KUZOVOV, K.G., starshiy prepodavatel'.

Weights of direction in making intersections and resections during triangulations in mine surveying. Izv. vys. ucheb. zav.; gor. zhur. no.1:94-102 '58. (MIRA 11:5)

1. Sverdlovskiy gornyy institut.
(Mine surveying)

KUZOVOV, K.G., starshiy prepodavatel'

Acceptable accuracy for calculating approximate coordinate points in mine surveying triangulation determined by multiple intersection. Izv.vys.ucheb.zav.; for zhur. no.8:36-40 '59. (MIRA 13:5)

1. Sverdlovskiy gornyy institut imeni V.V.Vakhrusheva. Rekomendovana kafedroy marksheyderskogo dela.
(Mine surveying)

KUZOVOV, K.G., starshiy prepodavatel'

Checks on compensating computations by the method of intervening observations in determining mine survey triangulation points with section. Izv. vys. ucheb. zav.; gor. zhur. no.11:32-40 1959.
(MIRA 14:5)

1. Sverdlovskiy gornyy institut imeni V. V. Vakhrusheva. Rekomendovana kafedroy marksheyderskogo dela.
(Mine surveying)

KUZOVOV, K.G., inzh.

Semigraphical method of comparison in determining separate points in a survey triangulation with resections and intersections. Izv. vys. ucheb. zav.; gor. zhur. no.3:15-21 '60. (MIRA 14:5)

1. Sverdlovskiy gornyy institut imeni V.V.Vakhrusheva. Rekomendovana kafedroy marksheyderskogo dela.
(Mine surveying)

KUZOVOV, K. G.

Cand Tech Sci - (diss) "Accuracy of compensating computations using the method of consecutive observations in insertion of separate points of mine surveyor triangulation in an existing trigonometric network." Sverdlovsk, 1961. 22 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Sverdlovsk Mining Inst imeni V. V. Vakhrushev); 130 copies; price not given; (KL, 5-61 sup, 190)

KUZOVSHCHIKOV, N.I., inzh.; KREMENETS, Yu.A., inzh.

Technological and economic efficiency of major repairs on mountain roads. Avt. dor. 27 no. 3:19-20 Mr '64. (MIRA 17:5)

KUZOVSKIN, KONSTANTIN SERGEYEVICH

LIPATENKOV, Ivan Vasil'yevich; KAPRALOV, Mikhail Karpovich; BITUNOV, Yevgeniy Ivanovich; VAKUROV, Konstantin Viktorovich; KUZOVSKIN, Konstantin Sergeyevich; PAVLOV, Leonid Vasil'yevich; KLOCHKOV, Ivan Nikitich; ZHITS, Margoliya Isayevna; KHROMOV, Vasiliy Vasil'yevich; LIPSHITS, N.V., redaktor; KOPELEVICH, Ye.I., redaktor; DMITRIYEVA, N.I., tekhnicheskiy redaktor

[Assembling and adjusting mechinery of looms with picker sticks; work practices of foremen and assistants in the Monin worsted mills] Ustanovka i naladka mekhanizmov tkatskikh stankov s verkhnim boem; obobshchennyi opyt raboty masterov i pomoshchnikov mastera Moninskogo kamvol'nogo kombinata. Pod red. N.V.Lipshitsa. Moskva, Gos.nauchno-tekhn.izd-vo M-va legkoi promyshl.SSSR, 1957. 109 p. (MLRA 10:9)
(Looms)

KUZSEL, Dezso

Achievements and goals of research work in motor vehicle transportation. Kozl tud sz 12 no.8:352-354 Ag '62.

1. Kozlekedes- es Postaugyi Miniszterium VI. Foosztalyanak vezetoje.

KUZSEL, Dezso

The work of the Council for Mutual Economic Assistance in the development of the Hungarian and international automobile transportation. Kozleked kozl 18 no.36:663-664 9 S '62.

KUZSEL, Dezso

Possibilities for cooperation among the socialist countries in the field of investments. Kozleked kozl 19 no.23:399-402 9 Je '63.

KUZSHINOV, Ya.I., kand.tekhn.nauk

Concerning the performance of tractor engines in the winter. Trakt. i sel'khozmash. 32 no.2:7-9 F '62. (MIRA 15:2)
(Tractors—Cold weather operation)

KUZUB, A.G.

133-1-4/24

AUTHORS: Glazkov, P.G., Dunayev, N.Ye., Kuzub, A.G., and Panev, G.A.

TITLE: The Production of Low-manganese Pig Using Krivoy Rog Ores and Donets Coke (Vyplavka malomargantsovistogo chuguna na Krivorozhskikh rudakh i Donetskom kokse)

PERIODICAL: Stal', 1958, No.1, pp. 14 - 20 (USSR).

ABSTRACT: Transfer of the blast furnaces on the above works to the production of pig iron with a manganese content of about 0.8 - 0.9% (as against 1.9% previously produced) is described. The decrease in manganese content was carried out in stages with simultaneous increase in slag basicity (CaO/SiO_2 about 1.3) and alumina content of slag (to about 10%) without encountering any operational difficulties. Chemical composition of raw materials is given in Table 1. Furnace-operating data - Tables 2 and 3. The dependence of sulphur content in pig on manganese content at various levels of silicon content - Fig. 1. The average monthly composition of iron and slag - Table 4. The dependence of sulphur content in pig on slag basicity - Fig.5. It is concluded that under works' operating conditions, the transfer of furnaces to the production of low-manganese pig increased the output of iron by 5-6%, decreased the coke rate by 6.5%, decreased the consumption of manganese ore by 73.5% and increased the consumption of fluxes by 6.72%. The cost of

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The Production of Low-manganese Pig Using Krivoy Rog Ores and Donets Coke

133-1-4/24

production of pig iron decreased by 5.18%. There are 4 tables, 5 figures and 7 Russian references.

ASSOCIATION: Stalino Metallurgical Works (Stalinskiy metallurgicheskiy zavod)

AVAILABLE: Library of Congress

Card 2/2

SOV/133-58-11-3/25

AUTHORS: Nosovitskiy, BM., Panev, G.A., Brodetskiy, L.V. and Kuzub, A.G.

TITLE: An Experience in Smelting Ferrosilicon from Krivoy Rog Ores (Opyt vyplavki ferrosilitsiya iz Krivorozhskikh rud)

PERIODICAL: Stal', 1958, Nr 11, pp 969-976 (USSR)

ABSTRACT: An analysis of the results of prolonged operation of blast furnaces on the Stalinsk Works producing ferrosilicon and a comparison of their main operation indices with the corresponding furnaces on the Dzerzhinsk and Zaporozhstal' Works is given. Characteristic features of the furnaces and the operational results obtained, raw materials used are given in Tables 1, 2, 3 and 4, respectively. The operation practice used on the Stalino Works and its influence on the furnace performance and, in particular, the influence of slag composition, the problem of distribution of the gas stream in the stack and the formation of scaffolds are discussed in some detail. Mean monthly indices of the furnace operation for 1951-54 are shown in Figure 1, gas distribution along the throat diameter - Figure 2, formation of

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scaffolds - Figure 3 and some details of its structure - Figure 4, chemical composition of scaffold - Table 5. It is concluded that the smelting of ferrosilicon is characterised by a low-stability furnace driving, development of axial gas streams and on prolonged operation, the formation of ferrous scaffolds (by the formation of successive layers during variation of temperature conditions in the stack). An increase in slag basicity from 1.0 - 1.1 to 1.2 - 1.25 with simultaneous increase in the content of magnesia from 2.2 - 2.5% to 3 - 3.5% improves the desulphurisation of ferrosilicon and pig iron and decreases metal losses on the pig casting machine to 3-4% (instead of 7%). Variations in the alumina content of slag from 8-11% at slag basicities from 1.05 to 1.25 have no noticeable influence on the silicon content in ferrosilicon. In order to obtain ferrosilicon with a high silicon content, normal stock level and blast temperature should be maintained (about 750-800 °C). A comparatively steady furnace driving and a decrease in the formation of scaffolds can be obtained by: a) exclusion from the burden of materials containing iron silicates

An Experience in Smelting Ferrosilicon from Krivoy Rog Ores

(open-hearth and welding slag, sinter and some types of iron ores); b) increase in the degree of peripheral working by an appropriate choice of charging system and an increase in the clearance between the large bell and furnace throat; c) periodic transfer of the furnace to the production of basic or foundry iron. There are 4 figures, 5 tables and 7 Soviet references

ASSOCIATIONS: Donetskiy industrial'nyy institut (Donets Industrial Institute) and Stalinskiy metallurgicheskiy zavod (Stalino Metallurgical Works)

Smelting low-manganese iron ... [illegible]

... A. Paney ... Stal' ... [illegible] ... A. G. ... possibility of making quality ... [illegible]

... hearth, and working on ... level, having stable slag in the ... [illegible]

... this possibility ... obtained, given ... [illegible]

KUZUB, A.G.; BOSIYEK, A.M.

Tuyere nozzles with a grog lining. Metallurg 6 no.10:7-8 O '61. (MIRA 14:9)

1. Stalinskiy metallurgicheskiy zavod. 2. Zamestitel' glavnogo inzhenera Stalinskogo metallurgicheskogo zavoda (for Kuzub). 3. Starshiy inzhener tekhnicheskogo otdela Stalinskogo metallurgicheskogo zavoda (for Bosiyek)
(Blast furnaces--Equipment and supplies)

PANEV, G.A.; KUZUB, A.G.; CHUVPYLO, P.P.; KAMARDIN, A.M.; NOVIKOV, I.S.; YAROSHEVSKIY, S.L.; POPOV, N.N., kand. tekhn. nauk

Effect of high temperature heating of the hearth on the operation of a blast furnace. Met. i gornorud. prom. no.2:9-11 Mr-Ap '65. (MIRA 18:5)

KUZUB, G. Ya.

"Test in laying pipe-lines by means of pressure with the adaptation of artificial decreasing of the ground water level," Construction Industry, 1952.

KUZUB, G. YA.

"Temperature Conditions in the Ice Cover on Certain Rivers of Siberia." Min. Higher Education USSR, Leningrad Hydrometeorological Inst., Leningrad, 1955. (Dissertation for the Degree of Candidate in Technical Sciences)

SO: Knizhnaya Letopis', No. 22, 1955, pp 93-105

KUZUB, G.Ya., inzh.

Thermal conditions of the ice cover in some rivers of Western Siberia. Trudy Transp.-energ.inst.Zap.-Sib.fil.AN SSSR no.5:69-79 '55. (MIRA 15:5)

1. Novosibirskiy institut inzhenerov zheleznodorozhnogo transporta.

(Siberia, Western--Ice on rivers, lakes, etc.)

KUZUB, G. YA.

