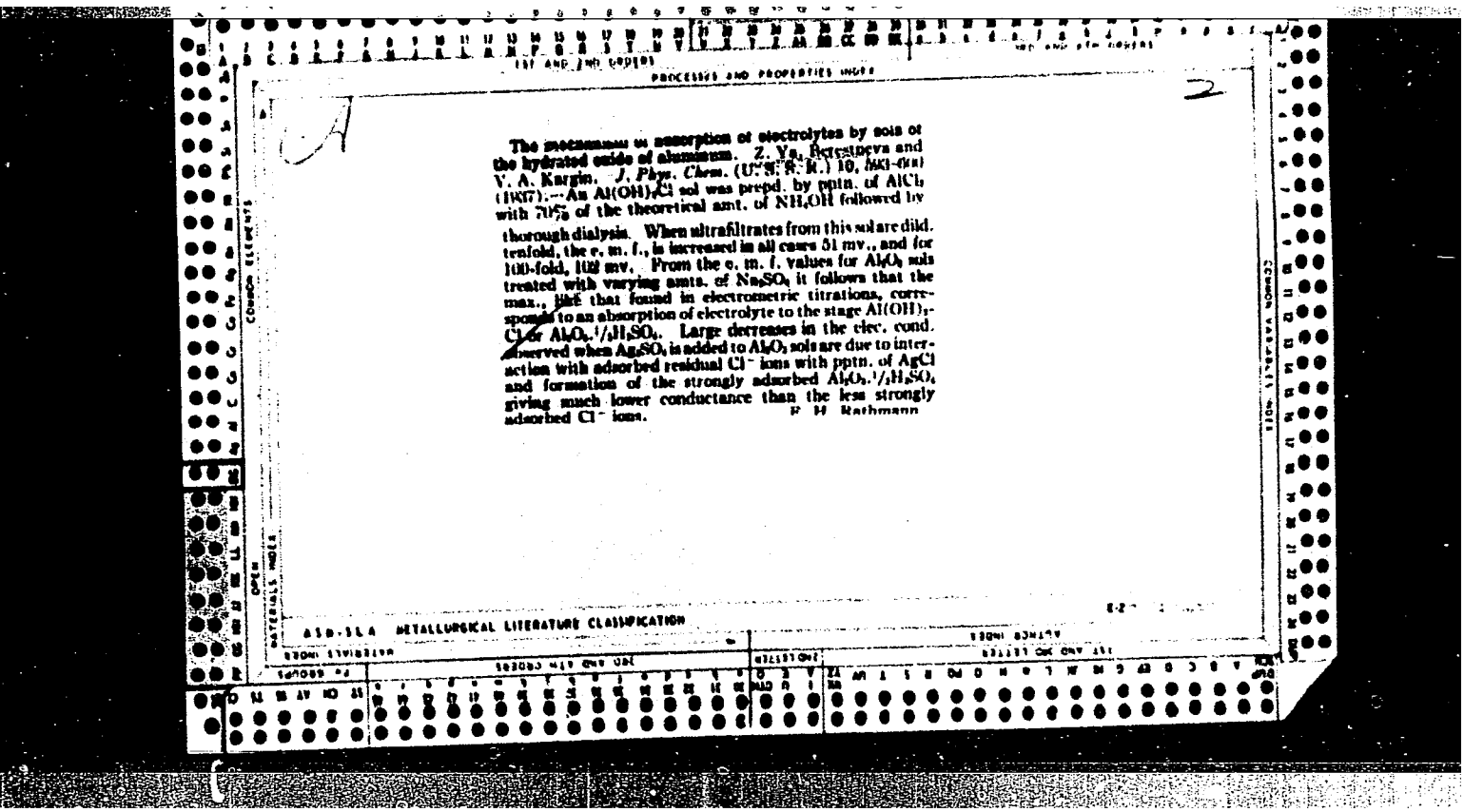
PROCESSES AND PROPERTIES INDEX

Application of an aluminum-amalgam electrode to the determination of the activity of aluminum ions in aqueous solutions. Z. Ya. Berestneva and V. A. Kargin. *J. Phys. Chem. (U. S. S. R.)* 8, 840-4(1936).—An Al-Hg electrode contg. not over 6×10^{-4}% of Al by wt. was used to measure the electrode potential in aq. soln. with an accuracy of ±1 mv. The electrode potentials against a satd. calomel electrode for 1.0, 0.1, 0.01 and 0.001 *N* solns. of $AlCl_3$ are 1.28, 1.30, 1.31 and 1.34 at 18°. Data are given up to 30° and in the presence of NaCl and $BaCl_2$ solns. The potentials against 1 *N* $AlCl_3$ soln. are 1.27, 1.26 and 1.24 for 5×10^{-4}, 2×10^{-4} and 10^{-4}% of Al in the amalgam, resp. F. H. Rathmann

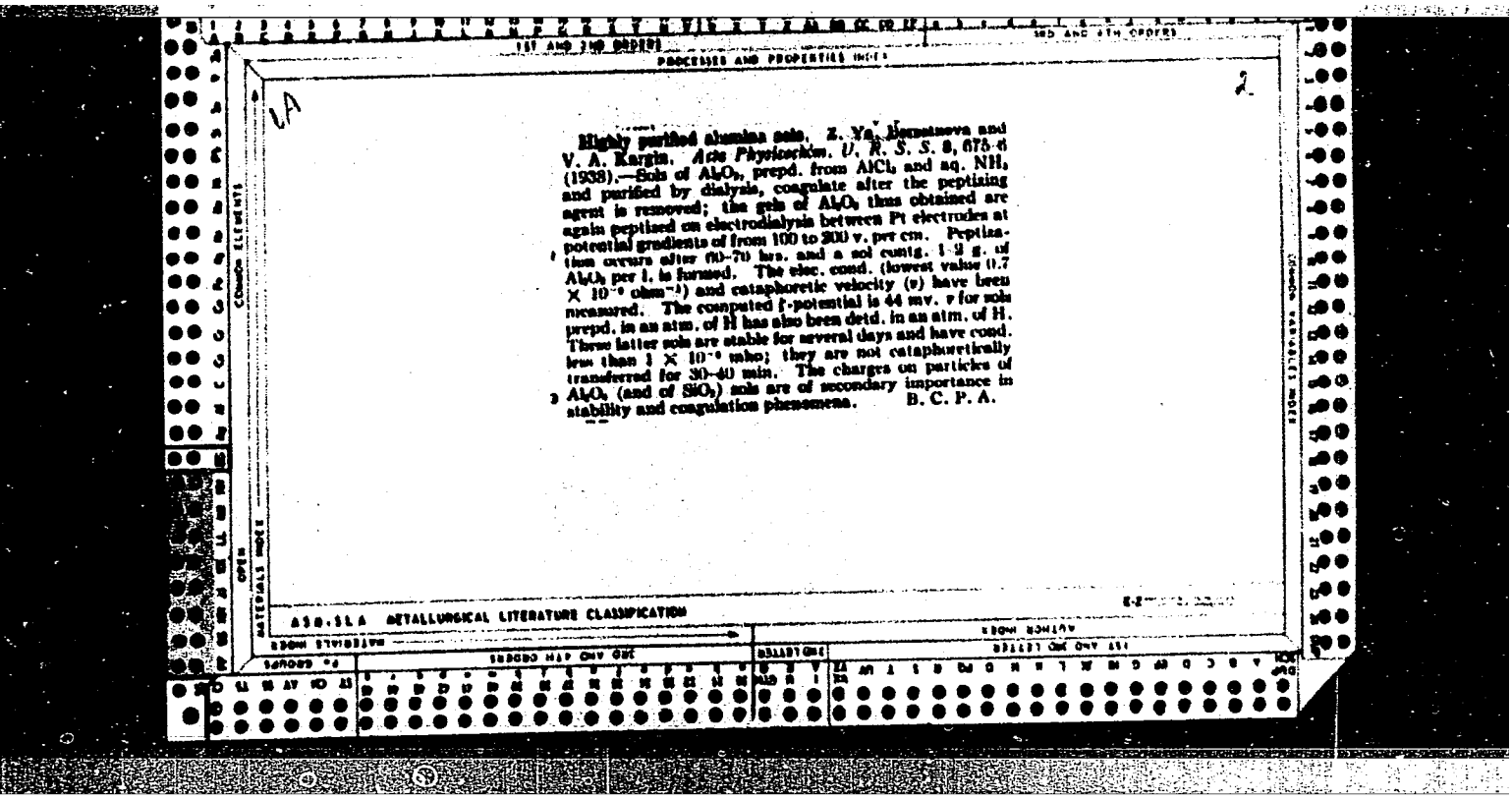
A.I.M.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION



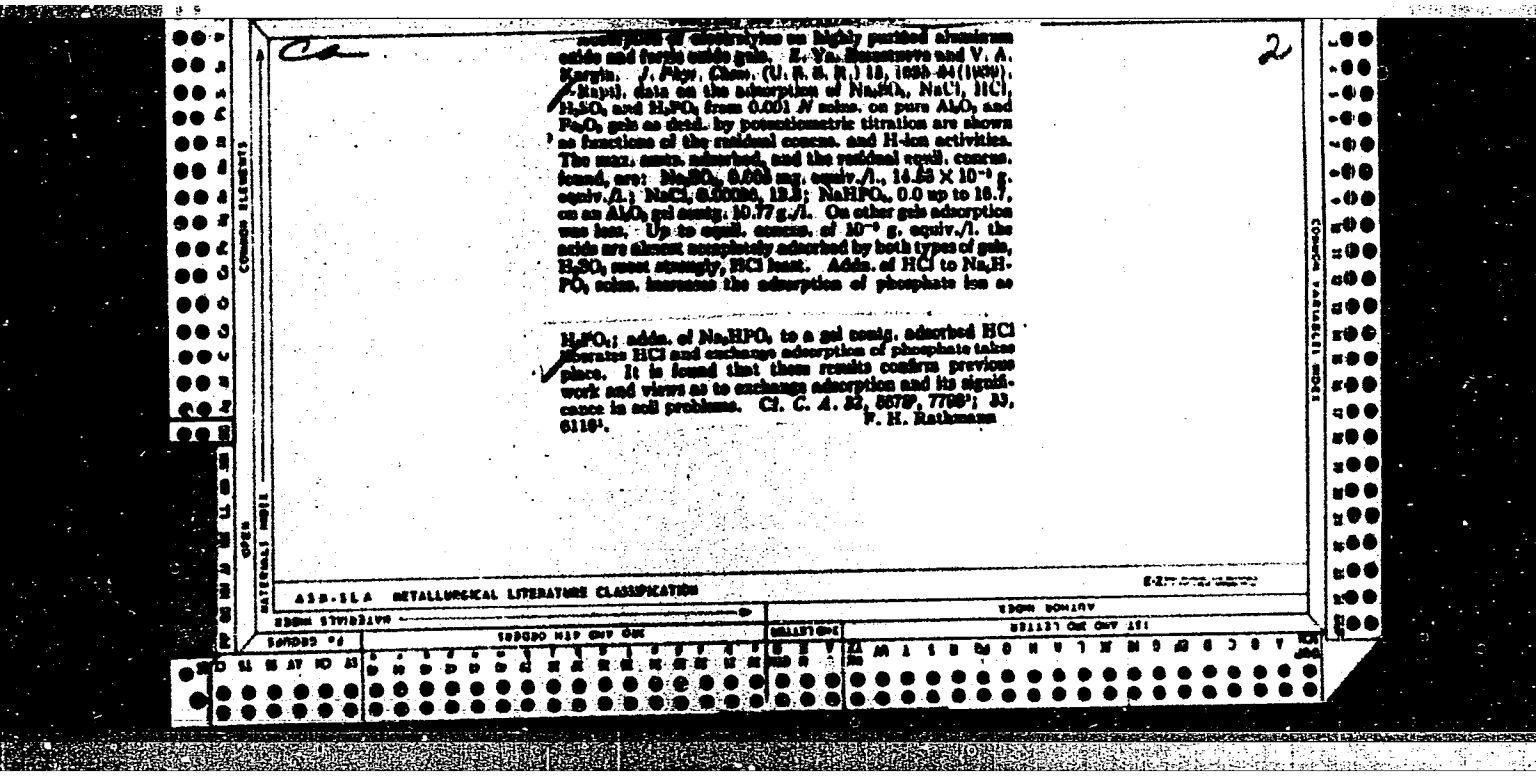
*Application of Aluminium Amalgam Electrode to the Determination of the Activity of Aluminium Ions in Aqueous Solutions. Z. Berestneva and V. Kargin (Acta Physicochimica U.R.S.S., 1937, 6, (3), 327-336). [In English.] A new form of aluminium amalgam electrode containing not more than 6 × 10⁻⁴%, by weight of aluminium is used to determine the potential (E) of aluminium amalgams in aqueous solutions correct to ± 1 mv. Values of E for aqueous solutions of pure aluminium trichloride of concentrations 1N to 0·003N are tabulated.—J. S. G. T.



