line log σ for 100% $VO_{2.5}$ (Fig. 5) yields values of between -3.0 and -3.6, which are thus near the value -3.1 for crystalline V_2O_5. Between the activation energy ΔE of the carriers and σ there exists the dependence $\sigma = A \exp(-D\Delta E)$ represented in Fig. 6. (A, D are constants). The thermo-emf was measured according to Tauc (Ref. 19) by means of a ППТВ-1 (PPTV-1) potentiometer and an ЭМУ-3 (EMU-3) electrometer amplifier. Proportionality was found to exist between the coefficient of the thermo-emf and the concentration of RO_x. As shown by Fig. 8, the coefficient of the thermo-emf decreases with increasing ordinal number of the elements of the second main group of the periodic system, the oxides of which are under consideration. An increase in the contents of elements of the fifth main group leads to the opposite effect. The authors arrived at the conclusion that the glasses investigated have an intrinsic conductivity of mixed n-p type, which is not influenced by impurities. This is explained by the different parts played by impurities in a crystal lattice and in an amorphous glass having no long-range order. Mention

84074

Synthesis and Investigation of Vitreous Oxide Semiconductors in Systems of the Type $VO_{2.5} - PO_{2.5} - RO_x$

S/181/60/002/009/015/036
B004/B056

is made of N. A. Goryunova, B. T. Kolomiyets (Ref. 4), V. V. Tarasov (Ref. 15), S. S. Shalyt (Ref. 16), A. R. Regel' (Ref. 20), and I. Z. Fisher (Ref. 21). There are 8 figures, 1 table, and 21 references: 12 Soviet, 3 US, 1 British, 1 Czechoslovakian, 1 French, and 1 German.

ASSOCIATION: Nauchno-issledovatel'skiy institut elektrotekhnicheskogo stekla, Moskva (Scientific Research Institute for Electrotechnical Glass, Moscow)

SUBMITTED: June 4, 1959 (initially)
February 22, 1960 (after revision)

Card 4/4

S/181/62/004/002/024/051
B101/B102

AUTHORS: Grechanik, L. A., Faynberg, Ye. A., and Zertsalova, I. N.

TITLE: Electrical conductivity of sodium-lead-silicate glasses containing iron oxide

PERIODICAL: Fizika tverdogo tela, v. 4, no. 2, 1962, 454 - 457

TEXT: The coexistence of ionic conductivity and n-type conductivity was studied from the effect of Fe_2O_3 and NaO on the electrical resistance of glass specimens containing 60 mole% SiO_2 and 40 mole% PbO, in which PbO was replaced by Fe_2O_3 (1 - 10%) and Na_2O (2 - 15%). The process of glass melting and the method used to measure the resistance will be described later. Addition of Fe_2O_3 to the lead-silicate glass lowered the resistance substantially (Fig. 4). Sodium-oxide glasses possess ionic conductivity, and iron-oxide glasses have n-type conductivity, whereas glasses containing Na_2O and Fe_2O_3 exhibit both types, the total conductivity is, however,

Card 1/3

Electrical conductivity of...

lower. $\log\varrho = f(E)$ is a linear function for either type. The activation energy E (ev) was calculated from $\varrho = \varrho_0 \exp(E/2kT)$. With $Na_2O + Fe_2O_3$ glasses, the points lay between the two straight lines for ionic conductivity and n-type conductivity. The activation energy of glasses with ionic conductivity and with the same volume resistivity as that of n-type glasses is higher than that of the latter type. n-type conductivity occurred already at 2 - 3% Fe_2O_3. This effect of low Fe_2O_3 concentrations requires special investigations. A paper of O. V. Mazurin et al. (ZhTF, 27, 2702, 1957) is referred to. There are 6 figures, 1 table, and 6 references: 4 Soviet and 2 non-Soviet. The reference to the English-language publication reads as follows: S. Strauss, D. Moore, W. Harrison, L. Richards, J. Res. Nat. Bur. Stand., 56, 135, 1956.

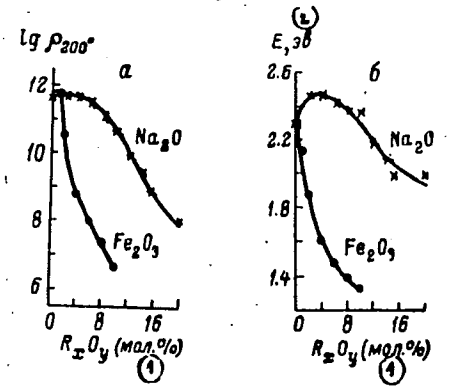
ASSOCIATION: Nauchno-issledovatel'skiy institut elektrotekhnicheskogo stekla, Moskva (Scientific Research Institute of Electrotechnical Glass, Moscow)

SUBMITTED: September 11, 1961

Fig. 4. Effect of replacement of PbO in lead-silicate glass by Na_2O and Fe_2O_3 on electrical resistance (a) and activation energy (б).

Legend: (1) mole%; (2) ev.

Fig. 4



43277

S/072/62/000/012/001/001
B101/B144

15.2100

AUTHORS: Kitaygorodskiy, I. I., Doctor of Technical Sciences, Professor, Faynberg, Ye. A., Engineer, Grechanik, L. A., Candidate of Technical Sciences

TITLE: Effect of some oxides on the reduction of lead glasses

PERIODICAL: Steklo i keramika, 19, no.12, 1962, 8 - 10

TEXT: Three problems gave rise to the present paper: (a) Semiconducting layers forming on glass surfaces by reduction; (b) the problem of eliminating the discoloration of glasses on thermal treatment in a reducing atmosphere; (c) effect of the chemical structure of glasses on the diffusion of reducing gases. Binary P-40 (R-40) lead glasses consisting of 60% SiO_2 and 40% PbO were used. At a constant content of PbO, 5 or 10% SiO_2 was replaced by Na_2O, BaO, ZnO, CdO, B_2O_3, Al_2O_3, TiO_2, V_2O_6, Cr_2O_3, MnO_2, Fe_2O_3, CoO, or NiO at 1250 - 1300°C (30 - 40 min), then the [illegible] reduced for 4 hrs in a hydrogen atmosphere at 400°C. The [illegible] measured spectrophotometrically in the 350 - 1100 mμ

Effect of some oxides on the reduction ...

region. The integral transparency S was determined from the curve T_λ versus λ and the change was calculated to be $T_{red} = \sqrt{S_1/S_o}$, where S_1 is the integral transparency of reduced, and S_o of non-reduced glasses. Furthermore, glasses in which Li_2O, Na_2O, K_2O, Rb_2O, or Cs_2O, were substituted for 15% SiO_2, were reduced for 3 hrs in H_2 at 360°C, and the transparency was also measured. Results: Glasses containing 5 and 10% Cr_2O_3 and 10% NiO crystallized; the transparency of specimens containing 10% CoO was too low. The other specimens showed the possibility of classifying oxides under the experimental conditions: (1) Oxides that support the Pb reduction: V_2O_5, NiO, Al_2O_3, and to a smaller extent also Na_2O; (2) oxides by which the reduction is not affected: TiO_2, CoO, B_2O_3, and CdO; (3) oxides inhibiting the reduction of Pb: $Fe_2O_3 > MnO_2 > ZnO > BaO$. Hence it is concluded that new electrochemical glasses, very stable to thermal treatment in a reducing atmosphere, can be produced from lead glasses containing Fe_2O_3 or MnO_2. The increase in reducibility of lead

Card 2/3

KITAYGORODSKIY, I.I., doktor tekhn.nauk, prof.; KARPECHENKO, V.G., inzh.; GRECHANIK, L.A., kand.tekhn.nauk

Significance of the polarizing properties of ions for developing the composition of low-melting types of glass. Stek.i ker. 19 no.11:10-13 N '62. (MIRA 15:12)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva (for Kitaygordoskiy).
(Ions) (Glass)

45602
S/080/63/036/001/008/026
D226/D308

AUTHORS: Grechanik, L.A., Faynberg, Ye. A., and Zertsalova, I.N.