SOV/4843

PHASE I BOOK EXPLOITATION

Akademiya nauk SSSR. Zapadno-Sibirskiy filial, Novosibirsk. Transportno-energeticheskiy institut

Voprosy ledotekhniki (Problems in Ice-Control Engineering) [Novosibirsk] Novosibirskoye knizhnoye izd-vo, 1958. 110 p. (Series: Its: Trudy, vyp. 7) 350 copies printed.

Resp. Ed.: K.N. Korzhavin, Doctor of Technical Sciences, Professor; Ed. of Publishing House: P.N. Men'shikov; Tech. Ed.: N.M. Pototskaya.

PURPOSE: This publication is intended for hydrologists and hydraulic engineers.

COVERAGE: This issue of the Transactions of the Transportation and Power Institu contains articles dealing with the ice conditions on the Ob' and Yenisey River the problems of ice pressure on the supports of hydraulic structures, the pos bilities of operating hydropower installations during the winter-spring perio and the determination of heat exchange between the water surface and the atmosphere. No personalities are mentioned. References follow each article

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Problems in Ice-Control Engineering SOV/4843

TABLE OF CONTENTS:

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KUZUB, G.Ya., kand. tekhn. nauk

Thermal cracks in the ice cover. Trudy Transp.-energ. inst. Zap.-Sib. fil. AN SSSR no.7:33-36 '58. (MIRA 13:2)

1. Novosibirskiy institut inzhenerov zheleznodorozhnogo transporta.
(Ice on rivers, lakes, etc.)

KUZUB, G.Ya., kand. tekhn. nauk

The problem of water-intake "buckets." Vod. i san. tekh. no.12: 22-24 D '61. (MIRA 15:6)
(Water-supply engineering) (Ice on rivers, lakes, etc.)

KUZUB, G.Ya., kand.tekhn.nauk (Novosibirsk)

Unheated water towers. Vod. i san. tekh. no.9:10-11 '62. (MIRA 15:12)

(Siberia--Water towers)

KUZUB, G.Ya., kand. tekhn. nauk, dots.; KORZHAVINA, K.N., prof., red.

[Manual on training hydrometric practice for students of the Novosibirsk Institute of Engineers of Railroad Transportation] Rukovodstvo po uchebnoi gidrometricheskoi praktike dlia studentov NIIZhTa. Novosibirsk, Novosibirskii in-t inzhenerov zhel-dor. transp., 1963. 30 p.
(MIRA 17:5)

AUTHORS: Kuzub, V.S., Kuzub, L.G., Kovsman, Ye.P. SOV/63-3-6-39/43

TITLE: The Problem of the Influence of Anions on Electrode Processes (K voprosu o vliyanii anionov na elektrodnyye protsessy)

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1958, Vol III, Nr 6, pp 656-657 (USSR)

ABSTRACT: The adsorption of iodine ions on cadmium is a function of the potential. Shifting the potential to positive values leads to a more intensive covering of the surface by iodine ions which is expressed in a deepening of the minimum in the curves lg i and $\frac{1}{\eta}$. The abnormal dependence of lg i on $\frac{1}{\eta}$ in the presence of haloide ions is probably due to a change of the electrode surface caused by the formation of surface connections between the metal and the haloide ions.
There are 6 graphs and 8 Soviet references.

ASSOCIATION: Chernovitskiy gosudarstvennyy universitet (Chernovtsy State University)

SUBMITTED: April 24, 1956

Card 1/1

KUBUB, L.G., Cand Chem Sci -- (diss) "Study in the field of the effect of anions upon the cathode process." Chernovtsy, 1959, 12 pp with graphs (Min of Higher Education UkSSR, Chernovtsy State Univ) 150 copies (KL, 34-59, 111)

87519
S/073/60/026/002/004/015
B023/B067

54600 1087, 1273, 1043

AUTHORS: Pamfilov, A. V., Kuzub, V. S., and Kuzub, L. G.

TITLE: Effect of Anions and Temperature on the Rate of Electrodeposition of Cadmium, Iron, Copper, and Zinc

PERIODICAL: Ukrainskiy khimicheskiy zhurnal, 1960, Vol. 26, No. 2, pp. 174-181

TEXT: The authors describe their studies of the effect of anions and temperature on the electrodeposition of cadmium, iron, copper, and zinc. In electrodeposition the anions which were studied at 25°C may be divided into the following series as to their effect on cathodic polarization: $NO_3^- > SO_4^{2-} > CH_3COO^- > Br^- > I^- > Cl^-$ which agrees with published data (Refs. 10 and 11). At 55° (Fig. 1), however, the nature of the effect is largely changed and the series reads as follows: $Br^- > I^- > Cl^- \gg NO_3^- > SO_4^{2-} > CH_3COO^-$. Fig. 2 shows that in the electrolyte with oxygen-containing anions ($CdSO_4$, $Cd(NO_3)_2$) the rate of electrolysis

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Effect of Anions and Temperature on the Rate of Electrodeposition of Cadmium, Iron, Copper, and Zinc

increases with increasing temperature, then passes a maximum at 55°C and finally decreases. In the salts of haloid acids (except HF) the processes are inhibited at this temperature. The different behavior of these two groups of anions becomes manifest at certain potentials and concentrations of the electrolyte. The addition of 1 to 10 mmole/l I' or Br' ions is sufficient to transform the maximum which is observed at 0.25 N $CdSO_4$ into a minimum. In the case of more strongly concentrated solutions the maximum and the minimum disappear independently of the nature of the anions. A similar dependence is observed with iron, zinc, and copper (Figs. 4,5, and 6). The measurements of hydrogen overtension in 0.05 N K_2SO_4 on smooth platinum at different temperatures showed that in the region of the potentials which are on the left of the zero-charge potential of platinum (φ = 0.2V) polarization decreases (Fig. 8) with an increase in temperature to 45°C. It then increases and the curves of the coordinates log i=f(1/T) show a maximum (Fig. 9). With reduced concentration of K_2SO_4 the maximum is shifted toward the side of higher temperatures (65-75°). With increased concentration it is shifted toward the side of lower temperatures and the

Effect of Anions and Temperature on the Rate of Electrodeposition of Cadmium, Iron, Copper, and Zinc

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curves become linear. These anomalies are observed only in dilute electrolytes. At different temperatures and at certain concentrations the specific conductivity of lead- and cadmium salts (Fig. 10) and the pH at which hydrates of cadmium, zinc, and nickel are formed (Fig. 11) deviate from the linear course of the dependence forming a break. With increased concentration of the electrolyte this break and the minimum and the maximum disappear (Fig. 12). The pH of water, the specific electrical conductivity, and the minimum of the differential capacity of the double layer mercury - solution show a break at 45-55°C. In the following, the authors study D. I. Mendeleyev's theory of the "characteristic" temperature (Ref. 21) and the same theory of A. P. Rutskov (Ref. 22). The authors hold the opinion that the anomalous dependence log i=f(1/T) is due to the change of the water properties which is intensified under the effect of anions. The highest rate of electrolysis was observed with the above maximum and the rate of the electrodic process is reduced. This is explained by the transformation of water into a state of "denser packing". The water dipoles can be adsorbed on the electrode surface. The distribution of the dipoles depends on the charge of the metal surface. With a positive charge of the

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Effect of Anions and Temperature on the Rate of Electrodeposition of Cadmium, Iron, Copper, and Zinc

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metal surface the adsorbed molecules may form a dipole layer, whose negative surface is directed to the metal, its positive one to the solution. With negative charge of the metal surface the reverse case is observed. Finally, the following scientists are mentioned: S. V. Gorbachev, Ye. P. Starostenko, G. A. Yemel'yanenko, and V. A. Karnitskiy, Ya. M. Kolotyrkin, L. A. Medvedeva (Ref. 15) and L. I. Antropov (Ref. 6). There are 12 figures and 31 references: 21 Soviet, 4 US, 1 British, 3 German, and 2 Italian.

ASSOCIATION: Chernovitskiy universitet, laboratoriya fizicheskoy khimii (Chernovtsy University, Laboratory of Physical Chemistry)

SUBMITTED: June 30, 1958

Card 4/4

KUZUB, V.S.; TSINMAN, A.I.; KUZUB, L.G.; DOLOTOVA, T.S.

Intercrystallite corrosion of stainless steels in a strong nitric acid. Zhur.prikl.khim. 35 no.12:2794-2796 D '62. (MIRA 16:5)

1. Lisichanskiy filial Gosudarstvennogo instituta azotnoy promyshlennosti.

(Steel, Stainless—Corrosion)

ACCESSION NR: AP5017745 UR/0365/65/001/004/0396/0400

AUTHOR: Kuzub, L. G.; Neyman, N. S.; Tsinman, A. I.; Kuzub, V. S.

TITLE: Anodic protection of stainless steels in the production of complex fertilizers containing potassium chloride

SOURCE: Zashchita metallov, v. 1, no. 4, 1965, 396-400

TOPIC TAGS: corrosion resistant steel, stainless steel, carbon steel, [illegible] metallurgy, anodic protection, 1Kh 8N9T stainless steel, OKh21N3T sta[illegible]

ABSTRACT: Stainless steels 1Kh18N9T, OKh21N3T, OKh21N6M2T, and OKh21N12M2T, and Brand 3 carbon steel were subjected to corrosion tests in a pulp of complex fertilizers with the following composition (in %, dry basis): $Ca_5F(PO_4)_3$--28, $(NH_4)_2SO_4$-14, $CO(NH_2)_2$-10, KCl-17, NH_3-2, HNO_3-29. Water content was about 25 grams per 100 grams of pulp. The corrosion resistance of 1Kh18N9T and OKh21N12M2T steels was also determined in media w[illegible]

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ACCESSION NR: AP5017745

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pH values (4.5; 3.2; 2.8; 3.4; 2.2) and concentrations of KCl from 17% to zero at temperatures of 40-50C. Anodic protection of 1Kh18N9T steel was investigated at temperatures of 20-70C. The electrode surface was 0.05 cm^2, source of current was two accumulators with an emf of 2.5 volts connected in series, and the cathode was a platinum grid. A saturated calomel electrode was used for comparison. During the tests the potential was within the limits of 0.7-0.9 volts, and it was determined that the region of optimum passivity has a spread of 0.85 volts. Up to 60C the limiting potentials of this region (0.1-0.95 volts) do not change, but at 70C the spread is 0.3 volts. Pitting is observed only with a KCl content of 70% from the standard. The results, as shown in tables, indicate that in a pulp of complex fertilizers, anodic protection can reduce the corrosion rate by more than 50 times, and can completely eliminate pitting. Orig. art. has: 3 figures and 3 tables.

ASSOCIATION: Gosudarstvennyi institut azotnoi promyshlennosti, Severodonetskiy filial (State Institute for the Nitrogen Industry, North Don Br...

NR REF SOV: 001 OTHER: 002

Card 2/2

KOLOTYRKIN, Ya.M.; MAKAROV, V.A.; KUZUB, V.S.; TSINMAN, A.I.; KUZUB, L.G.