The mechanism of adsorption of electrolytes by sols of the hydrated oxide of aluminum. Z. Ya. Berestneva and V. A. Kargin. *J. Phys. Chem.* (U.S.S.R.) 10, [illegible] (1937).—An $Al(OH)_2Cl$ sol was prepd. by pptn. of $AlCl_3$ with 70% of the theoretical amt. of NH_4OH followed by thorough dialysis. When ultrafiltrates from this sol are dild. tenfold, the e. m. f., is increased in all cases 51 mv., and for 100-fold, 102 mv. From the e. m. f. values for Al_2O_3 sols treated with varying amts. of Na_2SO_4 it follows that the max., like that found in electrometric titrations, corresponds to an absorption of electrolyte to the stage $Al(OH)_2Cl$ or $Al_2O_3 \cdot {}^1/_2H_2SO_4$. Large decreases in the elec. cond. observed when Ag_2SO_4 is added to Al_2O_3 sols are due to interaction with adsorbed residual Cl^- ions with pptn. of AgCl and formation of the strongly adsorbed $Al_2O_3 \cdot {}^1/_2H_2SO_4$ giving much lower conductance than the less strongly adsorbed Cl^- ions. F. H. Rathmann



Highly purified alumina sols. Z. Ya. Kuznetsova and V. A. Kargin. *Acta Physicochim. U. R. S. S.* 8, 675-6 (1938).—Sols of Al_2O_3, prepd. from $AlCl_3$ and aq. NH_3 and purified by dialysis, coagulate after the peptizing agent is removed; the gels of Al_2O_3 thus obtained are again peptized on electrodialysis between Pt electrodes at potential gradients of from 100 to 300 v. per cm. Peptization occurs after 60–70 hrs. and a sol contg. 1–2 g. of Al_2O_3 per l. is formed. The elec. cond. (lowest value 0.7 × 10^{-6} ohm^{-1}) and cataphoretic velocity (v) have been measured. The computed ζ-potential is 44 mv. v for sols prepd. in an atm. of H has also been detd. in an atm. of H. These latter sols are stable for several days and have cond. less than 1 × 10^{-6} mho; they are not cataphoretically transferred for 30–40 min. The charges on particles of Al_2O_3 (and of SiO_2) sols are of secondary importance in stability and coagulation phenomena. B. C. P. A.



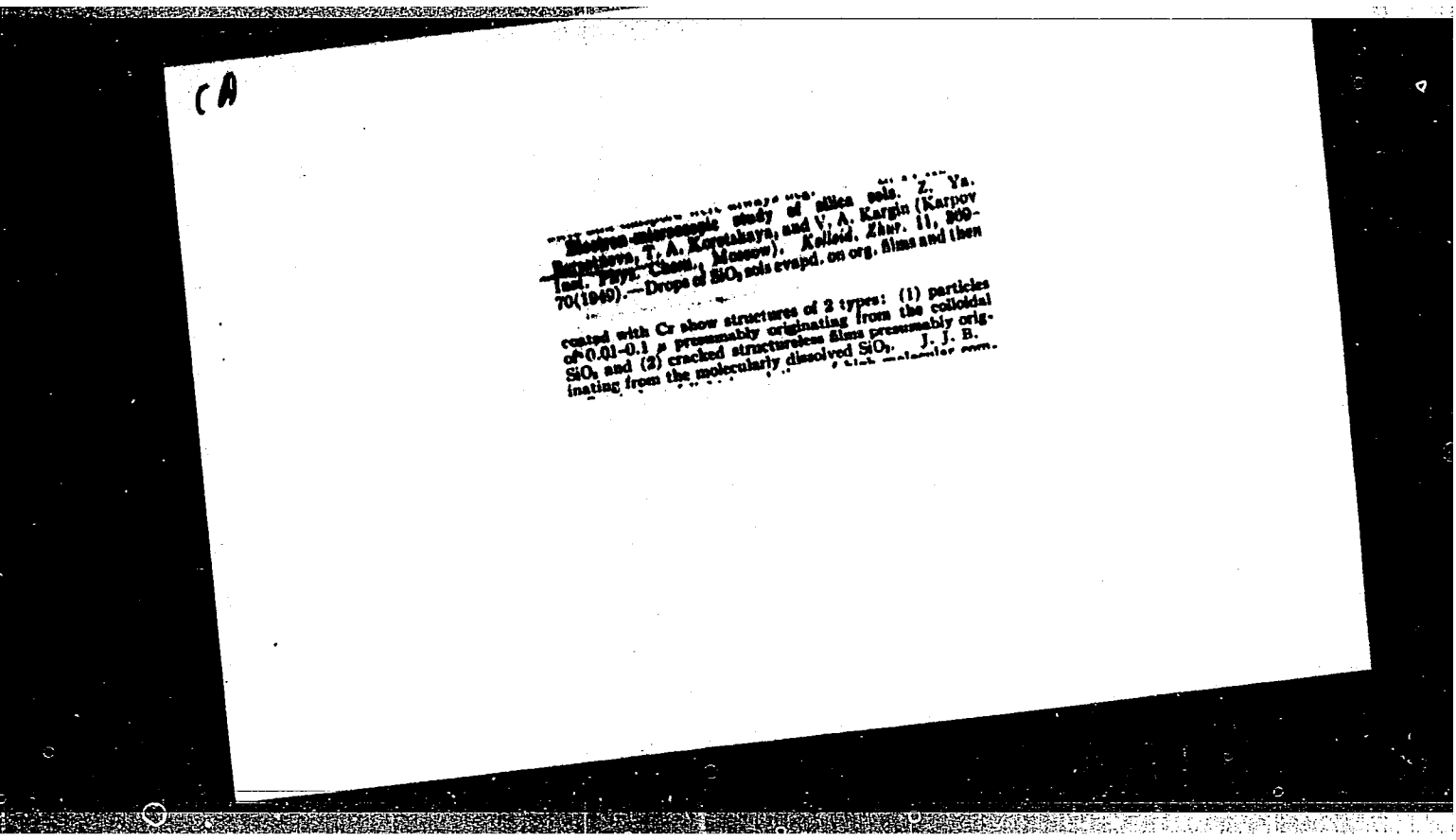
adsorption of electrolytes on highly purified aluminum oxide and ferric oxide gels. E. Ya. Rosenmovs and V. A. Kargin. J. Phys. Chem. (U. S. S. R.) 13, 1695-84 (1939). (In Russ.). Data on the adsorption of Na_2SO_4, NaCl, HCl, H_2SO_4 and H_3PO_4 from 0.001 N solns. on pure Al_2O_3 and Fe_2O_3 gels as detd. by potentiometric titration are shown as functions of the residual concns. and H-ion activities. The max. amts. adsorbed, and the residual equil. concns. found, are: Na_2SO_4, 0.008 mg. equiv./l., 16.53×10^{-3} g. equiv./l.; NaCl, 0.00386, 12.3; $NaHPO_4$, 0.0 up to 16.7, on an Al_2O_3 gel contg. 10.77 g./l. On other gels adsorption was less. Up to equil. concns. of 10^{-3} g. equiv./l. the acids are almost completely adsorbed by both types of gels, H_2SO_4 most strongly, HCl least. Adds. of HCl to Na_2HPO_4 solns. increases the adsorption of phosphate ion as $H_2PO_4^-$; adds. of Na_2HPO_4 to a gel contg. adsorbed HCl liberates HCl and exchange adsorption of phosphate takes place. It is found that these results confirm previous work and views as to exchange adsorption and its significance in soil problems. Cf. C. A. 32, 8679, 7769[9]; 33, 6118[1].

F. H. Rathmann

2

Structure of V_2O_5 sols. Z. Ya. Berestneva, T. A. Koretskaya, and V. A. Kargin. *Doklady Akad. Nauk S.S.S.R.* 59, 1121-4(1948).—Electron-microscope pictures of V_2O_5 sols prepd. according to Biltz (*Ber.* 37, 1098(1904)) by adding HCl to NH_4VO_3 and washing on the filter until the filtrate turned red, dilg., and dialyzing, showed, under a magnification of 18000-18000, initial presence of sep. particles and small aggregates, growing linearly into long threads, without or with only very little branching. Thus, the particles can aggregate only at two "active" points. It contradicts any representation of a homogeneity of the surface of the particles. N. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

Electron-microscopic study of silica sols. Z. Ya. Berestneva, T. A. Kavtaskaya, and V. A. Kargin (Karpov Inst. Phys. Chem., Moscow). Kolloid. Zhur. 11, 209-70(1949).—Drops of SiO_2 sols evapd. on org. films and then coated with Cr show structures of 2 types: (1) particles of 0.01-0.1 μ presumably originating from the colloidal SiO_2 and (2) cracked structureless films presumably originating from the molecularly dissolved SiO_2. J. J. B.

C.A.

