APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515110018-9"

USSR/Metals Jan 49
Copper
Corrosion - Prevention

"The Mechanism for Protecting Copper by Anthraquinone From Corrosion in Sulfur Solutions," Ya. I. Frenkel', Corr Mem, Acad Sci USSR, L. G. Gindin, All-Union Inst of Avn Materials, 3 pp

"Dok Ak Nauk SSSR" Vol LXIV, No 1

Attempts to determine exactly why a certain quantity of sulfur molecules cannot penetrate an impregnated, monomolecular film of anthraquinone on a copper surface. Submitted 3 Nov 48.

26/49180

621.315.61 : 621.3.015.51 : 537.528

1767. **Formation of "bridges" in suspensions of conductors or semi-conductors in dielectrics. I. Conducting-bridge formation of aluminium in vaseline oil.** L. G. GINDIN, YA. I. FRENKEL AND O. A. SHPANSKAYA. *J. Tech. Phys., USSR*, 20, 937–43 (*Aug.*, 1950) *In Russian.*

An investigation of the behaviour in strong electric fields of low concentration suspensions of Al in vaseline oil. It was found that above a certain critical value of the field strength the electric breakdown of the suspension occurs, i.e. conversion from a dielectric to a metallic conductor, owing to formation of bridges of Al particles. The curve of the influence of $E_{crit.}$ on dispersion of Al particles was almost a straight line. If for linear particle dimension λ, $E_{crit.} = 4\,000$ V/cm, size reduction to $\lambda/5$ brings $E_{crit.}$ to 13 000 V/cm. The critical Al concentration in the oil at which bridge formation is possible rises with its dispersion. If for particle size λ the limiting concentration = 0·005%, it is 0·05% for $\lambda/5$. It is interesting that for $E > E_{crit.}$ a weak (0·05%) concentration remains a dielectric. This is due to intense turbulence of suspension between electrodes. Variation of electrode distance from 0·5 to 3·5 mm does not alter $E_{crit.}$. At distance > 3·5 mm bridges were not completed. There is a certain "induction period." Detection of bridge formation is by fall of E from ~ 4 000 V/cm to ~ 1 V/cm and interruption of particle movement.

B. P. KRAUS (h)

ASS-SLA METALLURGICAL LITERATURE CLASSIFICATION

Behavior of soap dispersions in liquid dielectrics in a constant electric field. I. N. Putilova, L. G. Gindin, and L. M. Moroz. *Doklady Akad. Nauk S.S.S.R.* 71, 81-3(1950). Formation of peculiar ribbon-shaped structures was observed in 0.1% dispersions of Ba or Zn stearate, and of Ba oleate, in aviation gasoline and in paraffin oil, in an elec. field of 7800 v./cm. between 2 Ag electrodes 0.6 mm. apart. The ribbons start at one electrode, then a fragment breaks away and attaches itself to the other electrode; the 2 fragments continue to grow until they become united. At the stage when the ribbons connect the electrodes, the elec. cond. of the dispersion is increased very considerably, which indicates that the soap ribbons possess a very high elec. cond. Structurally, the ribbons appear to be cryst. N. Thon

14

Corrosion of Metals by Cracked Gasoline and Other Unsaturated Fuels. (In Russian.) L. G. Gindin. *Doklady Akademii Nauk SSSR* (Reports of the Academy of Sciences of the USSR), new ser., v. 71, Mar. 11, 1950, p. 301-303.

Study of the above problem indicates that autoxidation is the cause of corrosion by the above substances. Data on corrosion of Zn, Cu, and Pb are charted. Methods of prevention are indicated.

USSR/Physics - Dielectrics 1 Jun 50
New Techniques

"Electric Rupture of Metal Suspensions in Liquid Dielectrics," L. G. Gindin, L. M. Moroz, I. N. Putilova, Ya. I. Frenkel', Corr Mem, Acad Sci USSR, O. A. Shpanskaya

"Dok Ak Nauk SSSR" Vol LXXII, No 4, pp 671-674

Describes apparatus used in actual studies of subject rupture. Gives purely phenomenological (gross macroscopic) description of phenomenon of rupture in metal suspensions. Theoretical analysis will appear later. Suspensions of aluminum powder in gasoline, vaseline, oil, etc., were mainly used, varying in metallic content from 0.005 to 1% (usually 0.1%). Submitted 5 Apr 50

165T102

The electrochemical nature of the corrosion of metals in liquid dielectrics. L. G. Gindin. *Doklady Akad. Nauk S.S.S.R.* **73**, 515-18(1950).—In a 1.5 *N* soln. of AcOH in isooctane, of sp. elec. concn. $\sigma = 3.3 \times 10^{-11}$ ohm^{-1} cm^{-1} under 30 kv./cm., a Mg-Fe couple shows acetate spots on the Fe spreading from its middle but stopping at a distance of ~0.2 mm. from the Fe/Mg boundary. The Mg is corroded particularly along the boundary with Fe. This corrosion pattern, wherein the periphery of the Fe is protected by the contact with Mg, indicates clearly its electrochem. nature. This is confirmed by the potential distribution, mapped under a microscope, and showing a steep fall from the Mg to the Fe potential within a narrow boundary strip about 0.5 mm. wide. Consequently, in the dielec. soln., Fe and Mg form a cell in which Mg is anodic to Fe. That these electrochem. boundary effects, observed with macrocouples, must be even much more intense with microcouples, follows from the observation that the zone of strong corrosion of Mg spreads and increases with decreasing dimensions of the electrodes. In a Fe-Mg microcouple of a diam. of 10^4 A., with a gap of ~10 A. between the 2 metals, the elec. field E in the gap is ~10^9 v./cm., and, on the surface of the microcouple, 10^{-6} to 10^{-4} v./cm. On account of the proportionality between log σ and $\sqrt{E}$, this field gives rise to a sufficiently high elec. cond. around the microcouple to set up a galvanic cell. N. Thon

GINDIN, L. G.

USSR/Physics - Dielectrics 1 Sep 50

"Mechanism Governing the Electric Rupture of Metal Suspensions in Liquid Dielectrics," Ya. I. Frenkel', Corr Mem, Acad Sci USSR, L. G. Gindin, L. M. Moroz, I. N. Putilova

"Dok Ak Nauk SSSR" Vol LXXIV, No 1, pp 49-52

Expt indicate that crit rupture voltage E_c is several 1,000 v/cm, e.g., about 4,000 v/cm for Al particles 3-5 microns. Submitted 21 Jun 50.

174T56

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515110018-9"

S

21

Heat-Treatment of Twinned Iron Crystals. R. I. Garber, I. A. Gindin, M. G. Konstantinowskii, and V. I. Startsev. (Trudy Akademii Nauk U.S.S.R., 1950, vol. 74, No. 2, pp. 343-344) [In Russian] The investigation of the influence of heat treatment on disappearance of twinned crystals of iron twinned by mechanic deformation is described.

GINDIN, L.T.

ISA

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0

537.528 : 621.3.015.51 : 621.315.61

6248. Formation of "bridges" in suspensions of conductors or semiconductors in dielectrics. II. L. O. GINDIN, L. M. MIRITZ, I. N. PUTILOVA AND YA. I. FRENKEL. *J. Tech. Phys., USSR*, 21 (*No.* 2) 143–8 (1951) *In Russian.*

See Abstr. 3550 (1951) for part I. The behaviour of a 0·1% suspension of Al in petrol in strong electric fields was investigated. The process of bridge formation between the electrodes, which determines the final breakdown of the suspension, does not depend on shape, material or surface condition of the electrodes. Viscosity and specific weight of the dispersing medium, whilst not influencing the critical or breakdown voltage of the field, E_{crit}, determines the duration of the formation time, or rate of formation, of the bridges and also their "life" after removal of the field. E_{crit} depends on the dielectric constant of the dispersing medium and on the duration of the preliminary application of the field. The length of the obtainable bridges may be 3–4 cm, and even longer in more viscous media like vaseline oil. The measured resistances of 25 bridges varied between 150 and 10 000 Ω, and the initial resistance value increases during the lifetime of the bridge, and may reach several MΩ. Comparative values of E_{crit}: petrol (ε = 1·9), 4 250; diethyl ether (ε = 4·5), 4 000; chlorobenzene (ε = 5·94), 2 250; nitrobenzene (ε = 36·5), 1 750 V. B. P. KRAUS

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

USSR/Physics - Dielectrics Aug 51

"Electric Conductivity of Liquid Dielectrics in Strong Fields," L. G. Gindin, Ya. I. Frenkel

"Zhur Tekh Fiz" Vol XXI, No 8, pp 986-993

Exmnd electric cond of hydrocarbon solns of iodine and acetic acid. It was shown that elec cond of these solns increases exponentially with potential of elec field, according to Frenkel's eq $\sigma' = \sigma_0 \exp \sqrt{eE/\epsilon kT}$, which was represented graphically as rectilinear relation between ln σ' and $\sqrt{E}$. (cf. Ya. I. Frenkel, "Technical Physics of

194T102

USSR/Physics - Dielectrics (Contd) Aug 51

USSR" 1937). Authors thank V. A. Kazakova and O. N. Shpanskaya for exptl research. Submitted 31 Jan 51.