TITLE: Electroconductivity of glasses in the system Na_2O-PbO-SiO_2

PERIODICAL: Zhurnal prikladnoy khimii, v. 36, no. 1, 1963, 91 - 94

TEXT: The specific conductivity per unit volume was measured at 100-400°C in glasses of the above system, for compositions 35-70 mol.% SiO_2 and 0-20 mol.% Na_2O, in an effort to produce a unified picture of the conductivity in these glasses. The specimens were prepared by fusing pure materials in Pt or quartz crucibles: electric resistance was measured on discs 45 mm in dia and 1-1.5 mm thick, with graphite electrodes, with a reproducibility of 15 - 20%. The plot of log $\rho_{200°}$ (where $\rho_{200°}$ is the resistance at 200°C) against molar % Na_2O showed that in general log $\rho_{200°}$ remained essentially steady, or even increased,

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for small additions of Na_2O replacing PbO, but decreased sharply when the Na_2O was raised from 12 - 50%. Also, log ρ_{200° tended to increase up to a point with increasing PbO, for Na_2O contents of 6-35%; for a constant PbO content, log ρ_{200° remained essentially unchanged for 0-12 mol.% Na_2O and decreased rapidly as Na_2O was raised to 20-36%. The results are summarized on a ternary diagram. In PbO-SiO_2 glasses the current is carried by Pb^{++}, whilst the current carriers in the ternary glasses are largely Na^+. Two composition fields exist, as defined by the lines of equal resistance; in one of these Pb ions are merely modifiers and in the other Pb ions may be incorporated in the Si-O lattice. This difference is ascribed to a change in the coordination number of Pb. There are 4 figures and 1 table.

ASSOCIATION: Nauchno-issledovatel'skiy institut elektrotekhnicheskogo stekla (Scientific Research Institute of Electrochemical Glass)

SUBMITTED: September 12, 1961

Card 2/2

L 12045-65 EWT(l)/EWG(k)/EWP(e)/EWT(m)/EPA(sp)-2/EPA(w)-2/EEC(t)/EEC(b)-2/
EWP(b)/EWA(m)-2/EWA(h) Pq-4/Pz-6/Pab-10/Peb IJP(c)/SSD/AFWL/ASD(a)-5/ESD(c)/
ACCESSION NR: AP4045312 ESD(dp)/ESD(gs)/ESD(t) S/0048/64/028/009/1516/1521
AT/WH

AUTHOR: Chuyko, G.A.; Faynberg, Ye.A.; Siprikov, I.V.; Grechanik, L.A.

TITLE: Secondary electron emission of hydrogen reduced high-lead glasses with enhanced surface conductivity /Report, Tenth Conference on Cathode Electronics held in Kiev, 11-18 Nov 1963/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.28, no.9, 1964, 1516-1521

TOPIC TAGS: secondary emission, electron multiplier, glass, lead oxide, hydrogen reduction

ABSTRACT: The secondary emission coefficients and other properties of hydrogen-reduced high-lead glasses with enhanced surface conductivity were measured in order to assess the suitability of the materials for use as electrodes in electron multipliers in which the dynodes are not equipotential surfaces. Lead-silicate glasses containing a large proportion of PbO and having resistivities of 10^{11} to 10^{12} ohm-cm at 200°C were reduced in hydrogen at 380 to 450°C for 4 to 5 hours. The surface conduction of the resulting materials followed Ohm's law over a wide range of potential gradients, with surface resistivities from 10^{6} to 10^{10} ohm. The conductivity was

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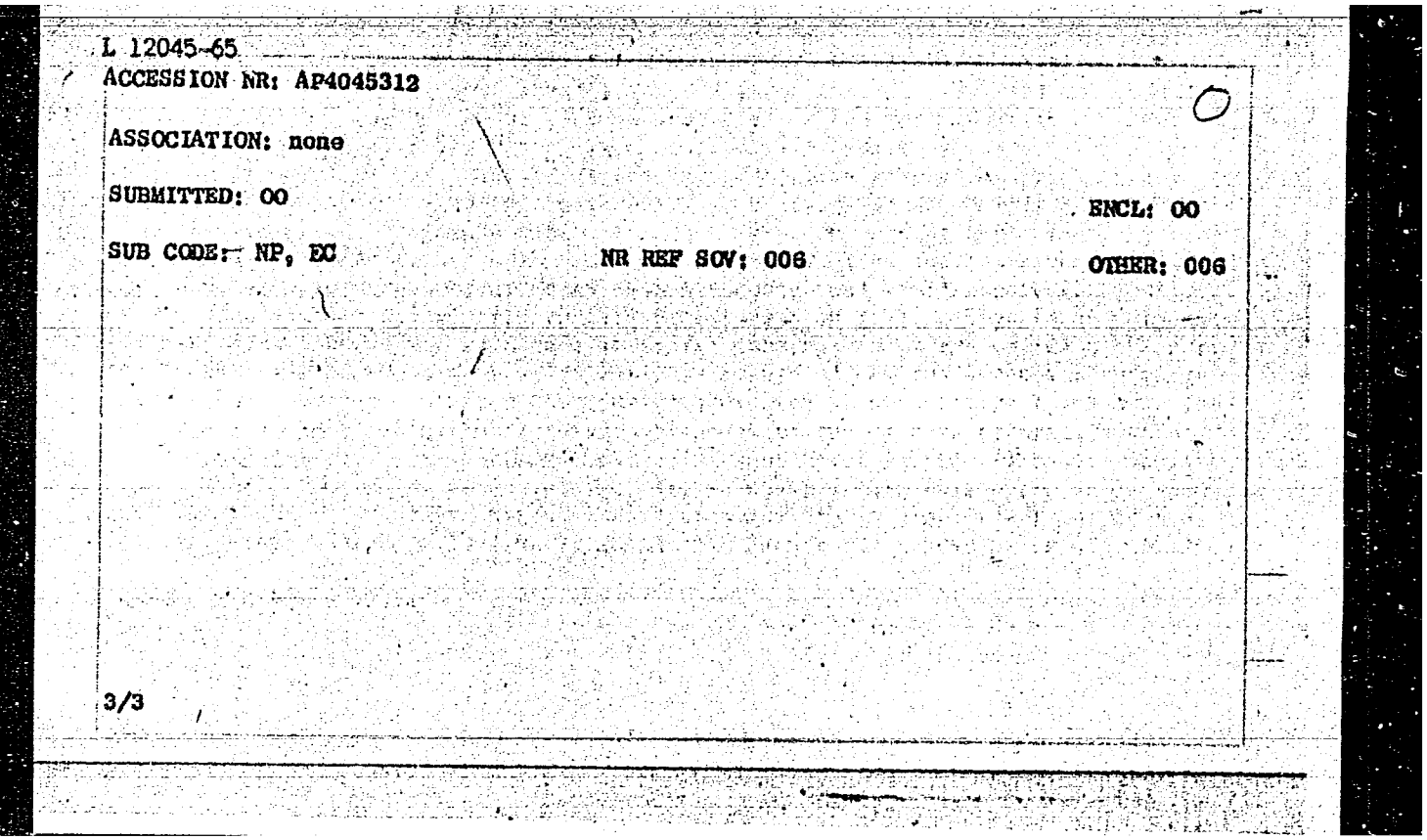
stable against prolonged heating at 200°C and against brief heating at 400°C. The temperature coefficient of surface resistivity was 0.3 to 0.4 percent per degree centigrade. Secondary emission coefficients as great as 4.5 were obtained at room temperature for incident electron energies of approximately 300 eV; the secondary emission decreased rapidly with further increase of the primary electron energy. The maximum secondary emission coefficient decreased by approximately 15% when the temperature was raised from room temperature to 340°C, and the secondary emission for high energy primaries increased somewhat. Examination of the energy distribution of the secondary electrons with the aid of a retarding field disclosed the presence of a considerable number of negative energy secondaries, i.e., secondary electrons that would leave the target only under the influence of an accelerating field. It is suggested that a positive charge develops within the target where the glass is still a good insulator. The secondary emission coefficient was practically unaffected by storage in air for a year. The secondary emission from a specimen subjected to continuous bombardment at 3×10^{-5} A/cm^2 decreased by 30% during the first 30 hours, by another 14% during the succeeding 50 hours, and thereafter remained constant for the remainder of the 120 hour test. It is concluded that hydrogen-reduced lead-silicate glass is a promising material for use in electron multiplier of special design. Orig.art.has: 9 figures.



L 12045-65

ACCESSION NR: AP4045312

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00

SUB CODE: NP, EC NR REF SOV: 006 OTHER: 006

3/3

GRECHANIK, Ya.S.; YAVNEL', B.K.

Use of ground and artesian waters in air-conditioning systems.
Vod.i san.tekh. no.9:8-13 S '59. (MIRA 12:12)
(Air conditioning) (Water, Underground)

GRECHANIK, Ya.S., inzh.

Selecting rated climatic parameters when designing air conditioning systems. Khol. tekh. 38 no.6:26-30 N-D '61. (MIRA 15:1)

1. Inzhenerno-tekhnicheskaya kontora "Soyuzsantekhnika". (Air conditioning)

GRECHANIK, Yu.