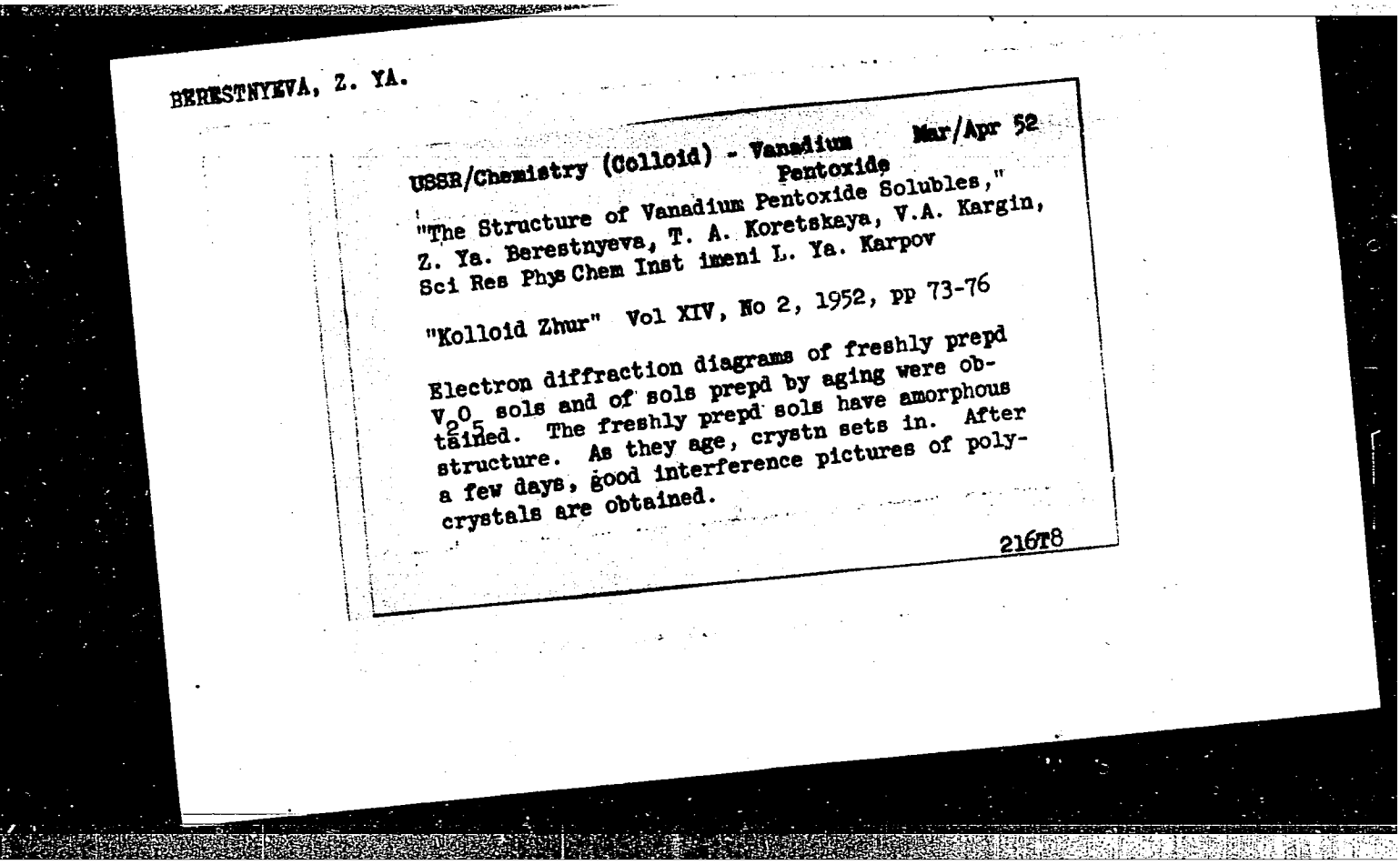
Electron-microscope study of titania sols and the mechanism of formation of colloidal particles. Z. Ya. Berestneva, G. A. Korotakaya, and V. A. Kargin (Karpov Inst. Phys. Chem., Moscow). *Kolloid. Zhur.* 12, 338-41(1950); cf. C.A. 42, 7132g.—Sols obtained by mixing $TiCl_4$ with cold H_2O contain originally amorphous spheres (e.g. 0.2 μ) which then crystallize within some hours. When $TiCl_4$ is mixed with hot water, cryst. particles form at once. The crystals seem to be mixts. of rutile, anatase, and brookite. A new electronographic study showed that the spacings of *rutile* are *a* 4.58, *c* 2.95 A., *anatase* *a* 3.73, *c* 9.37 (contrary to literature data), and *brookite* *a* 9.20, *b* 5.44, *c* 5.14.

J. J. Bikerman

CA

3

The mechanism of formation of colloidal particles of aluminum hydroxide. Z. Ya. Berestneva, T. A. Kuretskaya, and V. A. Kargin (Karpov Inst. Phys. Chem., Moscow). *Kolloid. Zhur.* 13, 323-6(1951); cf. C.A. 45, 9238.—$Al(OH)_3$ sols were prepd. by mixing of $AlCl_3$ and NH_4OH solns. and subsequent dialysis. Fresh sols contained spheres (visible in an electron microscope) showing no crystallinity (electron-diffraction patterns). A few days later the sol contained honeycomb structures. Some weeks later, microcrystals of hydrargillite were identified. The crystn. process was more rapid than for SiO_2 but slower than for TiO_2 sols. J. J. Bikerman



BERESTNYEVA, Z. YA.

USSR/Chemistry (Colloid) - Vanadium Pentoxide Mar/Apr 52

"The Structure of Vanadium Pentoxide Solubles," Z. Ya. Berestnyeva, T. A. Koretskaya, V.A. Kargin, Sci Res Phys Chem Inst imeni L. Ya. Karpov

"Kolloid Zhur" Vol XIV, No 2, 1952, pp 73-76

Electron diffraction diagrams of freshly prepd V_2O_5 sols and of sols prepd by aging were obtained. The freshly prepd sols have amorphous structure. As they age, crystn sets in. After a few days, good interference pictures of polycrystals are obtained.

216T8

BRESTKEVA, Z. Ya.

Chem. Abst.
Vol 48, No. 9
May 10, 1954

General and Physical Chemistry

The mechanism of formation of colloidal particles of a gold sol., Z. Ya. Brestneva, T. A. Koretskaya, and V. A. Kargin, *Colloid J.* (U.S.S.R.) 14, 427-32(1952)(Engl. translation).—See *C.A.* 47, 3088d. H. L. H.

(3) Chem

No. 6 8-31-54

L 24494-66 EWT(m)/EWP(j) IJP(c) RM

ACC NR: AP6006972 SOURCE CODE: UR/0190/66/008/002/0204/0206

AUTHORS: Kazhdan, M. V.; Dyumayeva, T. N.; Berestneva, Z. Ya.; Kargin, V. A.

ORG: Physico-Chemical Institute im. L. Ya. Karpov (Fiziko-khimicheskiy institut)

TITLE: Investigation of the structure-formation processes occurring during rubber breakdown

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 2, 1966, 204-206

TOPIC TAGS: vulcanization, rubber, molecular structure, electron microscope/ UEMB-100 electron microscope, GYeM-5U electron microscope

ABSTRACT: Structure-formation processes occurring during the breakdown of vulcanizers of noncrystallizing sodium butadiene rubbers and of crystallizing neoprenes AC and W were investigated by electron microscopy using instruments UEMB-100 and GYeM-5 U. It was established that new orientation processes take place in disintegrated vulcanizers, leading to supramolecular structures different from those in the original rubber. The rate of structure-formation processes in disintegrated rubbers is inversely proportional to the density of the vulcanization network. The experimental data indicate that, from the structural point of view, vulcanization is a heterogeneous process. Orig. art. has: 6 figures.

SUB CODE: 07, 11/ SUBM DATE: 05Feb65/ ORIG REF: 002

Card 1/1 ZC

UDC: 678.01:53+678.43

Electron-microscopic study of alumina-silica gels. Z. Ya. Berestneva and V. A. Kargin (L. Ya. K... Phys. Chem., Moscow). Kolloid. ... cf. C.A. 46, 2375f.—Gels (I ... $NO_3)_3$ with 0.1% Na silicate in ... spheres (of, apparently, an A... amorphous for 2 yrs. Gels II ... Al_2O_3 and SiO_2 contained sep. particles ... I, after heating to 800°, formed honeyc... iar to those of a clay from the bottom of the ... Straits. II gave a microcryst. pattern after treatment at ... in *Colloid J. U.S.S.R.* 17, 181-4(1955)(Engl. translation).

J. ...

4

USSR

10128* Mechanism of the Formation of Colloidal Particles. O mekhanizme obrazovaniia kolloidnykh chastits. (Russian.) Z. Ia. Berestneva and V. A. Kargin. *Uspekhi Khimii*, v. 24, no. 3, 1955, p. 249-259 + 4 plates

Method of study includes use of electron microscope. Sols of titanium dioxide, silicic acid, arsenic sulfide, aluminum hydroxide, vanadium pentoxide, and gold. Micrographs. 53 ref.

BERESTNEVA, Z. Ya.

ARIPOV, E.; BERESTNEVA, Z.Ya.; KARGIN, V.A.

Electron microscopic study of structure formation in loess. Part 2. Effect of loess components on structure formation. Koll. zhur. 19 no.1:17-23 Ja-F '57. (MLRA 10:4)

1. Fiziko-khimicheskiy institut im. L.Ya. Karpova, Moskva.
(Loess) (Electron microscopy)

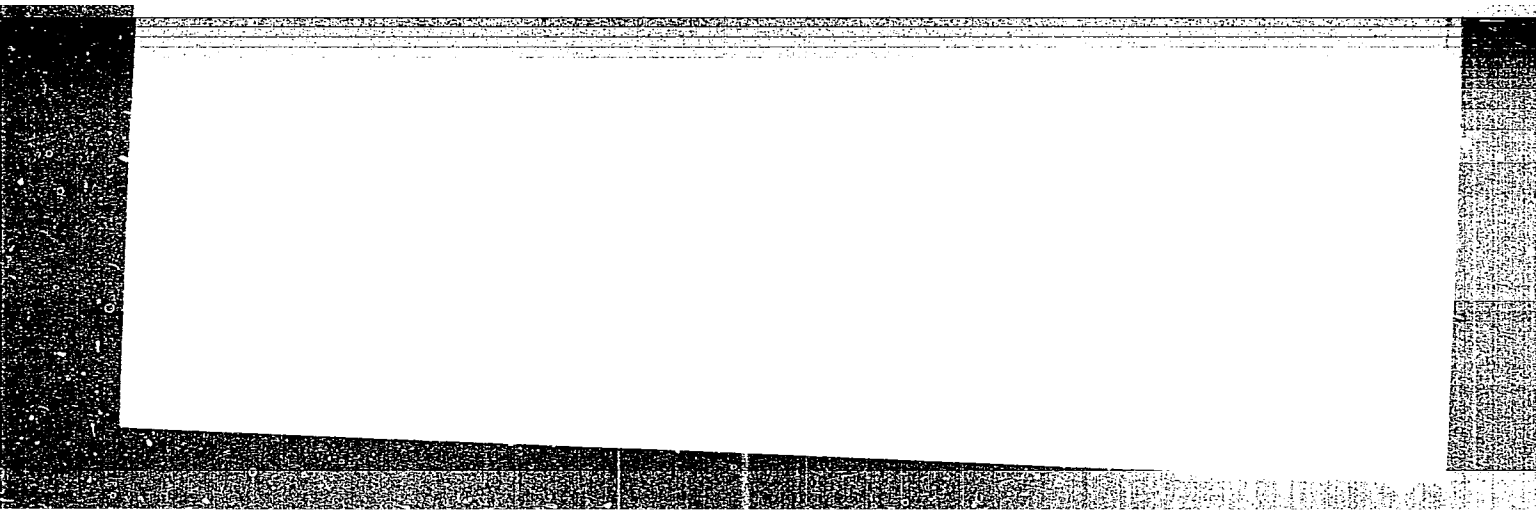
BERESTNEVA, Z.Ya.; SLONIMSKIY, G.L.

