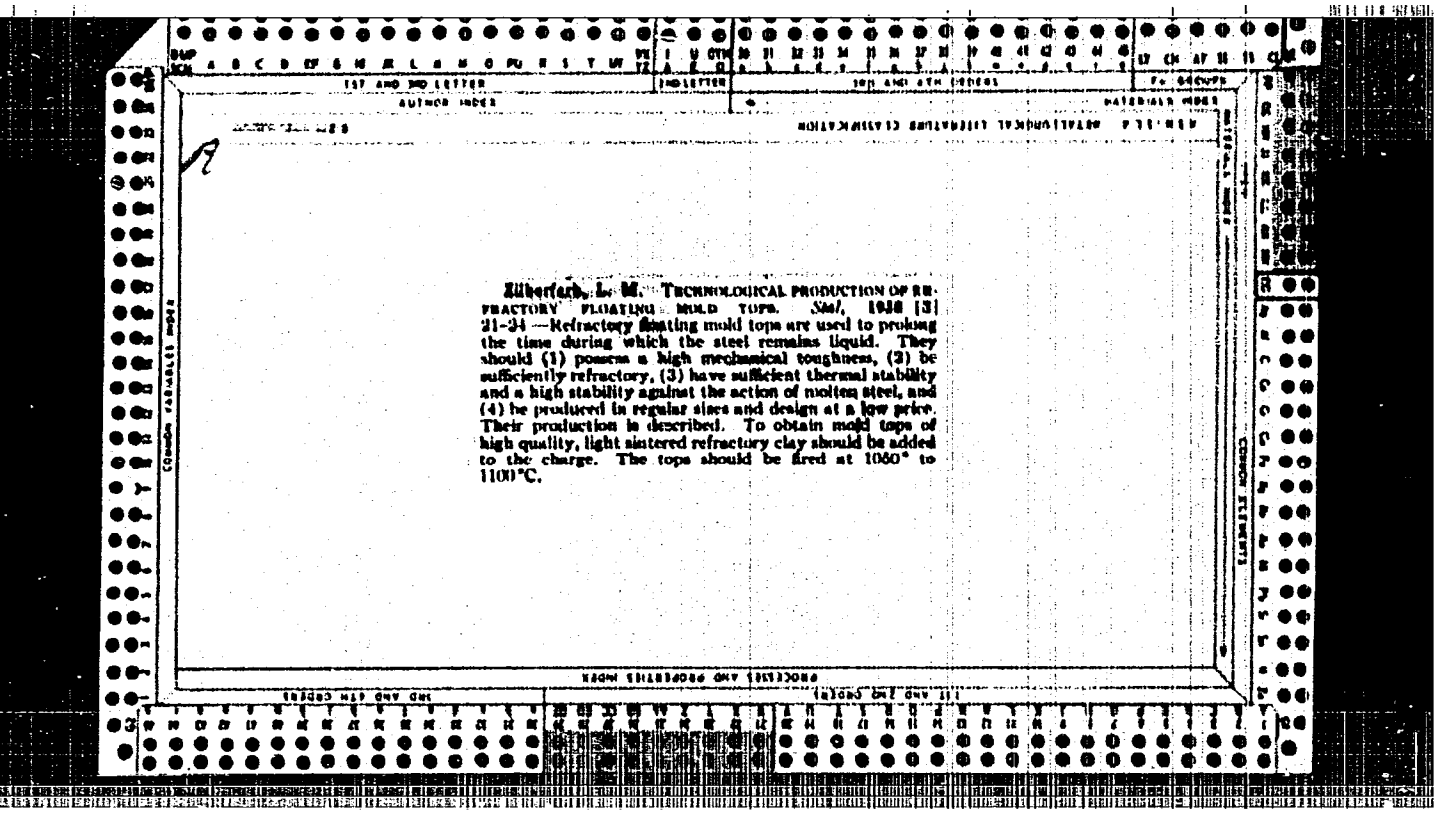
ANDROS, I.P.---(continued) Card 2.
red.; SANOVICH, P.O., red.; VOLOVICH, M.Z., inzh., red.; GORITSKIY, A.V., inzh., red.; POLUYANOV, V.A., inzh., red.; FADEYEV, E.I., inzh., red.; CHECHKOV, L.V., red. izd-va; PROZOROVSKAYA, V.L., tekhn. red.; NADEINSKAYA, A.A., tekhn. red.

[Mining; an encyclopaedic handbook] Gornoe delo; entsiklopedicheskii spravochnik. Glav. red. A.M. Terpigorev. Moskva, Gos. nauchno-tekhnicheskoe izd-vo lit-ry po ugol'noi promyshl. Vol.5 [Mining and timbering] Provedenie i krepleniie gornykh vyrabotok. Red-kollegiia toma: N.M.Pokrovskii... 1958. 464 p. (MIRA 11:7)

(Mine timbering) (Mining engineering)



Zilberfarb, L. M. TECHNOLOGICAL PRODUCTION OF REFRACTORY FLOATING MOLD TOPS. *Stal'*, 1938 [3] 21-24.—Refractory floating mold tops are used to prolong the time during which the steel remains liquid. They should (1) possess a high mechanical toughness, (2) be sufficiently refractory, (3) have sufficient thermal stability and a high stability against the action of molten steel, and (4) be produced in regular sizes and design at a low price. Their production is described. To obtain mold tops of high quality, light sintered refractory clay should be added to the charge. The tops should be fired at 1050° to 1100°C.

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

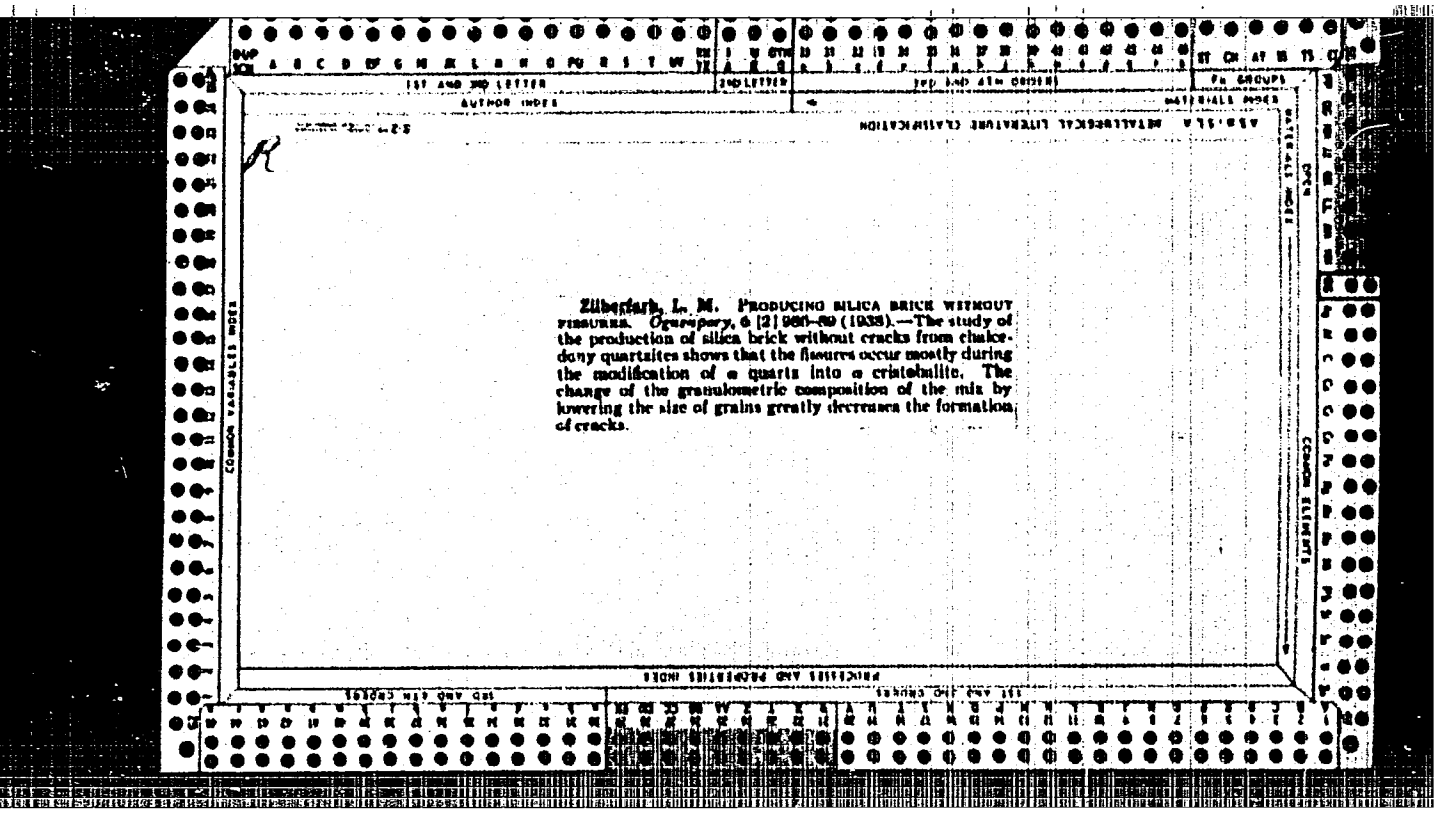
17a

19

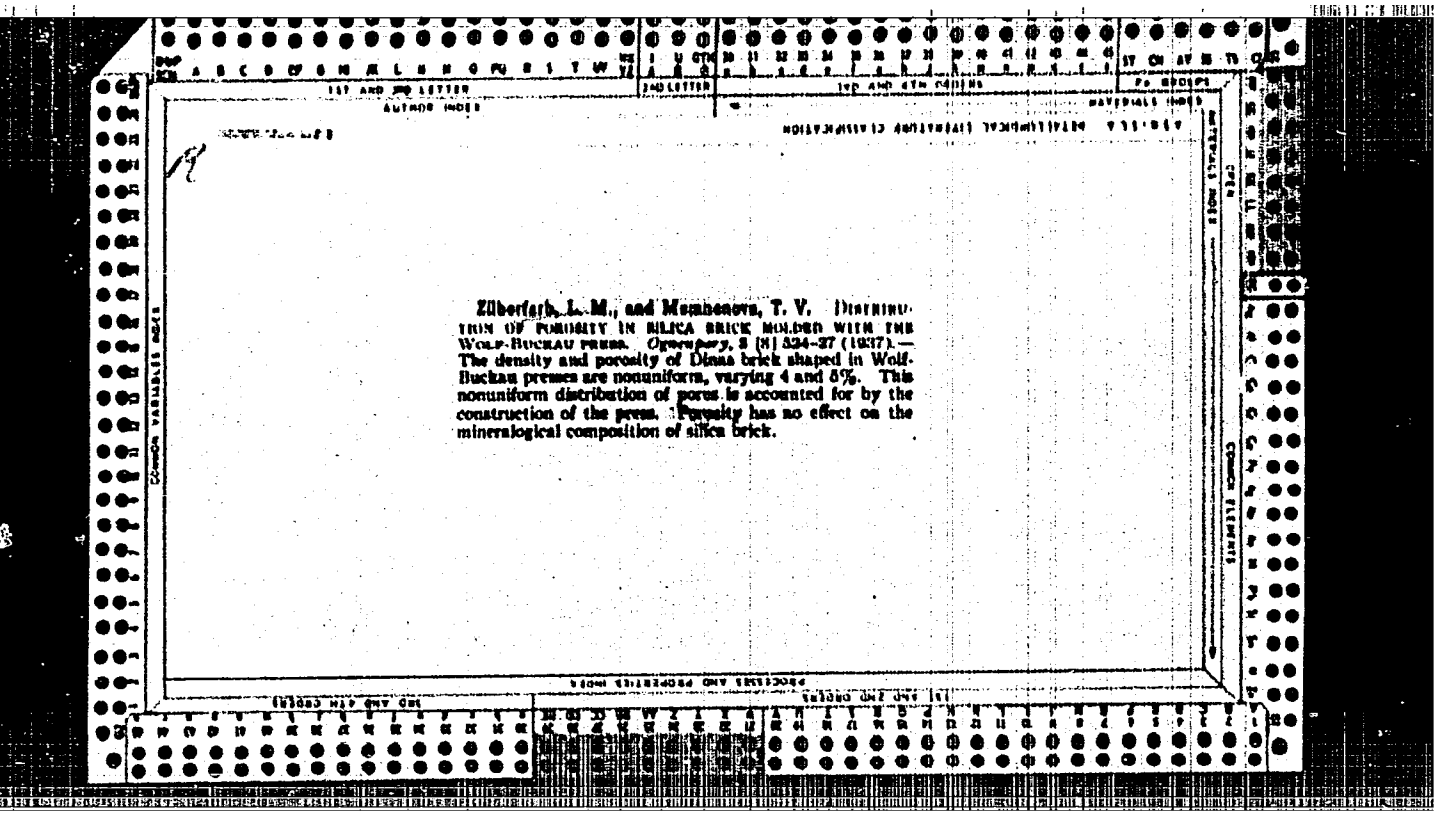
Producing silica brick without fissures. L. M. Zilberfarb. *Ogneupory* 6, 986-9(1938). —Fissure-free silica brick can be obtained by increasing the fineness of grind to under 3 mm. The burning can then be accelerated.

E. E. Stefanowsky

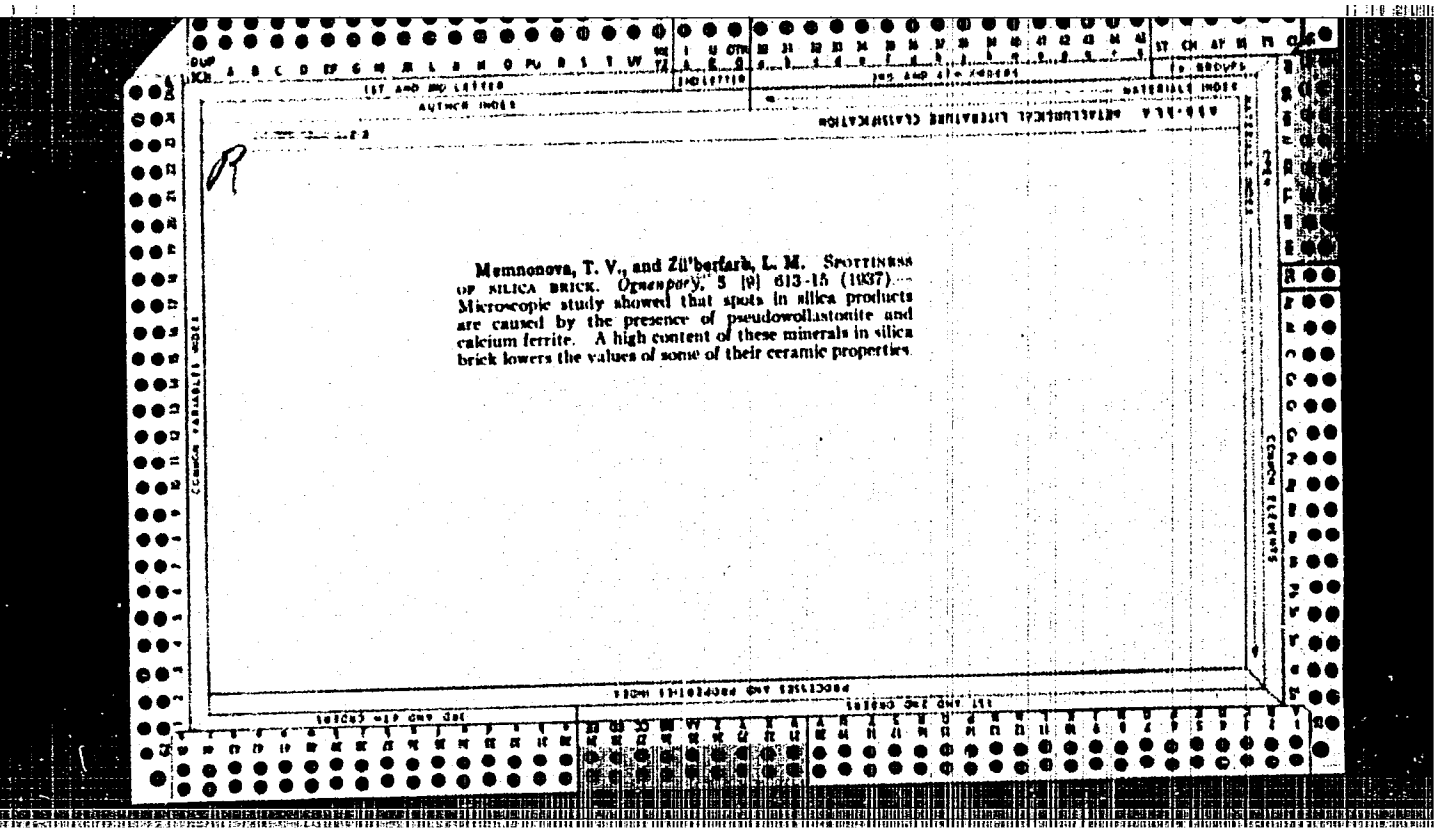
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



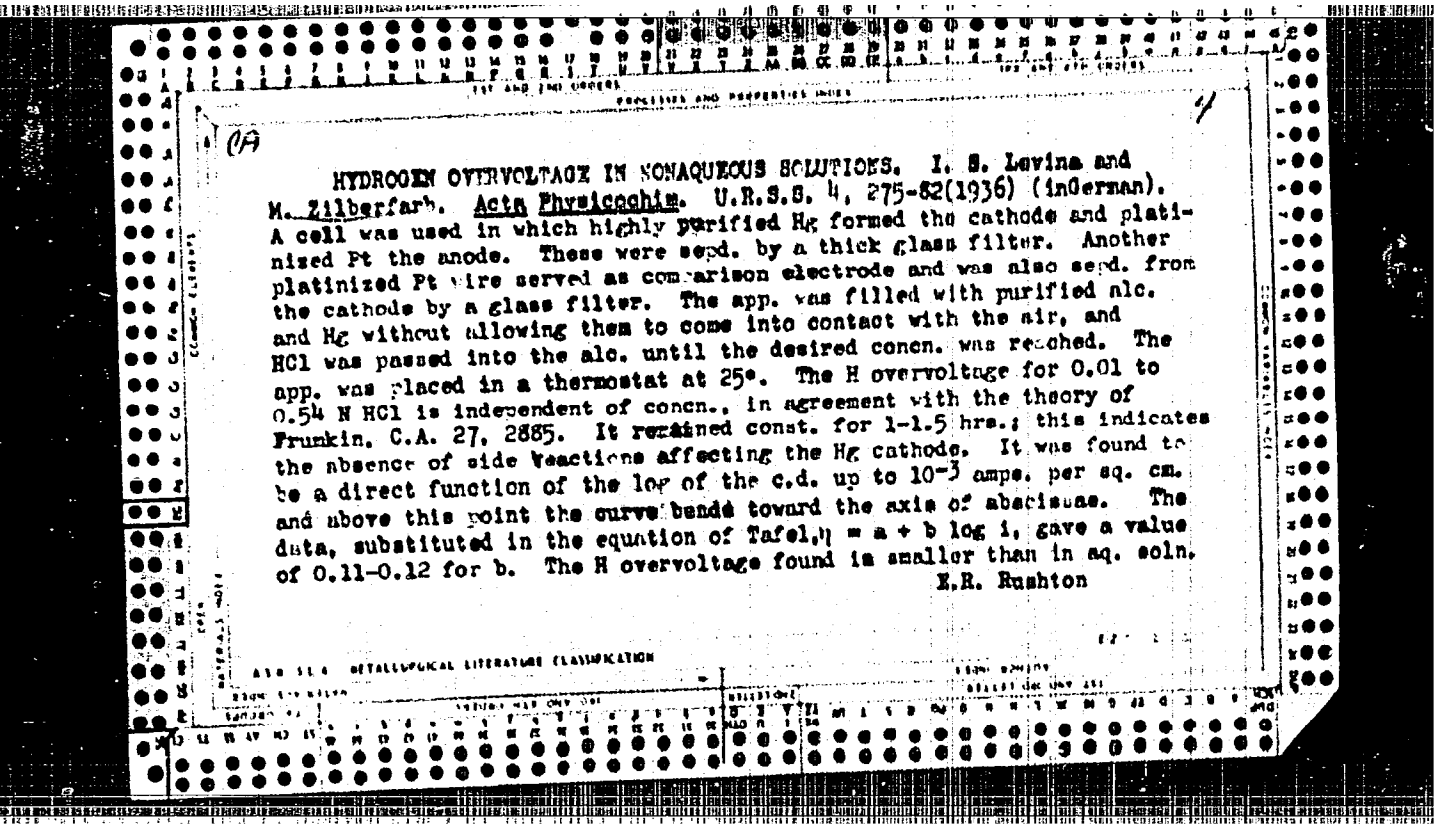
Zilberfarb, L. M. PRODUCING SILICA BRICK WITHOUT FISSURES. *Ogneupory*, 6 [2] 980–89 (1938).—The study of the production of silica brick without cracks from chalcedony quartzites shows that the fissures occur mostly during the modification of α quartz into α cristobalite. The change of the granulometric composition of the mix by lowering the size of grains greatly decreases the formation of cracks.



Zilberfarb, L. M., and Mezhenova, T. V. DISTRIBUTION OF POROSITY IN SILICA BRICK MOLDED WITH THE WOLF-BUCHAU PRESS. *Ogneupory*, 5 [8] 324–37 (1937).—The density and porosity of Dinas brick shaped in Wolf-Buchau presses are nonuniform, varying 4 and 5%. This nonuniform distribution of pores is accounted for by the construction of the press. Porosity has no effect on the mineralogical composition of silica brick.