Anodic protection of heat exchangers made of 1Kh18N9T steel in concentrated sulfuric acid at temperatures of 100 - 120°. Zashch. met. 1 no.5:598-600 S-O '65. (MIRA 18:9)

1, Nauchno-issledovatel'skiy fiziko-khimicheskiy institut imeni L.Ya.Karpova, Moskva.

L 10850-66 EWT(m)/EWA(d)/EWP(t)/EWP(z)/EWP(b) IJP(c) MJW/JD/WB

ACC NR: AP5025654 SOURCE CODE: UR/0080/65/038/010/2217/2222

AUTHOR: Kuzub, L. G.; Kuzub, V. S.; Kossyy, G. G.

ORG: Severodonetskiy Affiliate of the State Institute of the Nitrogen Industry (Severodonetskiy filial Gosudarstvennogo instituta azotnoy promyshlennosti)

TITLE: Steel corrosion in nitric acid of various concentrations in the presence of halide ions [Paper presented at a republic conference on the use of acid corrosion inhibitors held in Kiev on 18 September 1963]

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 10, 1965, 2217-2222

TOPIC TAGS: nitric acid, carbon steel, corrosion rate, chloride, fluoride, corrosion inhibitor, corrosion resistance

ABSTRACT: The effect of chloride and fluoride ions on the corrosion rate of 1Kh18N9T steel was studied over a wide HNO_3 concentration range (1-100%), with 0.01, 0.05, 0.1, 0.5, 1, 2, and 3 wt % Cl^- (added as NaCl) and 0.05, 0.1, 0.5, and 1 wt % F^- (added as NaF). The corrosion rate was determined gravimetrically, and the steady state potentials of the steel were measured. The change in the degree of passivation of the steel was measured as a function of NaCl and NaF concentration and was found to be consistent with the change in the corrosion rate. In all HNO_3 concentrations, the presence of Cl^- shifted the steady state potential toward the negative side; this

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UDC: 620.193

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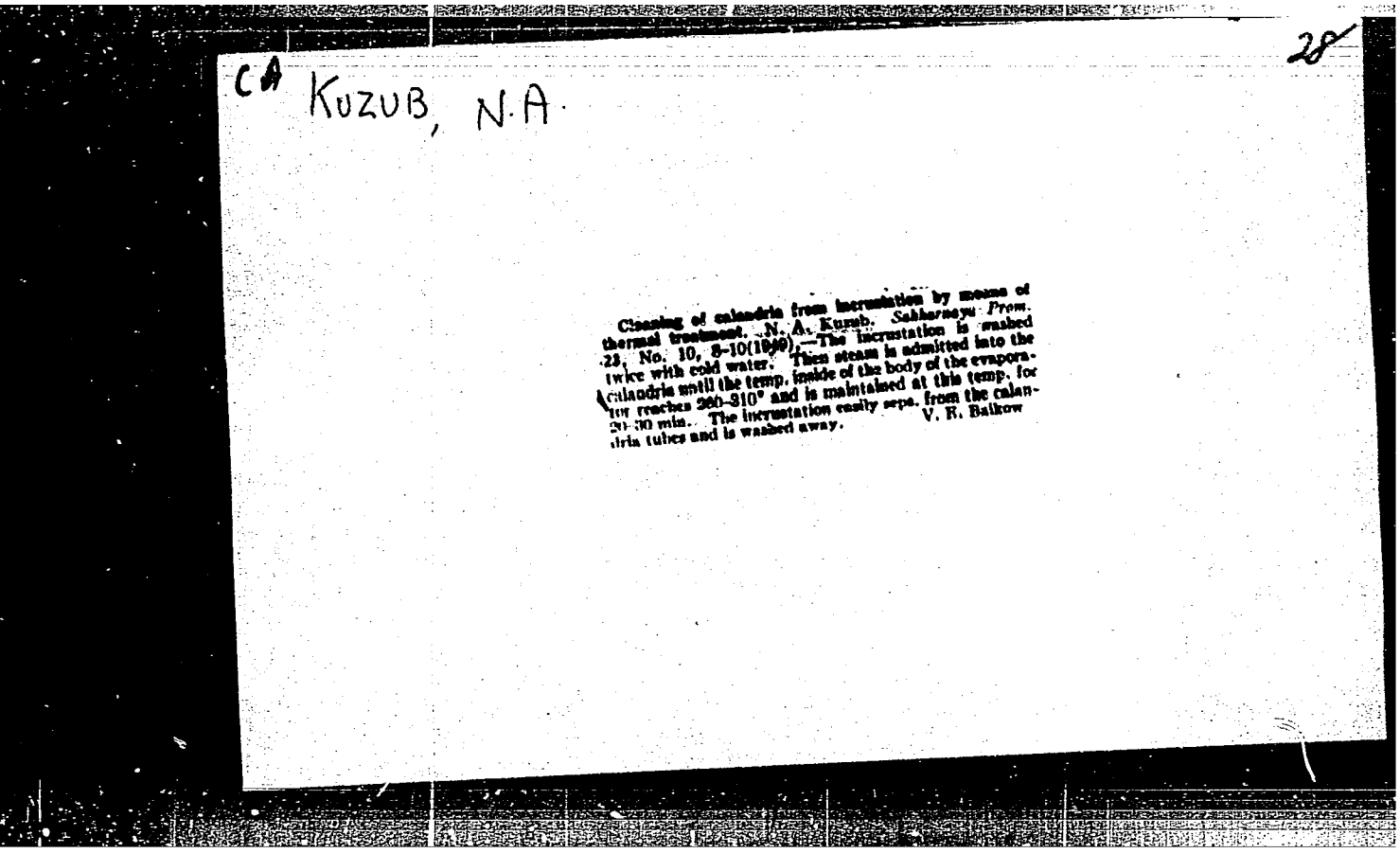
KUZUB, L.G.; KUZUB, V.S.; KOSSYY, G.G.

Corrosion of steels in nitric acid of various concentration in the presence of hologen ions. Zhur. prikl. khim. 38 no.10: 2217-2222 O '65. (MIRA 18:12)

1. Submitted April 27, 1963.



CA KUZUB, N.A.

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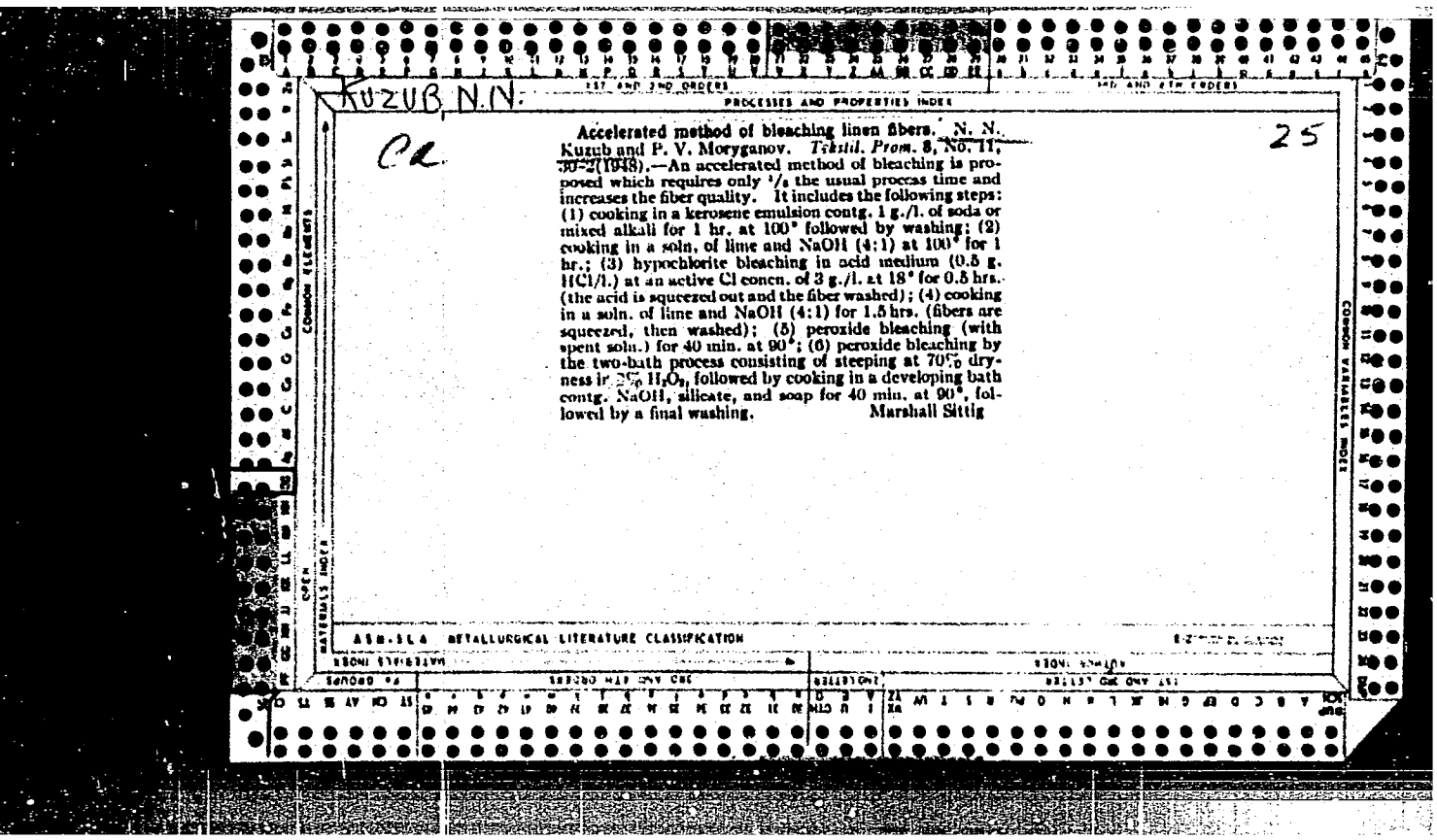
Cleaning of calandria from incrustation by means of thermal treatment. N. A. Kuzub. *Sakharnaya Prom.* 23, No. 10, 8-10(1949).—The incrustation is washed twice with cold water. Then steam is admitted into the calandria until the temp. inside of the body of the evaporator reaches 260-310° and is maintained at this temp. for 20-30 min. The incrustation easily seps. from the calandria tubes and is washed away. V. R. Balkow



KUZUB, N.N.