On the fiftieth birthday of Valentin Alekseevich Kargin. Koll.zhur. 19 no.2:129-130 Mr-Ap '57. (MLRA 10:5)
(Kargin, Valentin Alekseevich, 1907--)

VERESTNEVA, Z. Ya.

KARGIN, V.A.; KARYAKINA, M.I.; EERESTNEVA, Z.Ya.

The mechanism of protection of metals from corrosion by varnish coatings. Soob.o nauch.rab.chl.VKHO no.3:60-62 '55. (MIRA 10:10)
(Corrosion and anticorrosives) (Varnish and varnishing)



APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000204810014-1"

Berestneva Z. Ya.

KARGIN, V.A., akademik; BERESTNEVA, Z.Ya.; ARIPOV, E.A.

Effect of water on the formation and decomposition of clay mineral aggregates. Dokl. AN Uz. SSR no.8:21-25 '57. (MIRA 11:5)

1.Nauchno-issledovatel'skiy fuzuko-khimicheskiy institut im. L.Ya. Karpova g. Moskva.

(Clay)

ANTIPOV-KARATAYEV, I. N.; [illegible]; NICHIPORENKO, S. P.; KUKOLEVA, G. V.; OVCHARENKO, F.D SERB-SERBINA, N. N.;

"Structure formation in the colloidal chemistry of clays and peat."

Report presented at the Fourth All-Union Conference on Colloidal Chemistry, Tbilisi, Georgian SSR, 12-16 May 1958 (Koll zhur, 20,5, p.677-9, '58, Tsubman, A.B)

SOV/20-120-5-38/67

AUTHORS: Kargin, V. A., Member, Academy of Sciences, USSR, Karyakina, M. I., Berestneva, Z. Ya.

TITLE: An Investigation of the Mechanism of the Protective Action of Lacquer Coatings (Issledovaniye mekhanizma zashchitnogo deystviya lakokrasochnykh pokrytiy)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 120, Nr 5, pp.1065-1067 (USSR)

ABSTRACT: This problem is reduced to the application of the aggressive substance to the surface of the corroded metal through the film. The film is assumed to be ideally penetrable for the aggressive substance. Electrochemical methods are best suited for this study. The problem of the experimental investigation is basically that of maintaining a constant current in a system with a varying resistance. The maximum voltage employed in these experiments was 3 000 V. The current was automatically kept at 10 milliamperes. A 0.01 N soda solution served as electrolyte, a platinum plate as cathode and an iron rod covered with the lacquer to be investigated as anode. On the sample coated with lacquer only a few corrosion centers are

Card 1/3

formed. Because of the great adhesion of the lacquer coating no suitable conditions prevail at the boundary between the metal and the film for the formation of a new phase. The oxides produced dissolve in the lacquer coating, diffuse through the film and are separated at the boundary between the lacquer coating and the solution. When tests were carried out by means of the method of cathodic polarization the lacquer coating separated from the metal in places where the adhesion is smallest. Thus little bubbles are formed, the continuity of the lacquer coating, however, is maintained. The method developed in this investigation permits to estimate the protective effect of lacquer coatings. There are 6 references, 3 of which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy fiziko-khimicheskiy institut im. L. Ya. Karpova
(Physical and Chemical Scientific Research Institute imeni L. Ya. Karpov)

An Investigation of the Mechanism of the Protective Action of Lacquer Coatings SOV/20-120-5-38/67

SUBMITTED: March 1, 1958

1. Varnishes--Test methods 2. Varnishes--Electrochemistry
3. Metal--Coatings 4. Anticorrosive coatings--Effectiveness

Card 3/3

11. СЕКЦИЯ ЭЛЕКТРОННОЙ МИКРОСКОПИИ

Руководитель академик А. А. Лебедев

12 июня

(с 10 до 16 часов)

Н. А. Степанов,
В. В. [illegible]

Электронный микроскоп УЭМВ-100

А. И. Кобозев,
Ю. М. Кушнир

Универсальный электростатический анализатор энергии на 75 кв и некоторые вопросы его применения.

Н. Н. Попов

Электронный микроскоп-электронограф с ускоряющим напряжением 400 кв и перспективы использования электронов повышенных скоростей для исследования структуры вещества.

Н. Г. [illegible]

О возможности применения электронного микроскопа для исследования объектов в атмосфере газов и в жидком состоянии.

38

12 июня

(с 18 до 22 часов)

З. Г. [illegible]

Использование электронной микроскопии для исследования полимерных систем и высокомолекулярных соединений.

Ю. А. Скаков

Электронно-микроскопические исследования структурных несовершенств в металлах и сплавах.

12. СЕКЦИЯ РАДИОВЕЩАНИЯ, ЭЛЕКТРОАКУСТИКИ И ЗВУКОЗАПИСИ

Руководитель И. Е. Горон

9 июня

(с 10 до 16 часов)

В. А. [illegible]

Способы повышения устойчивости работы систем уплотнения речи.

Г. С. [illegible]

Исследование распределения во времени мгновенных значений стационарных сигналов.

39

report submitted for the Centennial Meeting of the Scientific Technological Society of Radio Engineering and Electrical Communications im. A. S. Popov (VNORIE), Moscow, 8-12 June. 1959

BEREZHNOVA, Z. YA.

15(6)

AUTHOR: Rebinder, P. A., Academician SOV/30-59-1-5/57

TITLE: New Trends of Colloid Chemistry (Novyye puti razvitiya kolloidnoy khimii)

PERIODICAL: Vestnik Akademii nauk SSSR, 1959, Nr 1, pp 44-51 (USSR)

ABSTRACT: At present, colloid chemistry plays an especially important part in political economy as it is a physical-chemical science concerning substances of modern engineering. It is of great practical importance that at present it is possible to carry on uninterrupted transitions from lyophobic to lyophilic systems. Thus, it is possible to obtain technically important substances with the required structural-mechanical properties. The theory of highly molecular substances and their solutions has developed into an independent branch of colloid chemistry. The vitality of modern colloid chemistry is proved by the fact that it produces many new independent branches of science. Further, the author describes the course of the 4th All-Union Conference of Colloid Chemistry which took place in Tbilisi on May 13-16, 1958. It was organized by the Otdeleniye khimiches-

V. A. Kargin, Z. Ya. Berestneva described the synthesis of aluminum-silicon jelly of crystalline structure.

V. N. Tsvetkov et al. examined the optical properties of macromolecular solutions and their structural peculiarities.

P. A. Dogadkin and collaborators reported on questions of compatibility of polymers and their solutions.

V. A. Kargin, P. I. Zubov and collaborators discussed the process of gelatin formation and its role in sticking processes.

S. M. Lipatov, S. I. Meyerson referred to the coincidental results of thermochemical and dilatometrical examination methods of the transition of gelatine jelly into a liquid solution at a rise in temperature.

A. I. Yurzhenko and collaborators (L'vov), P. M. Khomikovskiy reported on the clarification of polymerization processes in the state of dispersion.

B. Ya. Yampol'skiy, Ma Kun-ch'in, S. S. Voyutskiy, A. P. Pisarenko and collaborators examined the process of the influence of active fillers on the processes of structural formation of polymers.

A. V. Dumanskiy with his school, A. A. Trapeznikov, G. V. Vinogradov and collaborators examined the properties of soap solutions in connection with their structural peculiarities and the theory of consistent lubricants.

The reports on questions of dispersion systems in polymers showed the utility of a combination of problems of colloid chemistry and the physical chemistry of polymers. The results of the Conference indicate that, besides limited consultations on individual scientific problems, comprehensive congresses are also useful and necessary, uniting the investigators and comprising the results of achievements in wide fields of science. There is 1 Soviet reference.

Card 5/6

Card 6/6

of spontaneous dispersion of solid bodies, especially metals, [illegible] the theoretical criteria in surface-active surroundings.

V. I. Likhtman reported on the appearance of adsorptive plastification of lead and tin at normal temperatures.

L. A. Kozarovitskiy and collaborators examined the influence of rheological properties of printing colors on their behavior in the printing process.

I. I. Klopovets reported on the regulation of crystallization and coagulation structures in the production of best table-butter.

KARGIN, V.A.; KONSTANTINOPOL'SKAYA, M.B.; BERESTNEVA, Z.Ya.

Study of the wettability of solid surfaces by polymers. Vysokom.soed. 1 no.7:1074-1076 Jl '59. (MIRA 12:11)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova.
(Wetting)

[redacted], V. A.

"The Crystallization Mechanism of Colloid Titanium Dioxide."

report presented at the Section on Colloid Chemistry, VIII Mendeleyev Conference of General and Applied Chemistry, Moscow, 16-23 March 1959.
(Koll. Zhur. v. 21, No. 4, pp. 509-511)

S/190/60/002/011/020/027
B004/B060

AUTHORS: Konstantinopol'skaya, M. B., Berestneva, Z. Ya., Kargin, V. A.

TITLE: Spiral Structures of Polyethylene

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 11, pp. 1715 - 1716

TEXT: The authors used electron microscopic analyses to study the structural modifications taking place in polyethylene, when more concentrated solutions were used in comparison with previous experiments. A solution of 0.2% polyethylene in toluene was heated to 110°C and applied onto a colloxyline base. The pictures were taken by a УЭМБ-100 28 (UEMB-100) electron microscope. Unlike previously described processes (Refs. 1-4), wherein first packets, then planes, and finally crystals were formed, in the experiment concerned the authors first observed fibril structures passing over into planes giving rise in turn to spiral structures: Figs. 5-7. The appearance of these structures is explained by a reduced mobility of the individual molecular segments of

Card 1/3

the polymer due to higher concentration. There are 7 figures and 5 Soviet references.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-chemical Institute imeni L. Ya. Karpov)

SUBMITTED: May 27, 1960

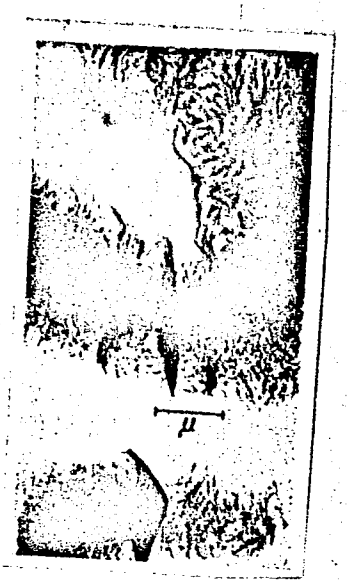


Fig.5

Fig.6

Fig.7

Card 3/3

S/069/60/022/005/003/011
B015/B064

AUTHORS: Berestneva, Z. Ya., Konstantinopol'skaya, M. B., Kargin, V. A.