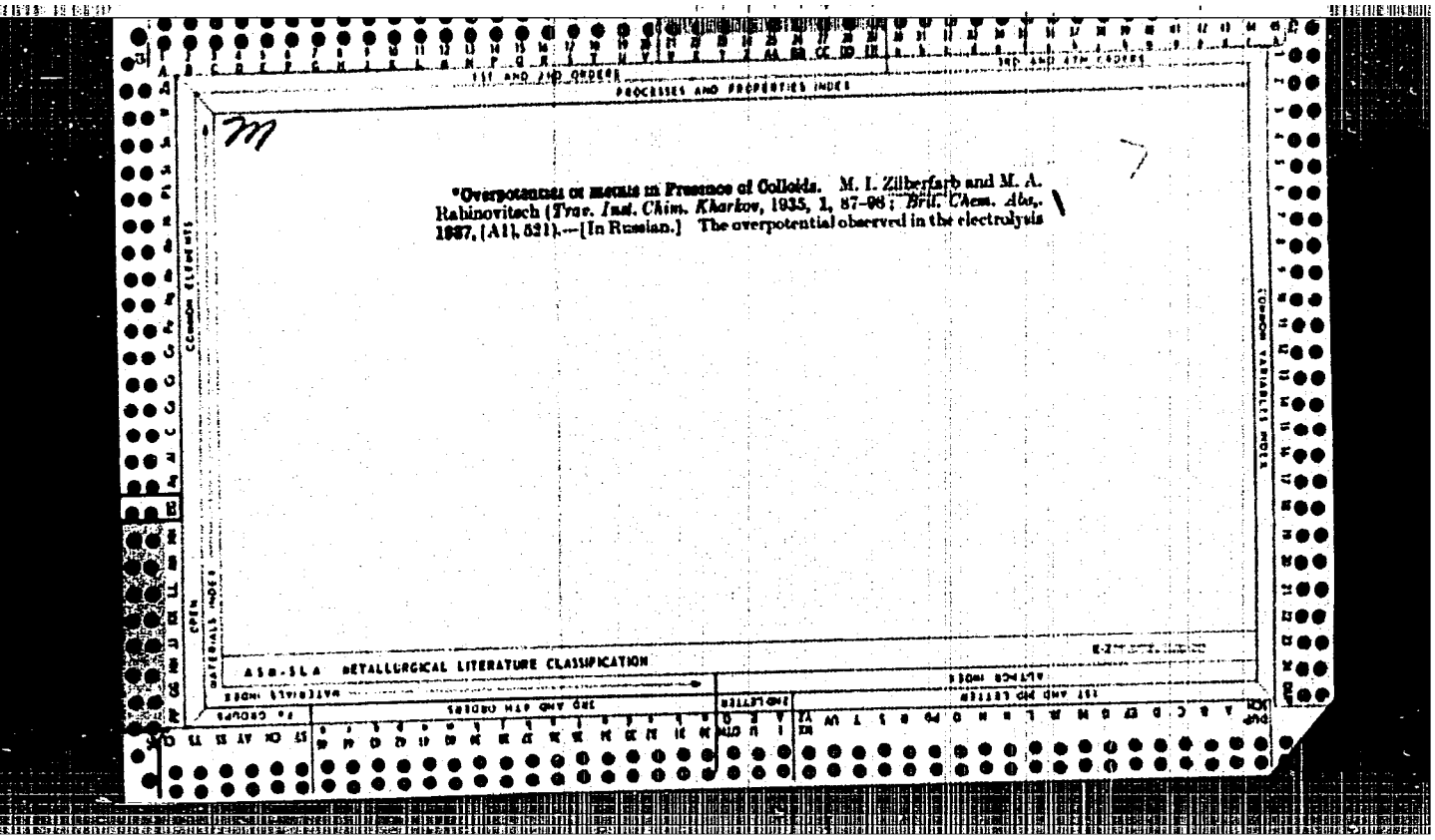
Memnonova, T. V., and Zil'berfarb, L. M. SPOTTINESS OF SILICA BRICK. *Ogneupory*, 5 [9] 413-15 (1937).—Microscopic study showed that spots in silica products are caused by the presence of pseudowollastonite and calcium ferrite. A high content of these minerals in silica brick lowers the values of some of their ceramic properties.



(A

HYDROGEN OVERVOLTAGE IN NONAQUEOUS SOLUTIONS. I. S. Levina and M. Zilberfarb. Acta Physicochim. U.R.S.S. 4, 275-82(1936) (in German). A cell was used in which highly purified Hg formed the cathode and platinized Pt the anode. These were sepd. by a thick glass filter. Another platinized Pt wire served as comparison electrode and was also sepd. from the cathode by a glass filter. The app. was filled with purified alc. and Hg without allowing them to come into contact with the air, and HCl was passed into the alc. until the desired concn. was reached. The app. was placed in a thermostat at 25°. The H overvoltage for 0.01 to 0.54 N HCl is independent of concn., in agreement with the theory of Frumkin, C.A. 27, 2885. It remained const. for 1-1.5 hrs.; this indicates the absence of side reactions affecting the Hg cathode. It was found to be a direct function of the log of the c.d. up to 10^{-3} amps. per sq. cm. and above this point the curve bends toward the axis of abscissae. The data, substituted in the equation of Tafel, $\eta = a + b \log i$, gave a value of 0.11-0.12 for b. The H overvoltage found is smaller than in aq. soln.

E.R. Rushton



PROCESSES AND PROPERTIES INDEX

77

*Overpotentials of metals in Presence of Colloids. M. I. Zilberfarb and M. A. Rabinovitsch (*Trav. Inst. Chim. Kharkov*, 1935, 1, 87–98; *Brit. Chem. Abs.*, 1937, [A II], 521).—[In Russian.] The overpotential observed in the electrolysis

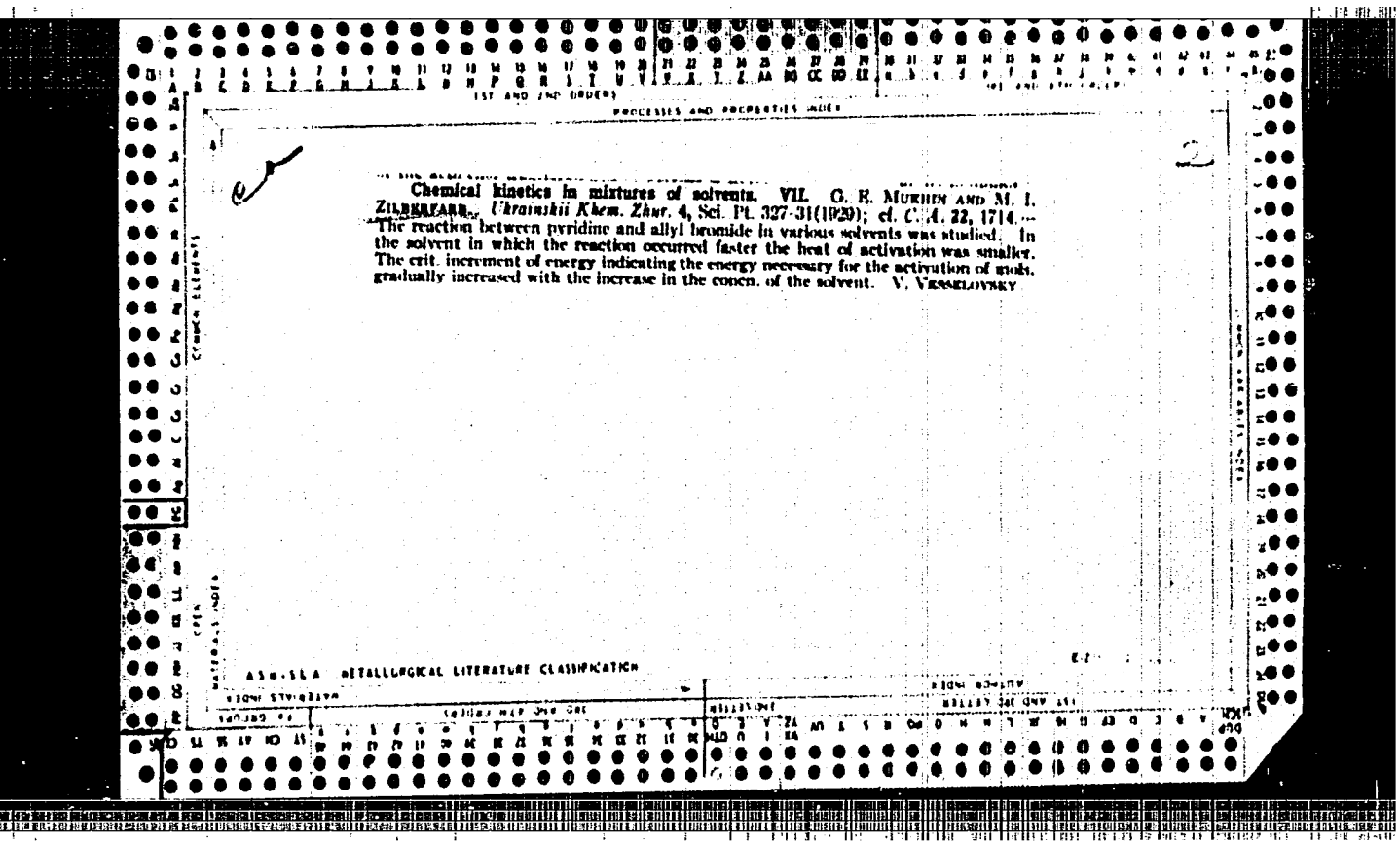
A58-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

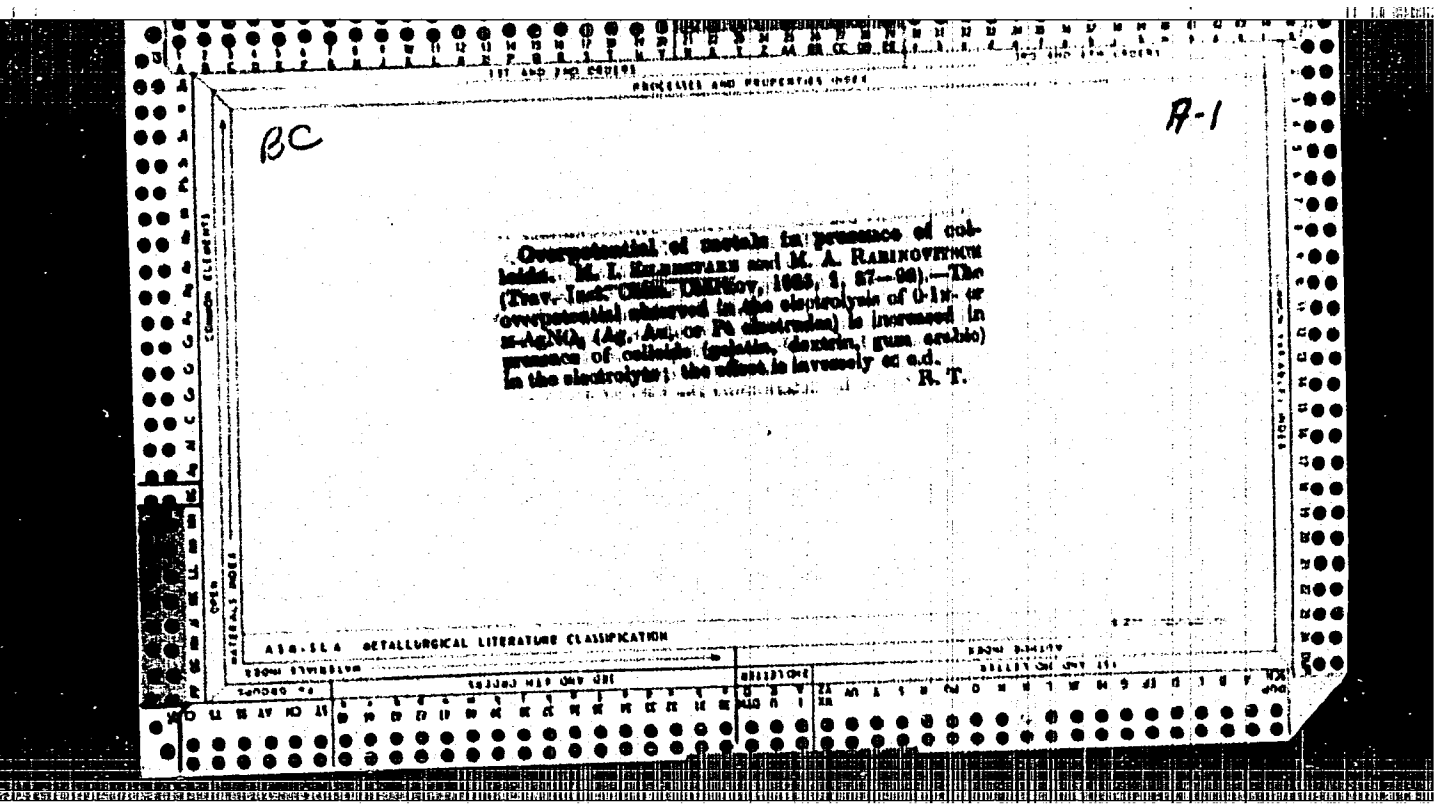
PROCESSES AND PROPERTIES INDEX

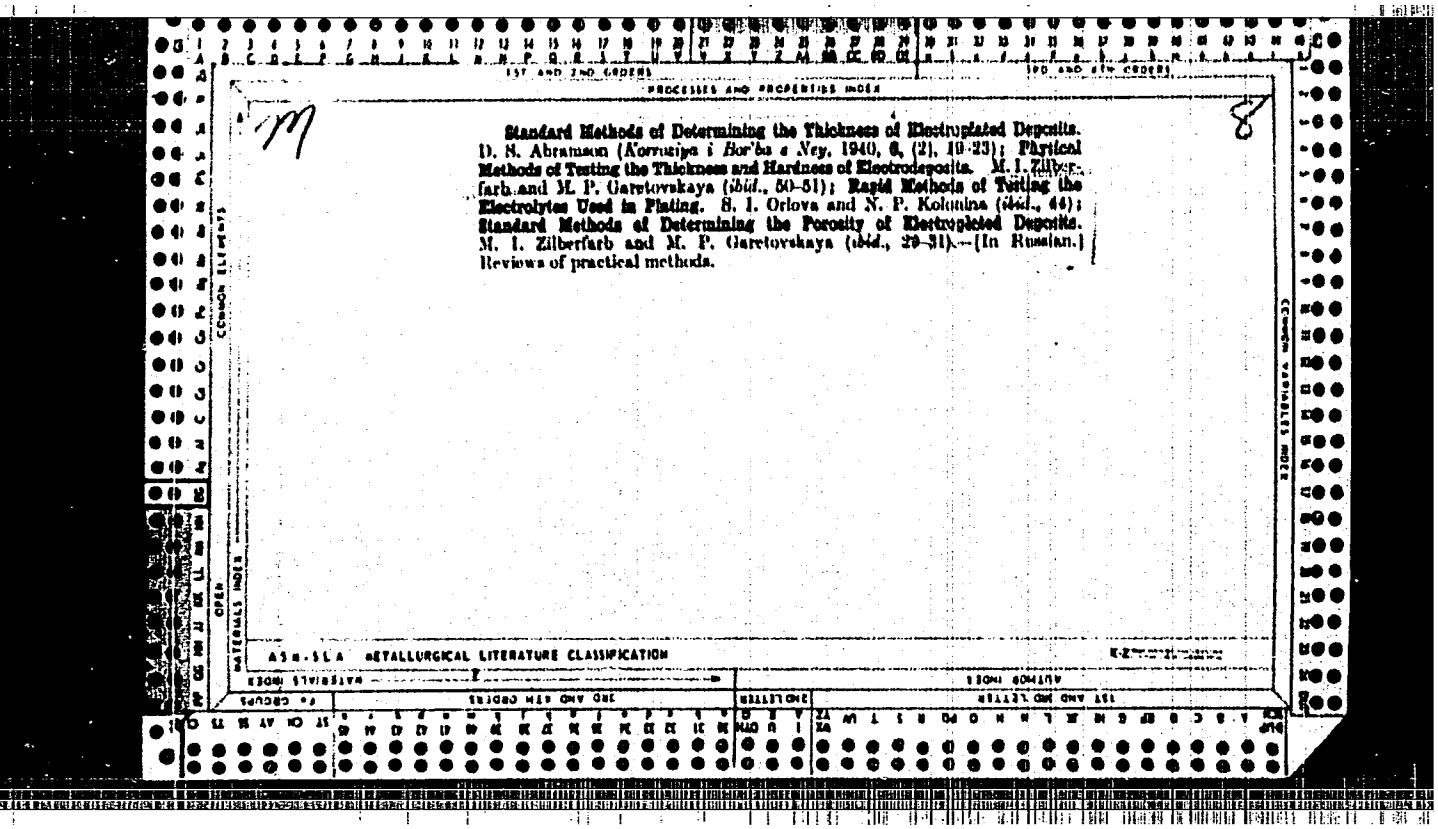
The so-called second-order Becquerel effect. G. I. [illegible] and M. I. [illegible]. *Ukrainskii Khem. Zhur.* 5, No. 4, Sci. pt., 323 (1930) (in German 340). After reviewing the literature on the 1st order and 2nd order Becquerel effect, the authors describe expts. on the influence of an arc light on the potential of a Pt electrode in H_2SO_4 solns. of various concns., by throwing the light on the electrolytes. As a measure of the effect is used $B = (E_1 - E_0)100/E_0Z$, where $E_1 - E_0$ is max. difference of the e. m. f. when electrolytes are lighted and E_0 the potential of the electrode in the dark measured against a satd. calomel electrode. Z is time of illumination required to get max. effect. Since the e. m. f. in these expts. is also affected by the heat of the arc, expts. were conducted to det. this effect by covering the electrolytic app. with a black paper. As a measure of heat effect was used $W = (E_w - E_0)100/E_030$, where $E_w - E_0$ is potential difference produced by 30 min. heating of the app. In all cases the heat had a neg. effect. The purely light effect is represented by $B - W$; values of this for various concns. of H_2SO_4 in g. mol. per l. are: for 0.05 mol. per l., 0.121, 0.25, +0.091, 0.40, +0.436, 0.70, +0.126, 0.92, +0.172, 1.21, [illegible]. The peculiar change of this effect with concn. can be explained on the basis of 2 opposing processes B and W which influence the electrolyte. Nothing definite can be said so far about the nature of these processes. S. L. Madorsky

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

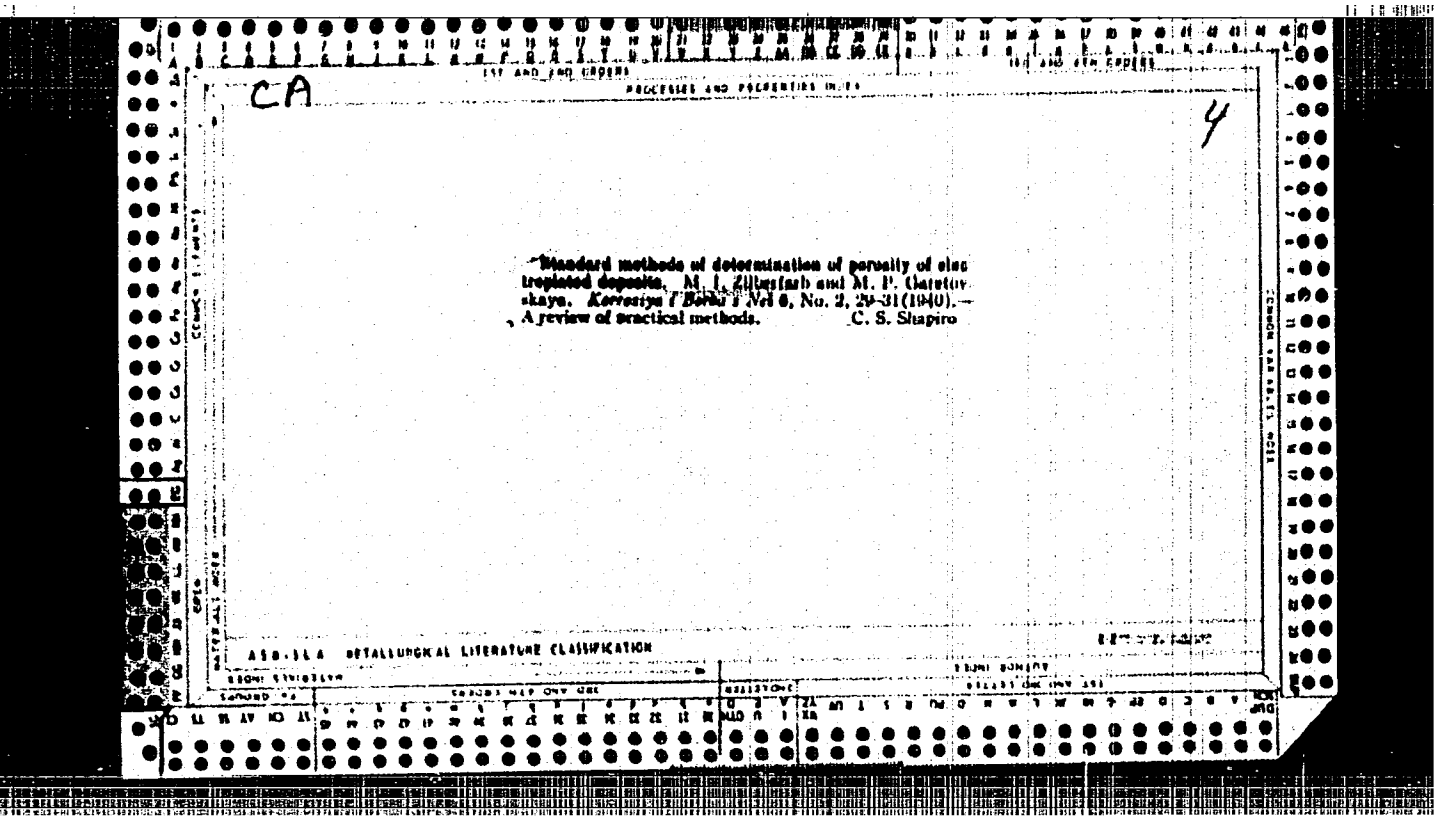


Chemical kinetics in mixtures of solvents. VII. G. E. Murkin and M. I. Zilberfarb. *Ukrainskii Khem. Zhur.* 4, Sci. Pt. 327-31(1929); cf. *C. A.* 22, 1714.—The reaction between pyridine and allyl bromide in various solvents was studied. In the solvent in which the reaction occurred faster the heat of activation was smaller. The crit. increment of energy indicating the energy necessary for the activation of mols. gradually increased with the increase in the concn. of the solvent. V. Vesselovsky





Standard Methods of Determining the Thickness of Electroplated Deposits. D. S. Abramson (*Korroziya i Bor'ba s Ney*, 1940, 6, (2), 19-23); **Physical Methods of Testing the Thickness and Hardness of Electrodeposits.** M. I. Zilberfarb and M. P. Garetovskaya (*ibid.*, 50-51); **Rapid Methods of Testing the Electrolytes Used in Plating.** S. I. Orlova and N. P. Kolomina (*ibid.*, 44); **Standard Methods of Determining the Porosity of Electroplated Deposits.** M. I. Zilberfarb and M. P. Garetovskaya (*ibid.*, 29-31).—[In Russian.] Reviews of practical methods.



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4

"Standard methods of determination of porosity of electroplated deposits. M. I. Zilberfarb and M. P. Charlov-skaya. *Korroziya i Borba s Nei* 8, No. 2, 29-31(1940).—A review of practical methods. C. S. Shapiro

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

CA

4

Physical methods of testing the thickness and hardness of electroplates. M. I. Zilberfarb and M. P. [illegible]skaya. *Korroziya i Borba* [illegible] Vol 6, No. 2, 31-1(1940). A review.

