"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

KRESTOV, M.A., kand. arkhitektury; GUTSKOV, Ye.V., inzh.

Improving the quality of materials and developing industrial methods for finishing exterior walls of large-element buildings. Izv. ASIA no.2:105-111 '60. (MIRA 13:7)

(Facades)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

KRESTOV, M.A., kand. arkh.; MAKOTINSKIY, M.P., kand. arkh.; TSILLI, L.B., kand. arkh.; Prinimali uchastiye: BOGUSLAVSKIY, A.I., inzh.; DOBRYAKOVA, L.I., kand. tekhn. nauk; LIVSHITS, A.M., inzh.; MUNTS, V.O., kand. arkh.; L'VOV, G.N., inzh., retsenzent; POPOV, A.N., retsenzent; GURVICH, E.A., red.izd-va; TEMKINA, Ye.L., tekhn. red.

[Catalog of finishing materials and elements] Katalog otdelochnykh materialov i izdelii. Moskva, Gosstroiizdat. Pt.6.[Concrete and mortars] Betony i rastvory. 1962. 46 p. (MIBA 16:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut novykh stroitel'nykh materialov. 2. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR (for Popov).
(Finishes and finishing)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

KRESTOV, N. I.

KVASHNIN, V.S.; KRESTOV, N.I.; KUDRYAVTSEV, V.V.; REKST, V.B.; TA-REYEV, B.M., redaktor; LARIONOV, G.Ye., tekhnicheskiy redaktor.

[New production techniques for laminated electric insulators] Novaia tekhnologiia proizvodstva sloistykh elektroizoliatsionnykh materialov. Moskva, Gos. energ. izd-vo, 1953. 51 p. (Electric insulators and insulation) (MLRA 7:8)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

L 13365-63 EWP(j)/BDS/EWT(m)/EPA(s)-2 ASD/ESD-3/SSD Pc-4/
Pt-4 HM

ACCESSION NR: AP3003307 S/0191/63/000/007/0028/0031

AUTHORS: Andrianov, K. A; Frantov, N. Y.; Rakst, V. B; Kudryavtsev, V. V.; Kvashnin, V. S. 71

TITLE: The production of dielectric laminates with non-alcoholic phenolformaldehyde resins

SOURCE: Plasticheskiye massy, no. 7, 1963, 28-31

TOPIC TAGS: laminate, phenolformaldehyde, resin, paraformol, cresol, polyoxymethylene.

ABSTRACT: The scope of this study is to produce liquid phenolformaldehyde resins without the use of alcohols which are to be used in the production of laminates. A new method for the preparation of liquid non-alcoholic phenolformaldehyde resins in which a large portion of formaldehyde is replaced by paraformol has been obtained. The ratio of intermediates is taken in such proportions that the water from formaldehyde and from the condensation is used in the formation of the liquid resin. This eliminates many steps from the process such as decantation or distillation, or vacuum drying by which the excess water is removed, the purification step of removing the undesirable by-products. Since there are no losses, the amount of

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ACCESSION NR: AP3003307

cresol is decreased. The characteristic of the above resin is its rapid change in viscosity upon standing. The production of laminates by a non-alcoholic method has a great economical effect not only by the fact that its materal cost is about 16% less than the alcoholic method, but also the absence of alcohol and explosive vapors simplifies the production and increases the production capacity. Other substitutes used in the laboratory preparation of liquid resins was Alpha-polyoxymethylene. Orig. art. has: 2 tables, and 2 figures.

ASSOCIATION: none

SUBMITTED 00 DATE ACQ: 30Jul63 ENCL: 00

SUB CODE: MA NO REF SOV: 000 OTHER: 000

Card 2/2

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

ARKHIPOV, V.N.; BIRYUKOV, V.G.; BRONSHTEYN, A.M.; DROZDOV, N.G.; KRESTOV, N.I.; NAYASHKOV, I.S.; PETROV, G.N.; SIROTINSKIY, L.I.; CHILIKIN, M.G.

Professor G.V. Butkevich; on his 60th birthday. Elektrichestvo no.10:92-93 O '63. (MIRA 16:11)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

KRETOV, N.Ye. (g. Kirov); SOKOL, E.N., inzh. (g. Kirov)

Compacted loading of freight cars. Zhel. dor. transp. 47 no.5: 36-37 My '65. (MIRA 18:6)

1. Starshiy kommercheskiy revizor Kirovskogo otdeleniya Gor'kovskoy dorogi (for Kretov).

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

KRESTOV, R.M.; DROBOT, V.M.; PAKHMANOV, D.M.; POPOV, N.G.

Concerning P.I.Sokolov's article "Reserve feed pumps with steam drives for boiler systems." Prom.energ. 19 no.7:27-29 Jl '64. (MIRA 18:1)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

KRESTOVA, Zdena

Education of cadres of the water resource management. Vodni hosp 13 no.9:321-322 '63.

1. Ministerstvo zemedelstvi, lesniho a vodniho hospodarstvi.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

AUERMAN, I.Ya.; KRETOVICH, V.L.; [illegible]OVA, R.D.

Fermentative way of improving the quality of wheat bread by the method of oxidation. Prikl. biokhim. i mikrobiol. 1 no.1:66-73 Ja-F '65. (MIRA 18:5)

1. Tekhnologicheskiy institut pishchevoy promyshlennosti, Moskva.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

OPARIN, A.I., akademik; KRETOVICH, V.L.

Sixth International Congress of Biochemistry. Vest. AN SSSR 34 no.1:73-75 Ja '65. (MIRA 18:2)

1. Chlen-korrespondent AN SSSR (for Kretovich).

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

KRETOVICH, V.L.; MORGUNOVA, Ye.A.; KARYAKINA, T.I.; LYUBIMOVA, N.V.

Transamination of keto acids with γ-aminobutyric acid and its interaction with glyoxylic acid. Dokl. AN SSSR 161 no.2:479-482 Mr '65. (MIRA 18:4)

1. Institut biokhimii im. A.N.Bakha AN SSSR. 2. Chlen-korrespondent AN SSSR (for Kretovich).

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

KRESTOVNIKOV, A N

"Changes in the Reserve Alkalinity of Trotters during Tests for Various Distances", Fiziol. Zhur. SSSR, 35, No 4, 1949. 2nd State Leningrad Hypodrome, -c1949-

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

KRESTOVNIKOV, ALEKSANDR NIKOLAEVICH

Krestovnikov, Aleksandr Nikolaevich Ocherki po fiziologiia na fizicheskite uprazhneniia Preveli ot ruski D. Dobrev, I. Ruschukliev, V. Toshkova. Pod red, na Dr. Mateev. (Sofiya Fizkultura) (1952) 520 p. (The physiology of physical exercises. Tr. from the Russian Illus.)

SO: MONTHLY LIST OF EAST EUROPEAN ACCESSIONS, L. C., VOL. 3, NO. 1, Jan. 1954, Uncl.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

VASIL'YEVA, V. V., Docent; [illegible], A. M., Prof.

Physiology

Change of functional state in some analysors in ball-throwing exercises, Teor. i prak. fizkul., 15, No. 7, 1952.

9. Monthly List of Russian Accessions, Library of Congress, November 1952 ~~1953~~, Uncl.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

KRESTOVNIKOV, A.N.;KOSSOVSKAYA, Ye.B.

Physiological analysis of motor function in athlete according to the Pavlovian theory. Fiziol. zh. SSSR 38 no.4:413-422 July-Aug 1952.
(CLML 23:2)

1. Department of Physiology of the State Order of Lenin and Order of the Red Banner of Labor Institute of Physical Culture imeni P. F. Lesgaft, Leningrad.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

KRESTOVNIKOV, A.N., zaslushennyy deyatel' nauki, doktor meditsinskikh nauk.

[The teachings of I.P.Pavlov concerning higher nervous activity are the natural scientific basis of physical training] Uchenie I.P.Pavlova o vysshei nervnoi deiatel'nosti - estestvenno-nauchnaia osnova fizicheskogo vospitaniia. Moskva, Izd-vo "Znanie," 1953. 31 p. (MLRA 6:12)
(Pavlov, Ivan Petrovich, 1849-1936) (Nervous system)
(Physical education and training)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

K[illegible], A.N.

Some data on the condition of the nervous system of a fencer. A.N. Kreslovnikov, T.A. Trotilova. Teor.i prak.fizkul. 16 no.11:793-799 N '53.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420(

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

KRESTOVNIKOV, A. N.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr 1954)

Name	Title of Work	Nominated by
Krestovnikov, A. N.	"Notes on the Physiology of Physical Exercises"	Institute of Physical Culture imeni P. F. Lesgaft

SO: W-30604, 7 July 1954

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

KRESTOVNIKOV, A. N. Prof.

Paper entitled "Contribution to the study of the physiological mechanism in what is called 'The Athletic Form,'" presented at the Tenth International Congress of Athletic Medicine which was held in Belgrade Yugoslavia on May 19 to 22, 1954.

BFB

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

KRESTOVNIKOV, Aleksandr Nikolayevich.

[Human physiology] Fiziologiia cheloveka. Moskva, Fizkul'tura i sport, 1954. 527 p.
(Physiology) (MIRA 8:3)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

KRESTOVNIKOV, A.N.; VASIL'YEVA, V.V.

Change in visual and cutaneous sensitivity under static stress.
Trudy Vses.ob-va fiziol.biokhim.i farm. 2:50-52 '54. (MLRA 8:7)

1. Kafedra fiziologii Gosudarstvennogo institut fizicheskoy kul'-
tury im. P.F.Lesgafta.
(SKIN, physiology,
electrical sensitivity in constant tension)
(EYE, physiology,
electrical sensitivity in constant tension)
(ELECTRICITY, effects,
on eye & skin, sensitivity in constant tension)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

KRESTOWNIKOW, A.N.

Pavlovian theory on the higher nervous function in man as a principle of physical education. Acta physiol. polon. 5 no.2:131-145 1954.

1. Z Katedry Fizjologii Leningradskiego Instytutu Kultury Fizycznej im. P.F.Lesgafta.
(PHYSICAL EDUCATION AND TRAINING,
Pavlovian theory in)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

USSR/Medicine - Physiology

FD-2699

Card 1/1 Pub. 33-8/28

Author : Krestovnikov, A. N.; Tretilova, T. A.

Title : Some data on the state of the nervous system in fencers

Periodical : Fiziol. zhur. 41, 48-54, Jan-Feb 1955

Abstract : Investigated the state of the nervous system in both beginning and advanced fencers, ranging in age from 14 to 39. Determined the chronaxy of the biceps and triceps brachii of both arms, both before and after fencing lessons, at various stages of training; determined the speed of the motor response to visual, auditory, and tactile stimuli; and studied the activity of the autonomic nervous system by pulse count at rest and by oculo-cardiac and orthostatic tests. Tables. Thirteen references, all USSR (8 since 1940).

Institution :

Submitted : September 1, 1953

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

KRESTOVNIKOV, A.N.; KOZIN, K.M.

