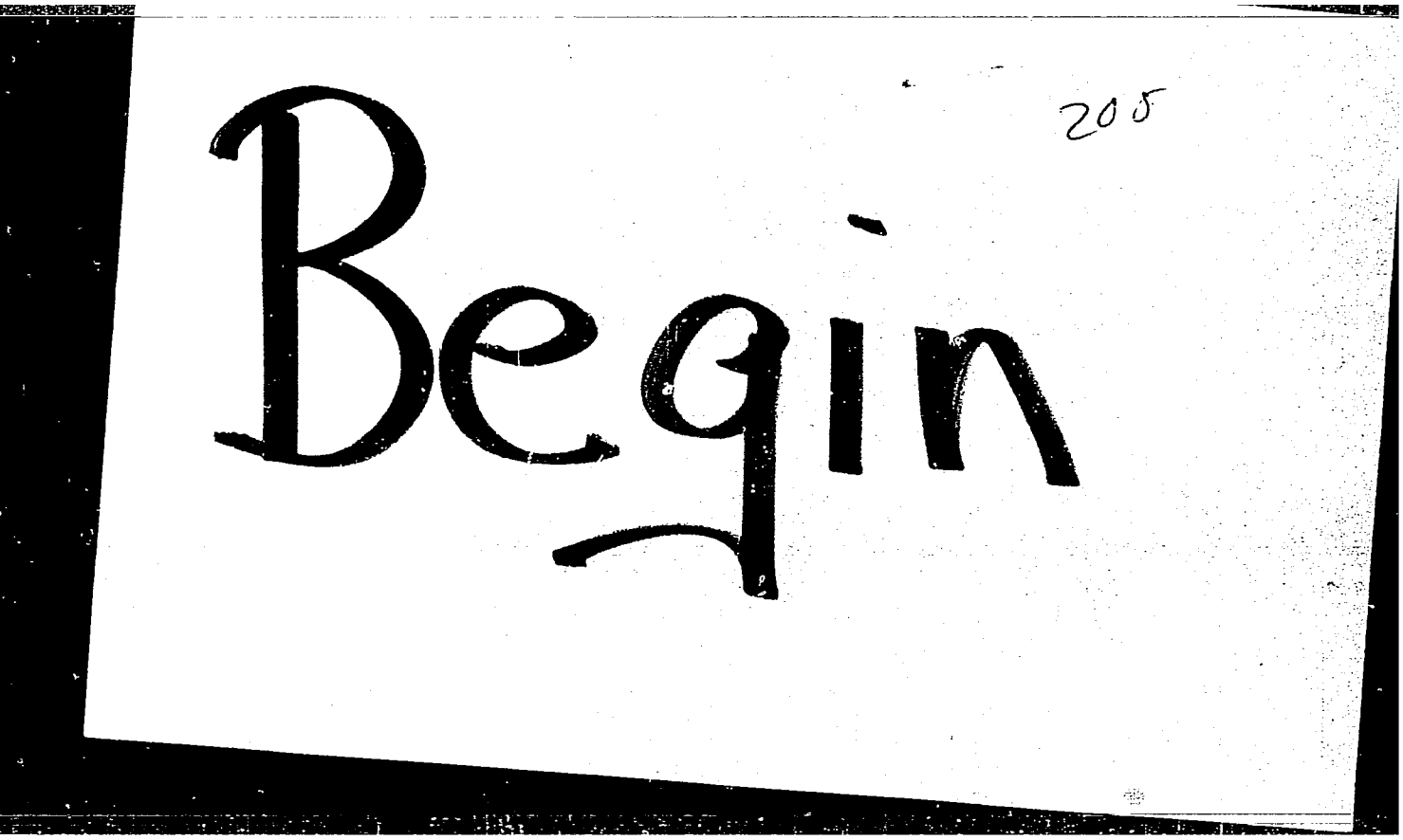
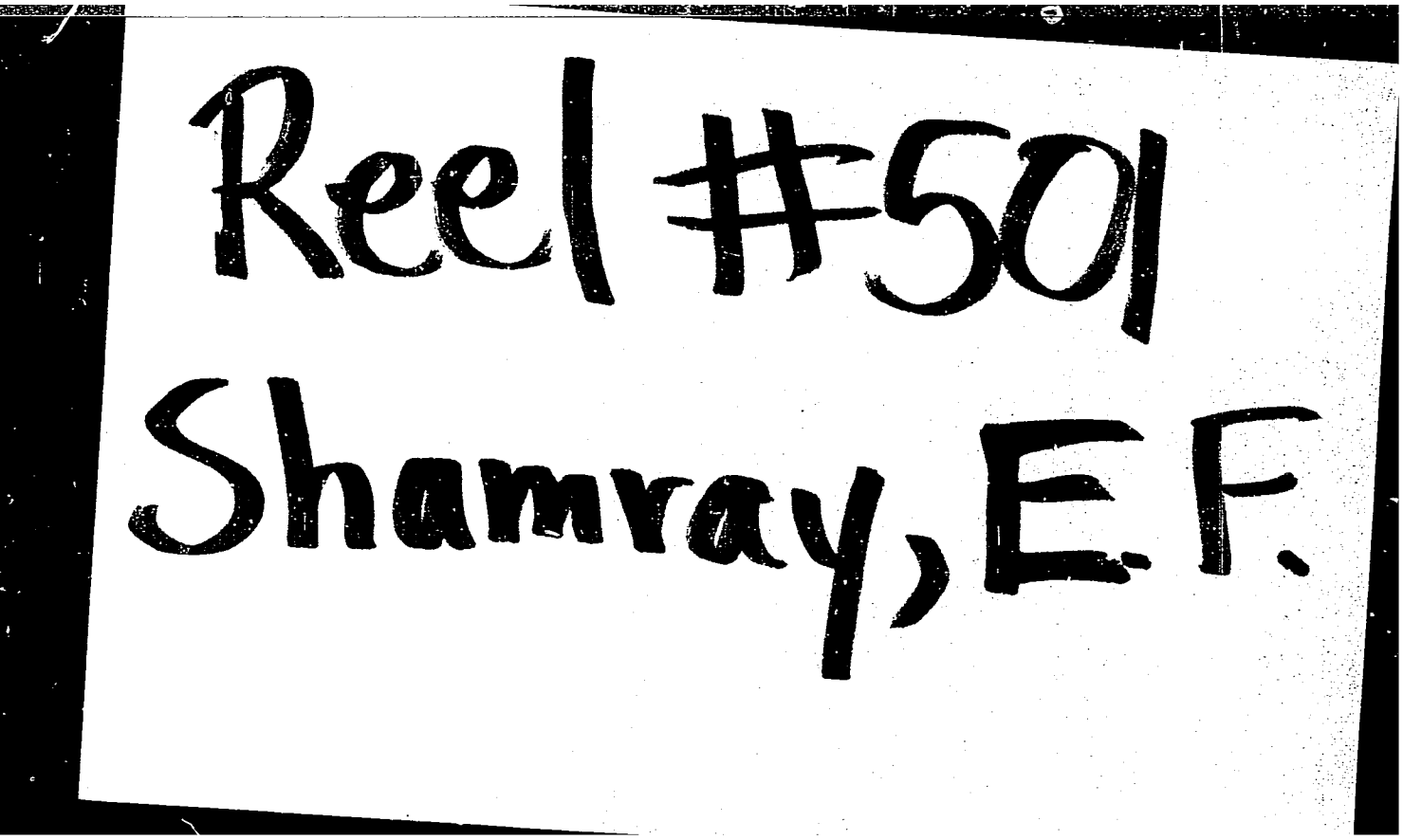
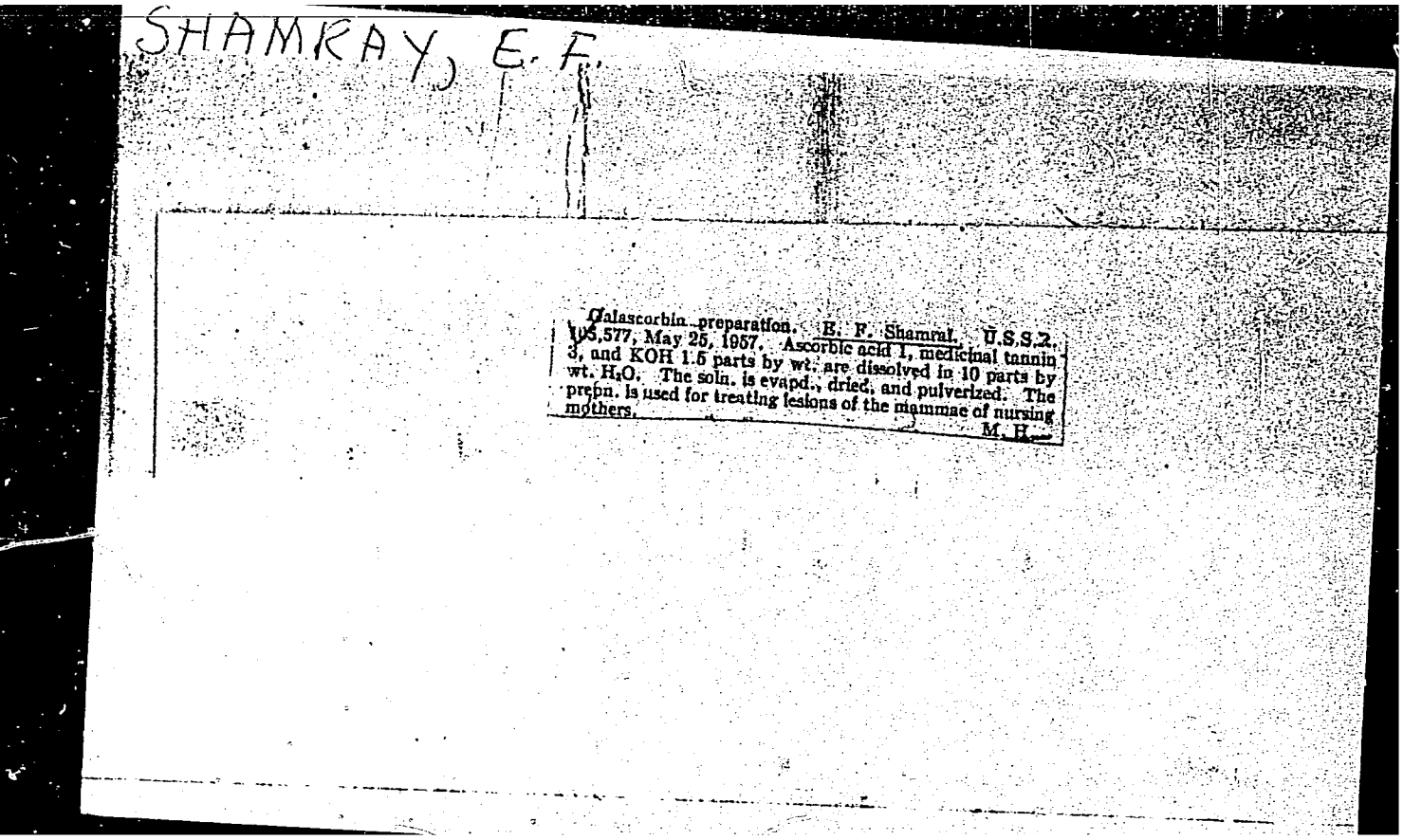






SHAMRAY, E. F.

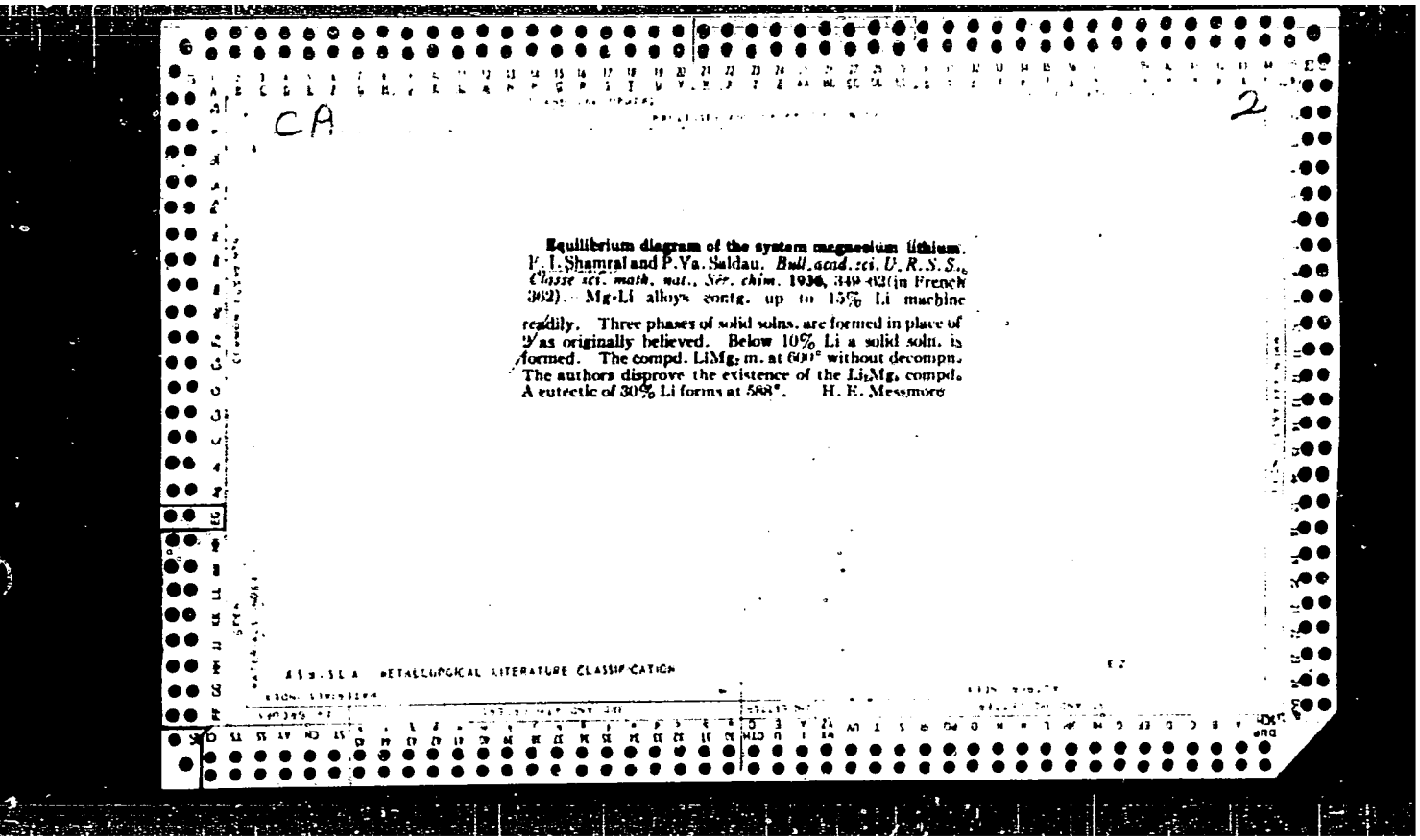
Galascorbin preparation. E. F. Shamrai. U.S.S.R. 105,577, May 25, 1957. Ascorbic acid 1, medicinal tannin 3, and KOH 1.5 parts by wt. are dissolved in 10 parts by wt. H_2O. The soln. is evapd., dried, and pulverized. The prepn. is used for treating lesions of the mammae of nursing mothers.

