24(0); 25(2) PHASE I BOOK EXPLOITATION SOV/2037

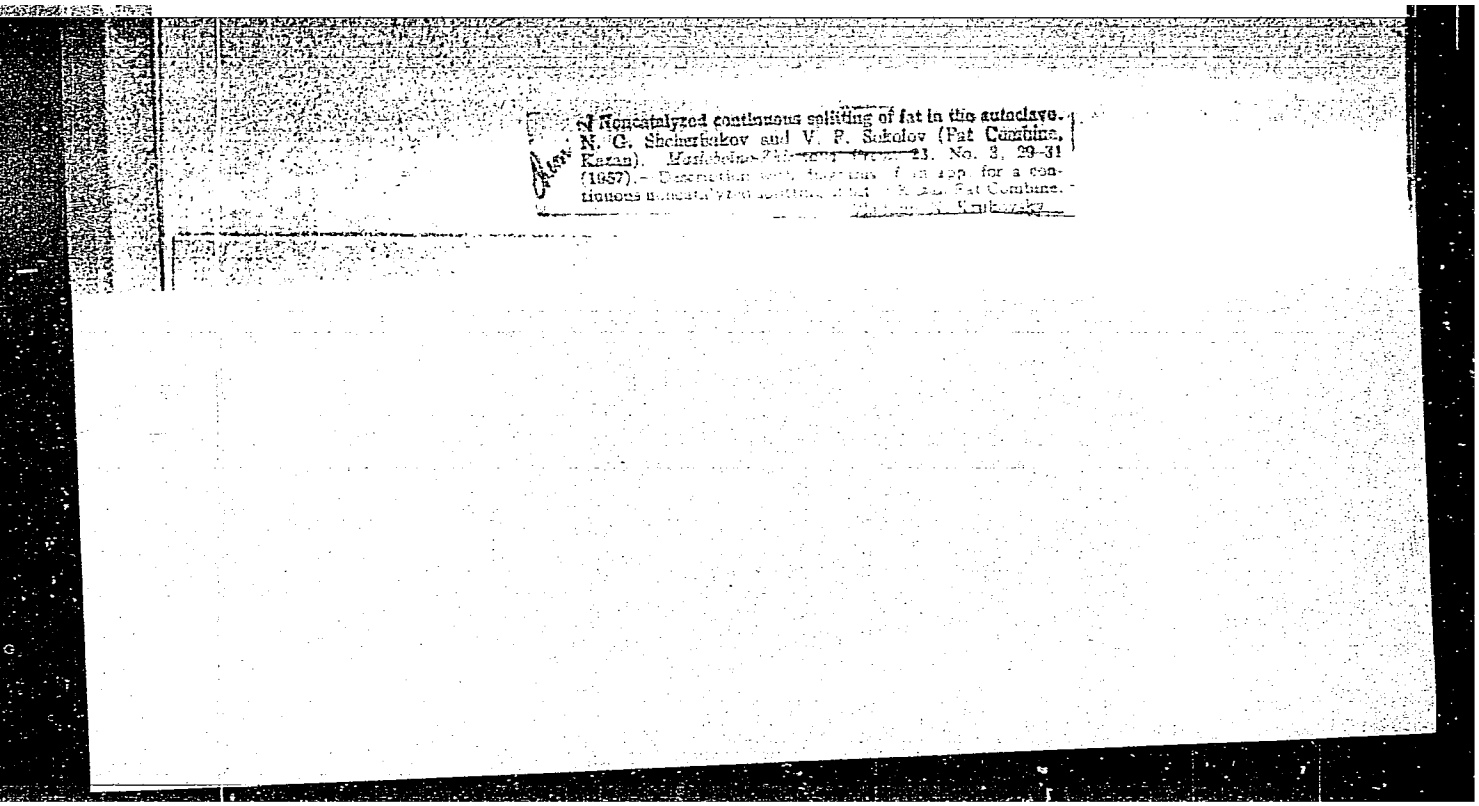
Moscow. Vyssheye tekhnicheskoye uchilishche imeni N.E. Baumana

Raschety na prochnost' v mashinostroyenii; [sbornik] Design for Strength in Mechanical Engineering; Collection of Articles) Moscow, Mashgiz, 1958. 244 p. (Series: Its: [Trudy] 89) 3,300 copies printed.

Ed.: G.A. Nikolayev, Doctor of Technical Sciences, Professor, Honored Worker in Science and Technology; Ed. of Publishing House: N.P. Chernysheva; Tech. Ed.: B.I. Model'; Managing Ed. for Literature on Heavy Machine Building (Mashgiz): S.Ya. Golovin, Engineer.

PURPOSE: This collection of articles is intended for engineering staffs in the machine-building industry and may be useful to scientific workers and senior students of mechanical engineering vtuzes.

COVERAGE: The articles cover the graphoanalytical method of designing circular symmetrically loaded reinforced plates, methods of designing rotating heated disks for transverse bending, and calculation of preloaded belleville springs. Also discussed are differential equations for deformation of rubber-cord shells of rotation, the theory of flexure of rubber-cord hose, and stability problems of elastic cylindrical shells. Results of experimental investigations of strength and ductility of constructional steels and other materials are presented. Several articles are devoted to problems of vibrations in machinery. There are 78 references; 71 Soviet, 4 German, 2 English, and 1 French.



Noncatalyzed continuous splitting of fat in the autoclave. N. G. Shcherbakov and V. P. Sokolov (Pat Combine, Kazan). [illegible] 23, No. 3, 29-31 (1957).- [illegible] for a continuous [illegible] Pat Combine. [illegible]

SOKOLOV, V.F., inzh.

Compressed air leak-proof testing of closed structures. Svar. proizv. no.9:21-24 S '63. (MIRA 16:10)

MOVCHAN, A.T.; POPOV, K.P.; SOKOLOV, V.F.; LIVSHITS, B.Ya.; BUTUZOV, M.D.

Automation of sulfate recovery plants. Koks i khim. no.5:39-43 '63. (MIRA 16:5)

(Coke industry--By-products) (Automation)

Card Tech Sci

SOKOLOV, V. F.

"Application of Pactericidal Radiation for Disinfection of Drinking Water."

17/1/50

Academy of Municipal Economy imeni K. D. Pamfilov

SO Vecheryaya Moskva
Sum 71

SOKOLOV, V.F.

PA 190T51

USSR/Engineering - Water, Purification Mar 51

"Application of the Bactericidal Effect of Ultraviolet Emission for Disinfection of Drinking Water," V. F. Sokolov, Acad of Communal Econ imeni K. D. Pamfilov

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 3, pp 360-368

Examn of sources of ultraviolet emission established methods for using bactericidal lamps. Found low-pressure argon-mercury lamp most efficient source. Expts for absorption of bactericidal radiation with water and detn of power required to stop activity of bacteria permitted development

190T51

USSR/Engineering - Water, Purification (Contd) Mar 51

of method for calcg emission power of sources depending on required extent of water disinfection. Submitted by Acad V. S. Kulebakin.

190T51

SOKOLOV, V.F. ; PODLIPSKIY, V.A., laureat Stalinskoy premii.

Purifying water with bactericidal rays. Gor.khoz.Mosk. 28 no.11: 27-29 N '54. (MLRA 8:1)

1. Starshiy nauchnyy sotrudnik Akademii kommunal'nogo khozyaystva im. K.D.Pamfilova (for Sokolov). 2. Glavnyy inzhener Vodokanaltresta g. Ufy, (for Podlipskiy).
(Water--Purification) (Ultraviolet rays)

SOKOLOV, V.F., kandidat tekhnicheskikh nauk.

Decontamination of water by germicidat irradiation. Svetotekhnika 2 no.4:7-10 Jl '56. (MLRA 9:10)

1.Akademiya kommunal'nogo khozyaystva.
(Water--Purification) (Ultraviolet rays)

Shubert, V.F.

SHUBERT, S.A.; PERLINA, A.M.; KULZHINSKIY, V.I.; SIDENKO, T.K.; ALEKSANDROV, D.N.; SOKOLOV, V.F.; FAL'KOVSKAYA, L.N.; BRUK-LEVINSON, T.L.; BELYAKOVA, A.N.; KOZHEVNIKOVA, Ye.K.; AVRUSHCHENKO, R.A., red. izd-va; VOLKOV, S.V., tekhn.red.

[Water purification for water supply to machine-tractor stations and state farms] Ochistka vody dlia vodosnabzheniia poselkov MTS i sovkhozov. Moskva, Izd-vo M-va kommun.khoz. RSFSR, 1957. 69 p. (MIRA 11:6)

1. Akademiya kommunal'nogo khozyaystva, Moscow.
(Water--Purification) (Water supply, Rural)

SOKOLOV, V.F.; BOTOVA, Yu.P., red.

[OV-1P and OV-3N apparatus for the disinfection of water with bactericidal rays] Ustanovki tipa OV-1P i OV-3N dlia obeszarazhivaniia vody bakteritsidnymi luchami; nauchnoe soobshchenie. Moskva, Akad.kommun.khoz.im. K.D.Pamfilova, 1960. 6 p. (MIRA 13:10)

(Water--Disinfection) (Ultraviolet rays)

SOKOLOV, V.F., kand.tekhn.nauk; SHISTER, G.M., red.; GANKINA, R.G., tekhn.red.

[Design and use of apparatus for disinfecting water by bactericidal rays] Opyt proektirovaniia i ekspluatatsii ustanovok dlia obezzarazhivaniia vody bakteritsidnymi luchami. [Moskva] 1962. 27 p. (Akademiia kommunal'nogo khoziaistva. Informatsionnoe pis'mo, no.4). (MIRA 16:8)
(Water--Purification) (Radiation sterilization)

SOKOLOV, V.F., kand.tekhn.nauk; KHALEZOVA, O.A., gidrobiolog; PRAKHOVA, M.I., inzh.

Using microstrainers. Vod.i san.tekh. no.10:6-9 O '62. (MIRA 15:12)

(Water--Purification)

SOKOLOV, V.F.; KHASIN, M.Ya.

New devices for the disinfection of water by bactericidal rays. (MIRA 18:5)
Nauch. trudy AKKH no.22:60-70 '63.

SOKOLOV, Viktor Fedorovich, kand. tekhn. nauk; [illegible], V.I., prof., doktor tekhn. nauk, nauchn. red.

[Sterilizing water by bactericidal rays] Obezzarazhivanie vody bakteritsidnymi luchami. Izd.2., perer. i dop. Moskva, Stroiizdat, 1964. 232 p. (MIRA 18:1)

LIVSHITS, B.Ya.; ROZENMAN, E.S.; KIBERNIK, K.V.; SOKOLOV, V.F.

Regulator of the feed of the ammonia sulfate pulp to the centrifuge. Koks i khim. no.7:55-56 '65. (MIRA 18:8)

1. Zaporozhskiy filial Instituta avtomatiki (for Livshits, Rozenman, Kibernik). 2. Zaporozhskiy koksokhimicheskiy zavod (for Sokolov).

L 9515-66

ACC NR: AP5028406 SOURCE CODE: UR/0229/65/000/010/0010/0012

AUTHOR: Sokolov, V. F.; Zhavoronkov, L. V.