TITLE: The Crystallization Mechanism of Colloidal Titanium Oxide

PERIODICAL: Kolloidnyy zhurnal, 1960, Vol. 22, No. 5, pp. 557-559

TEXT: In continuation of a previous paper (Ref. 1) the authors investigate the effect of surface tension at the interface between colloidal particles and intermicellar liquid on the crystallization of titanium dioxide. Since no direct method of examining the surface tensions of such systems is available, surface tension was changed by changing the composition of the intermicellar liquid, and the crystallization process was observed by a combination of electron microscopy and electron diffraction studies. The colloidal solutions were obtained by adding titanium tetrachloride to doubly distilled water at a temperature from -2° to +1°C, and the sol was concentrated with an ultracentrifuge. Practically all electrolytes could be removed from the intermicellar liquid by repeating this operation (between -2° and +21°C, five to ten times). It was found that the removal of the electrolytes from the intermicellar liquid slows

down the rate of crystallization of colloidal titanium dioxide. After the removal of electrolytes, the usual electron microscopic images (Fig.1) were obtained for the spherical colloidal titanium dioxide particles. If, instead of water, an organic solvent (benzene, toluene, or heptane) was used, electron microscopic images were obtained (Fig. 2) that differed only in that the particles did not aggregate. Thus, it may be assumed that the surface tension at the interface does not exert an essential influence upon the crystallization of the colloidal titanium dioxide. On the other hand, it was found that an addition of water to systems produced in organic solvents has a strong influence upon the rate of crystallization. There are 2 figures and 1 Soviet reference.

ASSOCIATION: Nauchno-issledovatel'skiy fiziko-khimicheskiy institut im. L. Ya. Karpova, Moskva
(Scientific Research Institute of Physical Chemistry imeni L. Ya. Karpov, Moscow)

SUBMITTED: February 25, 1960

26301
S/190/61/003/008/016/019
B110/B208

15.8060

AUTHORS: Konstantinopol'skaya, M. B., Berestneva, Z. Ya., Kargin, V.A.

TITLE: Spiral structures of polyethylene. II

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 8, 1961, 1260 - 1264

TEXT: In a previous paper by the authors (Ref. 1: Vysokomolekulyar. soyed., 2, 1715, 1960) low-pressure polyethylene was shown to form spiral structures under certain conditions. In the present paper they studied various modifications of PE with respect to spiral structure. Low-pressure PE, high-pressure PE, and radiation PE were used. Xylene solutions of PE (0.1 and 0.01%) were prepared and the boiling solution was applied to colloxylin bases heated to 100 - 110°C. The study was carried out by means of a УЭМБ-10 (UEMB-10) electron microscope. [Abstracter's note: the electron microscope photographs are not reproducible.] The following was found: (1) Some parallel spirals appear with low-pressure PE. (2) When the solution was diluted, spherolite crystals were observed in addition to spirals. (3) Laminas appear in addition to spirals. (4)

Card 1/2

26303

S/190/61/003/008/016/019
B110/B208

Spiral structures of...

Stretching of the crystals gives rise to filamentous structure. (5) High-pressure PE and radiation PE show a different structure as compared with low-pressure PE: (a) distinctly pronounced spherolites, (b) band structure, which may either appear separately or in spherolite form. A paper by P. V. Kozlov, N. F. Bakeyev, Li P'ang- T'ung, A. S. Kaftanova (Ref. 2: Vysokomolek. soyed., 2, 421, 1960) is mentioned. The authors thank A. D. Abkin, P. M. Khomikovskiy, and N. V. Makletsova for the supply of radiation PE. There are 12 figures and 2 Soviet references.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova
(Physicochemical Institute imeni L. Ya. Karpov)

SUBMITTED: December 23, 1960

Card 2/2

S/020/62/144/005/012/017
B124/B138

AUTHORS: Kargin, V. A., Academician, Zhuravleva, V. G., and Berestneva, Z. Ya.

TITLE: Electron microscopic study of rubber structures

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 144, no. 5, 1962, 1089-1090

TEXT: Contrary to current views of elastomers as systems consisting of entangled molecular chains, electron-microscopic analysis of thin natural and synthetic rubber (SKB-30 (SKB-30)) films showed that they consist of a disordered arrangement of bands which are shown to be the structural elements of the film. The nature of the pattern remains the same with a different support. When the film is stretched, fine fibers appear which are the elementary structural units of rubber, i.e., bundles of chains. At -5°C, structures are produced with a higher degree of order. There are thus ordered regions in rubbers just as in other amorphous polymers. There is 1 figure. The English-language references are: V. A. Kargin, J. Pol. Sci.,30, 247 (1958); C. E. Hall, E. A. Hauser et al., Ind. and Eng. Chem., 36, 7, 634 (1944); E. A. Hauser, Rubber Age, 78, 6, 881 (1956);

Card 1/2

Electron microscope study...

S/020/62/144/005/012/017
B124/B138

E. A. Hauser, Rubber Age, 78, 5, 713 (1956).

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-chemical Institute imeni L. Ya. Karpov)

SUBMITTED: March 1, 1962

Card 2/2

ZHURAVLEVA, V.G.; BERESTNEVA, Z.Ya.; KARGIN, V.A., akademik

Electron microscope study of the structure of isotactic polybutylene. Dokl. AN SSSR 146 no.2:366-367 S '62.
(MIRA 15:9)

1. Fiziko-khimicheskiy institut im. L.Ya. Karpova.
(Butene) (Polymers)

[illegible] IN POLYETHYLENE (USSR)

Konstantinopol'skaya, M. B., Z. Ya. Berestneva, and V. A. Kargin
Kolloidnyy zhurnal, v. 25, no. 2, Mar-Apr 1963, 174-177.
S/069/63/025/002/004/010

The influence of temperature, type of solvent, and solution concentration on the structures formed in low-pressure polyethylene (PE) has been studied by the electron microscope method at the Physicochemical Scientific Research Institute imeni L. Ya. Karpov. The experiments were conducted with PE of an average mol. wt. of 190,000 to 1,000,000 (in this range mol. wt does not affect structure). The results of the study are given in the form of electron micrographs. The influence of temperature on structure was studied by depositing a PE film from a boiling 0.01% solution of PE in xylene onto a collodion substrate heated to 20 to 120°C. It was shown that 1) at 20 to 70°C such complex secondary structures as planes, spirals, and crystals are

Card 1/2

FORMATION OF SECONDARY STRUCTURES [Cont'd]

S/069/63/025/002/004/010

formed; 2) above 100°C mainly simple secondary structures (bundles and ribbons) are observed; and 3) the greatest variety of structures is formed at 90°C. Experiments conducted with decalin and tetralin solutions of PE yielded similar results; at 90°C α-chloronaphthalene solutions of PE yielded only complex secondary structures, owing to the slower evaporation of the solvent. The character of the structures formed was shown to be almost independent of the concentration of the solution in the 0.001 to 0.1% concentration range. The formation of structures proceeded very rapidly (in a matter of seconds). It is believed that the solutions contain, in addition to dissolved molecules, bundles which are the main structural units of the secondary structures. Thus, in the process of structure formation in solution the character of secondary structures must depend on such factors as solution cooling rate and solvent evaporation rate, which favor or impede the development of complex structures.

[BAO]

Card 2/2

L 18659-63 EWP(j)/EWT(m)/BDS AFFTC/ASD Pc-4 RM/MAY

ACCESSION NR: AP3005441 S/0020/63/151/005/1108/1109 64

AUTHOR: Konstantinopol'skaya, M. B.; Berestneva, Z. Ya.; Kargin, V. A. (Academician) 63

TITLE: Fibrillar single crystals in polyamide copolymers

SOURCE: AN SSSR. Doklady*, v. 151, no. 5, 1963, 1108-1109

TOPIC TAGS: crystalline structure, crystallization, crystalline structure formation, secondary structure, fibril, fibrillar structure, fibrillar single crystal, copolymer, caprone-nylon-sebacamide copolymer, electron microscope, JEM-5J, ethylene glycol, substrate, carbon substrate, temperature effect, crystal nucleus, band-like formation, chain structure, lamellar crystal, amorphous fibril, caprone, nylon, sebacamide

ABSTRACT: Crystalline-structure formation in the caprone-nylon-sebacamide copolymer has been studied with the JEM-5J electron microscope. Specimens were prepared by applying a boiling solution of the copolymer in ethylene glycol onto carbon substrates whose temperatures varied from 20 to about 180C. Fibrillar structures were formed at all temperatures in this range. At 90C,

Card 1/3

well developed fibrillar crystals were formed; at 100C, crystal nuclei with fibrils building up on them; and at higher temperatures, less regular band-like formations. The entire process of fibrillar-crystal formation was thus observed. The effect of temperature on the crystallization of the copolymer is explained by the fact that the nature of the secondary structures formed depends on the degree of supersaturation of the solution. The latter is determined by the change in copolymer solubility with temperature and by the rate of evaporation at a given temperature. From this study, and from previous studies by Kargin and his associates, it is concluded that all peculiarities of structure formation which are dependent on the type of chain structure can be observed. Thus, regular polyolefins readily form lamellar crystals. In polystyrene, which has less regular chains and considerable molecular interaction, crystallization is slowed down and the entire process of structure formation, from amorphous fibrils to lamellar crystals, can be observed. In polyamide copolymers, which have irregular chains and exhibit a high degree of molecular interaction, only fibrillar crystals are formed, by a direct building up of fibrils. In polymers with a rigid cellulose-type chain, structure formation does not proceed beyond the amorphous-fibril stage. Orig. art. has: 3 figures.

L 18659-63
ACCESSION NR: AP3005441

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physicochemical Institute)

SUBMITTED: 5May63	DATE ACQ: 06Sep63	ENCL: 00
SUB CODE: CH, MA	NO REF SOV: 003	OTHER: 001

Card 3/3

SAFRONOV, N.Ya.; BERESTNEVA, Z.Ya.; KARGIN, V.A.

Thermal decomposition of benzene and heptane on an incandesced molybdenum wire. Koll. zhur. 25 no.4:468-471 Jl-Ag '63. (MIRA 17:2)

1. Fiziko-khimicheskiy institut imeni Karpova i Nauchno-issledovatel'skiy institut shinnoy promyshlennosti, Moskva.

KARGIN, V.A., akademik; EFENDIYEV, A.A.; BERESTNEVA, Z.Ya.

Electron microscope study of the structure of a copolymer of diethyl ester of vinylphosphinic acid and acrylic acid having complex-forming properties. Dokl. AN SSSR 155 no.6:1401-1403 Ap '64. (MIRA 17:4)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova.