M. H.

SHAMRAY, E. F.,

"Physiological Relationship between Vitamins C, P, B1 and Adrenocortical Hormones"

Report to be presented at Medical Society of J. E. PURKYNE, Czech, Vitaminological Cong., Prague Czech., 3-6 Jun 63

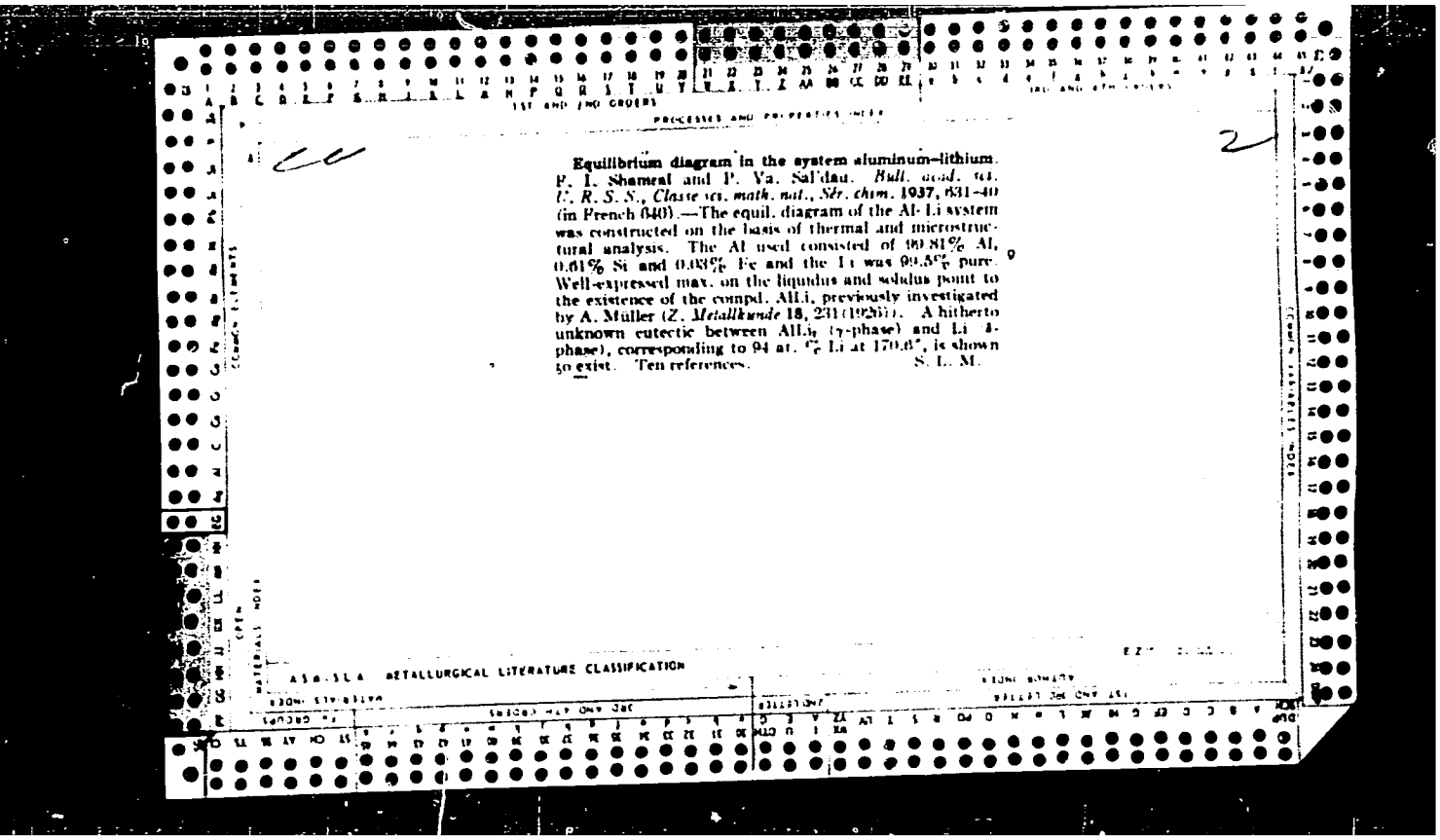


CA

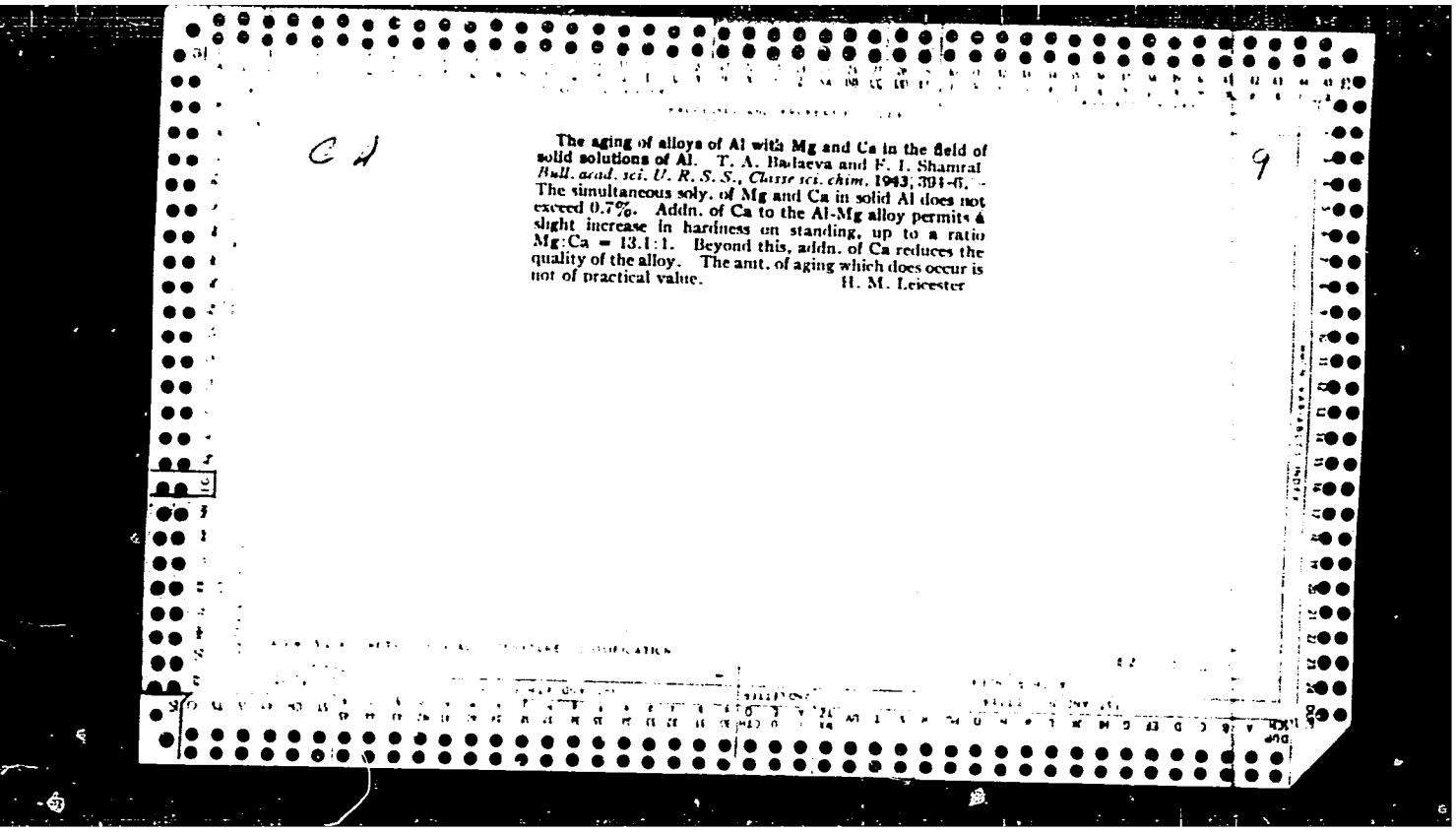
2

Equilibrium diagram of the system magnesium lithium. P. I. Shamrai and P. Va. Saldau. *Bull. acad. sci. U. R. S. S., Classe sci. math. nat., Sér. chim.* **1936**, 349-62 (in French 362). Mg-Li alloys contg. up to 15% Li machine readily. Three phases of solid solns. are formed in place of 2 as originally believed. Below 10% Li a solid soln. is formed. The compd. $LiMg_2$ m. at 601° without decompn. The authors disprove the existence of the Li_2Mg_3 compd. A eutectic of 30% Li forms at 588°. H. E. Messmore

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Equilibrium diagram in the system aluminum–lithium. P. I. Shameal and P. Va. Sal'dau. *Bull. acad. sci. U. R. S. S., Classe sci. math. nat., Sér. chim.* **1937**, 631–40 (in French 640).—The equil. diagram of the Al-Li system was constructed on the basis of thermal and microstructural analysis. The Al used consisted of 99.81% Al, 0.61% Si and 0.03% Fe and the Li was 99.5% pure. Well-expressed max. on the liquidus and solidus point to the existence of the compd. $AlLi$, previously investigated by A. Müller (*Z. Metallkunde* **18**, 231 (1926)). A hitherto unknown eutectic between $AlLi$ (γ-phase) and Li (β-phase), corresponding to 94 at. % Li at 170.6°, is shown to exist. Ten references. S. L. M.

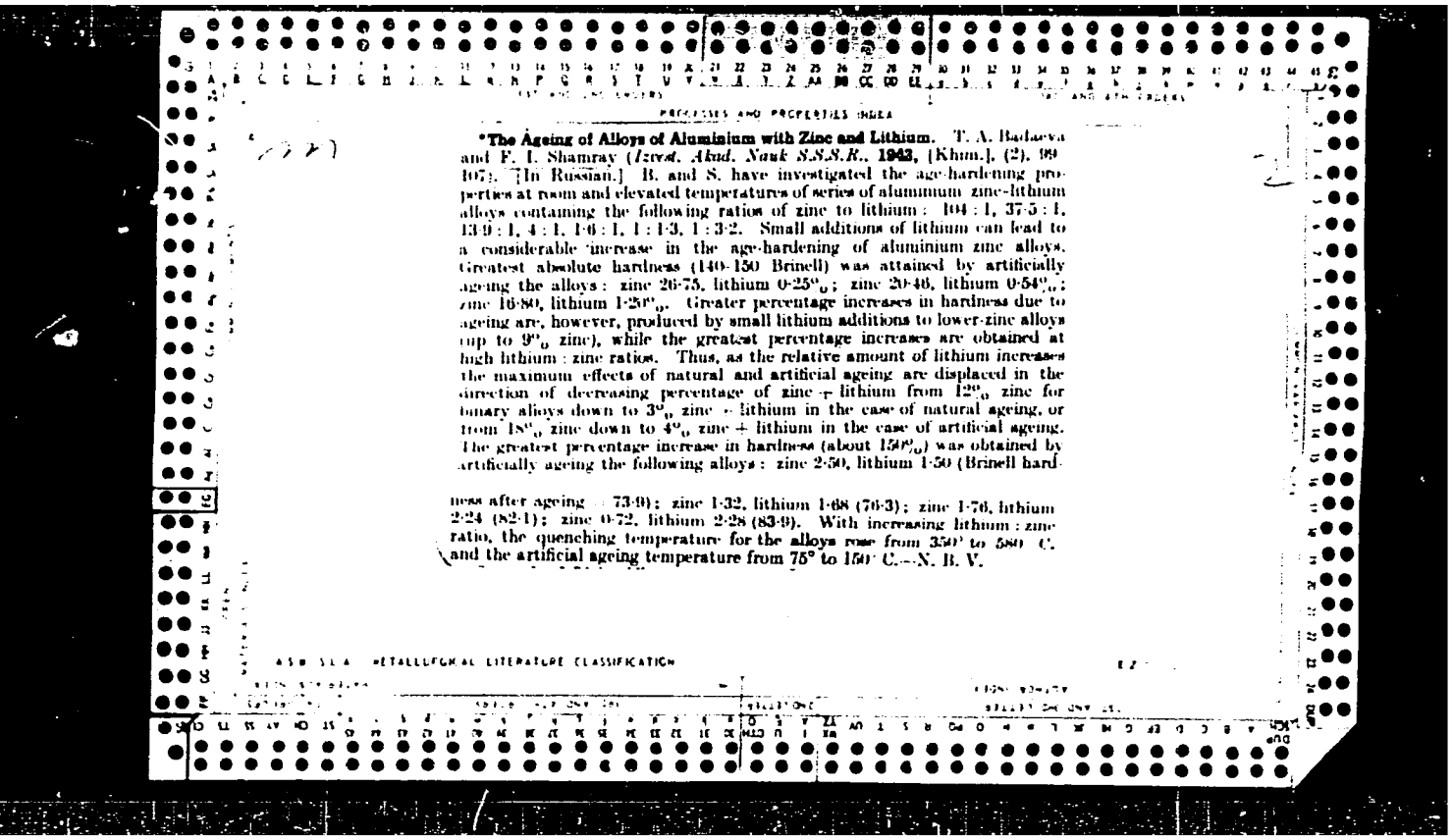


C A

9

The aging of alloys of Al with Mg and Ca in the field of solid solutions of Al. T. A. Baĭlaeva and F. I. Shamraĭ. *Bull. acad. sci. U. R. S. S., Classe sci. chim.* 1943, 391-6. — The simultaneous soly. of Mg and Ca in solid Al does not exceed 0.7%. Addn. of Ca to the Al-Mg alloy permits a slight increase in hardness on standing, up to a ratio Mg:Ca = 13.1:1. Beyond this, addn. of Ca reduces the quality of the alloy. The amt. of aging which does occur is not of practical value.