ORG: none

TITLE: Attachment for increasing the effectiveness of water screws

SOURCE: Sudostroyeniye, no. 10, 1965, 10-12

TOPIC TAGS: water screw, ship component, tugboat, pusher towboat

ABSTRACT: An attachment for increasing the effectiveness of propellers (see Fig. 1) consists of a nozzle with an adjustable orifice. It contains a hinged baffle plate which can be adjusted to the desired position by means of a turn mechanism, inside a sealed box, consisting of a sector and a gear operated from the wheelhouse. The attachment is designed to eliminate the overloading or underloading of marine engines. Utilizing the effect of the water outflow section's size on the output of the main engine, a propeller matched to the main engine (according to the mooring pulling test), and a nominal water outflow, the maintenance of the nominal parameters of the power plant while towing or pushing in formation can be assured for any resistance, water depth, or speed. At 8 km/hr a pusher-towboat showed an 8.5% increase in power output, or 15% with a reduced water-outflow section (0.321 to 0.283 m^2 or 0.283 to 0.250 m^2, respectively). Compared to a conventional vessel, 150-hp (a 1350 rpm) pusher-tugboat (L x B x H = 16.0 x 3.7 x 1.3 m^3) equipped with an adjustable water out-

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Card 1/3

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ACC NR: AP5028406

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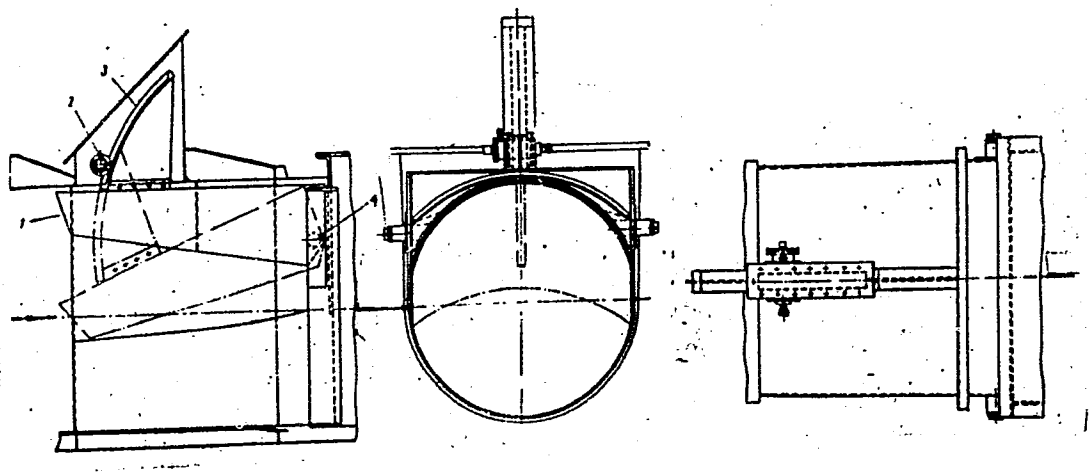

Fig. 1. Outlet with adjustable end opening

1 - Baffle plate; 2 - gear; 3 - sector; 4 - hinge.

Card 2/3

L 9545-66
ACC NR: AP5028406

flow section, displayed a specific pull increased from 8.1 to 9.55 kg/hp when operating in formation, a speed increased from 16.45 to 17.45 km/hr when running unloaded, and a specific pull increased from 10.8 to 12.5 kg/hp in a mooring pulling test. For tugboats with the most favorable propeller diameter, the adjustable end opening also assures the immediate intake of water while starting. Orig. art. has: 1 figure and 1 table.

[GE]

SUB CODE: 13/ SUBM DATE: none/ ATD PRESS: 4150

Card 3/3

SOKOLOV, V.F., inzh.; KOVALENKO, G.A., inzh.; KUZNETSOV, Yu.N., inzh.

Maneuvering properties of vessels equipped with turning gear.
Rech. transp. 17 no.4:20-23 Ap '57. (MIRA 11:4)
(Steering gear)

PALLER, Abram Mikhaylovich, SOKOLOV, Vladimir Fedorovich,; RIMMER, A.I., otv. red.; FOMICHEV, A.G., red.; SHISHKOVA, L.M., tekhn. red.

[Tightness testing of steel ship hulls] Ispytaniia korpusov stal'nykh sudov na nepronitsaemost'. Leningrad, Gos. soiuznoe izd-vo sudostroit. promyshl., 1958. 100 p. (MIRA 11:11)
(Ships, Iron and steel)

SOV/28-58-5-10/37

AUTHOR: Sokolov, V.F., Engineer

TITLE: Determining the Parameters of Tests with Compressed Air on the Tightness of Structures (Opredeleniye parametrov ispytaniy konstruktsiy szhatym vozdukhom na nepronitsayemost')

PERIODICAL: Standartizatsiya, 1958, Nr 5, pp 40 - 43 (USSR)

ABSTRACT: In testing the tightness of the welded seams in any compartment of a vessel, compressed air is pumped into the compartment; leakages then appear as air bubbles on the exterior soapy surface. The GOST standard lays down a compressed air pressure for this purpose of 0.15 kg/cm^2, but the author has demonstrated, theoretically and through a series of experiments, that this value is insufficient.

Card 1/2

Determining the Parameters of Tests with Compressed Air on the Tightness of Structures

A pressure of 0.3 kg/cm^2 should be adopted, though this could be reduced to a minimum of 0.2 kg/cm^2 when circumstances demand. A drop in pressure of up to 5% is normal and is caused by temperature changes. A drop in pressure above this point is a criterion of the extent of the vessel's non-tightness. There are 4 graphs and 1 table.

1. Materials--Inspection 2. Compressed air--Pressure
3. Pressure--Standards

SOKOLOV, V.F., inzh.

Using compressed air for testing ship compartments for impenetrability. (MIRA 11:4)
Sudostroenie 24 no.3:43-45 Mr '58.
(Hulls (Naval architecture)--Testing)

SOKOLOV, V.F., inzh.

Correcting thin-plated welded hull components by spot welding.
Sudostroenie 24 no.10:45-48 O '58. (MIRA 11:12)
(Ships--Welding)

GLOZMAN, Moisey Kalmanovich; SOKOLOV, Vladimir Fedorovich; PALLER, A.M., retsenzent; REVZYUK, G.A., retsenzent; RIMMER, A.I., nauchnyy red.; LISOK, E.I., red.; FRUMKIN, P.S., tekhn. red.

[Building of a ship hull on slipways] Postroika korpusa sudna na stapele. Leningrad, Sudpromgiz, 1961. 195 p. (MIRA 15:7)

(Hulls (Naval architecture))

KUZ'MENKO, Vladimir Kuz'mich, dots.; FEDOROV, Nikolay Aleksandrovich; FRID, Yevsey Grigor'yevich; ADLERSHTEYN, L.TS., inzh., retsenzent; SOKOLOV, V.F., inzh., retsenzent; SOSIPATROV, O.A., red.; FRUMKIN, P.S., tekhn. red.

[Shipfitter's handbook]Spravochnik sudovogo sborshchika. Pod obshchei red. V.K.Kuz'menko. Leningrad, Sudpromgiz, 1962. 327 p. (MIRA 16:4)
(Shipfitting)

PALLER, Abram Mikhaylovich; SOKOLOV, Vladimir Fedorovich; FRID, Ye.G., inzh., retsenzent; ENGLIN, R.K., inzh., retsenzent; RIMMER, A.I., nauchn. red.; SOSIPATROV, O.A., red.; KOROVENKO, Yu.N., tekhn. red.

[Shipfitter] Sudovoi sborshchik. Leningrad, Sudpromgiz, 1963. 327 p. (MIRA 16:11)
(Shipfitting)

LEONT'YEV, Valerian Markovich; FROLOV, Nikolay Fedorovich; POPILOV, L.Ya., inzh., retsenzent; SOKOLOV, V.F., kand. tekhn. nauk, nauchn. red.; OSVENSKAYA, A.A., red.

[Shipbuilding materials] Sudostroitel'nye materialy. Leningrad, Sudostroenie, 1965. 186 p. (MIRA 18:8)

BERZIN, M.A., inzhener; KRAYZMER, L.P., kandidat tekhnicheskikh nauk; SOKOLOV, V.F., inzhener.

Prospective application of television to railroad transport. Zhel. dor.transp. 37 no.12:71-74 D '55. (MLRA 9:5)
(Railroads--Communication systems) (Television)

DVORKOVSKIY, Boris Borisovich; SOKOLOV, V.F., inzhener, redaktor; STROGANOV, L.P., inzhener, redaktor; KNITROV, P.A., tekhnicheskiy redaktor

[Radio units in trains] Poezdnye radiopunkty. Moskva, Gos. transp. zhel-dor. izd-vo, 1956. 106 p. (MLRA 9:10)
(Railroads--Trains--Radio equipment)

SOKOLOV, V.F., inzhener.

Radio relay communication. Avtom., telem. i sviaz' no.1:8-12 Ja '57. (MLRA 10:4)
(Railroads--Communication systems)
(Radio relay systems)

SOKOLOV, V.F., inzh.

Television in marshalling yards. Avtom., telem. i sviaz' no.11:22 N '57. (MLRA 10:11)
(Industrial television)

FILIPPOV, Vitaliy Konstantinovich; SOKOLOV, V.F., red.; DONSKAYA, G.D., tekhn.red.

[Organizing radio communication in automotive transportation] Organizatsiia radiosviazi na avtomobil'nom transporte. Moskva, Nauchno-tekhn.izd-vo M-va avtomobil'nogo transp. i shosseinykh dorog RSFSR, 1959. 37 p. (MIRA 12:9)
(Radio in automotive transportation)

KORLAS, Ivan Ivanovich; SOKOLOV, Viktor Fedorovich; KHAYKIN, Yakov L'vovich; UPENDIK-UMANSKIY, G.M., inzh., retsenzent; NOVIKAS, M.N., inzh., red.; USENKO, L.A., tekhn.red.

[Concise manual for electricians and technicians of railroad radio communication systems] Kratkii spravochnik dlia elektromekhanikov i monterov poezdnoi i stantsionnoi radiosviazi. Moskva, Vses.izdatel'sko-poligr.ob"edinenie M-va putei soobshcheniia, 1961. 191 p. (MIRA 15:2)
(Railroads--Electronic equipment)
(Railroads--Handbooks, manuals, etc.)

BUNIN, Dmitriy Anatol'yevich; KOLOKOL'NIKOV, Aleksandr Nikolayevich; LISENKOV, Viktor Mikhaylovich; SERGEYEV, Ivan Sergeyevich; SOKOLOV, Viktor Fedorovich; USTINSKIY, Aleksandr Andreyevich; GRIGOR'YEV, N.I., inzh., retsenzent; NOVIKAS, M.N., inzh., red.; KHITROV, P.A., tekhn.red.

[Radio-relay communication in railroad transportation] Radiorelenaia sviaz' na zheleznodorozhnom transporte. Moskva, Vses. izdatel'sko-poligr.ob"edinenie M-va putei soobshcheniia, 1961. 270 p. (MIRA 14:6)

(Railroads—Communication systems)

USTINSKIY, Aleksandr Andreyevich, kand. tekhn. nauk; BODILOVSKIY, Vasiliy Georgiyevich, inzh.; ROZENBERG, N.M., inzh., retsenzent; SOKOLOV, V.F., inzh., retsenzent; NOVIKAS, M.N., inzh., red.; KHITROCA, N.A., tekhn. red.

[Radio-relay communication in railroad transportation] Radiorelenaia sviaz' na zheleznodorozhnom transporte. Moskva, Transzheldorizdat, 1962. 330 p. (MIRA 15:6)
(Railroads--Communication systems)
(Radio relay systems)

LISTOV, V.N.; NOVIKOV, V.A.; PETROV, I.I.; RYAZANTSEV, B.S.; SVIRODLICHENKO, D.Ya.; SOKOLOV, V.F.; TYURIN, V.L.; EYLER, A.A.

Sixtieth anniversary of the birth of an outstanding scientist. Avtom., telem.i sviaz' 6 no.4:44 Ap '62. (MIRA 15:4)
(Ramlau, Pavl Nikolaevich, 1902-)

TAMTSYURA, A.A.; YERFYLOV, K.N.; SOKOLOV, V.F., inzh., retsenzent; KOVIKAS, M.N., inzh., red.

[The ZhR-5 radio transmitter-receiver] Radiostantsiia tipa ZhR-5. Moskva, Transport, 1964. 163 p. (MIRA 17:6)

POPOV, Vasiliy Alekseyevich; ASTREIN, Avenir Arkad'yevich; UZDIN, David Konstantinovich; GURVICH, Natan Borisovich; SOKOLOV, V.G., red.; OTOCHEVA, M.A., red. izd-va; LELYUKHIN, A.A., tekhn. red.

[Operation, maintenance and repair of trolley bus rolling stock] Ekspluatatsiia i remont podvizhnogo sostava trolleibusa. Pod obshchei red. V.A.Popova. Moskva, Izd-vo M-va kommun.khoz. RSFSR, 1961. 471 p. (MIRA 15:3)

(Trolley buses)

SOKOLOV, V.G., nauchnyy sotrudnik.

Investigation of aeration in the flow of water in a model spillway hydroelectric power station. Trudy gidrav.lab.VODGEO no.3: 87-97 '52. (MLRA 9:10)
(Water--Aeration) (Hydroelectric power stations)

1. SOKOLOV, V. G.

2. USSR (600)

4. Water - Aeration

7. Studying aeration of a current on a model. Gidr. stroi. 21 no. 10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953, Unclassified.

GOMES, I.; SOKOLOV, V.; FAL'KOVSKAYA, L.