Calculation of repeated zonal recrystallization. Izv.vys.ucheb.zav.; tsvet.met. 8 no.2:105-112 '65. (MIRA 19:1)

1. Kafedra fiziko-khimicheskikh issledovaniy protsessov proizvodstva poluprovodnikovykh materialov i chistykh metallov Moskovskogo instituta stali i splavov. Submitted October 10, 1963.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

L 13031-66 EWT(m)/EPF(n)-2/T/EWP(t)/EWP(b)/EWA(c) IJP(c) JD/WW/RM

ACC NR: AP5028582 SOURCE CODE: UR/0076/65/039/011/2738/2741

AUTHOR: Krestovnikov, A. N.; Vigdorovich, V. N.; Marychev, V. V.

ORG: Moscow State Scientific Research, Design and Planning Institute of the Rare Metal Industry (Moskovskiy gosudarstvennyy nauchno-issledovatel'skiy i proektnyy institut redkometallicheskoy promyshlennosti)

TITLE: Effect of atomic number of impurities on their distribution coefficient

SOURCE: Zhurnal fizicheskoy khimii, v. 39, no. 11, 1965, 2738-2741

TOPIC TAGS: impurity level, atomic property, metal purification, distribution coefficient, metal crystallization

ABSTRACT: The distribution coefficients of impurity elements have been evaluated for only a small number of elements and in many cases only preliminary determinations were made; therefore, the periodicity of changes of the distribution coefficients of impurities is only qualitative. In the aluminum matrix the distribution coefficients of short period impurities displayed one maximum: in the second period Be has the highest value, in the third period--Mg. In long periods two maxima are observed. The first maximum occurs in transition metals: fourth period--Ti, V, Cr; fifth period--Zr, Nb, Mo; sixth period--Ta, W;

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seventh period--Th. The second maximum falls in the fourth period on Cu, Zr, Ge; in the fifth period on Ag, Cd, In; in the sixth period on Pb and Bi. For indium and thallium matrices each period displays one maximum, primarily in the IB-VB groups. In antimony and bismuth matrices one maximum is displayed in each period, which occur with elements of the IVb-VIb groups. In the silicon matrix one maximum per group is observed, occurring with elements of the IIIb-Vb groups and analogous behavior is observed in germanium. In the indium antimonide matrix similar behavior is observed in germanium but sufficiently high values of the distribution coefficients are also displayed by the elements of the IIb and VIb groups. Si, Ge and Sn do not follow the general behavior. It is proposed that the established periodicity of the behavior be used for the prediction of the behavior of impurities during crystallization of metals and semiconductors. Orig. art. has: 2 figures.

SUB CODE: 07,20/ SUBM DATE: 14Sep64/ ORIG REF: 010/ OTH REF: 004

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

L 23083-66 EWT(m)/T/EWP(t)/EWP(e) IJP(c) JD/WH/MJW(CL)

ACC NR: AP5028998 SOURCE CODE: UR/0128/65/000/009/0001/0003

AUTHOR: Krestovnikov, A. N. (Doctor of technical sciences); Vendrikh, M. S. (Candidate of technical sciences); Shklennik, Ya. I. (Candidate of technical sciences); Kuz'micheva, V. I. (Engineer); Matusevich, I. S. (Engineer); Telis, M. Ya. (Engineer)

ORG: none

TITLE: Silica-free molds for casting high-temperature alloys and refractory metals

SOURCE: Liteynoye proizvodstvo, no. 9, 1965, 1-3

TOPIC TAGS: metal casting, silica, refractory metal, nitrate, high temperature alloy

ABSTRACT: Although previous studies have demonstrated the unsuitability of SiO_2 as a molding material for casting refractory metals and alloys, most binders used in investment-pattern casting contain SiO_2 and a radical solution of this problem would be the use of silica-free binders with chemical properties analogous or close to those of the refractory materials (oxides). Ethylsilicate-type silicones meet this need but they are too scarce and expensive. Two of the authors (Ya. I. Shkleynik and I. S. Matusevich. Author's Certificate [Patent] no. 162299 of 25 Apr 1963), have previously established that saturated aqueous solutions of nitrate salts can, following their thermal or chemical decomposition, be used as binders for the preparation of silica-free molds. In this connection, the authors describe laboratory

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APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

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experiments with the construction of molds based on the use of aluminum nitrate as the silica-free binder, with the setting of the mix being a result of the exchange reaction between the aqueous solution of nitrate salt and oxide:

$$2Al(NO_3)_3 + 3H_2O + 3MgO = 2Al(OH)_3 + 3Mg(NO_3)_2.$$

Sieve-screened metallurgical magnesite and chamotte were used as the fillers. On subsequent firing at 950°C the resulting aluminum hydroxide and magnesium nitrate decompose to form high-disperse oxides assuring the strength of the mix in heated state.

$$2Al(OH)_3 = Al_2O_3 + 3H_2O\uparrow;$$
$$2Mg(NO_3)_2 = 2MgO + 4NO_2\uparrow + O_2\uparrow.$$

The molds were shaped by hand on wood models, dried for 2-3 hr at 300-400°C, heated to 950°C and filled with G13L manganese steel at 1650°C or with L114 steel at 1750°C. Findings: No signs of scorching could be observed on the molds but some parts of their surface displayed bead-like projections which were traced to bubbles of air escaping from their surface; this is a minor technical problem that can be ironed out by a more efficient preparation of the mix. The results confirmed that solutions of nitrate salts and primarily of aluminum nitrate may be used as binders for molding

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ACC NR: AP5028998

sands. The two major shortcomings of this method -- the release of toxic nitrogen oxides during the firing of the molds and the considerable (2%) shrinkage of the mix -- are technical problems that can be solved. Experiments have shown that the binder Al_2O_3 can be used in the preparation of silica-free molds of sillimanite, zircon, electrolytically produced corundum, and other materials for the vacuum casting of magnets and high-temperature alloys as well as for the casting of Ti and Cr alloys. Orig. art. has: 1 table, 3 figures.

SUB CODE: 11, 12, 13/ SUBM DATE: none/ ORIG REF: 011/ OTH REF: 001

Card 3/3 PB

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

L 24128-66 EWT(m)/EWP(w)/ETC(f)/EWG(m)/T/EWP(t) RM/JD
ACC NR: AP6011316 SOURCE CODE: UR/0363/66/002/003/0453/0460

AUTHOR: Glazov, V. M.; Krestovnikov, A. N.; Glagoleva, N. N.

ORG: Moscow Institute of Steel and Alloys (Moskovskiy institut stali i splavov); Institute of Metallurgy im. A. A. Baykov (Institut metallurgii)

TITLE: Investigation of electric conductivity and viscosity of smelts in Bi-Se, Bi-Te, and Sb-Te systems

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no.3, 1966, 453-460

TOPIC TAGS: electric conductivity, bismuth, selenide, telluride, antimony, metal melting, stress concentration, temperature dependence

ABSTRACT: An investigation of viscosity and electric conductivity of Bi-Se, Bi-Te, and Sb-Te alloys over a wide range of temperatures and concentrations has been carried out. On the basis of isotherm analysis, it is shown that bismuth selenide is stable after melting in all temperature ranges investigated. Bismuth telluride dissociates during melting while antimony telluride is relatively stable during melting and begins to dissociate after a certain amount of overheating. The correlation between characteristic concentrations and

Card 1/2 UDC: 546.3-19-87-23;546.3-19-87-24;546.3-19-86-24

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

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ACC NR: AP6011316

viscosity and electric conductivity is recorded. Orig. art. has: 9 figures and 1 table. [Based on author's abstract] [NT]

SUB CODE: 11/ SUBM DATE: 07Jul65/ ORIG REF: 018/ OTH REF: 004/

Card 2/2

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

L 29805-66 EWT(m)/ETC(f)/EWP(t)/ETI IJP(c) RDW/JD

ACC NR: AP6015068 (N) SOURCE CODE: UR/0363/66/002/005/0850/0854

AUTHOR: Glazov, V. M.; Krestovnikov, A. N.; Yevseyev, V. A.; Ayvazov, A. A. 58 B

ORG: Moscow Institute of Steel and Alloys (Moskovskiy institut stali i splavov)

TITLE: Study of the thermal emf of germanium and tin tellurides in the solid and liquid state

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 5, 1966, 850-854

TOPIC TAGS: germanium compound, tin compound, telluride, thermal emf, electric conductivity, temperature dependence

ABSTRACT: The temperature dependence of the thermal emf of tin and germanium tellurides were studied in order to investigate their physicochemical nature and changes in bond character associated with the fusion of these compounds. To this end, a special apparatus was constructed which permitted measurements of differential thermal emf over a wide temperature range in a vacuum or in an inert gas atmosphere in both the liquid and solid state. A correlation was noted between the character of the temperature dependence of the thermal emf and the electrical conductivity of

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UDC: 546.289'241 + 546.811'241

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ACC NR: AP6015068

germanium and tin tellurides in the liquid and solid state. The presence of hole conductivity and the decrease in thermal emf with rising temperature of the melt confirm the conclusion, reached on the basis of electrical conductivity measurements, that these tellurides remain semiconductors after they have melted, and indicate that these substances are not semimetals in the solid state. Orig. art. has: 4 figures and 1 table.

SUB CODE: 20,07/ SUBM DATE: 13Sep65/ ORIG REF: 013/ OTH REF: 003

Card 2/2

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

L 46036-66 EWT(m)/EWP(t)/ETI IJP(c) JD
ACC NR: AT6022711 SOURCE CODE: UR/2848/66/000/041/0227/0231

AUTHORS: Krestovnikov, A. N.; Glazov, V. M.; Ivliyeva, V. I.; Makhmudova, N. M.

ORG: Moscow Institute of Steel and Alloys, Department for Physico-chemical Investigation of Manufacturing Processes of Semiconductor Materials and Pure Metals (Moskovskiy institut stali i splavov, Kafedra fiziko-khimicheskikh issledovaniy protsessov proizvodstva poluprovodnikovykh materialov i chistykh metallov)

TITLE: Investigation of electrical conductivity of alloys belonging to the system Sb_2Te_3 - Sb_2S_3 in the solid and liquid state

SOURCE: Moscow. Institut stali i splavov. Sbornik, no. 41, 1966. Fizicheskaya khimiya metallurgicheskikh protsessov i sistem (Physical chemistry of metallurgical processes and systems), 227-231

TOPIC TAGS: antimony compound, antimony sulfide, tellurium containing alloy, electric conductivity, semiconductor conductivity, alloy phase diagram

ABSTRACT: The electrical conductivity of the system Sb_2Te_3 - Sb_2S_3 was studied as a function of composition and temperature. The investigation supplements the results of N. Kh. Abrikosov and V. I. Ivliyeva /No further reference given. Note of abstracter/. The experimental procedure is described by D. A. Petrov and V. M. Glazov (Zavodskaya laboratoriya, 1958, No. 1). The experimental results are presented graphically (see Fig. 1). It was found that all alloys of this system are semiconductors in the liquid state. From the appearance of the conductivity-temperature-composition curves, it is

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L 46036-66
ACC NR: AT6022711

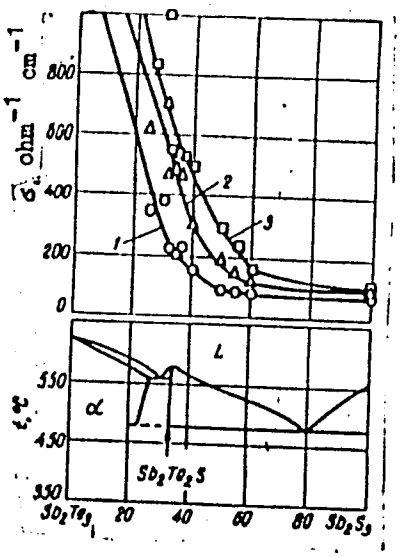

Fig. 1. Comparison of the concentration dependence of electrical conductivity of melts of the system Sb_2Te_3 - Sb_2S_3 with the phase diagram of this system. (The data for the construction of the phase diagram were taken from the work of N. Kh. Abrikosov and V. I. Ivliyeva). 1 - 600C, 2 - 700C, 3 - 800C.

concluded that, contrary to the assertion of N. Kh. Abrikosov and V. I. Ivliyeva, no ternary compound exists in this system. Orig. art. has: 3 graphs.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 006/ OTH REF: 001

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L 46037-66 EWT(m)/EWP(t)/ETI IJP(c) JD/WW/JG

ACC NR: AT6022712 SOURCE CODE: UR/2848/66/000/041/0232/0238

AUTHORS: Krestovnikov, A. N.; Glazov, V. M.; Glagoleva, N. N.; Situlina, O. V.