194T102

USSR/Chemistry - Corrosion of Metals Oct 51

"Corrosion of Metals by Hydrocarbon Solutions of Carboxylic Acids," L. G. Gindin, V. A. Kazakova

"Zhur Prik Khim" Vol XXIV, No 9, pp 958-969

Subsequent to series of investigations of corrosion processes arising in oxidized cracking gasoline, investigated corrosion of Mg, Fe, and Pb by hydrocarbon (isooctane, benzene, and petr ether) solns of acetic, propionic, n-valeric, and n-caproic acids. Discusses variations of corrosion in respect to different hydrocarbons and acids. Character of salts formed in

193T27

USSR/Chemistry - Corrosion of Metals Oct 51
(Contd)

corrosion processes was found to depend on nature of metal, properties of hydrocarbons, and mol wt and concn of acids.

193T27

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515110018-9"

GINDIN, L. G.

USSR/Chemisty - Corrosion Oct 51

"Corrosion of Copper and Lead by Hydrocarbon Solutions of Iodine," L. G. Gindin, M. V. Pavlova

"Zhur Prik Khim" XXIV, No 10, pp 1026-1032

Benzene and iso-octane solns of iodine corrode copper and lead, converting the former to CuJ, the latter to PbJ_2. Iso-octane solns of iodine are more corrosive than benzene solns to lead, while both are equally aggressive in regard to copper.

190T36

K

ASM

27-16. Corrosion of Iron by Benzene Solutions of Iodine. (In Russian.) L. G. Gindin and M. V. Pavlova. Zhurnal Prikladnoi Khimii, v. 24, Nov. 1951, p. 1151-1155.

Laboratory tests; apparatus and method. It was found that FeI_2 is first formed and is then transformed to Fe_2O_3, liberating the iodine for further attack. Data are tabulated (4 ref. Fr)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515110018-9"

GINDIN, L. G.

USSR/Chemistry - Corrosion; Fuels — 21 Sep 51

"Corrosion of Metals by Hydrocarbon Solutions of Fatty Acids," L. G. Gindin, V. A. Kazakov

"Dok Ak Nauk SSSR" Vol LXXX, No 3, pp 389-392

Studies the action of benzene, isooctane, and petroleum ether solns of acetic, propionic, butyric, valeric and caproic acids on magnesium, iron, and lead. The corrosive action of 0.5N solns of acetic to caproic acids in isooctane increases with mol wt but not evenly. The rate of corrosion depends nonlinearly on the concn of the acid, and this dependence varies from one metal to another, as illustrated by curves. 210T32

GRUZIN, L. G.

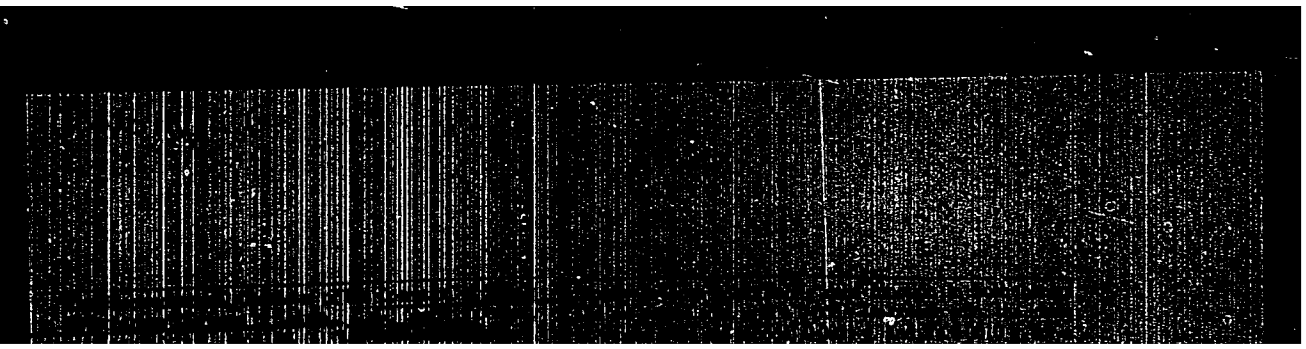
"Electric conductivity of hydrocarbon solutions of iodine." (p. 1762)

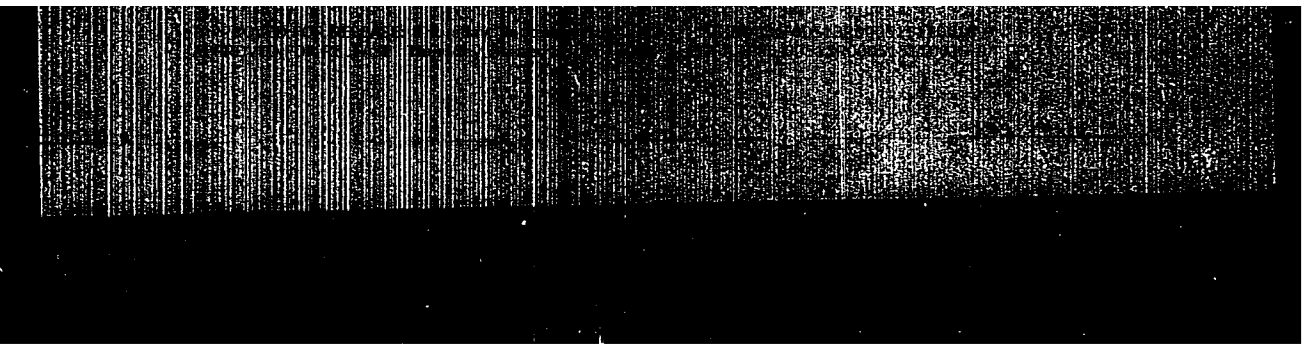
SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii), 1952, Vol. 22, No. 10

GINDIN, L. G.

Gindin, L. G., Kazakova, V. A.- "Electric conductivity of hydrocarbon solutions of saturated fatty acids." (p. 1767)

SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii), 1952, Vol. 22, No. 10





GINDIN, L. G.

USSR/Metallurgy - Corrosion, Immunizators Oct 52

"On the Immunization of Metals Against Corrosion,"
L. G. Gindin and I. N. Putilova

"Dok Ak Nauk SSSR" Vol 86, No 5, pp 973-975

Defines immunizators as substances capable of delaying beginning of corrosion process on metals in hydrocarbon solutions, increasing, sometimes by thousands of times induction period preceding evident beginning of corrosion. These substances were detected during search for corrosion inhibitors. Names several immunizators of copper, such as anthraquinone, aniline, triethanolamine, quinoline, benzyl alcohol, phthalimide, and others. Discusses application of immunizators for protection of steel in kerosene and analyzes difference in action of inhibitors and immunizators, suggesting coefficient for evaluating protective action of latter. Submitted by Acad P. A. Rebinder 28 Jun 52.

245T26

245T26

GINDIN, L.G.

USSR/Chemistry - Corrosion 21 Oct 52

"The Mechanism of Corrosion of Metals by Hydrocarbon Solutions of Sulfur," L. G. Gindin, T. A. Miskinova

"Dok Ak Nauk SSSR" Vol 86, No 6, pp 1145, 1146

Finds that the corrosion of copper by 0.1% benzene solns of sulfur is a purely chem process rather than electrochem. Presented by Acad P. A. Rebinder, 28 Jun 52.

234T32

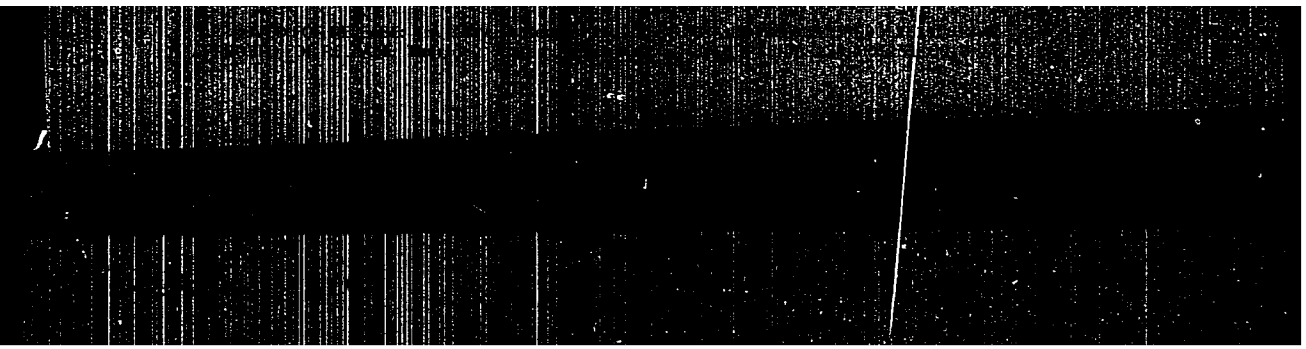
GINDIN, L.G.