C. S. Shapiro

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

MATERIALS INDEX

SUBJECT INDEX

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

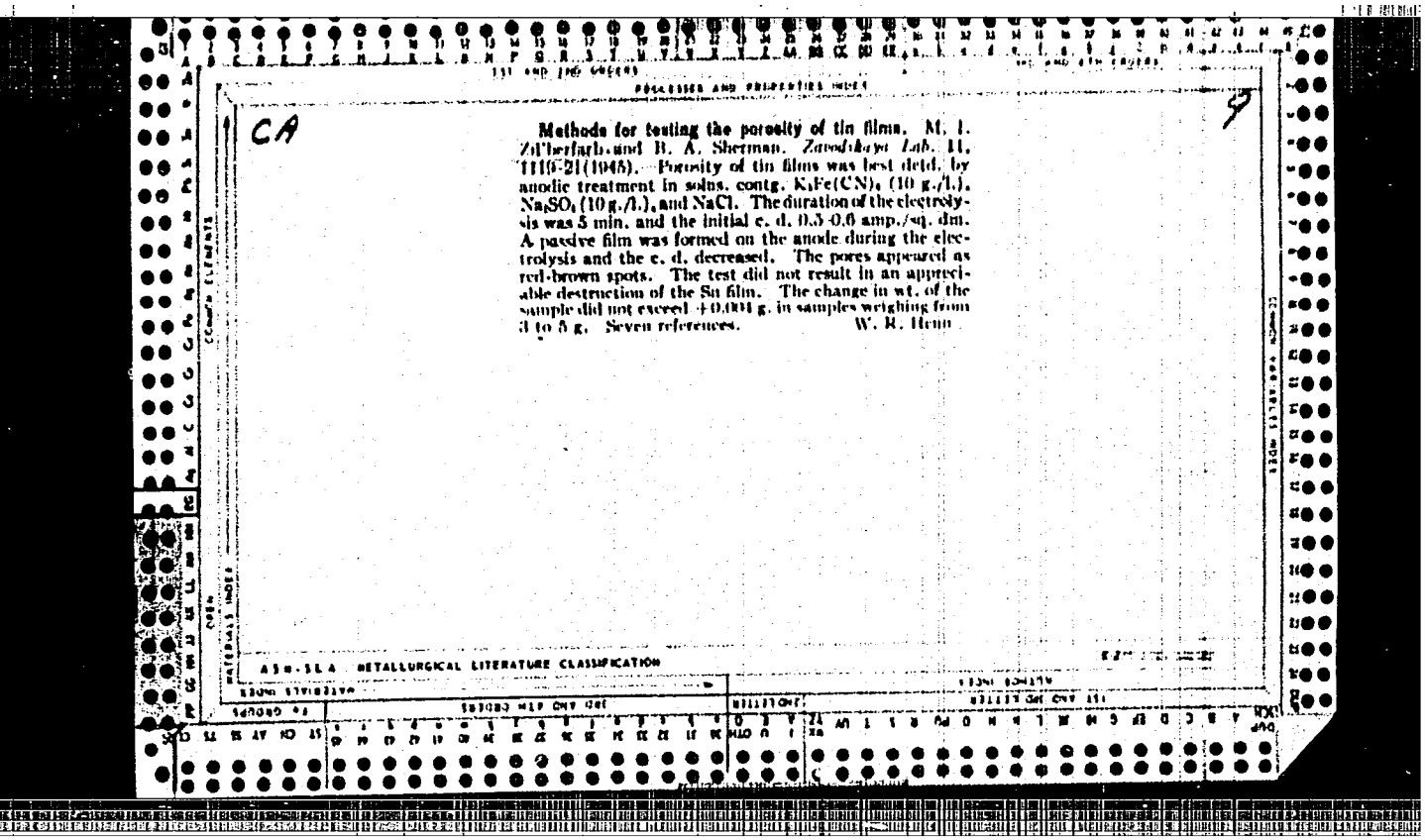
CA

7

Chemical control of the thickness of tin coatings. M. I. Zil'berfarb and I. M. Shteinberg. *Zavodskaya Lab.* 11, 1043-6(1945).—Five methods for the detn. of the mean thickness of Sn coatings were studied: in HCl (d. 1.15) with Sb_2O_3 (20 g./l.) (I), in HCl (d. 1.16) (II), in boiling Na plumbite (III), electrolytic method (IV), and according to the OST 4098 method (V). The most accurate and rapid methods were: on steel I, on Cu and brass II, and on Cu-plated steel III. Two solns. used to det. the thickness of Sn coatings by the drip method are proposed: NH_4NO_3 70 g./l. + $CuSO_4$ 7 g./l. + 1 N HCl 70 ml./l., which dissolves Sn coatings slowly (1 drop dissolves at 18° a layer of Sn 0.22 μ thick); $FeCl_3$ 75 g./l. + $CuSO_4$ 50 g./l. + 1 N HCl 300 ml./l., which dissolves Sn coatings rapidly (1 drop dissolves at 18° a layer of Sn 1.00 μ thick). The detn. can be accelerated and its accuracy can be increased by using both solns. on the same spot, first the 2nd soln., then the 1st soln. Two solns. used in detns. of the thickness of Sn coatings by the jet method are proposed: NH_4NO_3 70 g./l. + $CuSO_4$ 7 g./l. + 1 N HCl 70 ml./l., which dissolves 1 μ of the coating in 3.0 sec., and $FeCl_3$ 15 g./l. + $CuSO_4$ 30 g./l. + 1 N HCl 60 ml./l, which dissolves 1 μ of the coating in 1 sec. The accuracy of detns. with the 1st soln. is ±15 and that with the 2nd soln. is ±20%. Owing to the rapidity of the soln. of Sn, the 2nd soln. can be used only for coatings at least 5 μ thick. Both solns. were tried on coatings from acid and basic baths obtained with various current strengths (from 0.5 to 2.0 amp./sq. dm.). Within the accuracy of the method the coeffs. did not depend on the conditions under which the coatings had been obtained. These solns. can be used for the control of the thickness of Sn coatings on steel, Cu, and brass. The end of the soln. of the coating is very sharp. Eleven references.

W. R. Henn

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

Methods for testing the porosity of tin films. M. I. Zil'berfarb and B. A. Sherman. *Zavodskaya Lab.* 11, 1115-21(1945). Porosity of tin films was best detd. by anodic treatment in solns. contg. $K_4Fe(CN)_6$ (10 g./l.), Na_2SO_4 (10 g./l.), and NaCl. The duration of the electrolysis was 5 min. and the initial c. d. 0.5-0.6 amp./sq. dm. A passive film was formed on the anode during the electrolysis and the c. d. decreased. The pores appeared as red-brown spots. The test did not result in an appreciable destruction of the Sn film. The change in wt. of the sample did not exceed ±0.001 g. in samples weighing from 3 to 5 g. Seven references. W. R. Hess

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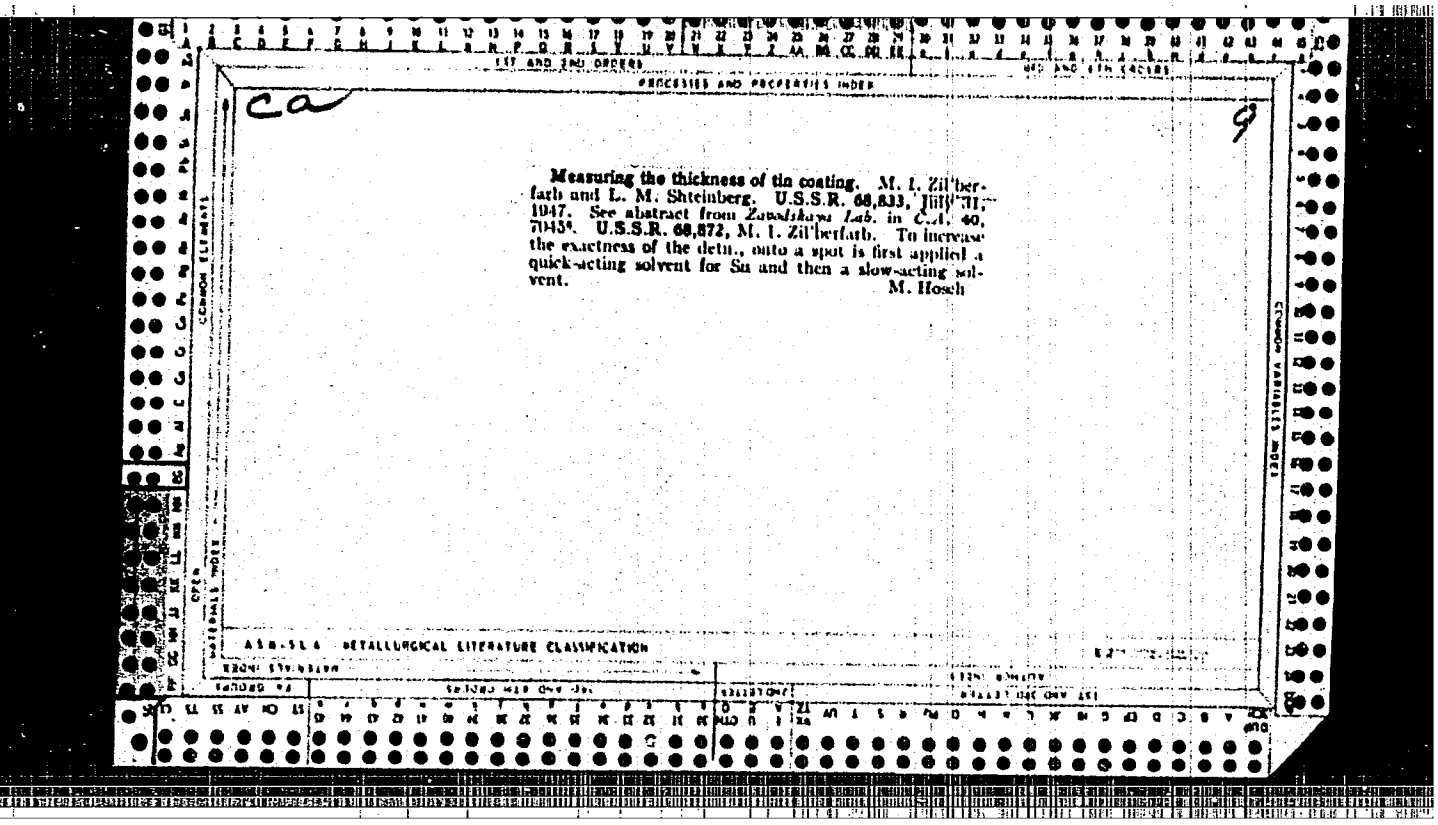

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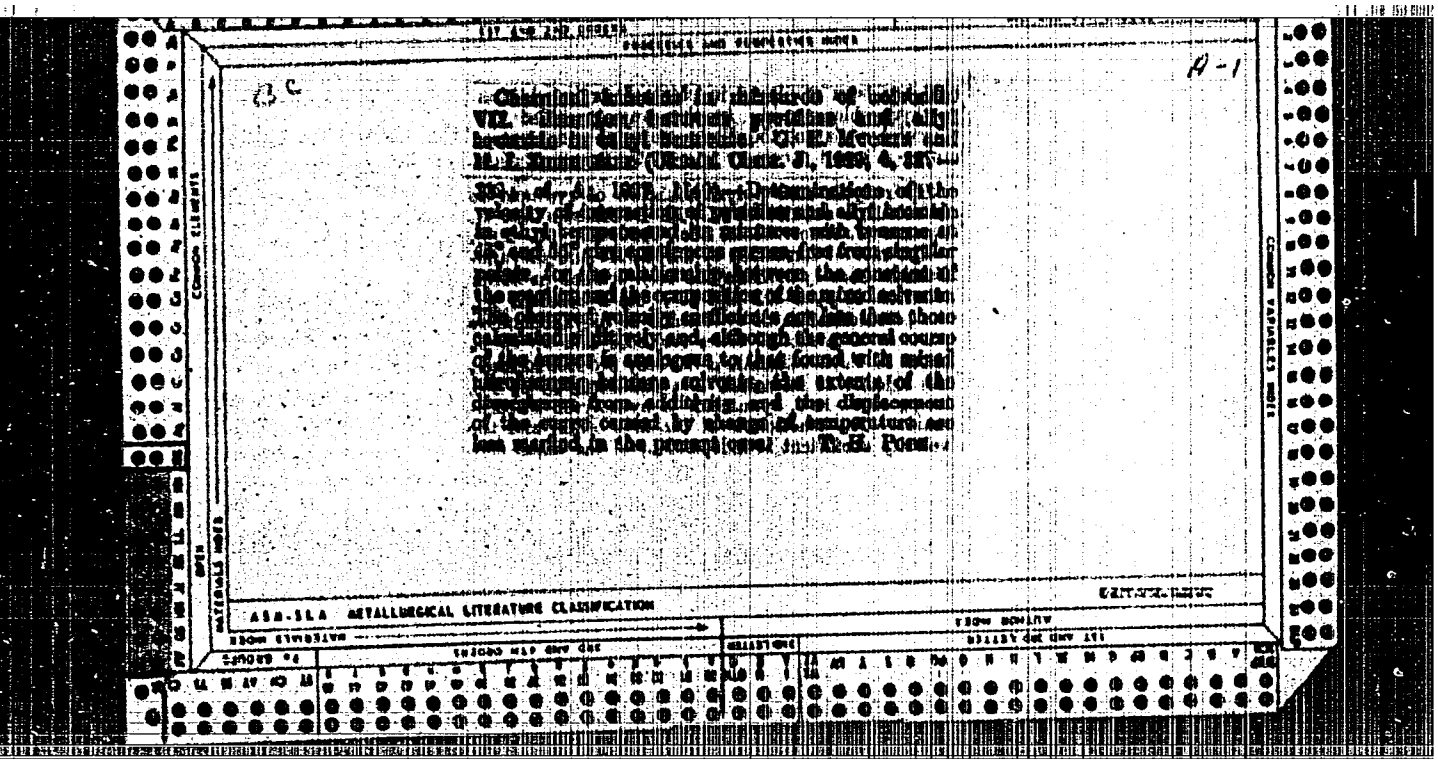
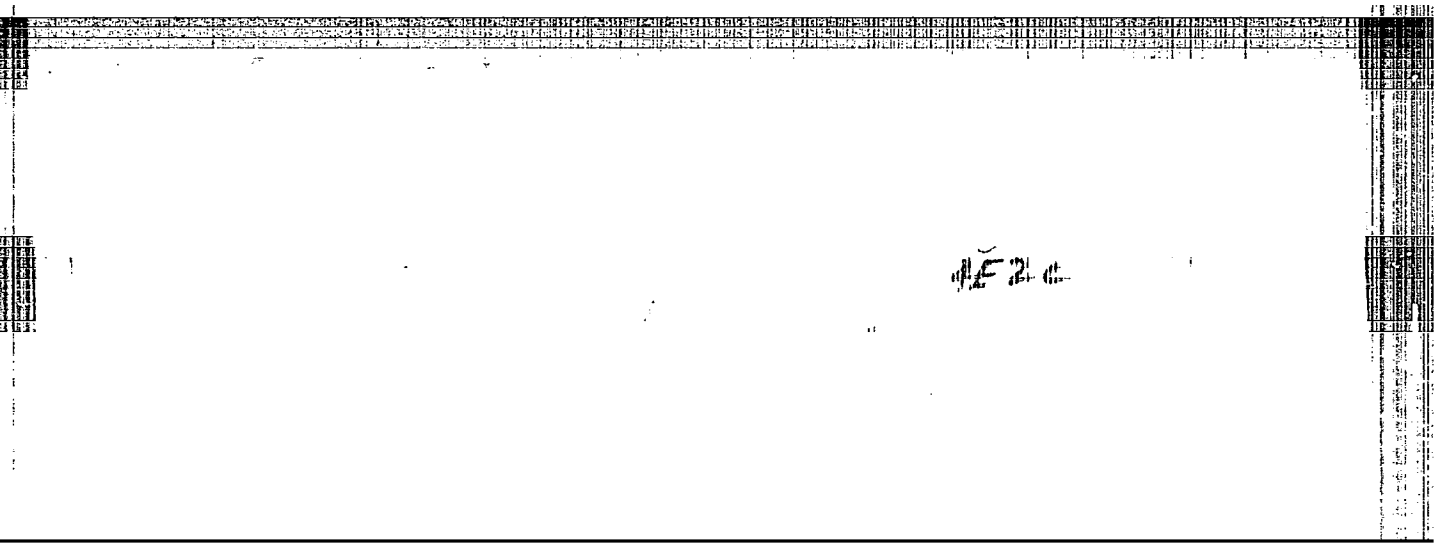
9

Measuring the thickness of tin coating. M. I. Zil'berfarb and L. M. Shteinberg. U.S.S.R. 68,833, July 31, 1947. See abstract from *Zavodskaya Lab.* in *C.A.* 40, 7043⁸. U.S.S.R. 68,872, M. I. Zil'berfarb. To increase the exactness of the detn., onto a spot is first applied a quick-acting solvent for Sn and then a slow-acting solvent.

M. Hosch





ZIL'BERFARB, M.I., kandidat tekhnicheskikh nauk; LESHCHENKO, B.A., mladshiy nauchnyy sotrudnik.

The degreasing of tin plate. Sbor.st.NIIKHIMMASH no.15:91-96 '54. (MLRA 10:1)

(Tin plate--Cleaning)

ZIL'BERFARB, M.I.; GARETOVSKAYA, M.P., mladshiy nauchnyy sotrudnik.

Determining the stability of materials in a solution of flux and melted tin. Sbor.st.NIIKHIMMASH no.15:97-102 '54. (MLRA 10:1)
(Tinning)

ZIL'BERFARB, M.I., kandidat tekhnicheskikh nauk; LESHCHENKO, B.A., mladshiy nauchnyy sotrudnik.

Determining the porosity and thickness of a layer of tin and alloy on tin plate. Sbor.st.NIIKHIMMASH no.15:103-115 '54. (MLRA 10:1)
(Tin plating)

ZIL'BERFARB, M.I.

ZIL'BERFARB, M.I., kandidat tekhnicheskikh nauk; GARETOVSKAYA, M.P., mladshiy nauchnyy sotrudnik; LESHCHENKO, B.A., mladshiy nauchnyy sotrudnik.

Diffusion process zinc plating. Sbor.st.NIIKHIMMASH no.15:196-229 '54. (MLRA 10:1)

(Zinc plating--Testing) (Diffusion)

SOV/137-59-9-21035

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 9, pp 298 - 299 (USSR)

AUTHORS: Kristal', M.M., Zil'berfarb, M.I., Garetovskaya, M.P.

TITLE: Comparative Corrosion Resistance of Various Steels and Diffusion Chrome Coating in Media of Liquid Fuel Synthesis

PERIODICAL: Sb. statey, Vses. n.-i. i konstrukt. in-t khim. mashinostr., 1958, Nr 25, pp 145 - 150

ABSTRACT: The authors present results of investigations into corrosion resistance of 3, NL2, Kh5M, 1Kh13, 1Kh18Kh9T steel specimens and diffusion Cr-Al coatings (I) in media of artificial liquid fuel containing aliphatic acids and CO_2. The tests were carried out in laboratories and under industrial conditions simultaneously. The duration of laboratory tests was 500 hours and 3,600 and 4,300 hours in the industrial tests. It was stated that 3 steel grades NL2 and Kh5M were not resistant to corrosion in water and in synthesis products under operation conditions of the synthesis shop equipment. 1Kh13 grade steel was resistant in CO_2-saturated water at 150°C to the liquid phase and less resistant to the vapor phase. 1Kh13 steel was corrosion-resistant in recovery water, containing only a

Card 1/2

SOV/137-59-9-21035

Comparative Corrosion Resistance of Various Steels and Diffusion Chrome Coating in Media of Liquid Fuel Synthesis

small amount of CO_2 at 200°C and in CO_2-saturated condensate at ~60°C. Corrosion resistance of 1Kh13 steel in reaction water containing aliphatic acids is somewhat lower than that of 1Kh18N9T steel and I. Corrosion resistance of 1Kh18N9T steel is high in synthesis shop media. I is resistant (corrosion rate is 0.001 mm/year) in CO_2-saturated water at 60°C and at 150 - 200°C. This coating is also resistant in reaction water containing aliphatic acids at 150 - 200°C. As a result of investigations on the manufacture of devices for the synthesis shop, the authors recommend the use of 1Kh13, two-layer 20 + 08Kh13 steels. To protect internal and external "3"-steel pipe surfaces, the authors recommend to use I.

M.K.

Card 2/2

Cand. Tech. Sci.

ZIL'BERFARB, P. M.

Dissertation: "Tensile Strength of a Cement Joint."

22 Feb. 49

Central Sci. Res. Inst. of Industrial Structures

"TsNIPS"

SO Vecheryaya Moskva
Sum 71

ZIL'BERFARB, A. M.

"Strength of a Cement Joint in Tension." Sub 5 Jun 51, Central Sci Res Inst of Industrial Structures (TsNIPS)

Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55

Zh Zil'berfarb, PM

Preparation of reinforced concrete panels with filler in a continuous operation. P. M. Zil'berfarb. *Sborník Trudov*

Resp. Nauch. Issledovatel. Inst. Mestnykh Stroitel. Materialov 1953, No. 5, 103–16; *Referat. Zhur., Khim.* 1954, No. 50424.—In this procedure foam silicate blocks were replaced by cellular gypsum and the usual steaming was replaced by heating. The substitution of cellular gypsum for foam silicate as inserts reduced the fuel consumption by 30%.

M. Hirsch

ZIL'BERFARB, P.

USSR/Chemical Technology. Chemical Products and Their Application - Silicates. Glass. Ceramics. Binders. I-9

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 12649

Author : Fal'kov I., Zil'berfarb P.
Title : Heat Treatment of Blocks Made from Raw Materials Comminuted in a Vibratory Mill

Orig Pub : Stroit. meterialy, izdeliya i konstruktsii, 1956, No 7, 27-28

Abstract : Lime-sand, lime-clay-sand and lime-slag blocks (B), manufactured with the use of quicklime ground (same as clay) to a specific surface of 5000 - 6000 cm^2/g, are molded immediately after preparation of the mix. Heat treatment of the B in molds consists in steaming, for 24-36 hours, at 80-90° and carried out after a preliminary aging for 2 days at 5-20° in a moist medium. After completion of steaming the B are dried for 4 hours. Activity of the mix must not exceed 6-8%.

Card 1/2 - 100 -

ZIL'BERFARB, P.M., inzh.; ZAYTSEV, G.G., inzh.

Using cement-perlite and lime-perlite binders in the manufacture of perlite-concrete products. Sbor.trud. ROSNIIMS no.25:120-134 '62 (MIRA 17:8)

BUDNIKOV, P.P., akademik; ZIL'BERFARB, P.M., inzh.

Kinetics of the hydration of lime in sand-lime mixtures. Stroi.mat. 9 no.9:36-39 S '63. (MIRA 16:10)

1. AN UkrSSR (for Budnikov).

BUDNIKOV, P.P., akademik; ZIL'BERFARB, P.M., inzh.

Perlite as an active mineral additive. Stroi. mat. 9 no.7: 29-31 Jl '63. (MIRA 16:11)

1. Akademiya nauk Ukrainskoy SSR (for Budnikov).

VAYSFEL'D, L.D., inzh.; ZIL'BERFARB, P.M., inzh.

Mechanized production of cement-sand and lime-sand tile. Sbor. trud.ROSNIIMS no.19:6-23 '61. (MIRA 16:1)
(Tiles)

ZAYDENBERG, B.S., kand.tekhn.nauk; ZIL'BERFARB, P.M., inzh.; IVAKHNO, N.V., inzh.

Using local binding materials in the manufacture of keramzit-concrete products. Sbor. trud. ROSNIIMS no.20:98-107 '61. (MIRA 16:1)

(Binding materials) (Concrete products) (Keramzit)

ZIL'BERFARB, P.M., inzh.; ZEMTSOV, D.G., inzh.; VAYSFEL'D, L.D., inzh.

Effect of some technical factors on the properties of silicate tile. Sbor. trud. ROSNIIMS no.20:90-97 '61. (MIRA 16:1)
(Sand-lime products) (Tile)

BELKIN, Ya.M., kand.tekhn.nauk; ZIL'BERFARB, P.M., inzh.

Production factors which determine the physicomechanical properties of silicate concrete. Stroi.mat. 8 no.10:22-24 O '62. (MIRA 15:11)

(Sand-lime products)

ZIL'BERFARB, P.M., inzh.; KAMEYKO, V.A., kand.tekhn.nauk

Bearing panels for interior walls made of silicate concrete.
Stroi. mat. 8 no.6:6-9 Je '62. (MIRA 15:7)
(Sand-lime products)
(Walls)

BELIKOV, V.S., inzh.; ZIL'BERFARB, P.M., inzh.; MEL'NIK, M.F., inzh.