A mistproof paint sprayer. Okhr.truda i sots.strakh. no.8:83 Ag '59.
(MIRA 12:11)
(Spray painting)

GRECHANIK, Yu.

Is this "nagging"? Mest.prom.i khud.promys. 3 no.12:14-15 D '62.
(MIRA 16:2)

1. Spetsial'nyy korrespondent zhurnala "Mestnaya promyslennost' i khudozhestvennyye promysly".
(Service industries)

GRECHANIK, Yu. (Khar'kov)

Honestly speaking. Mest.prom. i khud.promys 4 no.3:4-5 Mr '63.
(MIRA 16:4)

1. Spetsial'nyy korrespondent zhurnala "Mestnaya promyshlennost' i khudozhestvennyye promysly".
(Kharkov--Textile factories) (Efficiency, Industrial)

GRECHANIK, Yu.

Without issuing a receipt? What a shame. Mest. prom. i khud. promys. no.5:26-27 My '63. (MIRA 16:7)

(Service industries)

GRECHANIK, Yu. (Volgograd)

Prompted by conscience. Mest.prom.i khud.promys. 4 no.2:24-25
F '63. (MIRA 16:2)

1. Spetsial'nyy korrespondent zhurnala "Mestnaya promyshlennost' i khudozhestvennyye promysly".

GRECHANIN, B. Ye., assistent

Complex examination of patients with lesions of the cervix uteri using colposcopy, cytological and histological methods. Akush. i gin. 38 no.3:32-35 My-Je '62. (MIRA 15:6)

1. Iz kafedry akusherstva i ginekologii (zav. - zasluzhennyy deyatel' nauki prof. I. I. Grishchenko) lechebnogo fakul'teta i kafedry patologicheskoy anatomii (zav. - prof. G. L. Derman) Khar'kovskogo meditsinskogo instituta.

(UTERUS--CANCER) (DIAGNOSIS, CYTOLOGIC)
(COLPOSCOPY)

GRECHANIN, Ye.S.

Method of determining the limits of zone 1 for the sanitary protection of subterranean water sources. Gig. i san. no.11:44-45 N '54. (MLRA 7:12)
(WATER SUPPLY
subterranean wells, sanitary protection area determ.)

GRECHANINOV, V. A.

25489. Teorema D'alambera I Yeye Dokazatel'stvo. Izvestiya Rost. In-ta Inzhenerov Zh-D. Transporta, VYP. 14, 1949, s. 3-6

SO: Letopis' Zhurnal'nykh Statey, Vol. 34, Moskva, 1949

GRECHANNIK, Yu.

Hydraulic plunger. Okh. truda i sots. strakh. no.6:77 Je '59.
(MIRA 12:10)

(Tires, Rubber--Testing)

S/081/60/000/016/008/012
A006/A001

Translation from: Referativnyy zhurnal, Khimiya, 1960, No. 16, p. 371, # 66227

AUTHORS: Azarov, K.F., Grechanova, S.B.

TITLE: Surface Tension of Priming Enamels for Steel

PERIODICAL: Tr. Novocherk. politekhn. in-ta, 1958, No. 47/61, pp. 233-242

TEXT: The authors studied surface tension of industrial priming boric, boron-free and titanium enamels and non-priming boric titanium enamel, fused with 5, 10, 15 and 20% ferric oxide. The effect of the admixtures of 0.5% Cu_2O, Cu_2S, Sb_2O_3, Sb_2S_3 was investigated to control the surface tension, which was determined by the method of the drop weight. The investigations show that surface tension of boron-free priming enamels is higher than that of boric and titanium enamels. Ferric oxide does practically not change the surface tension of boric and boron-free enamels but reduces that of titanium enamel. The admixtures investigated reduce surface tension of boron-free and titanium enamel but increase

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Surface Tension of Priming Enamels for Steel

that of boron priming. Maximum reduction of surface tension is caused by Sb_2S_3, then by Cu_2S, Cu_2O and Sb_2O_3. There are 20 references.

G. Gerashchenko

Translator's note: This is the full translation of the original Russian abstract.

S/081/60/000/016/010/012
A006/A001

Translation from: Referativnyy zhurnal, Khimiya, 1960, No. 16, p. 371, # 66229

AUTHORS: Azarov, K.P., Grechanova, S.B.

TITLE: On the Effect of Iron Oxides on Swelling of Enamels

PERIODICAL: Tr. Novocherk. politekhn. in-ta, 1958, No. 47/61, pp. 243-258

TEXT: Investigations of the causes of swelling and bubbling of enamels showed that the strong swelling of boron-free priming and boric non-priming enamels with iron oxide in the presence of a gas forming material, and proneness to bubbling were caused by higher viscosity, crystallization, high surface tension and low moistening capacity of boron-free coatings. There are 25 references.

The author's summary

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

Grechanova, S. B.

20-2-41/60

AUTHORS: Azarov, K. P., Grechanova, S. B.

TITLE: The Influence Exerted by Ferric Oxide Upon the Viscosity of Enamels Containing, or Devoid of, Boron (Vliyaniye okisi zheleza na vyazkost' bornykh i bezbornykh emaley)

PERIODICAL: Doklady AN SSSR, 1958, Vol. 118, Nr 2, pp. 348 - 350 (USSR)

ABSTRACT: The part played by the viscosity in the formation of the main faults of boronless coatings was hitherto not determined. It has been tried for years to produce boronless basic enamels which would, like the boron-containing ones, be free of these faults: effervescence and burning through. The authors found that the effervescences begin to develop at about 750°C. There were no data on the viscosity of enamel-melts around these temperatures (references 1-6). In this connection the authors investigated the viscosity of the following industrial enamels by means of the well-known method of thread-extension in the range of fusing: boron-containing numbers 18, 124 and 210, boronless numbers 16, 27 and 35 as well as titanium-enamels numbers 121 and 174. Further the viscosity of those enamels which were molten together with 2 - 25 % ferric oxide was measured. From figure 1 is to be seen that the viscosity of the investigated boron-enamels is higher than that of the rest. A

Card 1/3

The Influence Exerted by Ferric Oxide Upon the Viscosity of Enamels Containing, or Devoid of, Boron

crass difference manifests itself between the boron-containing and boronless enamels when ferric oxide is added. The viscosity of the boronless enamels no. 35 b/b considerable increases with increasing content of ferric oxide (figure 2 a). Only very small additions (2%) reduce their viscosity. The boron enamel no. 10 b (figure 2 b) reacts inversely. Figure 3 shows that all boronless enamels react similar to number 35 b/b. At high temperatures ferric oxide reduces the viscosity as well of the boron-containing as of the boronless enamels (figure 4). The different influence of ferric oxide upon the viscosity of the two sorts of enamels in the range of fusion may be ascribed to the formation of different forms of iron. In boron-enamels which are less basic than the boronless ones (references 13, 14) a prevalence of iron with a high coordination number is more probable. It has the position of the network-modifier which weakens the system and diminishes the viscosity. In the higher basic boronless enamels the FeO_4^{5-} groups with low coordination number increase the solidity of system by binding part of the SiO_4^{4} tetrahedrons. The viscosity is thereby increased. As far as ferric oxide at high temperatures reduced the viscosity of the two kinds of enamels, the iron here rather plays the part of a modifier than of a vitrifier. In the light of these results it is also possible to

20-2-41/60

The Influence Exerted by Ferric Oxide Upon the Viscosity of Enamels Containing, or Devoid of, Boron

describe the mechanism of effervescence and burning-through of boronless basic coatings. During the initial stages of burning the steel is intensively oxidized under the coating. Thus a very thin contact-layer is saturated with ferric oxides. In boronless coatings this leads to a rapid increase in viscosity, whereas it decreases in boron-enamels. In the boronless enamels larger blisters form which burst and which are hard to cover. Atmospheric oxygen oxidizes the steel in the places of the burst blisters. The local accumulations of ferric oxides thus developing merge with the enamel and form burnings-through. In spite of the reduction of the viscosity of boronless enamels at high temperatures these faults are not completely removed. In order to prevent effervescences and burnings-through means shall be sought which reduce the viscosity of the basic coatings in the zone of contact with the metal. There are 4 figures, and 15 references, 1 of which is Slavic.