59

Chemical Abst.
Vol. 48 No. 5
Mar. 10, 1954
Metallurgy and Metallography

Corrosion of steels by kerosine and methods of its inhibition. L. N. Putilova, L. G. Gindin, E. V. Artamonova, and V. A. Kozlova. *Zhur. Prikladn. Khim.* 26, 148-51(1953); cf. *C.A.* 30, 5160⁹.—Contrary to conclusions drawn from work on the corrosive action of gasoline and hydrocarbons (*C. A.* 31, 4253⁹, 1750⁸; 33, 3740⁹) kerosine was found to be corrosive to steels. The rate of corrosion for kerosines treated in different manners, in diminishing order, are as follows: kerosine (I no. 0.30); satd. with water; redistd.; treated with Na and satd. with H_2O; and treated with Na. The analysis of the products of corrosion were 90% Fe^{+++} salt of org. acids and 10% Fe_2O_3. This acid was more than the kerosine contained originally, and it continued to increase to 25 times its original content after the steel had been removed. This suggests induced autocatalytic oxidation of kerosine when in contact with steels, and shows that the rate of oxidation is greater than the rate of combination of acid formed with Fe. The addn. of a H_2O soln. of Na benzoate prevents corrosion in the water phase, but corrosion continues in the kerosine phase. Org. substances contg. Cl, S, NH_2, and OH are suggested as inhibitors (cf. *C.A.* 46, 5510*b*).

I. Bencowitz



USSR

The corrosion of metals by a saturated fuel. I. N. Pulkin, A. G. Gnusin, and L. V. Arsenenova. *Doklady Akad. Nauk S.S.S.R.* 89, 489-92(1954). — *C.A.* 49, 4188d.

The corrosion of the following metals and alloys in kerosene was studied by using the time for surface discoloration to appear: Steel 1: C 0.10, Mn 0.48, Si 0.30, S 0.045, P 0.045, Ni 0.30, Cr 0.10%. Steel 2: C 0.10, Mn 0.08, Si 0.30, S 0.045, P 0.045, Ni 0.30, Cr 0.30%. Steel 3: C 1.00, Mn 0.90, Si 0.30, Cr 1.10, W 1.00%. Steel 4: C 0.99, Mn 0.30, Si 0.30, S 0.02, P 0.027, Ni 0.37, Cr 1.45%. Steel 5: C 0.97, Mn 0.75, Si 0.30, Ni 0.40, Cr 1.03%. Steel 6: Fe 0.001% (traces of Si, Mg). Al 0.3, Mn 2.2, Zn 0.3, Cu 0.18, Ni 0.11, Si 0.38, Be 0.02, Fe 0.04%. Mg-2: Al 8.2, Mn 0.3, Zn 0.7, Cu 0.05, Ni 0.002, Si 0.2, Be 0.02, Fe 0.04%. The kerosine was characterized by d 0.819, acidity 0.50 mg. KOH, iodine no. 0.30, S content 0.05%, flash point 20°; distn. and tr. the following: d²⁰ 0.819, acidity 0.50 mg.

62

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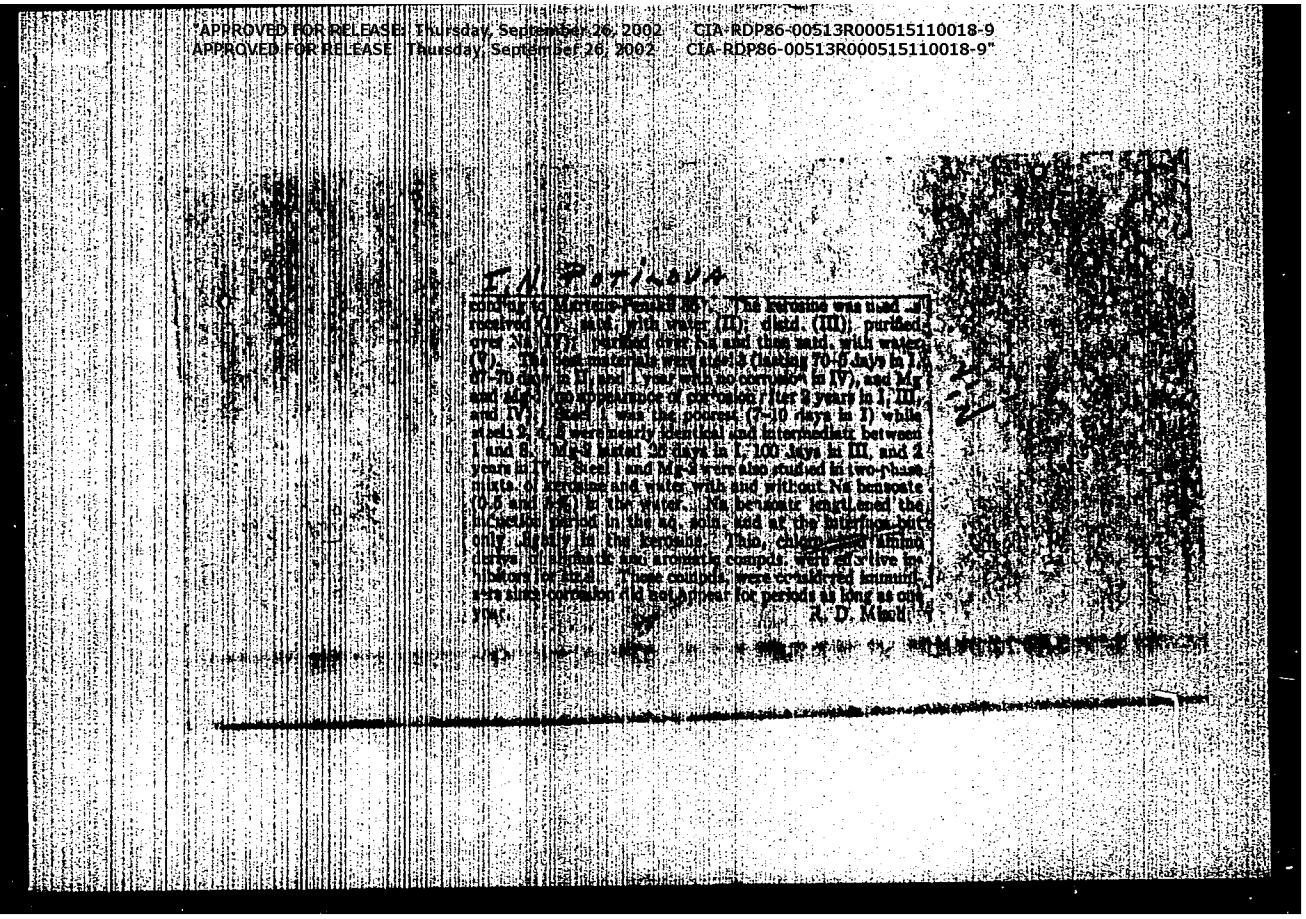
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515110018-9"



GINDIN, L.G.; MISKINOVA, T.A.; PUTILOVA, I.N.

Kinetics of the reactions of benzene solutions of certain fatty acids with sodium. Dokl.AN SSSR 106 no.4:683-686 F '56.(MLRA 9:6)

1.Predstavleno akademikom A.A.Balandinym.
(Acids, Fatty) (Sodium compounds)

GINDIN, L G

20-6-30/47

AUTHORS: Miskinova, T. A. , Gindin, L. G.

TITLE: The Kinetics of the Reactions of Sodium With Water and With the Systems: Water - Dioxane, Water - Butyric Acid (Kinetika reaktsiy natriya s vodoy i sistemami : voda - dioksan, voda - maslyannaya kislota)

PERIODICAL: Doklady AN SSSR, 1957, Vol. 117, Nr 6, pp. 1027 - 1029 (USSR)

ABSTRACT: Before the investigation of the reaction of sodium with the systems benzene - butyric acid - water it had to be determined how sodium reacts with water alone and with the systems water - butyric acid. The present paper gives the results of such investigations. Water was diluted with dioxane which does not react with sodium at room temperature. In the systems consisting of water and butyric acid the butyric acid serves as "diluting medium" of water. The method of the tests was already described in a preliminary paper by the authors (reference 1). The experiments were made at 20°C. The composition of the systems studied is given. The reaction with pure water was finished after several seconds. The data on the dependence of the reaction velocity on the concentration of water in the systems water - dioxane are illustrated by a diagram. In some such systems the reaction velocity is a linear function of the concentration of water and therefore satisfies a first order

Card 1/3

The Kinetics of the Reaction of Sodium With Water and With the Systems: Water - Dioxane , Water - Butyric Acid

equation of reaction: $dC/dt = kC$ with the constant $C = 4,7.10^{-5}$. Above a certain concentration of wat er the reaction velocity rapidly increases. Dioxane with water most probably forms a number of oxone compounds by means of the hydrogen-linkages and thereby inactivates water to the known degree. A further diagram illustrates the dependence of the velocity of the dissolution of sodium in the systems butyric acid-water on the portion of water in them. This dependence has a peculiar steplike nature. These steps are in parallel with the abscissa and correspond to a certain interval of the molecular relations between water and fatty acid within which the dissolution velocity of sodium remains constant. These steps are of different length and height. The reduction of the velocity after the third step and the subsequent rapid acceleration of the reaction also are peculiar. The peculiar nature of this reaction may only be due to the common action of water and butyric acid upon the metal. First of all water is supposed to react with sodium. But the assumption arises that butyric acid because of the hydrogen-linkage forms a number of molecular compounds with water. It is just this fact which might represent the key for the explanation of the kinetic rules found here. There are 3 figures, 1 table, and 3 references, 2 of which are Slavic.

20-6-30/47

The Kinetics of the Reactions of Sodium With Water and With the System: Water - -, Dioxane, Water - Butyric Acid

PRESENTED: June 22, 1957, by P. A. Rebinder, Academician

SUBMITTED: June 5, 1957

AVAILABLE: Library of Congress

Card 3/3

S/044/62/000/005/056/072
C111/C444

AUTHOR: Gindin, L. G.