KONSTANTINOPOL'SKAYA, M.B.; BERESTNEVA, Z.Ya.; KARGIN, V.A.

Effect of the molecular weight on the cross-linking of low pressure polyethylene. Part 4. Vysokom.soed. 5 no.11:1702-1705 N '63. (MIRA 17:1)

1. Fiziko-khimicheskiy institut imeni L.Ya.Karpova.

[redacted], V. G.; KAZBAN, M. V.; KARGIN, V. A.

"Electronmicroscopic study of structure in rubbers."

report submitted to 3rd European Regional Conf, Electron Microscopy, Prague, 26 Aug-3 Sep 64.

KARGIN, V.A.; SAFRONOV, N.Ya.; BERESTNEVA, Z.Ya.

Thermal decomposition of benzene over a heated molybdenum wire studied with the aid of rapid cinematography. Koll.zhur. 26 no.2:198-199 Mr-Ap '64. (MIRA 17:4)

1. Fiziko-khimicheskiy institut imeni Karpova i Nauchno-issledovatel'skiy institut shinnoy promyshlennosti, Moskva.

ACCESSION NR: AP4037286 S/0190/64/006/005/0906/0909

AUTHOR: Kalashnikova, V. G.; Kazhdan, M. V.; Berestneva, Z. Ya.; Kargin, V. A.

TITLE: Electron microscopic study of the structure of rubbers. II

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 5, 1964, 906-909, and inserts between p. 906 and 907

TOPIC TAGS: natural rubber, sodium butadiene rubber, butadiene styrene rubber, polychloroprene rubber, stereoregular isoprene rubber, stereoregular butadiene rubber, rubber structure, ribbon rubber structure, fibril rubber structure, spherulite rubber structure, spiral rubber structure, rubber elasticity, rubber failure, rubber structure formation

ABSTRACT: The structure of and structure formation in rubbers have been studied by means of the electron microscope. Experiments were conducted with natural, sodium butadiene (SKD), butadiene-styrene (SKS), polychloroprene (Nairit A; neoprenes AS and N), and stereoregular isoprene (SKT) and butadiene (SKD) rubbers. It

Card 1/2

ACCESSION NR: AP4037286

was shown that the ribbon structure, as a first step in the structure formation, is inherent in almost all rubbers. It was suggested that the elastic properties of elastomers are due to their ribbon structure. Development of more perfect structures, such as fibrils, spherulites, and spirals, was observed in natural and polychloroprene rubbers. Stretching of thin rubber films results in their rupture into bands parallel to the direction of stretch; the structural formations first orient themselves perpendicularly to the direction of the stretch and then break down. Orig. art. has: 5 figures.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Varpova (Physicochemical Institute)

SUBMITTED: 24Jun63 DATE ACQ: 09Jun64 ENCL: 00

SUB CODE: MT NO REF SOV: 004 OTHER: 001

Card 2/2

KARGIN, V.A., akademik; EFENDIYEC, A.A.; BERESTNEVA, Z. Ya.

Spontaneous formation of large oriented structures in a non-regular copolymer of the diethyl ester of vinylphosphinic acid and acrylic acid. Dokl. AN SSSR 157 no.1:125-126 Jl '64 (MIRA 17:8)

1. Fiziko-khimicheskiy institut im. L. Ya.Karpova.

KALASHNIKOVA, V.G.; KAZHDAN, M.V.; BERESTNEVA, Z.Ya.; KARGIN, V.A., akademik

Electron microscope study of structural changes taking place during the thermal vulcanization of chloroprene rubbers. Dokl. AN SSSR 158 no.4:939-941 O '64.

(MIRA 17:11)

1. Fiziko-khimicheskiy institut im. L.Ya. Karpova.

L 1428-66 EWT(m)/EPF(c)/EWP(j)/T RPL WW/RM

ACCESSION NR: AP5023366 UR/0020/65/164/001/0112/0114

AUTHOR: Kargin, V. A. (Academician); Konstantinopol'skaya, M. B.; Terteryan, R. A.; Berestneva, Z. Ya.

TITLE: Nature of crystalline elastic copolymers of ethylene

SOURCE: AN SSSR. Doklady, v. 164, no. 1, 1965, 112-114 and insert facing page 97

TOPIC TAGS: morphology, copolymer, crystalline polymer, elastomer, ethylene, vinyl acetate

ABSTRACT: A study has been made of the effect of morphological forms on the properties of crystalline elastic copolymers. The experiments were conducted with ethylene—vinyl acetate copolymers with various ratios of components. The dependence of the crystallinity and of mechanical properties of the copolymers on vinyl acetate group content was determined first. The results are given in Fig. 1 of the Enclosure. An electron microscopic study of the copolymers was conducted next. It was shown that in the range of the optimum mechanical properties (8—20 mol% vinyl acetate groups), the copolymers contain no higher morphological forms (spherulites) but only such elementary formations as fibrils and sheaves together with spherulite fragments. It is suggested that the optimum elastic properties are imparted to the

Card 1/3

L 11428-66

ACCESSION NR: AP5023366

3

copolymers by linear mobile structures (fibrils and sheaves) and that spherulite fragments produce a self-reinforcing effect on the system. Orig. art. has: 2 figures. [BO]

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physical Chemistry Institute)

SUBMITTED: 26Apr65 ENCL: 01 SUB CODE: OC,MT

NO REF SOV: 006 OTHER: 002 ATD PRESS: 4097

Card 2/3

L 11428-66
ACCESSION NR: AP5023366 ENCLOSURE: 01

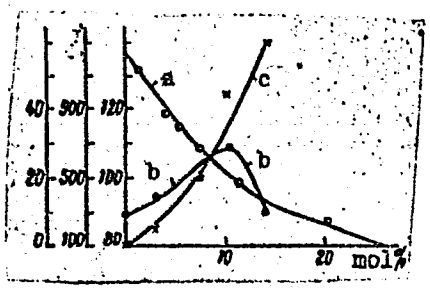


Fig. 1. Dependence of the crystallinity (a), tensile strength (b), and elongation of the copolymers of ethylene and vinyl acetate on the content in vinyl acetate groups

Card 3/3

RYABOVA, L.G.; BERESTNEVA, Z.Ya.; PRAVIKOVA, N.A.

Electron microscope study of turbidimetric titration of polystyrene. Vysokom.soed. 7 no.10:1796-1797 O '65.
(MIRA 18:11)

1. Fiziko-khimicheskiy institut imeni L.Ya.Karpova.

KONSTANTINOPOL'SKAYA, M.B.; KORETSKAYA, T.A.; BERESTNEVA, Z.Ya.; KARGIN, V.A.

Structure formation in regular polyamides. Vysokom. soed. 7 no.11:1927-1929 N '65. (MIRA 19:1)

1. Fiziko-khimicheskiy institut imeni L.Ya. Karpova. Submitted December 16, 1964.

ACC NR: AP6010429 SOURCE CODE: UR/0020/66/167/002/0384/0385

AUTHOR: Kargin, V. A. (Academician); Berestneva, Z. Ya.; Bogdanov, M. Ye.; Efendiyev, A. A.

ORG: Physicochemical Institute im. L. Ya. Karpov (Fiziko-khimicheskiy institut)

TITLE: The problem of ordering in amorphous polymers

SOURCE: AN SSSR. Doklady, v. 167, no. 2, 1966, 384-385

TOPIC TAGS: amorphous copolymer, ordered structure, supramolecular structure, morphological form, globule, fibril

ABSTRACT: A study has been made of the structure of the allylbarbituric acid-acrylic acid copolymer prepared by radical copolymerization. The copolymer is amorphous and noncrystallizing by virtue of its irregular structure. However, from dilute aqueous solutions (10^{-1}—10^{-2} g/100 ml; pH, 1.0) the copolymer was shown to form large ordered structures. These structures are highly oriented, exhibit marked optical anisotropy, and consist both of globular and fibrillar formations. Orig. art. has: 3 figures. [BO]

SUB CODE: 07, 11/ SUBM DATE: 02Jun65/ ORIG REF: 003/ ATD PRESS: 4221

Card 1/1 UDC: 539.213

L 27308-66 EWT(m)/EWP(j)/T IJP(c) RM

ACC NR: AP6008975 SOURCE CODE: UR/0190/65/007/011/1927/1929

AUTHORS: Konstantinopol'skaya, M. B.; Koretskaya, T. A.; Berestneva, Z. Ya.; Kargin, V. A.

ORG: Physico-Chemical Institute im. L. Ya. Karpov (Fiziko-khimicheskiy institut)

TITLE: Structure formation in regular polyamides

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 11, 1965, 1927-1929

TOPIC TAGS: polymer structure, polymer nylon, electron microscopy

ABSTRACT: The present investigation is an extension of earlier published work by M. B. Konstantinopol'skaya, Z. Ya. Berestneva, and V. A. Kargin (Vysokomolek. soyed., 7, 420, 1965). The polymorphism of 6, 6-6, and 6-10 nylons was studied as a function of the temperature and nature of solvent. The form of the crystallites was determined by means of an electron microscope. It was found that, depending on the experimental conditions, two types of crystal forms were formed, viz.: plates and fibrilles. The formation of the latter was enhanced by shortening the time of secondary structure formation, e.g. rapid evaporation of solvent, addition of precipitating agent, and recrystallization of the polymer from the melt. Several electron microscope slides are presented. Orig. art. has: 12 photographs.

SUB CODE: 11/ SUBM DATE: 16Dec64/ ORIG REF: 002

UDC: 678.01:53+678.675

Card 1/1

L 32754-66 EWP(j)/EWT(m)/T LJP(c) RM

ACC NR: AP6012706 SOURCE CODE: UR/0190/66/008/004/0569/0572

AUTHOR: Zharikova, Z. F.; Reztsova, Ye. V.; Berestneva, Z. Ya.; Kargin, V. A.

ORG: Physicochemical Institute im. L. Ya. Karpov (Fiziko-khimicheskiy institut)

TITLE: The effect of supramolecular structure in rubbers on their mechanical properties

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 4, 1966, 569-572

TOPIC TAGS: natural rubber, synthetic rubber, vulcanization, molecular structure

ABSTRACT: The dependence of the mechanical properties of structures in thiuram vulcanizates with natural rubber and synthetic polyisoprene, polybutadiene, and sodium butadiene rubbers, on its supramolecular structures was investigated. Vulcanized rubber with more ordered structure was found to possess superior mechanical properties. Change in mixing temperature (in the range of 25—70C) does not significantly affect the structure and properties of the rubber. Structure formation in thiuram polyisopreme vulcanized rubber subjected to stretching was investigated by electron microscopy. Ribbon-like structures were found to be perpendicular to the applied force during stretching of vulcanized rubbers. Orig. art. has: 4 figures and 1 table. [NT]

SUB CODE: 11/ SUBM DATE: 05Feb65/ ORIG REF: 007/

Card 1/1 UDC: 678.01:53+678.43

BERESTOV, A. I.