Ca

25

Accelerated method of bleaching linen fibers. N. N. Kuzub and P. V. Moryganov. *Tekstil. Prom.* 8, No. 11, 30–2(1948).—An accelerated method of bleaching is proposed which requires only 1/5 the usual process time and increases the fiber quality. It includes the following steps: (1) cooking in a kerosene emulsion contg. 1 g./l. of soda or mixed alkali for 1 hr. at 100° followed by washing; (2) cooking in a soln. of lime and NaOH (4:1) at 100° for 1 hr.; (3) hypochlorite bleaching in acid medium (0.5 g. HCl/l.) at an active Cl concn. of 3 g./l. at 18° for 0.5 hrs. (the acid is squeezed out and the fiber washed); (4) cooking in a soln. of lime and NaOH (4:1) for 1.5 hrs. (fibers are squeezed, then washed); (5) peroxide bleaching (with spent soln.) for 40 min. at 90°; (6) peroxide bleaching by the two-bath process consisting of steeping at 70° dryness in 2% H_2O_2, followed by cooking in a developing bath contg. NaOH, silicate, and soap for 40 min. at 90°, followed by a final washing. Marshall Sittig

C-4 KUZUB, N.N.

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Uninterrupted peroxide bleaching. N. N. Kuzub. *Tekstil. Prom.*, 7, No. 5, 30-2(1947); *Chem. Zentr.* (Russian Zone Ed.) 1948, II, 1138-9; cf. *C.A.* 43, 8087e.—Acid peroxide baths which are stable even at high temps. are decompd. rapidly in the presence of contact metals, especially Fe and Cu. Approx. neutral baths decompose upon heating. The fact that H_2O_2 is not adsorbed by the fabric simplifies the regulation of the bath. The optimum satv. of the developer bath is at 5 g. NaOH/l. with a $NaOH:SiO_2$ ratio slightly less than 1. Simple fabrics are treated with a slightly acid soln. of H_2O_2 (20 g./l.) and then treated for 40 min. at 95-100° with a NaOH-Na silicate soln. contg. 5 g. NaOH/l. The fabric is then washed with water at 70°. Before bleaching, printed materials are treated for 40 min. at 90-8° with a soln. contg., per l., 20 g. NaOH, 10 g. neutral contact, 8 g. Na bisulfite soln. of 38° Bé., and 5 g. Na silicate soln. of 40° Bé. The material is finally washed with hot water.

M. G. Moore

KUZUB, V.S.

KUZUB, V.S.

On A.K. Dmitriev's paper "Chemical inequivalence of hydrogen in the moment of liberation". Zhur. ob. khim. 27 no.3:831-833 Mr '57. (MLRA 10:6)

1. Chernovitskiy gosudarstvennyy universitet.
(Hydrogen sulfide) (Hydrochloric acid)

SOV/63-3-6-39/43

AUTHORS: Kuzub, V.S., Kuzub, L.G., Kovsman, Ye.P.

TITLE: The Problem of the Influence of Anions on Electrode Processes (K voprosu o vliyanii anionov na elektrodnyye protsessy)

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1956, Vol III, Nr 6, pp 836-837 (USSR)

ABSTRACT: The adsorption of iodine ions on cadmium is a function of the potential. Shifting the potential to positive values leads to a more intensive covering of the surface by iodine ions which is expressed in a deepening of the minimum in the curves lg i and $\frac{1}{\theta}$. The abnormal dependence of lg i on $\frac{1}{\theta}$ in the presence of haloide ions is probably due to a change of the electrode surface caused by the formation of surface connections between the metal and the haloide ions. There are 6 graphs and 8 Soviet references.

ASSOCIATION: Chernovitskiy gosudarstvennyy universitet (Chernovtsy State University)

SUBMITTED: April 24, 1958

Card 1/1

KUZUB, V. S., Cand Chem Sci -- (diss) "Kinetics of the electrodeposition of cadmium and adsorption phenomena." Chernovtsy, 1959 [publication date given as 1960]. 17 pp; (Ministry of Higher and Secondary Specialist Education Ukrainian SSR, Chernovtsy State Univ); 150 copies; price not given; (KL, 17-60, 142)

PAMFILOV, A.V.; KUZUB, V.S.; PALAMARCHUK, I.V.

Joint action of surface active substances on the electrocapillary curve. Dop.AN URSR no.6:813-816 '60. (MIRA 13:7)

1. Chernovetskiy gosudarstvennyy universitet. Predstavleno akademikom AN USSR Yu.K.Delimarskim [IU.K.Delimars'kyi].
(Surface active agents) (Surface tension)

87519
S/073/60/026/002/004/015
B023/B067

54600 1087, 1273, 1043

AUTHORS: Pamfilov, A. V., Kuzub, V. S., and Kuzub, L. G.

TITLE: Effect of Anions and Temperature on the Rate of Electrodeposition of Cadmium, Iron, Copper, and Zinc

PERIODICAL: Ukrainskiy khimicheskiy zhurnal, 1960, Vol. 26, No. 2, pp. 174-181

TEXT: The authors describe their studies of the effect of anions and temperature on the electrodeposition of cadmium, iron, copper, and zinc. In electrodeposition the anions which were studied at 25°C may be divided into the following series as to their effect on cathodic polarization: $NO_3' > SO_4'' > CH_3COO' > Br' > I' > Cl'$ which agrees with published data (Refs. 10 and 11). At 55° (Fig. 1), however, the nature of the effect is largely changed and the series reads as follows: $Br' > I' > Cl' > NO_3' > SO_4'' > CH_3COO'$. Fig. 2 shows that in the electrolyte with oxygen-containing anions ($CdSO_4$, $Cd(NO_3)_2$) the rate of electrolysis

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Effect of Anions and Temperature on the Rate of Electrodeposition of Cadmium, Iron, Copper, and Zinc

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increases with increasing temperature, then passes a maximum at 55°C and finally decreases. In the salts of haloid acids (except HF) the processes are inhibited at this temperature. The different behavior of these two groups of anions becomes manifest at certain potentials and concentrations of the electrolyte. The addition of 1 to 10 mmole/l I' or Br' ions is sufficient to transform the maximum which is observed at 0.25 N $CdSO_4$ into a minimum. In the case of more strongly concentrated solutions the maximum and the minimum disappear independently of the nature of the anions. A similar dependence is observed with iron, zinc, and copper (Figs. 4,5, and 6). The measurements of hydrogen overtension in 0.05 N K_2SO_4 on smooth platinum at different temperatures showed that in the region of the potentials which are on the left of the zero-charge potential of platinum (φ = 0.2V) polarization decreases (Fig. 8) with an increase in temperature to 45°C. It then increases and the curves of the coordinates log i=f(1/T) show a maximum (Fig. 9). With reduced concentration of K_2SO_4 the maximum is shifted toward the side of higher temperatures (65-75°). With increased concentration it is shifted toward the side of lower temperatures and the

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Effect of Anions and Temperature on the Rate of Electrodeposition of Cadmium, Iron, Copper, and Zinc

S/073/60/026/002/004/015
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curves become linear. These anomalies are observed only in dilute electrolytes. At different temperatures and at certain concentrations the specific conductivity of lead- and cadmium salts (Fig. 10) and the pH at which hydrates of cadmium, zinc, and nickel are formed (Fig. 11) deviate from the linear course of the dependence forming a break. With increased concentration of the electrolyte this break and the minimum and the maximum disappear (Fig. 12). The pH of water, the specific electrical conductivity, and the minimum of the differential capacity of the double layer mercury - solution show a break at 45-55°C. In the following, the authors study D. I. Mendeleyev's theory of the "characteristic" temperature (Ref. 21) and the same theory of A. P. Rutskov (Ref. 22). The authors hold the opinion that the anomalous dependence log $i=f(1/T)$ is due to the change of the water properties which is intensified under the effect of anions. The highest rate of electrolysis was observed with the above maximum and the rate of the electrodic process is reduced. This is explained by the transformation of water into a state of "denser packing". The water dipoles can be adsorbed on the electrode surface. The distribution of the dipoles depends on the charge of the metal surface. With a positive charge of the

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B023/B067

Effect of Anions and Tomperature on the Rate of Electrodeposition of Cadmium, Iron, Copper, and Zinc

metal surface the adsorbed molecules may form a dipole layer, whose negative surface is directed to the metal, its positive one to the solution. With negative charge of the metal surface the reverse case is observed. Finally, the following scientists are mentioned: S. V. Gorbachev, Ye. P. Starostenko, G. A. Yemel'yanenko, and V. A. Karnitskiy, Ya. M. Kolotyrkin, L. A. Medvedeva (Ref. 15) and L. I. Antropov (Ref. 6). There are 12 figures and 31 references: 21 Soviet, 4 US, 1 British, 3 German, and 2 Italian.

ASSOCIATION: Chernovitskiy universitet, laboratoriya fizicheskoy khimii (Chernovtsy University, Laboratory of Physical Chemistry)

SUBMITTED: June 30, 1958

Card 4/4

S/073/60/026/002/005/015
B023/B067

AUTHORS: Pamfilov, A. V. and Kuzub, V. S.

TITLE: Effect of Temperature and Composition of the Solution on the Capacity of the Cadmium Electrode

PERIODICAL: Ukrainskiy khimicheskiy zhurnal, 1960, Vol. 26, No. 2, pp. 182-187

TEXT: In continuation of earlier papers (Refs. 1 and 2) the authors studied the capacity of the cadmium electrode in a wide range of potentials at different temperatures and different concentrations of the electrolytes. The temperatures were 25-75°C, the concentrations of K_2SO_4: 0.0012-1.0 N, of NaF 0.25-1.75 N, of KBr 0.005-2 N. The authors arrived at the following conclusions: With increased temperature the capacity of the electrode in concentrated solutions decreases, whereas, in dilute solutions it increases. An extremum, whose position depends on the charge of the surface and the anions was observed in the concentration range studied. For medium concentrations the capacity attains a maximum which, upon reduction of the

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Effect of Temperature and Composition of the Solution on the Capacity of the Cadmium Electrode

concentration, is shifted toward the side of higher temperatures (Fig. 2). The effect of the anions on the capacity of the cadmium electrode is explained in terms of the structure of water and according to D. I. Mendeleyev's opinion on the "characteristic" temperature. The experimental data show that, independently of the nature of the electrolyte, the capacity of the cadmium electrode increases by increasing the temperature to 45-55° (characteristic temperature). In the electrolyte with surface-active anions at temperatures of 45-55° at which water has the "loosest" structure, the halogen ions penetrate into the Helmholtz double layer. They are adsorbed on the active surface fields thus reducing the capacity of the double layer. On the basis of the experimental data the authors hold the opinion that this structural change takes place with positive surface charge and with participation of specific adsorptive powers and electrostatic attractive powers. Papers by A. P. Rutskov (Ref. 14) and G. Landezen (Ref. 23) are mentioned. This lecture was presented at the II Conference of the UkrSSR on Physical Chemistry in Kiyev on December 27, 1958. There are 7 figures and 23 references: 16 Soviet, 5 US, 1 British, and 1 Dutch.

Effect of Temperature and Composition of the Solution on the Capacity of the Cadmium Electrode

S/073/60/026/002/005/015
B023/B067

ASSOCIATION: Chernovitskiy universitet, laboratoriya fizicheskoy khimii (Chernovtsy University, Laboratory of Physical Chemistry)

SUBMITTED: November 20, 1958

Card 3/3

S/080/60/033/007/019/020
A003/A001

AUTHORS: Pamfilov, A. V., Kuzub, V. S., Tovmach, L. P.