ASSOCIATION: Polytechnic Institute imeni S. Ordzhonikidze, Novocherkassk (Novocherkasskiy politekhnicheskiy institut im. S. Ordzhonikidze)

PRESENTED: June 12, 1957, by P. A. Rebinder, Academician
SUBMITTED: May 21, 1957
AVAILABLE: Library of Congress

Card 3/3

GRECHANOVA, S. B.: Master Tech Sci (diss) -- "The viscosity and surface tension of base enamels for steel". Novocherkassk, 1959. 13 pp (Min Higher Educ USSR, Novocherkassk Order of Labor Red Banner Polytech Inst im S. Ordzhonikidze, Chair of the Technology of Ceramics, Glass, and Enamel), 160 copies (KL, No 10, 1959, 125)

5(4) SOV/69-21-2-3/22

AUTHORS: Azarov, K.P. and Grechanova, S.B.

TITLE: On the Viscosity of Steel Enamels (O vyazkosti emaley dlya stali)

PERIODICAL: Kolloidnyy zhurnal, 1959, Nr 2, pp 144-147 (USSR)

ABSTRACT: This article deals with the change in the viscocity of various kinds of industrial steel enamel coatings within the range of softening temperatures. This problem is of great importance, as the defects (blisters, burns) produced during the burning process are due to gas exhalations of the enamel coatings, which in their turn depend on the change in the viscosity of the enamel coating in connection with the dissolution of the scale of the oxidizing steel. On the basis of their experiments, the authors come to the conclusion that 1) a high viscosity is not a characteristic of boron-free enamels; boron-containing primary enamels soften increasingly according to the duration of the heating period, where boron-free primary and secondary enamels soften at decelerating speeds,

Card 1/2

On the Viscosity of Steel Enamels

which testifies to the tendency of boron-free primary and secondary enamels to crystallize; 2) at the softening temperature, the ferric oxide increases the viscosity of boron-free primary and boron-containing secondary enamels, and reduces the viscosity of boron-containing primary enamels; 3) cupric oxide reduces the viscosity of boron-free primary and boron-containing secondary enamels, whereby these coatings on copper do not show defects; 4) the occurrence of defects on enamels used as steel coatings, is due to an increase in the viscosity of the coating as a result of the saturation by scale of a thin layer covering the oxidized steel. There are 5 graphs and 23 references, 14 of which are English, 4 Soviet, 3 German and 2 French.

ASSOCIATION: Novocherkasskiy politekhnicheskiy institut im. S. Ordzhonikidze, Laboratoriya emaley (Novocherkassk Polytechnical Institute imeni S. Ordzhonikidze, Enamel Laboratory)

SUBMITTED: July 3, 1957

S/081/60/000/022/011/016
A005/A001

Translation from: Referativnyy zhurnal, Khimiya, 1960, No. 22, p. 326, # 89435

AUTHORS: Azarov, K. P., Berdova, G. V., Grechanova, S. B., Podroykina, Ye. I.

TITLE: Enamels for Steel Without Prime Coat

PERIODICAL: Tr. Novocherk. politekhn. in-ta, 1959, Vol. 97, pp. 93-98

TEXT: The effect of some physical-chemical properties was studied of enamels without and with prime coat and with and without boron, on the origination process of coating swelling. Form the variation of the index of refraction, the solubility of Fe_2O_3 was determined in white boric titanic enamels without prime coat, antimonic enamels without prime coat, and enamels with prime coat with and without boron. The solubility of Fe_2O_3 in enamels without prime coat is lower than that in boric enamels with prime coat and near the solubility in enamels with prime coat without boron. With increasing content of Fe_2O_3 the viscosity of the enamels with boron and without prime coat as well as the enamels without boron and with prime coat increases sharply, but that of the enamels with boron and prime coat decreases. The experiments on the artificial swelling of enamels showed that

Card 1/2

Enamels for Steel Without Prime Coat

the enamels with or without addition of 15% Fe_2O_3 do not practically swell. The addition of 15% Fe_2O_3 with 2% graphite strongly swells the enamels without prime coat as well as those without boron and with prime coat, but less the boric enamels with prime coat. It is shown that a preliminary special treatment of the steel by applying chemical nickel-plating as well as a high rate of temperature increase in the range 700-850°C decrease the origination of swelling of the coatings.

G. Gerashchenko

Translator's note: This is the full translation of the original Russian abstract.

GRECHANOVA, S P

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PHASE I BOOK EXPLOITATION SOV/5583

Podkletnov, Ye. N., Stalin Prize Winner, ed.

Emal' i protsessy emalirovaniya (Enamels and Enameling Processes) Moscow, Mashgiz, 1961. 113 p. 4,000 copies printed.

Sponsoring Agency: Gosudarstvennyy nauchno-tekhnicheskiy komitet Soveta Ministrov UkrSSR. Institut tekhnicheskoy informatsii.

Ed.: N. P. Onishchenko; Tech. Ed.: M. S. Gornostaypol'skaya; Chief Ed.: Mashgiz (Southern Dept.): V.K. Serdyuk, Engineer.

PURPOSE: This book is intended for engineering and technical personnel concerned with the research, production, and uses of enamel.

COVERAGE: This collection of articles on enamels and enameling processes is based on material presented at the first Ukraine-wide conference on the production of enamel and enameled equipment, organized by the State Scientific Technical Committee of the Ukrainian SSR, the Kiyev Sovnarkhoz, Chemical

Card 1/4

Society imeni Mendeleyev, Scientific Technical Society of the Machine-Building Industry, and other sovnarkhozes, scientific research institutes, and planning organizations. [The name, place, and date of the conference are not given.] The following are discussed: old and new types of enamels, their composition, properties, uses, and methods of production; the production of enameled equipment (chemical apparatus, pipes, cisterns, etc.), and their use in the coal, chemical, food, and other industries; latest advances in the mechanization of enameling processes and techniques; the effect of underlying surfaces on the quality of enamel coatings; and methods of modifying the properties of enamel coatings, e.g., increasing their chemical stability. American and Chinese practices and production are also briefly discussed. No personalities are mentioned. There are 32 references: 22 Soviet, 7 English, and 3 German.

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AVAILABLE: Library of Congress

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JA /dfk/mas
10-6-61

15.2120 1112, 3109, 3309

23347 S/058/61/000/006/034/043
A001/A101

AUTHORS: Azarov, K.P., Balandina, V.V., Grechanova, S.B., Lyutsedarskiy, V.A.

TITLE: The structure and properties of iron-containing glasses

PERIODICAL: Referativnyy zhurnal, Fizika, no. 6, 1961, 224, abstract 6D271 (V sb. "Steklooctrazn. sostoyaniye", Moscow-Leningrad, AN SSSR, 1960, 365-368, Discus. 377 - 379)

TEXT: The authors investigated magnetochemical and other properties of boron and boron-free glasses and enamels containing iron. On the basis of data obtained, the authors drew conclusions on the valent and coordination states of Fe^{2+} and Fe^{3+} ions and their position in the structural skeleton of the glass. The conclusion was arrived at that iron in boron glasses and enamels was mainly present in the form of Fe^{2+} cations weakly bound with the glass structure. In boron-free glasses, Fe is present mainly in the trivalent state in the form of FeO_3 and FeO_4 groups which are parts of the glass structural skeleton and strengthen the latter.

T. Veynberg

[Abstracter's note: Complete translation]

Card 1/1

BUDNIKOV, P.P.; AZAROV, K.P.; GRECHANOVA, S.B.; SHCHERBAK, T.I.

Study of the process of expansion of perlite. Stroi.mat. 8 no.11:32-34 N '62. (MIRA 15:12)
(Perlite (Mineral))

L 21828-65 EWP(e)/EPA(s)-2/EWT(m)/EPF(c)/EPF(n)-2/EWA(d)/EPR/EPA(w)-2/EWP(t)/EWA(bb)-2/EWP(b) Pab-10/Pr-4/Ps-4/Pt-10/Pu-4 BSD/ASDM-3/AS(mp)-2/APETR JD/WW/WH

ACCESSION NR: AP5002932 S/0072/65/000/001/0033/0036

AUTHOR: Azarov, K. P. (Doctor of technical sciences) (Deceased); Grechanova, S. B. (Candidate of technical sciences); Shcherbak, T. I. (Engineer)

TITLE: Wetting and adhesion of ceramic coating of metals B

SOURCE: Steklo i keramika, 22- no. 1, 1965, 33-36 18

TOPIC TAGS: 18 heat resistant metal coating, metal enamel, ceramic coating, frit, chromium sesquioxide, contact angle, enamel adhesion, ceramic coating adhesion