TITLE: On the controlling of chemical reactions

PERIODICAL: Referativnyy zhurnal, Matematika, no. 5, 1962, 56, abstract 5V301. ("Probl. kibernetiki", no. 5, M. Fizmatgiz, 1961, 97-103)

TEXT: One points to the large dispersion of the results of certain chemical experiments and to the processes of divergence and convergence in connection with it. The latter ones are also observed in physics, biology etc. The phenomena and analogies are considered under the kibernetic aspect.

Abstracter's note: Complete translation.]

Card 1/1

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515110018-9"

S/194/62/000/007/044/160
D295/D308

AUTHOR: Gindin, L.G.

TITLE: On the control of chemical reactions

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika no. 7, 1962, abstract 7-2-95 yu (In collection: Probl. kibernetiki, no. 5, 1961, 97 - 103)

TEXT: The fundamental problem of chemical kinetics is the development of methods for the control of chemical reactions, enabling the automation of production. The factors governing the course of a chemical process are divided into two groups: internal, material, and external ones (temperature, pressure, radiation, mixing, etc.). Dispersion of experimental results, caused by the nature of the samples tested, occurs in physical and physico-chemical investigations. The methodological consequences of this are pointed out. Results of the author's experiments are shown as well as examples from animate nature, oecology and geology. The question is discussed of the need of differentiating cybernetics into branches, in conformity with the material nature of the systems investigated. The distinct featu-

Card 1/2

S/194/62/000/007/044/160
On the control of chemical reactions D295/D308

res of chemical cybernetics are discussed. The close connection of chemical cybernetics and chemical kinetics is emphasized. [Abstractor's note: Complete translation.]

Card 2/2

GINDIN, L. G.; MISKINOVA, T. A.; PUTILOVA, I. N.

Reaction kinetics of sodium with the single-phase systems benzene-water-butyric (or lauric) acid. Zhur. fiz. khim. 36 no.12:2587-2592 D '62. (MIRA 16:1)

1. Moskovskiy elektrotekhnicheskiy institut svyazi.

(Butyric acid) (Benzene) (Sodium)

GINDIN, L.G.; MISKINOVA, T.A.

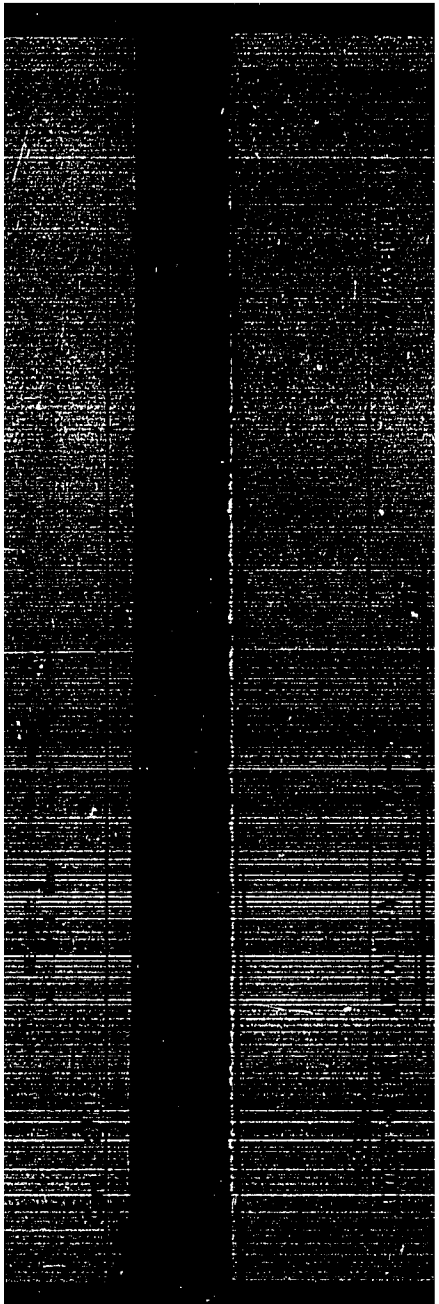
Kinetics of certain reactions involving metallic sodium. Kin. i kat. 4 no.3:480-483 My-Je '63. (MIRA 16:7)

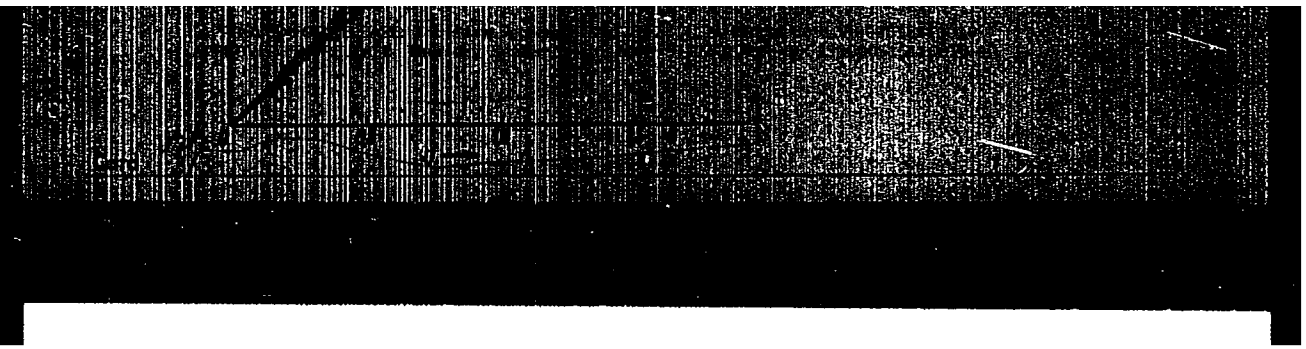
1. Vsesoyuznyy zaochnyy politekhnicheskiy institut.
(Sodium) (Chemical reaction, Rate of)

MISKINOVA, T.A.; GINDIN, L.G.

Lead corrosion in dielectric materials. Zashch. met. 1 no.2: 195-198 Mr-Ap '65. (MIRA 18:6)

1. Vsesoyuznyy zaochnyy politekhnicheskiy institut.





BALANDIN, A.A.; GINZBURG, L.G.

Kinetics of antibacterial reactions. Report No.1. Effect of some organotin compounds on pathogenic bacteria. Biofizika 10 no.6:986-992 '65. (MIRA 19:1)

1. Vsesoyuznyy zaochnyy politekhnicheskiy institut, Moskva.
Submitted March 23, 1965.

L 21191-66 EWT(1)/EWP(e)/EWT(m)/EWP(t)/EWP(k) IJP(c) JD
ACC NR: AP6008052 SOURCE CODE: UR/0020/66/166/004/0894/0896

AUTHOR: Vol'pyan, A. Ye.; Gindin, L. G.; Gul', V. Ye.

ORG: All-Union Correspondence Polytechnic Institute (Vsesoyuznyy zaochnyy politekhnicheskiy institut)

TITLE: Behavior of copper suspensions and powders in a constant electric field

SOURCE: AN SSSR. Doklady, v. 166, no. 4, 1966, 894-896

TOPIC TAGS: copper, electric conductivity, powder metal property, semiconducting film

ABSTRACT: Powdered electrolyte copper particles (2-15 μ) oxidized in air and covered with a film of semiconducting Cu_2O were suspended in B-70 airplane gasoline and the conductivity of the suspension in a constant electric field was studied. The volt-ampere characteristic obtained showed that the conductivity of the system increases smoothly with the field strength as is typical of semiconductors in strong electric fields. The conductivity was due to the contact between the individual

UDC: 54.148

Card 1/2

copper particles coated with Cu_2O. The critical voltage (value at which breakdown occurs) was found to be directly proportional to the thickness of the oxide film. This relationship can be used in rapid methods for determining the degree of oxidation of metal powders. In order to show that the conducting structures in powders do not differ from those observed in suspensions, the conductivity of copper powder immersed in gasoline was studied as a function of the depth of immersion of the electrodes; the volume of powder between the electrodes was proportional to the depth. It was found that the conductivity of the oxidized copper powder before breakdown and that of deoxidized copper powder is approximately proportional to the immersion depth whereas the conductivity of oxidized powder after breakdown is independent of the volume of powder between the electrodes. Hence, in the first and second case three-dimensional conducting structures are formed, but in the third case, a bridge is produced. The paper was presented by Academician A. A. Balandin on 6 July 1965. Orig. art. has: 3 figures.

SUB CODE: 11/ SUBM DATE: 05Jul65/ ORIG REF: 006/ OTH REF: 000

L 05130-67 EWP(k)/EWT(m)/EWP(e)/EWP(w)/EWA(d) / [illegible] JD/JW/JG

ACC NR: AP6027736 SOURCE CODE: UR/0020/66/169/004/0865/0867

AUTHOR: Gindin, L. G.; Vol'pyan, A. Yo.; Galkin, I. F.