Akimov, M. P. and Berestov, A. I. "A comparative biocenotic analysis of the animal population of the region of the Dnieper rapids and Dnieper reservoirs in the first years of its existence," Nauch. zapiski (Dnepropetr. gor. un-t), Vol. XXXII, 1949, p. 161-76 - Bibliog: 12 items

SO: U-3850, 16 June 53, (Letopis 'Zhurnal 'nykh Statey, No. 5, 1949).

BERESTOV, A.V. (Head District Veterinary Doctor), BERESTOV, V.A. (Candidate of Veterinary Sciences), KLYAPISHEV, I.A., SHAKMAKOVA, V.I. and MAKAROV, N.V. (Veterinary Doctors), BARABOSHIN, S.A., BUCHINOV, I.N., LYAMIN, A.F., FEDOROV, Yu. I., and FILIMONOV, I. Ya. (Veterinary Medical Assistants, Ul'yanov Oblast', Terentul'sk District).

"Protein hydrolysates in dispepsia in newborn calves..."
Veterinariya, vol. 39, no. 3, March 1962 pp. 71

BERESTOV, I.F.; GOLOVINA, N.V.; PUKHAL'SKIY, I.M.

Communist labor movement in the "Smychka" Canning Plant in Rostov. Kons. i ov. prom. 18 no.11:3-5 N '63. (MIRA 16:12)

1. Rostovskaya-na-Donu vysshaya partiynaya shkola (for Berestov). 2. Konservnyy zavod "Smychka" (for Golovina). 3. Rostovskiy-na-Donu finansovo-ekonomicheskiy institut (for Pukhal'skiy).

BERESTOV, A.V. (Head District Veterinary Doctor), BERESTOV, V.A. (Candidate of Veterinary Sciences), KLYAPISHEV, I.A., SHAKMAKOVA, V.I. and MAKAROV, N.V. (Veterinary Doctors), BARABOSHIN, S.A., BUCHINOV, I.N., LYAMIN, A.F., FEDOROV, Yu. I., and FILIMONOV, I. Ya. (Veterinary Medical Assistants, Ul'yanov Oblast', Terentul'sk District).

"Protein hydrolysates in dispepsia in newborn calves..."
Veterinariya, vol. 39, no. 3, March 1962 pp. 71

BERESTOV, M.

Gor'kii and pilots. Kryl.rod. 2 no.6:5-6 Je '51. (MLRA 8:8)
(Gor'kii, Maksim, 1868-1936)

BERESTOV, M.

Wings of our motherland. Kryl. rod. 3 no.1:11-14 Ja '52.
(Aeronautics--Exhibitions) (MIRA 8:8)

BERESTOV, M.

Strict discipline is the integral quality of the Soviet man. Kryl. rod. 3 no.11:14-15 N '52. (MLRA 8:8)
(Military discipline)

BERESTOV, M.

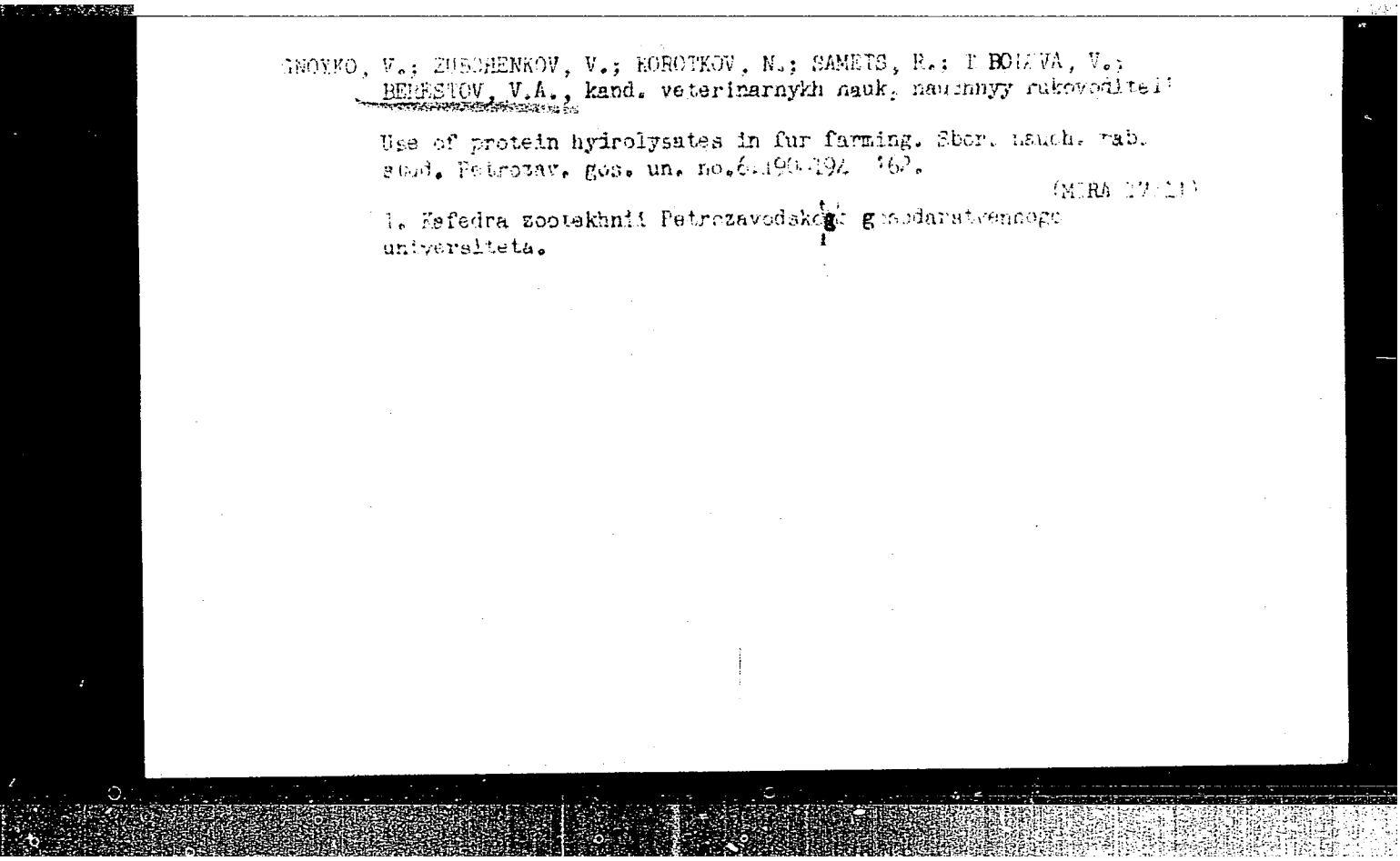
Peking plane modellers. Kryl.rod. 4 no.7:22 Jl '53. (MLRA 6:7)
(Peiping--Airplanes--Models) (Models--Airplanes--Peiping)

KHRESTOV, S., brigadir.

Working for 1958. Stroitel' no.2:8 F '57. (MIRA 10:3)

1. Kompleksnaya brigada kamenshchikov-montazhnikov tresta Stalingradgidrostroy.
(Volzhsk--Building)

BERESTOV, V. A., CAND VET SCI, "APPLICATION OF PROTEIN HYDROLYSATES (AMINOPEPTIDE-2 AND HYDROLYSIN L-103) IN ALIMENTARY KETONURIA OF PREGNANT SHEEP AND DYSPEPSIA OF NEWBORN CALVES." KAZAN', 1961. (~~MSKH~~ [MIN OF AGR] USSR, KAZAN' VET INST IM N. E. BAUMAN). (KL, 3-61, 227).



[illegible]NOVKO, V.; ZUBCHENKOV, V.; KOROTKOV, N.; SAMETS, R.; [illegible]BOLEVA, V.; BELOSTOV, V.A., kand. veterinarnykh nauk, nauchnyy rukovoditel'

Use of protein hyirolysates in fur farming. Sbor. nauch. rab. stud. Petrozav. gos. un. no.6.[illegible]196[illegible] '62.

(MIRA 17:12)

1. Kafedra zootekhnii Petrozavodskogo gosudarstvennogo universiteta.

BERESTOVA, V.I.; PANOVA, M.K.

Content of cobalt and copper in the organs and tissues of some fur-bearing animals. Uch. zap. Petrozav. gos. un. 12 no.3:121-125 '64. (MIRA 19:1)

1. Kafedra biologicheskoy i organicheskoy khimii Petrozavodskogo gosudarstvennogo universiteta imeni O.V. Kuusinena.

38276
S/190/62/004/006/002/026
B101/B110

15.9220

AUTHORS: Tager, A. A., Suvorova, A. I., Goldyrev, L. N., Yesafov, V. I., Berestova, V. L.

TITLE: Effect of the chemical structure of the plasticizer on the vitrification temperature of polymers. I. Plasticizing of polystyrene with diphenic acid and naphthalic acid esters

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 6, 1962, 803-808

TEXT: Thermomechanical curves were plotted for polystyrene (PSt) plasticized with 25 mole% of: monomethyl-, monoethyl-, and monobutyl diphenate; dimethyl-, diethyl-, ethyl-butyl-, dibutyl-, ethyl-octyl-, and diheptyl diphenate; dimethyl, diethyl, and dibutyl naphthalate. The synthesis of ethyl-butyl diphenate (b.p. 167-168°C/15 mm Hg, MR 91.89) and of ethyl-octyl diphenate (MR 110.57), now produced for the first time, will be published. The compatibility of the plasticizer with PSt was studied on the basis of the critical mixing temperature, which lay at 100-130°C with diphenic acid monoester, below room temperature (sometimes

Card 1/2

Effect of the chemical structure ...

at ~ -50°C) with esters of this acid, and at room temperature with naphthalates. Results: (1) The vitrification temperature, T_v, of plasticized PSt drops with increasing compatibility. Pure PSt had T_v = 105°C, PSt with monoesters had T_v = 40-70°C, PSt with diphenic acid diesters yielded the lowest T_v. T_v dropped with increasing length of the alkyl radical; ethyl-octyl diphenate yielded T_v = -11°C; the naphthenates showed a low effect (T_v = 9-48°C). (2) With increasing content of CH_2 links in the alkyl radical, T_v of diphenic acid diesters approaches a minimum at n_{CH_2} = 10-12, and then rises again. (3) The structure of the aromatic radical of the plasticizer affects T_v: diphenates (and phthalates) plasticize more intensively than naphthalates. There are 3 figures and 2 tables.

ASSOCIATION: Ural'skiy gosudarstvennyy universitet im. A. M. Gor'kogo (Ural State University imeni A. M. Gor'kiy)

SUBMITTED: March 21, 1961

Card 2/2

BERESTOVETSKIY, B.

Differential purchasing prices are needed for rabbit skins. Mias. ind.SSSR 32 no.6:45 '61. (MIRA 15:2)

1. Kiyevskiy myasotrest.
(Ukraine--Rabbit fur)

SKLYAR, V.A.; AVRAMENKO, K.P.; PAVLOV, D.F.; BOBKOV, N.V.; BERESTOVAYA, R.V.; SKRYPNIK, Ye.P.; SEMONENKO, Ye.T.; SERGEYEVA, V.P.; KOLYAKO, D.A., red.; SOLDATOVA, N.P., otvetstv.za vypusk; GRISHNYAYEV, B.G., tekhn.red.