Liquidate water losses in domestic water pipe systems. Zhil.-kom. khoz. 4 no.2:16-17 '54. (MLRA 7:5)
(Water pipes)

O'ITSEROV, A.S., kandidat tekhnicheskikh nauk; SOKOLOV, V.G., nauchnyy sotrudnik.

Effect of ejection on a hydroelectric power station combined with a spillway dam. Trudy gidrav.lab.VODGEO no.4:164-175 '55. (MLRA 9:10)
(Spillways)

SOKOLOV, V.G., inzh.

Effect of stream aeration on head and tail water conjugation in case of a hydraulic jump. Trudy Gidrav.lab.VODGEO no.7:200-220 '59. (MIRA 13:8)
(Water--Aeration) (Hydraulic jump)

Sokolov, V.G.

121. NEW AGENT FOR FLOTATION OF COAL FINES. Kolbesh, V.A. and Sokolov, V.G. (Ugol (Coal, Moscow), Feb. 1957, 39, 40). Improved results in froth flotation are recorded when using "distillation liquid" with sulphonated kerosine. This liquid is a by-product of the manufacture of calcined soda in Donbass and consists mainly of calcium, sodium and magnesium salts. One result of its use is that the petrographic constituents of the coal are separated into different flotation chambers, and the froth from the last cells contains up to 60% fusain with an increased concentration of sulphur. This should enable more coals with high fusain and sulphur contents to be used for coking. (L).

SOKOLOV, V.G., gornyy inzh.

Rock filling in conditions prevailing in many Donets Basin mines is not advantageous; response to P.M. Ul'iakhin's article entitled "Leaving waste rock in mines." Ugol' Ukr. 3 no.3:45 Mr '59. (MIRA 12:5)

1. Donetskiy ugol'nyy institut.
(Donets Basin--Mine filling)
(Ul'iakhin, P.M.)

STOROZHENKO, Aleksandr Panteleyevich; SOKOLOV, Vladimir Gennadiyevich; KOZLOVA, Neonila Petrovna; GUSAROVA, Mariya Afrikanovna; VORONOV, Kuz'ma Denisovich; KARPOVA, N.N., otv. red.; TURCHENKO, V.K., otv. red.; GARBER, T.N., red. izd-va; BOLDYREVA, Z.A., tekhn. red.

[Maintenance of machines in coal-preparation plants] Ukhod za mashinami na ugleobogatitel'nykh fabrikakh. Moskva, Gos. nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1961. 258 p. (MIRA 15:1)

(Coal preparation--Equipment and supplies)

OSTAPENKO, Pavel Yefimovich; SOKOLOV, V.G., otv. red.; KACHALKINA, Z.I., red.izd-va; OVSEYENKO, V.G., tekhn. red.; BOLDYREVA, Z.A., tekhn. red.

[Sampler for the ore dressing plant]Otborshchik prob na obogatitel'noi fabrike. Moskva, Gosgortekhizdat, 1962. 86 p. (MIRA 15:8)

(Ore dressing--Equipment and supplies)

SOKOLOV, Vladimir Gennadiyevich; VERKHOVSKIY, I.M., laureat Gosudarstvennoy premii, prof., doktor tekhn. nauk, retsenzent; VESSEL'MAN, S.G., prof., doktor tekhn. nauk, retsenzent; KHVAN, V.I., kand. tekhn. nauk, retsenzent; SHEVCHENKO, N.P., inzh., retsenzent; OL'FERT, A.I., red. izd-va; MAKSIMOVA, V.V., tekhn.red.; OVSEYENKO,V.G., tekhn.red.

[Curves of beneficiation properties of coals]Krivye obogatimosti uglei. Moskva, Gosgortekhizdat, 1962. 88 p. (MIRA 15:12)
(Coal preparation)

SYUN'I, G., inzh.; SOKOLOV, V., insh.

Using reinforced asphalt-concrete in cities. Zhil.-kom. khoz. 8 no.11:16-17 '58. (MIRA 11:12)
(Pavements, Asphalt)

SOKOLOV, V., inzh.

Streets and sidewalks in residential blocks. Zhil.stroi. no.10:32 '58. (MIRA 12:6)

(Sidewalks) (Pavements)

VIL'NER, V.A., inzh. (Kiyev) SOKOLOV, V.G., inzh. (Kiyev)

Fine grained improved asphalt concrete. Gor. khoz. Mosk. 32 no.6:31 Je '58. (MIRA 11:7)
(Asphalt concrete)

SYUN'I, G.K., dots.; SOKOLOV, V.G., inzh.

Asphalt concrete reinforced by metal mesh. Avt. dor. 21 no.4:10-11 Ap '58. (MIRA 11:4)

(Pavement, Concrete)

SOKOLOV, V. G., Cand of Tech Sci -- (diss) "The Special Features of the Service of Asphalt-Concrete Road Coverings in City Conditions and the Means for Improving their Serviceability," K,ev, 1959, 22 pp (Sci Res Institute of City Construction, Academy of Construction and Architecture UkSSR) (KL, 5-60, 127)

SOKOLOV, V., inzh.-stroitel' avtomobil'nykh dorog

Using local materials in constructing rural roads. (MIRA 13:3)
Sil'.bud. 9 no.5:9-12 My '59.
(Ukraine--Road construction)

SOKOLOV, V., inzh.-stroitel' (g. Kaluga)

Precast reinforced concrete floors. Zhil.-kom.khoz. 11 no.4:30-31 Ap '61. (MIRA 14:6)

(Floors, Concrete)

KUZNETSOV, N.; SOKOLOV, V.

"Instructions for designing highways." Reviewed by N. Kuznetsov, V. Sokolov. Avt. dor. 24 no. 1:3 of cover Ja '61. (MIRA 14:2)

(Road—Design)

KUZNETSOV, N.; SOKOLOV, V.

Technical specifications for designing rural roads in the R.S.F.S.R. Avt. dor. 24 no.8:29-30 Ag '61. (MIRA 14:9)
(Roads---Design)

SOKOLOV, Vladimir Grigor'yevich, kand. tekhn. nauk; SLIN'KO, B.I., red.; YEREMINA, I.A., tekhn. red.

[Improving the operating qualities of asphalt-concrete pavements]Povyshenie ekspluatatsionnykh kachestv asfal'tobetonnykh pokrytii. Kiev, Gosstroiizdat, 1962. 84 p. (MIRA 16:3)
(Asphalt concrete) (Pavements)

ANISIMOVA, N.D. (Moskva); SOKOLOV, V.I. (Moskva)

Effect of the saturation of steel on the capacitive self-excitation of synchronous machines. Izv. AN SSSR.Energ. i transp. no.3:49-55 My-Je '65. (MIRA 18:12)

1. Submitted July 18, 1964.

L 44728-66 EWT(l)/EWP(e)/EWP(t)/ETI/EWT(m) IJP(c) JD/JG/WH

ACC NR: AP6031989 SOURCE CODE: UR/0386/66/004/005/0186/0188

AUTHOR: Belov, K. P.; Sokolov, V. I.

ORG: Physics Department of the Moscow State University im. M. V. Lomonosov (Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta)

TITLE: Magnetostriction of rare-earth gallate garnets

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 4, no. 5, 1966, 186-189

TOPIC TAGS: garnet, gallium compound, rare earth metal, magnetostriction, paramagnetism, temperature dependence, magnetic susceptibility, Curie point

ABSTRACT: The authors investigated the magnetostriction of paramagnetic garnets in which all the iron was replaced by diamagnetic gallium. Since iron and gallium garnets have very similar structures the investigation of the gallates was aimed at yielding additional information on the behavior of rare-earth ions in the garnet structure. The magnetic and magnetostriction properties of polycrystalline gallate garnets $R_3Ga_5O_{12}$, where R = Gd, Tb, Ho, and Dy, were measured in the temperature interval 1.7 - 50K. The magnetostriction deformation was measured by the capacitive pickup method, and the samples were magnetized with a superconducting solenoid (magnetic field up to 25 kOe). The tests show that with decreasing temperature the magnetostriction increases abruptly, reaching the appreciable magnitude (for paramagnets) ~60 x 10^{-6}. In gadolinium gallate, the magnetostriction is two orders of magnitude smaller and amounts

Card 1/2

L 44728-66
ACC NR: AP6031989

to +0.25 x 10^{-6} at 4.2K. The signs of the magnetostriction of the investigated gallate garnets are the same as for the corresponding iron garnets (positive for Tb and negative for Dy and Ho). The molar susceptibility of Gd, Tb, Dy, and Ho gallate garnets increases sharply in the liquid-helium temperature region, and has a weak inflection point. This is evidence of magnetic ordering at a temperature below 1.7K, and explains the appreciable magnetostriction effects observed in gallate garnets. Consequently, magnetostriction can serve as a sensitive indicator of the process of magnetic ordering as the Curie point is approached from the high-temperature side. In the region of the ordering temperature, a change takes place also in the character of the $\lambda(H)$ dependence. The isotherms of the magnetostriction of $Dy_3Ga_5O_{12}$ show the quadratic growth of magnetostriction with magnetic field characteristic of ferromagnets. Deviation from this relation takes place already at T = 4.2K, and at 2.5K the inclination of the curve relative to the field axis reverses. A similar situation is observed in the behavior of even magnetic effects when the Curie point of a ferromagnet is approached from the high-temperature side. It is also possible, however, that this character of the magnetostriction isotherms at low temperatures is connected with paramagnetic saturation in the strong magnetic field. The authors thank Tkhan Dyk Khiyen for help with the measurements. Orig. art. has: 3 figures.

SUB CODE: 20/ SUBM DATE: 22Jun66/ ORIG REF: 002/ OTH REF: 003

Card 2/2

EWT(d)/EWT(l)/EWT(m)/EWP(t)/ETI TJP(c) JD/WH/JG

SOURCE CODE: UR/0048/66/030/006/1073/1075

AUTHOR: Belov, K.P.; Sokolov, V.I.

ORG: Physics Department, Moscow State University im. M.V.Lomonosov (Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta)

TITLE: Low temperature magnetic and magnetostrictive properties of rare earth garnet ferrites [Report, All-Union Conference on the Physics of Ferro- and Antiferromagnetism held 2-7 July 1965 in Sverdlovsk]

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 6, 1966, 1073-1075

TOPIC TAGS: magnetostriction, magnetic susceptibility, low temperature, rare earth element, ferrite, garnet

ABSTRACT: The authors have measured the paraprocess magnetostriction and susceptibility at temperatures from 4 to 100° K of polycrystalline specimens of Gd, Tb, Dy, Ho, Er, and Yb ferrite garnet, prepared by the usual technique. The magnetostriction measurements were made with the aid of a differential capacitor, with which, it is said, displacements as small as 10^{-7} cm can be measured. A superconducting magnet capable of producing a 23 kOe field uniform within 1% over a 7 cm^3 volume was employed. A considerable paraprocess due to the rare earth sublattice was evinced by all the investigated materials at fields exceeding that required to saturate the iron sublattice. Both the paraprocess susceptibility and the paraprocess magnetostriction of each of the investigated materials except the ytterbium and terbium ferrite garnets showed a low temperature maximum, the maximum being reached by both characteristics of a given

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L 08771-67
ACC NR: AP6029138

material at nearly the same temperature. The failure of terbium ferrite garnet to exhibit a low temperature paraprocess magnetostriction maximum is ascribed to its great low temperature magnetic anisotropy, which was such that the 25 kOe magnetic field was inadequate for the observation of paraprocess effects, and the failure of the ytterbium ferrite garnet to exhibit low temperature paraprocess magnetostriction is ascribed to the proximity of the ~5° K compensation point. The experimental results confirm the hypothesis of K.P.Belov (izv. AN SSSR, Ser. fiz., 25, No.11, 1320 (1961)) that ferrite garnets have a "low temperature point" associated with change in the long range magnetic order of the rare earth sublattice. The low temperature points of the different materials were evaluated directly from the maxima in the paraprocess magnetostriction and susceptibility, and from the effective magnetizing field produced at the rare earth sublattice by the iron sublattice, which could be evaluated from the experimental data with the aid of the theory of K.P.Belov and S.A.Nikitin (Physica status solidi, 12, No. 1 (1965)). The two methods of evaluating the low temperature points gave concordant results, which showed that the low temperature point increases linearly with the spin of the rare earth ion from 20° K for the spin 3/2 Er ion to 70° K for the spin 7/2 Gd ion. It is concluded that the exchange interaction between rare earth ions is determined mainly by the spin magnetic moment, rather than by the total magnetic moment. There is a footnote thanking V.R.Karasik and G.B.Kurganov of the Physics Institute of the AN SSSR for assisting with the construction of the superconducting magnet. Orig. art. has: 3 figures.