TITLE: Lustrous Cadmium-Plating From Acidic Baths

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol. 33, No. 7, pp. 1669-1671

TEXT: Cadmium-plating from acidic baths by means of current reversal effected by a variant of APT-2 (ART-2) electronic breaker (Ref. 3) was investigated. The duration of the anode (t_a) and cathode periods (t_c) was regulated independently of each other. The deposition was carried out on brass samples and partially on copper samples with a total surface of 4 cm^2. The thickness of the coatings was 10-20 μ. The anodes were made of chemically pure cadmium. The range of current densities was 0.5-4 amp/dm^2. The bath had the following composition (in g/l): CdO 19, $KHSO_4$ 45, $(NH_4)_2SO_4$ 10. The structure of the deposit is affected by the $\frac{t_c}{t_a}$ ratio and by the duration of the cycle T. Already at T = 11 sec and $\frac{t_c}{t_a} = 10$

Card 1/2

Lustrous Cadmium-Plating From Acidic Baths

the appearance of the deposits obtained by current reversal does not differ from those obtained by d-c. In the presence of naphthalene mono- or disulfoacids with gelatin, mirror-lustrous cadmium deposits were obtained. Caramelized sugar still improves these results. From a cyanide bath finely-grained, dense, light deposits were obtained, but without luster. Cadmium deposits from acidic baths have a microhardness twice higher than deposits from cyanide baths, their porosity is 5 times lower and the current density can be increased twice. There are 2 graphs, 2 tables and 5 Soviet references.

ASSOCIATION: Laboratoriya fizicheskoy khimii Chernovitskogo universiteta
(Laboratory of Physical Chemistry at the Chernovtsy University)

SUBMITTED: July 3, 1959

Card 2/2

PAMFILOV, A.V.; KUZUB, V.S.

Organic addition agents and halogens in cathodic processes.
Ukr.khim.zhur. 27 no.3:311-314 '61. (MIRA 14:11)

1. Chernovitskiy gosudarstvennyy universitet, laboratoriya fizicheskoy khimii.
(Electrochemistry)

PAMFILOV, A.V.; KUZUB, V.S.

Particular features of the adsorption of aromatic compounds on cadmium and mercury electrodes. Ukr.khim.zhur. 28 no.4:528-530 '62. (MIRA 15:8)

1. Chernovitskiy gosudarstvennyy universitet.
(Aromatic compounds) (Electrodes) (Adsorption)

PAMFILOV, A.V.; KUZUB, V.S.

Absorption phenomena and the electrodeposition of cadmium.
Ukr.khim.zhur. 28 no.8:939-944 '62. (MIRA 15:11)

1. Chernovitskiy gosudarstvennyy universitet.
(Cadmium plating)
(Absorption)

KUZUB, V.S.; TSINMAN, A.I.; KUZUB, L.G.; DOLOTOVA, T.S.

Intercrystallite corrosion of stainless steels in a strong nitric acid. Zhur.prikl.khim. 35 no.12:2794-2796 D '62. (MIRA 16:5)

1. Lisichanskiy filial Gosudarstvennogo instituta azotnoy promyshlennosti.

(Steel, Stainless—Corrosion)

ANIKINA, N.S.; KUZUB, V.S.; Prinimala uchastiye KOVALINSKAYA, Ye.K.

Determination of iron, nickel, chromium in concentrated nitric acid by the oscillographic polarography method. Zhur. anal.khim. 18 no.12:1502-1503 D '63. (MIRA 17:4)

1. Lisichanskiy filial Gosudarstvennogo instituta azotnoy promyshlennosti, Severodonetsk.

KUZUB, V.S.; GRU, B.A.

Bright zinc plating from an acid bath. Zhur. prikl. khim. 36 no.8:1782-1784 Ag '63. (MIRA 16:11)

1. Lisichanskiy filial Gosudarstvennogo nauchno-issledovatel'skogo i proyektnogo instituta azotnoy promyshlennosti i produktor organicheskogo sinteza.

ACCESSION NR: AP 4006937 S/0080/63/036/012/2762/2764

AUTHORS: Kuzub, V. S.; Mukhlya, S. Yu.

TITLE: Non-electric nickel plating in an ultrasonic field

SOURCE: Zhurnal prikl. khimii, v. 36, no. 12, 1963, 2762-2764

TOPIC TAGS: nickel plating, nonelectric nickel plating, ultrasonic nickel plating, ultrasonic plating, nonelectric plating

ABSTRACT: Solutions generally used for nickel plating behave differently under the action of ultrasonics. Three solutions were investigated (table, enclosure). From solution No. 1, the rate of nickel reduction was increased 6-fold by ultrasonics, avoiding necessity of multiple depositions from fresh solutions to obtain satisfactory thick deposits. The effect of ultrasonics (1000 ± 50 kilocycles/sec., 3-20 W/cm.^{2}, powdered Ni starts to precipitate, depleting the solution rapidly. Satisfactory deposits are obtained on aluminum, brass, and stainless steel. Rate of nickel reduction increases with temperature; at 50°C. satisfactory deposit can be obtained with ultrasonics, which is not possible without irradiation

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ACCESSION NR: AP4006937

at this temperature. Microhardness, cohesion and porosity of the nickel deposits is practically the same, with or without ultrasonics. Fairly satisfactory plating was obtained with solution No. 2, while deposition was unsatisfactory from solution No. 3. Orig. art. has: 1 Table and 2 Figures

ASSOCIATION: Lisichanskiy filial Gosudarstvennogo instituta azotnoy promy*shlennosti (Lisichansk Branch of the State Institute of the Nitrogen Industry)

SUBMITTED: 24May62 DATE ACQ: 20Jan64 ENCL: 02

SUB CODE: ML, CH NR REF SOV: 002 OTHER: 002

Card 2/2

ACCESSION NR: AP4038563 S/0080/64/037/005/1063/1066

AUTHOR: Kuzub, V. S.; Kossy*y, G. G.

TITLE: Intergranular corrosion of stainless steel in concentrated nitric acid. Communication II.

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 5, 1964, 1063-1066

TOPIC TAGS: stainless steel corrosion, corrosion, 1Kh18N9T, Kh17, double layer capacity, intergranular corrosion, true surface area, surface area measurement

ABSTRACT: It was shown that the rate of corrosion of chromium and chromium-nickel stainless steels in concentrated nitric acid increases with time and the corrosive destruction is intergranular in nature. It was thought that such a relationship of the rate of corrosion may result from the increase of the surface area due to the intergranular corrosion or due to the accumulation of hexivalent chromium, traces of which in the nitric acid accelerate the corrosion. The purpose of the present article was to verify this through the investigation of the true surface area of electrodes made of 1Kh18N9T and Kh17 steels. This was done by the differential measurements of the capacity of the double layer. Measurements were made

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ACCESSION NR: AP4038563

by means of an a.c. bridge. The capacity of the double layer was measured in 0.1 N K_2SO_4 solution. The oxygen was removed from the solution by passing clean nitrogen through it. The capacity was taken after 10 min. of immersion into the solution. All measurements were made at room temperature at 400 cps frequency. It was found that the capacitance of annealed steel electrodes increases greatly upon 48 hour etching in 98.9 % nitric acid. Under these conditions a definite intergranular corrosion has been detected. The increase of the true surface area in the intergranular corrosion process of steel 1Kh18N9T is approximately 2.4 times that of Kh17 steel. This fact is apparently associated with the larger grain size of the latter steel. Experimental measurements of the capacity of double layers were conducted with the participation of A. N. Zhukov. Orig. art. has: 3 tables and 2 figures.

ASSOCIATION: Lisichanskiy filial gosudarstvennogo nauchnoissledovatel'skogo i proyektnogo instituta azotnoy promyshlennosti i produktov organicheskogo sinteza (Lisichansk Branch of the State Scientific Research Planning Institute of the Nitrogen Industry and Products of Organic Synthesis)

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ACCESSION NR: AP4038563

SUBMITTED: 24Jul62 ENCL: 00

SUB CODE: MM NO REF SOV: 007 OTHER: 002

Card 3/3

ACCESSION NR: AP4040469 S/0226/64/000/003/0029/0031

AUTHOR: Kuzub, V. S.; Gru, B. A.; Sokolov, V. K.

TITLE: Obtaining lead powder by cementation

SOURCE: Poroshkovaya metallurgiya, no. 3 (21), 1964, 29-31

TOPIC TAGS: lead, lead powder, lead powder manufacture, lead cementation, lead powder cementation

ABSTRACT: A process for obtaining lead powder by cementation on copper or its alloys in an aqueous solution of thiourea, lead nitrate, and organic (tartaric or citric) acid has been developed. Satisfactory results were obtained with an aqueous solution of 5—8 g/dm³ lead nitrate, 38—42 g/dm³ thiourea, 20—30 g/dm³ tartaric acid, and 1.8—2.2 pH at 19—25C. Copper or brass submerged for 1 hr were covered with a solid layer of lead 1 μ thick. With prolonged cementation the layer became loose. The powder contained 90—96% lead and 0.2—2.6% sulfur. The average particle size was 50—70 μ and the bulk density was 28 g/cm³. Changes in the concentration of citric acid from 5 to 30 g/dm³ and lead nitrate from 1 to 5 g/dm³ had no effect on the emf.

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ACCESSION NR: AP4040469

Thiourea added in an amount of 10—35 g/dm^3 shifted the potential by more than 400 mv to negative values, thereby intensifying the process of cementation. Orig. art. has: 2 figures.

ASSOCIATION: Lisichanskiy filial GIAP (Lisichanskiy branch GIAP)

SUBMITTED: 27Aug63 ENCL: 00

SUB CODE: MM NO REF SOV: 011 OTHER: 001

Card 2/2

S/0365/65/001/001/0042/0047

AUTHOR: Kossyy, G. G.; Kuzub, V. S.