ORG: All-Union Correspondence Polytechnic Institute (Vsesoyuznyy zaochnyy politekhnicheskiy institut)

TITLE: Structuralization of suspensions and powders of certain metals in a constant electric field

SOURCE: AN SSSR. Doklady, v. 169, no. 4, 1966, 865-867

TOPIC TAGS: powder metal, dielectric breakdown, ELECTRIC FIELD, ELECTRIC CONDUCTIVITY

ABSTRACT: Suspensions in gasoline (B-70) and gasoline-immersed powders of Fe, Ni, Co, Cr, Mo, W, Sb, Bi, Sn, Pb and Ag were studied in a constant electric field. All the metal particles were oxidized as a result of prolonged contact with air. On the basis of the behavior of their disperse systems, the metals studied are divided into four groups: (1) Pb, Bi; (2) Fe, Co, Ni, Cr, W, Mo; (3) Sn, Zn; (4) Ag, Sb. The differences between the first three groups are shown in Fig. 1, where the first group is represented by lead. The conductivity of lead up to the breakdown was too low to be measured, and became high only after the breakdown (indicated by a broken line). The second group is represented by Fe and Co, whose structures in relatively weak fields (up to the breakdown) display a conductivity obeying Ohm's law, and as the field increases, a conductivity characteristic of thin semiconducting films in strong fields.

Card 1/3 UDC: 54-148

Breakdown occurs after $E \geq E_{cr}$ is reached. The third group is characterized by a still greater increase of conductivity with rising E: whereas in Fe and Co the currents preceding the breakdown are 10^{-6} A, they amount to $\sim 10^{-3}$ A in Zn and Sn. In general, the behavior of suspensions and powders of the metals studied is determined by the nature and primarily by the conductivity of their oxide films. The formation of structures in the electric field is due to polarization forces of the particles, this polar-

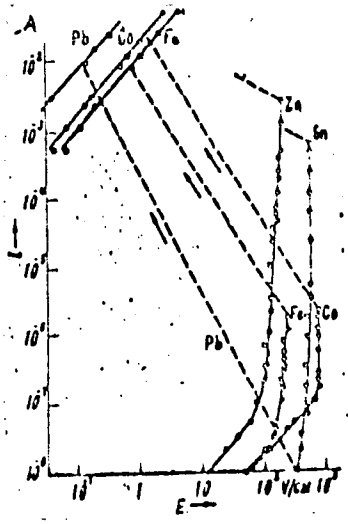


Fig. 1. Volt-ampere characteristics of structures in Fe, Fe, Co, Zn and Sn powders (broken lines indicate breakdown leading to the formation of a bridge).

ination in turn being related to the conductivity of the surface oxides. A conductivity low enough to promote the formation of more or less stable structures up to the breakdown is shown by oxides of the metals of the first three groups. The paper was presented by Academician Robinder, P. A., 11 Dec 65. Authors thank Prof. V. Ye. Gul' for his steady interest in this work and for discussing its results. Orig. art. has: 2 figures.

SUB CODE: 07,11,20/ SUBM DATE: 04Oct65/ ORIG REF: 010/ OTH REF: 004

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515110018-9"

USSR/Chemistry - Polymerization Apr 1947
Chemistry - Azeotropes

"Some Problems of Binary [illegible] Polymerization," L. M. Gindin, A. D. Abkin, [illegible], 4 pp

"CR Acad Sci" Vol LVI, No 2

Differential equations and their [illegible] describing the subject phenomenon. Study of [illegible] (extremal boiling point) mixtures and the limits to polymerization.

11T70

AUTHORS: Gindin, L. M., and Kouba, E. F.

TITLE: Quick Detection of Nickel by the Extraction Method (Ekspressnoye opredeleniye Nikelya ekstraktsionnym metodom)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, No. 1, pp. 19-20 (U.S.S.R.)

ABSTRACT: This process is based on the premise that the detection of nickel in hydroxide, oxide and metallic cobalt can be effected only after the removal of the cobalt. Cobalt is generally precipitated in the form of potassium cobaltinitrite. The final detection is done by the gravimetric or colorimetric method. The experimenters tried the method based on the difference in solubility of nickel dimethylglyoximate and cobalt in chloroform and found that the analysis took about 30 minutes. The analysis was begun by dissolving a batch of hydroxide or oxide of cobalt in a concentrated saline acid (metallic cobalt dissolved in nitric acid 1:1). The further steps of the analysis are stated, a table of results is prepared and it is found that the extraction method gives results close to those of the spectral method.

Quick Detection of Nickel by the Extraction Method

ASSOCIATION: Noril Mining and Metallurgical Combine

PRESENTED BY:

SUBMITTED:

AVAILABLE:

Card 2/2

SOV/20-122-3-44/

AUTHORS: Gindin, L. M., Bobikov, P. I., Kouba, L. F., Kopp, I. F., Nazen, A. M., Ter-Oganesov, N. A., Zagarskaya, N. I.

TITLE: Separation of Metals by the Exchange-Extraction Method (Razdeleniye metallov metodom obmennoy ekstraktsii)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 122, Nr 3, pp 41[illegible]47 (USSR)

ABSTRACT: An extraction in connection with an exchange reaction between metals is a very productive method of separation if these metals are in different phases: in an organic phase as salts and aliphatic acids and in an aqueous phase as salts of mineral acids (Ref 1). For this purpose saturated aliphatic acids with 5 and more carbon atoms were used. They fulfill a double function: a) they take part in the formation of the corresponding metallic salts (soaps), and b) they serve as solvents for these soaps being formed. Aliphatic acids are used most properly as solutions in an inactive solvent with a low specific weight. Directions for the preparation of such solutions are mentioned. The exchange reaction between the metals as mentioned earlier can be

$$({}^{1}Me^{2+})_{aqu} + ({}^{2}MeR_2)_{org} \longrightarrow ({}^{1}MeR_2)_{org} + ({}^{2}Me^{2+})_{aqu}; \quad (1)$$

^{1}M and ^{2}M denote the corresponding metals, R - the organic residue of the aliphatic acid $C_nH_{2n+1}COO'$, the indices org and aqu denote the organic and the aqueous phase. The equilibrium constant of the exchange reaction depends on the character of the exchanging metals, as was confirmed by the experiments. Metals with a small pH value ("acid" metals) mainly pass into the organic phase, metals with a high pH value, however, (more alkaline metals) into the aqueous phase. In many cases reaction (1) takes place almost completely ($>99\%$), it may therefore be said that a metal is displaced from the organic phase by another metal. Separation of the metallic salts by means of the reaction mentioned in the title can be carried out from the aqueous as well as from the organic phase. In the first case (Fig 1) the aqueous phase which contains a mixture of salts of two metals is brought into contact with the organic phase in which a salt of an aliphatic acid of a stronger alkaline metal is contained. In the second case the organic phase which contains a mixture of salts of the aliphatic acids is brought into contact with the aqueous phase which contains a salt of a mineral acid of a

weaker alkaline metal. Table 1 reveals the results of separation of metallic salts combined with sulfuric acid by means of the discussed method. As organic phase a solvent of industrial aliphatic acids of the fraction C_7 - C_9 (average molecular weight 141) in petroleum (400 g/liter) was used. Data on table characterize a single exchange. By using an extraction column the degree of separation is considerably increased. If metals have similar properties reaction takes place incompletely. There are 2 figures, 1 table, and 1 reference, 1 of which is Soviet.

ASSOCIATION: Noril'skiy gorno-metallurgicheskiy kombinat im. A. P. Zavenyagina (Noril'sk Mining Metallurgy Kombinat imeni A. P. Zavenyagin)

PRESENTED: May 4, 1958, by S. I. Vol'fkovich, Member, Academy of Sciences, USSR

SUBMITTED: April 12, 1958

5(2,3,4) SOV/20-128-2-20/59

AUTHORS: Gindin, L. M., Bobikov, P. I., Rozen, A. M.

TITLE: Some Physico-chemical Peculiarities of the Exchange Extraction

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 2, pp 295-298 (USSR)

ABSTRACT: The exchange extraction is based on reactions proceeding between the salts of fatty acids (soaps), which are mainly dissolved in the organic phase, and the salts of mineral acids dissolved in the aqueous phase (Ref 1). Besides the above-mentioned reaction (1), its equilibrium constant K (2) as well as the equilibrium conditions for metal soaps (3) are indicated (K_1 and K_2). The soaps are not dissociated in the organic phase, but they are dissociated in the aqueous phase. In the exchange reaction, the equilibrium conditions of the equations of both soaps must be satisfied at the same time. A common solution of the two equations (3) gives the value of K_1/K_2 (4). From (2) and (4) it results that $K = K_1/K_2$, i.e. the equilibrium constant of the exchange reaction is equal to the ratio of the

distribution constants of the mutually exchanging metals. Thus the direction of the exchange reactions is conditioned by the distribution character of the corresponding soaps. The metals, the soaps of which are less soluble in water, pass into the organic phase, mainly as soaps. Metals with a higher water solubility of their soaps are concentrated in the aqueous phase as cations. With respect to the rising water solubility of their soaps, the metals constitute the following sequence: Fe^{III}, Pb^{II}, Cu^{II}, Zn, Ni^{II}, Co^{II}, Mn^{II}, Na; the same order is maintained in the exchange reactions: each metal, which is present as a cation in the aqueous phase, dislodges all metals on its right in the sequence out of the soap dissolved in the organic phase. The extraction of the metal by the organic phase can be achieved by the introduction of an alkali into the system. Figure 1 shows the experimental results characterizing the extraction of Cu^{II}, Zn, Ni^{II}, and Co^{II} by a fatty acid (fraction C_7-C_9 dissolved in petroleum, concentration of the acid 400 g/l) under the influence of NaOH. This shows that the