SUB CODE: 20 SUBM DATE: 00 ORIG. REF: 002 OTH REF: 004

Card 2/2 bc

AUTHOR: Kolov, V. I., Engineer

105-58-4-19/37

TITLE: The Type 50H Magnetic Soft Alloy With High Magnetic Properties (Magnitno-myagkiy splav 50H s vysokimi magnitnymi svoystvami)

PERIODICAL: Elektrichestvo, 1958, Nr 4, pp. 70-72 (USSR)

ABSTRACT: The alloy 50H produced in the USSR and the Hypernik (Gipernik) produced abroad are almost identical as regards their chemical properties. They contain 50 % Ni, 49,5 % Fe and 0,5 % Mn. A certain difference in the chemical composition consists in the fact that 50H contains a certain small amount of silicon and aluminum introduced as technological additions for improving plasticity. The comparison of the magnetic properties of the two alloys shows that 50H is far behind Hyperkin in this respect. This can be explained by the fact that 50H is produced in open induction furnaces and the final heat treatment is carried out in vacuum while the Hypernik alloy is produced in vacuum furnaces and is finally heat treated in dry purified oxygen.- The technology of melting must secure the absence of oxygen in the metal which can not be regenerated

Card 1/3

The Type 50H Magnetic Soft Alloy With High Magnetic Properties 105-58-4-19/37

by annealing in hydrogen. The works carried out by the author at the Institute for Fine Alloys of the TsNIICHM (Central Scientific Research Institute for Metallurgy) showed that the magnetic properties of the 50H alloy depend first of all on the oxygen content in the alloy. High magnetic properties can be obtained only at an oxygen content of less than 0,0005 %. The production of the 50H-alloy in vacuum furnaces with desoxidation of the carbon makes it possible to obtain the metal without silicon and aluminum and therefore also without their oxides. This can be explained by the fact that in a vacuum of 1-2 torr the desoxidizability of carbon increases about 100-fold. In connection with the fact that the non-metal inclusions of FeO, MnO, NiO, which are easily reproducable in hydrogen, exist, a heat treatment in dry purified oxygen leads to an essential improvement of the magnetic properties. The melting of the alloy 50H in the vacuum furnace without introduction of silicon and aluminum (with a desoxidation by carbon) and a treatment of the alloy in purified dry hydrogen yields a 50H alloy which is with regard to its properties

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The Type 50H Magnetic Soft Alloy With High Magnetic Properties 105-58-4-19/37

not worse than the 50H alloy.
There are 2 figures, 2 tables, and 6 references, 4 of which are Soviet

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii (Central Scientific Research Institute for **Ferrous Metallurgy**)

SUBMITTED: September 27, 1957

AVAILABLE: Library of Congress

1. **Alloys-Magnetic properties** 2. **Magnetic properties-Improvement**

Card 3/3

SOKOLOV, V. I.

PHASE I BOOK EXPLOITATION SOV/3895

Moscow. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii. Institut pretsizionnykh splavov

Pretsizionnyye splavy (Precision Alloys) Moscow, Metallurgizdat, 1960. 283 p. (Series: Its: Sbornik trudov, vyp. 23) Errata slip inserted. 2,525 copies printed.

Additional Sponsoring Agency: USSR. Gosudarstvennaya planovaya komissiya.

Ed.: D.I. Gabrielyan; Ed. of Publishing House: Ye.I. Levit; Tech. Ed.: Ye.B. Vaynshteyn.

PURPOSE: This book is intended for engineers and scientific personnel in the metallurgical, instrument-production, and electrical-equipment industries, as well as for industrial personnel engaged in the production of precision alloys. It may also be useful to students attending advanced technical schools.

COVERAGE: The articles in this collection present the results of investigations conducted in recent years by the Central Scientific Research Institute of

Card 1/6

SOKOLOV, V. I., Cand Tech Sci — (diss) " [illegible] for the production of soft magnetic alloys 50% and 79%Ni with increased magnetic properties," Moscow, 1960, 18 pp (Central Sci-Res Institute of Ferrous Metallurgy)

(KL, 33-60, 145)

S/137/61/000/008/027/037
A060/A101

AUTHOR: Sokolov, V. I.

TITLE: Elaboration of methods for obtaining magnetically soft alloys 50H (50N) and 79 HM(79NM) with high grade magnetic characteristics

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 8, 1961, 12, abstract 8I95 ("Sb. tr. Tsentr. n.-i. in-t chernoy metallurgii", 1960, no. 23, 5-22)

TEXT: The obtaining of high-grade magnetic characteristics in the alloys 50N and 79NM is connected with the most thorough purification of the alloys from harmful impurities and, in the first place, from O. For a complete purification of the metal from O the alloys are smelted in a vacuum furnace with reduction by carbon under vacuum without introducing the elements (Si, Al, Mg, Ca) into the alloy composition, as these elements form stable oxides. The alloy thus obtained is subjected to high-temperature heat-treatment in dry purified H_2 atmosphere. As a result the alloys were obtained having the following magnetic characteristics: alloy 50N (Smelt 12B) - μ_o 9,700 gauss-oersted, μ_{max} 76,400 gauss-oersted, H_c 0.039 oersted, B_8^* 14,400 gauss; smelt 13B - μ_o 7,300 gauss-

Card 1/2

L 26108-65 EWT(m)/EPF(n)-2/EWA(d)/EWP(v)/T/EWP(t)/EWP(k)/EWP(b) Pf-4/Pu-4
ACCESSION NR: AP4047426 IJP(c) MJW/JD/HM/JG S/0136/64/000/010/0066/0067

47
45
B

AUTHOR: Kazakov, N.F.; Krivoshey, A.V.; Sudenkov, Ye. G.; Sokolov, V.I.; Kasatkin, N.M.; Lyubenko, L.A.; Bodyako, A.V.

TITLE: Vacuum diffusion welding of bimetallic strips for thermostats

SOURCE: Tsvetnyy metally, no. 10, 1964, 66-67

TOPIC TAGS: diffusion welding, vacuum diffusion welding, thermostat, bimetal, manganese alloy, clad metal/ alloy 75GND

ABSTRACT: The authors used the vacuum diffusion welding method developed by Prof. N. F. Kazakov (Diffuzionnaya svarka v vakuume metallov, splavov i nemetallov. Izd. NIL DSVM M., 1962) to prepare samples of thermostat metals. The process consisted of four operations: 1. cold rolling of the component metals into strips of given thickness; 2. cutting to the given size; 3. mechanical cleaning and degreasing of the contact surfaces, and 4. vacuum diffusion welding of the passive and active components. The component plates were welded at the Nauchno-issledovatel'skaya laboratoriya diffuzionnoy svarki (Scientific Research Laboratory of Diffusion Welding) of the Mosgorsovnarkhoz, using an SDVU-6 vacuum diffusion welder. The samples of thermostat metal obtained were tested for specific bending at the TsNIIChM (Central

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ACCESSION NR: AP4047426

2

Scientific Research Institute of Ferrous Metallurgy). One of the tested compositions (the high-manganese alloy 75GND plus molybdenum) was found to meet the maximum sensitivity requirement (specific bending A = 0.151 1/°C). The experimental work performed showed that vacuum diffusion welding permits a substantial acceleration of the process of finding new brands of thermostat metals and an appreciable saving of labor and development costs. Orig. art. has: 1 figure and 1 formula.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 001 OTHER: 000

Card 2/2

L 42414-65 EPA(s)-2/EWT(m)/EWP(w)/EPF(c)/EPF(n)-2/EWA(d)/EPR/T/EWP(t)/EWP(k)/EWP(z
EWP(b)/EWA(c) Pr-4/Pad/Ps-4/Pt-7/Pu-4 IJW/JD/WW/HW/JG
ACCESSSION NR: AP5008710 S/0133/65/000/003/0236/0238

AUTHOR: Krasnykh, V.I.; Sokolov, V.I.

TITLE: Melting of precision alloys in a vacuum induction furnace with hydrogen refining

SOURCE: Stal', no. 3, 1965, 236-238

TOPIC TAGS: hydrogen refining, vacuum induction furnace, alloy melting, precision alloy manufacture, precision alloy mechanical property, iron alloy, nickel alloy, cobalt alloy, aluminum alloy/14 Yu alloy

ABSTRACT: The influence of various technological factors of the melting process on the properties of precision alloys was studied at TsNIIChM using an IPRV-2 vacuum induction furnace. The process of deoxidation by hydrogen in this furnace was investigated by melting pure metals (iron, nickel, cobalt) and alloys of iron with nickel, cobalt, or aluminum in a hydrogen atmosphere, then evacuating the furnace, filling it with helium, and discharging the liquid metal. The experiments showed that the use of vacuum and hydrogen drastically reduced the content of gaseous and nonmetallic impurities. Thus, in 14 Yu alloy, for example, the content of nonmetallic impurities was reduced to 71-250 x 10^{-4}% in the vacuum melts and 13-24 x 10^{-4}% in the hydrogen melts. As a result, the properties of the precision alloys are improved by a factor of 1.5 to 2.

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L 42414-65

ACCESSION NR: AP5008710

In addition, the increased purity of the metal makes it possible to prepare strip and wire with cross sections measured in microns. Orig. art. has: 1 table and 3 formulas.

ASSOCATION: TsNIIChM

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 005 OTHER: 005

llc

Card 2/2

L 54048-65 EWT(1)/EWT(m)/EWP(t)/EWP(b) IJP(c) JD

ACCESSION NR: AP5015614 GE/0030/65/009/003/K163/K165

AUTHOR: Akselrod, M. M.; Sokolov, V. I.; Tsidilkovski, I. M.

TITLE: Oscillations of the longitudinal magnetoresistance in n-GaAs

SOURCE: Physica status solidi, v. 9, no. 3, 1965, 163-K165

TOPIC TAGS: electron inelastic scattering, magnetoresistance, crystal longitudinal magnetoresistance, crystal transverse magnetoresistance

ABSTRACT: An investigation was made of the oscillations due to the inelastic scattering of electrons by optical phonons. Measurements were made of the longitudinal ($\Delta\rho_{\parallel}/\rho_0$) and transverse ($\Delta\rho_{\perp}/\rho_0$) magnetoresistance of n-GaAs single crystals with electron densities of $n \approx 10^{16}$ to 10^{17} cm^{-3} within a temperature range from 200 to 410K and in pulsed magnetic fields up to 300 kG. No oscillations of $\Delta\rho_{\perp}/\rho_0$ were observed. A maximum of $\Delta\rho_{\parallel}/\rho_0$ was observed at T > 200K which shifted to stronger magnetic fields with increasing temperature. The dependence of the longitudinal magnetoresistance of n-GaAs on the magnetic field strength for two specimens ($n = 1.9 \times 10^{16}$ cm^{-3}, $\mu = 2.3 \times 10^3$ cm^2/v-sec at 80K and $n = 1.9 \times 10^{17}$ cm^{-3}, $\mu = 2.3 \times 10^3$ cm^2/v-sec at 80K) at temperatures of 220K, 300K, and 410K showed that $\Delta\rho_{\parallel}/\rho_0 > 0$ in the measured ranges of temperatures and magnetic fields. The positive sign is due to an inhomogeneous distribution of the impurities. Hall measurements

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L 5404-65
ACCESSION NR: AP5015614

showed that the difference in n between the ends of specimen 1 (length 6 mm) was ≈ 20% and for specimen 2 (same length) ≈ 10%. This is 5 to 10 times larger than the inhomogeneities in n-InAs specimens, where the effect is negative. The magnetoresistance was higher in specimen 1 than in specimen 2 apparently not only because of higher electron mobility but also because of the larger inhomogeneity of specimen 1. The maxima of $\Delta\rho_{\parallel}/\rho_0$ are located at magnetic fields for which $\mu H \gg 1$ (μ is the electron mobility) and $\hbar\omega_c > kT$ (ω_c is the optical frequency). Orig. art. has: 2 formulas and 1 figure. [JA]

ASSOCIATION: Institute of Metal Physics, Sverdlovsk

SUBMITTED: 13Apr65 ENCL: 00 SUB CODE: SS, NP

NO REF SOV: 002 OTHER: 005 ATD PRESS: 4019

Card 2/2

KAZAKOV, N.F.; KRIVOSHEY, A.V.; SUDENKOV, Ye.G.; SOKOLOV, V.I.; KASATKIN, N.M.; LYUBENKO, L.A.; BODYAKO, A.V.