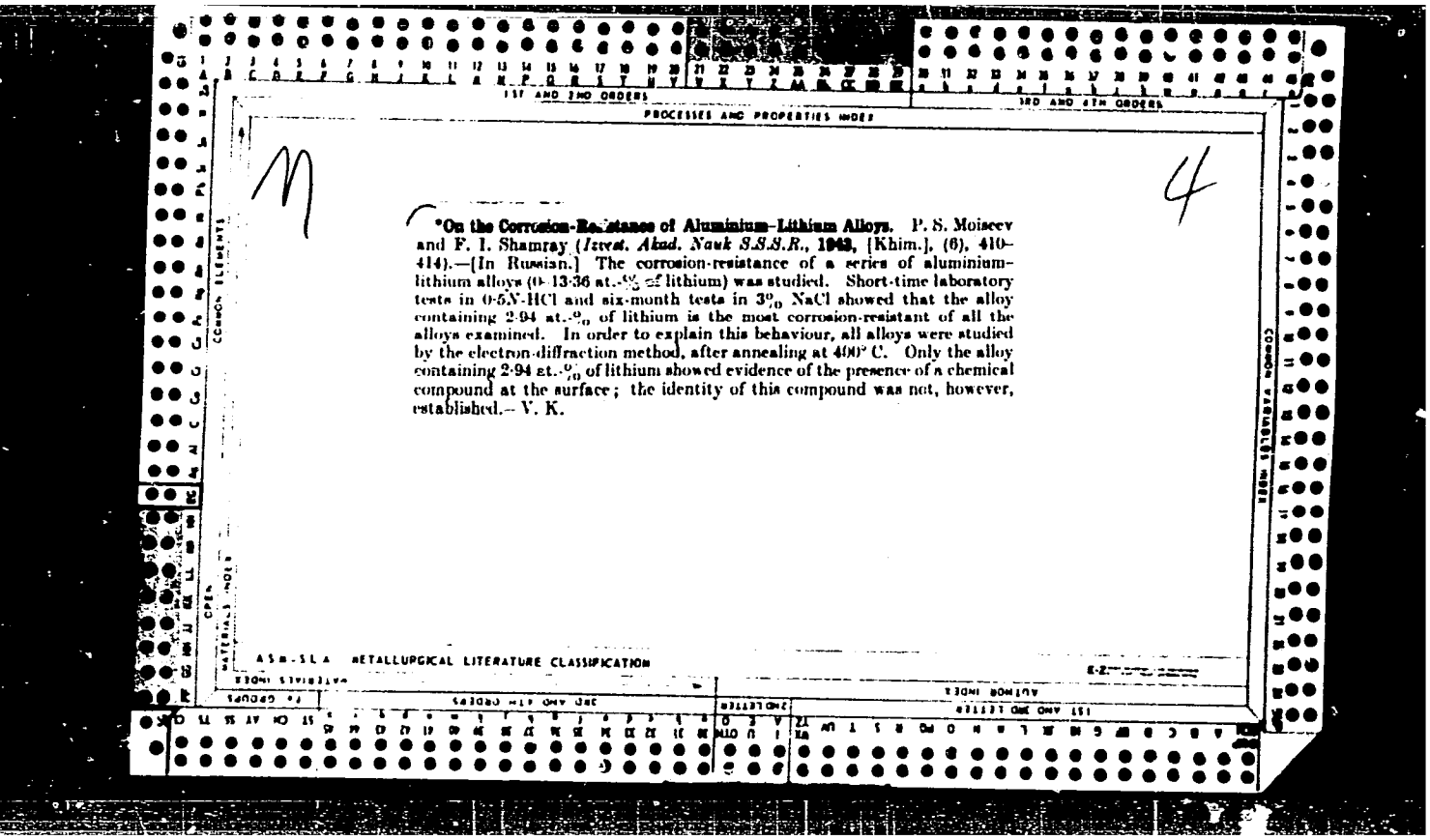
H. M. Leicester



PROCESSES AND PROPERTIES INDEX

***The Ageing of Alloys of Aluminium with Zinc and Lithium.** T. A. Badaeva and F. I. Shamray (*Izvest. Akad. Nauk S.S.S.R.*, **1943**, [Khim.], (2), 99-107). [In Russian.] B. and S. have investigated the age-hardening properties at room and elevated temperatures of series of aluminium zinc-lithium alloys containing the following ratios of zinc to lithium: 104 : 1, 37·5 : 1, 13·9 : 1, 4 : 1, 1·6 : 1, 1 : 1·3, 1 : 3·2. Small additions of lithium can lead to a considerable increase in the age-hardening of aluminium zinc alloys. Greatest absolute hardness (140-150 Brinell) was attained by artificially ageing the alloys: zinc 26·75, lithium 0·25%; zinc 20·46, lithium 0·54%; zinc 16·80, lithium 1·20%. Greater percentage increases in hardness due to ageing are, however, produced by small lithium additions to lower-zinc alloys (up to 9% zinc), while the greatest percentage increases are obtained at high lithium : zinc ratios. Thus, as the relative amount of lithium increases the maximum effects of natural and artificial ageing are displaced in the direction of decreasing percentage of zinc + lithium from 12% zinc for binary alloys down to 3% zinc + lithium in the case of natural ageing, or from 18% zinc down to 4% zinc + lithium in the case of artificial ageing. The greatest percentage increase in hardness (about 150%) was obtained by artificially ageing the following alloys: zinc 2·50, lithium 1·50 (Brinell hardness after ageing = 73·9); zinc 1·32, lithium 1·68 (76·3); zinc 1·76, lithium 2·24 (82·1); zinc 0·72, lithium 2·28 (83·9). With increasing lithium : zinc ratio, the quenching temperature for the alloys rose from 350° to 580° C. and the artificial ageing temperature from 75° to 150° C.—N. B. V.

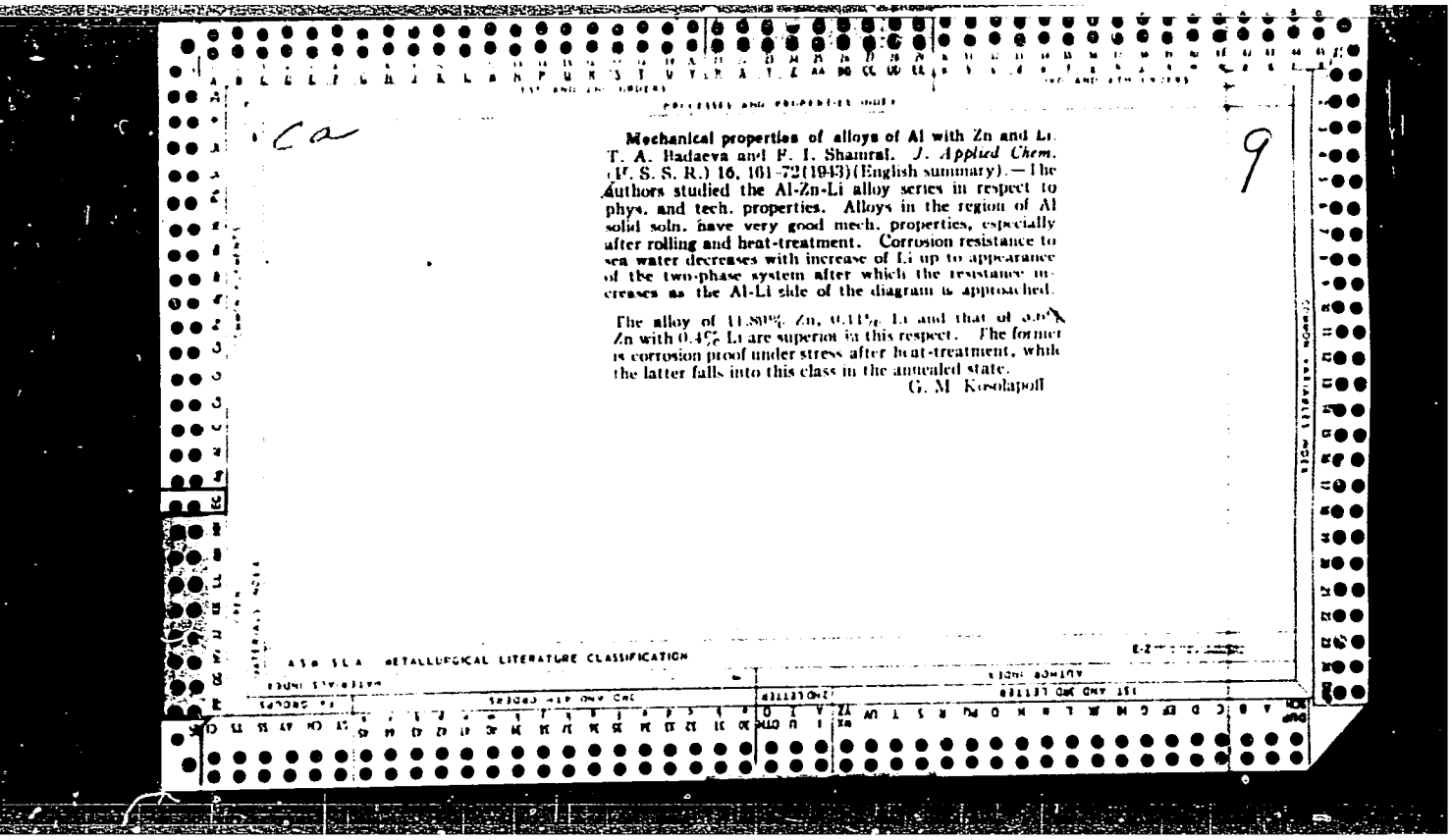
A S M S L A METALLURGICAL LITERATURE CLASSIFICATION



M

4

***On the Corrosion-Resistance of Aluminium–Lithium Alloys.** P. S. Moiseev and F. I. Shamray (*Izvest. Akad. Nauk S.S.S.R.*, **1943**, [Khim.], (6), 410–414).—[In Russian.] The corrosion-resistance of a series of aluminium–lithium alloys (0–13·36 at.-% of lithium) was studied. Short-time laboratory tests in 0·5*N*-HCl and six-month tests in 3% NaCl showed that the alloy containing 2·94 at.-% of lithium is the most corrosion-resistant of all the alloys examined. In order to explain this behaviour, all alloys were studied by the electron-diffraction method, after annealing at 400° C. Only the alloy containing 2·94 at.-% of lithium showed evidence of the presence of a chemical compound at the surface; the identity of this compound was not, however, established.—V. K.



Ca

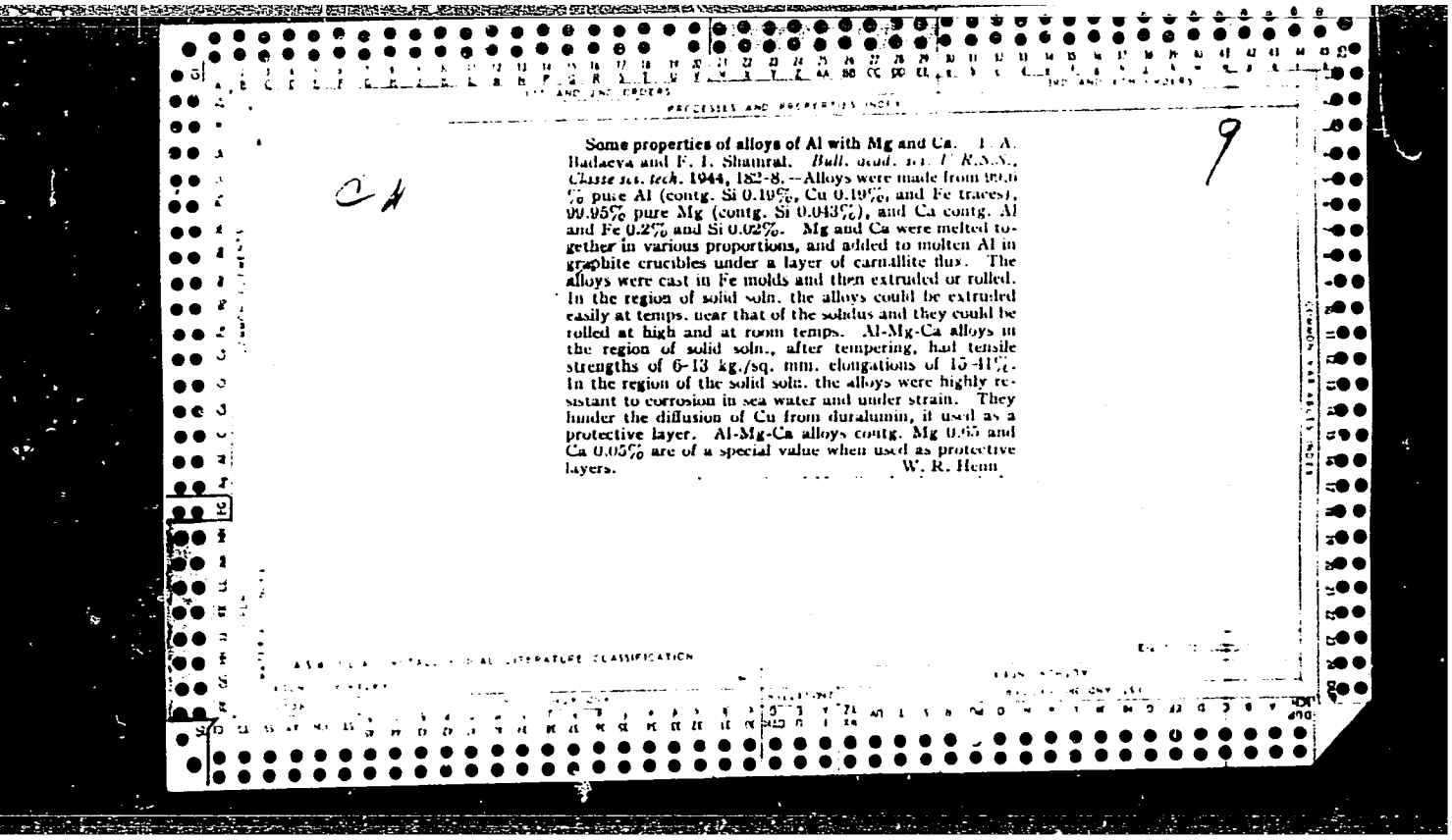
9

Mechanical properties of alloys of Al with Zn and Li. T. A. Badaeva and F. I. Shamrai. *J. Applied Chem.* (U. S. S. R.) 16, 161–72 (1943) (English summary). — The authors studied the Al-Zn-Li alloy series in respect to phys. and tech. properties. Alloys in the region of Al solid soln. have very good mech. properties, especially after rolling and heat-treatment. Corrosion resistance to sea water decreases with increase of Li up to appearance of the two-phase system after which the resistance increases as the Al-Li side of the diagram is approached.