Some Physico-chemical Peculiarities of the Exchange Extraction

equation $\lg \alpha = K_6 + 2\ pH$ (11) derived from the above-mentioned equations is satisfied. With an increase in the basic properties of the metals, the value of the constant K_6 decreases, while the above-mentioned sequence of metals is maintained. It is easy to prove that for metals of equal valency the constant (1) is determined by the constants K_{Me-H} characterizing the extraction of each metal mutually exchanging under the influence of the base. After further calculations ((12) - (20)), the authors arrive at the conclusion that the solubility of the soap in the aqueous phase is proportional to the cube root of the solubility product of the metal hydroxide. This explains the connection between the behavior of a metal during the extraction by fatty acids, and its basicity. The separation of metals by exchange extraction constitutes a peculiar hydrolytic method of separation: this separation is distinguished from the ordinary hydrolytic method by the absence of precipitation. As is well intelligible, this separation proceeds more perfectly since there is no carrying along by the solid phase. Be-

Some Physico-chemical Peculiarities of the Exchange Extraction

sides, a multi-stage separation in counterflow columns is easier to be carried out. Therefore, this kind of extraction makes possible the separation of metals with similar properties (e.g. Co^{II} - Ni^{II}) which cannot be achieved by means of hydrolytic separation. Figure 2 shows the dependence of the $lg(Me^{+2})b$ on pH in the distribution of soaps. There are 2 figures and 4 references, 2 of which are Soviet.

ASSOCIATION: Noril'skiy gornometallurgicheskiy kombinat im. A. P. Zavenyagina (Noril'sk Mining Metallurgical Kombinat imeni A. P. Zavenyagin)

PRESENTED: April 6, 1959, by I. I. Chernyayev, Academician

SUBMITTED: March 30, 1959

GINDIN, L.M.

Extraction of hydrochloric acid and calcium chloride with isoamyl alcohol. Zhur.neorg.khim. 5 no.1:139-148 Ja '60.
(MIRA 13:5)

1. Noril'skiy gorno-metallurgicheskiy kombinat im. A.P. Zavenyagina, Opytno-issledovatel'skiy tsekh.
(Hydrocholoric acid) (Calcium chloride)
(Isopentyl alcohol)

GINDIN, L.M.; KOPP, I.F.; ROZEN, A.M.; BOBIKOV, P.I.; KOUBA, E.F.; TER-OGANESOV, N.A.

Extraction equilibria for cobalt, nickel, and certain metals. Zhur.neorg.khim. 5 no.1:149-159 Ja '60. (MIRA 13:5)

1. Noril'skiy gornometallurgicheskiy kombinat im. A.P. Zavenyagina, Opytno-issledovatel'skiy tsekh.
(Extraction (Chemistry)) (Metals)

GINDIN, L.M.; BOBIKOV, P.I.; KOUBA, E.F.; BUGAYEVA, A.V.

Separation of metals by exchange extraction with fatty acids under the influence of alkali. Zhur. neorg. khim. 5 no.8:1868-1875 Ag '60. (MIRA 13:9)

1. Noril'skiy gornometallurgicheskiy kombinat im.A.P.Zavenyagina.
(Acids, Fatty) (Metals--Analysis) (Extraction (Chemistry))

GINDIN, L.M.; BOBIKOV, P.I.; KOUBA, E.F.; BUGAYEVA, A.V.

Distribution of metal soaps in exchange extraction. Zhur. neorg. khim. 5 no.10:2366-2373 O '60. (MIRA 13:10)

1. Noril'skiy gornometallurgicheskiy kombinat im.A.P.Zavenyagina.
(Soap) (Extraction (Chemistry))

GINDIN, L.M.; BOBIKOV, P.I.; KOUBA, E.F.

Extraction of metals of the platinum group with amines.
Izv. Sib. otd. AN SSSR no.10:84-91 '61. (MIRA 14:12)

1. Noril'skiy gornometallurgicheskiy kombinat imeni A.P. Zavenyagina.

(PLATINUM GROUP)
(EXTRACTION(CHEMISTRY))
(AMINES)

18.3100

31739
S/136/61/000/012/001/006
E091/E335

AUTHORS: Gindin, L.M., Bobikov, P.I., Patyukov, G.M., Dar'yal'skiy, V.A., Brodnitskiy, K.P. and Kasavin, I.A.

TITLE: Electrolytic-extraction method for the production of high-purity cobalt

PERIODICAL: Tsvetnyye metally, no. 12, 1961, 22 - 26

TEXT: The basic method for the production of high-purity cobalt is its purification from other metals by double extraction and the final electrolytic separation of the metallic cobalt. Cobalt is separated from less alkaline metals during double extraction and, subsequently, it is separated from more alkaline ones, which plate out at the cathode to a certain extent, by electrodeposition. In the above technological scheme, an ion-exchange separation from Pb and Zn is used, in addition to the double-extraction purification of cobalt solutions. However, variations of this scheme are possible in which only extraction-purification without ion exchange is carried out. This method is based on the double reactions between metals in different phases: in the organic phase, in the form of fatty acid salts (soap) and

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in the aqueous phase, in the form of mineral acid salts (chlorides or sulphates). Fatty acids of the C_7-C_9 fraction (monocarbonic acids of the aliphatic series) are used in the organic phase; these participate in the formation of the corresponding metal salts and are also solvents for the soaps formed. The principles underlying this method are discussed and the procedure is outlined. The method has many advantages over the double extraction-electrolytic one. The following are the main advantages: 1) the purification of the Co solution from impurities is completely automated and mechanized;
2) filtration of solid cakes and operations associated with processing and unloading are dispensed with;
3) the extraction of Co is higher and the losses lower;
4) compared with the normal hydrometallurgical process, this method of Co-production results in a higher quality metal;
5) purification is carried out at normal temperature and pressure;

Electrolytic-extraction method .. E091/E335

6) working conditions are healthier;
7) production costs are lower.

There are 1 figure, 1 table and 4 Soviet-bloc references.

GINDIN, L.M.; BOBIKOV, P.I.; KOUBA, E.F.; BUGAYEVA, A.V.

Exchange interaction of soaps with mineral acid salts. Zhur.neorg.-khim. 6 no.12:2797-2804 D '61. (MIRA 14:12)

1. Noril'skiy gornometallurgicheskiy kombinat imeni A.P.Zavenyagina.
(Metallic soaps) (Acids, Inorganic)

GINDIN, L.M., kand.khimicheskikh nauk; BOBIKOV, P.I., inzh.; SOKOLOV, A.P., inzh.

Former indivisibles. Nauka i zhizn' 29 no.1:56-57 Ja '62. (MIRA 15:3)

(Platinum group)

GINDIN, L.M.; BOBIKOV, P.I.; PATYUKOV, G.M.; DAR'YAL'SKIY, V.A.; BRODNITSKIY, K.P.; KASAVIN, I.A.

Electrolytic extraction of high-purity cobalt. TSvet. met. 34 no.12:22-26 D '61. (MIRA 14:12)
(Cobalt—Electrometallurgy)

GINDIN, L.M.; BOBIKOV, P.I.; PATYUKOV, G.M.; ROZEN, A.M.; KOUBA, E.F.; BUGAYEVA, A.V.

Separation of mixtures of metals by exchange extraction with carboxylic acids. Ekstr.; teor.,prim.,app. no.2:87-111 '62. (MIRA 15:9)

(Metals) (Extraction (Chemistry)) (Acids, Organic)

BOBIKOV, P.I.; GINDIN, L.M.

Commercial separation of metals by the method of exchange extraction in columns. Izv. Sib. otd. AN SSSR no.6:46-53 '62
(MIRA 17:7)

1. Noril'skiy gorno-metallurgicheskiy kombinat, Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR, Novosibirsk.

GIMDIN, L.M.

Acid-base interactions in ion-exchange extraction processes.
Izv. Sib. otd. AN SSSR no.12:128-130 '62. (MIRA 17:8)

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya
AN SSSR, Novosibirsk.

DOLGIKH, V.I.; BOBIKOV, P.I.; BORBAT, V.F.; FERBERG, M.B.; GINDIN, L.M.

Extractive method of recovering noble metals from slimes. TSvet. met. 36 no.11:85-86 N '63. (MIRA 17:1)

GINDIN, L.M.; IVANOVA, [illegible] M

Extraction separation of platinum and [illegible] with tri-n-octylamine. Izv. SO AN SSSR no.7 Ser. khim. nauk [illegible] 28-34 '62 (MIRA 15:11)

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR, Novosibirsk.

IVANOVA, S.N.; GINDIN, L.M.; NIKOLOVA L. Ya.

Extraction of platinum by aliphatic amines of various structure.
Izv. SO AN SSSR no.7 Ser. khim. nauk no.2:35-43 '64
(MIRA 18:1)

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR, Novosibirsk.

KHOL'KIN, A.I.; GINDIN, L.M.

Extraction equilibria in the system water - n-decane - n-caprylic acid. Izv. SO AN SSSR no.7 Ser. khim. nauk no.2:33-41 '65.
(MIRA 18:12)

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR, Novosibirsk. Submitted February 26, 1964.

MAKAROVA, A. A., GINDIN, L. M.

Palladium extraction with tri-n-octylamine hydrochloride. Zhur. neorg. khim. 10 no.2:489-496 F '65. (MIRA 18:11)

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR. Submitted July 29, 1963.