Making large silicate blocks in a specialized shop. Stroi. mat. 5 no.2:23-26 F '59. (MIRA 12:2)
(Building blocks) (Silicates)

ZIL'BERFARB, V.I., inzh.-elektrik

Systems of speed regulation for high-speed machines. Bum.prom. 35 no.4:14 Ap '60. (MIRA 13:10)
(Papermaking machinery)

ZIL'BERFARB, V.I., inzh.-elektrik

Useful book ("Electric equipment of pulp and paper mills" by B-S.D.Soltanov. Reviewed by V.I.Zil'berfarb. Bum.prom. 34 no.2:25 F '59. (MIRA 12:4)
(Paper industry--Equipment and supplies) (Soltanov, B-S.D.)

ZIL'BERFARB, V.I., inzh.-elektrik.

Electric equipment of woodpulp and paper industries of Canada and the United States. Bum. prom. 33 no.12:27-29 D '58. (MIRA 11:12)
(United States--Paper industry--Equipment and supplies)
(Canada--Paper industry--Equipment and supplies)

ZIL'BERFARB, V.I., inzh.

Regulating paper quality by the statistical method. Bum. prom. 33 no. 6:14 Je '58. (MIRA 11:7)
(Paper)

ZIL'BERBARB, V.I., prof.

Problems in the complete automation of paper manufacture. Bum. prom. 33 no.2:12-13 F '58. (MIRA 11:3)
(Paper industry) (Automation)

NERUCHEV, I.V., inzh.; SOSNOV, M.L., inzh.; ZIL'BERFARB, V.I., inzh.

Automatic electric drives in the paper industry. Bum. prom. 35 no.6:22-24 Je '60. (MIRA 13:7)
(Papermaking machinery)

ZIL'BERFARB, V.I., inzh. elektrik.

Increasing wear resistance of starters of the OKMA type. Bum. prom. 32 no.7:26 Jl '57. (MIRA 10:11)
(Electric motors--Starting devices)

ZIL'BERFARB, V.I., inzh.-elektrik

Adaptation of magnetic amplifiers. Bum. prom. 34 no.4:16-17 Ap '59. (MIRA 12:7)
(Magnetic amplifiers)

ZIL'BERFARB, V.I., inzhener-elektrik.

Electric drives of supercalenders. Bum.prom. 34. no.12:22-23 D '59. (MIRA 13:4)
(Switzerland--Papermaking machinery)

ZIL'BERFARB, V.I., inzhener.

Electric driving of papermaking machinery with magnetic amplifier control. Bum.prom. 31 no.9:10 S '56. (MLRA 9:11)
(Papermaking machinery--Electric driving)
(Magnetic amplifiers)

ZIL'BERFARB, V.I., inzhener.

Automatic papermaking machine. Bum.prom. 32 no.2:9-10 F '57.
(MLRA 10:5)
(Papermaking machinery)

ZIL'BERFARB, V.I., inzhener-elektrik.

How to make saturation throttles. Bum.prom. 32 no.3:20 Mr '57.
(MIRA 10:4)
(Papermaking machinery--Electric driving)

ZIL'BERFARB, V.I., inzhener.

Greater use of contactless automatic control in industry; letter to the editors. Bum. prom. 32 no.5:24 My '57. (MLRA 10:6)
(Papermaking machinery--Electric driving)

ZIL'BERFARB, V.I.

Automatic control of feeding the pulp to the papermaking machine.
Bum.prom. 31 no.1:22 Ja '56. (MLRA 9:5)

1. Zhidachevskiy kartonno-bumazhnyy kombinat.
(Papermaking machinery) (Automatic control)

ZIL'BERFARB, V.I., inzh.-elektrik

Multiengine electric drive of magnetic amplifiers. Bum.prom. 35 no.10:25 O '60. (MIRA 13:10)
(Rogan'--Papermaking machinery)

ZIL'BERFARB, V.I., inzh.-elektrik

Design and calculation of the ventilation of electric driving motors for paper- and cardboard-making machines. Bum. prom. 38 no.11:21 N '63. (MIRA 17:1)

ZIL'BERFARB, V.I., inzh.-elektrik

Nominal voltages in electric power systems. Bum.prom. [38] no.7: 14 Jl '63. (MIRA 16:8)

(Electric power distribution)

ZIL'BERFARB, V.I., inzh.-elektrik

How to select and order electric driving systems. Bum. prom. 37 no.12:31-32 D '62. (MIRA 16:1)
(Papermaking machinery--Electric driving)

ZIL'BERFAYN, M.

Production of mixed feeds in Turkmenistan. Muk.-elev. prom. 26 no. 12:12 D '60. (MIRA 13:12)

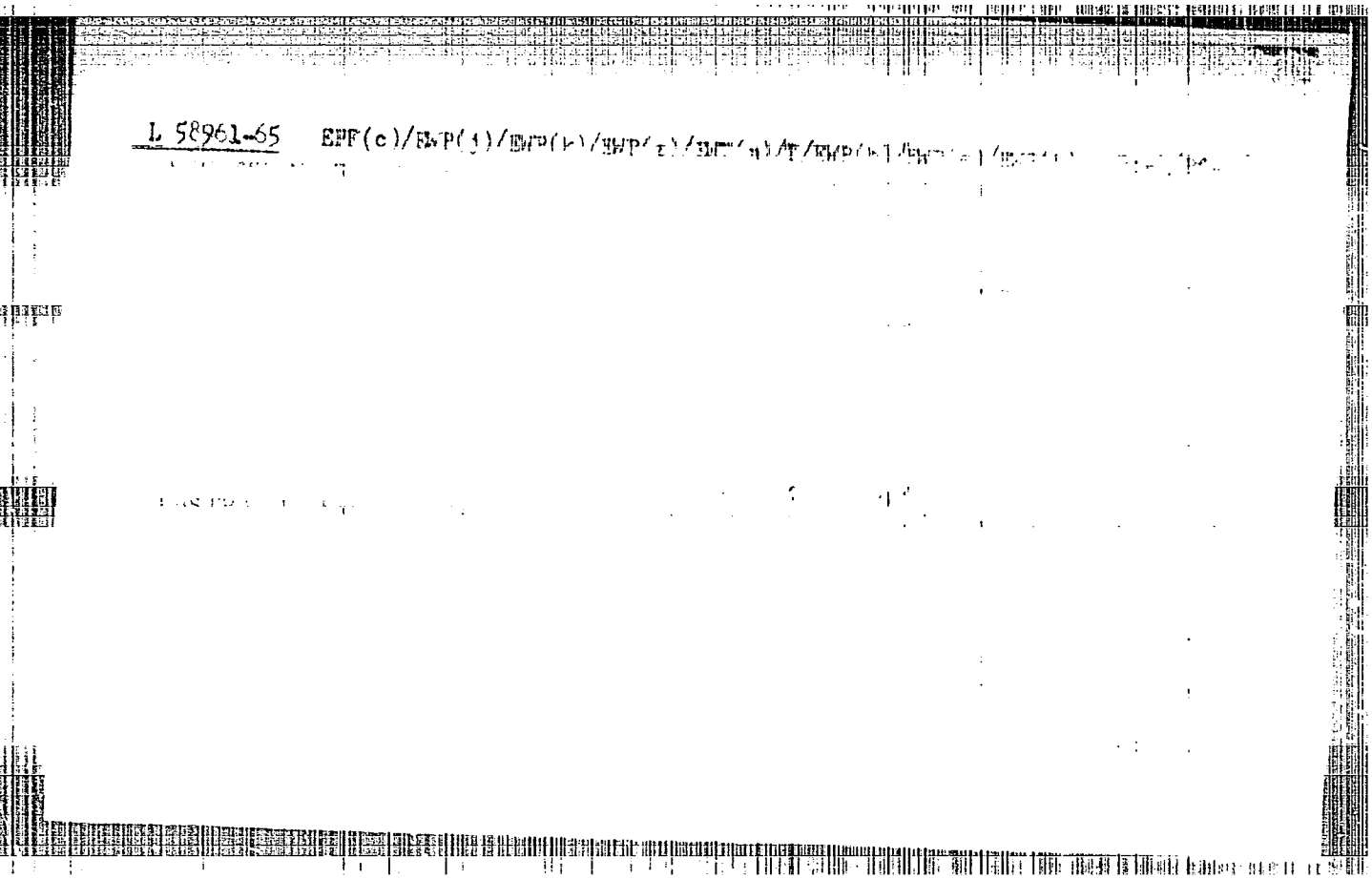
1. Nachal'nik Proizvodstvenno-tekhnicheskogo otdeleniya Upravleniya khleboproduktov pri Sovete Ministrov Turkmenskoy SSR. (Turkmenistan--Feed mills)

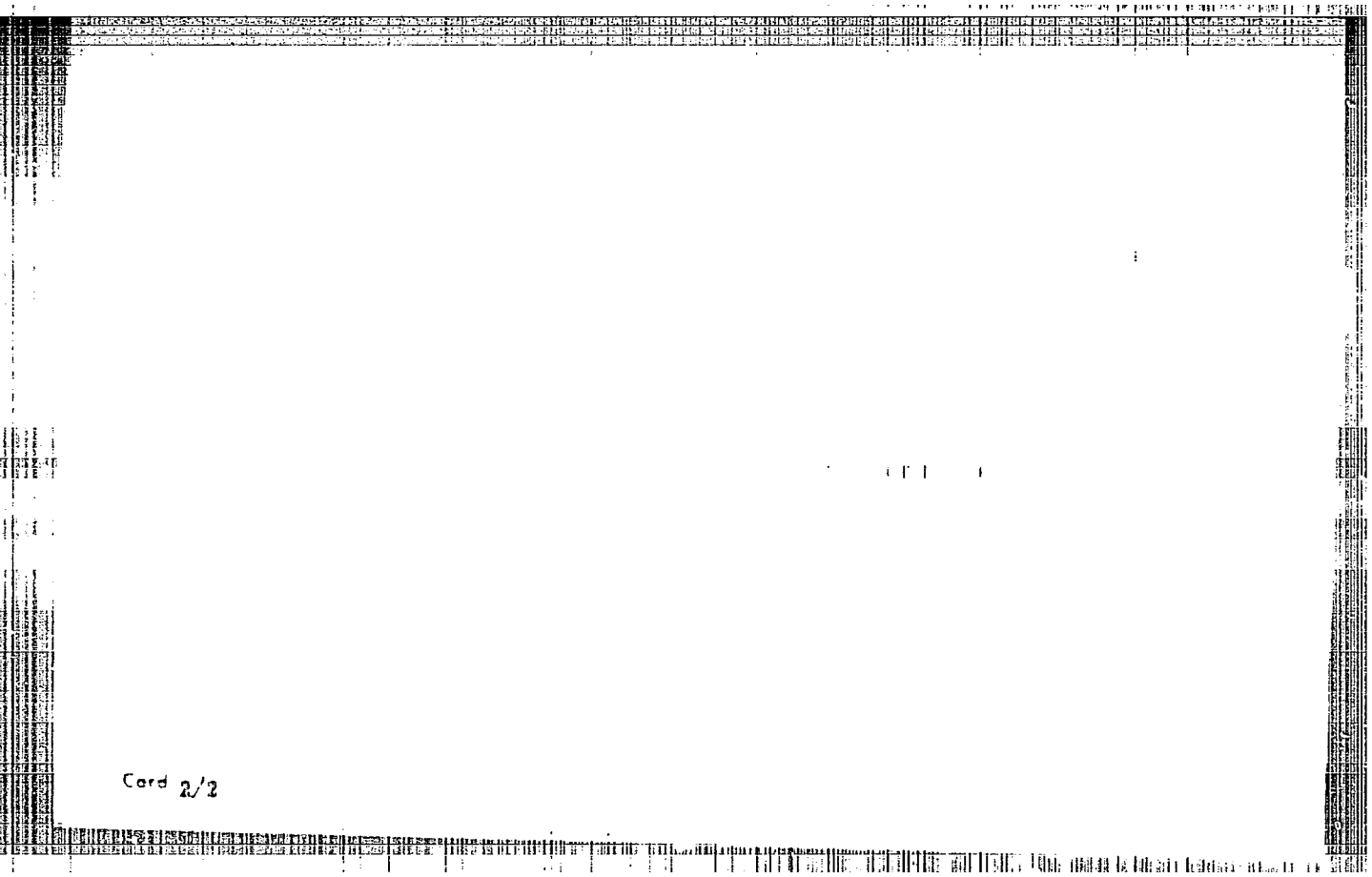
ZIL'BERFAYN, M.

Traps for catching the grain in the waste waters of grain washing machines. Muk.-elev. prom. 28 no.2:28 F '62. (MIRA 15:3)

1. Nachal'nik Proizvodstvenno-tekhnicheskogo otdela Ashkabadskogo mel'nichnogo kombinata.

(Grain--Cleaning)





ZIL'BERG, G.A.; SMIRNOVA, S.N.

Oxidation of branched paraffin hydrocarbons in the liquid phase. Dokl. AN SSSR 166 no.3:643-646 Ja '66.

(MIRA 19:1)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.V. Lomonosova. Submitted June 25, 1965.

L 45888-66 EWT(m)/EWP(j) RM

ACC NR: AP6023959 SOURCE CODE: UR/0204/66/006/002/0219/0226

AUTHOR: Zil'berg, G. A.; Smirnova, S. N.

29
B

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

TITLE: Characteristics of the liquid-phase oxidation of certain paraffinic hydrocarbons of normal and branched structure

SOURCE: Neftekhimiya, v. 6, no. 2, 1966, 219-226

TOPIC TAGS: hydrocarbon, oxidation kinetics

ABSTRACT: The branched paraffinic hydrocarbons 2-methyldodecane, 4-methyldodecane, 2,3-dimethyldodecane, 2,4-dimethyldodecane, 2,2,3-trimethyldodecane, 2-methyl-3-isopropyldodecane, and 5-butyldodecane, and the corresponding normal paraffinic hydrocarbons n-dodecane, ni-tridecane, ni-tetradecane and n-pentadecane were subjected to catalytic oxidation with atmospheric oxygen at 113±2°C in the presence of cobalt stearate catalyst (0.3 mole%). The content of acids, carbonyl compounds, alcohols, and esters at various stages of the oxidation (excluding volatile products) was determined. For normal hydrocarbons, the oxidation rate was found to be proportional to the number of methylene groups; this indicates the equivalence of all the methylene groups during catalytic oxidation. The catalytic oxidation of branched hydrocarbons was faster and produced a greater number of low-molecular acids than the oxidation of their straight-

Card 1/2 UDC: 547.21+547.21-125]:542.993.7

L 45888-66

ACC NR: AP6023959

chain analogs. This higher oxidation rate is probably due to the fact that the formation of hydroperoxides is facilitated by the lower strength of the C-H bonds in the branched hydrocarbons. The rate of accumulation of free radicals resulting from the decomposition of the hydroperoxides dropped off with time because of the inhibiting effect of the catalyst. The direction of the oxidation is preserved independently of its rate, i. e., of the extent of the process. Orig. art. has: 5 figures and 5 tables.

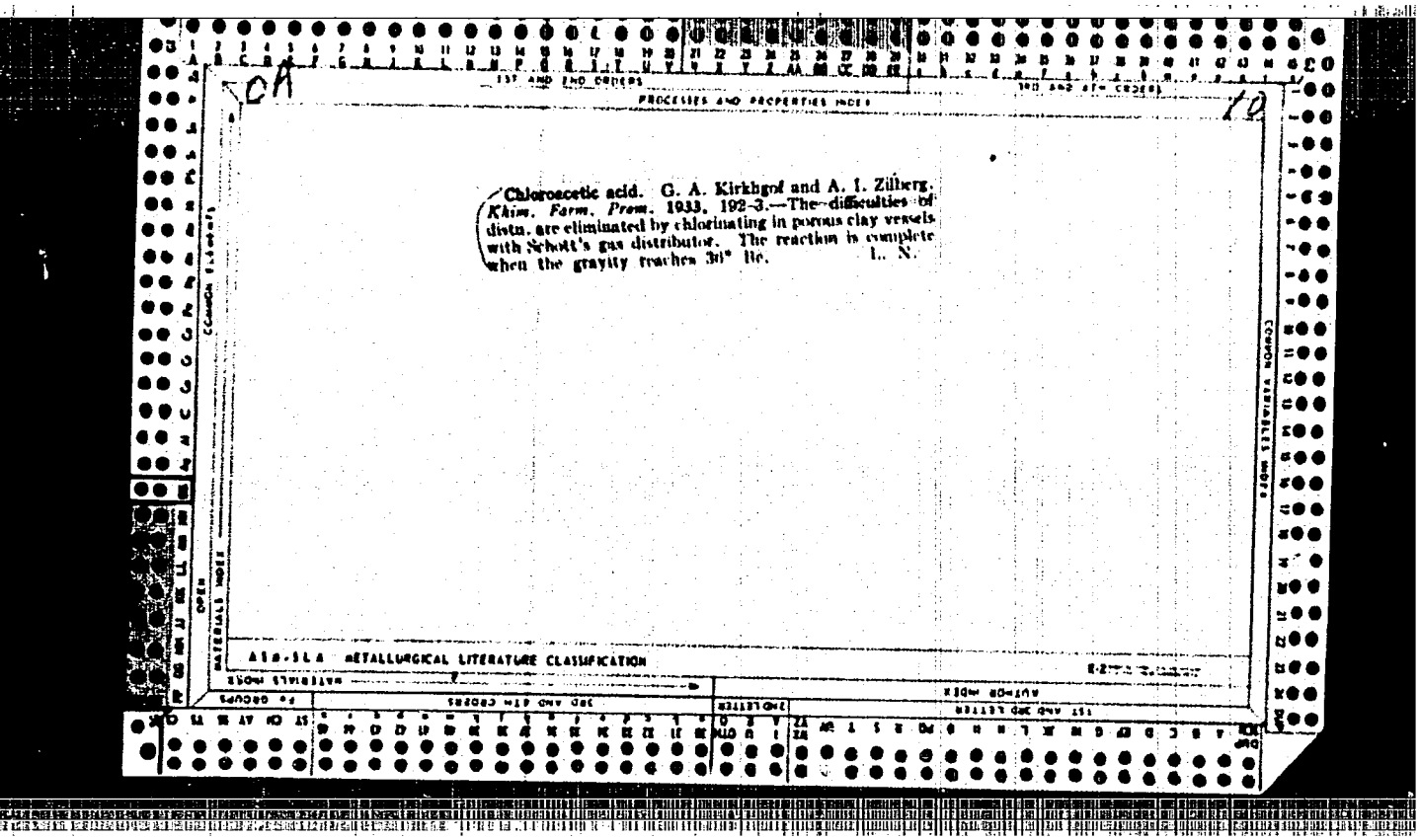
SUB CODE: 07/ SUBM DATE: 19Jul65/ ORIG REF: 014/ OTH REF: 004

Card 2/2 LC

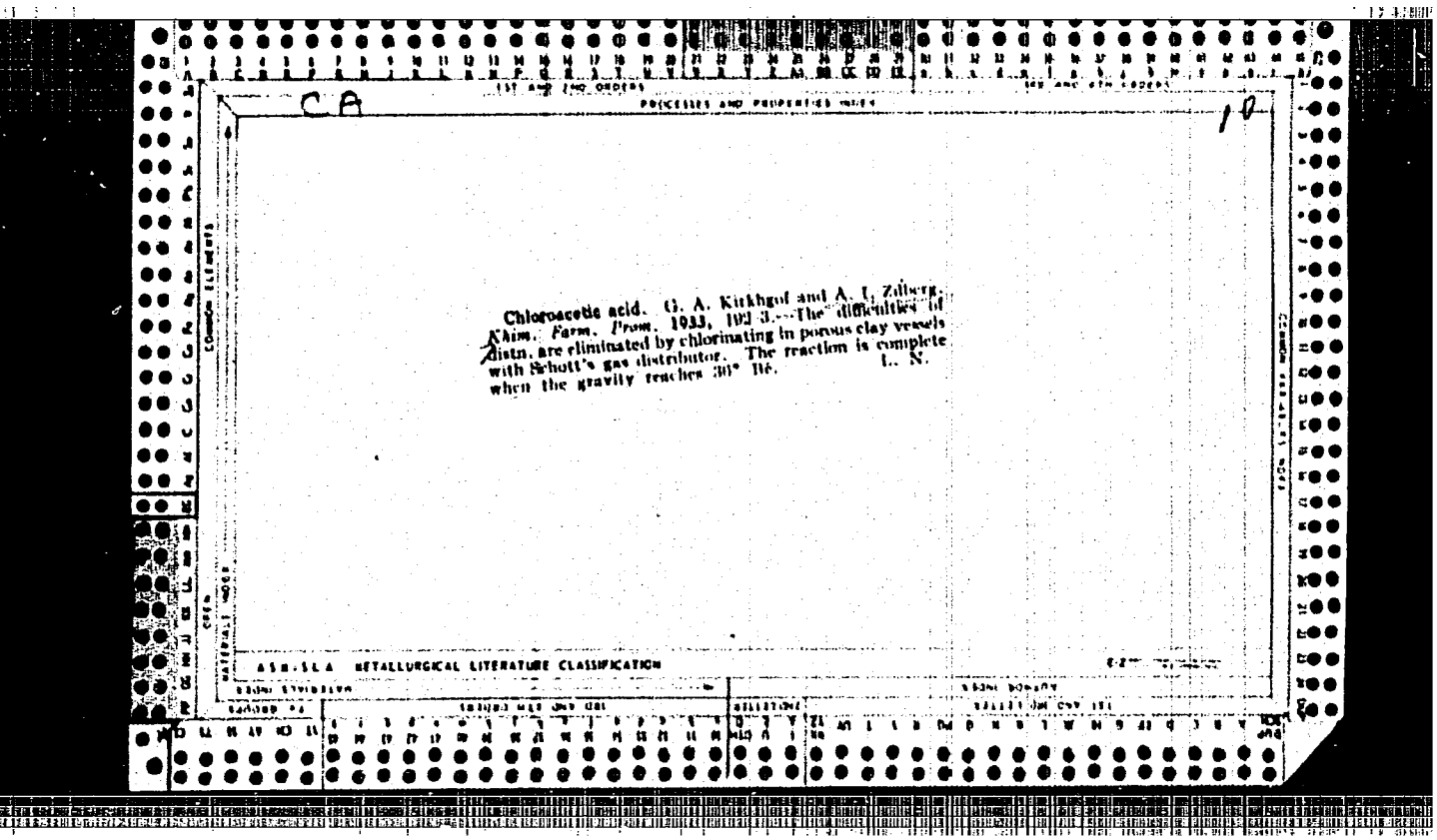
ZIL'BERG, Yu.Ya., kandidat tekhnicheskikh nauk.