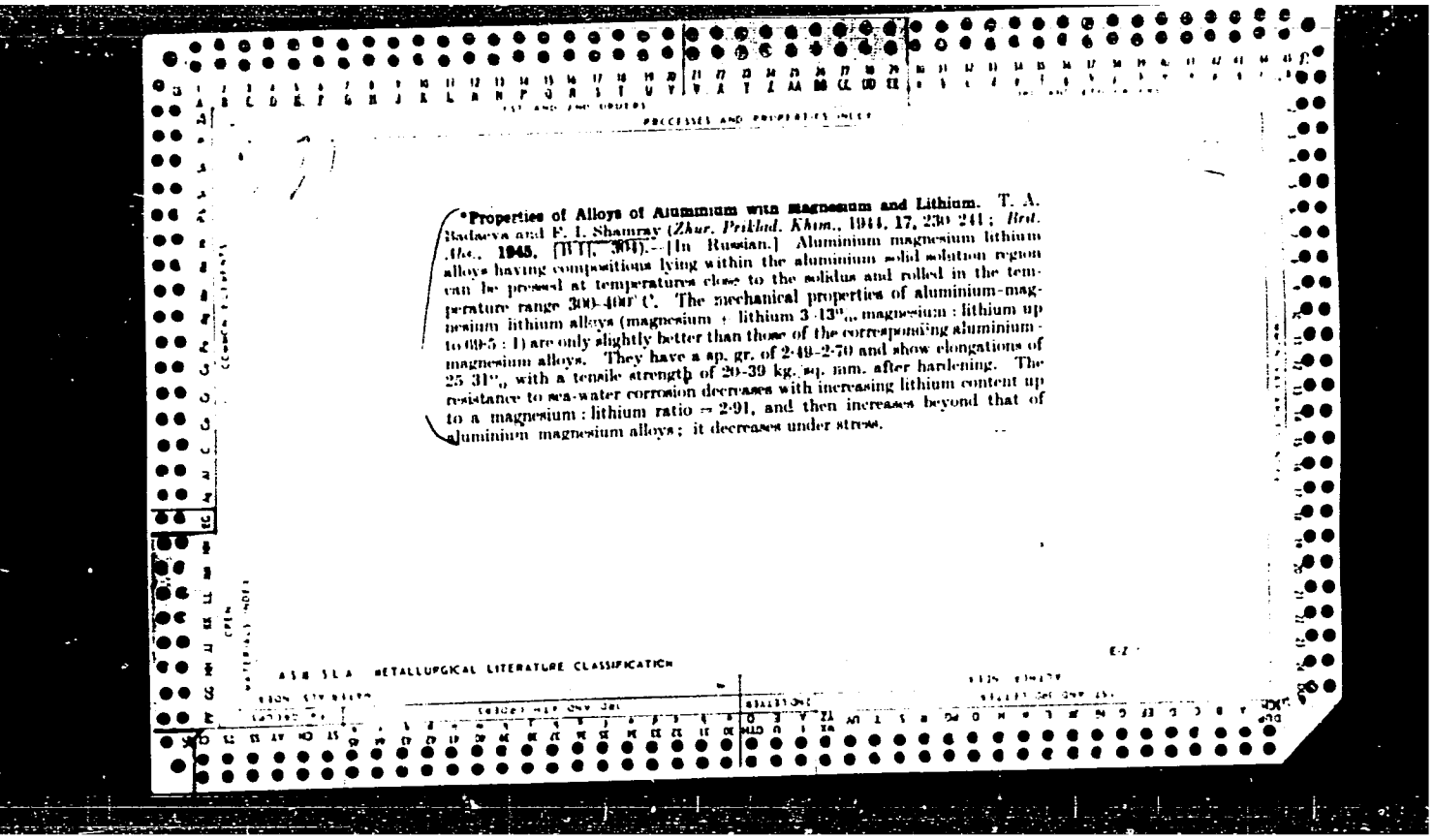
The alloy of 11.80% Zn, 0.11% Li and that of 5.0% Zn with 0.4% Li are superior in this respect. The former is corrosion proof under stress after heat-treatment, while the latter falls into this class in the annealed state.

G. M. Kosolapoff

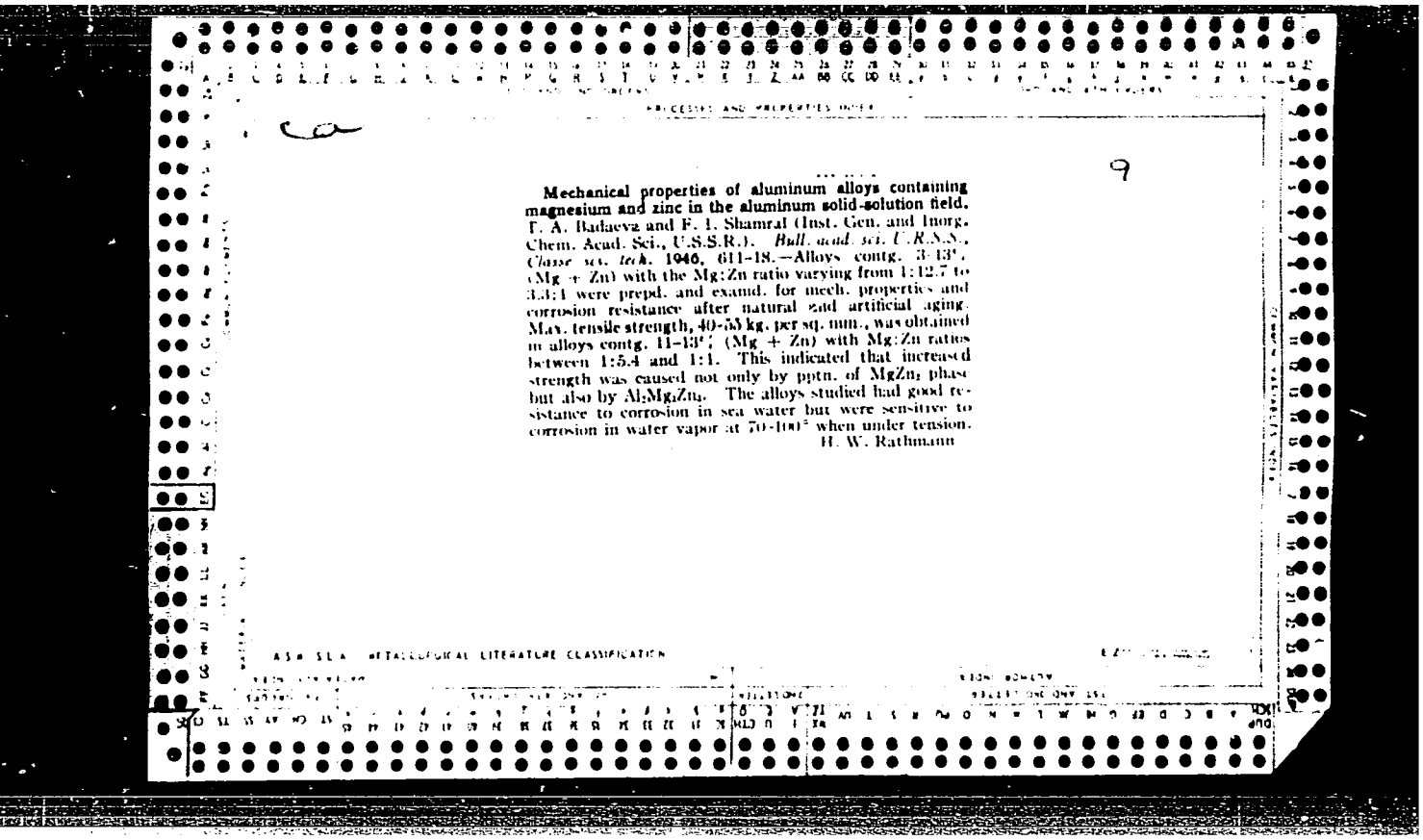
ASTM STA METALLURGICAL LITERATURE CLASSIFICATION



Some properties of alloys of Al with Mg and Ca. I. A. Hadaeva and F. I. Shamrai. *Bull. acad. sci. U.R.S.S., Classe sci. tech.* 1944, 182-8.—Alloys were made from 99.6% pure Al (contg. Si 0.19%, Cu 0.19%, and Fe traces), 99.95% pure Mg (contg. Si 0.043%), and Ca contg. Al and Fe 0.2% and Si 0.02%. Mg and Ca were melted together in various proportions, and added to molten Al in graphite crucibles under a layer of carnallite flux. The alloys were cast in Fe molds and then extruded or rolled. In the region of solid soln. the alloys could be extruded easily at temps. near that of the solidus and they could be rolled at high and at room temps. Al-Mg-Ca alloys in the region of solid soln., after tempering, had tensile strengths of 6-13 kg./sq. mm. elongations of 15-41%. In the region of the solid soln. the alloys were highly resistant to corrosion in sea water and under strain. They hinder the diffusion of Cu from duralumin, if used as a protective layer. Al-Mg-Ca alloys contg. Mg 0.65 and Ca 0.05% are of a special value when used as protective layers. W. R. Henn



***Properties of Alloys of Aluminium with Magnesium and Lithium.** T. A. Radaeva and F. I. Shamray (*Zhur. Prikład. Khim.*, 1944, 17, 230–241; *Brit. Abs.*, **1945**, [III], 301).—[In Russian.] Aluminium magnesium lithium alloys having compositions lying within the aluminium solid solution region can be pressed at temperatures close to the solidus and rolled in the temperature range 300–400° C. The mechanical properties of aluminium-magnesium lithium alloys (magnesium + lithium 3–13%, magnesium : lithium up to 0·8·5 : 1) are only slightly better than those of the corresponding aluminium-magnesium alloys. They have a sp. gr. of 2·49–2·70 and show elongations of 25–31% with a tensile strength of 20–39 kg./sq. mm. after hardening. The resistance to sea-water corrosion decreases with increasing lithium content up to a magnesium : lithium ratio = 2·91, and then increases beyond that of aluminium magnesium alloys; it decreases under stress.



Mechanical properties of aluminum alloys containing magnesium and zinc in the aluminum solid-solution field. T. A. Badaeva and F. I. Shamrai (Inst. Gen. and Inorg. Chem. Acad. Sci., U.S.S.R.). *Bull. acad. sci. U.R.S.S., Classe sci. tech.* 1946, 611–18.—Alloys contg. 3–13% (Mg + Zn) with the Mg:Zn ratio varying from 1:12.7 to 3.3:1 were prepd. and examd. for mech. properties and corrosion resistance after natural and artificial aging. Max. tensile strength, 40–50 kg. per sq. mm., was obtained in alloys contg. 11–13% (Mg + Zn) with Mg:Zn ratios between 1:5.4 and 1:1. This indicated that increased strength was caused not only by pptn. of $MgZn_2$ phase but also by $Al_2Mg_3Zn_3$. The alloys studied had good resistance to corrosion in sea water but were sensitive to corrosion in water vapor at 70–100° when under tension.
H. W. Rathmann

KHANRAY, F. I.

"Ternary Aluminum-Magnesium-Lithium System," Part I. Method of Working with Lithium. Binary Systems, Izvestiya Akademii Nauk SSSR Otdeleniye Khimicheskikh Nauk (1947) No. , pp 605/616

Translation B-7911y, 22 Sep 54

SHAMRAY, F. I.

DA 66T32

USSR/Chemistry - Systems, Ternary Jan/Feb 1948
Chemistry - Thermal Analysis

"Ternary System, Aluminum - Magnesium - Lithium, Part II: Diagrams Showing Composition of Subsidiary Cross Sections," F. I. Shamray, Inst of Gen and Inorg Chem, Acad Sci USSR, 14 pp

"Iz Ak Nauk SSSR, Otdel Khim Nauk" No 1, p 83-94

Subsidiary cross sections of ternary system aluminum-magnesium-lithium studied by methods of thermal analysis and microstructure, and photographs of resultant diagrams included.

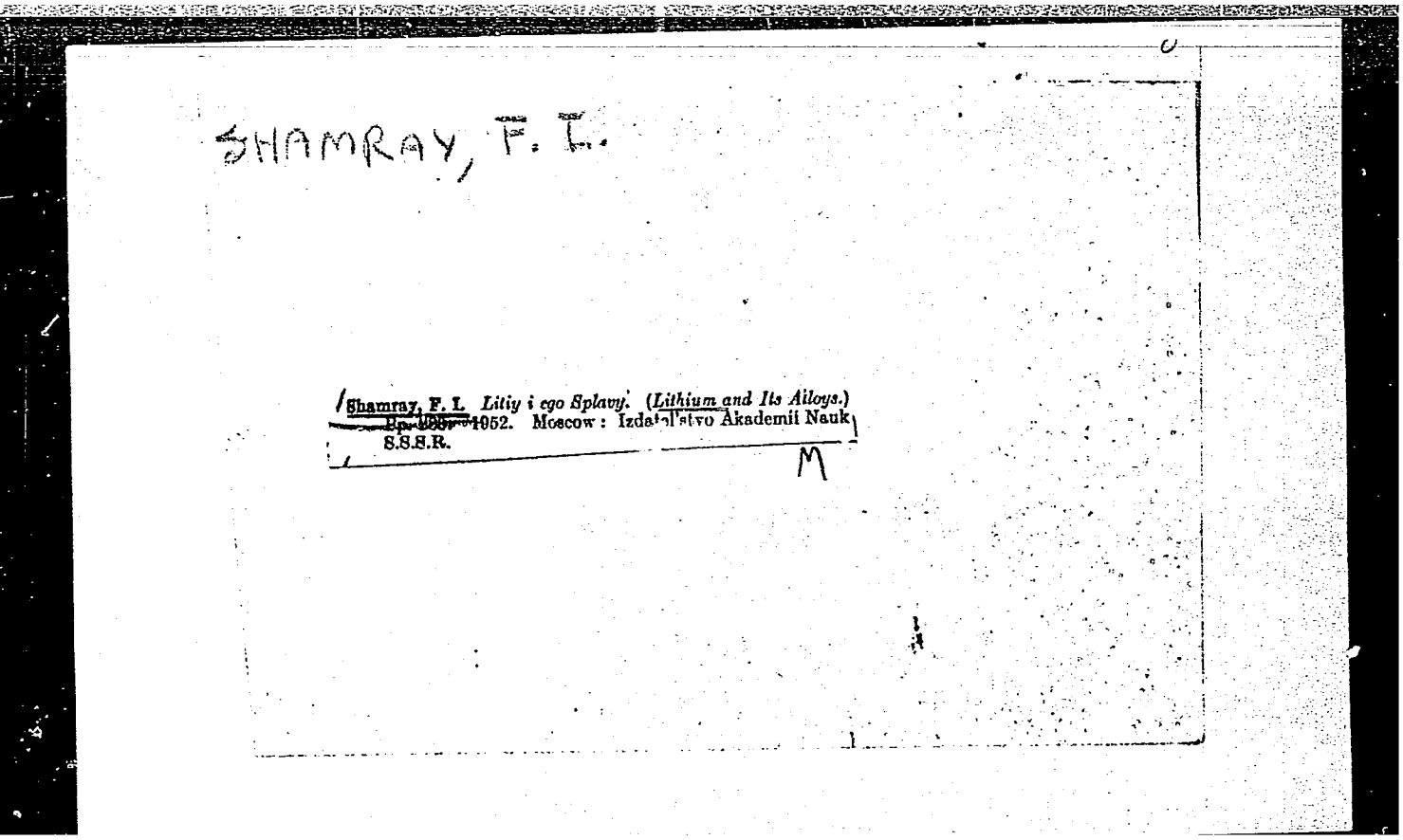
66T32

Evaluation B-7919

CHAMRAY, F. I.

"Ternary Aluminum-Magnesium-Lithium System," Part III. Description of Ternary Al-Mg-Li System. Projection of Liquidus Surface. Isotherms at 400 C and 20 C and Process of Crystallization. Izvestiya Akademii Nauk SSSR Otdeleniye Khimicheskikh Nauk (1948) No. 3, pp 290/301

Translation B-79119, 22 Dec 54



ZELIKMAN, A.N.; SAMSONOV, G.V.; KREYN, O.Ye.; STEPANOV, I.S., inzhener, retsenzent; TANANAYEV, I.V., retsenzent; POGODIN, S.A., professor, doktor, zasluzhennyy deyatel' nauki i tekhniki, retsenzent; ROME, Ye.Ye., professor, doktor, retsenzent; ABRIKOSOV, N.Kh, doktor khimicheskikh nauk, retsenzent; SHAMRAY, F.I., doktor khimicheskikh nauk, retsenzent; MOROZOV, I.S., kandidat khimicheskikh nauk, retsenzent; BOOM, Ye.A., kandidat khimicheskikh nauk, retsenzent; NIKOLAYEV, N.S., kandidat khimicheskikh nauk, retsenzent; ZVORYKIN, A.Ya, kandidat khimicheskikh nauk, retsenzent; BASHILOVA, N.I., kandidat khimicheskikh nauk, retsenzent; VYSOTSKAYA, V.N., redaktor; KAMAYEVA, O.M., redaktor; ATTOPOVICH, M.K., tekhnicheskiy redaktor

[Metallurgy of rare metals] Metallurgiia redkikh metallov. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1954. 414 p. (MLRA 7:9)

1. Chlen-korrespondent Akademii nauk SSSR (for Tananayev)
(Metals, Rare--Metallurgy)

SHAMRAY, F.I.; KRYLOVA, Ye.Ya.