Diffusion bonding of thermostat metal in vacuum. TSvet. met. 37 no.10:66-67 O '64. (MIRA 18:7)

L 2851-66 EWP(e)/EWT(m)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(c) LJP(c) JD/HW

ACCESSION NR: AT5022903 UR/2776/65/000/043/0169/0172

AUTHOR: Teplenko, V. G.; Reutova, N. P.; Sokolov, V. I.; Krasnykh, V. I.

TITLE: Production of high-purity iron and of alloys based on this iron

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii. Sbornik trudov, no. 43, 1965. Poroshkovaya metallurgiya (Powder metallurgy), 169-172

TOPIC TAGS: high purity metal, metal purification, carbonyl iron, iron powder, electric furnace, metal pressing

ABSTRACT: Since the properties of a number of special alloys, given the current techniques of production, are chiefly determined by the purity of the raw materials used, their preparation requires highly pure iron containing at least 99.96% Fe_{total}, 0.001-0.002% C and less than 0.004% S. The use of highly pure charge as well as improvements in the smelting process have currently made possible the production of iron of 99.8-99.9% purity (armco iron, Swedish iron) by means of conventional metallurgical techniques. Moreover, pure iron in powdered form is obtained on an industrial scale by electrolysis or by the carbonyl method.

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L 2851-66

ACCESSION NR: AT5022903

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Carbonyl iron is distinguished by its virtually nil content of metal impurities but it is relatively highly contaminated with carbon, oxygen, and nitrogen due to the secondary processes occurring between the active particles of iron and the gaseous phase. In this connection, the authors describe the procedure they developed for refining low-grade carbonyl iron powder (0.85-1.0% C, 0.75% N, 0.6% O) by means of vertical electric furnaces with a hydrogen atmosphere so as to obtain ultra-fine iron sponge containing 0.001-0.002% C, less than 0.004% S and N, traces of P, and 0.01% O. Specimens of this refined carbonyl iron, prepared by powder-metallurgical techniques (hydrostatic pressing at 1000 atm, sintering of the obtained 500-600 g briquets in a hydrogen atmosphere with a dew point of -30°C at 1400°C for 14 hr, forging at 1000-700°C into rods of 16 mm diameter which were rolled into standard specimens for tensile tests and resistivity measurements), displayed high plastic properties and a lower resistivity (0.743 ohm-mm^2/m) than commercial pure iron (0.0971 ohm-mm^2/m). The use of this type of refined iron in place of armco iron in the smelting of precision steels yields alloys with magnetic properties that are 1.5-2.0 times as high. In addition, this may lead to the development of new alloys with special physical properties, since this highly pure iron has already been utilized to develop monocrystals of Co-Fe alloys and Ni-Fe alloys as well as in the production of ultra-pure wire contain-

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L 2851-66

ACCESSION NR: AT5022903

ing less than 0.005% C, which has made it possible to solve the problem of regulating the gaseous phase during case-hardening. Orig. art. has: 4 tables.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 004 OTHER: 000

High Pressure

BVK

Card 3/3

KRAYUKHIN, V.I., SOKOLOV, V.I.

Making high-purity alloys in induction vacuum furnaces with hydrogen refining. Stal' 25 no.3:236-238 Mr '65. (MIRA 18:4)

1. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii imeni I.P. Bardina.

L 05775-67 EWT(d)/EWT(l)/EWT(m)/EWP(t)/ETI IJP(c) JD/WW/JG

ACC NR: AP6031436 SOURCE CODE: UR/0056/66/051/002/0428/0430

AUTHOR: Kiryukhin, V. P.; Sokolov, V. I.

57
B

ORG: Moscow State University (Moskovskiy gosudarstvennyy universitet)

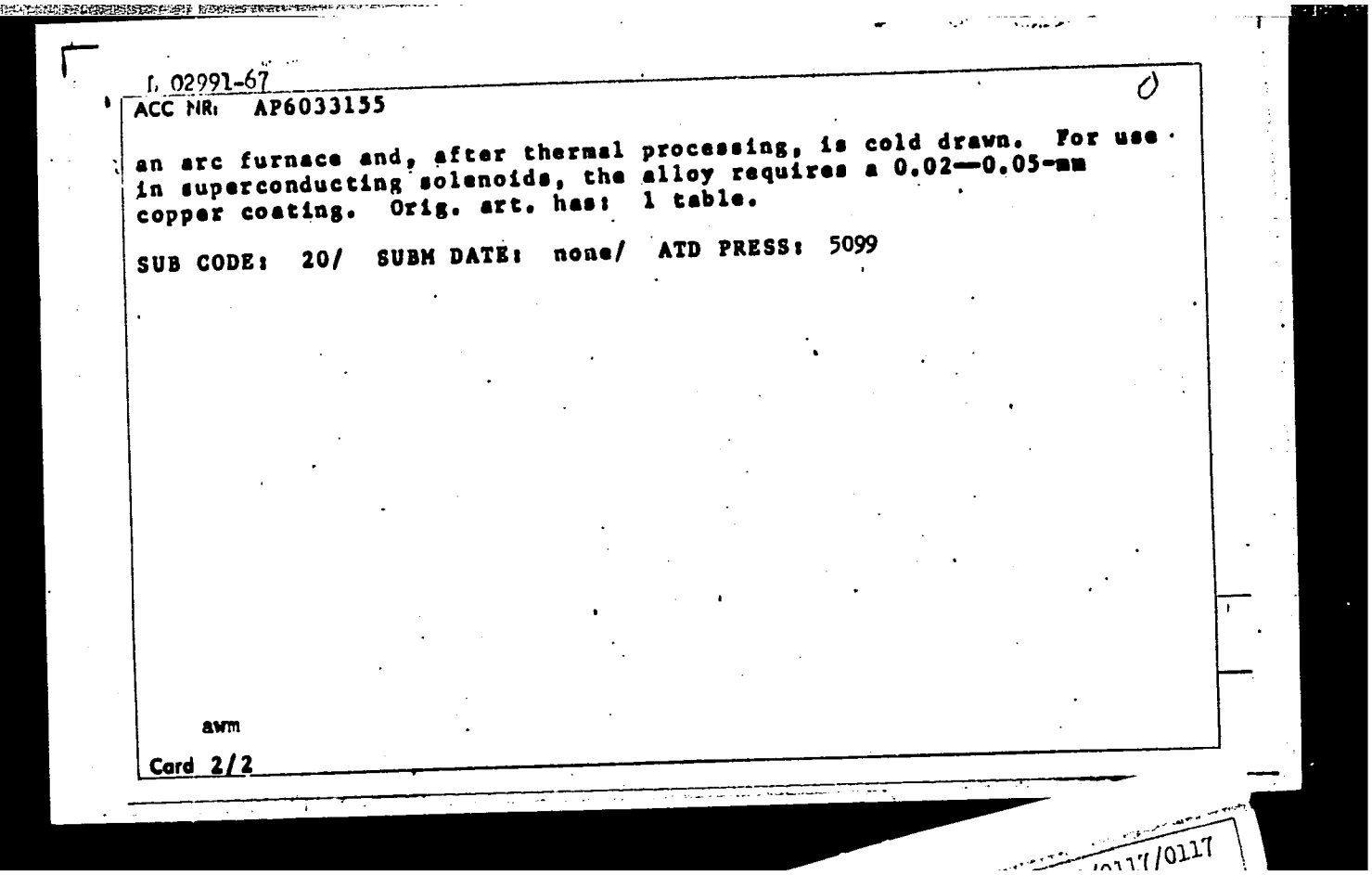
TITLE: Magnetostriction of yttrium-terbium ferrite garnets at low temperatures

SOURCE: Zh eksper i teor fiz, v. 51, no. 2, 1966, 428-430

TOPIC TAGS: ferrite, garnet, yttrium, terbium, magnetostriction, magnetization, Neel ferromagnetic material, ferromagnetic material

ABSTRACT: The magnetic and magnetostrictive properties of polycrystalline ferrite-garnets $Tb_xY_{3-x}Fe_5O_2$ (x varied from 0 to 3) has been investigated over the temperature range 4.2 to 100K. A sharp increase of magnetostriction is detected with the increase of the Tb^{3+} ion concentration. No apparent correlation between the temperature dependences of magnetostriction and magnetization has been found for samples with a high terbium content ($x > 1$). The results obtained do not conform to the single ion model for magnetoelastic interaction of Neel ferromagnetics. The authors thank Professor K. P. Belov for guiding the study and R. Z. Levitin for taking part in discussions of results. Orig. art. has: 2 figures. [Based on authors' abstract]

Card 1/1 SUB CODE: 20/SUBM DATE: 25Mar66/ORIG REF: 001/OTH REF: 003/



L 02991-67
ACC NR: AP6033155

an arc furnace and, after thermal processing, is cold drawn. For use in superconducting solenoids, the alloy requires a 0.02—0.05-mm copper coating. Orig. art. has: 1 table.

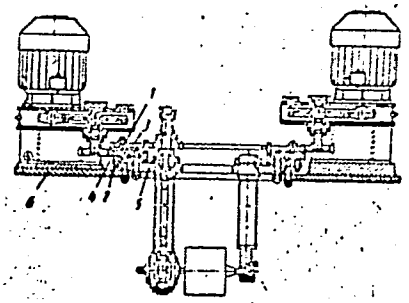
SUB CODE: 20/ SUBM DATE: none/ ATD PRESS: 5099

awm

Card 2/2

ACC NR: AP6018005

when electric motors are used in the drive mechanism, and for providing output shaft rotation in relation to two mutually perpendicular axes. The output shaft is fitted with two sets of cams. One set located in the wheel housing is equipped with rims having both internal and external gearing. These cams are spring loaded in the axial direction of the shaft and rest on the end surface of the geared wheel which is connected in turn to the faceplate. The second set of cams is located in the mechanism housing and rests on the opposite end surface of the rim. The rim is connected to the faceplate and is spring loaded in the axial direction. The cam springs are made so that the cams set in the mechanism housing can exert more pressure on the wheel connected to the faceplate than the cams which are set in the housing of the wheel which is equipped with rims having both internal and external teeth.



1 and 2—cams; 3 and 4—gear wheels; 5—faceplate; 6—frame

SUB CODE: 13/ SUBM DATE: 24Mar65

ACC NR: AP7001546 SOURCE CODE: UR/0020/66/171/003/0566/0569

AUTHOR: Alekseyevskiy, N. Ye. (Corresponding member AN SSSR); Dubrovin, A. V.; Mikhaylov, N. N.; Sokolov, V. I.; Fedotov, L. N.