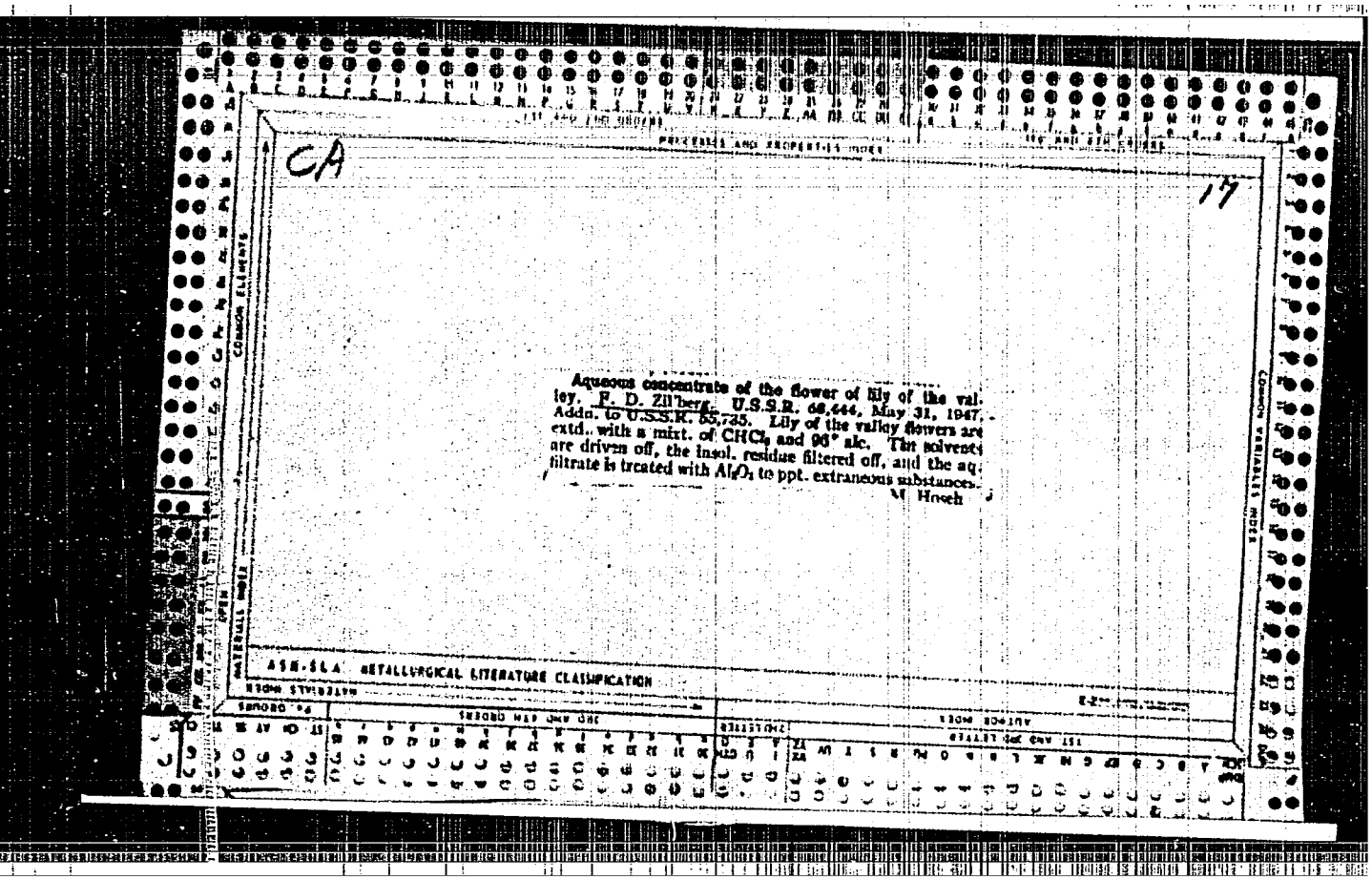
Using thin-walled rolled bushings in tractor engines. Avt. i trakt. prom. no.11:23-27 N '56. (MLRA 10:1)

1. Nauchno-issledovatel'skiy avtotraktronyy institut.
(Tractors--Engines)

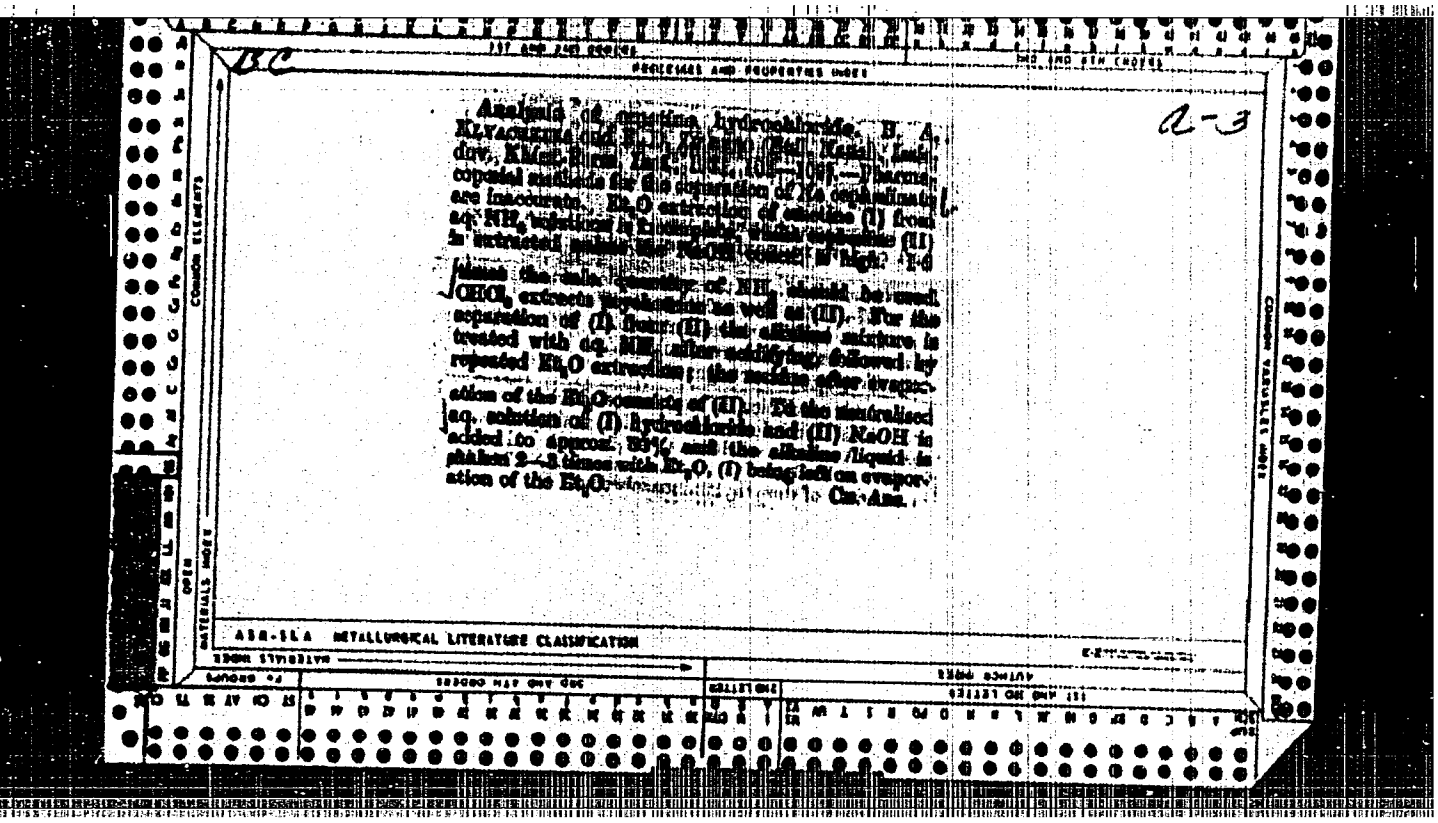


Chloroacetic acid. G. A. Kirkhgof and A. I. Zilberg. *Khim. Farm. Prom.* 1933, 192-3.—The difficulties of distn. are eliminated by chlorinating in porous clay vessels with Schott's gas distributor. The reaction is complete when the gravity reaches 31° Be. L. N.





ZILBERG, F.D.,
KLYACH, B.A., Byull. Nauch.-Issledovatel. Khim.Farm. Inst. 1931, 203-8.



BC

a-3

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

ZILBERG, F. D.

B. A. KLYACHKINA, Bull. Nauch. Issledov. Khim. Farm. Inst. 1931, 203-208

ZILBERG, F. D.

B. A. KLYACHKINA, Byull. Nauch. Issledovatel Khim. Farm. Inst. 1931, 103-9

Zilberg, G.A.

Translation from: Referativnyy Zhurnal, Elektrotekhnika, 1957, Nr 1, p. 193 (USSR) 112-1-1241

AUTHORS: Zilberg, G.A., Ignatov, A.V.

TITLE: Automation and Mechanization of Control of Mass-Production Components (Avtomatizatsiya i mekhanizatsiya kontrolya massovykh detaley)

PERIODICAL: Sbornik: Opyt proizvoditel'nosti truda, Chelyabinsk, Knigoizdat, 1956, pp.252-272.

ABSTRACT: Installations developed or applied at the Chelyabinsk Tractor Plant (ChtZ) are described: automatic machines with electric contact transmitters for the control of elasticity and of clearance of the lock of piston rings, mechanized light-signal devices for multimeter control of pistons (13 dimensions) and valves (9 and 7 dimensions), a device for controlling the thickness of nonmagnetic coatings by the method of its contact-breaking magnet which provides a reliable check up of galvanic and varnish

Card 1/2

Automation and Mechanization of Control of Mass Production (Cont.)

coats up to 0.003 mm thick with an accuracy of 1 to 2 μ. Pneumatic control and measuring instruments are widely used for the control of dimensions executed according to the 1-st and 2-nd classes of precision. A hydroplastic equipment for an accurate and rapid basing of components for testing is described. The necessity of automation of the control of threaded articles is emphasized since for their calibration with gages, 8 to 15 times more time is consumed than in producing threads by knurling. A device for controlling external threads is described. A schematic draft of a micro-testing indicator for the inspection of discontinuous surfaces in the process of polishing is presented.

Card 2/2

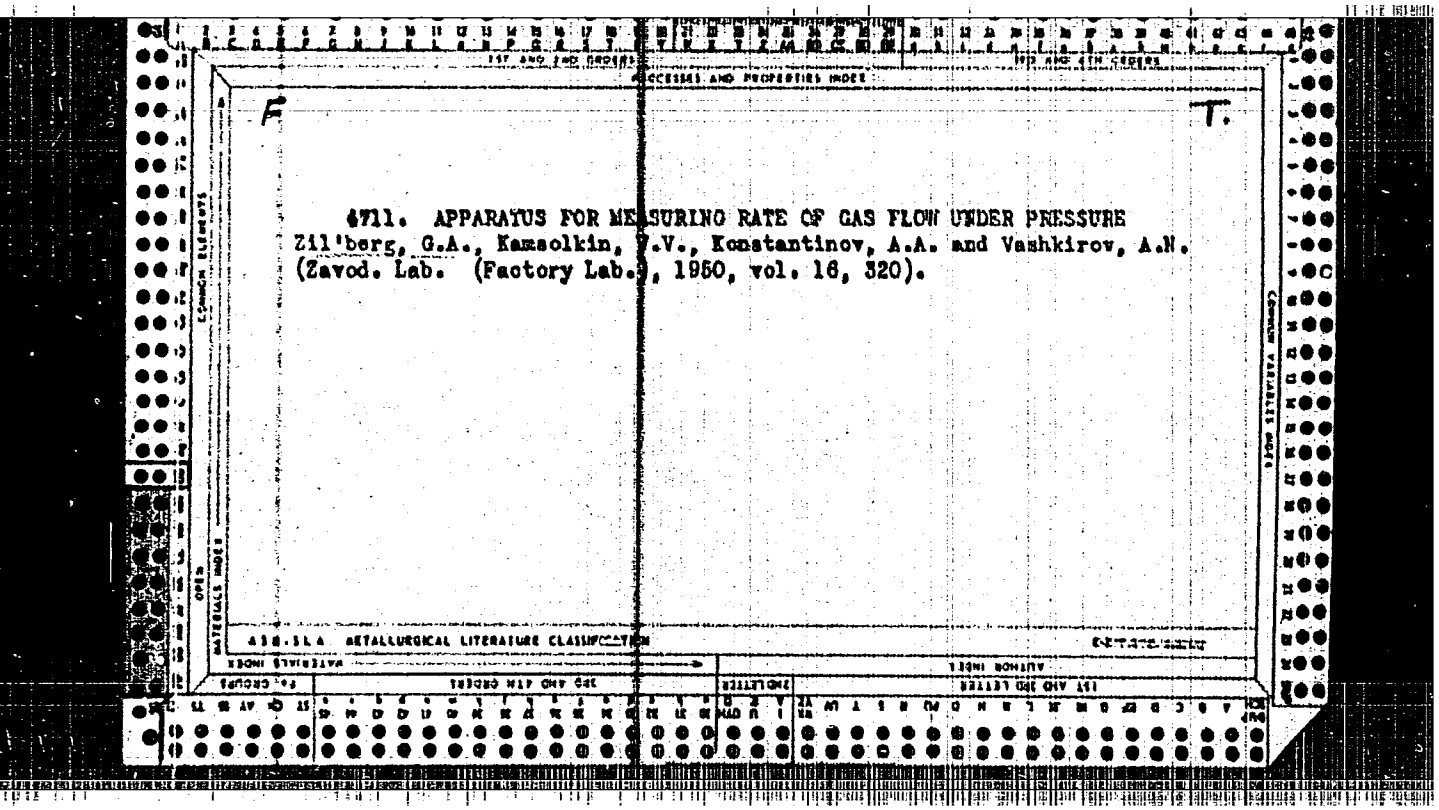
M.P.S.

ZIL'BERG, G.A., kand.tekhn.nauk; SMIRNOVA, S.N.

Effect of ultrasonic waves on the crystallization of naphtalene. Koks i khim. no.12:39-43 '62. (MIRA 16:1)

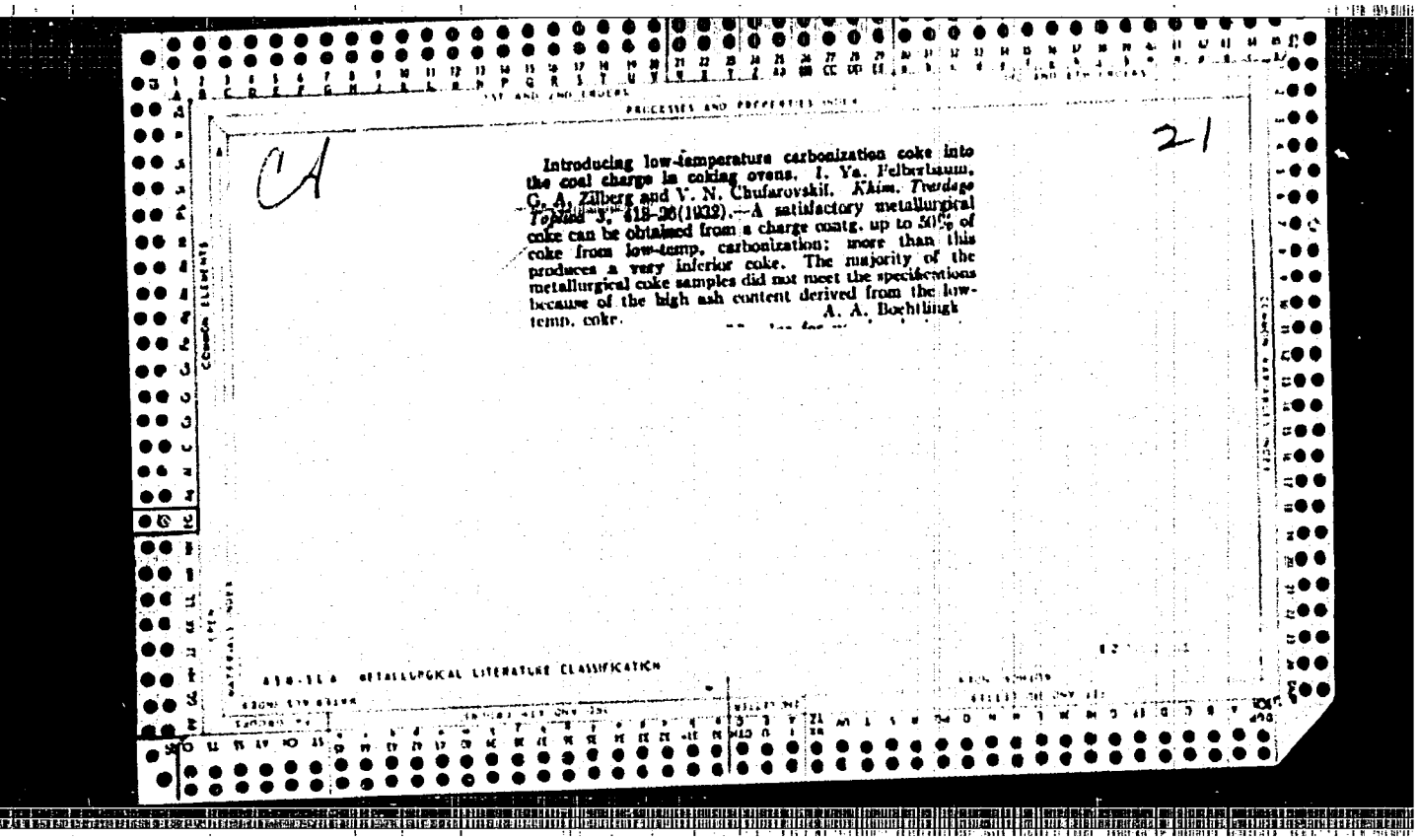
1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.V.Lomonosova.

(Naphtalene)
(Ultrasonic waves--Industrial applications)
(Crystallization)



F T.

4711. APPARATUS FOR MEASURING RATE OF GAS FLOW UNDER PRESSURE
Zil'berg, G.A., Kamsolkin, V.V., Konstantinov, A.A. and Vashkirov, A.N.
(Zavod. Lab. (Factory Lab.), 1950, vol. 16, 320).

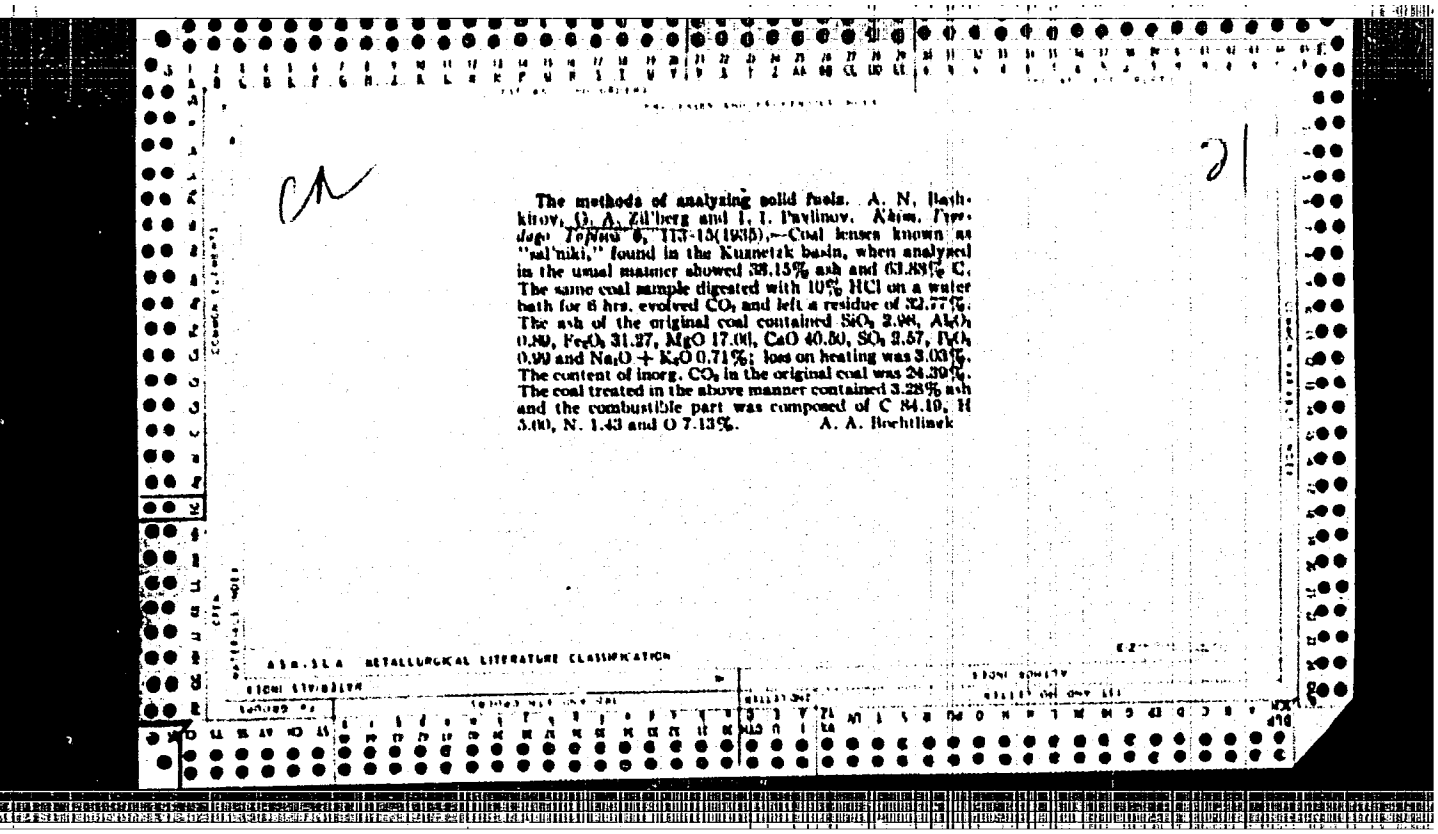


CA

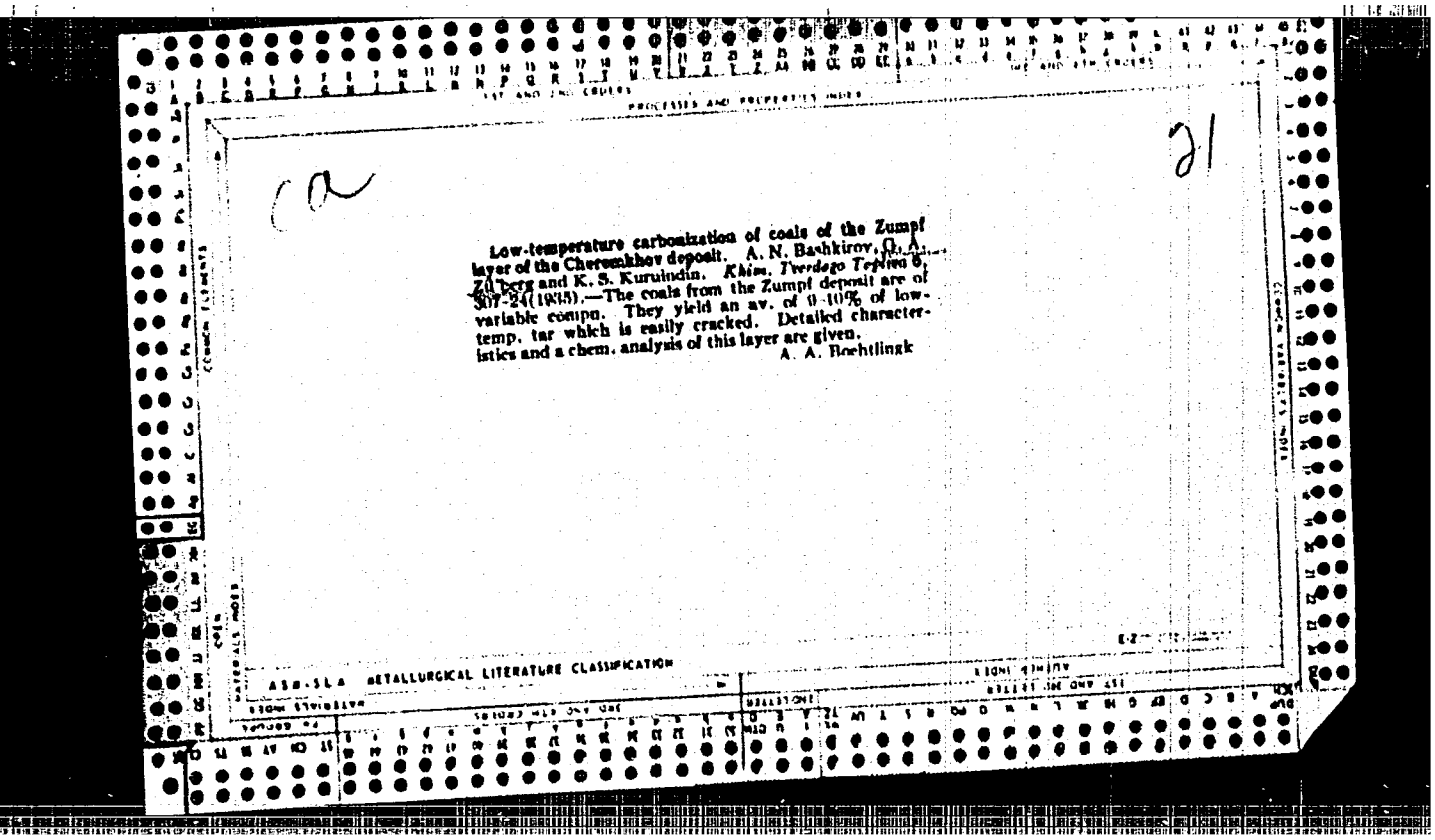
21

Introducing low-temperature carbonization coke into the coal charge in coking ovens. I. Ya. Pelbertsaum, G. A. Zilberg and V. N. Chufarovskii. *Khim. Tverdago Topliva* 3, 415-26(1932).—A satisfactory metallurgical coke can be obtained from a charge contg. up to 50% of coke from low-temp. carbonization; more than this produces a very inferior coke. The majority of the metallurgical coke samples did not meet the specifications because of the high ash content derived from the low-temp. coke.