ABSTRACT: The purpose of this study was to determine the effect of wetting on the process of coating metals with glass-ceramic enamels, 15 especially with those enamels containing Cr_2O_3, and on the adhesion of such coatings to metal. The wetting of two Ni-based alloys, I and II, and two nickel-chromium steels [unspecified] with various frits, such as alkali-free barium silicate frits with a low B_2O_3 content, titanoborosilicate frits, and a mixture of frits with Cr_2O_3, was investigated. Alloy I contained Cr, Ti, and Al, and alloy II con-

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tained, in addition, Nb and Mo. The wetting at various temperatures was traced by means of a motion picture camera, and curves showing the dependence of the contact angles on temperature in various frit-to-metal combinations were obtained. The effect of the addition of MoO_3, CuO, CuO + Sb_2O_3, Sb_2O_3, WO_3, or Co_2O_3 as surfactants in one of the heat-resistant frits was tested. The results of the study indicated that the accuracy of readings depends on many side phenomena, such as crystallization, bloating, phase separation, oxidation of metal, and the melt interaction with the oxidized metal. However, since these phenomena also take place in the actual coating process, the data obtained in the study can be used for the evaluation of the relationship between the wetting and the adhesion. The experiments conducted indicated that the wetting depends both on the metal and frit. Low-melting frits wet the metal well, but they have poor adhesion. The addition of Cr_2O_3 to a heat-resistant frit improved the contact angle and facilitated the sintering and spreading on metal; an increase in Cr_2O_3 content in low-melting frits increased the contact angle and the strength of adhesion. The introduction of a surfactant improved the wetting and sintering, but did not change the

L 21828-65

ACCESSION NR: AP5002932

adhesion. Other conditions being equal, high-melting and poorly wetting frits have a better adhesion to metals than low-melting frits. The poor adhesion of the low-melting frits seems to be caused by insufficient metal oxidation under a rapidly sintering coating, while a high-melting and slowly sintering coating provides a sufficient development of an oxide film, which promotes the adhesion. The phenomenon was confirmed experimentally. The index of wetting is not the basic factor controlling the adhesion. The diffusion of atoms was found to be an important factor in the development of the cohesive layer. It was noted that the strength of adhesion increases after prolonged service or after tests at high temperatures. The addition of small amounts of metal powders to the frits is suggested in order to distort the crystalline lattice of the coated metal by diffusion. Orig. art. has: 5 figures.

ASSOCIATION: Novocherkasskiy politekhnicheskiy institut (Novocherkassk Polytechnical Institute)

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

NO REF SOV: 003 OTHER: 002 ATD PRESS: 3166

Card 3/3

FISHER, S.L.; PERMINOV, A.M.; RADCHENKO, I.I.; PODDUBNYY, I.Ya.; LOBACH, M.I.; BELGORODSKIY, I.M.; Prinimali uchastiye: VALENINA, V.F.; GRECHANOVSKIY, V.A.; UKHALOV, N.T.; ATLASOVA, L.A.; SIRE, Ye.M.; PANOV, P.I.

Manufacture of butadiene-styrene (methyl-styrene) rubber according to the iron-trilon-rongalite compounding formula with the use of rosin emulsifiers. Kauch.i rez. 22 no.1:9-15 Ja '63. (MIRA 16:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka imeni S.V.Lebedeva.
(Rubber, Synthetic) (Styrene)

S/020/62/144/004/015/024
B101/B138

AUTHORS: Grechanovskiy, V. A., Dolgoplosk, B. A., Corresponding Member AS USSR, Kropacheva, Ye. N., Poddubnyy, I. Ya., Sterenzat, D. Ye., and Khrennikova, Ye. K.

TITLE: Distribution of molecular weight in stereographically regular polybutadiene polymerized under the influence of "cobalt" systems

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 144, no. 4, 1962, 792 - 794

TEXT: Changes in the molecular weight of polybutadiene and in its distribution M_o were studied in relation to the monomer concentration and degree of polymerization. The polymerization was performed in a 10% solution of the butadiene in benzene, in the presence of a complex catalyst composed of $CoCl_2 \cdot C_2H_5OH$ and $Al(iso\text{-}C_4H_9)_2Cl$, the concentration of the $CoCl_2$ being 0.01 % and that of the dibutyl-aluminum chloride 2% as referred to the monomer. The M_o was found using an ultra-centrifuge ($\sim$180,000 g), hexane and heptane in equal proportions being thermodynamically almost ideal as

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a solvent, and the calculation being done according to S. Ya. Frenkel' (ZhTF, 24, no. 12, 2167 (1954)). Results: (1) With 20% conversion the maximum M_o came at about 245,000. This enabled the number average molecular weight $\overline{M}_n$ to be calculated as 270,000 and the weight average molecular weight $\overline{M}_w$ as 320,000. (2) With 97% conversion M_o was about 90,000, $\overline{M}_n$ was 136,000 and $\overline{M}_w$ was 265,000. Similar results were obtained with the catalyst $CoBr_2 \cdot C_2H_5OH$ - $Al(iso\text{-}C_4H_9)_2Cl$. (3) Stepwise addition of the monomer, each successive portion thereof being added only after the preceding portion was completely polymerized, gave M_o = 55,000, $\overline{M}_n$ = 68,000 and $\overline{M}_w$ = 180,000 for all of the successively polymerized portions. Conclusions: (a) The catalyst is fully regenerated and remains active for a long time (>100 hr); (b) the reduced M_o, $\overline{M}_n$ and $\overline{M}_w$ in case (2) is due to reduction in the monomer concentration when polymerization lasts longer; (c) in case (3) two opposite tendencies compensate one another: namely the tendency to higher M_o through the catalyst becoming

diluted by added portions of monomer and the tendency to lower M_o as a result of diminishing butadiene concentration; hence all portions show the same values of M_o, $\overline{M}_n$ and $\overline{M}_w$. There are 4 figures.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S. V. Lebedeva (All-Union Scientific Research Institute of Synthetic Rubber imeni S. V. Lebedev)

SUBMITTED: March 13, 1962

Card 3/3

ACCESSION NR: AP3003793 S/0190/63/005/007/1042/1048

AUTHORS: Poddubnyy, I. Ya.; Grechanovskiy, V. A.; Moscvitskiy, M. I.; Podalinskiy, A. V.

TITLE: Study of hydrodynamic parameters and molecular weight distributions of divinylstyrene copolymers in an "ideal" solvent

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 5, no. 7, 1963, 1042-1048

TOPIC TAGS: intrinsic viscosity, divinyl styrene copolymer fraction, molecular weight distribution, sedimentation constant, diffusion coefficient, polarization interferometer

ABSTRACT: The sedimentation, diffusion, and intrinsic viscosity of divinylstyrene copolymer fractions in an ideal solvent (n-octane at 21C) were investigated on the basis of data determined from an ultracentrifuge using the rational method for molecular weight distribution. An independent method for calculating sedimentation constant and the diffusion coefficient is given by

$$M = \frac{S_0}{D_0} \cdot \frac{RT}{1 - \bar{v}_2\rho}$$

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ACCESSION NR: AP3003793 .

The diffusion coefficient was measured by means of a polarization interferometer. In all experiments the solution concentration did not exceed 0.05%. Empirical laws expressing the sedimentation constant S, diffusion coefficient D, and intrinsic viscosity η were found as functions of the molecular weight M in the molecular weight region 5×10^4 to 8×10^5; these are

$$S_0 = 1{,}59 \cdot 10^{-2} M^{0.50},$$
$$D_0 = 1{,}49 \cdot 10^{-4} M^{-0.50}.$$

and

$$[\eta]_0 = 1{,}62 \cdot 10^{-3} M^{0.80}.$$

In the molecular weight theory of Flory-Mandelkern given by the equation

$$M = \frac{S_0 [\eta]^{1/2}}{\Phi^{1/2} D^{3/2}} \cdot \frac{N \eta_0}{1 - \bar{v}\rho},$$

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ACCESSION NR: AP3003793

a value of 2.36×10^6 was found for the parameter $\Phi^{1/3} p^{-1}$.
The sedimentation constant of all fractions investigated was found to depend upon the entire range studied (0.1-0.4%). Expressions for S as a function of M have been determined for finite concentrations and shown to be applicable to molecular weight distribution calculations without extrapolating to infinite dilution. Orig. art. has: 15 equations, 7 figures, and 5 tables.

ASSOCIATION: Vsesoyuzny*y nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S. V. Lebedeva (All-Union Scientific Research Institute of Synthetic Rubber)

SUBMITTED: 30Dec61 DATE ACQ: 08Aug63 ENCL: 00

SUB CODE: GC, MA NO REF SOV: 008 OTHER: 003

Card 3/3

ACCESSION NR: AP3003794 S/0190/63/005/007/1049/1053

AUTHORS: Poddubny*y, I. Ya.; Grechanovskiy, V. A.; Mosevitskiy, M. I.