Aging of Mg - Zn - Li system alloys on an α-phase base. Trudy Inst.met. no.3:238-244 '58. (MIRA 12:3)
(Magnesium-zinc-lithium alloys) (Phase rule and equilibrium)
(Metals, Effect of temperature on)

SHAMRAY, F.I.; KRYLOVA, Ye.Ya.

Mutual solubility of zinc and lithium in magnesium, in the solid state at various temperatures. Trudy Inst.met. no.3:231-237 '58. (MIRA 12:3)

(Solutions, Solid) (Systems (Chemistry))

JOURNAL: This volume of the Trudy (Transactions) of the Institut metallurgii imeni A.A. Baykova (Metallurgical Institute im. A.A. Baykov) contains 31 studies on metallurgy, individual metals and alloys, and physicochemical methods of investigation. Some of the studies pertain to the reduction of titanomagnetites, the viscosity and other characteristics of blast furnace slag, dislocation in metals, cracking of metals due to corrosion, simultaneous

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solubility of metals at various temperatures, apparatus for measuring electrical resistance and for determining the melting point of alloys and metals, optical spectral analysis, quantitative determinations by the sublimation method, and aging of alloys. Each study is accompanied by references.

PHASE I BOOK EXPLOITATION SOV/5747

Vsesoyuznoye soveshchaniye po redkim shchelochnym elementam. 1st, Novosibirsk, 1958.

Redkiye shchelochnyye elementy; sbornik dokladov soveshchaniya po khimii, tekhnologii i analiticheskoy khimii redkikh shchelochnykh elementov, 27-31 yanvarya 1958 g. (Rare Alkali Elements; Collection of Reports of the Conference on the Chemistry, Technology, and Analytical Chemistry of Rare Alkali Elements, Held 27-31 January, 1958) Novosibirsk, Izd-vo Sibirskogo otd. AN SSSR, 1960. 99 p. 1000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Sibirskoye otdeleniye. Khimiko-metallurgicheskiy institut.

Resp. Ed.: T. V. Zabolotskiy, Candidate of Technical Sciences; Members of Editorial Board: A. S. Mikulinskiy, Professor, Doctor of Technical Sciences, A. T. Logvinenko, Candidate of Technical Sciences, F. F. Barkova, Candidate of Chemical Sciences; Ed.: V. M. Bushuyeva; Tech. Ed.: A. F. Mazurova.

Card 1/5

PURPOSE : This book is intended for chemical engineers and technicians working in metallurgical and mining operations and related enterprises.

COVERAGE: The collection contains reports which deal with the physical and analytical chemistry of rare alkali elements and their compounds and their reactions with mineral ores and salts. Methods of extraction and modern analytical techniques and equipment are also discussed. No personalities are mentioned. References accompany individual articles.

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Urazov, G. G. [Deceased], V. V. Plyushchev, Yu. P. Simanov, and I. V. Shakhno [Moskovskiy institut tonkoy khimicheskoy tekhnologii im. (M.V.) Lomonosova - Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov]. High-Temperature Modification of Spodumene 5

Plyushchev, V. Ye. [Moscow Institute of Fine Chemical Technology

imeni Lomonosov]. Physicochemical Investigation of the Process of the Interaction of Spondumene With Sulfates of Alkali Metals 15

Shamray, F. I. and T. F. Fedorov [Institut metallurgii im. Baykov AN SSSR - Institute of Metallurgy imeni Raykov AS USSR]. Thermodynamics of the Vacuum-Thermal Method of Obtaining Lithium 25

Klinayev, V. M. [Gosudarstvennyy institut redkikh i malykh metallov-State Institute of Rare and Minor Metals]. The Interaction of Lithium With Nitrogen 31

Petrov, Ye. S. [Sibirskoye otdeleniye AN SSSR - Siberian Division of the AS USSR]. Some Relationships in the Interaction of Salts of Alkali Metals With Silica and Alumina and Properties of the Products Formed 43

Logvinenko, A. T. and G. D. Uryvayeva [Khimiko-metallurgicheskiy institut Sibirskogo otdeleniya AN SSSR - Institute of Chemical Metallurgy of the Siberian Department of the Academy

of Sciences USSR]. Binding Building Material From Industrial Wastes 51

Poluektov, N. S., and M. P. Nikonova. [Institut obshchey i neorganicheskoy khimii AN Ukrainskoy SSR - Institute of General and Inorganic Chemistry of the Academy of Sciences Ukrainskaya SSR]. Use of Photometry-of-Flame Methods in Analyzing Ores and Salts of Rare Alkali Metals 63

Zak, B. M. [Irkutskiy institut redkikh metallov - Irkutsk Institute of Rare Metals]. Methods of Determining Rare Elements 71

Zakhariya, N. F., and Ts. A. Leyderman. [Institut obshchey i neorganicheskoy khimii AN SSSR - Institute of General and Inorganic Chemistry of the Academy of Sciences USSR]. Methods of Quantitative Spectral Determination of Rare Alkali Metals in Ores and Evaluation of the Impurity Content in Ore Preparations 75

Kozlov, A. S. [Khimicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta - Chemistry Department of Moscow State University]. A New (Turbidimetric) Method of Determining Small Amounts of Cesium With the Aid of Cesium and Cadmium Ferrocyanides 79

Galkina, N. K., and M. M. Senyavin [Institut geokhimii i analiticheskoy khimii AN SSSR - Institute of Geochemistry and Analytical Chemistry of the Academy of Sciences USSR] Chromatographic Separation of Mixtures of Alkali Metals 87

Zabrodin, N. I., A. A. Nechayeva, and T. V. Korobochkina [Vsesoyuznyy nauchno-issledovatel'skiy institut galurgii - All-Union Scientific Research Institute of Halurgy]. The Content of Rare Alkali Elements in Natural Salts of the Soviet Union and Prospects of Its Utilization in Industry 97

AVAILABLE: Library of Congress (QD 172.A4V8)

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11-27-61

67835

18.1200 SOV/180-59-6-13/31

AUTHORS: Dokukina, N.V., Polyakova, M.D., and Shamray, F.I. (Moscow)

TITLE: Several Properties of the WSi_2 - $NbSi_2$ System Alloys

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1959, Nr 6, pp 102-109 (USSR)

ABSTRACT: Alloys were prepared from powders containing 99.2% Nb, 99.7% W and 99.13% Si. Mixtures containing 23-37% Si, 1.2-76% W and 0.4-62% Nb were prepared by hot pressing, followed by arc melting. The final compositions are given in Table 1. Microsections were prepared in the cast state and after 360 hours at 1000 °C followed by a slow cool. Alloys containing less than 59.2% $NbSi_2$ were two phased and greater than 59.2% $NbSi_2$ single phased. The primary crystals of alloys on the WSi_2 side had a long columnar-type structure, with thin films of the second phase in the grain boundary. In the alloys lying on the $NbSi_2$ side, the primary crystals were more rounded. The alloys containing 29.3% $NbSi_2$ had approximately equal amounts of both phases. The heat treatment coarsened the structure of the alloys and decreased the quantity of second phase in alloys

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Several Properties of the WSi_2 - $NbSi_2$ System Alloys

containing up to 1.9% $NbSi_2$. The microhardness of the WSi phase was 1255-1280 kg/mm^2. The microhardness of 100% $NbSi_2$ was 1038 and fell to 780 kg/mm^2 with a decrease to 71% $NbSi_2$ in the alloy. Further decreases in $NbSi_2$ content led to an increase in microhardness. The Vickers hardness increased from 723 to 840 kg/mm^2 with increase in $NbSi_2$ content from 0.7 to 65%. Further increases in $NbSi_2$ content gave a curve similar to that for microhardness. X-ray investigations showed only $NbSi_2$ content. The lattice parameter decreased with increase of WSi_2 from 1.6 to 28.7%. The porosity of the alloys varied from 1 to 7%. The electrical resistance was found and calculated for zero porosity. The resistance increases from 17.4 to 148.9 micro ohm/cm with increase in $NbSi_2$ content from 0 to 48.5%. It then fell to 23.2 micro ohm/cm in the 98.4% $NbSi_2$ alloy. The high temperature strength at 1100 and 1200 °C in air gave poor results. The oxide layer formed on the alloys is porous and does not protect them from further oxidation. Table 4 gives the melting points of various alloys. An equilibrium diagram was drawn from the above results

Card 2/3

Several Properties of the WSi_2 - $NbSi_2$ System

(Fig 7). The WSi_2 - $NbSi_2$ section of the W - Si - Nb ternary system is pseudobinary. There is a wide range of solid solutions of WSi_2 in $NbSi_2$, and eutectic at about 29% $NbSi_2$.

There are 7 figures, 4 tables and 15 references, of which 7 are German, 4 English, 3 Soviet and 1 French. 4

SUBMITTED: July 20, 1959

Card 3/3

S/081/62/000/004/003/087
B149/B101

AUTHORS: Shamray F. I., Fedorov T. F.

TITLE: The thermodynamics of the vacuum-thermal method of preparing lithium

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 4, 1962, 51, abstract 4B337 (Sb. "Redk. shchelochn. elementy". Novosibirsk, Sib. otd. AN SSSR, 1960, 25-29)

TEXT: The effusion method was used to study the equilibria in silico-thermal reduction of lithium oxide in the presence and in the absence of calcium oxide and in alumo-thermal reduction of lithium aluminate. Mineralogical analysis of briquet scraps showed that the following reactions took place during the reduction:

$$2Li_2O + Si + 2CaO = 4Li(gas) + Ca_2SiO_4 \quad (1);$$

$$4Li_2O + Si = 4Li(gas) + Li_4SiO_4 \quad (2);$$

Card 1/2

$$3Li_2O \cdot Al_2O_3 + 2Al = 6Li(gas) + 4Al_2O_3 \quad (3).$$

The experimental data were used to calculate the equations for the dependence of the isobar potential on the temperature for reactions (1), (2), and (3).

$$\Delta Z_T = -209900 + 70.8T;\ 167000 - 115.6T;\ 312820 - 129.75\ T.$$

The values of the isobar potentials of the entropy and enthalpy for the formation of lithium oxide, lithium orthosilicate and lithium aluminate were calculated from these data. [Abstracter's note: Complete translation.]

84-637

18.1245

S/509/60/000/004/017/024
E021/E106

AUTHORS: Shamray, F.I., and Krylova, Ye.Ya.

TITLE: The Mutual Solubility of Zinc and Lithium in the β-Phase of the Mg—Zn—Li System in the Solid State

PERIODICAL: Akademiya nauk SSSR. Institut metallurgii. Trudy, No. 4, 1960. Metallurgiya, metallovedeniye, fiziko-khimicheskiye metody issledovaniya, pp.200-207

TEXT: The solubility of zinc and lithium was investigated in five sections:

I	Mg:Li = 71:29	Zn:Li = 4:1
II	Mg:Li = 71:29	Zn:Li = 5:2
III	Mg:Li = 69:31	Zn:Li = 1:1
IV	Mg:Li = 67:33	Zn:Li = 2:3
V	Mg:Li = 67:33	Zn:Li = 17:83

98.95% Li, 99.99% Zn and 99.91% Mg were used. The main method of investigation was by microstructural analysis. In section I, the limiting solubility in the β-phase by microstructural analysis corresponded to 375 °C and 16.8 weight % zinc. At 330 °C, 13.5% zinc goes into solution, at 300 °C about 11%.

Card 1/ 2

The Mutual Solubility of Zinc and Lithium in the β-phase of the Mg---Zn—Li System in the Solid State

and at 250 °C about 7%. The hardness increased with increase in zinc up to 16.8% and then remained constant.
In section II the limiting solubility from microstructural analysis corresponded to 370 °C and 17% zinc. The solubility at 350, 330, 290, 250 and 150 °C was 16, 14, 10.5, 7.5 and 2.4 weight % zinc respectively. The hardness of alloys in this section increased to 16.8% zinc and then remained constant.
In section III microstructural analysis showed that the limiting solubility corresponded to 380 °C and 19 weight % zinc. At 350, 250 and 150 °C, the solubility was 17, 6.7 and 2% zinc, respectively. The hardness increased up to 18.4% zinc.
In section IV the microstructural analysis showed that the limiting solubility corresponded to 385 °C and 19.27 weight % zinc. The solubility at 350 and 300 °C was about 17 and 15% zinc.
In section V the limiting solubility corresponded to 320 °C and 18 weight % zinc.
There are 2 figures and 2 tables.
Card 2/2

69658

18.1245

S/509/60/000/004/018/024
E021/E106

AUTHORS: Shamray, F.I., and Krylova, Ye.Ya.

TITLE: Ageing of Alloys of the β-Phase in the Mg—Zn—Li System

PERIODICAL: Akademiya nauk SSSR. Institut metallurgii. Trudy, No. 4, 1960. Metallurgiya, metallovedeniye, fiziko-khimicheskiye metody issledovaniya. pp.208-213

TEXT: Ageing was studied at 125, 100, 75°C and room temperature, using the following sections.

I	Mg:Li = 71.29	Zn:Li = 4:1
II	Mg:Li = 71:29	Zn:Li = 3:2
III	Mg:Li = 69:31	Zn:Li = 1:1
IV	Mg:Li = 67:33	Zn:Li = 2:3
V	Mg:Li = 67:33	Zn:Li = 17:83

At 125 °C there was a particularly marked increase in the hardness of the alloy from section I containing 16.6% zinc and 9.07% lithium. After 3.15 hours an increase of 15 units on the Rockwell C scale was observed. Alloys from this section containing 3.31, 6.49 or 9.53% zinc aged to a lesser degree and more slowly.