ORG: Moscow Institute of Steel and Alloys, Department for Physico-chemical Investigation of Processes for the Manufacture of Semiconductor Materials and Pure Metals (Moskovskiy institut stali i splavov, Kafedra fiziko-khimicheskikh issledovaniy protsessov proizvodstva poluprovodnikovykh materialov i chistykh metallov)

TITLE: Investigation of viscosity and electrical conductivity of binary alloys of tellurium with germanium, tin, and lead in the liquid state

SOURCE: Moscow. Institut stali i splavov. Sbornik, no. 41, 1966. Fizicheskaya khimiya metallurgicheskikh protsessov i sistem (Physical chemistry of metallurgical processes and systems), 232-238

TOPIC TAGS: tellurium containing alloy, germanium containing alloy, lead containing alloy, tin containing alloy, electrical conductivity, fluid viscosity

ABSTRACT: The viscosity and electrical conductivity of the binary systems TeGe, TeSn, and TePb were investigated. The alloys were prepared after the method of L. Ya. Krol', A. Ya. Nashel'skiy, and M. D. Khlystovskaya (Zavodskaya laboratoriya, 1961, No. 2). The experimental procedure for the determination of viscosity and electrical conductivity is described by V. M. Glazov and S. N. Chizhevskaya (DAN SSSR, 1964, t. 154, No. 1). The experimental results are presented in tables and graphs (see Fig. 1). It was found that in order to retain a stoichiometric composition in

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L 46037-66

ACC NR: AT6022712

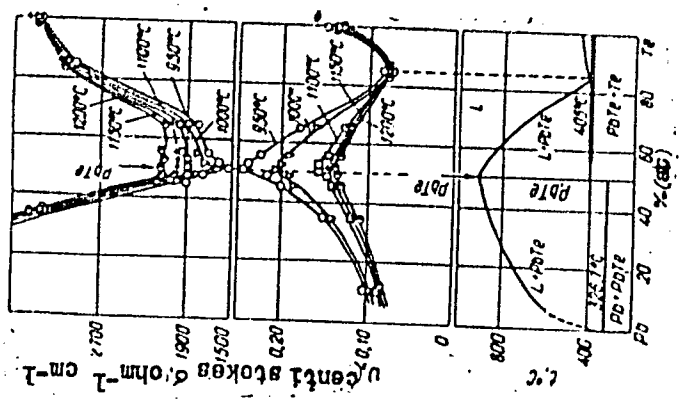

Fig. 1. Isotherms for the viscosity and electrical conductivity of melts for the system lead-tellurium.

the systems GeTe and SnTe it is necessary to maintain an equilibrium vapor pressure of Te above the corresponding systems. The compound PbTe is relatively stable, but it is recommended that, when working with this compound, care is to be exercised in not exceeding its thermal stability limits. Orig. art. has: 1 table and 9 graphs.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 010/ OTH REF: 001

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

L 07979-67 EWT(m)/EWP(t)/ETI/EWP(k) IJP(c) JD/HW/JG/WB

ACC NR: AT6022710 SOURCE CODE: UR/2848/66/000/041/0196/0204

AUTHORS: Krestovnikov, A. N.; Krupin, A. V.; Linetskiy, B. L.; Chernyshev, V. N.; Bogolyubov, V. S. 71 70

ORG: Moscow Institute of Steel and Alloys, Department of Technology and Automation of the Rolling Industry (Moskovskiy institut stali i splavov, Kafedra tekhnologii i avtomatizatsii prokatnogo proizvodstva)

TITLE: Thermodynamic analysis of the conditions of nonoxidizing rolling of tungsten in a vacuum at high temperatures 27

SOURCE: Moscow. Institut stali i splavov. Sbornik, no. 41, 1966. Fizicheskaya khimiya metallurgicheskikh protsessov i sistem (Physical chemistry of metallurgical processes and systems), 196-204

TOPIC TAGS: tungsten, tungsten compound, tungsten containing alloy, tungsten alloy, THERMODYNAMIC ANALYSIS, METAL ROLLING, METAL OXIDATION

ABSTRACT: Thermochemical calculations of tungsten behavior at various temperatures and residual pressures and conditions under which oxidation cannot occur are presented. The thermodynamic calculations for the oxidation reactions which form WO_3, W_2O_5, and WO_2 are given for temperatures 1200--1600C, and the thermodynamic characteristics (as well as enthalpy and entropy) are tabulated for the tungsten oxides over the temperature range 1473--1873K. The characteristic temperatures of the oxides are given and

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the Debye functions for tungsten and oxygen in W_2O_5 are tabulated. Based on this data, curves of the isobaric potentials for oxide formation and of the equilibrium pressures of oxygen as a function of temperature are constructed as shown in Figs. 1 and 2.

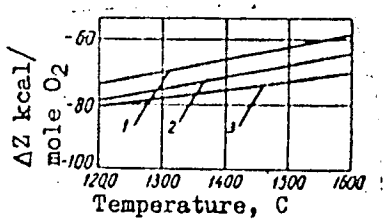

Fig. 1. Isobaric potentials of oxide formation: 1 - WO_3; 2 - WO_2; 3 - W_2O_5.

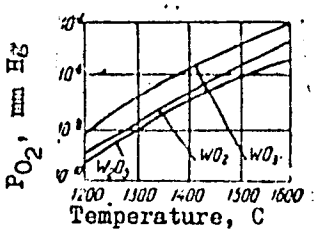

Fig. 2. Dissociation constants of tungsten oxides.

It is concluded that rolling of tungsten in a vacuum to prevent oxidation is feasible. Orig. art. has: 9 tables, 12 formulas, and 2 figures.

SUB CODE: 13/ SUBM DATE: none/ ORIG REF: 018/ OTH REF: 003

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

L 06481-67 EWT(m)/EWP(e)/EWP(t)/ETI IJP(c) WH/JD

ACC NR: AP6028293 SOURCE CODE: UR/0363/66/002/006/0976/0979

AUTHOR: Glazov, V. M.; Krestovnikov, A. N.; Yevseyev, V. A. 31 B

ORG: Moscow Institute of Steel and Alloys (Moskovskiy institut stali i splavov)

TITLE: Study of the thermal emf's of group V chalcogenides in the solid and liquid state

SOURCE: AN SSSR. Izvestiya, Neorganicheskiye materialy, v. 2, no. 6, 1966, 976-979

TOPIC TAGS: thermal emf, bismuth compound, antimony compound, telluride, selenide

ABSTRACT: The differential thermal emf's of the compounds Bi_2Te_3, Bi_2Se_3, Sb_2Te_3 and Sb_2Se_3 were studied over a wide temperature range (up to 1000°C) in the solid and liquid state. A substantial drop in thermal emf on melting was observed; this is attributed to an increase in the carrier concentration and an equalization of the electron and hole mobilities. The magnitude of this drop is decreased by the "anionic" replacement by a lighter element, due to the tendency of the thermal emf to increase in the liquid phase as Te is replaced by Se. It is shown that the sign of the thermal emf of Sb_2Se_3 and Bi_2Se_3 changes after superheating in the liquid state. A correlation was observed between the nature of the temperature dependence of the thermal emf and the electrical conductivity in the solid phase at high temperatures in Sb_2Te_3; this is thought to be due to a decrease in deviations from stoichiometry in the Sb_2Te_3 phase as the temperature rises. On the whole, data on the thermal emf of the

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

L 07979-67 EWT(m)/EWP(t)/ETI/EWP(k) IJP(c) JD/HW/JG/WB

ACC NR: AT6022710 SOURCE CODE: UR/2848/66/000/041/0196/0204

AUTHORS: Krestovnikov, A. N.; Krupin, A. V.; Linetskiy, B. L.; Chernyshev, V. N.; Bogolyubov, V. S.

ORG: Moscow Institute of Steel and Alloys, Department of Technology and Automation of the Rolling Industry (Moskovskiy institut stali i splavov, Kafedra tekhnologii i avtomatizatsii prokatnogo proizvodstva)

TITLE: Thermodynamic analysis of the conditions of nonoxidizing rolling of tungsten in a vacuum at high temperatures

SOURCE: Moscow. Institut stali i splavov. Sbornik, no. 41, 1966. Fizicheskaya khimiya metallurgicheskikh protsessov i sistem (Physical chemistry of metallurgical processes and systems), 196-204

TOPIC TAGS: tungsten, tungsten compound, tungsten containing alloy, tungsten alloy, THERMODYNAMIC ANALYSIS, METAL ROLLING, METAL OXIDATION

ABSTRACT: Thermochemical calculations of tungsten behavior at various temperatures and residual pressures and conditions under which oxidation cannot occur are presented. The thermodynamic calculations for the oxidation reactions which form WO_3, W_2O_5, and WO_2 are given for temperatures 1200--1600C, and the thermodynamic characteristics (as well as enthalpy and entropy) are tabulated for the tungsten oxides over the temperature range 1473--1873K. The characteristic temperatures of the oxides are given and

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the Debye functions for tungsten and oxygen in W_2O_5 are tabulated. Based on this data, curves of the isobaric potentials for oxide formation and of the equilibrium pressures of oxygen as a function of temperature are constructed as shown in Figs. 1 and 2.

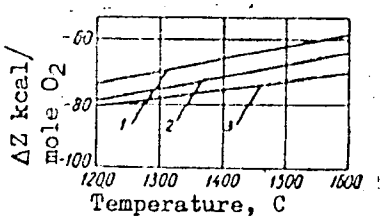

Fig. 1. Isobaric potentials of oxide formation: 1 - WO_3; 2 - WO_2; 3 - W_2O_5.