TITLE: On the method for determining molecular weight distributions of cis-1,4-polybutadienes from sedimentation data in "ideal" solvent

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 5, no. 7, 1963, 1049-1053

TOPIC TAGS: polybutadiene, complex catalyst, sedimentation constant, polymer, infinite dilution, hexane, heptane

ABSTRACT: The sedimentation characteristics of two cis-1,4-polybutadiene specimens in near-ideal solutions, obtained by polymerization of various complex catalysts, have been investigated. The first specimen, D-1, was obtained on complex catalyst $Al(iso\text{-}C_4H_9)_3 + TiI_4$ and the second, D-2, on $Al(iso\text{-}C_4H_9)_3 + CoCl_2$. IR spectroscopy indicates that both polymers contain 90% cis-1,4. The solvent was a 1:1 mixture (by volume) of hexane and heptane. It is shown that the concentration dependence of the sedimentation constant S(o) persists over a wide range in the vicinity of the Θ point. The sedimentation constant is determined as a function of the molecular weight M, thus, for D-1 $S|_{c\to 0}^{mg/ml} = 6{,}24\cdot10^{-2}M^{0.40}$; and for D-2, $S|_{c\to 0}^{mg/ml} = 4{,}44\cdot10^{-2}M^{0.44}$; $S|_{c\to 0}^{mg/ml} = 12{,}5\cdot10^{-2}M^{0.33}$; $S|_{c\to 0}^{mg/ml} = 5{,}51\cdot10^{-2}M^{0.40}$.

Card 1/2

ACCESSION NR: AP3003794

An approximate evaluation of the molecular weight distribution of cis-1,4-polybutadiene has been made on the basis of sedimentation data at finite concentrations without extrapolating to infinite dilutions. "The authors are grateful to R. K. Tsvetkova for helping in the diffusion measurements." Orig. art. has: 5 formulas, 3 figures, and 1 table.

ASSOCIATION: Vsesoyuzny*y nauchno-issledovatel'skiy institut sinteticheskogo kauchuka, im. S. V. Lebedeva (All-Union Scientific Research Institute of Synthetic Rubber)

SUBMITTED: 30Dec61 DATE ACQ: 08Aug63 ENCL: 00

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

Card 2/2

PODDUBNYY, I.Ya.; GRECHANOVSKIY, V.A.; PODALINSKIY, A.V.

Hydrodynamic parameters and molecular weight distribution of cis-1,4-polyisoprene. Vysokom. soed. 5 no.10:1588 O '63. (MIRA 17:1)

PODDUBNYY, I.Ya.; GRECHANOVSKIY, V.A.

Effect of chain branching on the character of the molecular weight dependence of the hydrodynamic parameters of macromolecules. Vysokom soed. 6 no.1:64-68 Ja'64. (MIRA 17:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka imeni S.V. Lebedeva.

PODDUBNYY, I.Ya.; GRECHANOVSKIY, V.A.

Sedimentation constant in "ideal" solvents as dependent on concentration. Dokl. AN SSSR 153 no.5:1122-1124 D '63. (MIRA 17:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S.V. Lebedeva. Predstavleno akademikom V.A. Karginym.

L 05129-67 EWP(j)/EWT(m) LJP(c) RM

ACC NR: AP6027734 (A) SOURCE CODE: UR/0020/66/169/004/0832/0834

AUTHOR: Babitskiy, B. D.; Grechanovskiy, V. A.; Poddubnyy, I. Ya.; Smirnova, I. N.; Dolgoplosk, B. A.

35
B

ORG: none

TITLE: Some regularities in the change of the molecular weight distribution of cis-1,4 polybutadienes obtained under the influence of Ziegler-Natta catalysts

SOURCE: AN SSSR. Doklady, v. 169, no. 4, 1966, 832-834

TOPIC TAGS: polybutadiene, catalytic polymerization, molecular weight, titanium compound, organoaluminum compound

ABSTRACT: The complex Ziegler-Natta catalyst TiI_4+Al(iso-C_4H_9)$_3$ was used to synthesize cis-1,4-polybutadienes. The effect of the degree of conversion of the monomer, concentration of the catalyst TiI_4 + Al(iso-C_4H_9)$_3$ and polymerization temperature on the molecular weight and molecular weight distribution (MWD) of the polymers formed was studied. The MWD was determined from sedimentation rates in a "Phywe" centrifuge. Samples obtained at various stages of polymerization at 25°C showed that independently of the degree of conversion of the monomer, beginning with the smallest experimentally measurable degree of conversion (~15%), the MWD of the polymers does not change, i. e., the process is a steady one. The catalyst and monomer concentrations do not affect the steadiness of the process. The latter is affected, however, by a

Card 1/2 UDC: 66.095.265+678.744

ACC NR: AP6027734

drop in the polymerization temperature to 15°C, and in this case the molecular weight increases with the degree of conversion. The molecular weight of cis-1,4-polybutadienes increases with the initial concentration of the monomer and with decreasing initial concentration of the catalyst. As the temperature drops, the nature of the change in molecular weight as a function of these two concentrations remains the same. It is concluded that the polymerization of butadiene over TiI_4+Al(iso-C_4H_9)$_3$ at 15°C and below involves the "live"-chain mechanism, whereas at higher temperatures an increasingly important role is played by chain-limiting reactions. Orig. art. has: 4 figures.

SUB CODE: 07/ SUBM DATE: 13Jan66/ ORIG REF: 004/ OTH REF: 004

Card 2/2

REZNIK, B.Ye.; SKARRE, O.K.; GRECHANOVSKIY, V.F.; DLUGACH, R.Ye.;
Prinimali uchastiye: NEDOSHOPA, G.N.; SEREBRO, V.D.;
OVDIYENKO, A.N.; GUBENKO, R.V.

Phototurbidimetric and radiometric methods for the determination of sulfates in pure iron oxide. Khim. prom. no.5:381-384 My '63. (MIRA 16:8)

1. Dnepropetrovskiy gosudarstvennyy universitet (for Reznik, Skarre, Grechanovskiy, Dlugach).

BRYNZA, A.P.; RYNSKAYA, Ye.S.; GRECHANOVSKIY, V.F.; GRISHKO, N.I.; ZHURBA, T.V.

Atmospheric corrosion of copper powder in the presence of sulfur dioxide. Zhur. prikl. khim. 36 no.9:1936-1942 D '63. (MIRA 17:1)

1. Dnepropetrovskiy gosudarstvennyy universitet imeni 300-letiya vossoyedineniya Ukrainy s Rossiyey.

ACCESSION NR: AP4040544 S/0064/64/000/006/0440/0442

AUTHOR: Grechanovskiy, V. F.; Reznik, B. Ye.; Skarre, O. K.; Dlugach, R. Ye.; Gubenko, R. V.

TITLE: Production of ferric oxide with low iron content

SOURCE: Khimicheskaya promy*shlennost', no. 6, 1964, 440-442

TOPIC TAGS: ferric oxide, production, purification, analytical grade ferric oxide, ferrite production, electrical industry, ferric carbonate

ABSTRACT: A procedure was worked out for the production of analytical grade ferric oxide which comprises an improvement on the iron carbonate precipitation and calcining method:

$$FeSO_4 + (NH_4)_2CO_3 \rightleftarrows FeCO_3 + (NH_4)_2SO_4$$

$$2FeCO_3 \xrightarrow{O_2} Fe_2O_3 + 2CO_2$$

In the improved method the second wash after calcining is eliminated and the amount

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ACCESSION NR: AP4040544

of distilled water required in the first wash is reduced. The conditions found most amenable to the production of an $FeCO_3$ precipitate with a reduced amount of impurities which are fairly readily washed out include: pouring a 40% solution of $FeSO_4 \cdot 7H_2O$ (preheated to 60-65C) into a strongly agitated 25% $(NH_4)_2CO_3$ solution preheated to 35-40C and taken in two-fold excess (not in stoichiometric amounts). Mixing is to be continued for 30-60 minutes and the mixture then allowed to stand one hour. The precipitate is washed with hot water on the filter, dried and calcined. Subsequent washing is not required. Analysis of the ferric oxide thus produced showed sulfate content in the 0.01-0.08% range and alkali and alkaline earth content of 0.02-less than 0.05%. Such material may be used in ferrite production, in the electrical and radio technology. Orig. art. has: 1 equation and 4 tables.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00

SUB CODE: IC NO REF SOV: 003 OTHER: 000

Card 2/2

L 20754-65 EWT(m)/EWP(b)/EWP(t) IJP(c)/SSD/AFWL/ESD(gs) JD
ACCESSION NR: AP5000473 S/0073/64/030/011/1141/1142

AUTHOR: Zakhariya, H. F.; Grechanovskiy, V. P.