Card 1/3

Ageing of Alloys of the β-Phase in the Mg—Zn—Li System

A similar ageing process was observed in sections II, III and IV. In section II a maximum increase in hardness was observed with the alloy containing 15.43% zinc and 9.84% lithium after 3.13 hours. At 100 °C all the alloys were susceptible to ageing. The character of ageing was similar to that observed at 125 °C. Alloys from sections I and III aged to a greater degree than the others. In section I, the maximum increase in hardness was 9 units for the alloy containing 12.47% zinc and 9.41% lithium after one hour. At 70 °C all the alloys aged to a lesser degree than at the higher temperatures. The alloys of the last two sections gave a maximum increase of hardness of 4 units. Natural ageing at room temperature was carried out for 30 days. Alloys of all the sections aged very slowly and the maximum increase in hardness was 4 - 7 units after 3 - 5 days. Ageing practically ceased after 10 days. The corrosion resistance of the alloys was also tested by immersion in a 3% solution of common salt. Alloys of sections I and II containing 12.67 and 16.6% zinc had low resistance (weight loss of 41 and 17.26 mg/cm^2

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E021/E106

Ageing of Alloys of the β-Phase in the Mg—Zn—Li System

per day). Alloys of sections V and III containing 3.31, 6.49 and 6.67% zinc were relatively resistant (1.84, 4.15 and 6.91 mg/cm^2 weight loss per day), but had lower hardness figures. Alloys of section IV containing 10.08% zinc had good resistance (6.31 mg/cm^2 per day) and medium hardness. The lithium used in the investigations contained 0.5% sodium and 0.2% potassium which may have affected the properties.
There are 1 figure and 1 table.

Card 3/3

KALININA, A.A.; SHAMRAY, F.I.

Physicochemical investigation of the section SiC - B_4C of the system Si - B - C. Trudy Inst.met. no.5:151-155 '60. (MIRA 13:6)
(Silicon carbide)
(Boron carbide)
(Powder metallurgy)

FEDOROV, T.F.; SHAMRAY, F.I.

Reaction equilibrium of lithium oxide reduction by the thermodynamics of silicon in presence of calcium oxide. Trudy Inst.met. no.5: 162-165 '60. (MIRA 13:6)

(Lithium)
(Silicon)
(Vacuum metallurgy)

86697
S/180/60/000/006/007/030
18.3000 1087, 1454, 1521 E193/E335

AUTHORS: Fedorov, T.F. and Shamray, F.I.

TITLE: Refining of Metallic Lithium

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1960, No. 6, pp. 56 - 60

TEXT: Having derived an expression describing the variation of the composition of the liquid and vapour phases of an ideal liquid solution during the distillation process, the present authors used it to construct theoretical curves which, for the case of lithium containing its chief impurities, illustrate how the composition of the residue and condensate should vary in relation to the ratio between the weight of the condensate (and residue) and the initial weight of the metal distilled. These theoretical predictions were checked experimentally on lithium containing 0.6% sodium and 0.04% potassium. In the first series of experiments simple distillation was studied under various conditions of temperature, partial pressure of sodium and vacuum employed. The results were disappointing in that,

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S/180/60/000/006/007/030
E193/E335

Refining of Metallic Lithium

irrespective of the conditions employed, it was found impossible to reduce the content of the impurities below 0.1%. In the next series of experiments, distillation with fractional condensation in a horizontal column was employed. Vacuum of 5 to 6 x 10^{-4} mm Hg was used and the distillation process was carried out at 700-800 °C. Under these conditions the fraction condensed at 300-400 °C contained less than 0.01% sodium and potassium. However, no reduction in the manganese content was attained by this method. Best results were obtained when distillation was carried out in a bubble-cap plate fractionating column. This method reduced the impurity content in the starting material to less than 0.01%. There are 3 figures, 7 tables and 7 references: 6 Soviet and 1 non-Soviet.

SUBMITTED: April 1, 1960

Card 2/2

5.2400(A)

5(2)

68120
SOV/78-5-1-39/45

AUTHORS: Fedorov, T. F., Shamray, F. I., Nisel'son, L. A., Petrusevich, I. V.

TITLE: On the Production of Elementary Boron

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol 5, Nr 1, pp 226-228 (USSR)

ABSTRACT: After giving a survey of publications with reference to a paper by F. I. Shamray and V. I. Mikheyev (Ref 6), the authors mention that commercial boron has a purity of about 90%. Boron with a higher degree of purity (99%) is produced only in small quantities. The authors attempted to obtain pure boron by reducing BCl_3 with Zn. Thermodynamic investigation of this reaction (Table, Fig 1) indicates that it may be carried out within a wide temperature range. As boron chloride reacts slowly even with liquid zinc, Zn was evaporated in a device schematically represented in figure 2. The reaction took place in a quartz tube heated to 1000°. It was stopped as soon as the tube was completely filled with the reaction products (Figs 3,4). The latter were decomposed into B, Zn, and $ZnCl_2$ in quartz

Card 1/2

On the Production of Elementary Boron

ampoules by distillation at 1000°. The boron, the purity of which is not given, contained impurities of Fe, Mn, Zn, Al, and Si. There are 4 figures, 1 table, and 16 references, 3 of which are Soviet.

SUBMITTED: May 31, 1959

Card 2/2

83126

S/078/60/005/009/009/017
B015/B064

18.1200

AUTHORS: Cherkashina, N. V., Nedumov, N. A., Shamray, F. I.

TITLE: Some Data on Alloys of the System Titanium - Chromium - Boron

PERIODICAL Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No 9, pp. 2025-2031

TEXT: The phase diagram of the ternary system Ti-Cr-B was investigated; first, the cross sections $Cr-Ti_2B$ and $Cr-TiB_2$ were studied (Tables 1, 2, composition of the mixtures). The samples were produced by mixing and melting the powders and were investigated both metallographically and with respect to microhardness (on the ПМТ-3 (PMT-3) device), while the alloys $Cr-Ti_2B$ were thermally analyzed with a device described in Refs. 10, 11. Phase transformations were recorded by a differential thermometer (Fig. 1), while temperature was optically measured in an electric furnace (Fig. 2). Figs. 3 and 4 show the microstructure photographs of some alloys, the data of the microhardness of the phases are given in Tables 3 and 4. At 20 at%

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83126

Some Data on Alloys of the System Titanium - Chromium - Boron

S/078/60/005/009/009/017
B015/B064

Ti_2B or TiB_2 a eutectic occurs in the structure of the alloy. An increase of the Ti_2B or TiB_2 content to more than 20 at% leads to the formation of an excessive boride phase whose microhardness is between 1300 and 2070 kg/mm^2 depending on the boron content. The results of thermal analysis show that apparently a ternary eutectic occurs in the system Ti-Cr-B whose formation temperature lies somewhat over 1300°C. Its composition could not be stated; it is, however, very likely to lie in the range of 70 at% Cr and 30 at% TiB_2. There are 6 figures, 4 tables, and 11 references: 3 Soviet, 5 US, 1 German, 1 British, and 1 Danish.

SUBMITTED: June 20, 1959

Card 2/2

DOKUKINA, N.V.; SHAMRAY, F.I.

Phase equilibrium in the system W - Nb - Si and certain alloy properties. Porosh. met. 2 no.6:32-41 N-D '62. (MIRA 15:12)

1. Institut metallurgii imeni A.A.Baykova AN SSSR.
(Tungsten-niobium-silicon alloys—Metallography)
(Phase rule and equilibrium)

FEDOROV, T.F.; NEDUMOV, N.A.; POLYAKOVA, M.D.; SHAMRAY, F.I.

Data on the ternary system titanium - boron - chromium. Porosh. met. 2 no.6:42-49 N-D '62. (MIRA 15:12)

1. Institut metallurgii imeni Baykova AN SSSR.
(Titanium-boron-chromium alloys--Metallography)
(Powder metallurgy)

S/080/62/035/005/002/015
D204/D307

AUTHORS: Nisel'son, L. A., Petrusevich, I. V., Shamray, F. I. and Fedorov, T. F.

TITLE: Preparation of elemental boron by reduction of its halides with hydrogen

PERIODICAL: Zhurnal prikladnoy khimii, v. 35, 5 1962, 984-989

TEXT: The present work was carried out to supplement existing data on the preparation of elemental B. Purified BCl_3, BBr_3, BI_3 and H_2 were used under anhydrous conditions. The reactor consisted of a quartz tube enclosing a pair of Mo electrodes connected by a Ta wire 100 x 8 x 0.10 mm, on which the B was deposited. Temperatures were varied from 800 to 1400°C and the molar $(BX_3):(H_2)$ ratios, (n), were made 1:3-25. The interactions took place over 1.7 - 8 hours. The rate of B deposition increased rapidly with temperature and tended to be higher for lower n. For BBr_3/H_2 mixtures the

yields of B increased linearly from ~3% at 800°C to ~50% at 1300°C, almost independently of n. For a given temperature the rate of B deposition increased in the order $BCl_3 < BBr_3 < BI_3$. Between 800 and 900°C brown, friable deposits of amorphous B were obtained for all n studied, from BBr_3/H_2 mixtures. At higher temperatures and n, black, "graphite" B was produced, and "metallic" crystalline boron formed at and above 1200°C with 3 or less moles H_2/mole BBr_3. Similar regions of formation of each form of B are believed to exist for BCl_3-H_2 and BI_3-H_2 systems. There are 6 figures and 1 table.

SUBMITTED: January 25, 1961

Card 2/2

DOKUKINA, N.V.; SHAMRAY, F.I.

Investigating the ternary system tungsten - niobium - silicon.
Trudy Inst. met. no.12:132-142 '63. (MIRA 16:6)

(Tungsten-niobium-silicon alloys--Metallography)
(Phase rule and equilibrium)

L 24800-65 EWT(m)/EWP(b)/T/EWP(t) IJP(c)/SSD/AFWL/ASD(m)-3 JD/JG/MLK
ACCESSION NR: AT4046000 S/0000/64/000/000/0255/0264

20
B+1

AUTHOR: Shamray, F. I.; Fedorov, T. F.

TITLE: Comments on the Cr-B phase diagram

SOURCE: AN SSSR. Institut metallurgii. Issledovaniya metallov v zhidkom i tverdom sostoyaniyakh (Research of metals in liquid and solid states). Moscow, Izd-vo Nauka, 1964, 255-264

TOPIC TAGS: phase diagram, chromium 27, boron 27, solid solution 18, fusion point, polymorphic transformation, annealing

ABSTRACT: The authors discuss papers on the Cr-B phase diagram and draw conclusions from the investigations of other authors. They assume that Cr with 2% B form a new phase which should not be considered as Cr or simply a solid solution of B in Cr. The micrograph of an alloy with 20% B has a second phase Cr_4B. Alloys with 34, 33.3, 32 and 30% B have a polygonal structure and either single phased or close to it. A CrB compound was identified in an alloy with

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L 24800-65
ACCESSION NR: AT4046000

48 to 50% B. The structure of an alloy with 66% B clearly testifies to the presence of an CrB_2 compound. All specimens were homogenized. A microanalysis of cast alloys shows that the solid solution extends from about 66 to 70% B. CrB_6 was identified in alloys with 86% B. The solubility of Cr in B is negligible insofar as an alloy with 90% B approximates the eutectic whereas an alloy with 98% B still contains considerable amounts of the second phase in the solid solution. On the basis of an analysis of material of alloys, homogenized and quenched from 1100 and 700 C as well as from 145 to 195 C the authors suggest a modification of the phase diagram. (See enclosure) However, there are still a great many controversial problems and unsolved questions. Orig. art. has: 8 figures

ASSOCIATION: None
SUBMITTED: 18May64 ENCL: 01

SUB CODE: MM NO REF SOV: 003 OTHER: 010

L 24800-65
ACCESSION NR: AT4046000

ENCLOSURE: 01

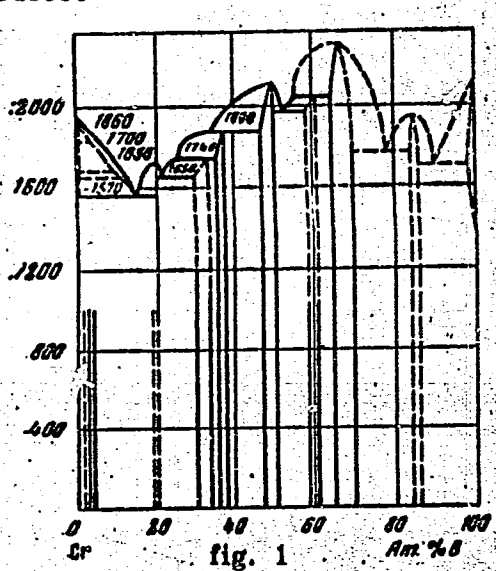

fig. 1

phase diagram for Cr-B alloys

Card 3/3

L 8865-65 EWT(m)/EPF(n)-2/EPR/EWP(q)/EWP(b) Ps-4/Pu-4 JD/JG/AT/WH
ACCESSION NR: AP4043577 S/0078/64/009/008/1905/1910

AUTHOR: Dokukina, N. V.; Glady*shevskiy, Ye. I.; Shamray, F. I.

TITLE: W-Nb-Si system

SOURCE: Zhurnal neorganicheskoy khimii, v. 9, no. 8, 1964, 1905-1910

TOPIC TAGS: tungsten niobium silicon system, tungsten niobium silicon alloy, tungsten silicide, niobium silicide

ABSTRACT: A large series of the tungsten-niobium-silicon alloys has been studied in an attempt to determine (1) the exact boundaries of the regions of solid solutions based on individual components and their binary compounds, (2) the exact extent of the regions of individual phases, and (3) the phase composition of the alloys. It was found that tungsten and niobium disilicides form a quasibinary system of eutectic type with limited solubility. The regions of solid solutions in as-cast (rapidly cooled) alloys are wider than those in annealed and very slowly cooled alloys. The β-Nb_5Si_3 and W_5Si_3 compounds in as-cast alloys form a continuous series of solid solutions. In annealed alloys, however, the solubility becomes limited owing

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L 8865-65
ACCESSION NR: AP4043577

to transformation of β-Nb_5Si_3 to α-Nb_5Si_3, which dissolves only 8 mol% W_5Si_3. The solubility of Nb_5Si_3 in W_5Si_3 is 80 mol%. No ternary compounds were found in the system, and no Nb_4Si compound was found in any of the ternary alloys. Orig. art. has: 8 figures.

ASSOCIATION: Institut metallurgii im A. A. Baykova (Institute of Metallurgy); L'vovskiy gosudarstvenny*y universitet im. Iv. Franko (L'vov State University)

SUBMITTED: 10 Jul63 ATD PRESS: 3099 ENCL: 00

SUB CODE: MM,IC NO REF SOV: 006 OTHER: 005

Card 2/2

L 32672-66 EWT(m)/EWP(t)/ETI IJP(c) JD/WW/JG/WB/GD

ACC NR: AT6013571 (N) SOURCE CODE: UR/0000/65/000/000/0421/0428

44
43
B+1

AUTHOR: Cherkashina, N. V.; Fedorov, T. F.; Shamray, F. I.