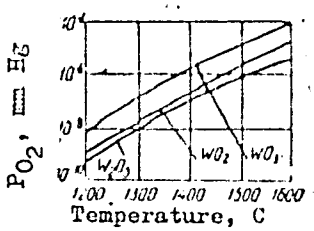

Fig. 2. Dissociation constants of tungsten oxides.

It is concluded that rolling of tungsten in a vacuum to prevent oxidation is feasible. Orig. art. has: 9 tables, 12 formulas, and 2 figures.

SUB CODE: 13/ SUBM DATE: none/ ORIG REF: 018/ OTH REF: 003

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L 06481-67 EWT(m)/EWP(e)/EWP(t)/ETI IJP(c) WH/JD

ACC NR: AP6028293 SOURCE CODE: UR/0363/66/002/006/0976/0979

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TITLE: Study of the thermal emf's of group V chalcogenides in the solid and liquid state

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ACC NR: AP6028293

chalcogenide melts studied indicate a certain degree of metallization of the bonds on melting, particularly in Bi_2Te_3. Orig. art. has: 4 figures and 1 table.

SUB CODE: 20/ SUBM DATE: 13Oct65/ ORIG REF: 007/ OTH REF: 002

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APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

L 07979-67 EWT(m)/EWP(t)/ETI/EWP(k) IJP(c) [illegible]

ACC NR: AT6022710 SOURCE CODE: UR/2848/66/000/041/0196/0204

AUTHORS: Krestovnikov, A. N.; Krupin, A. V.; Linetskiy, B. L.; Chernyshev, V. N.; Bogolyubov, V. S.

ORG: Moscow Institute of Steel and Alloys, Department of Technology and Automation of the Rolling Industry (Moskovskiy institut stali i splavov, Kafedra tekhnologii i avtomatizatsii prokatnogo proizvodstva)

TITLE: Thermodynamic analysis of the conditions of nonoxidizing rolling of tungsten in a vacuum at high temperatures

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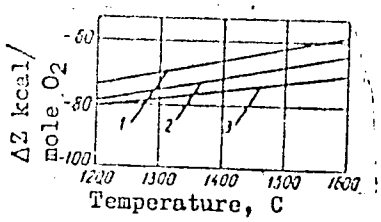

Fig. 1. Isobaric potentials of oxide formation: 1 - WO_3; 2 - WO_2; 3 - W_2O_5.

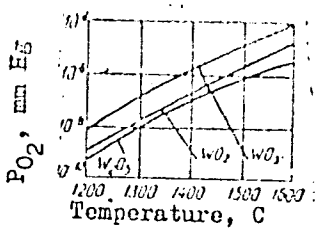

Fig. 2. Dissociation constants of tungsten oxides.

It is concluded that rolling of tungsten in a vacuum to prevent oxidation is feasible. Orig. art. has: 9 tables, 12 formulas, and 2 figures.

SUB CODE: 13/ SUBM DATE: none/ ORIG REF: 018/ OTH REF: 003

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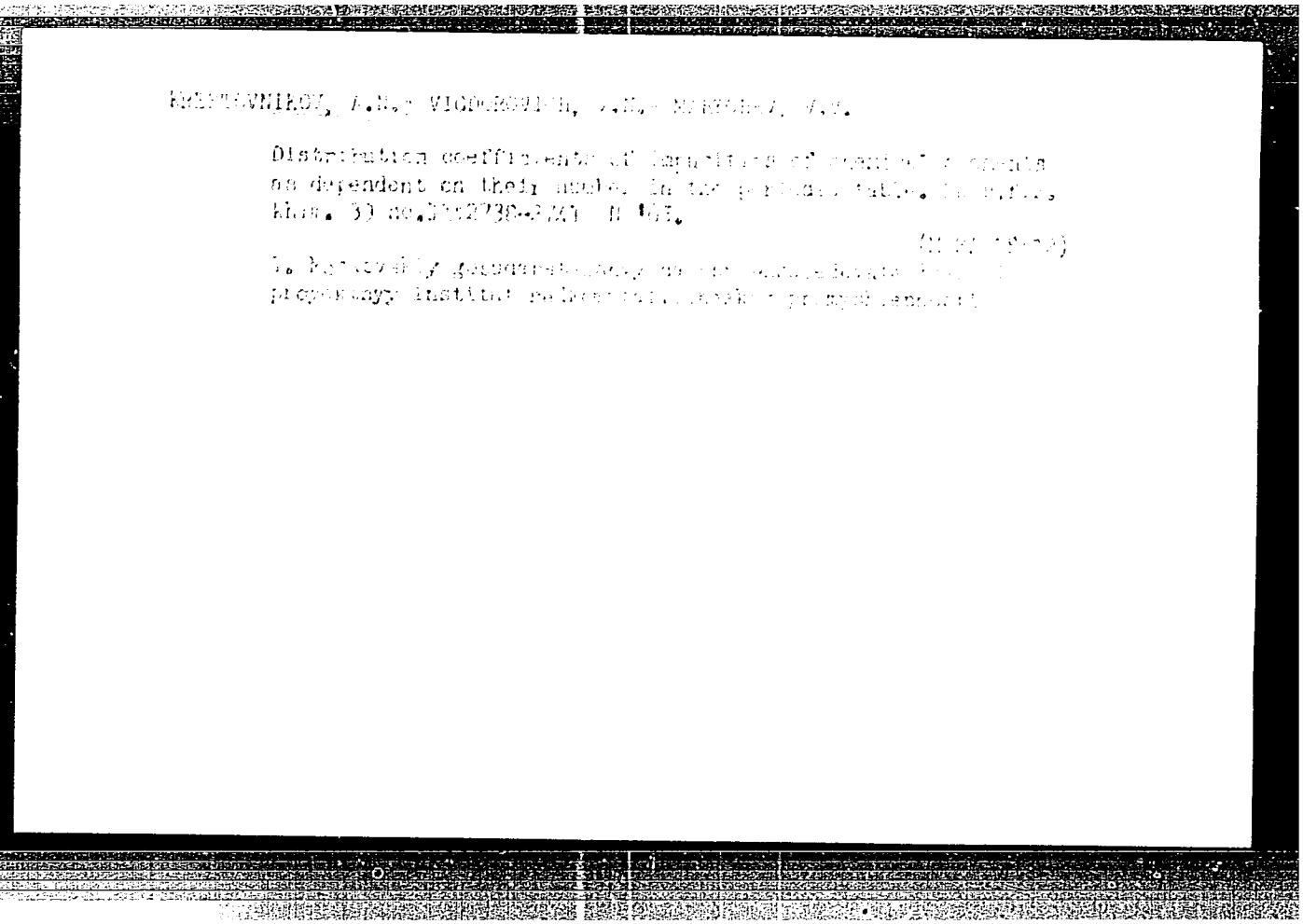

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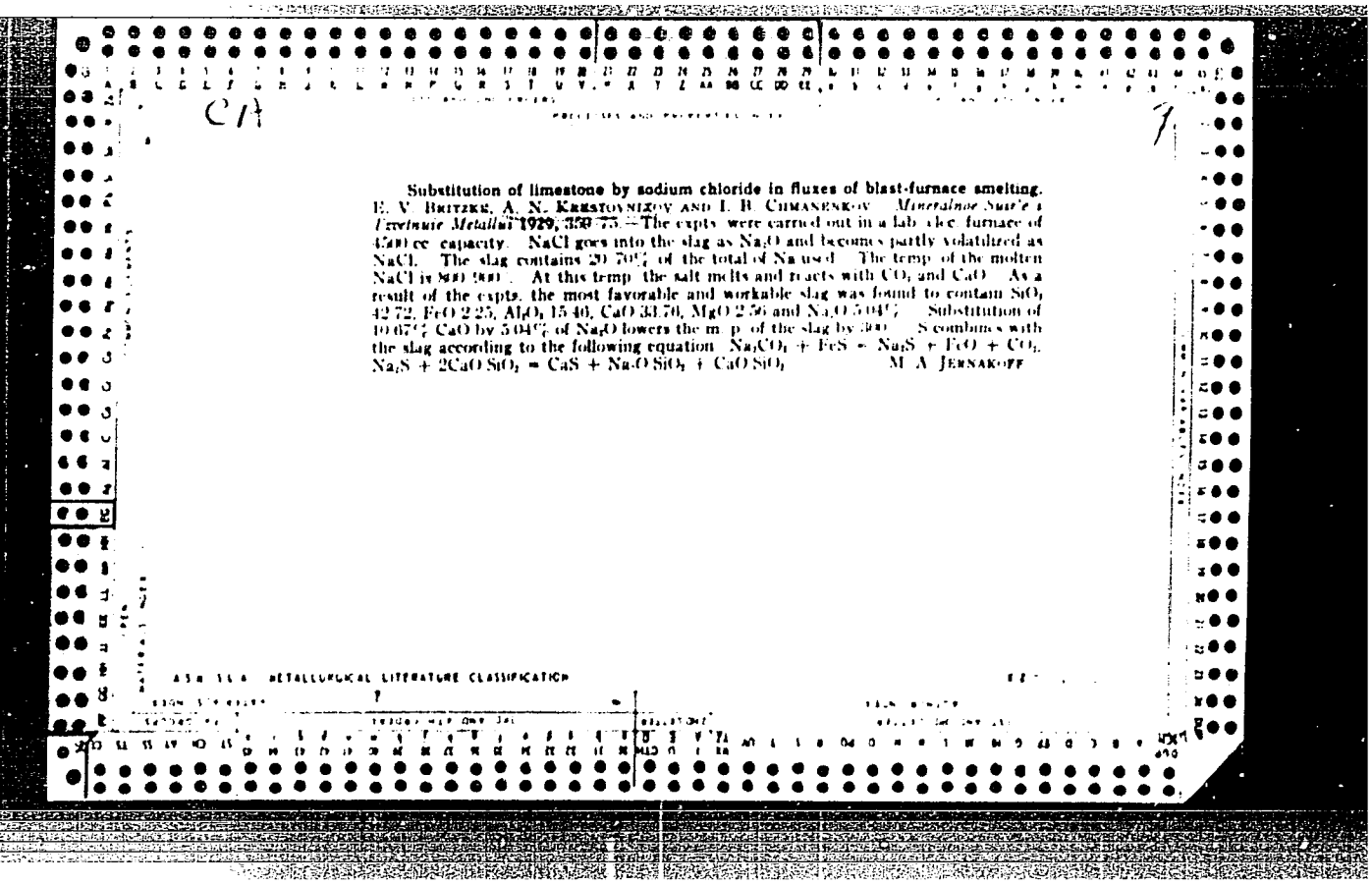