TITLE: Iodination of metallic germanium

SOURCE: Ukrainskiy khimicheskiy zhurnal, v. 30, no. 11, 1964, 1141-1142

TOPIC TAGS: germanium, germanium tetraiodide, germanium iodination, purification, analysis, metal iodide separation

ABSTRACT: Impurities were determined in germanium by a technique developed for iodinating metallic Ge to GeI_4. Pieces of Ge metal were reacted with liquid I_2 at elevated temperatures (300-350C) and pressures in sealed glass tubes, in an inert atmosphere to avoid GeO_2 formation. The GeI_4 was then distilled in the unopened tubes and crystallized on the cold portion of the tube. Tests with 5×10^{-5} -5×10^{-4}% of various metals added as impurities showed that thermally unstable iodides or iodides having much lower vapor pressure than GeI_4 did not distill with the GeI_4. Thus the alkali, alkaline earth, rare earth element, Cu,

Card 1/2

L 20754-65
ACCESSION NR: AP5000473

Ag, Au, Pb, Cr, Mn, Co and Ni iodides were almost completely separated. Some Cd, In and Tl iodides were entrained with GeI_4 vapors, while the Ga, Sn and Ti iodides all distilled over with GeI_4. If the objective is not analytical, but simply to prepare pure GeI_4, the use of 1-2% less than the stoichiometric amount of I_2 circumvents the need for separating excess I_2. The GeI_2 formed under these conditions separated from the GeI_4 by distilling onto a hotter section of the tube. Orig. art. has: no graphics

ASSOCIATION: Institut obshchey i neorganicheskoy khimii AN UkrSSR. Laboratorii v Odessa. (Odessa Laboratory, Institute of General and Inorganic Chemistry, AN UkrSSR)

SUBMITTED: 02Jul63 ENCL: 00

SUB CODE: IC, GC NO REF SOV: 000 OTHER: 003

Card 2/2

GRECHANSKIY, V.S.

KRYUGER, P.K.; KOTS, S.L.; KAZAKOV, V.N.; GRECHANSKIY, V.S.; FEDOROV, P.N.; NEBOZHENKO, I.A.; PEREL'MAN, Yu.S.; DANILOV, V.I., inzh., red.; KHITROV, P.A., tekhn.red.

[Repairing electric equipment and cab sections of diesel locomotives] Remont elektrooborudovaniia i ekipazhnoi chasti teplovozov. Moskva, Gos.transp.zhel-dor. izd-vo, 1955. 150 p. (MIRA 11:6)
(Diesel locomotives--Maintenance and repair)

SEROPIAN, Ye.; GHEGHANU, I.; IOAN, A. (Bukharest)

Treatment of severe forms of bronchial asthma with ACTH and cortisone. Klin.med. 37 no.6:149-151 Je '59. (MIRA 12:8)

1. Iz terapevticheskoy kliniki Koltsya pri Institute usovershenstvovaniya i spetsializatsii vrachey (dir. - prof.B Teodoresku).

(ASTHMA, ther.
ACTH & cortisone alone & in combination (Rus))
(ACTH, ther. use
asthma, with & without cortisone (Rus))
(CORTISONE, ther. use
asthma, with & without ACTH (Rus))

VYTRISHCHAK, V.Ya.; GRECHANYI, K.V.

Use of a quick-setting plastic "styracryl" for plombage of the frontal sinuses. Vop. neirokhir 24 no. 2:53-54 Mr-Sp '60. (MIRA 14:1)
(FRONTAL SINUS—SURGERY)

GRECHANYUK, M.M., podpolkovnik; DMITRIYEV, V.I., kand.istor.nauk, kapitan 2 ranga; KRINITSYN, F.S., kand.istor.nauk, polkovnik; CHERNOV, Yu.I., kapitan 3 ranga; LUPACH, V.S., red.; KONOVALOVA, Ye.K., tekhn.red.

[The Baltic Fleet; a historical sketch] Baltiiskii flot; istoricheskii ocherk. Moskva, Voen.izd-vo M-va obor.SSSR, 1960. 373 p. (MIRA 14:2)
(Russia--Navy)

GRECHANYUK, N.M., polkovnik; BUKHANOVSKIY, L.M., kand. tekhn. nauk, kapitan dal'nego plavaniya.

Reviews and bibliography. Mor. sbor. 48 no.10:89-94 O '65. (MIRA 18:9)

GODLEVSKIY, G.F.; GRECHANYUK, N.M.; KONONENKO, V.M.; LUPACH, V.S., red.

[Combat cruises; the squadron of the Black Sea Fleet in the Great Patriotic War] Pokhody boevye; eskadra Chernomorskogo flota v Velikoi Otechestvennoi voine. Moskva, Voenizdat, 1966. 241 p. (MIRA 19:1)

ACC NR: AP7006798 SOURCE CODE: UR/0418/66/000/006/0058/0060

AUTHOR: Shul'te, Yu. A. (Doctor of technical sciences); Lunev, V. V. (Engineer); Grechanyy, A. P. (Engineer)

ORG: None

TITLE: Increasing resistance to cold shortness in alloy steels used for castings

SOURCE: Tekhnologiya i organizatsiya proizvodstva, no. 6, 1966, 58-60

TOPIC TAGS: alloy steel, impact strength, plastic strength, cast steel, FERRITE STEEL, PEARLITE STEEL

ABSTRACT: The authors consider the effect of complex reduction on the mechanical properties and resistance to cold shortness of alloyed ferrite-pearlite steels. The grades of steel studied were 25ML with the composition (in %) 0.23-0.28 C, 0.55-0.75 Mn, 0.2-0.3 Si, 0.024-0.634 S, 0.027-0.030 P, 0.4-0.55 Mo and 0.027-0.040 Al, and 30KhMML with the composition (in %) 0.28-0.35 C, 0.52-0.68 Mn, 0.23-0.27 Si, 0.032-0.040 S, 0.33-0.38 P, 1.42-1.56 Cr, 1.30-1.50 Ni, 0.25-0.35 Mo and 0.030-0.035 Al. The effect of calcium and cerium additives on the mechanical properties and cold shortness of these grades of steel was studied. Aluminimum alone, aluminim combined with silicon-calcium alloy and a combination of silicon-calcium alloy, aluminum and ferrocerium were used as reducing agents. It was found that complex reduction increases strength and ductility with a simultaneous reduction in the critical tempera-

Card 1/2 UDC: 669.15:620.192.42.004.68

ACC NR: AP7006798

ture of embrittlement. The effect of calcium modification alone approaches that of triple modification by aluminum, calcium and cerium. All specimens showed a smooth reduction in impact strength from +20 to -100°C without the jumps characteristic of steel with pronounced cold shortness thresholds. The yield stress of 25ML steel falls with a temperature reduction until it reaches the value of the tensile strength at -196°C. Due to the favorable effect of nickel, 30KhNML steel retains a fair amount of ductility even at this temperature. The experimental data show that the resistance of ferrite-pearlite alloy steels to cold shortness may be considerably increased with a concomitant improvement in the purity of the metal. Orig. art. has: 4 figures, 1 table.

SUB CODE: 11/ SUBM DATE: None/ ORIG REF: 004

Card 2/2

KHOKHLACHEV, F.N.; GREBCHANYY, I.V.

[Don valley flood lands; practice of vegetable growers] V donskom zaimishche; opyt ovoshchevodov. Rostov-na-Donu, Rostovskoe obl. kn-vo, 1951. 68 p. (MLRA 9:11)
(Rostov Province--Vegetable gardening)

GRECHANYY, K.V.

Tumors of arterio-venous anastomoses. Khirurgiia, Moskva No.12:69-71 Dec 51. (CIML 21:4)

1. Of the Military Medical Academy imeni S.M. Kirov, Leningrad.

GRECHEN, A.A.

SHATSKIY, M.M.; MILLER, V.N.; GRECHEN, A.A.; PASHCHENKO, N.Ye.; VETROV, P.I.

The "POR" valve for regulating heat output of one-pipe running-water radiators. Mats.i izobr.predl.v stroi. no.73:13-15 '54. (MLRA 7:6)
(Radiators)

GRECHENKO, A

Effect of construction factors of wheeled tractors on their traction and economic properties. p.273. SBORNIK. RADA MECHANISACE A ELEKTRIFIKACE ZEMEDELSTVI A LESNICTVI. Praha. Vol. 28, no. 5, November 1955

SOURCE: East European Accessions List, (EEAL) Library of Congress Vol. 5, No. 8, August 1956

GRECHENKO, A.