TITLE: [illegible] of intercrystalline corrosion of stainless steels and methods of its determination

SOURCE: Zashchita metallov, v. 1, no. 1, 1965, 42-47

TOPIC TAGS: steel corrosion, stainless steel, electrolytic corrosion, intercrystalline corrosion, chromium containing alloy, steel passivity

ABSTRACT: On the basis of data in the literature on the anodic behavior of iron-chromium alloys and various stainless steels, it is shown that intercrystalline [illegible] the depletion of chromium at the grain boundaries can occur in sulfuric acid in the range of 0.0 to +0.3 volts [illegible] maximum at approximately 0.1 V. The occurrence of intercrystalline [illegible] does not require a drop in the chromium content of the grain [illegible] a positive potentials, intercrystalline corrosion is not [illegible]

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L 54976-65
ACCESSION NR: AP5007625

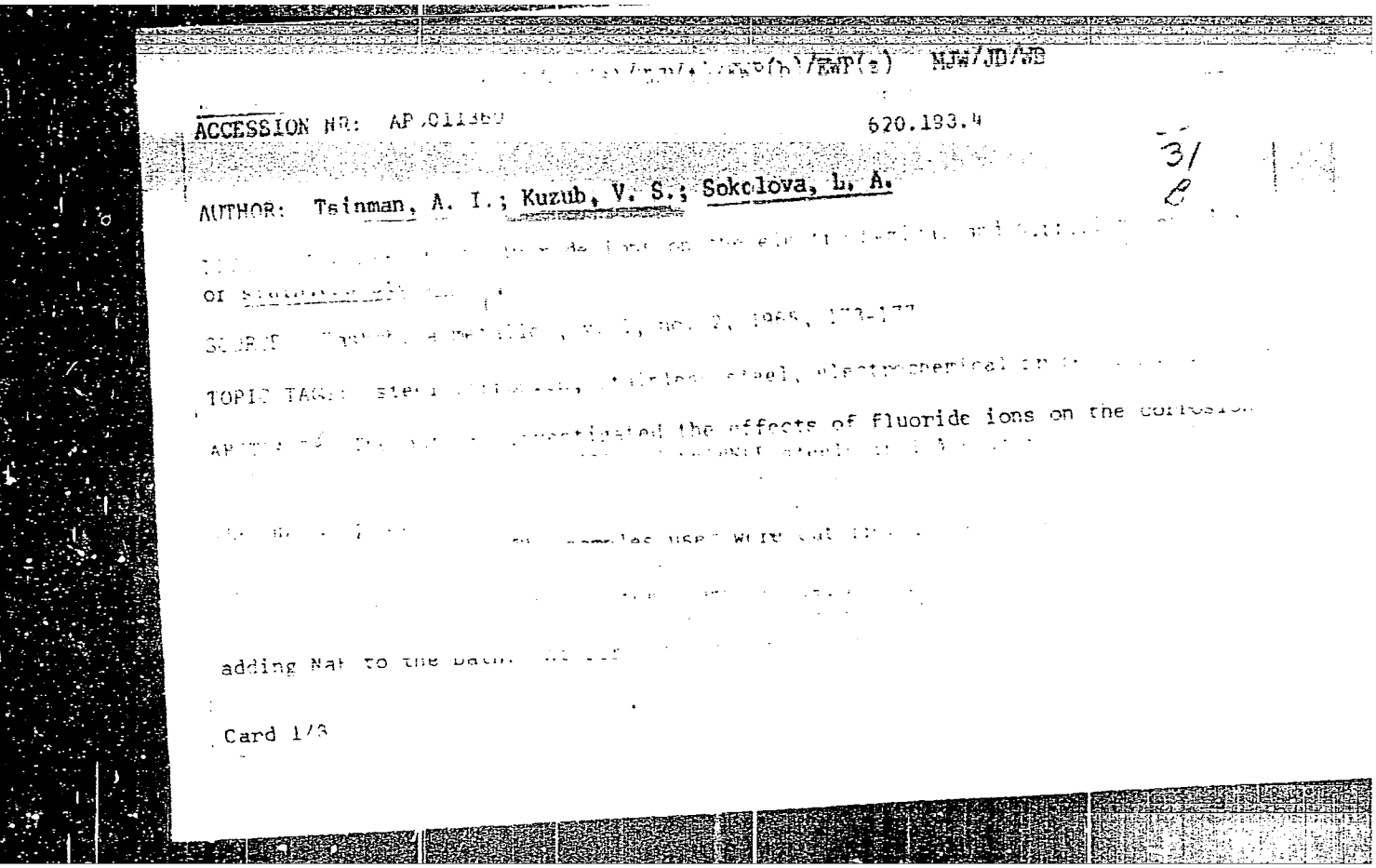
of chromium [illegible]. To determine the tendency [illegible] intercrystalline corrosion, it is necessary to test a polished steel sulfuric acid at a potential of +0.15 V maintained by a potentiostat. Steel subject to intercrystalline corrosion can be utilized if its steady-state [illegible] tial lies within the range of the stable passive state. These conclusions in agreement with those of V. M. Knyazheva, Ya. M. Kolotyrkin, M. A. Vedeneyeva, and R. S. Ramananova (Khim. prom-st', No. 5, 61, 1964). Orig. art. has: 2 figures.

ASSOCIATION: Gosudarstvennyy institut azotnoy promyshlennosti, Severodonetsk [illegible] North Donets Branch

SUBMITTED: [illegible] ENCL: 00 SUB CODE: [illegible]

NO REF SOV: 021 OTHER: 007

Card 2/2



EWT(b)/EWP(t) MJW/JD/WB

ACCESSION NR: AP [illegible] 620.193.4

AUTHOR: Tsinman, A. I.; Kuzub, V. S.; Sokolova, L. A.

[illegible]

SOURCE: [illegible]

TOPIC TAGS: [illegible]

ABSTRACT: [illegible] investigated the effects of fluoride ions on the corrosion [illegible]

[illegible]

adding NaF to the bath [illegible]

Card 1/3

L 55134-65

ACCESSION NR: AP5011360

density in sulfuric acid baths due to the passivation of the steel. After the passivity is overcome, the dissolution rate of the steel hardly changes. This initial current increase depends only slightly on the concentration of the sulfuric acid and it decreases for steels of higher chrome content. For steels containing less than 27% chrome when fluoride ions are present, the anodic polarizing curves show a region of slow reduction in current density at voltages where the passivation begins. This reduction depends on the composition of the steel, the concentration of the fluoride ions and the concentration of the sulfuric acid. The region of maximum passivity in solutions with fluoride ions begins at higher voltages than when sulfuric acid is used alone. At positive voltages (0.5 to 0.6 v) the fluoride ions destroy the passive state and the current density increases, particularly in low alloy steels. With NaF constant concentration the current density decreases in the 0.4 to 0.95 range in more concentrated solutions. Metallographic analysis shows that the dissolution of the tempered steel specimens is uniform, the surfaces remain smooth without pitting. Oxidation of ferrous ions in the presence of fluoride ions on the steel surfaces is low. The effect of fluoride ions on steel corrosion in $10N$ $H_2SO_4 + 3M CrO_3$ solution is more pronounced than that of chloride ions. It is concluded that all halide ions attack the passive state in steel. But the mechanism of the attack by fluoride ions differs from that of the

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ACCESSION NR: AP5011350

other halides. The Cl^-, Br^-, I^- and ClO_4^- ions attack the steel surfaces spot- [illegible] the iron as ferrous ions. The fluoride ions attack

is based on [illegible] ions are first formed and then [illegible] that the fluoride ions are [illegible]

SUBMITTED: 11Nov64

OTHER: 009

AUTHORS: Kossyy, G. G.; Kuzub, V. S.

TITLE: Potentiostatic determination of stainless steel tendency to intercrystalline corrosion

SOURCE: Zavodskaya laboratoriya, v. 31, no. 5, 1965, 582-584

TOPIC TAGS: stainless steel, corrosion, potentiometer / 5KN 100m accumulator, 2Kh18N9 steel

ABSTRACT: A method is offered for potentiostatic determination of steel tendency to intercrystalline corrosion by using a potentiostat shown [illegible] in Fig. 1 on the Enclosure. The procedure consists of boiling a steel [illegible] H_2SO_4 for 5 min at 18-25C at a potential of 150 mv, with subsequent microscopic observation of the metal surface. The appearance of grain-delineation is a sign of intercrystalline corrosion. The potentiostat is fed by two batteries (1) of five parallel connected accumulators 5KN-100m. A stainless steel [illegible] in diameter with 0.1 ohm resistivity serves as a low-resistance [illegible] Water is run through the pipe for cooling. Nonpolarizable auxiliary electrode

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ACCESSION NR: AP5012495 3

(3) are made of lead accumulator plates; their surface exceeds 100 times that of the electrode (4). They are recharged from the rectifier (5). Current strength is measured by the milliamperemeter (6). The saturated calomel electrode (7) serves as a reference electrode. The potential is controlled by the tube potentiometer (8); its value on the polarization curve is sustained with an accuracy up to 5 mv. Two microphotographs are shown of 2Kh18N9 steel specimens (water hardened at 1200C with and without tempering at 650C for 2 hours) tested in this device. The tendency toward intercrystalline corrosion in the tempered steel is clearly visible. Orig. art. has: 3 figures.

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy [illegible] ... of Organic Synthesis Products, North Donets Branch)

SUBMITTED: 00 ENCL: 01

NO REF SOV: 003 OTHER: 004

Card 2/3

L 55976-65

ACCESSION NR: AP5012495

ENCLOSURE: 01

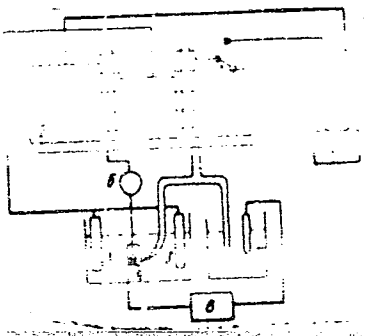

Fig. 1.

Schematic drawing of the potentiostat

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L 4205-66 EWT(m)/EPF(c)/T/EWP(t)/EWP(b)/EWA(c) IJP(c) JD/WB

ACCESSION NR: AP5014132 UR/0365/65/001/003/0277/0279
620.193.141

AUTHOR: Kuzub, V. S.; Neyman, N. S.; Tsinman, A. I.

TITLE: Anodic dissolution of nickel in H_2SO_4 solutions

SOURCE: Zashchita metallov, v. 1, no. 3, 1965, 277-279, and insert facing p. 275

TOPIC TAGS: anodic oxidation, potentiometer, electrode potential, nickel plating

ABSTRACT: In this work, anodic potentiostatic measurements and metallography are used to study the dissolution of 99.2% pure Ni in a 1 N H_2SO_4 solution and in an electrolytic polishing solution, 21.5 N H_2SO_4, at a temperature of 22 ± 1°. The potentiostatic curves are obtained by using an electronic potentiostat. The specimens used had both planar and cylindrical shapes; at potentials above 1.3 v the strength of the current depended upon the separation and shape of the electrodes. Data on the dissolution of Ni are presented in the form of potentiostatic curves (lg i-a/cm^2 as a function of ϕ-voltage) in both of the H_2SO_4 solutions. Some of the curves illustrate the dependence of current density and speed of dissolution on potential. Surface microphotographs of Ni are shown for various regions of the potential, after 5-10 min of dissolution. However, for the regions of stability

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L 4205-

ACCESSION NR: AP5014132

(passivization) the immersion time was longer. In the 1 N H_2SO_4 for the transition towards the passivating region, the surface was found to be etched, and pitting was observed. In the secondary region of passivity, spots of intercrystalline corrosion were observed, while beyond this region they diminished. Intercrystalline corrosion of the Ni occurred in the 21.5 N H_2SO_4 in the interval of potential from 0.3 to 1.3 volts. This is rationalized in terms of established theories of oxygen adsorption on the Ni surface which resulted in electrochemical heterogeneity of the grains relative to the boundaries and enhanced intercrystalline corrosion. The absence of intercrystalline dissolution in the 21.5 N H_2SO_4 in the potential range from 1.7 to 2.2 volts is explained by the apparent effect of the limiting current in causing the presence of some type of diffusion layer to form on the surface of the Ni. An analogous pattern of behavior was observed in the electrolyte $H_3PO_4 + H_2SO_4 + CrO_3$, where a similar increase in speed of dissolution was observed with the beginning of oxygen evolution. The authors conclude that only in the presence of some diffusion layer can the rates of dissolution of grains and boundaries be equalized, otherwise the adsorption of oxygen will result in intercrystalline attack. Orig. art. has: 5 figures.