Substitution of limestone by sodium chloride in fluxes of blast-furnace smelting. E. V. Britzke, A. N. Krestovnikov and I. B. Chmanenkov. *Mineralnoe Suir'e i Tsvetnuie Metallui* **1929**, 359-75.—The expts. were carried out in a lab. elec. furnace of 4500 cc. capacity. NaCl goes into the slag as Na_2O and becomes partly volatilized as NaCl. The slag contains 20-70% of the total of Na used. The temp. of the molten NaCl is 800-900°. At this temp. the salt melts and reacts with CO_2 and CaO. As a result of the expts. the most favorable and workable slag was found to contain SiO_2 42.72, FeO 2.25, Al_2O_3 15.40, CaO 33.70, MgO 2.56 and Na_2O 5.04%. Substitution of 10.67% CaO by 5.04% of Na_2O lowers the m. p. of the slag by 300°. S combines with the slag according to the following equation: $Na_2CO_3 + FeS = Na_2S + FeO + CO_2$, $Na_2S + 2CaO \cdot SiO_2 = CaS + Na_2O \cdot SiO_2 + CaO \cdot SiO_2$. M. A. Jernakoff

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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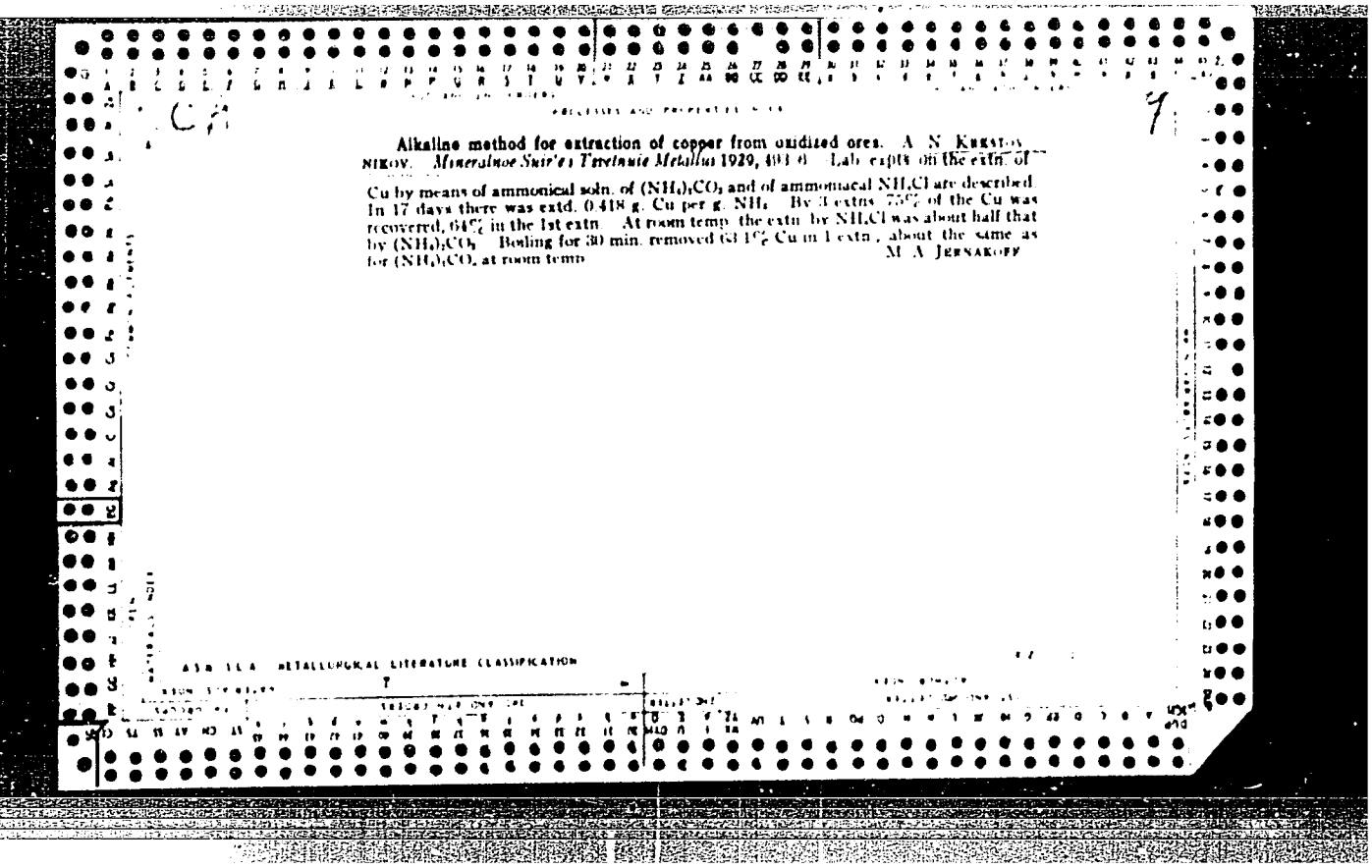
PROCESSES AND PROPERTIES INDEX



Alkaline method for extraction of copper from oxidized ores. A. N. KRESTOVNIKOV. *Mineralnoe Suir'e i Tsvetnuie Metallui* 1929, 493-6. Lab. expts. on the extn. of Cu by means of ammonical soln. of $(NH_4)_2CO_3$ and of ammoniacal NH_4Cl are described. In 17 days there was extd. 0.418 g. Cu per g. NH_4. By 3 extns. 75% of the Cu was recovered, 64% in the 1st extn. At room temp. the extn. by NH_4Cl was about half that by $(NH_4)_2CO_3$. Boiling for 30 min. removed 63.1% Cu in 1 extn., about the same as for $(NH_4)_2CO_3$ at room temp. M. A. JERNAKOFF

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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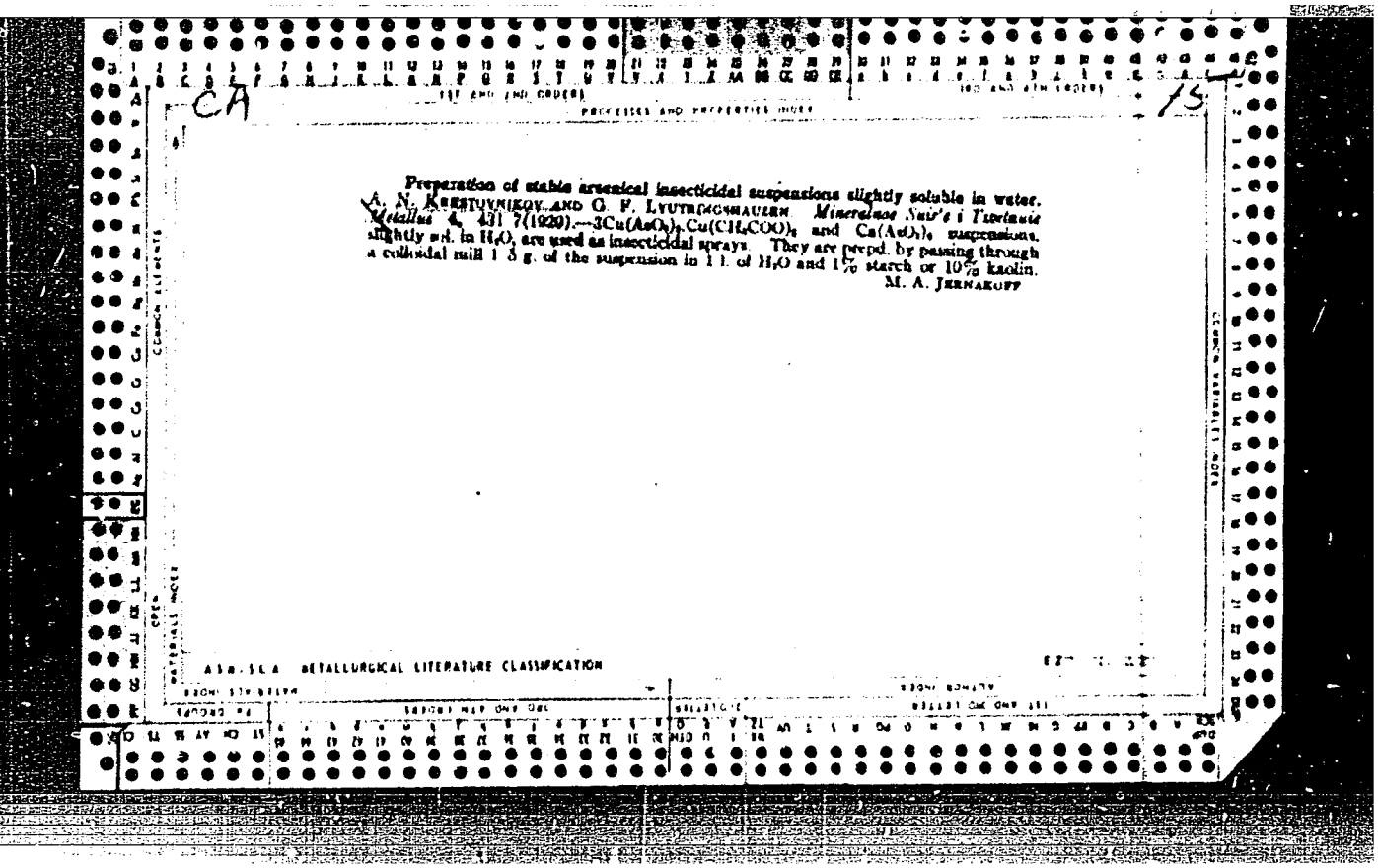

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PROCESSES AND PROPERTIES INDEX

Preparation of stable arsenical insecticidal suspensions slightly soluble in water. A. N. Krestovnikov and G. F. Lyutrdigshauzen. *Mineralnoe Suir'e i Tsvetnuie Metallus* 4, 431-7(1929).—$3Cu(AsO_2)_2.Cu(CH_3COO)_2$ and $Ca(AsO_2)_2$ suspensions, slightly sol. in H_2O, are used as insecticidal sprays. They are prepd. by passing through a colloidal mill 1.5 g. of the suspension in 1 l. of H_2O and 1% starch or 10% kaolin.