ORG: Central Scientific Research Institute of Ferrous Metallurgy im. I. P. Bardin (Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii)

TITLE: Basic properties of 65BT-type superconducting alloy wire in specimens and solenoids

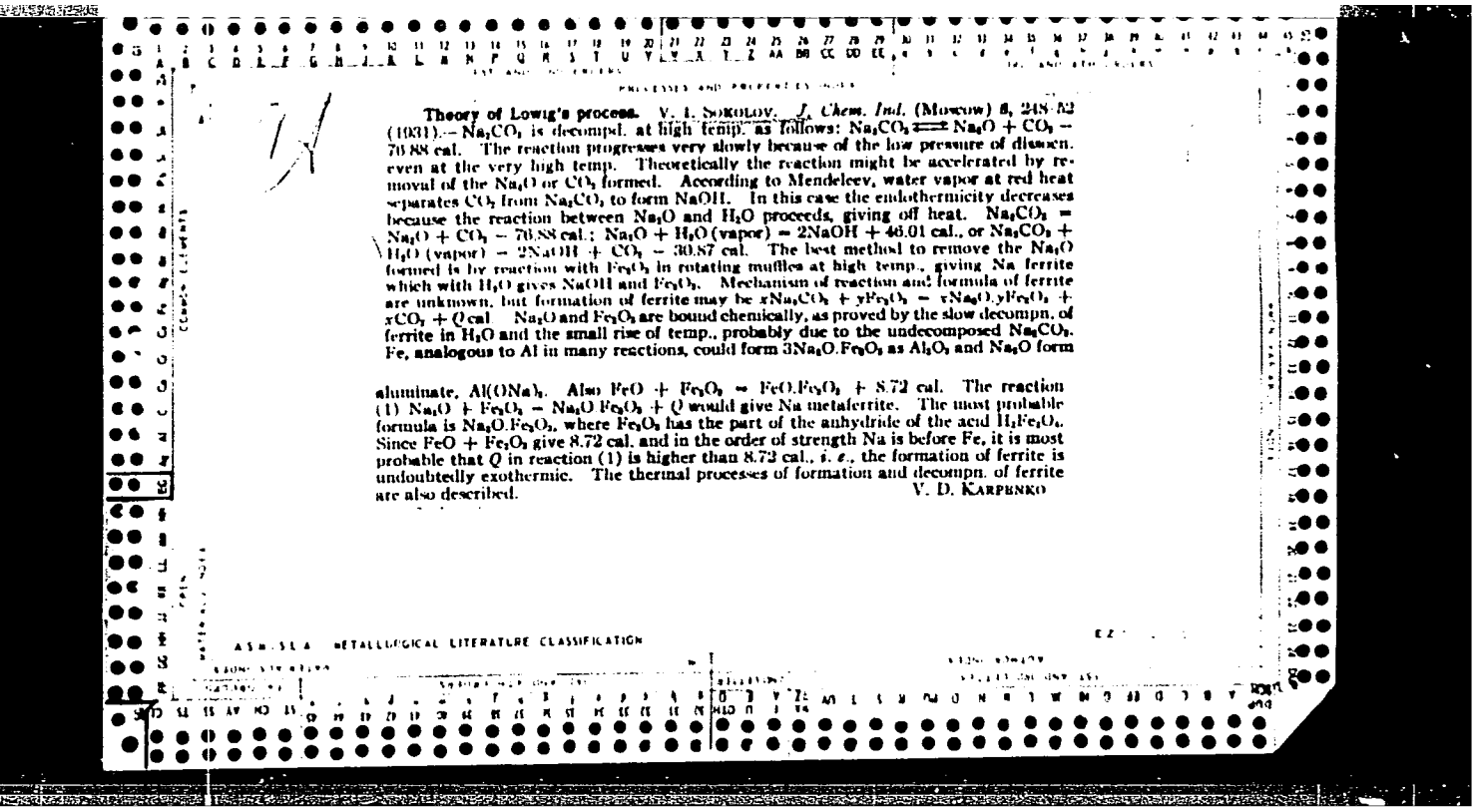
SOURCE: AN SSSR. Doklady, v. 171, no. 3, 1966, 566-569

TOPIC TAGS: superconducting alloy, niobium titanium alloy, zirconium containing alloy, niobium titanium alloy wire, alloy wire superconducting property

ABSTRACT:
A method of protecting superconductors from damage during the transition from superconducting to normal state has been developed. The 65BT superconducting niobium-titanium alloy wire (65% niobium and some zirconium) was developed by the Institute of Precision Alloys at the Central Scientific Research Institute of Ferrous Metallurgy. At 293, 77 and 20K the wire has a tensile strength of 81, 140 and 192 kg/mm^2, a notch toughness of 18.5, 5.8 and 4.4 kg/cm^2, and a resistivity of 70, 59 and $56 \cdot 10^{-6}$ ohm·cm, respectively. The critical temperature of the wire is 9.7K and the critical magnetic field at 4.2K is 90 kilo-oersteds. It was found that a thin copper coating effectively

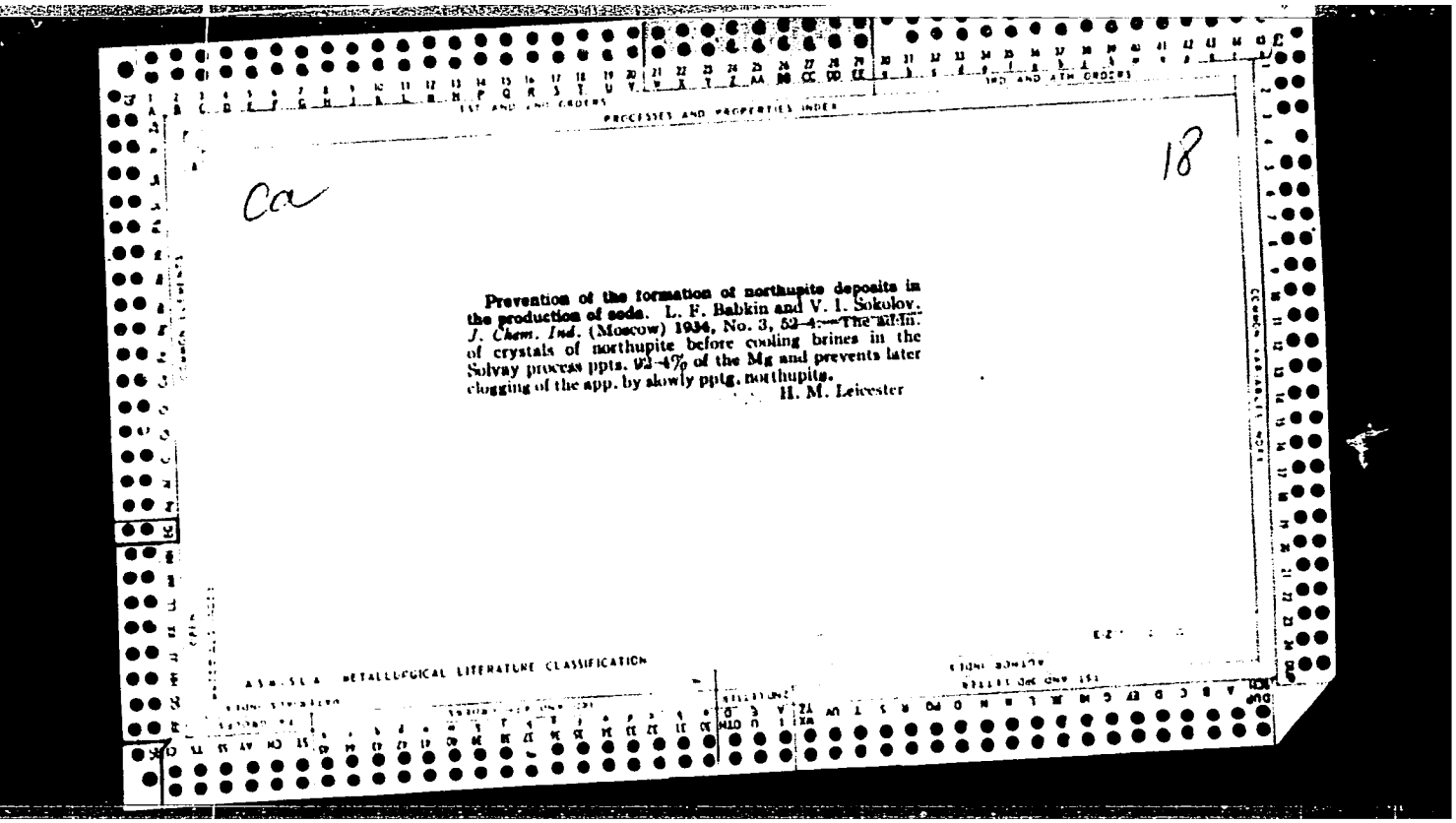
UDC: 537.312.62.

Card 1/2



Theory of Lowig's process. V. I. SOKOLOV. *J. Chem. Ind.* (Moscow) 8, 248-52 (1931).—Na_2CO_3 is decompd. at high temp. as follows: $Na_2CO_3 \rightleftharpoons Na_2O + CO_2 - 70.88$ cal. The reaction progresses very slowly because of the low pressure of dissocn. even at the very high temp. Theoretically the reaction might be accelerated by removal of the Na_2O or CO_2 formed. According to Mendeleev, water vapor at red heat separates CO_2 from Na_2CO_3 to form NaOH. In this case the endothermicity decreases because the reaction between Na_2O and H_2O proceeds, giving off heat. $Na_2CO_3 = Na_2O + CO_2 - 70.88$ cal.; $Na_2O + H_2O$ (vapor) $= 2NaOH + 46.01$ cal., or $Na_2CO_3 + H_2O$ (vapor) $= 2NaOH + CO_2 - 30.87$ cal. The best method to remove the Na_2O formed is by reaction with Fe_2O_3 in rotating muffles at high temp., giving Na ferrite which with H_2O gives NaOH and Fe_2O_3. Mechanism of reaction and formula of ferrite are unknown, but formation of ferrite may be $xNa_2CO_3 + yFe_2O_3 = xNa_2O.yFe_2O_3 + xCO_2 + Q$ cal. Na_2O and Fe_2O_3 are bound chemically, as proved by the slow decompn. of ferrite in H_2O and the small rise of temp., probably due to the undecomposed Na_2CO_3. Fe, analogous to Al in many reactions, could form $3Na_2O.Fe_2O_3$ as Al_2O_3 and Na_2O form aluminate, $Al(ONa)_3$. Also $FeO + Fe_2O_3 = FeO.Fe_2O_3 + 8.72$ cal. The reaction (1) $Na_2O + Fe_2O_3 = Na_2O.Fe_2O_3 + Q$ would give Na metaferrite. The most probable formula is $Na_2O.Fe_2O_3$, where Fe_2O_3 has the part of the anhydride of the acid $H_2Fe_2O_4$. Since $FeO + Fe_2O_3$ give 8.72 cal. and in the order of strength Na is before Fe, it is most probable that Q in reaction (1) is higher than 8.72 cal., *i. e.*, the formation of ferrite is undoubtedly exothermic. The thermal processes of formation and decompn. of ferrite are also described.

V. D. KARPENKO

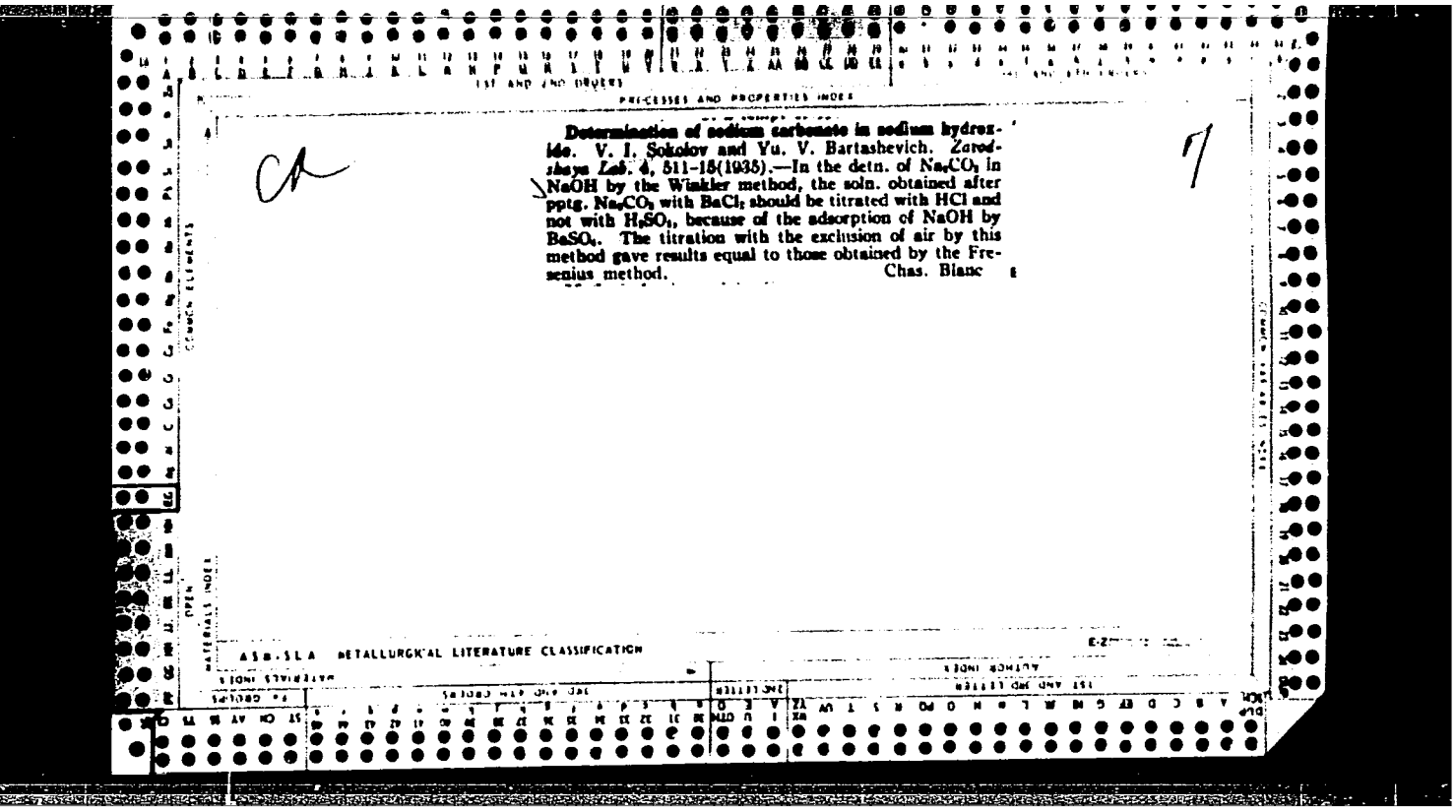


Ca

18

Prevention of the formation of northupite deposits in the production of soda. L. F. Babkin and V. I. Sokolov. *J. Chem. Ind.* (Moscow) 1934, No. 3, 52–4.—The addn. of crystals of northupite before cooling brines in the Solvay process ppts. 92–4% of the Mg and prevents later clogging of the app. by slowly ppting. northupite.