Card 2/3

L 4205-66
ACCESSION NR: AP5014132

3

ASSOCIATION: Gosudarstvennyy institut azotnoy promyshlennosti Severodonetskiy filial (State Institute of the Nitrogen Industry, North Donets Affiliate)

SUBMITTED: 14Dec64 ENCL: 00 SUB CODE: GC, MM

NO REF SOV: 003 OTHER: 008

Card 3/3

L 62996-65 EWT(m)/EPF(c)/EWA(d)/EWP(t)/EWP(z)/EWP(b) MJW/JD/WB
ACCESSION NR: AP5017745 UR/0365/65/001/004/0396/0400

AUTHOR: Kuzub, L. G.; Neyman, N. S.; Tsinman, A. I.; Kuzub, V. S.

TITLE: Anodic protection of stainless steels in the production of complex fertilizers containing potassium chloride

SOURCE: Zashchita metallov, v. 1, no. 4, 1965, 396-400

TOPIC TAGS: corrosion resistant steel, stainless steel, carbon steel, potassium chloride, corrosion resistance, fertilizer, corrosion protection, electrochemistry, anodic protection, 1Kh18N9T stainless steel, OKh21N3T stainless steel, OKh21N6M2T stainless steel, OKh21N12M2T stainless steel, 3 carbon steel

ABSTRACT: Stainless steels 1Kh18N9T, OKh21N3T, OKh21N6M2T, and OKh21N12M2T, and Brand 3 carbon steel were subjected to corrosion tests in a pulp of complex fertilizers with the following composition (in %, dry basis): $Ca_5F(PO_4)_3$--28, $(NH_4)_2SO_4$-14, $CO(NH_2)_2$-10, KCl-17, NH_3-2, HNO_3-29. Water content was about 25 grams per 100 grams of pulp. The corrosion resistance of 1Kh18N9T and OKh21N12M2T steels was also determined in media with different

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pH values (4.5; 3.2; 2.8; 3.1; 2.2) and concentrations of KCl from 17% to zero at temperatures of 40-50C. Anodic protection of 1Kh18N9T steel was investigated at temperatures of 20-70C. The electrode surface was 0.05 cm^2, source of current was two accumulators with an emf of 2.5 volts connected in series, and the cathode was a platinum grid. A saturated calomel electrode was used for comparison. During the tests the potential was within the limits of 0.7-0.9 volts, and it was determined that the region of optimum passivity has a spread of 0.85 volts. Up to 60C the limiting potentials of this region (0.1-0.95 volts) do not change, but at 70C the spread is 0.3 volts. Pitting is observed only with a KCl content of 70% from the standard. The results, as shown in tables, indicate that in a pulp of complex fertilizers, anodic protection can reduce the corrosion rate by more than 50 times, and can completely eliminate pitting. Orig. art. has: 3 figures and 3 tables.

ASSOCIATION: Gosudarstvennyi institut azotnoi promyshlennosti, Severodonetskii filial (State Institute for the Nitrogen Industry, North Don Branch)

SUBMITTED: 04Jan65 ENCL: 00 SUB CODE: MM

NR REF SOV: 001 OTHER: 002

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L 62191-65 EWT(m)/EPF(c)/EWA(d)/EWP(t)/EWP(z)/EWP(b) MJW/JD/WB

ACCESSION NR: AP5015880 UR/0080/65/038/006/1404/1407
620.193.41 + 541.13

AUTHOR: Kuzub, V. S., Kossyy, G. G.

TITLE: Study of the passivity of stainless steel in nitric acid by measuring the differential capacity

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 6, 1965, 1404-1407

TOPIC TAGS: stainless steel, steel corrosion, steel passivation, nitric acid, differential capacity

ABSTRACT: The differential capacity method was used to study the passivation of OKh18N9 stainless chromium-nickel steel by nitric acid of vari[illegible]

[illegible] minutes after immersion, before and after passivation versus the concentration of the passivator (HNO_3). Three portions are seen on this curve: the region of low concentrations (up to 30%), the passivity region (30-95%), and the transpassivation region [illegible] HNO_3). This figure also shows the corrosion rate versus the aci[illegible]

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L 62191-65

ACCESSION NR: AP5015888

acidity and the oxidizing properties of HNO_3. In the region of the stable passive state (30-95°) almost the entire surface becomes coated with a passivating film [illegible] region is apparently due to the dissolution of portions of the film via the same [illegible] which governs the dissolution of the metal itself in this region. [illegible] This is due to the fact that in the transpassivation region, the true surface [illegible] trode increases because of the nonuniformity of the dissolution and primarily because of intercrystalline corrosion. A. N. Zhukov took part in the experimental work. [illegible] art. has: 4 figures and 1 formula.

ASSOCIATION: Lisichanskiy filial Gosudarstvennogo instituta azotnoy promyshlennosti (Lisitsy Branch, State Institute of the Nitrogen Industry)

SUBMITTED: 14Feb63 ENCL: 01 SUB CODE: MM

NO REF SOV: 015 OTHER: 004

Card 2/3

L 62191-65

ACCESSION NR: AP5015881 ENCL: 01

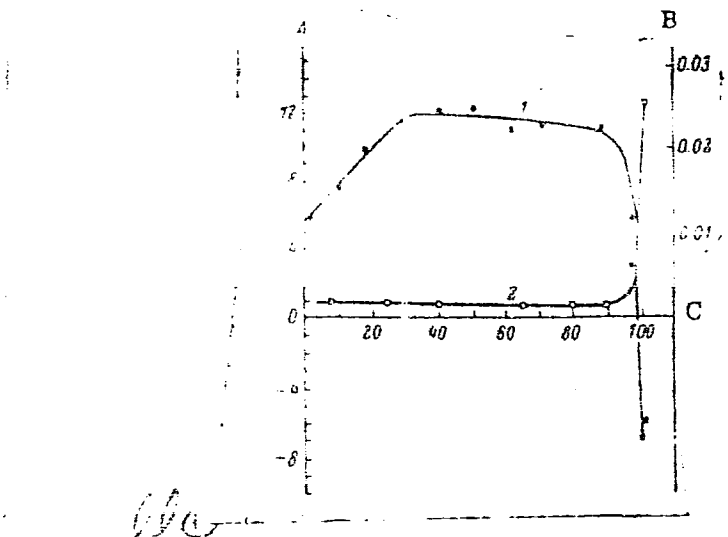

Fig. 1. Capacity decrease (ΔC) during passivation for [illegible]SN9 steel (1) and corrosion rate of 1Kh18N9T steel (2) versus HNO_3 concentration.

A - capacity decrease (μF/cm^2)

B - Corrosion rate (g/m^2·hr)

C - HNO_3 concentration (wt. %).

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L 1254-66 EWT(m)/EPF(c)/EWA(d)/EWP(t)/EWP(z)/EWP(b) IJP(c) MJW/JD/HW/JG/WB/MJW(CL)

ACCESSION NR: AP5021672 UR/0080/65/038/008/1872/1874
620.191/.193

AUTHOR: Tsinman, A. I.; Kuzub, V. S.

TITLE: Corrosion of stainless steels in solutions of dicarboxylic acids

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 8, 1965, 1872-1874

TOPIC TAGS: corrosion rate, stainless steel, corrosion resistant steel, chromium alloy, molybdenum steel, dicarboxylic acid, nickel, copper molybdenum titanium

ABSTRACT: A study was made of the corrosion behavior of ordinary stainless steels (1Kh18N9T, Kh18l2M2T) and of a number of new experimental chromium-nickel, chromium-molybdenum, and chromium-nickel-molybdenum steels in a solution of adipic acid in the temperature range 160-245 C. A comparison was made of the corrosive activity of solutions of glutaric, succinic, adipic, and sebacic acids on Kh18N12M2T steel. Data were taken on the corrosion resistance of NIKhMo-20 steel, nickel, copper, molybdenum, and titanium. Corrosion rates were determined on rectangular samples of rolled sheet 2-3 mm thick with surfaces of 15-30 cm^2. Test results showed that the nickel content in chromium-

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L 1254-66

ACCESSION NR: AP5021672

nickel steels has only a slight effect on the corrosion rate in adipic acid. However, the corrosion rate of austenitic steels (1Kh18N9T, OKh21N14B, OKh19N14B) is approximately 1.5-2.0 times less than that of ferritic-austenitic steels (OKh21N5B, OKh21N5T).** In tests of chromium-molybdenum steels at 170, 225, and 240C, corrosion resistance increased with increased chromium and molybdenum content. With an increase in temperature, steels alloyed with additions of molybdenum or copper have greater chemical resistance in adipic acid solutions than chromium-molybdenum steels. It was determined that solutions of adipic acid do not differ in corrosion activity from solutions of other dicarboxylic acids. Experimental data indicated that in solutions of these acids, the corrosion rate of stainless steels increases sharply with rise in temperature. Chromium-nickel-molybdenum steels were found to have the greatest corrosion resistance. The most resistant materials in solutions of dicarboxylic acids were titanium, molybdenum and NIKhMo-20 steel. Orig. art. has: 2 figures and 2 tables

ASSOCIATION: Lisichanskiy filial Gosudarstvennogo instituta azotnoy promushlennosti (Lisichansk Branch of the State Institute for the Nitrogen Industry)

SUBMITTED: 04Feb63 ENCL: 00 SUB CODE: MM

NR REF SOV: 003 OTHER: 000

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**These designations should begin with 0 (zero) instead of O (letter)

L 1652-66 EWT(m)/EPF(c)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b) IJP(c) MJW/JD/HW/JG/WB

ACCESSION NR: AP5021422 UR/0076/65/039/008/2020/2021
620.191/.1 9

AUTHOR: Tsinman, A. I.; Kuzub, V. S.