M. A. Jernakoff

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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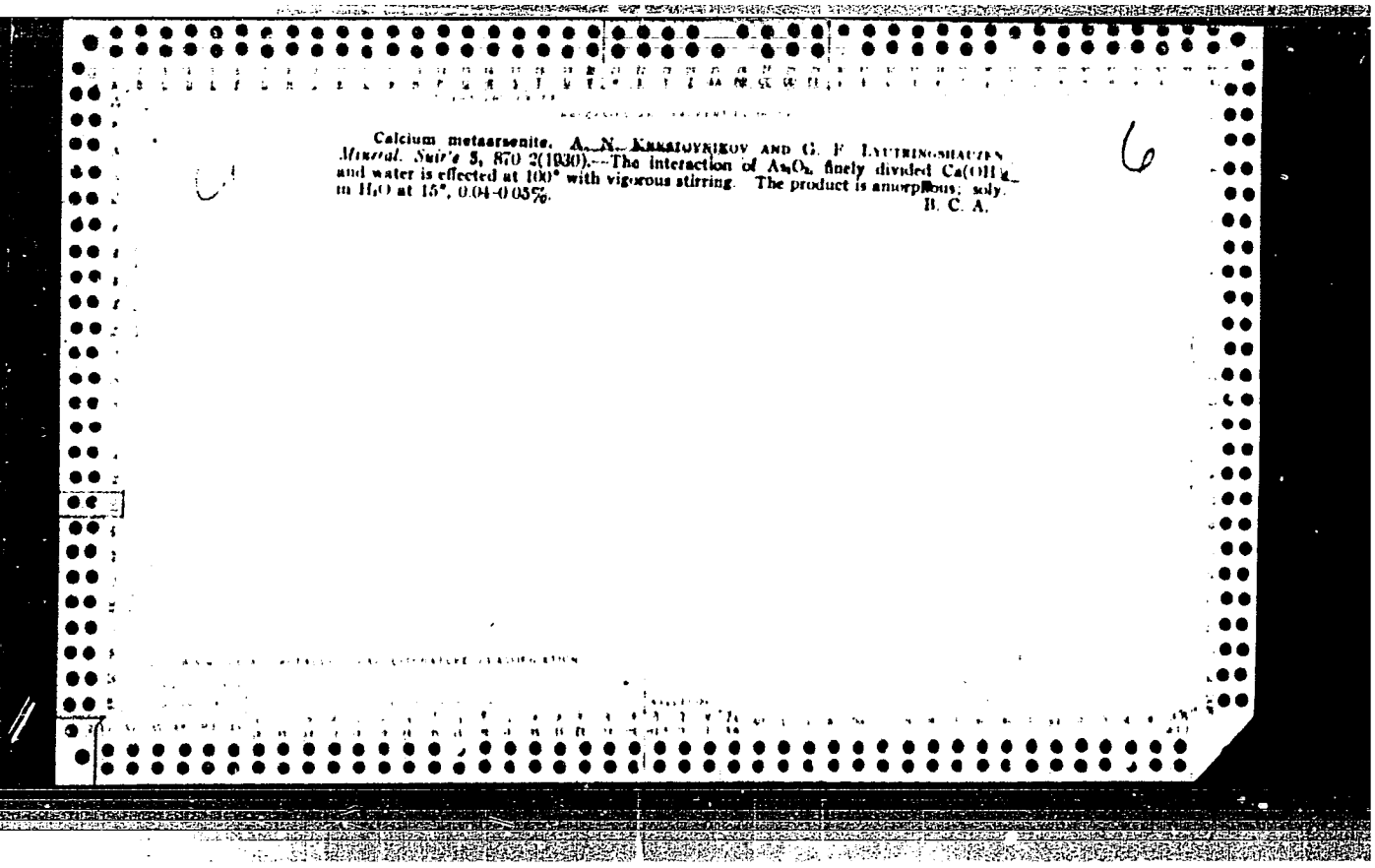

6

Calcium metaarsenite. A. N. Krestovnikov and G. F. Lyutringshauzen. *Mineral. Suir'e* 5, 870-2(1930).—The interaction of As_2O_3, finely divided $Ca(OH)_2$ and water is effected at 100° with vigorous stirring. The product is amorphous; soly. in H_2O at 15°, 0.04-0.05%.

B. C. A.

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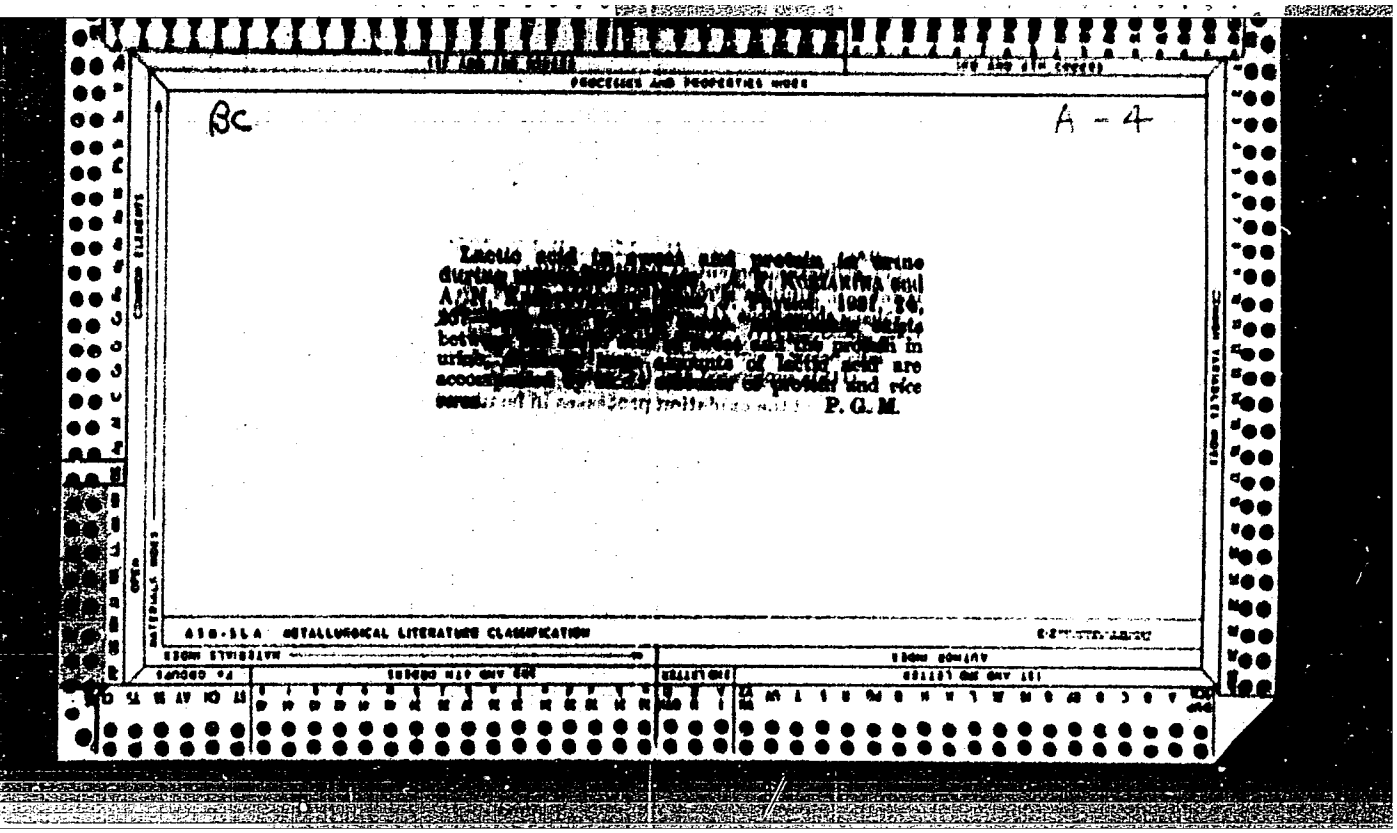

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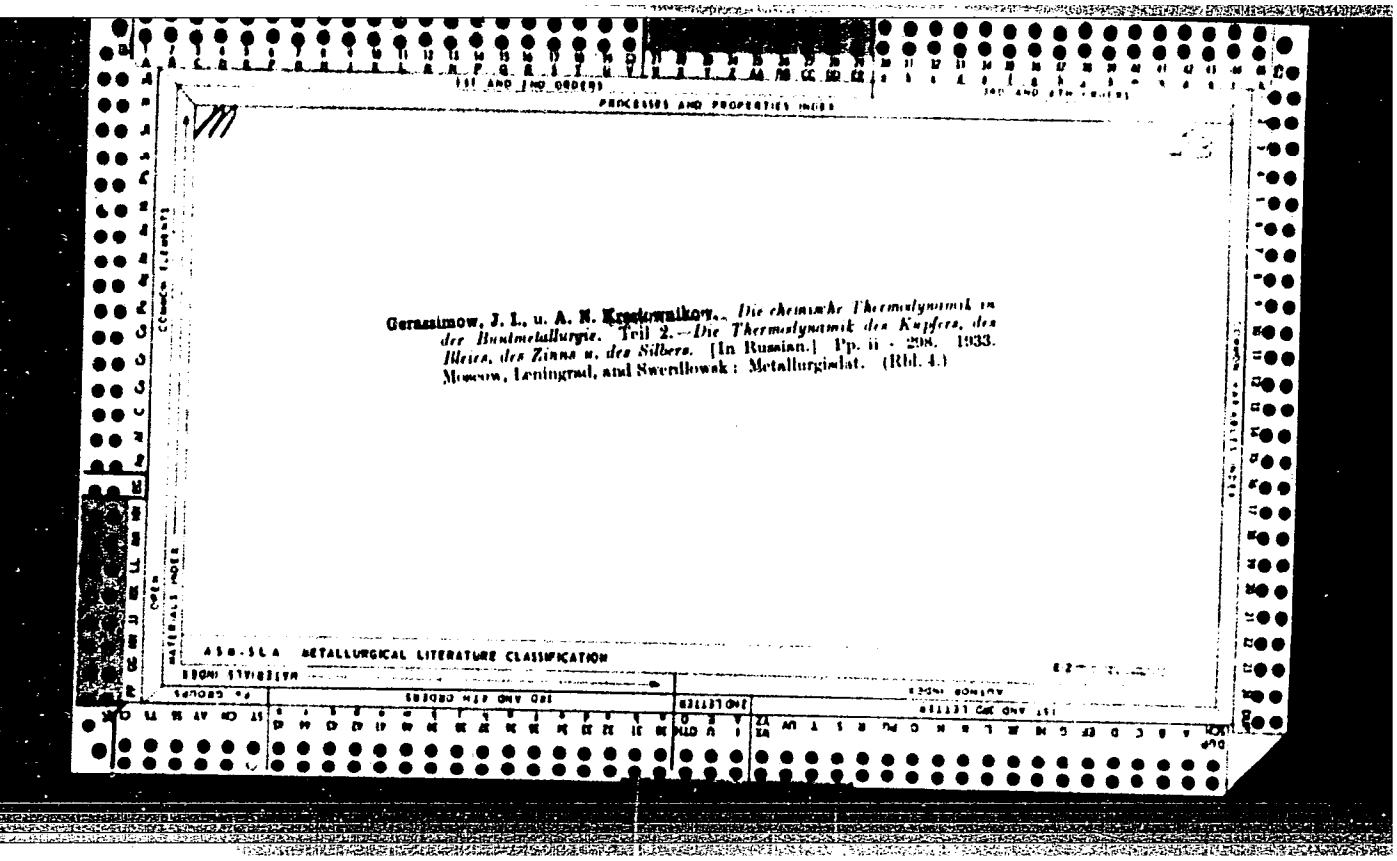

Gerassimow, J. L., u. A. N. Krestownikow. *Die chemische Thermodynamik in der Buntmetallurgie.* Teil 2.—*Die Thermodynamik des Kupfers, des Bleies, des Zinns u. des Silbers.* [In Russian.] Pp. ii + 208. 1933. Moscow, Leningrad, and Swerdlowsk: Metallurgizdat. (Bbl. 4.)