ORG: Institute of Metallurgy im. Baykov (Institut metallurgii)

TITLE: The zirconium-vanadium-boron system

SOURCE: AN UkrSSR. Institut problem materialovedeniya. Vysokotemperaturnyye neorganicheskiye soyedineniya (High temperature inorganic compounds). Kiev, Naukova dumka, 1965, 421-428

TOPIC TAGS: zirconium, vanadium, boron, boride, METAL PHASE SYSTEM, METAL OXIDATION

ABSTRACT: The phase structure and oxidation susceptibility of the binary sections, ZrB_2-VB_2 and Zr-VB_2, of the Zr-V-B system were investigated by x-ray, microhardness, and gravimetric techniques. The individual diborides were prepared by fusion in a Tamman furnace in a hydrogen atmosphere of the oxides and carbides according to formulas:

$$V_2O_5 + B_4C + 4C = 2VB_2 + 5CO;$$

$$2ZrO_2 + B_4C + 3C = 2ZrB_2 + 4CO.$$

The intercomponent molar ratio varied from 1:9 to 9:1 in the case of the ZrB_2-VB system and from 1:19 to 19:1 for the Zr-VB_2 system. For all the ratios, the ZrB_2-VB_2 sys-

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L 32672-66

ACC NR: AT6013571

tem was found to be a true two-phase one. After oxidation (1 hour heating in oxygen at 1200°C) the ZrB_2-VB_2 samples gained 0.5-2.0 weight due to the predominant formation of ZrO_2. It was found that ZrB_2 contributed to greater oxidation stability of the ZrB_2-VB_2 alloys. It was found that Zr-VB_2 alloys containing more than 50 mol % Zr had a face-centered lattice with a=4.618 kx [where 1kx=1/1.00202 Å]. Alloys containing 80 and 90 mol % Zr had a cubic face-centered lattice with a=4.63 kx. When subjected to oxidation at 1200°C all samples of the Zr-VB_2 system corroded throughout and turned into powder. Orig. art. has: 1 figure, 6 tables, 2 formulas.

SUB CODE: 11/ SUBM DATE: 03Jul65/ ORIG REF: 003/ OTH REF: 008

Card 2/2 BLG

SHRAYMAN, L. I.; SHAMRAY, G.A.

Discussing the duration of boring and blasting work in exploding blast hole VV charges of increased diameter. Ugol' 30 no.4:12-15 Ap '55. (MIRA 8:6)

1. VNIIOMShS
(Coal mines and mining) (Blasting)

IZRAYELIT, B.Z., dotsent; VINNIK, I.V., inzh.; KARASIK, I.B., kand. tekhn.nauk; TROFIMOV, V.P., gornyy inzh.; VOVK, A.A., gornyy inzh.; SHAMRAY, G.A.

Response to I.E.Detistov's article "Evaluating the efficiency of explosives." Ugol' 35 no.3:58-61 Mr '60. (MIRA 13:6)

1. Gosudarstvennyy nauchno-tekhnicheskiy komitet USSR. (for Trofimov and Vovk).
(Coal mines and mining--Explosives)
(Detistov, I.E.)

SHAMRAY, I. A.

"To the Question of Accumulation of Terrigenous Material in North Caucasus during the Maykop Era," Dok. AN, 25, No. 7, 1939. Mbr., Dept. Mineralogy & Petrography, Rostov State Univ. im. V. M. Molotov, -1939-.

SHAMRAY, I. A. (Co-author)

See: SEDLETSKIY, I. D.

Sedletskiy, I. D. and Shamray, I. A. - "Mineralogy of the Sulinskiy fire clays," Uchen. zapiski (Rost. n/D gos. un-t im. Molotova), Vol. XI, 1948, p. 21-35 -- Bibliog: 14 items

SO: U-3566, 15 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 14, 1949).

SHAMRAY, I. A.

Shamray, I. A. "Sketch of the natural building stone deposits of the Il'sko-Kholmskiy zone in the Northern Caucasus," Uchen. zapiski (Rost. n/D gos. un-t im. Molotova), Vol. XI, 1948, p. 73-84

SO: U-3566, 15 March, 53 (Letopis 'Zhurnal 'nykh Statey, No. 14, 1949).

SHAMRAY, I. A.

2

Microspherolithic coccolithospheric Paleogene limestones of the lower Don and of the N. Caucasus. I. A. Shamrai. *Doklady Akad. Nauk S.S.S.R.* 67, 1093-6(1949). The formations contain CaO 30–45, and SiO_2 15–45%, both of org. origin (coccolithophoridae and sponges). B. A.

H/7/55 UM

SHAMRAY, I.A.

Paleogenic glauconites in region of Stalingrad city as an example of marine allochtonous ore formation. Dokl.AN SSSR 96 no.3:621-624 My '54. (MLRA 7:6)

1. Predstavleno akademikom N.M.Strakhovym.
(Stalingrad region--Glauconite) (Glauconite--Stalingrad region)

Chem Abs V48
1-25-54
mineralogical Chemistry

Mineralogical characteristics of quaternary loess loam, and their marine analogs in the Lower Don and Volga Basins. I. A. Shamrai and S. Ya. Orekhov. *Doklady Akad. Nauk S.S.S.R.* 85, 417–20(1952).—The petrographic character of widespread loess deposits in S. Russia is given by a surprising abundance of light and heavy minerals of relatively unstable minerals, e.g. the easily weathering feldspars (15 to 20% in light fractions), mica, chalcedony, glauconite, calcite, diatomaceous earth, besides quartz. In the heavy fractions are ilmenite, less magnetite, leucoxene, Fe_2O_3 hydrates, epidote, zoisite, clinozoisite, further particularly characteristic green and basaltic hornblende, but rare actinolite and tremolite. Epidote and amphibole minerals occur in larger amts. in the north-south direction of the deposition in the loess, but quartz, garnet, kyanite, staurolite, and sillimanite decrease. Below the loess occur red-colored clayish rocks, which differ from the loess especially by their low contents of feldspar; epidote, amphibole, and pyroxenes are absent, whereas zircon, rutile, kyanite, and staurolite are distinctly enriched. Between the loess loams and these red rocks are brownish transitional horizons which combine the characteristics of both. The older (Upper-Tertiary and Palaeogenic) sediments also do not contain amphiboles and garnet, but some feldspar. All these sediments are typically terrigenous (continental), but analogous loessslike rocks occur in the basin of the Caspian Sea, of Old-Tertiary origin, and in beds of 100 m. thickness. They are pelitic or psammitic, and siallitic in chem. character. The quartz-feldspar content may be 15 to 20%, and chalcedony and micas are also abundant. In their heavy fractions, epidote and amphiboles are characteristic, but black, basaltic hornblende is absent. The partial or complete disappearance of unstable minerals by weathering and mech. decay is observed in the alluvions. There is a close analogy of these marine layers, especially in the varieties of the Baku and Khazaura region with true loess.

W. Eitel

15-57-4-4830

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 4, p 112 (USSR)

AUTHOR: Shamray, I. A.

TITLE: Mechanical Sorting Action of the Sea as a Factor of Sediment Accumulation (Mekhanicheskaya sortiruyushchaya deyatel'nost' morya kak faktor morskogo rudonakopleniya)

PERIODICAL: Vopr. mineralogii osadoch. obrazovaniy. Kn. 3-4. L'vov, L'vovsk. in-t, 1956, pp 121-131

ABSTRACT: The formation of marine sedimentary deposits is associated with hydrochemical and hydrodynamic processes. The latter process is highly important. The author believes that the conditions of deposition of a number of marine accumulations of limonite, siderite, bauxite, glauconite, etc., and the structural and textural characteristics of the ores indicate their allochthonous nature. The translocation of

Card 1/2

Mechanical Sorting Action of the Sea (Cont.)

sediments accumulated on the bottom of the sea and the mechanical sorting associated therewith are important and necessary for formation of such deposits. These processes occur on a large scale. Lake iron ore deposits are a typical example of the concentration of sediments as a result of mechanical sorting and displacement on the bottom of a basin under the action of hydrodynamic forces. Diagenesis plays an important part. The action of diagenesis consists basically in structural alteration of sediment (as, for instance, consolidation of ore depositions) which promotes the processes of sorting and enrichment of ore material.

Card 2/2

S. I. B.

OREKHOV, S.Ya.; SHAMRAY, I.A.

Tertiary phosphorites of the eastern Donets Basin and their petrographic characteristics. Dokl. AN SSSR 106 no.3:529-532 Ja '56.
(MLRA 9:6)

1.Rostovskiy na Donu gosudarstvennyy universitet imeni V.M.Molotova. Predstavleno akademikom N.M.Strakhovym.

(Donets Basin--Apatite)

SHAMRAY, I.A.; LAZAREVA, Ye.P.

Palaogenic Coccolithophoridae and their stratigraphic importance. Dokl.AN SSSR 108 no.4:711-714 Je '56. (MLRA 9:9)

1.Rostovskiy gosudarstvennyy universitet imeni V.M.Molotova. Predstavleno akademikom N.M.Strakhovym.
(Coccolithophoridae, Fossil)

AUTHOR SHAMRAY, I.A., OREKHOV, S.Ya. 20-1-48/64

TITLE The Monolithicly Plastical Phosphorite Ores at the Periphery of the South-Eastern Donets Basin: the Deposit Near Nesvetayev. (Plastovo-monolitnyye fosforitovyye rudy na periferii yugovostochnogo Donbassa (Nesvetayevskoye mestorozhdeniye) - Russian)

PERIODICAL Doklady Akademii Nauk SSSR, 1957, Vol 114, Nr 1, pp 176 -179 (U.S.S.R.)

ABSTRACT During the course of recent geological investigations in the above area, the monolithicly plastical type of the phosphorite ore was found. Examination of the ore led to the important conclusion that this kind of ore is of relatively high quality. Further explorations of the area have already been decided. It is assumed that there exist in the southeastern Donets Bassin many more such deposits - not only in area of Nesvetayev.
(1 Drawing, 1 chart, references: G.I.Bushinski, Izv.An.SSR, ser.geol.Nr 1, 1954 B.T.Vasiliev, Izv. Donsk.PolitekhnInst. 4, 3, 1915, S.Y.Orekhov, DAN 106, Nr 3, 1956).

ASSOCIATION Not Given.

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SUBMITTED

AVAILABLE Library of Congress

Card 1/1

AUTHORS: Shamray, I. [illegible] Sorochinskaya, V. T. SOV/20-120-4-52/67

TITLE: The Mineralogy and the Conditions of Formation of the Dark-Green Iron Ores of Kerch' (Mineralogiya i usloviya formirovaniya kerchenskikh zheleznykh temnozelenykh rud)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 120, Nr 4, pp.875-878 (USSR)

ABSTRACT: Among the iron ores of the Kerch'(Kerchenskiy)peninsula the dark-green ferrous oxide-oxide variety is most advanced in development. The two other types: the brown one and the "caviare" ore occur less frequently, and, exactly speaking, are a hypogenic modification of the first. The ferrous oxide-oxide ores have been little investigated, as usually they are covered by a considerable layer of sediments. Only recently new ore of this sort was extracted in the Kamysh-Buruns kaya depression. In its fresh state the ore is dark, almost black. It rapidly oxidizes when exposed to air, turning green, then greenish-brown, and finally brown. These ores contain two basic structural and mineralogical components: Iron oxide mineral aggregates (oolite, pea ore and lumps of unknown composition) and a green ferrous oxide cement mass. The structure

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of these ores is of a typical oolitic nature. The substance of these formations consists primarily of iron hydroxide minerals: hydrogoethite, goethite, more rarely lepidocrotite. At the same time these iron-oxide agglomerations contain quantities of opal, loamy material and frequently fine terrigenous quartz. In a few layers the oolites are replaced by chamoisite at the surface, forming a narrow seam. On first inspection, the chemical composition of this mineral does not agree with that of the cementing mass (Table 1). The cement essentially is a solid colloidal pseudosolution of chamoisite, mostly as a pebble-like colloid mass. The problem of a common generation of the oxide- and the ferrous oxide minerals in the green ores represents considerable difficulties. The amount of organic substance present in the ore was not sufficient to transform the entire huge masses of iron oxide material into a ferrous oxide state. It only sufficed to ensure the reduction of easily reducible iron oxide under the formation of chamoisite, that is to say of the colloid masses of iron oxide, which penetrated the fine pebble - quartz-like ore substrate. As regards the stage of formation of the ore deposits it can be maintained, that in particular

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their high concentration is due to the activity of the surf. There are 2 figures, 1 table, and 12 references, 11 of which are Soviet.

ASSOCIATION: Rostovskiy-na-Donu gosudarstvennyy universitet (Rostov-na-Donu State University)

PRESENTED: January 17, 1958, by N. M. Strakhov, Member, Academy of Sciences, USSR

SUBMITTED: January 15, 1958

1. Iron ores--Geology 2. Iron ores--Properties 3. Iron ores --Structural analysis 4. Iron ores--Materials

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SOV/152-59-2-3/32

14(5)
AUTHOR: Shamray, I. A.

TITLE: Petrographical Peculiarities and Conditions of the Formation of Deposits of the Northern Part of the Maykop Basin (Petrograficheskiye osobennosti i usloviya formirovaniya osadkov severnoy chasti Maykopskogo basseyna)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Neft' i gaz, 1959, Nr 2, pp 3 - 8 (USSR)

ABSTRACT: In the South of the European part of the USSR large areas are made up of mighty deposits of the Maykop series. In the South and Southeast they border on the northern foothills of the Caucasus range. In the Southwest they comprise a considerable part of Transcaucasia. In the North the masses, more closely studied in the present article, reach up to the lower part of the Don and Vostochnyy Donbass. In the Northeast typical Maykop sediments comprise Yuzhnyye Yergeni and Nizhneye Povolzh'ye. Further to the East and Northeast there are to be found analogous formations to the Maykop series of similar age, which are in the main represented

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by continental facies. They extend to Priaral'ye. The absence of some horizons of the lower Neogene points to a considerable interruption of the post Maykop period. It seems that for a longer period of the upper Maykop continental conditions prevailed. Possibly, the same conditions also prevailed at the beginning of the Maykop age. This is to be seen clearly from the fact that the masses in the northern part of the basin are relatively depressed (Table 1), which is due to the absence of lower and upper horizons. A very typical characteristic of the Maykop mass of the northern part of the basin, as well as of the southern regions, is its high percentage of organic materials and iron sulfides (melnicovite, marcasite, and pyrites) to be found in the rocks. In some layers of the northern section of the Maykop series these materials are often to be found in amounts of between 10-30 percent. As to their organic material contents Maykop deposits are quite distinct from recent sea and lagoon muds which rarely contain more than 1.5-2% of these materials. Studies of the organic material contained

in Maykop rocks have shown that it is mainly of the type of brown coal humus and is represented either by finely disperse material penetrating the clay mass, or by brown coal mud. The brownish black, chocolate brown coloring of the Maykop rocks is due to brown coal material and finely dispersed masses of iron sulfide minerals. In some places smaller quantities of bituminous material can be found. The increase in organic and iron sulfide materials to be noted in the northern sections of the mass suggests that it comes from the extended peat - moor area of the humus region north and northeast of the Maykop sediments of more recent times. It can be assumed rather safely that the Maykop sediments of the northern part of the Maykop basin are of the same age as the coal-bearing sediments of a wide strip of the western and southern Priural'ye. With regard to the conditions prevalent during the formation of the Maykop mass it can be said that the irregular distribution of coal material in the layers of the series and its high percentages in some layers point to the fact that the Maykop basin was often in the course of its existence sanded up and its

size varied. During some periods the Maykop basin receded far to the South and was in the North replaced by a semi-continental sea- moor area. Thus the sediments carried down from the North could during some periods penetrate rather far into the South; the thickness of the sediment in the South thus greatly increased, but the sediments retained their mineralogical character. There are 2 tables and 11 Soviet references.