[Economy of Krasnodar Territory; a statistical manual] Narodnoe khoziaistvo Krasnodarskogo kraia; statisticheskii sbornik. Krasnodar, Gosstatizdat, 1958. 233 p. (MIRA 12:2)

1. Krasnodarskiy krav. Statisticheskoye upravleniye. 2. Nachal'nik Krasnodarskogo krayevogo statisticheskogo upravleniya (for Kolyako). (Krasnodar Territory--Statistics)

LYAKHOVSKIY, V.N., kand.tekhn.nauk; BERESTOVENKO, K.M., inzh.; ZAYTSEV, R.V., inzh.; KIZ', A.M., inzh.; SIBIRKO, A.N., inzh.

Choosing the optimum red line over difficult terrain using electronic digital computers. Transp. stroi. 12 no.2:42-43 F '62. (MIRA 15:7)
(Electronic digital computers)

BERESTOVETSKIY, B.

Meat combines are being modernized. Mias. ind. SSSR 32 no.4: 17 '61. (MIRA 14:9)

1. Kiyevskiy mezhoblastnoy myasotrest.
(Kiev Province--Packing houses)

LASKORIN, B.N.; PUSHLENKOV, M.F.; BERESTOVOY, A.M.; SMIRNOV, V.F.; SHCHEPETIL'NIKOV, N.N.

Horizontal mix-and-settle extractor. Ekstr.; teor.,prim.,ap[illegible] no.2:347-360 '62. (MIRA 15:9)
(Extraction apparatus)

BERESTOVOY, A.M.; KAMINKER, D.M.; KONDUROV, I.A.

Measuring the lifetime of the levels of Eu^{152}, Ag^{107}, and Cs^{134} nuclei engendered in (n γ) reactions. Zhur. eksp. i teor. fiz. 45 no.4:892-896 O '63. (MIRA 16:11)

1. Fiziko-tekhnicheskiy institut imeni A.F.Ioffe AN SSSR.

BERESTOVOI, A. M.; KONDUROV, I. A.; LOGINOV, Yu. Ye.

"Investigation of Cascade Transitions in the Reaction Sc^{45} $(n,\gamma)Sc^{46}$."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22 Feb 64.

FTI

BERESTOVOY, A.M.; KONDUROV, I.A.; LOGINOV, Yu.Ye.

Cascade transitions in the $Sc^{45}(n,\gamma)Sc^{46}$ reaction. Izv. AN SSSR. Ser. fiz. 28 no.10:1695-1700 O '64.

Delayed transitions in Eu^{152} and Eu^{154}. Ibid.:1701-1703 (MIRA 17:12)

L 1318-66 EWT(m)/EWP(t)/ETI IJP(c) JD/HM/JG

ACC NR: AP6019633 (A,N) SOURCE CODE: UR/0048/66/030/002/0359/0366

AUTHOR: Berestovoy,A.M.; Kondurov, I.A.; Loginov,Yu.Ye.

ORG: none

TITLE: Investigation with the aid of a Ge(Li) semiconductor detector of the soft gamma radiation of the odd-odd nuclei Sc-46, Mn-56, Co-60, As-76, Ag-108, Ag-110, In-116, and Cs-134 produced in neutron capture reactions /Report, Fifteenth Annual Conference on Nuclear Spectroscopy and Nuclear Structure, held at Minsk, 25 January to 2 February 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 2, 1966, 359-366

TOPIC TAGS: gamma spectrum, gamma detector, semiconductor device, soft gamma rays, scandium, manganese, cobalt, arsenic, silver, indium, cesium

ABSTRACT: The authors have recorded the low energy (50 to 700 keV) γ-ray spectra of Sc^{46}, Mn^{56}, Co^{60}, As^{76}, Ag^{108}, Ag^{110}, In^{116}, and Cs^{134} produced in (n,γ) reactions on Sc^{45}, Mn^{55}, etc., by means of a 15 mm diameter 1 mm thick lithium drifted germanium detector of the type described elsewhere by O.A.Matveyev (Atomnaya energiya, 16, 362 (1964)). The detector was mounted near the bottom of a Dewar flask containing liquid nitrogen and shielded on the sides with a large block of lead. The detector was shielded from the target (mounted below the Dewar with 5 mm of lead. The target was

Card 1/2

ACC NR: AP6019633

4

irradiated with thermal neutrons filtered through 10 cm of lead in the care of the reactor and further moderated with 25 cm of quartz. Energy calibration was effected with the aid of monochromatic γ rays from Te^{123m} and Cs^{137}, and with γ rays from Hf^{181}. The spectra were recorded with a 256-channel pulse height analyzer. The eight spectra are presented graphically, compared with the findings of other investigators and discussed. The present findings were mostly in agreement with those of other authors. In many cases improved energy evaluations were obtained, owing to the high energy resolution of the semiconductor detector as compared with the scintillators frequently employed for soft γ-ray measurements. Two new lines (at 159 and 257 keV) were found in the Co^{60} spectrum, and a number of new lines were found in the Cs^{134} spectrum. The As^{76} spectrum was not in agreement with the findings of V. Cojocaru, D.Dorcioman, D.Dragomirescu and M.Cristu (Rev. Phys. Buoresti, 5, 211 (1960)). The authors thank D.M.Kaminker for support and valuable discussions, and L.V.Maslova, O.A.Matveyev, and N.B.Strokan for preparing the semiconductor counter. Orig. art. has: 7 figures and 2 tables.

SUB CODE: 20 SUBM DATE: 00 ORIG. REF: 009 OTH REF: 006

Card 2/2

L 41320-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6019606 (A,N) SOURCE CODE: UR/0048/66/030/002/0209/0213

AUTHOR: Berestovoy, A.M.; Kondurov, I.A.; Loginov, Yu.Ye.

ORG: none

TITLE: Delayed gamma transitions in Re-186 and Re-188 induced in neutron capture reactions /Report, Fifteenth Annual Conference on Nuclear Spectroscopy and Nuclear Structure, held at Minsk, 25 Jan. to 2 Feb. 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 2, 1966, 209-213

TOPIC TAGS: nuclear spectroscopy, nuclear structure, rhenium, gamma spectrum, gamma transition, half life

ABSTRACT: Delayed gamma transitions have been investigated and lifetimes of excited states have been measured in Re^{186} and Re^{188}. Small (50 mg) samples of metallic rhenium enriched in Re^{185} or Re^{187} were irradiated in the collimated thermal neutron beam from the water-moderated reactor of the Physicotechnical Institute of the USSR Academy of Sciences. The gamma rays from the irradiated samples were detected with two NaI: Tl scintillators connected into a fast-slow coincidence circuit. Half-lives were measured with the aid of a time-to-pulse height converter. Five lines ranging in energy from 63 to 255 keV were detected in the 12 nanosec delayed γ ray spectrum of Re^{186}. The half-life measured for this group of lines (of which the 63 keV line

Card 1/2

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ACC NR: AP6019606

was by far the most intense) was 11.7 ± 1.2 nanosec. In the 10 nanosec delayed spectrum of Re^{188} there were detected four lines ranging in energy from 62 to 205 keV. The 205 keV line did not appear in the 20 nanosec delayed spectrum, and its half-life was found to be 4.6 ± 0.3 nanosec. The measured half-life of the longer lived group of Re^{188} states was 7.7 ± 0.6 nanosec. The nature of the observed states is discussed and a level diagram for Re^{188} is presented. The authors thank D.M. Kaminker for valuable advice and fruitful discussions. Orig. art. has: 1 formula, 4 figures and 2 tables.

SUB CODE: 20 SUBM DATE: 00 ORIG. REF: 005 OTH REF: 007

Card 2/2

BERESTOVOY, Ye. I.

NOVIKOV, Vladimir Nikolayevich; IVANOV, Georgiy Petrovich; SAVUKOV, Vladimir Pavlovich; BERESTOVOY, Ye.I., inzhener, redaktor; BOBROVA, Ye.N., tekhnicheskiy redaktor

[Electric spark hardening of locomotive parts; practices of the Moscow depot of the Moscow-Kursk-Donbass railroad] Elektroiskrovoe uprochnenie detalei parovozov; opyt depo Moskva Moskovsko-Kursko-Donbasskoi dorogi. Moskva, Gos.transp.zhel-dor.izd-vo, 1957. 50 p. (MLRA 10:7)

(Locomotives--Repairs) (Electric spark)

SOV/137-58-11-22616

Trahslation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 11, p 114 (USSR)

AUTHOR: Berestovoy, Ye. I.

TITLE: The Effect of Welding Stresses on the Strength of Metal Structures (O vliyanii svarochnykh napryazheniy na prochnost' metallicheskikh konstruktsiy)

PERIODICAL: Byul. tekhn.-ekon. inform. M-vo putey soobshch. SSSR, Nauchno-tekhn. o-vo zh.-d. transp., 1957, Nr 10 (24), pp 93-96

ABSTRACT: The problem of the effect of welding stresses (WS) on the strength of metal structures was examined at the June 1957 conference of the coordinating committee of the Metallurgy Institute of the USSR Academy of Sciences for scientific-research work in the field of welding. The 14 reports discussed dealt with the results of experimental and theoretical work carried out by the Institute for Electrical Welding im. Ye. O. Paton, the LPI (Leningrad Polytechnic Institute im. Kalinin), the LKI (Leningrad Shipbuilding Institute), the MVTU im. Baumana (Moscow Higher Technical School im. N. Ye. Bauman), the MIIT (Moscow Institute of Railroad Engineers im. I. V. Stalin), the TsNIIMPS (Central Scientific Research

Card 1/3

Institute for Machine Building and Industrial Structures), and others. A summary of the results of the employment of welding in structural and machine-building fields is presented. Postulates are formulated for the following topics: The effect of residual WS on the strength of structural members manufactured from plastic material and being in a ductile or brittle state; the effect of the WS on fatigue strength of structural elements; the role of subsequent heat treatment of welded structures. It is noted that, under certain conditions, the residual WS may lower the local or the over-all resistance to buckling of welded members operating under compression (at certain cross-sectional shapes, flexibility values, and properties of the material); however, the investigations performed do not furnish sufficient data to evaluate quantitatively the degree of reduction in the over-all resistance to buckling resulting from various factors. The following theoretical investigations were outlined at the symposium for the future: The effect of the stress-strain and structural state of the metal in welded structures on the process of its transition into the brittle state; the effects of the nature of the field of WS and of the scale factor on the static and fatigue strength characteristics of welded structures; the effect of the WS on the sensitivity to stress concentrations and the durability of welded structures, particularly of structures made of low-alloy steel: the effect of WS on corrosion resistance of welded joints; the effect of the WS on the carrying capacity of

The Effect of Welding Stresses on the Strength of Metal Structures

structural members operating under compression; the possibilities and methods of utilizing WS for purposes of improving the durability of welded structures, etc.

V. K.

Card 3/3