AGRICULTURE

PERIODICAL: SBORNIK RADA MECHANIZACE E ELEKTRIFIKACE ZEMEDELSTVI
VOL. 31, no. 5 /6, Dec. 1958

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Monthly List of East European Accessions (EEAI), LC, Vol. 8, no 5,
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Stanki I Instrument, 16, Nos. 7-8, 1945

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(Artillery--Dictionaries) (German language--Dictionaries--Russian)

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Expansion of [redacted]. p. 2.

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GRECHIKHIN, A., master sporta (UA3TZ) (g.Gor'kiy)

Sensitivity of receivers used in "fox hunting" games.
Radio no.7:17-19 Jl '65. (MIRA 18:9)

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Receiver for "fox hunting" games. Radio no.9:18-20 S '65.
(MIRA 19:1)

GRECHIKHIN, A.A.

Shipbuilding industry in capitalist countries during 1957.
Sudostroenie 24 no.8:73-76 Ag '58. (MIRA 11:10)
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[Economic conditions of capitalistic countries; review of business conditions for 1958 and the beginning of 1959] Ekonomicheskoe polozhenie kapitalisticheskikh stran; kon"iunkturnyi obzor za 1958 g. i nachalo 1959 g. Moskva, Izd-vo "Pravda," 1959. 127 p. (Prilozhenie k zhurnalu "Mirovaia ekonomika i mezhdunarodnye otnosheniia," no.8, avgust 1959 g.) (MIRA 12:9)

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MANUKYAN, A.A.; RYDVANOV, N.F.; BELOUS, T.Ya.; SVIRIDOVA, Z.P.; CHEBOTAREVA, Ye.A.; SHUMILIN, V.I.; PUDINA, K.V.; LUTSKAYA, Ye.Ye.; BRAGINA, N.M.; SANDAKOV, V.A.; MUSSO, S.; ZABLOTSKAYA, A.I.; VDOVICHENKO, D.I.; MIRKINA, I.Z.; MORENO, I.; SIDOROV, V.F.; MOKLYARSKIY, B.I.; GRECHIKHIN, A.A.; KOSOVA, V.A.; KULIKOV, N.I.; ZHDANOVA, L.P.; ROZENTAL', Ye.I.; PETRANOVICH, I.M.

[Economic conditions of capitalist countries; survey of economic trends in 1961 and the beginning of 1962] Ekonomicheskoe polozhenie kapitalisticheskikh stran; kon'iunkturnyi obzor za 1961 g. i nachalo 1962. g. Moskva, Izd-vo "Pravda," 1962. 157 p. (MIRA 16:9)

1. Sotrudniki kon"yunkturnogo sektora Instituta mirovoy ekonomiki i mezhdunarodnykh otnosheniy AN SSSR.
(Economic history)

L 24495-65 EEO-2/FSS-2/EWT(1)/EWA(d)/EWA/EED-2/FCS(k)

ACCESSION NR AM5002713 BOOK EXPLOITATION

16
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Grechikhin, Aleksey Fedorovich (Colonel); Loshchilov, Andrey Kapitonovich (Colonel)

Firing command of motorized rifle units (Upravleniye ognem motostrelkovykh podrazdeleniy), Moscow, Voyenizdat M-va obor. SSSR, 1964, 162 p. illus., 13,000 copies printed.

TOPIC TAGS: fire control system

PURPOSE AND COVERAGE: This book is intended for officers and noncommissioned officers of motorized artillery, reconnaissance, landing, training school subdivisions, higher general command schools and it has the purpose of helping them in problems of fire control. It cites elements of fire control systems and, using concrete examples, considers the organization and methodology for conducting studies with noncommissioned officers and officers and also makes recommendations for developing their skills in fire control.

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33646
S/051/62/012/001/015/020
E202/E492

24.6710 also 3617

AUTHORS: Grechikhin, L.I., Min'ko, L.Ya., Plyuta, V.Ye.

TITLE: Investigation of a plasma stream in an impulse discharge

PERIODICAL: Optika i spektroskopiya, v.12, no.1, 1962, 120-121

TEXT: The authors investigated a stream of plasma issuing from an opening in a flat copper electrode, produced by an impulse discharge between the latter electrode and a pointed iron rod electrode disposed along the axis of the opening. The diameter of the opening was 2 mm, the capacity of the condenser bank 60 μF and the power 2 kW. The discharge circuit contained a non-inductive resistance of 1.1×10^{-4} ohms, used for measuring the potential drop across its terminals. This P.D. was applied to the first pair of vertical plates of the C.R.T. The second pair was connected to the reference (sinusoidal) voltage of the audio-generator. The luminous part of the plasma was photographed by the high speed camera type COP(SFR) mounted with its slit parallel to the axis of the stream, which made it possible to photograph the stream in all its stages of development, at right

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angle to its line of motion. The camera was synchronized with the initiation of the discharge and an additional arrangement for the synchronization of the oscilloscope was also included. The study of the luminosity of the plasma stream has shown that the strongest luminosity is present immediately behind the flat electrode; then it passes into a region of weak luminosity and is followed by a sharply defined region of strong luminosity which decays gradually. The comparison of the oscillograms and photograms shows that the high luminosity regions follow the current. The persistence of after-glow with the decaying discharge was observed to be fairly long, ca. 10^{-4} sec. The photograms show that the plasma stream consists of discrete "streamers" which are well defined in the positive and negative half cycles of the discharge. The shape of the streamers was found to be independent of the material of the electrodes. With the help of the streamers, the authors determined indirectly the velocity of the main plasma stream. A graph showing the average stream velocity in relation to the distance from the edge of the flat electrode shows that at a distance corresponding to the transition from low into high

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luminosity, there is also a sharp drop (from 3×10^3 to 2.1×10^3 m/sec) in the velocity of the plasma stream. The authors complete their work by giving a brief and qualitative explanation of the structure of the plasma stream. It is said that each of the individual streamers creates a compressive "jump", the distance of this jump from the flat electrode being proportional to the velocity of the issuing streamer. On the other hand, the velocity of the main stream changes during each half cycle, following the change in the discharge current. The absolute value of the stream velocity depends on the nature of the metal. It was found to be higher in the case of light metals.
Acknowledgments are expressed to M.A.Yel'yashevich for discussion.
There are 2 figures and 9 references: 7 Soviet-bloc and 2 Russian translations from non-Soviet publications.

SUBMITTED: June 12, 1961

Card 3/3

GRECHIKHIN, L.I. [Hrachykhin, L.I.], EL'YASHEVICH, M.A. [El'iashevich, M.A.]

Broadening of sodium and lithium lines in nonuniform fields. Vestsi AN BSSR. Ser. fiz-tekh. nav. no.4:37-41 '62. (MIRA 18:4)

ACC NR: AP6032692 SOURCE CODE: UR/0203/66/006/005/0889/0893

AUTHOR: Grechikhin, L. I.

ORG: Institute of Physics, AN Belorussian SSR (Institut fiziki AN Belorusskoy SSR)

TITLE: Appearance of forbidden transitions $^1D_2 - {}^3P_{1,2}$ in oxygen

SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 5, 1966, 889-893

TOPIC TAGS: aurora, forbidden transition, transition probability, function theory

ABSTRACT: Conditions under which forbidden transitions $^1D_2 - {}^3P_{1,2}$ take place in oxygen are discussed. The transitions occurring during nebular and auroral phenomena are treated in particular. It is pointed out, in agreement with the work of L. V. Moiseyeva (Geomagn. i aeronomiya, 1964, 4, No. 3, 581), that under the conditions of aurora polaris, in new stars, and in gasdischarge plasma the accepted values for the probabilities of forbidden transitions are not satisfied by the observational data by as much as one or more orders of magnitude. It is shown that for such cases the probability of transition depends upon the concentration of electrons in the plasma. The intensity of the aurora polaris is a linear or square function (depending upon the conditions of electron-atom collision) of electron concentration when that concentration is above $10^5 cm^{-3}$. Below that concentration the exchange effects are small and the probability of the spontaneous transition is determined by spin-orbital inter-

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ACC NR: AP6032692

action. The author expresses his sincere gratitude to M. A. Yel'yashevich and P. A. Apanasevich for evaluation of this work and valuable remarks. Orig. art. has: 15 formulas and 1 tabls.

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