TITLE: Dissolution of stainless steels at potentials of disruption of the passive state by fluoride ions

SOURCE: Zhurnal fizicheskoy khimii, v. 39, no. 8, 1965, 2020-2021

TOPIC TAGS: steel depassivation, sodium fluoride, steel corrosion

ABSTRACT: Addition of sodium fluoride to sulfuric acid disrupts the passivation state of chromium-nickel steel. The dissolution rate of nickel is increased, but not that of chromium. An increase in the chromium content of steel from 13 to 27% decreases the dissolution rate in 1 N H_2SO_4 (containing 0.3 N NaF) by a factor of almost 100 at φ = 0.6 - 0.8 V. This leads to the assumption that steels having zones poor in chromium should dissolve faster than hardened steels, and that the dissolution of such steels should have the character of intercrystalline corrosion. This assumption was proven correct by measuring the current density versus time with electrodes of 2Kh18N9 steel, one of which was heat-treated at 1200°C (30 min,

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L 1652-66

ACCESSION NR: AP5021422

followed by quenching in water), the other annealed at 650°C (2 hr, followed by quenching in air). The annealed electrode dissolved rapidly owing to the presence of regions poor in chromium (grain boundaries); the rise in current density with time is due to a continuous increase in surface area as a result of the process of intercrystalline corrosion (see fig. of the Enclosure). The data show that the tendency toward such corrosion can be studied in sulfuric acid solutions containing F^- ions at potentials for which the passive state of steels is disrupted, no potentiostat being required. Orig. art. has: 4 figures.

ASSOCIATION: Gosudarstvennyy institut azotnoy promyshlennosti, Severodonetskiy filial (State Institute of the Nitrogen Industry, North Donets Branch)

SUBMITTED: 21Apr64 ENCL: 01 SUB CODE: MM

NO REF SOV: 005 OTHER: 005

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L 1652-66

ACCESSION NR: AP5021422 ENCLOSURE: 01

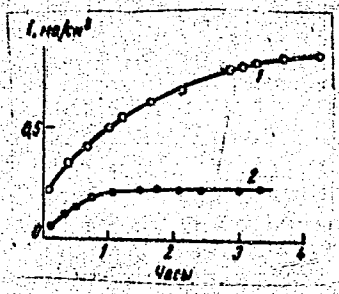

Fig. 1. Change in current density with time at φ = 0.8 V in 1 N H_2SO_4 + 0.3 N NaF, 2Kh18N9 steel. Heat treatment: 1 - 650°C, 2 hr, quenching in air; 2 - 1200°C, 30 min, quenching in water.

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KUZUB, V.S.; KOSSYY, G.G.

Study of the passivity of stainless steel in nitric acid by the measurement of differential capacity. Zhur.prikl.khim. 38 no.6:1404-1407 Je '65. (MIRA 18:10)

1. Lisichanskiy filial Gosudarstvennogo instituta azotnoy promyshlennosti.

TSINMAN, A.L.; KUZUB, V.S.

Dissolution of stainless steels at the potentials of passive state disturbance by fluorine ions. Zhur. fiz. khim. 39 no.8:2020-2021 Ag '65. (MIRA 18:9)

1. Severodonetskiy filial Gosudarstvennogo instituta azotnoy promyshlennosti.

TSINMAN, A.L.; KOVSMAN, Ye.P.; KUZUB, V.S.

Anodic behavior of titanium and stability of a platinum-titanium anode in aqueous methanol solutions containing chlorine ions. Ukr. khim. zhur. 31 no.9:923-926 '65. (MIRA 18:11)

1. Severodonetskiy filial Gosudarstvennogo nauchno-issledovatel'skogo i proyektnogo instituta azotnoy promyshlennosti i produktov organicheskogo sinteza.

L 10850-66 EWT(m)/EWA(d)/EWP(t)/EWP(z)/EWP(b) IJP(c) MJW/JD/WB

ACC NR: AP5025654 SOURCE CODE: UR/0080/65/038/010/2217/2222

AUTHOR: Kuzub, L. G.; Kuzub, V. S.; Kossyy, G. G.

ORG: Severodonetskiy Affiliate of the State Institute of the Nitrogen Industry (Severodonetskiy filial Gosudarstvennogo instituta azotnoy promyshlennosti)

TITLE: Steel corrosion in nitric acid of various concentrations in the presence of halide ions [Paper presented at a republic conference on the use of acid corrosion inhibitors held in Kiev on 18 September 1963]

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 10, 1965, 2217-2222

TOPIC TAGS: nitric acid, carbon steel, corrosion rate, chloride, fluoride, corrosion inhibitor, corrosion resistance

ABSTRACT: The effect of chloride and fluoride ions on the corrosion rate of 1Kh18N9T steel was studied over a wide HNO_3 concentration range (1-100%), with 0.01, 0.05, 0.1, 0.5, 1, 2, and 3 wt % Cl^- (added as NaCl) and 0.05, 0.1, 0.5, and 1 wt % F^- (added as NaF). The corrosion rate was determined gravimetrically, and the steady state potentials of the steel were measured. The change in the degree of passivation of the steel was measured as a function of NaCl and NaF concentration and was found to be consistent with the change in the corrosion rate. In all HNO_3 concentrations, the presence of Cl^- shifted the steady state potential toward the negative side; this

UDC: 620.193

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L 10950-66

ACC NR: AP5025654

3

shift increased with the Cl^- concentration. In 10-30% HNO_3, an increased Cl^- concentration led to an increase in the corrosion rate; in 98-100% HNO_3, to its decrease with a reduction in intercrystalline corrosion; in 40-95%, the halide ions had practically no effect on the corrosion rate. An interpretation of this behavior is given. Orig. art. has: 4 figures, 1 table.

SUB CODE: 07, 11/ SUBM DATE: 27Apr63/ ORIG REF: 013/ OTH REF: 010

HW

Card 2/2

L 24137-66 EWT(m)/EWA(d)/T/EWP(j)/EWP(t) IJP(c) JD/HW/WB/RM

ACC NR: AP6014665 SOURCE CODE: UR/0314/65/000/008/0040/0040

AUTHOR: Kuzub, V. S. (Candidate of chemical sciences); Dolotova, T. S. (Engineer)

ORG: none

TITLE: Corrosion of metallic materials in the production of diphenylolpropane

SOURCE: Khimicheskoye i neftyanoye mashinostroyeniye, no. 8, 1965, 40

TOPIC TAGS: corrosion, stainless steel, aluminum, titanium, nickel, copper, organic synthetic process, alloy, distillation, corrosion resistant alloy/NIKhMO-20 alloy, 1Kh18N9T stainless steel, Kh18N12M2T stainless steel, Kh21N14B stainless steel, Kh23N28M3D3T stainless steel

ABSTRACT: The corrosion resistance of Al (A-00) (AD-1), Ti (VT1), Ni, Cu alloy NIKhMO-20 and stainless steels 1Kh18N9T, Kh18N12M2T, Kh21N14B, Kh23N28M3D3T were studied in the synthesis, distillation and purification processes of diphenylolpropane. The specimens were tested in the following media corresponding to these processes: phenol + BF_3 (2.5%), t = 90-120°C (in the liquid and gaseous phases); diphenolpropane + CH_3COOH + impurities, t = 80 C; diphenylolpropane + water + impurities, t = 100°C. For the synthesis and distillation processes the most stable material both in the liquid and gaseous phase is aluminum grade A-00 (grade AD-1 was less stable). Also, the results of tests indicated that an increase in the medium temperature from 90 to 120°C does not affect the corrosion rate of the materials

UDC: 620.193:546.621'74:669.15:547.62'213

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L 24137-66
ACC NR: AP6014665

studied. Stainless steels and titanium are corrosion-resistant materials in a solution of 30% acetic acid with impurities of phenol, boron fluoride, and resins. In the purification of diphenylolpropane from residues of phenol, BF_3 and resins containing water vapor, an aqueous solution of phenol and hydrofluoric acid is formed. In this medium copper and stainless steels Kh23N28M3D3T and Kh18N12M2T, alloyed with copper and molybdenum and possessing high resistance in hydrofluoric acid, are corrosion-resisting materials. Thus the tests and resulting data permit the recommendation of the metals as structural materials for a specific process in the production of fiphenylolpropane. Orig. art. has: 1 table. [JPRS]

SUB CODE: 13, 07 / SUBM DATE: none / ORIG REF: 003

Card 2/2

KUZUB, L.G.; KUZUB, V.S.; KOSSYY, G.G.

Corrosion of steels in nitric acid of various concentration in the presence of hologen ions. Zhur. prikl. khim. 38 no.10: 2217-2222 O '65. (MIRA 18:12)

1. Submitted April 27, 1963.

L 3995-66 EWT(m)/EWP(t)/ETI IJP(c) JD/WB

ACC NR: AP6015292 (N) SOURCE CODE: UR/0365/66/002/003/0358/0360

46

45B

AUTHOR: Kuzub, V. S.; Kachanov, V. A.

ORG: North Donets Branch, State Institute of the Nitrogen Industry (Severodonetskiy filial, Gosudarstvennyy institut azotnoy promyshlennosti)

TITLE: Study of the feasibility of anodic protection of stainless steels in dilute nitric acid

SOURCE: Zashchita metallov, v. 2, no. 3, 1966, 358-360

TOPIC TAGS: stainless steel, corrosion protection, nitric acid, chloride/1Kh18N9T stainless steel, Kh17 stainless steel, Kh27 stainless steel

ABSTRACT: An attempt was made to determine whether anodic protection could be employed for 1Kh18N9T, Kh17, and Kh27 stainless steels in 1.5 N HNO_3 containing from 0.1 to 3 moles NaCl per liter. Potentiostatic anodic polarization curves were plotted from the spontaneous dissolution potential to more positive values at 50 mV intervals. It was found that the introduction of chloride ions up to 0.1 mole/l has little effect on the polarization curve; when the Cl^- content increases to 0.3 mole/l, the steady-state potential of the steel shifts from the region of the passive state to the region of active dissolution, and as the Cl^- content rises further, pitting corrosion appears. The activation of the steel is facilitated as the acid concentration decreases. In the potential range from +0.5 to +0.9 V at all the studied concentrations of Cl^- and HNO_3, the steel is passive. The high-chromium steel Kh27 is not

Card 1/2 UDC: 620.197.5

L 39954-66

ACC NR: AP6015292

activated by Cl^- ions up to a concentration of 3 moles of Cl^- per liter. Anodic protection, achieved by keeping 1Kh18N9T steel at potentials of +700 mV and +800 mV for 48 hr, was found to decrease the corrosion rate by a factor of more than 2000, and its use is therefore recommended. Orig. art. has: 3 figures and 1 table.

SUB CODE: 11,07/ SUBM DATE: 31Jul65/ ORIG REF: 004/ OTH REF: 001

Card 2/2

KUZUB, V.S., kand. khim. nauk; GRU, B.A.; SOKOLOV, V.K.; GAYVORONSKIY, F.F.

Using polyacrylamide as a brightener in zinc plating. Vest. mashinostr. 45 no.7:65-67 Jl '65. (MIRA 18:10)