A. A. Boehtlingk

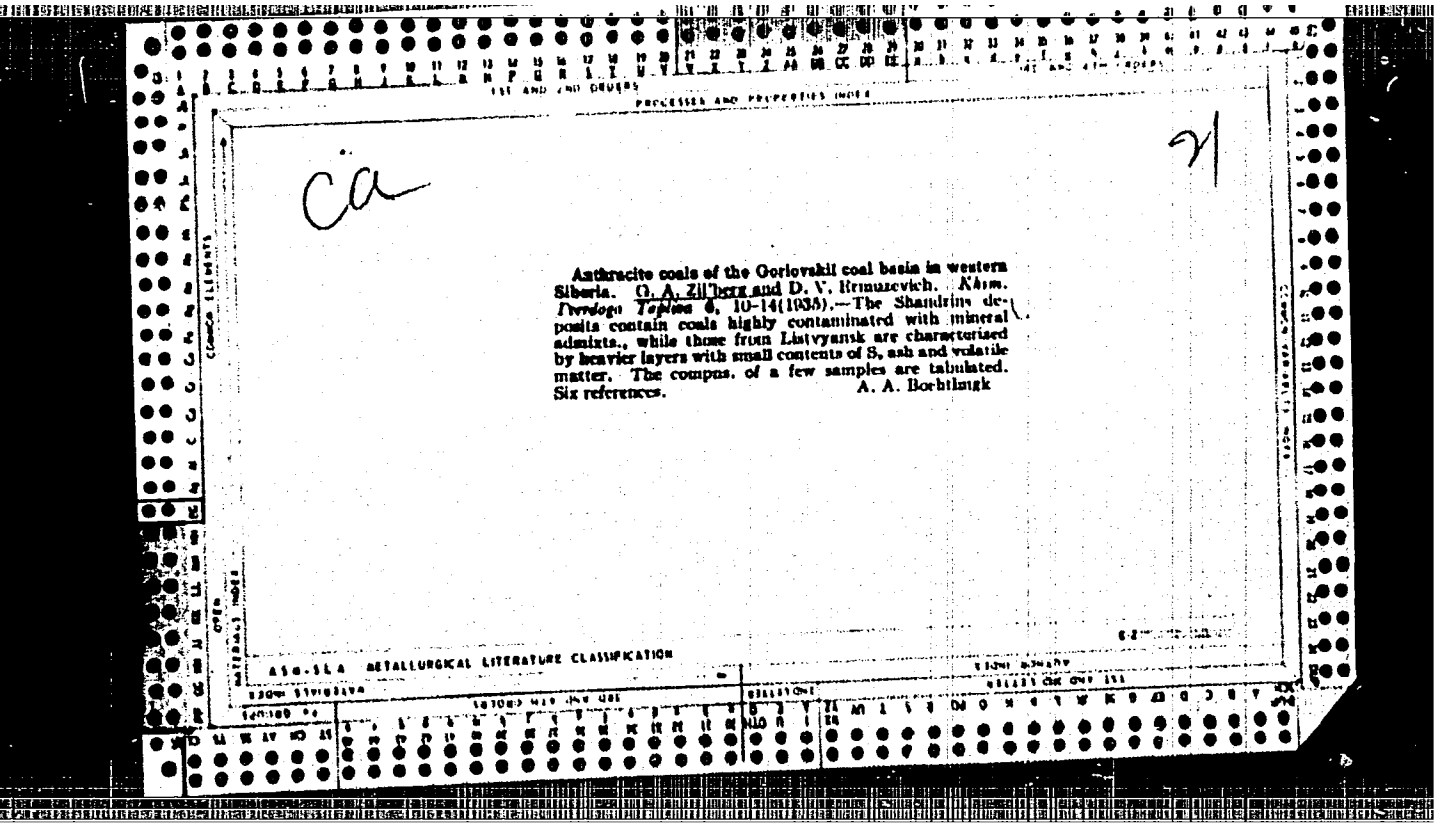


The methods of analyzing solid fuels. A. N. Bashkirov, G. A. Zil'berg and I. I. Pavlinov. *Khim. Tverdogo Topliva* 6, 113-15(1935).—Coal lenses known as "sal'niki," found in the Kuznetzk basin, when analyzed in the usual manner showed 38.15% ash and 63.88% C. The same coal sample digested with 10% HCl on a water bath for 6 hrs. evolved CO_2 and left a residue of 32.77%. The ash of the original coal contained SiO_2 2.98, Al_2O_3 0.80, Fe_2O_3 31.27, MgO 17.01, CaO 40.80, SO_3 2.57, P_2O_5 0.99 and $Na_2O + K_2O$ 0.71%; loss on heating was 3.03%. The content of inorg. CO_2 in the original coal was 24.39%. The coal treated in the above manner contained 3.28% ash and the combustible part was composed of C 84.10, H 5.00, N 1.43 and O 7.13%. A. A. Bochtlingk



Low-temperature carbonization of coals of the Zumpf layer of the Cheremkhov deposit. A. N. Bashkirov, O. A. Zolberg and K. S. Kurulndin. *Khim. Tverdogo Topliva* 6, 307-24(1935).—The coals from the Zumpf deposit are of variable compn. They yield an av. of 9-10% of low-temp. tar which is easily cracked. Detailed characteristics and a chem. analysis of this layer are given.
A. A. Boehtlingk

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

21

Anthracite coals of the Gorlovskii coal basin in western Siberia. O. A. Zil'berg and D. V. Brinnarevich. *Khim. Tverdogo Topliva* 6, 10-14(1935).—The Shandrins deposits contain coals highly contaminated with mineral admixts., while those from Listvyansk are characterised by heavier layers with small contents of S, ash and volatile matter. The compns. of a few samples are tabulated. Six references. A. A. Borbilnigk

A10-51A METALLURGICAL LITERATURE CLASSIFICATION

BULANZHE, I. N., kand.khimicheskikh nauk, dotsent; TURCHENKO, Ya. I., dotsent, kand. tekhn. nauk; ZIL'BERG, G. I., inzh.

Studying the wear resistance of phosphate coated steel surfaces. Report no.1. Izv.vys.ucheb.zav.; tekh.leg.prom. no.4:147-153 '61. (MIRA 14:10)

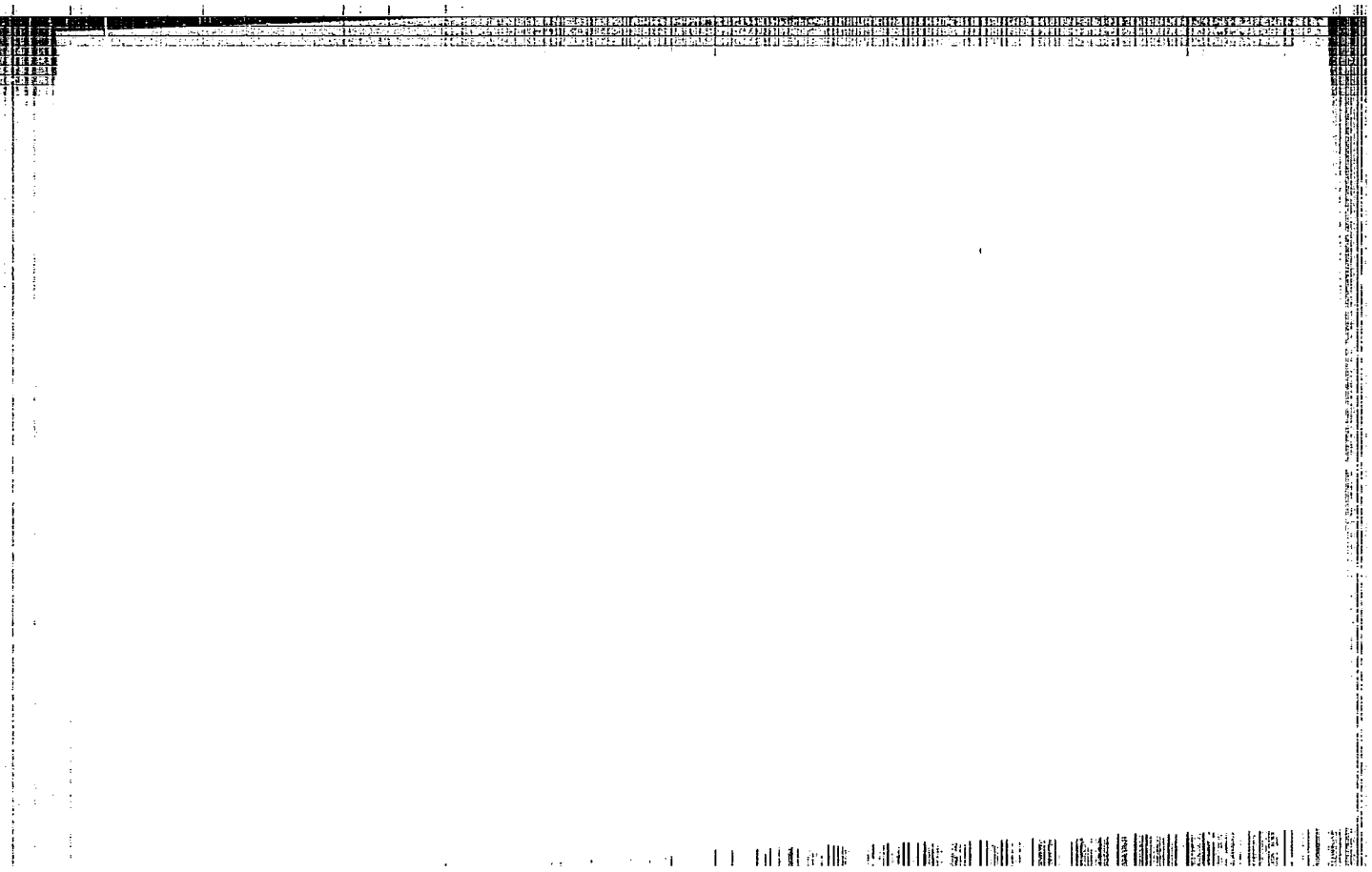
1. Kiyevskiy tekhnologicheskiy institut legkoy promyshlennosti. Rekomendovana kafedroy obshchey i analiticheskoy khimii.
(Steel, Structural—Testing)
(Phosphate coating—Testing)

ZIL'BERG, I. G.

"On the Preparation and Certain Properties of the Chlorderivatives of Benzene-M-Disulphamide,"

Zhur. Obshch. Khim., 16, No. 12, 1946.

Mbr., Synthetics Dept., Sci. Res. Chemico-Pharmaceutical Inst., -1945-.



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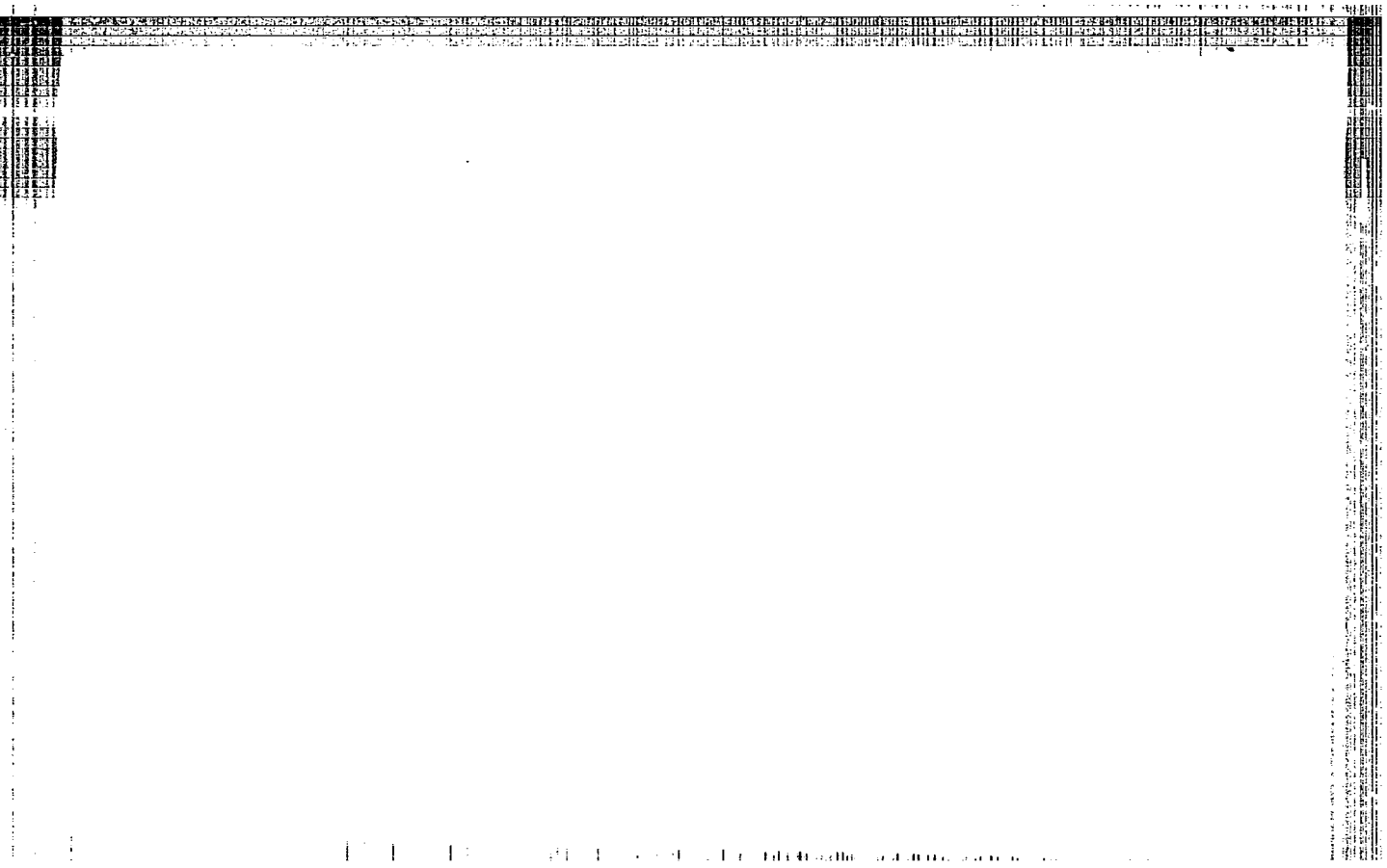

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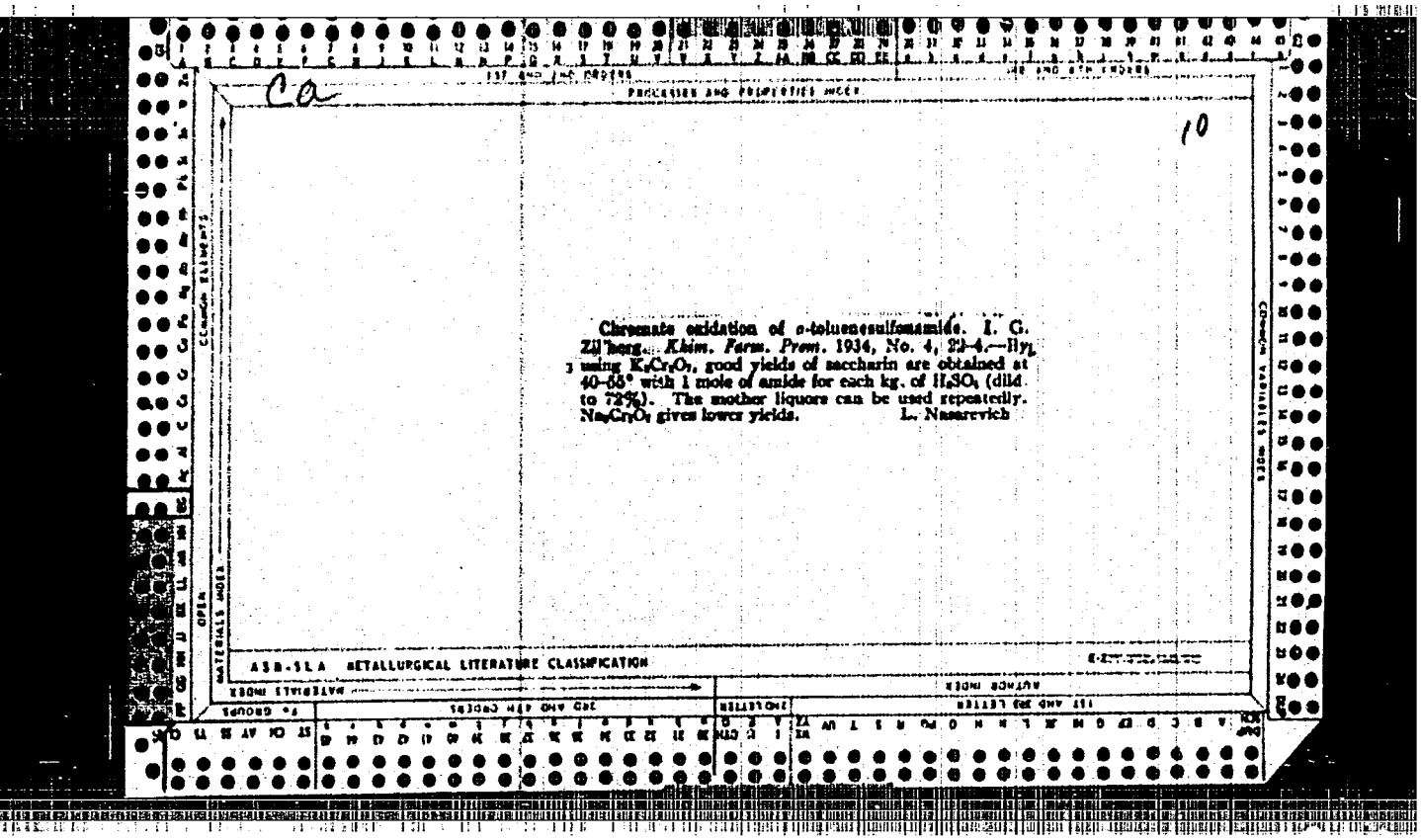


Ca

10

Chromate oxidation of *o*-toluenesulfonamide. I. G. Zil'berg. *Khim. Farm. Prom.* 1934, No. 4, 23-4.—Hy, using $K_2Cr_2O_7$, good yields of saccharin are obtained at 40–55° with 1 mole of amide for each kg. of H_2SO_4 (dild. to 72%). The mother liquors can be used repeatedly. $Na_2Cr_2O_7$ gives lower yields. L. Nasarevich

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

S/137/62/000/001/208/237
A154/A101

AUTHORS: Bulanzhe, I. N., Turchenko, Ya. I., Zil'berg, G. I.

TITLE: Investigation of the wear-resistance of phosphate-coated steel surfaces. Communication 1

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 1, 1962, 94, abstract 1I673 ("Izv. vyssh. uchebn. zavedeniy. Tekhnol. legk. prom-sti", 1961, no. 4, 147 - 153)

TEXT: A pure Mazhef solution is the most suitable for phosphate-coating small parts. Various additions of CaO, $BaCO_3$ and $Ba(NO_3)_2$, as well as passivation in a $K_2Cr_2O_7$ solution, impair the external appearance of the items, giving them a greyish hue. The most aggressive solutions are Mazhef solutions containing $BaCl_2$, and superphosphate solutions containing $H_2C_2O_4 + Na_2C_2O_4$. They can be recommended for phosphate-coating alloyed steels. The most corrosion-resistant coatings are obtained from a Mazhef solution brought to the required acidity by the addition of $MnCO_3$ or Na_3PO_4, with subsequent treatment in commercial vaseline. The corrosion-resistance of phosphate coatings is over 10 times higher than that of coatings obtained by hot sulfidizing or oxidizing. Phosphatizing increases

Card 1/2

Investigation of the...

S/137/62/000/001/208/237
A154/A101

the wear-resistance of items subjected to comparatively low specific pressures (12 - 14 kg/cm^2) and low speeds (200 rpm). Under these conditions the most effective results are obtained in phosphate-phosphate friction. The friction surface becomes smooth, lustrous and black. The friction factor varies between 0.03 and 0.09. A film obtained from a Mazhef solution possesses the highest electrical resistivity - $5 \cdot 10^7$ ohm/cm at 20°C. There are 7 references.