H. M. Leicester



PROCESSES AND PROPERTIES INDEX

Determination of sodium carbonate in sodium hydroxide. V. I. Sokolov and Yu. V. Bartashevich. *Zavodskaya Lab.* 4, 511–15(1935).—In the detn. of Na_2CO_3 in NaOH by the Winkler method, the soln. obtained after pptg. Na_2CO_3 with $BaCl_2$ should be titrated with HCl and not with H_2SO_4, because of the adsorption of NaOH by $BaSO_4$. The titration with the exclusion of air by this method gave results equal to those obtained by the Fresenius method. Chas. Blanc

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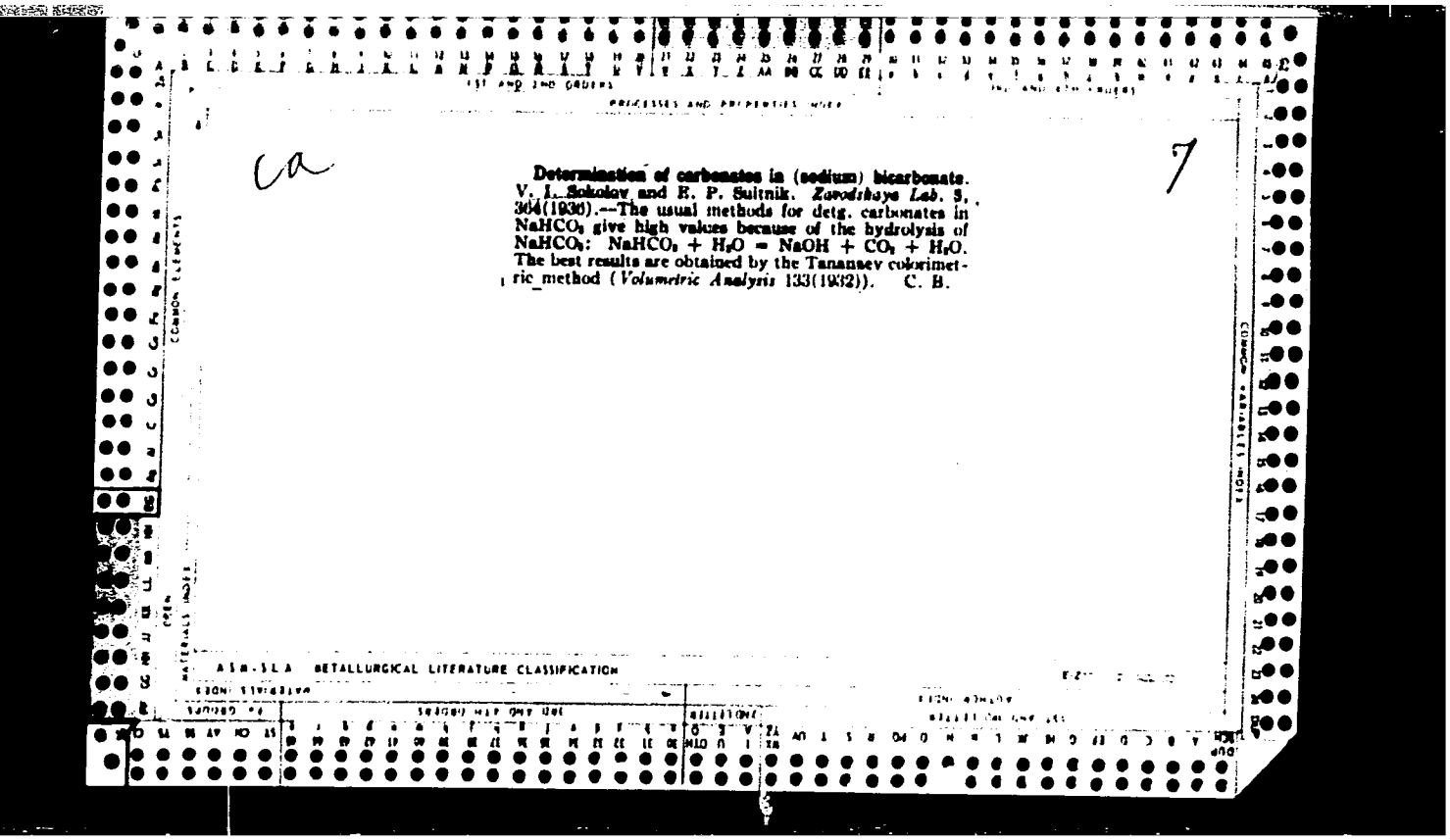
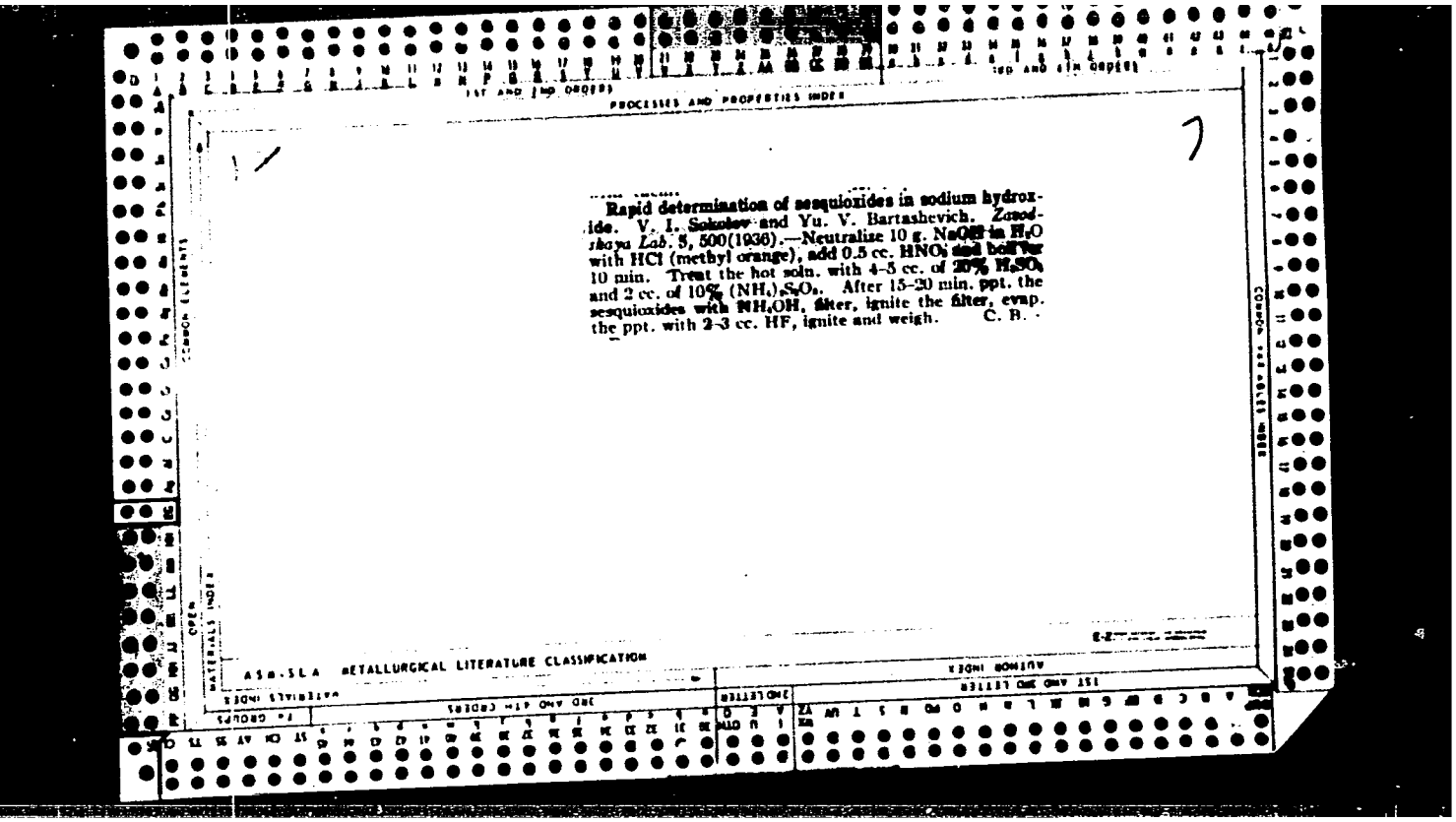


Ca

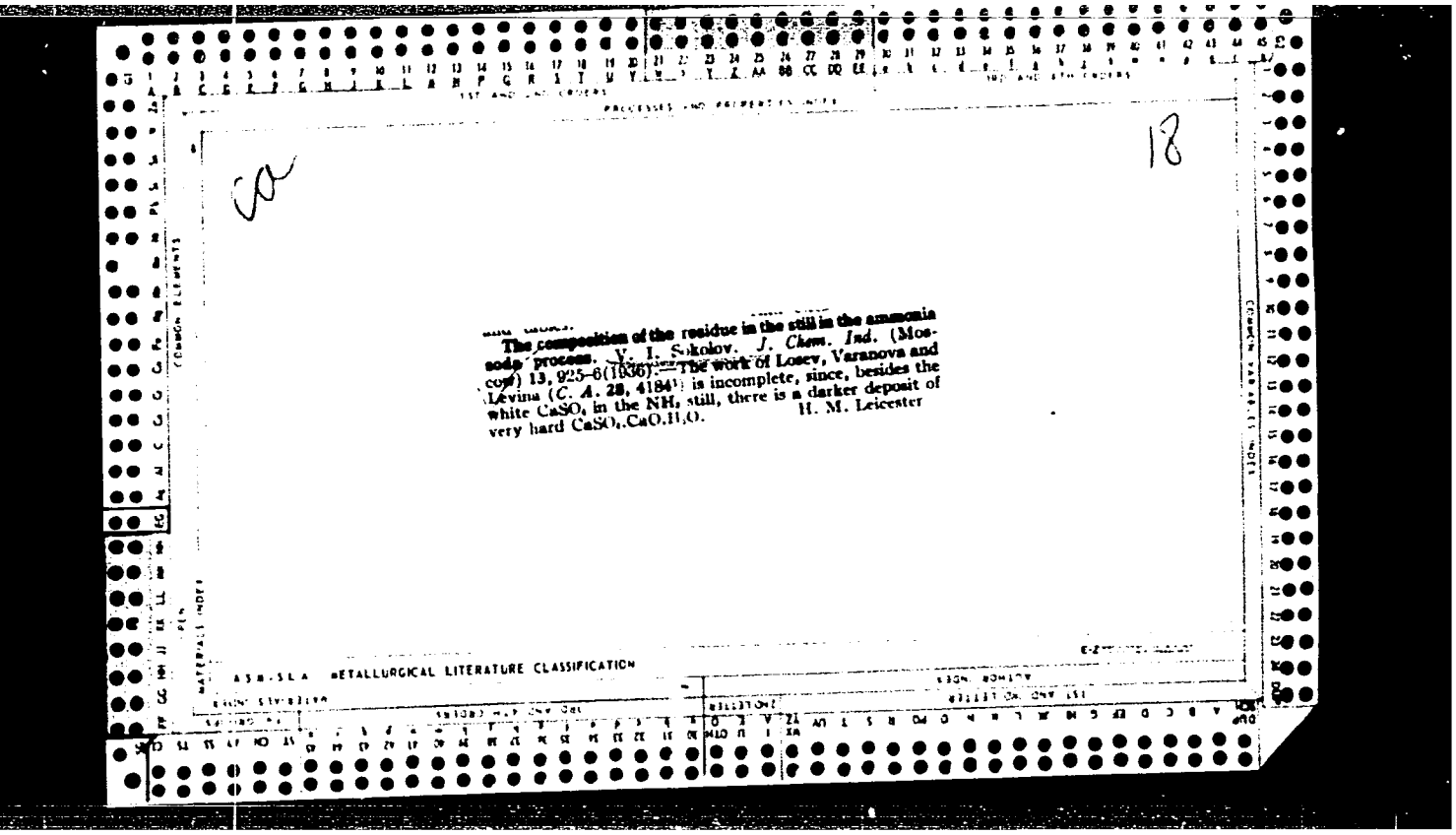
7

Determination of carbonates in (sodium) bicarbonate. V. I. Sokolov and E. P. Sultnik. *Zavodskaya Lab.* 5, 304(1930).—The usual methods for detg. carbonates in $NaHCO_3$ give high values because of the hydrolysis of $NaHCO_3$: $NaHCO_3 + H_2O = NaOH + CO_2 + H_2O$. The best results are obtained by the Tananaev colorimetric method (*Volumetric Analysis* 133(1932)). C. B.