GINZBURG, L.N.; VASIL'YEV, A.A.; IVANOV, I.P.

Extraction of bismuth, antimony, and silver with aliphatic monocarboxylic acids. Zhur. neorg. khim. 13 no.2:497-501 F '68. (MIRA 18:11)

1. Submitted July 29, 1963.

GINDIN, L.M.; IVANOVA, S.N.; MAZUROVA, A.A.; MIRONOVA, L.Ya.

Extraction of platinum metals with salts of quaternary ammonium bases. Zhur. neorg. khim. 10 no.2:502-506 F '65.
(MIRA 18:11)

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR. Submitted May 12, 1964.

MAZUROVA, A.A.; GINDIN, L.M.

Extraction of hydrochloric acid with tri-n-octylamine.
Zhur.neorg.khim. 10 no.11:2559-2563 N '65.
(MIRA 18:12)

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya
AN SSSR. Submitted April 11, 1964.

NIKOLAYEV, A.V.; GILPIN, L.M.; ZAKHAROV, V.F.; [illegible] I.A.

Hydrometallurgical method of treating Kuvan-Kazy cobalt-nickel arsenate concentrates. TSvet. met. 38 no. 1, 34-36 D '65
(MIRA 19:1)

L 36078-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6016126 SOURCE CODE: UR/0289/66/000/001/0083/0087

AUTHOR: Fedyashina, A. F.; Yudelevich, I. G.; Gindin, L. M.; Strokina, T. G.;

ORG: Institute of Inorganic Chemistry, Siberian Branch of the AN SSSR, Novosibirsk (Institut neorganicheskoy khimii, Sibirskogo otdeleniya AN SSSR)

TITLE: Chemical and spectral determination of micro impurities in salts of high purity rare alkali metals by extraction with aliphatic monocarboxylic acids

SOURCE: AN SSSR. Sibirskoye otdeleniye. Izvestiya. Seriya khimicheskikh nauk, no. 1, 1966, 83-87

TOPIC TAGS: alkali metals, spectrophotometric analysis, solvent extraction, carboxylic acid

ABSTRACT: The metals are arranged in the following series in decreasing order of their ability to go over into the organic phase in an exchange reaction: Sn(IV); Bi(III); Fe(III); Sb(III); Pb(II); Cu(II); Al(III); Ag(I); Cd(II); Zn(II); Ni(II); Co(II); Mn(II); Mg(II); Na(I). To investigate the possibility of concentrating micro impurities of the

UDC: 546.31 543.42

GINDIN, M. L.; Putilova, I. N.

"Structure Formation in Suspensions under the Influence of an Electrical Field" (Strukturoobrazovaniye v suspenziyakh pod vliyaniyem elektricheskogo polya) from the book Trudy of the Third All-Union Conference on Colloid Chemistry, pp.182-196, Iz. AN SSSR, Moscow, 1956

(Report given at above Conference, Minsk, 21-4 Dec 53)

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515110018-9"

GINDIN, R. S.

"Corrosion of Metals by Non-Aqueous Aolutions: The Action of Ethyl Alcohol on Metals," Dokl. AN SSSR, 29, No.1, 1940.

All-Union Inst for Aircraft Materials

L 08098-67 EWT(1) (N)

ACC NR: AP6029965 (N) SOURCE CODE: UR/0413/66/000/015/0151/0152

34
12

INVENTOR: Barshay, Ya. A.; Vysokorodov, N. S.; Gindin, V. I.; Golovin, N. A.; Zelenskiy, S. I.; Indin, I. M.; Levit, G. A.; Petrov, P. P.; Smirnov, A. M.

ORG: none

TITLE: Installations for underwater television inspection of the docking assembly and the bottom of ships. Class 65, No. 184645 /announced by Gunboat Repair Plant, Baltic Sea Steamship Line, Ministry of the Navy, SSSR (Kanonerskiy sudoremontnyy zavod Baltiyskogo morskogo parokhodstva Ministerstva morskogo flota SSSR)/

SOURCE: Izobret prom obraz tov zn, no. 15, 1966, 151-152

TOPIC TAGS: underwater camera, floating dry dock, TV camera, remote control

ABSTRACT: An Author Certificate has been issued for an installation for the underwater television inspection of the dock assembly and the bottom of a ship while docking includes a remote-controlled television camera with a transmitting cathode-ray tube in a hermetic casing and an electric cable for power supply and signaling. The television camera is mounted on a remote-controlled self-propelled carriage provided with an electric drive, rollers for moving on vertical and horizontal monorails along the wall and floor of the dock, and a switch remotely controlled by a block-and-tackle system. Orig. art. has: 1 figure. [GE]

SUB CODE: 14, 13, 09/ SUBM DATE: 21Aug64

Card 1/1 nh UDC: 629.128.6: 621.397.13

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515110018-9"

CA

3

Demountable ionic x-ray tube for structural analysis. V. G. Prokhvatilov and E. I. Gindin. *Zavodskaya Lab.* 15, 1071-4(1949).—The cathode-anode distance can be varied from 70 to 90 mm., and the anode-window distance is 9 mm. The tip of the anode is a tetragonal pyramid, each face consisting of a different metal. Focusing is accomplished with a deep-cup cathode and can be controlled from the outside. Most necessary adjustments can be made without breaking the vacuum. Cyrus Feldman

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515110018-9"

GINDIN YE. I.

PA 169T90

USSR/Physics - X-Ray Analysis

Aug 50.

"Vacuum High-Temperature Camera for X-Ray Structure Analysis," V. G. Prokhvatilov, Ye. I. Gindin

"Zavod Lab" Vol XVI, No 8, pp 965

Describes camera for precision determination of lattice parameters at elevated temperatures. Specimens may be heated to 500°. Camera satisfactorily maintains vacuum to 10^{-4} mm Hg, and is simple and convenient in operation.

PA 169T90.

GINDIN, YE. I.

USSR/Physics - X-ray Tube Mar/Apr 51

"Small-Size Ionic Sectional (Dismountable) X-ray Tube for Structural Analysis," V. G. Prokhvatilov, Ye. I. Gindin

"Iz Ak Nauk SSSR, Ser Fiz" Vol XV, No 2, pp 277, 278

Subject tube operates up to 10 ma at 30 kv. At loads higher than 12 ma the cementing material begins to soften and indications of deterioration of the vacuum are observed. Gives schematic diagram of the tube. Lecture read at 3d All-Union Conference on Use of X-rays in Study of Materials held 19 - 24 Jun 50 in Leningrad.

187T97

LC

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515110018-9"

32-1-42/55

AUTHORS: Gindin, Ye.I., Prokhvatilov, V.G.

TITLE: A Device for Taking X-Ray Pictures at High Temperatures (Prisposobleniye dlya vysokotemperaturnykh rentgenovskikh s"yemok).

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 1, pp. 106-107 (USSR)

ABSTRACT: In the present paper an additional device for the camera intended for taking pictures of pulverized polycrystalline substances at high temperatures (up to 1500°) is suggested. The powder of the substance to be investigated is applied on to a platinum wire of about 0.2 mm diameter. The suitable temperature is maintained by allowing the current to pass through this wire. The device consists of two suitably shaped brass plates, which are connected by a shaft. Between these plates a platinum wire is drawn in such a manner that one of its ends is made fast and the other is connected to a movable rod with a spring. This rod rests in two bearings of insulation material. The current is fed by 2 elastic lines in such a manner that one of them is connected to the connecting shaft of the device and the other to the free end of the movable rod; for reasons of safety this line is caught by an insulator which is

A Device for Taking X-Ray Pictures at High Temperatures

fastened to one of the brass plates. The device is placed upon a steel rod in such a manner that the axis of this rod and that of the platinum wire is the same. The rod serves as a holder for the device with the sample and is fastened in the X-ray camera accordingly. Because of the automatic control of the necessary current a current stabilizer, an autotransformer, and a step-down transformer are provided (220/10). A small motor is connected here in order that the sample moves at not full revolutions (backwards and forwards). Temperature is measured according to the linear modulus of extension of the platinum wire (as per table). There is 1 figure.

AVAILABLE: Library of Congress

Card 2/2 1. X-ray cameras-Adaptors

5(2) SOV/78-4-3-8/34

AUTHORS: Verebeychik, N. M., Gindin, Ye. I., Odelevskiy, V. I., Prokhvatilov, V. G.

TITLE: New Modification of the Crystalline Magnesium Metasilicate (Novaya modifikatsiya kristallicheskogo metasilikata magniya)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 3, pp 535-542 (USSR)

ABSTRACT: The existence of the δ-modification of magnesium metasilicate has been discovered by the thermal decomposition of talc. Investigations of the X-ray structure have shown that the δ-phase distinguishes distinctly from protoenstatite. The existence of δ-$MgSiO_3$ has been confirmed by comparative investigations of the refraction indices, the density and the mechanical stability of the various modifications. The thermodynamical stability of the δ-phase was investigated at 900°. In the absence of mineralizers the δ-phase is stable up to 1400°C. The δ-modification of $MgSiO_3$ can be used for the production of non-aging steatite. There are 3 figures, 3 tables, and 16 references, 7 of which are Soviet.

S/032/60/026/04/36/046
B010/B006

AUTHORS: Prokhvatilov, V.G., Gindin, Ye.I.