ASSOCIATION: Rostovskiy gosudarstvennyy universitet (Rostov State University)

SUBMITTED: September 3, 1958

SHAMRAY, I.A.

Textural and mineralogical types of Tertiary quartz sands in the eastern Donets Basin and their stratigraphic position. Uch. zap. RGU 44:55-66 '59. (MIRA 14:1)

(Donets Basin--Sand)
(Donets Basin--Geology, Stratigraphic)

SHAMRAY, I.A.; OREKHOV, S.Ya.

New phosphate occurrences in the Cretaceous and lower-Paleogene sediments in the Belaia Basin of the Northern Caucasus. Uch. zap. ZGU 44:165-170 '59. (MIRA 14:1)
(Belaya Valley (Northern Caucasus)--Phosphates)

5(8)

AUTHORS: Shamray, I. A., Radushev, V. I. SOV/20-124-4-49/67

TITLE: Glauconite From the Cretaceous Sediments of the Belaya River in the Northern Caucasus (Glaukonit iz melovykh otlozheniy r. Beloy na Severnom Kavkaze)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 4, pp 900-902 (USSR)

ABSTRACT: In the region mentioned above a constant horizon of glauconitic sands and sandstones in the Lower Cretaceous (Aptian) can be observed in many places. On the Belaya river it attains a thickness of 15 m and is characterized by a high glauconitic concentration which often attains a percentage of 60-75 %. The respective strata are described here. They contain also fine intermediate strata and bizarre dendroid siderite concretions which are probably pseudomorphs of wood remnants, which also contain glauconitic inclusions. The glauconite grains are green, ball-shaped or elliptical, slightly transparent only at the edges and their size varies between extremely small dimensions and 0.6-0.7 mm. In polarized light there appears a typical aggregate extinction with double light refraction. Table 1 shows the chemical composition of glauconite and the crystallochemical formula which is very approximate to that mentioned in reference 2. The numerical coefficient (chislovoy koeffitsient) of

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silicon in the tetrahedra amounts to 3.58, that of aluminum in the octahedra to 0.21. Part of the silicon is replaced in the tetrahedra by aluminum. Glauconite is similar to the celadonites (Ref 2) due to a rather high content of iron in the octahedral layers. Table 2 presents the radiometric measurements and the comparison between them and the Debye electronograms of earlier described (Refs 1,2,3,5) glauconites. The thermal curve of heating (Fig 1) indicated two marked endothermic intermissions (ostanovka) as being characteristic of standard glauconites, i.e. at 190° by loss of the hygroscopic water and at 575° by separation of the constitution water. Up to 100° about 4 % water are separated (Fig 2), up to 400° the water loss is insignificant. The largest amount of water is separated between 400 and 600°. At 700° dehydration has virtually been completed. The total loss of water amounts to 9 % approximately. The glauconite deposits within the catchment area of the Belaya river may have been built up in the area of an extremely shallow body of water near the shore, which is confirmed by a high content of organic substances as well as tree-like sideritic pseudomorphs. A high content of oxide iron is evidence of the small depth in which the deposits were formed. Glauconites are regarded as accumulations in the upper shelf

Glauconite From the Cretaceous Sediments of the Belaya River in the Northern Caucasus

area (Ref 1). Glauconite was formed by hydrochemical synthesis during the earliest stage of diagenesis when the reductive reactions had not yet attained the climax. Subsequently, siderite was produced when the decomposition of organic substances increased and the reductive processes had attained the climax. Thus, siderite was formed in a later stage of diagenesis (Refs 7,8). As the glauconitic material is weakly sorted, it is syngenetic-autochthonous. A certain displacement and sorting within the intermediate strata most abundant in glauconite seems to be possible (Ref 9). There is no doubt about the great practical importance of the above mentioned deposits. There are 2 figures, 2 tables, and 10 references, 9 of which are Soviet.

ASSOCIATION: Rostovskiy-na-Donu gosudarstvennyy universitet (Rostov-na-Donu State University)

PRESENTED: October 11, 1958, by N. M. Strakhov, Academician

SUBMITTED: October 9, 1958

SHAMRAY, I.A.; KUBETSKIY, N.I.

Organogenic phosphate ores in the northern part of the Maikop Basin and the conditions of their formation. Dokl. AN SSSR 135 no.5:1219-1222 D '60. (MIRA 13:12)

1. Rostovskiy-na-Donu gosudarstvennyy universitet. Predstavleno akademikom N.M.Strakhovym.
(Maikop--Phosphates)

BLINOV, Yu.I.; OREKHOV, S.Ya.; SHAMRAY, I.A.

Garnet placer in Tuapse. Priroda 50 no.8:108-109 Ag '61. (MIRA 14:7)

1. Rostovskiy-na-Donu gosudarstvennyy universitet.
(Tuapse region--Garnet)

SHAMRAY, I. A.

Some forms of Upper Cretaceous and Paleogene coccoliths and Discoasteridae in the southern part of the Russian Platform. Izv. vys. ucheb. zav.; geol. i razv. 6 no.4:27-40 Ap '63. (MIRA 16:6)

1. Rostovskiy gosudarstvennyy universitet.
(Russian Platform—Coccolith)
(Russian Platform—Discoasteridae)

SHAMRAY, I.A.

Siliceous rocks from the southeastern part of the Russian Platform and the conditions governing their formation. Lit. i pol. iskop. no.2:19-27 Mr-Ap '65. (MIRA 18:6)

1. Rostovskiy-na-Donu gosudarstvennyy universitet.

SHAMRAY, I.A.; KOKHANOVSKIY, P.P.; KOPTELOVA, S.N.

Mineralogical and structural-petrographic types and areas of loess-type rocks in the lower Don Valley, southern Yergeni Hills, and northern Ciscaucasia. Biul. Kom. chetv. per. no.30:100-110 '65. (MIRA 19:2)

L 36942-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JG/WB

ACC NR: AP6020966 (N) SOURCE CODE: UR/0226/66/000/006/0088/0091

AUTHOR: Dokukina, N. V.; Shamray, F. I.

ORG: Institute of Metallurgy im A. A. Baykov (Institut metallurgii)

TITLE: Oxidation resistance of tungsten silicide—niobium silicide alloys

SOURCE: Poroshkovaya metallurgiya, no. 6, 1966, 88-91

TOPIC TAGS: tungsten silicide, niobium silicide, tungsten silicide alloy, niobium silicide containing alloy, alloy oxidation, oxidation

ABSTRACT: A series of tungsten—silicon—niobium alloys with compositions corresponding to WSi_2—$NbSi_2$ and W_5Si_3—Nb_5Si_3 sections were tested for oxidation behavior at 1000, 1100 and 1200C in air with an exposure time of 5 hr. It was found that the unalloyed components (silicides) in both the WSi_2—$NbSi_2$ and W_5Si_3—Nb_5Si_3 systems are not oxidation resistant even at 1000C. The addition of a second component improves oxidation resistance in both systems. In the WSi_2—$NbSi_2$ system, the lowest weight gain (10 mg/cm^2) in 5 hr at 1000C was shown by alloy containing 19.9% niobium. Under the same conditions, unalloyed $NbSi_2$ had a weight gain of 20 mg/cm^2, and unalloyed WSi_2 gained 160 mg/cm^2 in 3.5 hr. In the W_5Si_3—Nb_5Si_3 system, alloy containing 32.5% niobium had the highest oxidation resistance. Its weight gain in 5 hr tests at 1000C was 10 mg/cm^2 compared to 110 mg/cm^2 for Nb_5Si_3 and 140 mg/cm^2 for W_5Si_3, the latter in 1.6 hr. Orig. art. has: 6 figures. [DV]

SUB CODE: 11/ SUBM DATE: 16Mar66/ ORIG REF: 003/ OTH REF: 002/ ATD PRESS: 5139

KARVITSKIY, M.P., inzh.; SHAMRAY, L.N., inzh.

Use of bentonite clays in the construction of seepage preventing facings in irrigation canals. Gidr.i mel. 13 no.7:29-34 Jl '61. (MIRA 14:7)

1. Sredazgiprovodkhlopok.
(Irrigation canals and flumes) (Bentonite) (Seepage)

ASATURYAN, A.Sh., kand.tekhn.nauk; SHAMRAY, N.I., inzh.

Forced quasi-harmonic vibrations of piston pump valves. Izv. vys.ucheb.zav.; energ. 3 no.6:145-153 Je '60. (MIRA 13:6)

1. Bashkirskiy nauchno-issledovatel'skiy institut po pererabotke nefti. Predstavlena kafedroy transporta i khraneniya nefti i gaza Ufimskogo neftyanogo instituta.
(Pumping machinery--Vibration)

SHAMRAY, N.M.

Determining the speed of a valve at the time of its seating. Trudy NIITransneft' no.1:315-332 '61. (MIRA 16:5)
(Reciprocating pumps) (Valves)

SHAMRAY, N.M.

Operation of the valves of a piston power pump. Trudy BashNII NP no.6:259-266 '63. (MIRA 17:5)

1. SHAMRAY, P.S.

2. USSR (600)

4. Technology

7. Electrific tion of collective farm work. Kiev, Gostekhi dat, USSR 1952

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

112-3-5581

Translation from: Referativnyy Zhurnal, Elektrotekhnika, 1957, Nr 3, p. 75 (USSR)

AUTHOR: Shamray, P. A.

TITLE: Power Transmission from High-Power Systems (Peredacha energii ot moshchnykh energosistem)

PERIODICAL: Mekhaniz. sil'sk. gospodarstva, 1956, Nr 5, pp. 24-25 (Ukrainian SSR)

ABSTRACT: Bibliographic entry.

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SHAMRAY, P.F., assistent

Development of connective tissue in a wound. Sbor.nauch.trud. Vin.der.med.inst. 18 no.1:137-155 '58. (MIRA 16:2)

1. Kafedra gistologii i embriologii (zav. kafedroy doktor med.nauk, prof. I.V. Almazov) Vinnitskogo gosudarstvennogo meditsinskogo instituta.
(WOUNDS) (CONNECTIVE TISSUES)

SHAMRAY, P.F., assistent

Participation of vlumerary infiltrate cells in the development of collagen fibers. Sbor.nauch.trud.Vin.der.med.inst. 18 no.1:156-164 '58. (MIRA 16:2)

1. Kafedra gistologii i embriologii (zav. kafedroy doktor med. nauk, prof. I.V. Almazov) Vinnitskogo gosudarstvennogo meditsinskogo instituta.
(WOUNDS) (COLLAGEN)

SHAMRAY, P.F., assistent

Changes in vulnerary infiltrate cells cultivaed in a colloid bag within the organism. Sbor.trud.Vin.der.med.inst. 18 no.2: 40-45 '58. (MIRA 16:2)

1. Kafedra gistologii i embriologii (zav. kafedroy doktor med.nauk, prof. I.V. Almazov) Vinnitskogo gosudarstvennogo meditsinskogo instituta.
(WOUNDS) (CONNECTIVE TISSUES) (TISSUE CULTURE)

YUFA, Ye.Ye.; SHAMRAY, T.V.

Work of the nurse in the prevention of poliomyelitis. Med. sestra no.6:52-53 Je '62. (MIRA 15:8)

1. Iz detskogo poliklinicheskogo otdeleniya 4-y bol'nitsy L'vova.
(POLIOMYELITIS--PREVENTION) (NURSES AND NURSING)

SHAMRAY,V., inzhener

The machine-tractor station assists collective farms in construction work. Sel'.stroi.10 no.6:4-5 Je'55.
(MLRA 8:10)

1. Nachal'nik stroitel'no-montazhnogo otryada Kryukovskoy mashinnotraktornoy stantsii Moskovskoy oblasti
(Machine-tractor stations)

ACC NR: AP7002403 SOURCE CODE: UR/0363/66/002/012/2156/2161

AUTHOR: Alekseyevskiy, N. Ye.; Ageyev, N. V.; Shamray, V. F.

ORG: Institute of Metallurgy im. A. A. Baykov Academy of Sciences SSSR (Institut metallurgii Akademii Nauk SSSR)

TITLE: The critical temperature of the transition to the superconducting state of the β-phase in the Nb-Sn-Al-Ge system

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 12, 1966, 2156-2161

TOPIC TAGS: niobium, tin alloy, aluminum containing alloy, germanium containing alloy, superconducting alloy, ~~superconduction transition temperature, alloy transition~~ temperature, phase transition

ABSTRACT: Beta-alloys of the Nb-Sn-Al-Ge system with various contents of the alloying elements were levitation melted from 99.8%-pure niobium and 99.999%-pure aluminum, tin and germanium, homogenized at 600C for 250 hr and water quenched. Nb_3Sn, Nb_3Al and Nb_3Ge compounds were found to have a temperature of transition to the superconducting state (T_{cr}) of 18.1, 17.4 and 7.1K, respectively. With increasing Sn content in alloys of the pseudobinary Nb_3Sn-Nb_3Al section, T_{cr} gradually decreased, reached a minimum at the Sn:Al ratio of 1:1, and gradually increased again with a further increase in the Sn content. In alloys of the Nb_3Sn-Nb_3Ge section, T_{cr} dropped sharply with

UDC: 546.3—19—882—811—621—289

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an increase of Nb_3Ge content to about 70%, and then remained almost constant. With small increases in the Ge content of alloys along the Nb_3Al–Nb_3Ge section, T_{cr} slightly increased to a maximum in an alloy with a 4:1 Al:Ge ratio, and then decreased continuously with increasing Ge content. The

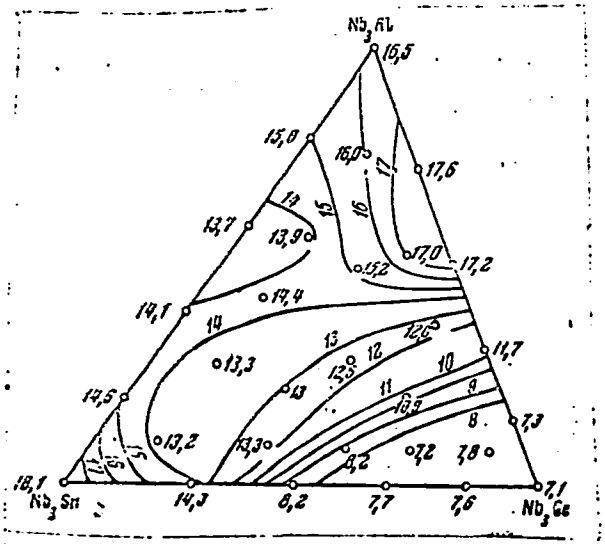

Fig. 1. Critical temperatures (K°) of alloys of the Nb_3Sn–Nb_3Al–Nb_3Ge section

ACC NR: AP7002403

composition dependence of T_{cr} in the Nb_3Sn-Nb_3Al-Nb_3Ge section is shown in Fig. 1. The critical temperature T_{cr} was also found to increase with the increasing degree of ordering of the investigated alloys. In the Nb-Sn-Al-Ge system, the value of T_{cr} appears to be determined mainly by the density of states at the Fermi surface. Orig. art. has: 7 figures.

SUB CODE: 11, 20/ SUBM DATE: 09Mar66/ ORIG REF: 007/ OTH REF: 008/
ATD PRESS: 5113

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