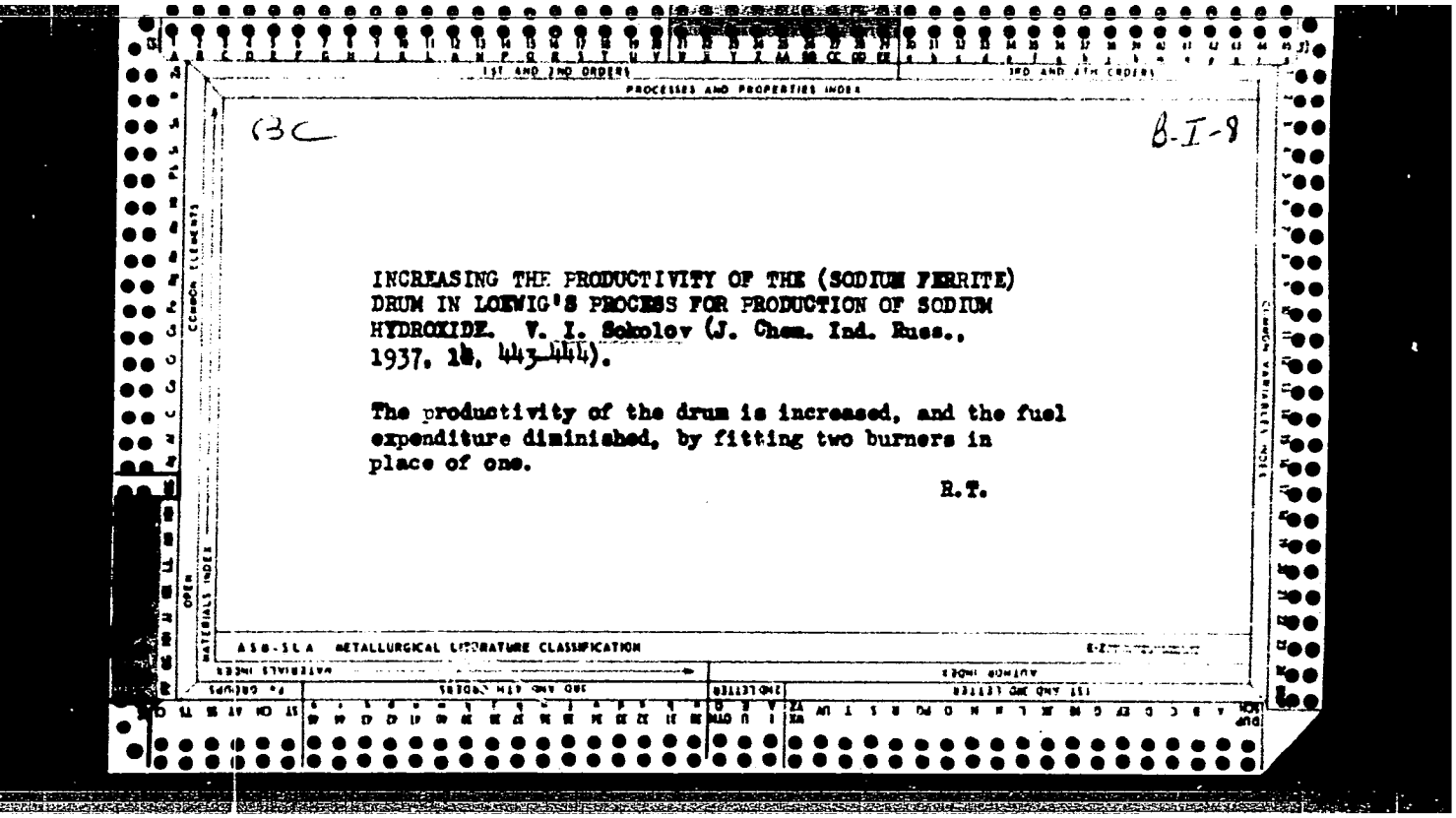
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Rapid determination of sesquioxides in sodium hydroxide. V. I. Sokolov and Yu. V. Bartashevich. *Zavodskaya Lab.* 5, 500(1936).—Neutralize 10 g. NaOH in H_2O with HCl (methyl orange), add 0.5 cc. HNO_3 and boil for 10 min. Treat the hot soln. with 4–5 cc. of 20% H_2SO_4 and 2 cc. of 10% $(NH_4)_2S_2O_8$. After 15–20 min. ppt. the sesquioxides with NH_4OH, filter, ignite the filter, evap. the ppt. with 2–3 cc. HF, ignite and weigh. C. B.



The composition of the residue in the still in the ammonia soda process. V. I. Sokolov. *J. Chem. Ind.* (Moscow) 13, 925–6(1936).—The work of Losev, Varanova and Levina (*C. A.* 28, 4184[1]) is incomplete, since, besides the white $CaSO_4$ in the NH_3 still, there is a darker deposit of very hard $CaSO_4.CaO.H_2O$. H. M. Leicester



(3C

B-I-8

INCREASING THE PRODUCTIVITY OF THE (SODIUM FERRITE) DRUM IN LOEWIG'S PROCESS FOR PRODUCTION OF SODIUM HYDROXIDE. V. I. Sokolov (J. Chem. Ind. Russ., 1937, 14, 443-444).

The productivity of the drum is increased, and the fuel expenditure diminished, by fitting two burners in place of one.

R.T.

REUTOV, O.A.; SOKOLOV, V.I.; BELETSKAYA, I.P.

Study of electrophilic substitution reactions at a saturated carbon atom by use of the isotope exchange method. Report No.1: Kinetics of the isotope exchange reaction of ethyl -(bromomercuri) phenyl acetate with mercury bromide tagged with Hg^{203} in pyridine. Izv. AN SSSR. Otd.khim.nauk no.7:1213-1217 Jl '61. (MIRA 14:7)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
(Acetic acid) (Mercury bromide) (Substitution (Chemistry))

REUTOV, O.A.; SOKOLOV, V.I.; BELETSKAYA, I.P..

Study of electrophilic substitution reactions at a saturated carbon atom by use of the isotope exchange method. Report No.2: Kinetics of the isotope exchange reaction of ethyl α-(bromomercuri)phenyl acetate with mercury bromide tagged with Hg^{203} in water - dioxane mixture. Izv. AN SSSR. Otd.khim.nauk no.7:1217-1222 Jl '61. (MIRA 14:7)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
(Acetic acid) (Mercury bromide) (Substitution (Chemistry))

REUTOV, O.A.; SOKOLOV, V.I.; BELETSKAYA, I.P.

Study of the electrophilic substitution reaction at a saturated carbon atom by the isotope exchange method. Report No.3: Isotope exchange of esters of α-bromomercuriarylacetic acids with mecury bromide tagged with Hg^{203}, in water-dioxane. Izv. AN SSSR. Otd.khim.nauk no.8:1427-1429 Ag '61.
(MIRA 14:8)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
(Acetic acid)
(Mercury—Isotopes)

REUTOV, O.A.; SOKOLOV, V.I.; BELETSKAYA, I.P.

Study of electrophylic substitution at a saturated carbon atom using the isotope exchange method. Report No.4: Kinetics of isotopic exchange between ethyl α-(bromomercuri) phenylacetates and mercury bromide tagged with Hg^{203} in dimethylformamide. Izv. AN SSSR. Otd.khim.nauk no.9:1561-1565 S '61. (MIRA 14:9)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Acetic acid) (Mercury bromide) (Mercury--Isotopes)

S/020/61/136/002/023/034
B016/B060

AUTHORS: Reutov, O. A., Corresponding Member AS USSR, and Sokolov, V. I.

TITLE: Radiochromatography of Organomercury Compounds

PERIODICAL: Doklady Akademii nauk SSSR, 1961, Vol. 136, No. 2, pp. 366-368

TEXT: The authors have frequently met with difficulties in their experiments on the isotopic exchange of organomercury compounds (I) - (VI) (Refs. 1-4), owing to the fact that the reacting substances were difficultly separable due to very similar solubility. The article under consideration gives a description of a radiochromatographic separation method which may be applied to the study of kinetic modifications during the separation of organomercury compounds both from one another and from inorganic mercury salts. The authors proved that the organomercury compounds of $HgBr_2$ are readily separable by paper-chromatography, the paper having been impregnated with a 10% ethylene glycol solution in acetone a few hours earlier. For a mobile phase, the mixture of octane with benzene

(3:2) gave the best results. $HgBr_2$ remains on the spot to which the solution was applied, while the organomercury compound moves directly behind the front of the solvent. 4 - 5 cm in such movement and less than 5 min are enough for a satisfactory separation. When using pyridine the chromatogram was 8 - 9 cm long. The development of the zones was brought about with diluted dithizone solution in chloroform or CCl_4. A lilac-pink color appeared with organomercury salts, and a pink-red-yellow one with $HgBr_2$ (Ref. 6). The authors performed the separation of mixtures of organomercury salts $XC_6H_4CH(HgBr)COOR$ and $YC_6H_4CH(HgBr)COOR$ in two cases: X = H, Y = n-Br and X = nBr, Y = o-CH_3. The separation took place with 10% olive oil solution in petroleum ether in the inverse phase. The mobile phase was provided by aqueous ethanol or methanol. The dependence of R_f on the alcohol concentration was:

Radiochromatography of Organomercury Compounds

X	65% ethanol	70% ethanol	80% methanol
H	0.19	0.20	-
n-Br	0.07	0.09	0.18
o-CH_3	-	-	0.30

Radiochromatography was applied in the study of the kinetics of isotopic exchange of ethyl esters of α-bromine mercury aryl acetic acids with $HgBr_2$ (tagged with Hg^{203}) in pyridine and 70% aqueous dioxan (Ref. 7). The degree of exchange was calculated on the basis of the ratio between the activities corresponding to the organomercury compound and those corresponding to $HgBr_2$ on the individual paper zones:

$$F = \frac{A_{Hg\text{-}OC}}{A_{Hg\text{-}OC} + A_{HgBr_2}} \cdot \frac{C_{Hg\text{-}OC} + C_{HgBr_2}}{C_{Hg\text{-}OC}},$$

where Hg-OC denotes the organomercury compound, A the activity, and C the concentration. No secondary exchange on paper occurs under the experimental conditions. Results agreed with those of the usual method

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Radiochromatography of Organomercury Compounds

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(preparatory isolation of a substance and measurement of its activity). The advantages offered by the method under discussion and its fields of application are stressed. There are 7 references: 5 Soviet, 1 US, and 1 Japanese.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov). Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental Organic Compounds, Academy of Sciences USSR)

SUBMITTED: September 16, 1960

$$R_2Hg + \dot{H}g \rightleftarrows R_2\dot{H}g + Hg \quad (1) \qquad (I)$$

$$R_2Hg + R'_2\dot{H}g \rightleftarrows R_2\dot{H}g + R'_2Hg \quad (2) \qquad (II)$$

$$R_2Hg + R\dot{H}gX \rightleftarrows R_2\dot{H}g + RHgX \quad (3) \qquad (III)$$

$$RHgX + \dot{H}g \rightleftarrows R\dot{H}gX + Hg \quad (4) \qquad (IV)$$

$$RHgX + \dot{H}gX_2 \rightleftarrows R\dot{H}gX + HgX_2 \qquad (V)$$

$$RHgX + R'\dot{H}gX \rightleftarrows R\dot{H}gX + R'HgX \qquad (VI)$$

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