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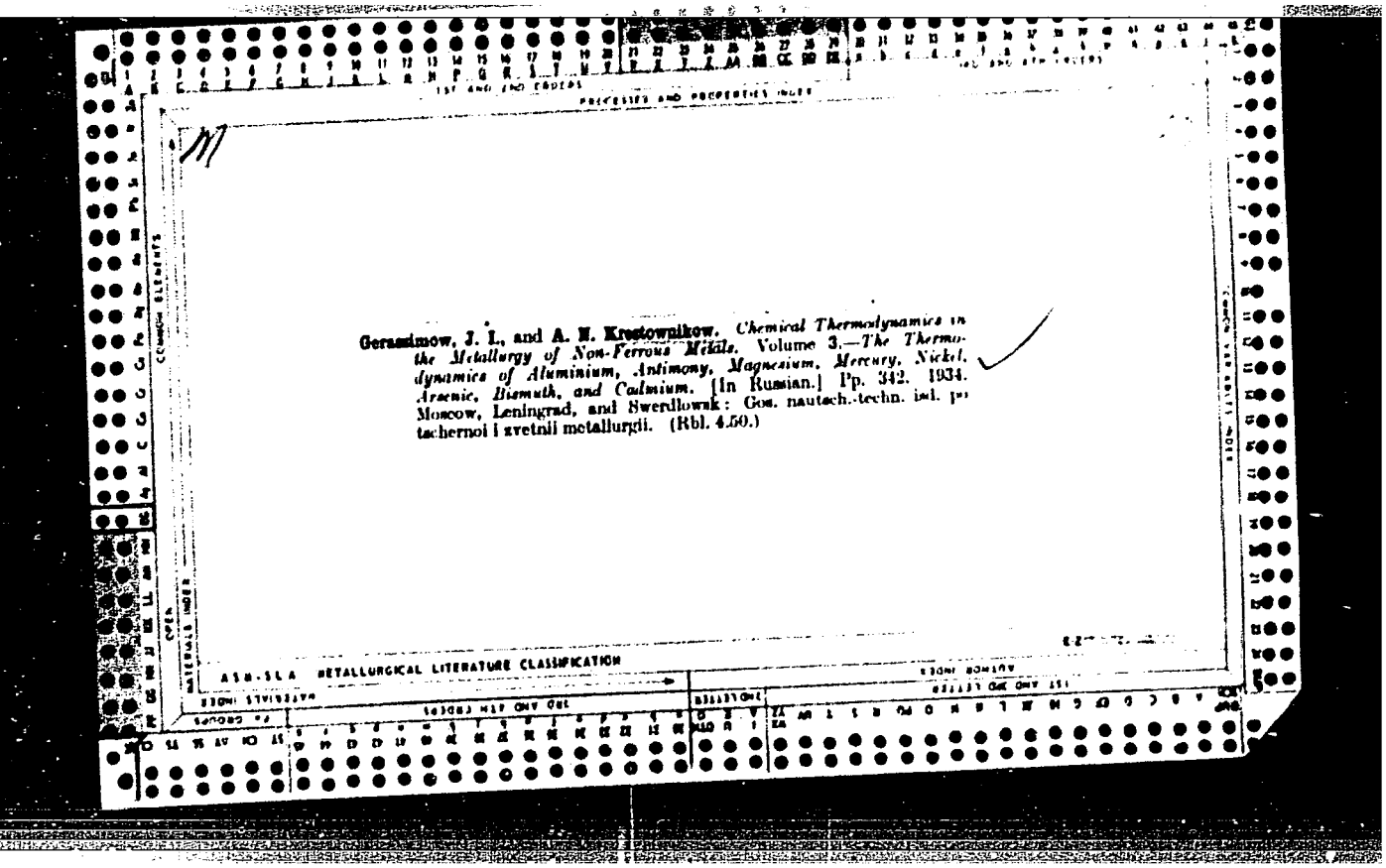

Gerassimow, J. I., and A. N. Krestownikow. *Chemical Thermodynamics in the Metallurgy of Non-Ferrous Metals.* Volume 3.—*The Thermodynamics of Aluminium, Antimony, Magnesium, Mercury, Nickel, Arsenic, Bismuth, and Cadmium.* [In Russian.] Pp. 342. 1934. Moscow, Leningrad, and Swerdlowsk: Gos. nautech.-techn. izd. po tachernoi i zvetnii metallurgii. (Rbl. 4.50.)

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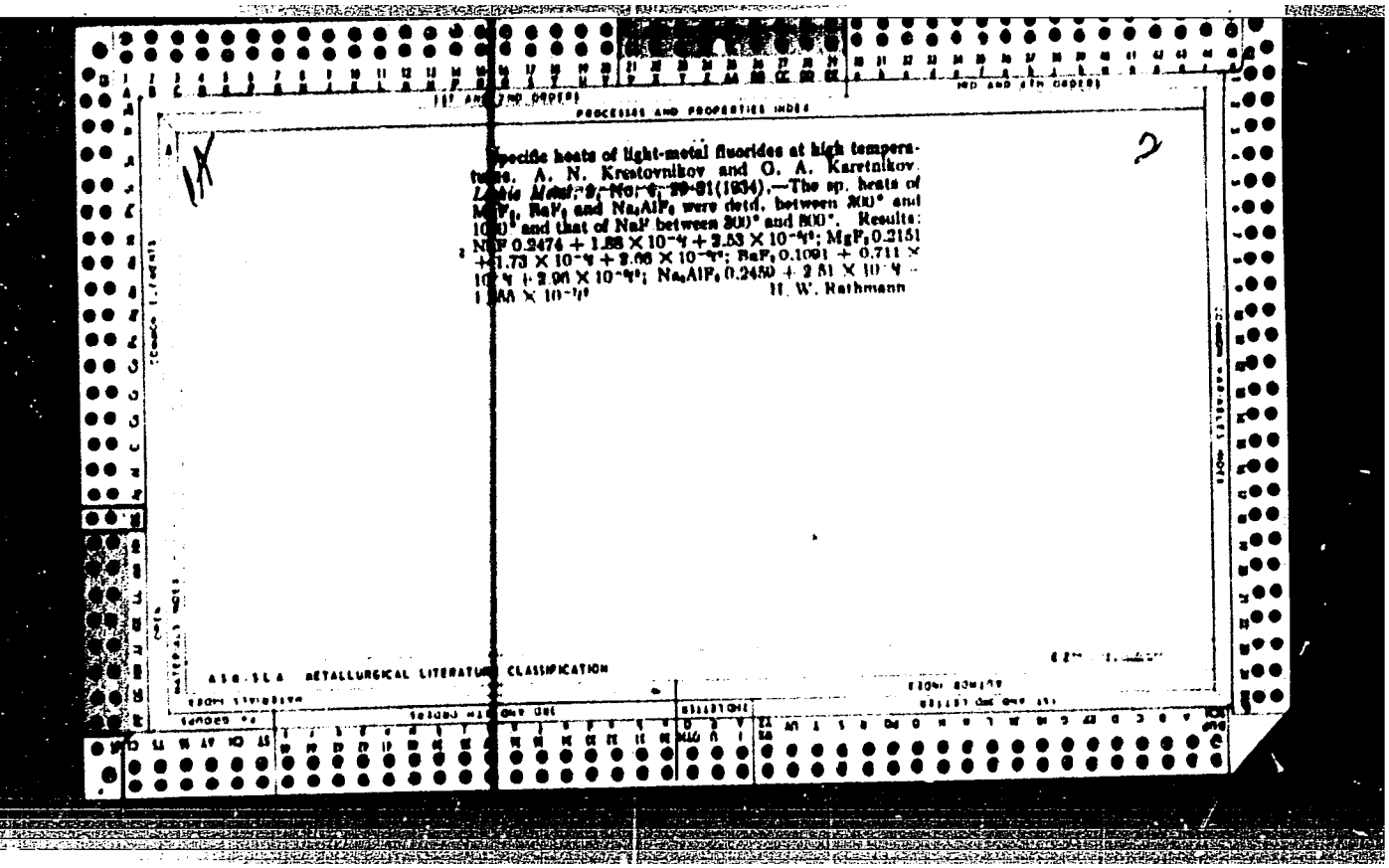

PROCESSES AND PROPERTIES INDEX

Specific heats of light-metal fluorides at high tempera-
tures. A. N. Krestovnikov and O. A. Karetnikov.
Light Metals 2, No. 6, 29-31(1934).—The sp. heats of
MgF_2, BaF_2 and Na_3AlF_6 were detd. between 300° and
1000° and that of NaF between 300° and 800°. Results:
NaF 0.2474 + $1.88 \times 10^{-4}t + 2.53 \times 10^{-8}t^2$; MgF_2 0.2151
$+1.73 \times 10^{-4}t + 2.06 \times 10^{-8}t^2$; BaF_2 0.1091 + 0.711 ×
$10^{-4}t + 2.90 \times 10^{-8}t^2$; Na_3AlF_6 0.2450 + 2.81 × $10^{-4}t$ −
$1.44 \times 10^{-7}t^2$. H. W. Rathmann

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METALLURGICAL LITERATURE CLASSIFICATION

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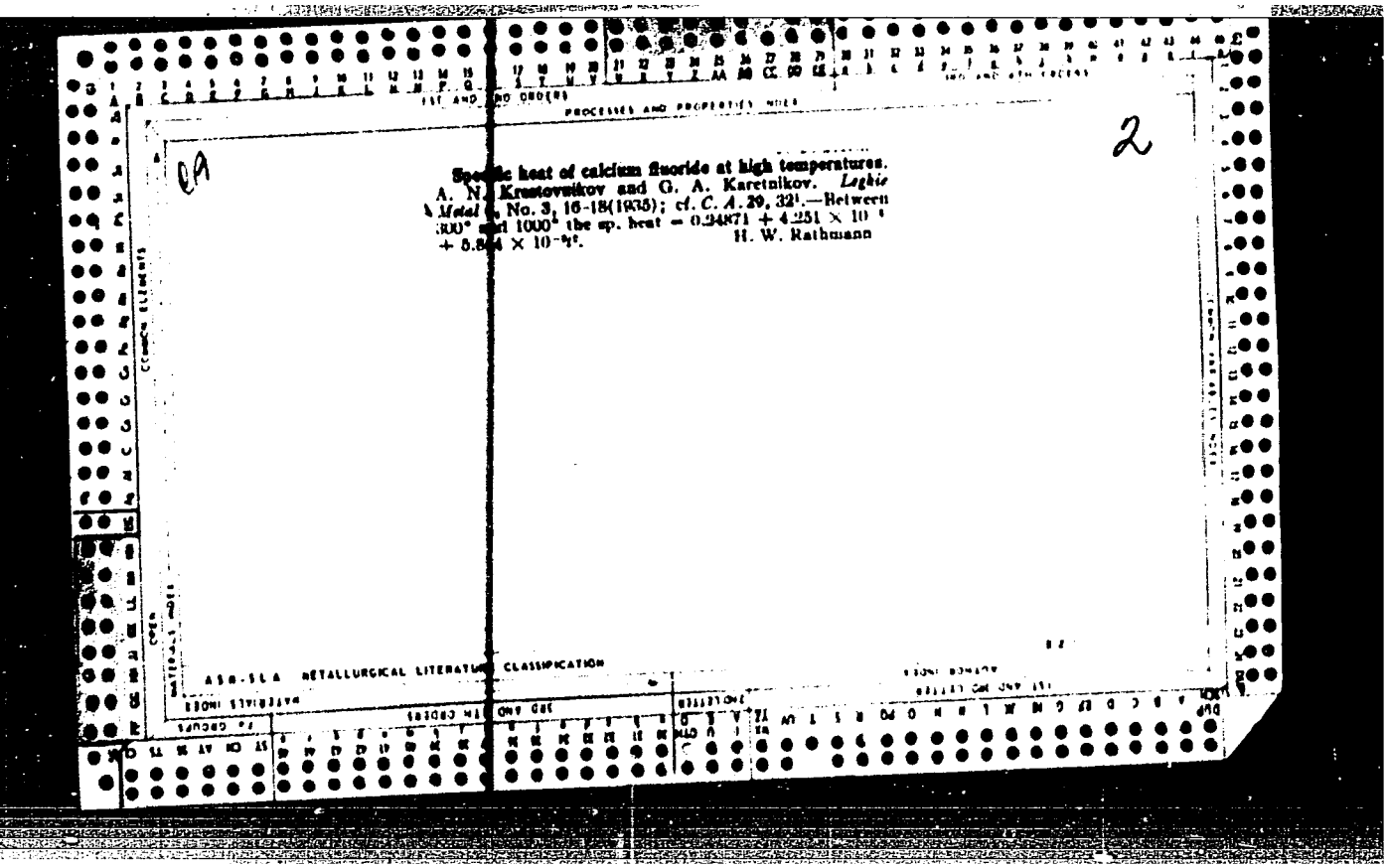