Authors' summary

[Abstracter's note: Complete translation]

Card 2/2

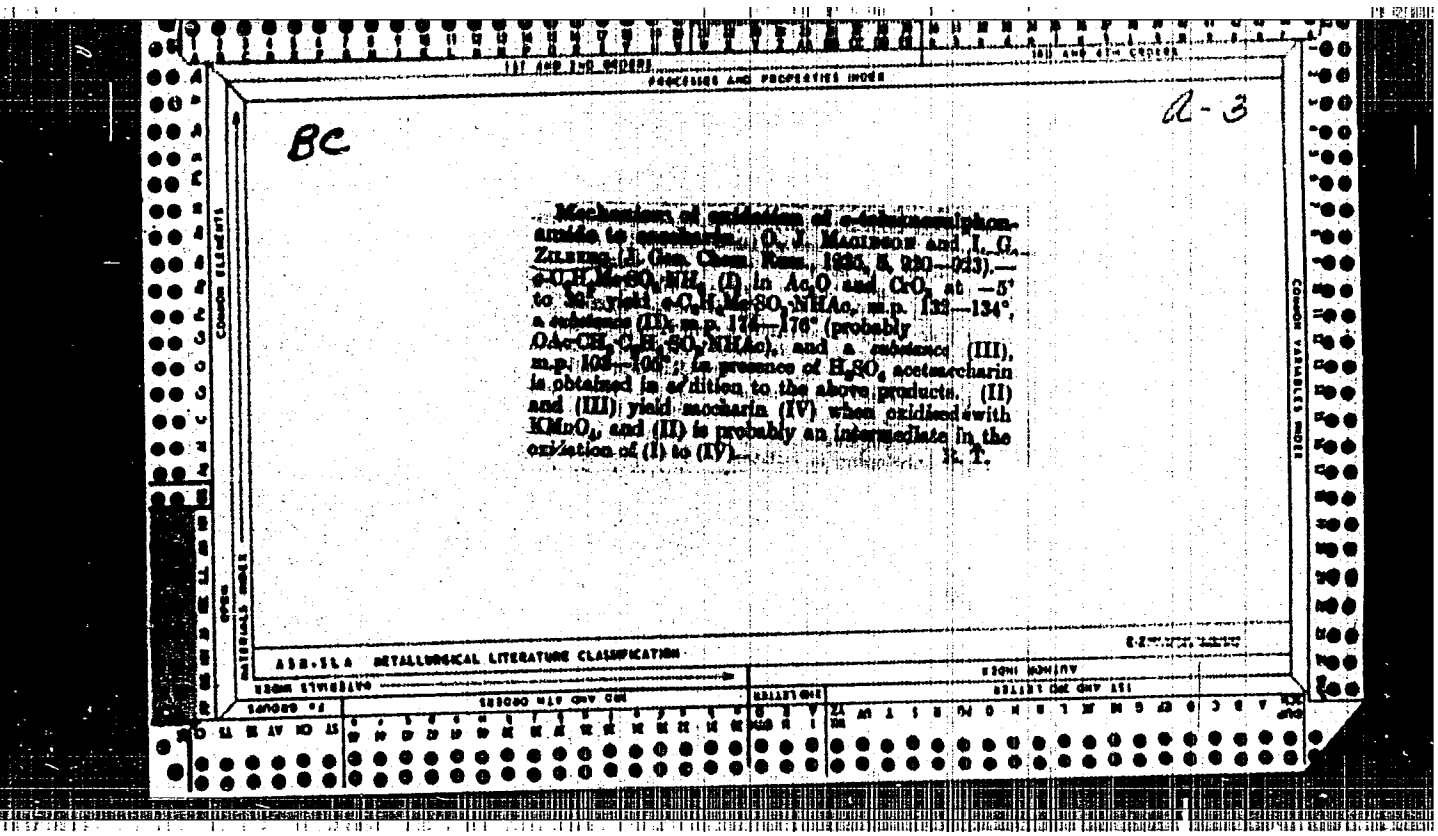
BC

a-3

3. Chromate oxidation of o-toluenesulphonamide. I. G. [illegible] (Khim. Farm. Prom., 1934, No. 4, [illegible]).—The production of saccharin by this method is described; $K_2Cr_2O_7$ is superior to $Na_2Cr_2O_7$ for the purpose.

Ch. Abs. (r)

METALLURGICAL LITERATURE CLASSIFICATION

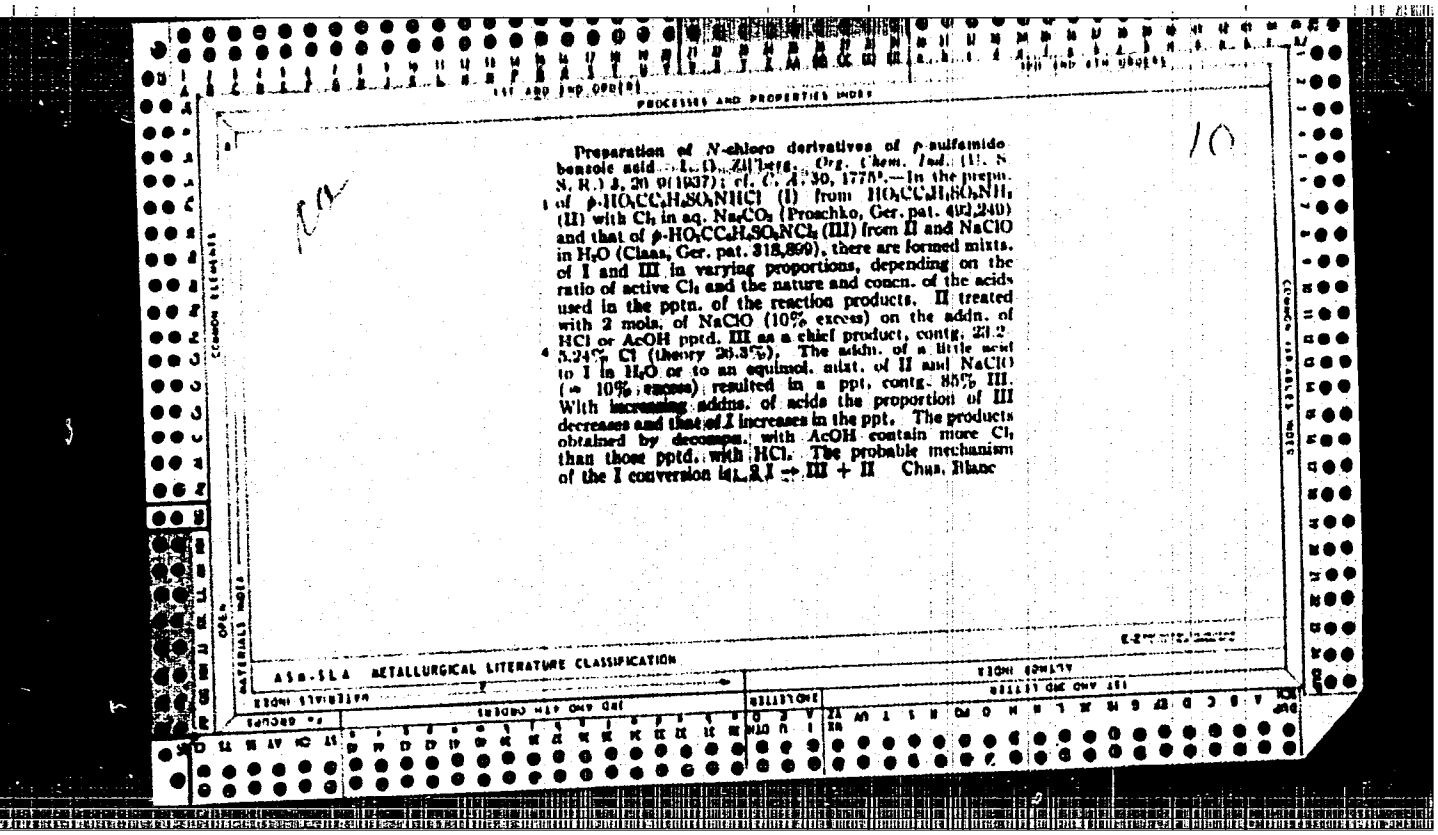


BC

A-3

Mechanism of oxidation of o-toluenesulphonamide to saccharin. O. Y. Magidson and I. G. Zilberg. (J. Gen. Chem. Russ., 1935, 5, 920–923).—o-$C_6H_4Me\cdot SO_2NH_2$ (I) in Ac_2O and CrO_3 at −5° to 30° yield o-$C_6H_4Me\cdot SO_2NHAc$, m.p. 132–134°, a substance (II), m.p. 175–176° (probably $OAc\cdot CH_2\cdot C_6H_4\cdot SO_2\cdot NHAc$), and a substance (III), m.p. 103–106°; in presence of H_2SO_4 acetosaccharin is obtained in addition to the above products. (II) and (III) yield saccharin (IV) when oxidised with $KMnO_4$, and (II) is probably an intermediate in the oxidation of (I) to (IV). H. T.

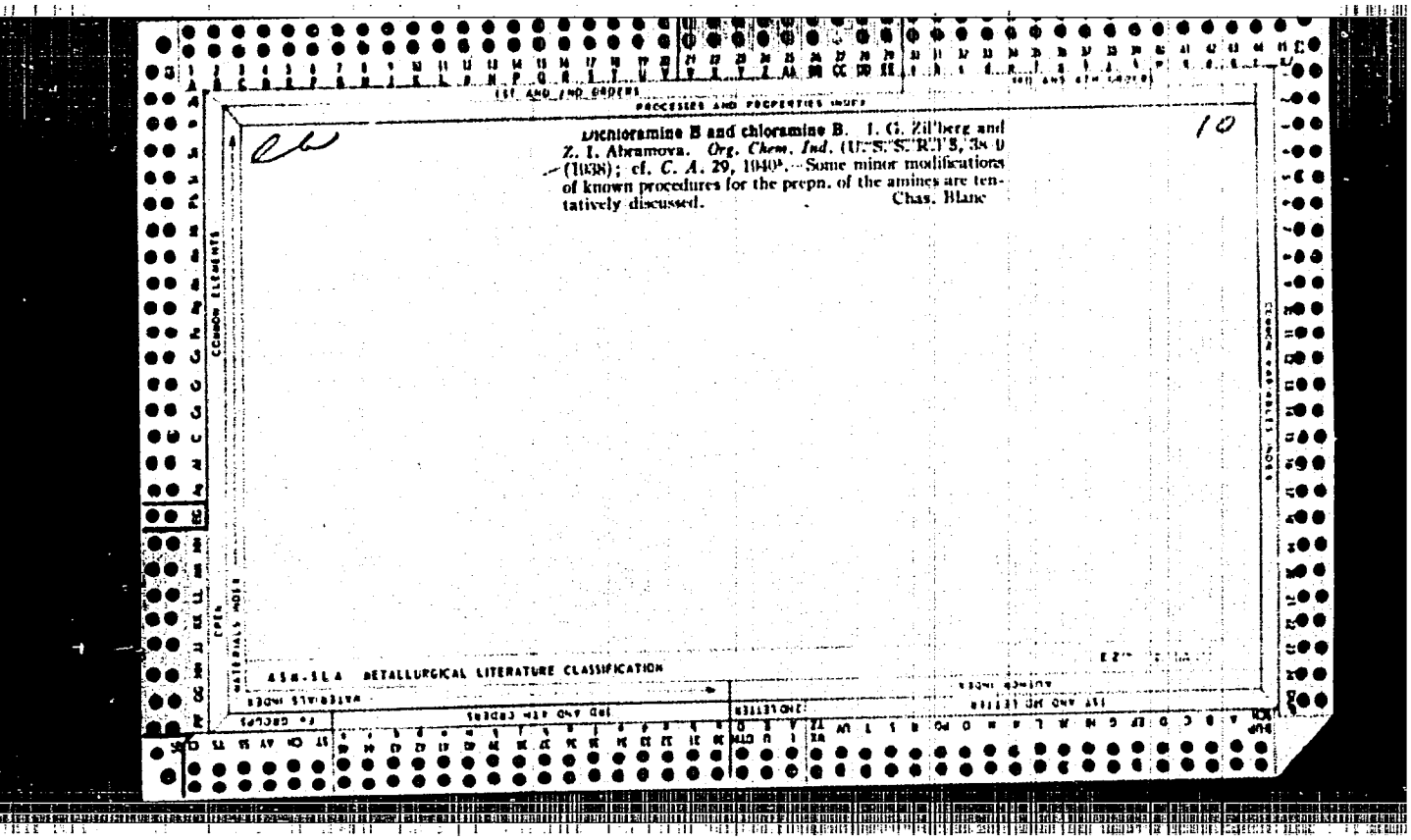
A58.11A METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

Preparation of *N*-chloro derivatives of *p*-sulfamidobenzoic acid. I. O. Zil'berg. *Org. Chem. Ind.* (U. S. S. R.) 3, 20-9 (1937); cf. *C. A.* 30, 1775⁹.—In the prepn. of *p*-$HO_2CC_6H_4SO_2NHCl$ (I) from $HO_2CC_6H_4SO_2NH_2$ (II) with Cl_2 in aq. Na_2CO_3 (Proschko, Ger. pat. 402,240) and that of *p*-$HO_2CC_6H_4SO_2NCl_2$ (III) from II and NaClO in H_2O (Claas, Ger. pat. 318,899), there are formed mixts. of I and III in varying proportions, depending on the ratio of active Cl_2 and the nature and concn. of the acids used in the pptn. of the reaction products. II treated with 2 mols. of NaClO (10% excess) on the addn. of HCl or AcOH pptd. III as a chief product, contg. 21.2-5.24% Cl (theory 26.3%). The addn. of a little acid to I in H_2O or to an equimol. mixt. of II and NaClO (+ 10% excess) resulted in a ppt. contg. 85% III. With increasing addns. of acids the proportion of III decreases and that of I increases in the ppt. The products obtained by decomps. with AcOH contain more Cl_2 than those pptd. with HCl. The probable mechanism of the I conversion is: $2I \rightarrow III + II$. Chas. Blanc

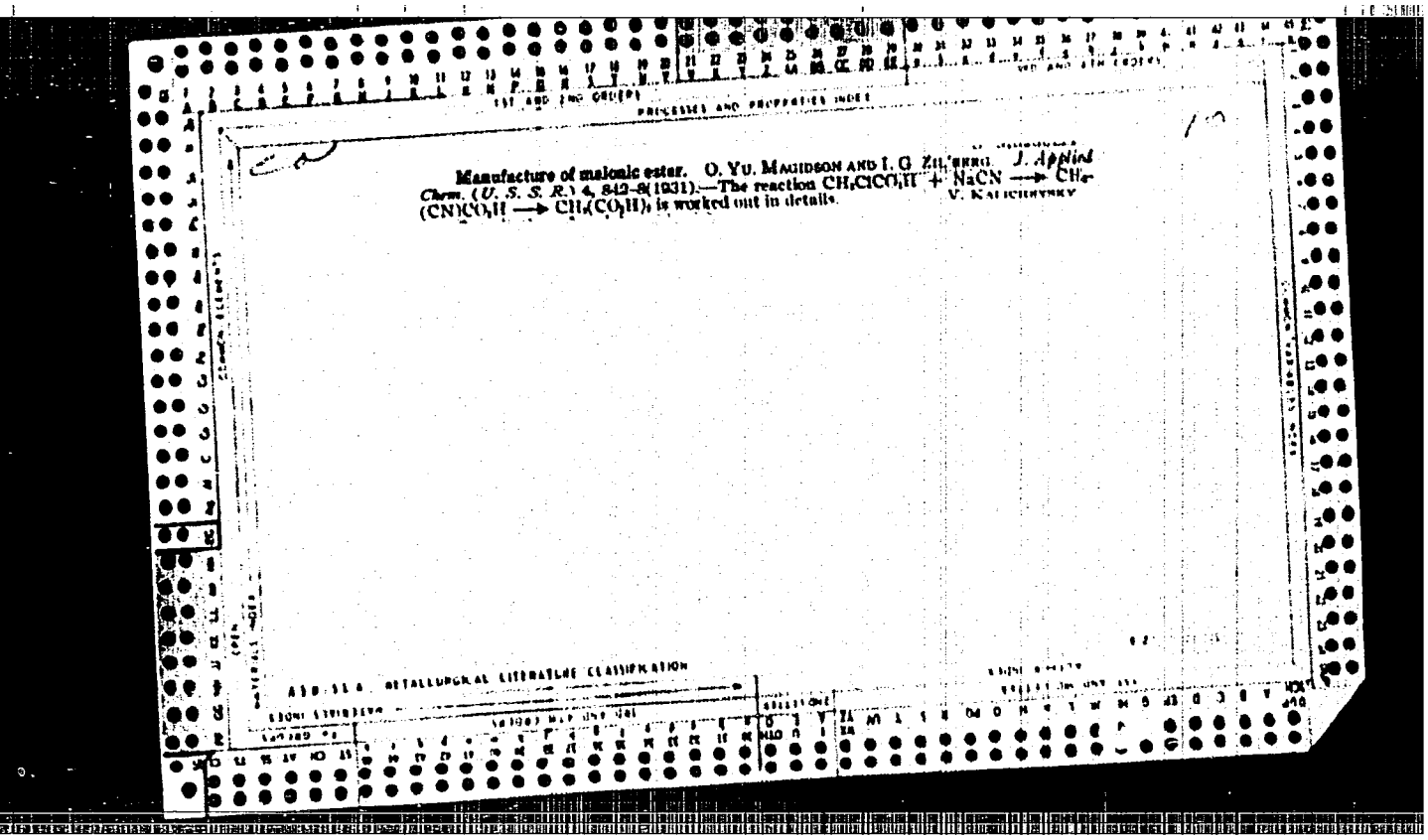
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



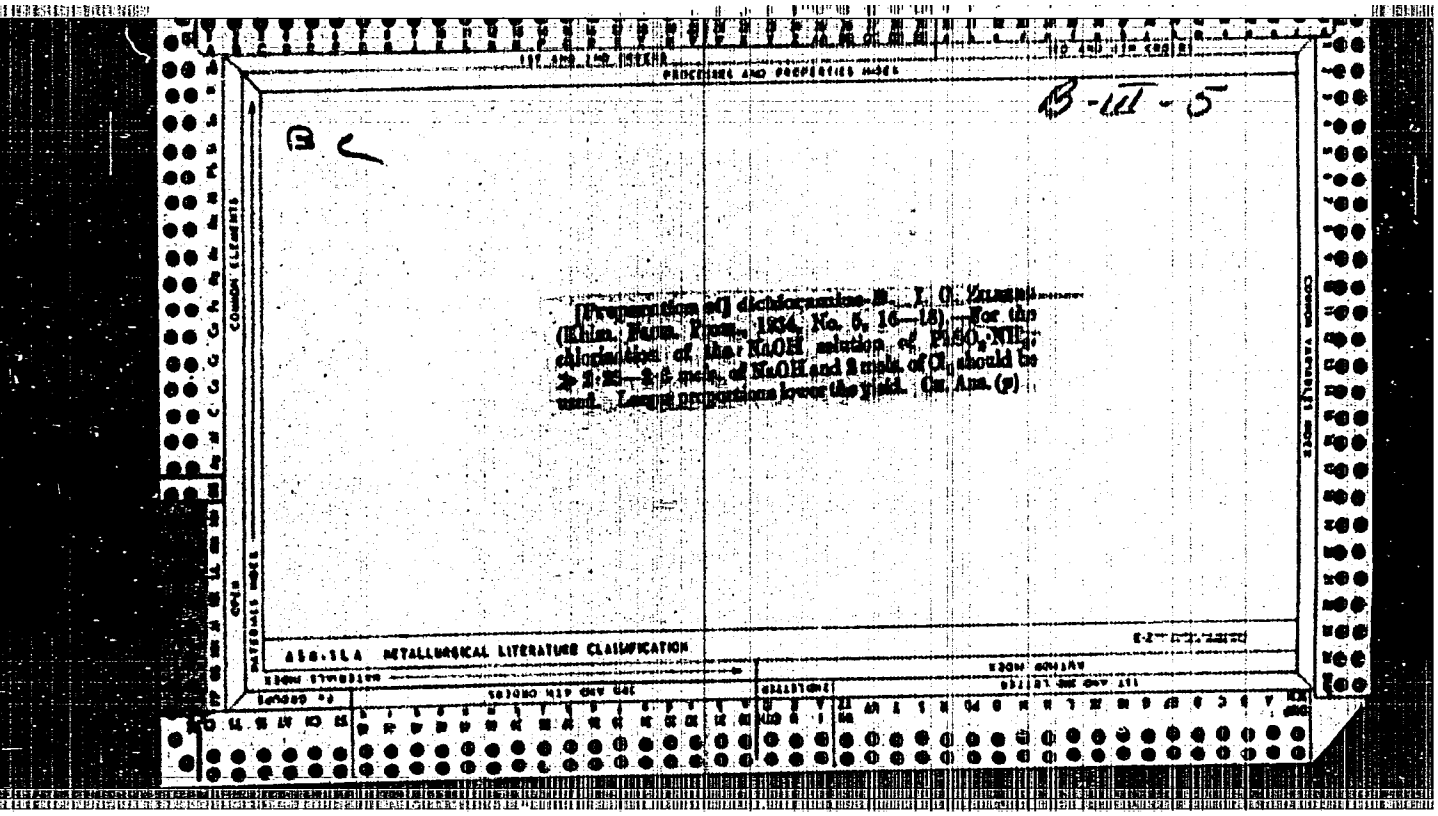
Dichloramine B and chloramine B. I. G. Zil'berg and Z. I. Abramova. *Org. Chem. Ind.* (U.S.S.R.) 3, 38-9 (1938); cf. *C. A.* 29, 1040⁹.—Some minor modifications of known procedures for the prepn. of the amines are tentatively discussed. Chas. Blanc