TITLE: Specimen Holder for the Apparatus of the Type URS-50I

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 4, p. 499

TEXT: Since the holders of the URS-50I apparatus turned out to be unsatisfactory, several new types of specimen holders were designed and tested. The most suitable holder is described in the present paper (Fig.). The specimen is fixed at one end of a horizontal bar and pressed against a support by a spring. The other end of the bar is connected to an electric motor, so that the specimen can be rotated slowly while photographing. A small chamber is used for investigating powdered specimens. The specimen is adjusted to the goniometer axis by means of a screw and a step bearing. In a footnote the editors point out the fact that the holder described has the disadvantage of providing no protection against scattered X-rays. There is 1 figure.

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BALYGIN, I.Ye.; GINDIN, Ye.I.

Changes in the structure of quartz glass during thermal diffusion of gold, platinium, and palladium. Zhur.prikl.khim. 35 no.11:2558-2563 N '62. (MIRA 15:12)

(Glass research) (Metals)

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S/080/62/035/011/009/011
D423/D307

15.2410

AUTHORS: Balygin, I.Ye., and Gindin, Ye.I.

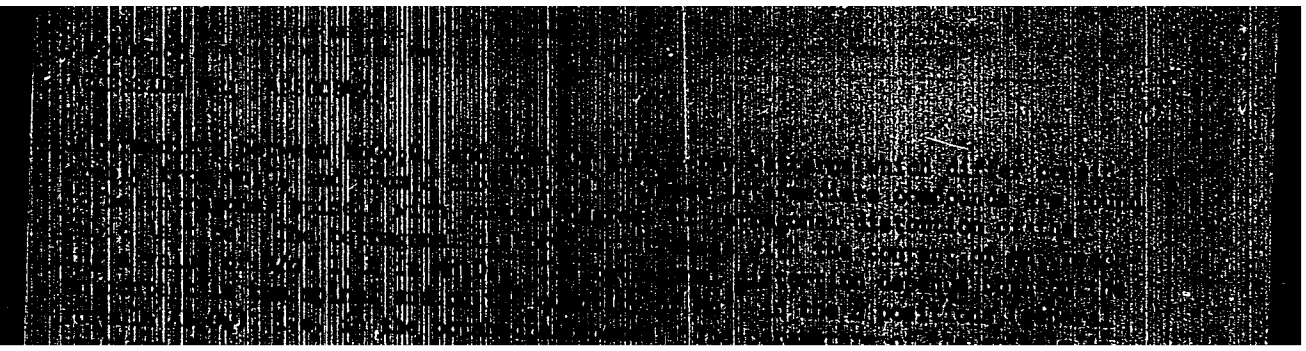
TITLE: Changes in the structure of quartz glass as a result of thermo-diffusion of gold, platinum and palladium

PERIODICAL: Zhurnal prikladnoy khimii, v. 35, no. 11, 1962, 1558 - 2563

TEXT: Quartz glass discs 30 mm in dia. and 2 mm thick were coated with a metallic layer of Au, Pt and Pd and were heated at 600 - 800°C in a muffle furnace. After removal of metal from the surface of the quartz, the samples were examined by x ray photographic techniques. In the case of gold-coated discs no structural change occurred after 5 min at 300°C or after 280 hrs. at 700°C, but after 280 hrs. at 800°C the formation of α-crystobalite was confirmed by comparison with standard x-ray photographs of pure α-crystaobalite. Samples coated with Pt and heated at 900°C for 5 min. showed the start of formation of a new structure. Well-defined polycrystalline structures of α-quartz were found after heating at 600, 700 and 800 °C for 280 hrs., and of α-crystobalite also at 600°C. Transformation

of the amorphous structure of the quartz glass by the action of Pt occurred more intensively than with Au, which can be associated with the size of atomic radii (r = 1.39 Å for Pt, r = 1.44 Å for Au). Heating of samples coated with Pd paste was carried out at 1100 and 950°C for 5 min.; a change of structure was again observed. Exhaustive testing at 700°C confirmed that the amorphous structure was transformed into α-crystobalite, and the start of formation of α-quartz was also observed. A further structure was observed which was neither α-quartz nor α-crystobalite. A theory is advanced for the mechanism of structural change due to interaction of atoms and ions of the infiltrating metal with the structural lattice of SiO_2, in which a layer of valency electrons is released, capable of penetration as ions into the quartz lattice. As a result of interaction with the oxygen of quartz, destruction of Si-O-Si bridges and regrouping of valency bonds occur, thus changing the structure of the amorphous quartz. There are 7 figures.

SUBMITTED: August 29,1961



L 10560-66 EWT(m)/EWP(t)/ETI/EWP(b) IJP(c) JD

ACC NR: AP5025385 SOURCE CODE: UR/0181/65/007/010/3048/3053

AUTHOR: Rotenberg, B. A.; Danilyuk, Yu. L.; Gindin, Ye. I.; Prokhvatilov, V. G. 69 B

ORG: none

TITLE: Electrophysical and microwave spectral study of barium titanate with admixtures of oxides of trivalent elements 27

SOURCE: Fizika tverdogo tela, v. 7, no. 10, 1965, 3048-3053

TOPIC TAGS: barium titanate, solid solution, electron paramagnetic resonance, microwave spectroscopy, oxide, semiconductor research, crystal lattice defect, electric conductivity, polycrystal

ABSTRACT: The authors study some of the electrical properties and the structure as well as paramagnetic resonance absorption of polycrystalline barium titanate with small admixtures of oxides of trivalent elements. Preparation of the specimens is breifly described together with an explanation of the experimental methods and equipment used. Paramagnetic resonance absorption was measured at 9320 Mc and 78°K. It is experimentally established that there are four possible types of solid solutions in $BaTiO_3$-R_2O_3 systems. 1. A solid solution of substitution in the barium ion sublattice with the formation of weakly bound electrons (donor levels)

$$Ba_{1-x}R_x^{3+}TiO_3 + xe^-.$$

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Solid solutions of this type have high electrical conductivity. 2. A solid solution of substitution with subtraction in the barium ion sublattice

$$Ba_{1-y/2}\square_{y/2}R_x^{3+}TiO_3;$$

in this case, the lattice is neutral due to barium vacancies, and the specimens are dielectrics. 3. A solid solution of substitution in the titanium sublattice

$$BaTi_{1-x}R_x^{3+}O_{3-\frac{x}{2}},$$

where it is most natural to assume that electric neutrality of the lattice in the case of oxide semiconductors is due to oxygen vacancies formed during annealing, and electrical conductivity does not increase. 4. A more complex solid solution of substitution in both sublattices with the formation of oxygen vacancies and donor levels

$$(Ba_{1-y}R_y^{3+})(Ti_{1-x}R_x^{3+})O_{3-\frac{x}{2}} + ye^-.$$

An increase in electrical conductivity is possible in this case. When $x = y$, electric neutrality may be maintained without the formation of oxygen vacancies and donor levels according to the formula

$$\left(Ba_{1-\frac{x}{2}}R_{\frac{x}{2}}^{3+}\right)\left(Ti_{1-\frac{x}{2}}R_{\frac{x}{2}}^{3+}\right)O_3.$$

Other cases are also possible if the alloying additive has variable valence. It is

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shown that electrical conductivity is related to impurity concentration through changes in the type of solid solution formed during annealing of barium titanate with impurities in concentrations of 0.1-0.3 mol %. The experimental data indicate that the same types of defects are formed by reduction of the ceramic and by alloying. It is possible that these are not single-electron defects or defects of odd order in general. This hypothesis agrees with the conclusions made by other researchers. Orig. art. has: 4 figures.

SUB CODE: 20,07/ SUBM DATE: 30Jan65/ ORIG REF: 002/ OTH REF: 008

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515110018-9"

GINZBURG, Ye.M., polkovnik meditsinskoy sluzhby, doktor meditsinskikh nauk

Intraperitoneal penicillin injections for treating peritonitis. Voen.-med. zhur. no.10:29-34 O '55. (MLRA 9:10)
(PENICILLIN) (PERITONITIS)

GINDIN, Ye.M.; POKROVSKAYA, O.L.; LEBEDEVA, L.V.

Burn shock in dogs and the effect of neuroplegic substances on its course. Khirurgiia 36 no. 5:87-96 My '60. (MIRA 14:1)
(BURNS AND SCALDS) (HIBERNATION, ARTIFICIAL)

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Translation from: Referativnyy zhurnal, Geofizika, 1959, Nr 6, pp 140 - 141 (USSR)

AUTHORS: Glndin, Ye.Z., Leykin, G.A., Lozinskiy, A.M., Masevich, A.G.

TITLE: The Optical Observations of Artificial Earth Satellites

PERIODICAL: V sb.: Predvarit. itogi nauchn. issled. s pomoshch'yu pervykh sov. iskustv. sputnikov Zemli i raket, Moscow, AS USSR, 1958, pp 5 - 39 (Engl. Res.)

ABSTRACT: The Astronomicheskiy sovet Akademii nauk SSSR (Council of Astronomy of the USSR Academy of Sciences) was put in charge of organizing the optical observations of artificial earth satellites. Sixty-six visual stations and twenty-four photographic stations were established for observing the satellites. The visual observation stations began their activity at the time when the first Soviet satellite was launched, while photographic observations have been performed systematically since the beginning of 1958. The visual observation methods were determined by the tasks they must establish the position of a satellite on

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