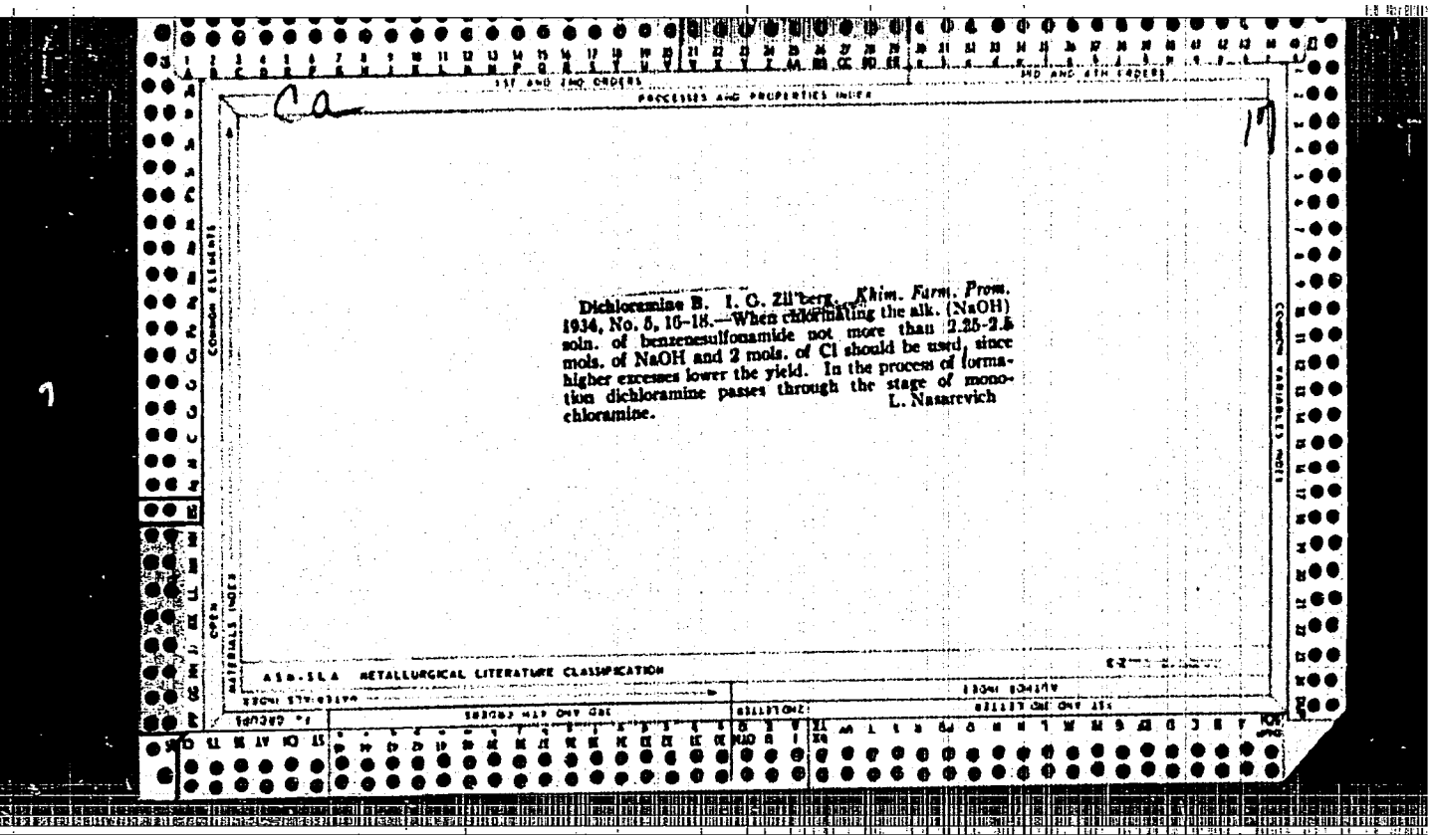
10

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



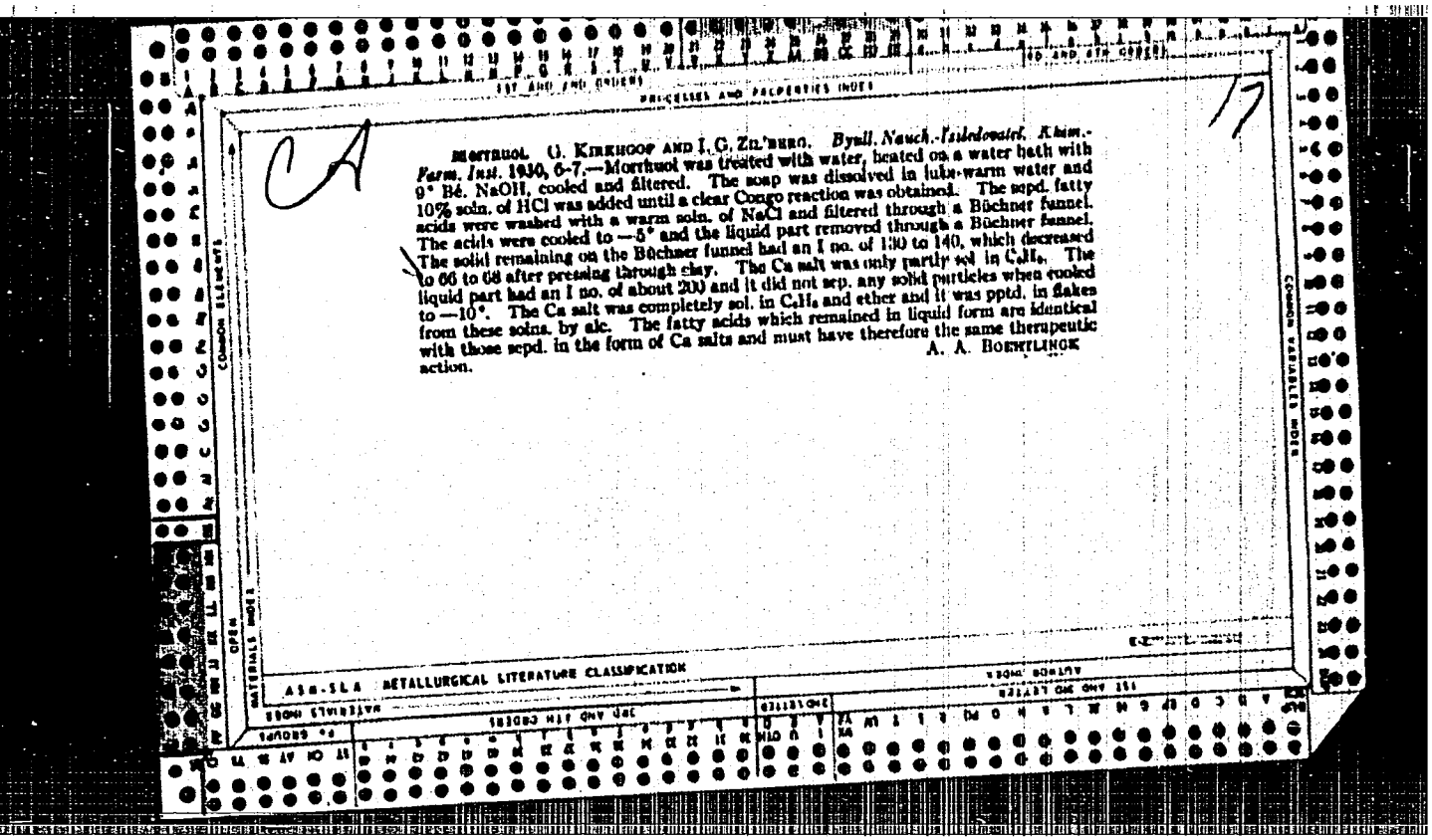
Manufacture of malonic ester. O. Yu. Magidson and I. G. Zil'berg. *J. Applied Chem. (U. S. S. R.)* 4, 842–8(1931).—The reaction $CH_2ClCO_2H + NaCN \longrightarrow CH_2(CN)CO_2H \longrightarrow CH_2(CO_2H)_2$ is worked out in details. V. Kalichevsky





Dichloramine B. I. C. Zil'berg. *Khim. Farm. Prom.* 1934, No. 5, 16–18.—When chlorinating the alk. (NaOH) soln. of benzenesulfonamide not more than 2.25–2.5 mols. of NaOH and 2 mols. of Cl should be used, since higher excesses lower the yield. In the process of formation dichloramine passes through the stage of monochloramine.

L. Nasarevich



CA

17

Morrhuol. O. Kirchhof and I. G. Zn.'shko. *Byull. Nauch.-Issledovatel. Khim.-Farm. Inst.* 1930, 6-7.—Morrhuol was treated with water, heated on a water bath with 9° Bé. NaOH, cooled and filtered. The soap was dissolved in luke-warm water and 10% soln. of HCl was added until a clear Congo reaction was obtained. The sepd. fatty acids were washed with a warm soln. of NaCl and filtered through a Büchner funnel. The acids were cooled to —5° and the liquid part removed through a Büchner funnel. The solid remaining on the Büchner funnel had an I no. of 130 to 140, which decreased to 66 to 68 after pressing through clay. The Ca salt was only partly sol in C_6H_6. The liquid part had an I no. of about 200 and it did not sep. any solid particles when cooled to —10°. The Ca salt was completely sol. in C_6H_6 and ether and it was pptd. in flakes from these solns. by alc. The fatty acids which remained in liquid form are identical with those sepd. in the form of Ca salts and must have therefore the same therapeutic action.

A. A. Boshtlinok

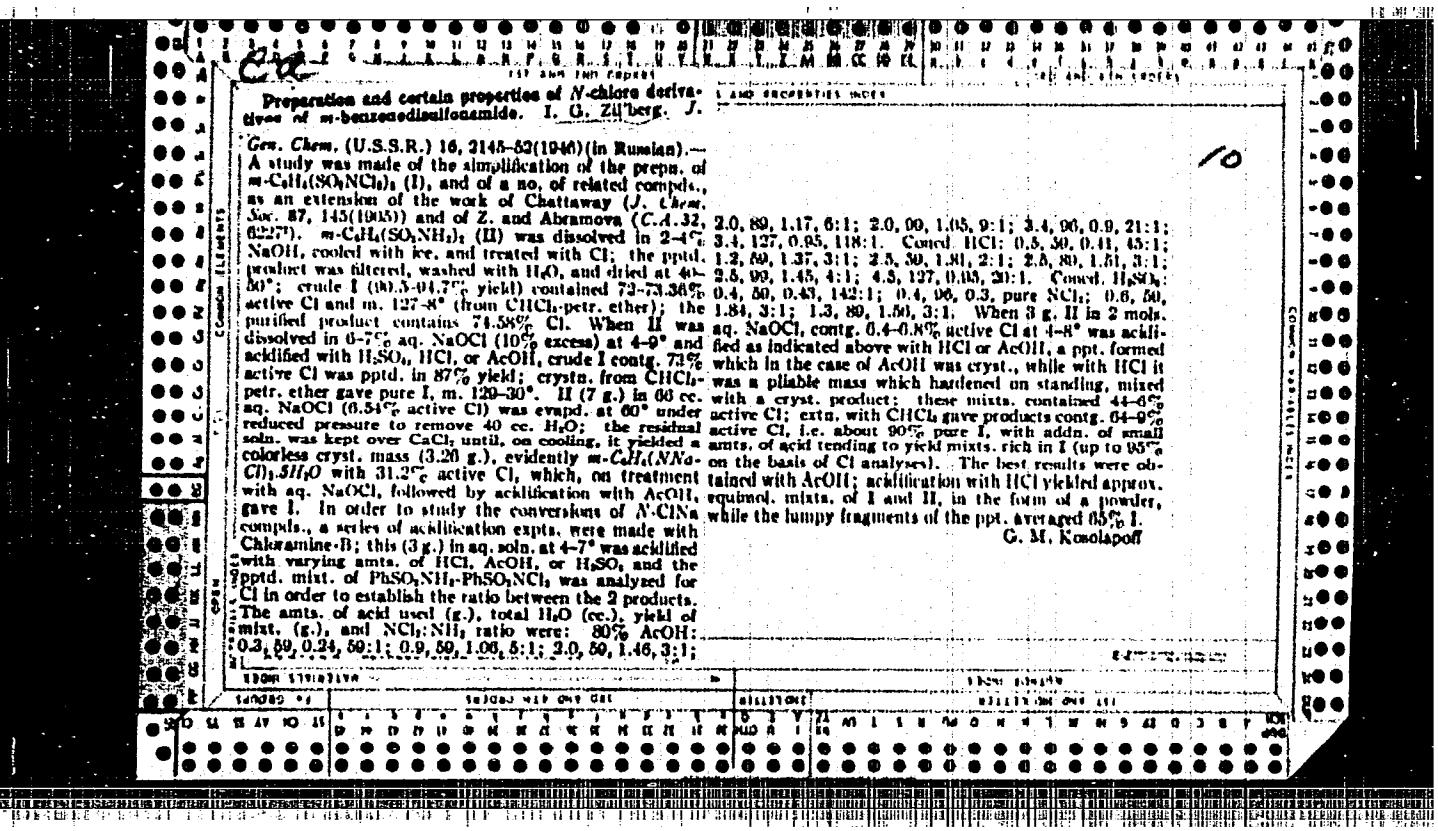
PROCESSES AND PROPERTIES INDEX

CA

17

Chaulmoogra oil acids and their esters. I. G. Zilberg. *Khim. Farm. Prom.* 1932, 419-22.—The sepn. of acids from the oil and prepn. of Et esters are studied chiefly to substitute Moogrol for the therapy of leprosy. L. Nasarevich

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Preparation and certain properties of *N*-chloro derivatives of *m*-benzenedisulfonamide. I. G. Zil'berg. *J. Gen. Chem.* (U.S.S.R.) 16, 2145–52(1946)(in Russian).—A study was made of the simplification of the prepn. of *m*-$C_6H_4(SO_2NCl_2)_2$ (I), and of a no. of related compds., as an extension of the work of Chattaway (*J. Chem. Soc.* 87, 145(1905)) and of Z. and Abramova (*C.A.* 32, 6227⁷). *m*-$C_6H_4(SO_2NH_2)_2$ (II) was dissolved in 2–4% NaOH, cooled with ice, and treated with Cl; the pptd. product was filtered, washed with H_2O, and dried at 40–50°; crude I (90.5–94.7% yield) contained 72–73.36% active Cl and m. 127–8° (from $CHCl_3$-petr. ether); the purified product contains 74.58% Cl. When II was dissolved in 6–7% aq. NaOCl (10% excess) at 4–9° and acidified with H_2SO_4, HCl, or AcOH, crude I contg. 73% active Cl was pptd. in 87% yield; crystn. from $CHCl_3$-petr. ether gave pure I, m. 129–30°. II (7 g.) in 60 cc. aq. NaOCl (6.54% active Cl) was evapd. at 60° under reduced pressure to remove 40 cc. H_2O; the residual soln. was kept over $CaCl_2$ until, on cooling, it yielded a colorless cryst. mass (3.20 g.), evidently *m*-$C_6H_4(NNaCl)_2.5H_2O$ with 31.2% active Cl, which, on treatment with aq. NaOCl, followed by acidification with AcOH, gave I. In order to study the conversions of *N*-ClNa compds., a series of acidification expts. were made with Chloramine-B; this (3 g.) in aq. soln. at 4–7° was acidified with varying amts. of HCl, AcOH, or H_2SO_4 and the pptd. mixt. of $PhSO_2NH_2$-$PhSO_2NCl_2$ was analyzed for Cl in order to establish the ratio between the 2 products. The amts. of acid used (g.), total H_2O (cc.), yield of mixt. (g.), and NCl_2:NH_2 ratio were: 80% AcOH: 0.3, 59, 0.24, 59:1; 0.9, 59, 1.06, 5:1; 3.0, 59, 1.46, 3:1; 2.0, 89, 1.17, 6:1; 2.0, 99, 1.05, 9:1; 3.4, 96, 0.9, 21:1; 3.4, 127, 0.95, 118:1. Concd. HCl: 0.5, 50, 0.41, 45:1; 1.2, 59, 1.37, 3:1; 2.5, 50, 1.81, 2:1; 2.5, 89, 1.51, 3:1; 2.5, 99, 1.45, 4:1; 4.5, 127, 0.85, 20:1. Concd. H_2SO_4: 0.4, 50, 0.43, 142:1; 0.4, 96, 0.3, pure NCl_2; 0.6, 50, 1.84, 3:1; 1.3, 89, 1.50, 3:1. When 3 g. II in 2 mols. aq. NaOCl, contg. 0.4–0.8% active Cl at 4–8° was acidified as indicated above with HCl or AcOH, a ppt. formed which in the case of AcOH was cryst., while with HCl it was a pliable mass which hardened on standing, mixed with a cryst. product; these mixts. contained 44–6% active Cl; extn. with $CHCl_3$ gave products contg. 64–9% active Cl, i.e. about 90% pure I, with addn. of small amts. of acid tending to yield mixts. rich in I (up to 95% on the basis of Cl analyses). The best results were obtained with AcOH; acidification with HCl yielded approx. equimol. mixts. of I and II, in the form of a powder, while the lumpy fragments of the ppt. averaged 65% I.

G. M. Kosolapoff

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

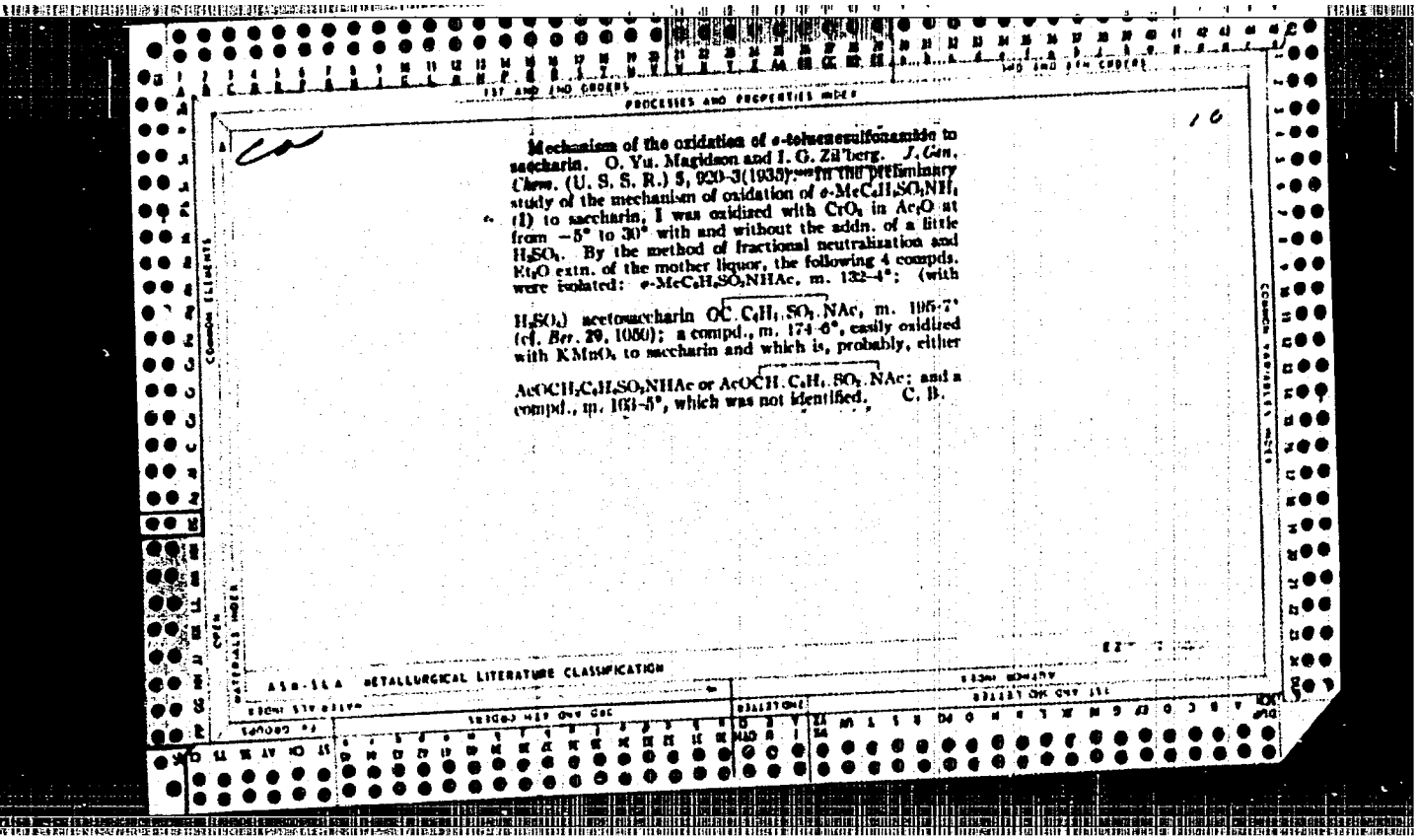
BC

B-2-2

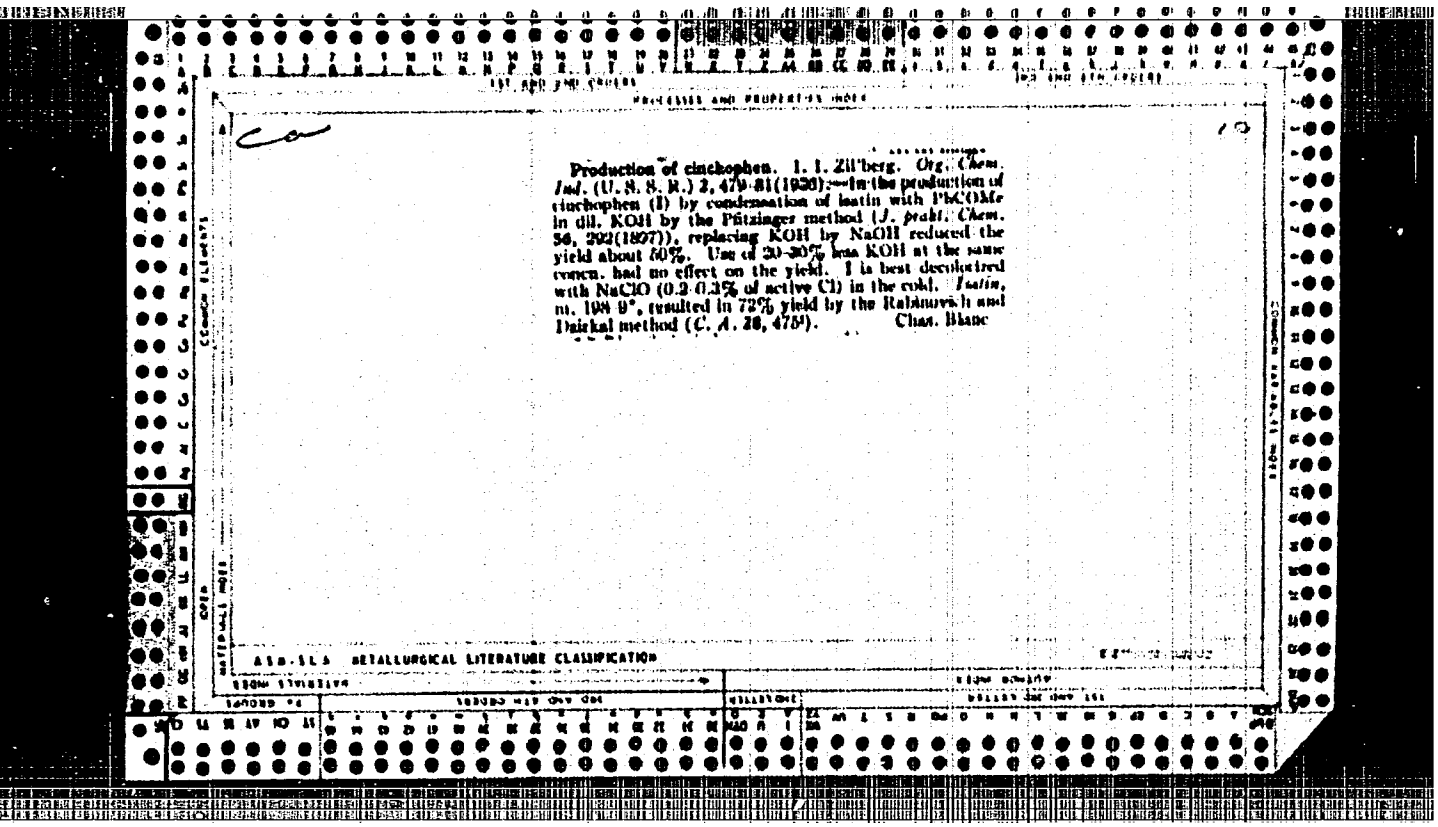
Morrhuol. [illegible] Kuznecov and I. G. Zaumne. (Bull. Nauch. Issledov. Khim.-Farm. Inst. 1930, 6—7).— The solid fatty acids of morrhuol had I val. 130—140 (66—68 after [illegible]). The Ca salt was only partly sol. in C_6H_6. The liquid acids had I val. 200, and the Ca salt was sol. in C_6H_6 and Et_2O.

Ch. Abs.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Mechanism of the oxidation of *o*-toluenesulfonamide to saccharin. O. Yu. Magidson and I. G. Zil'berg. *J. Gen. Chem.* (U. S. S. R.) 5, 920-3(1935): In the preliminary study of the mechanism of oxidation of *o*-$MeC_6H_4SO_2NH_2$ (I) to saccharin, I was oxidized with CrO_3 in Ac_2O at from −5° to 30° with and without the addn. of a little H_2SO_4. By the method of fractional neutralization and Et_2O extn. of the mother liquor, the following 4 compds. were isolated: *o*-$MeC_6H_4SO_2NHAc$, m. 132–4°; (with H_2SO_4) acetosaccharin $OC.C_6H_4.SO_2.NAc$, m. 105–7° (cf. *Ber.* 29, 1050); a compd., m. 174–6°, easily oxidized with $KMnO_4$ to saccharin and which is, probably, either $AcOCH_2C_6H_4SO_2NHAc$ or $AcOCH.C_6H_4.SO_2.NAc$; and a compd., m. 101–5°, which was not identified. C. B.



Production of cinchophen. I. I. Zil'berg. *Org. Chem. Ind.* (U. S. S. R.) 2, 479-81(1936).—In the production of cinchophen (I) by condensation of isatin with PhCOMe in dil. KOH by the Pfitzinger method (*J. prakt. Chem.* 56, 292(1897)), replacing KOH by NaOH reduced the yield about 50%. Use of 20-30% less KOH at the same concn. had no effect on the yield. I is best decolorized with NaClO (0.2-0.3% of active Cl) in the cold. *Isatin*, m. 198.9°, resulted in 72% yield by the Rabinovich and Dairkal method (*C. A.* 26, 475⁴). Chas. Blanc

GRUDEV, A.P.; ZILBERG, I.V. [Zil'berg, I.V.]

Dependence of the maximum gripping angles on the thickness of laminated bands. Analele metalurgie 16 no.4:113-121 O-D '62.