Specific heat of calcium fluoride at high temperatures. A. N. Krestovnikov and G. A. Karetnikov. *Legkie Metally*, No. 3, 16-18(1935); cf. *C. A.* 29, 321.—Between 300° and 1000° the sp. heat = 0.24871 + 4.251 × 10⁻⁴ t + 5.84 × 10⁻⁸t². H. W. Rathmann

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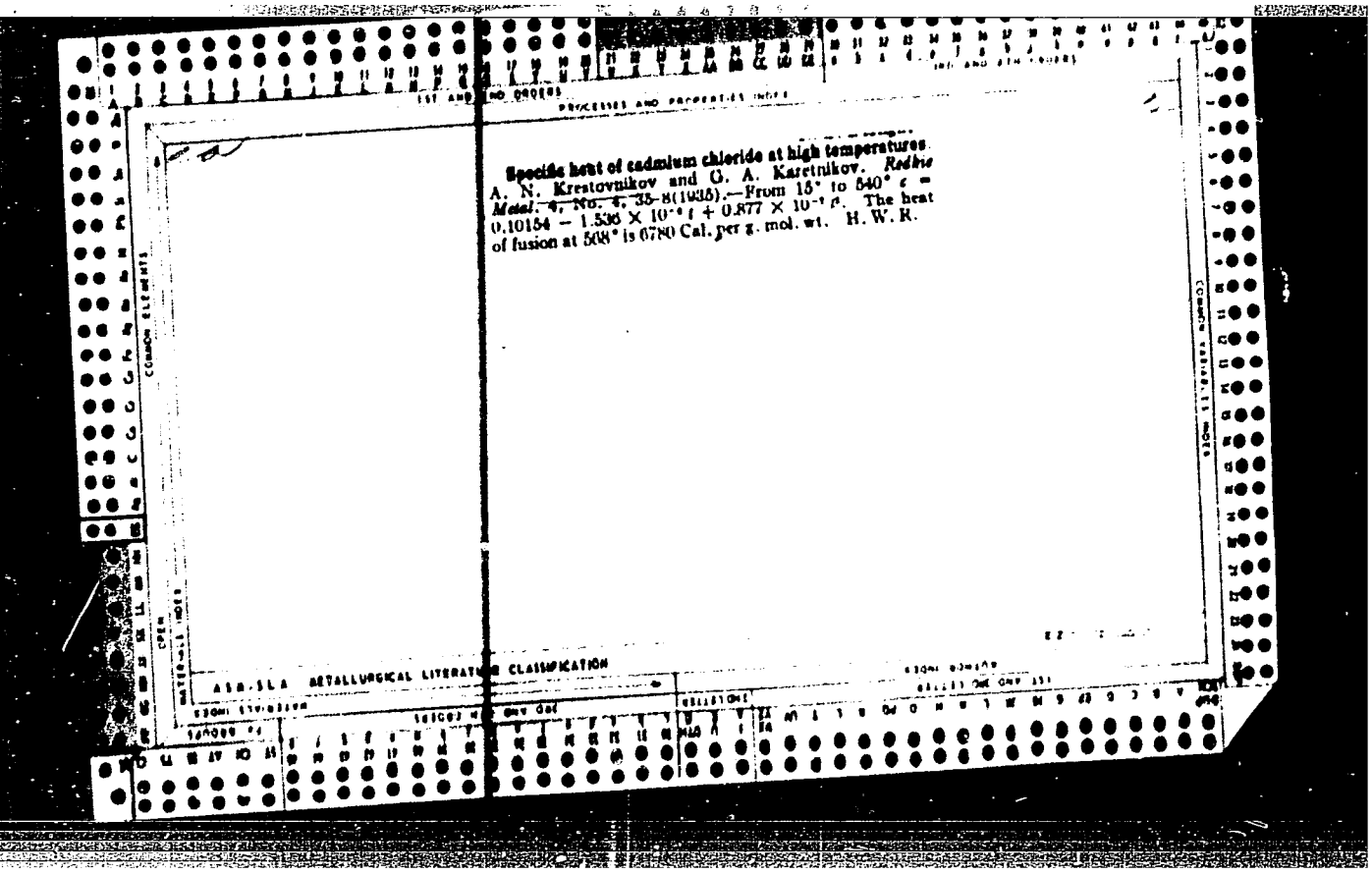

Specific heat of cadmium chloride at high temperatures. A. N. Krestovnikov and G. A. Karetnikov. *Redkie Metal.*, 4, No. 4, 35-8(1935).—From 15° to 540° $c = 0.10154 - 1.536 \times 10^{-4} t + 0.877 \times 10^{-7} t^2$. The heat of fusion at 568° is 6780 Cal. per g. mol. wt. H. W. R.

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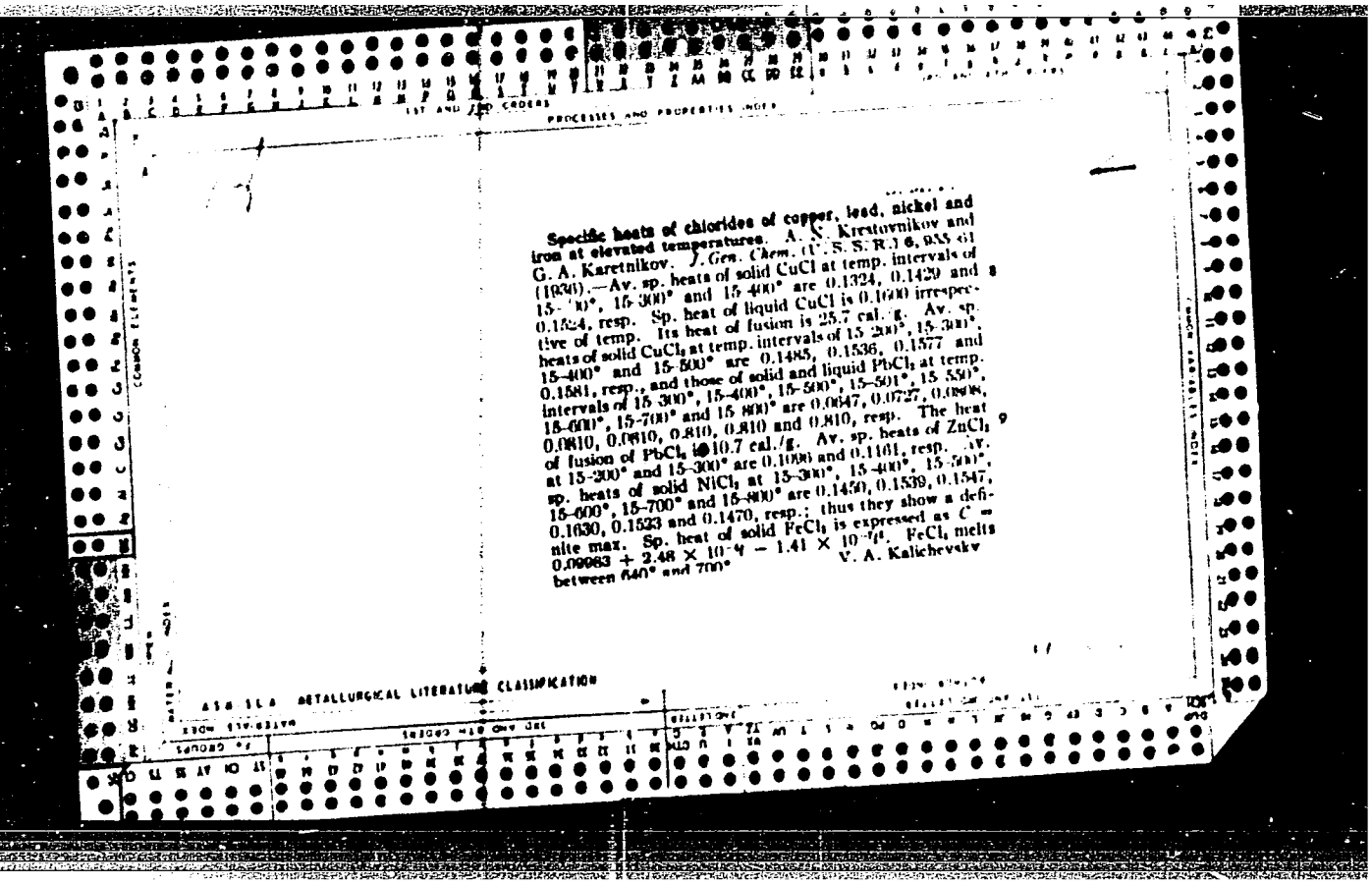

Specific heats of chlorides of copper, lead, nickel and iron at elevated temperatures. A. G. Kretovnikov and G. A. Karetnikov. *J. Gen. Chem.* (U. S. S. R.) 6, 935-61 (1936).—Av. sp. heats of solid CuCl at temp. intervals of 15-100°, 15-300° and 15-400° are 0.1324, 0.1429 and 0.1524, resp. Sp. heat of liquid CuCl is 0.1600 irrespective of temp. Its heat of fusion is 25.7 cal./g. Av. sp. heats of solid $CuCl_2$ at temp. intervals of 15-200°, 15-300°, 15-400° and 15-500° are 0.1485, 0.1536, 0.1577 and 0.1581, resp.; and those of solid and liquid $PbCl_2$ at temp. intervals of 15-300°, 15-400°, 15-500°, 15-501°, 15-550°, 15-600°, 15-700° and 15-800° are 0.0647, 0.0727, 0.0808, 0.0810, 0.0810, 0.810, 0.810 and 0.810, resp. The heat of fusion of $PbCl_2$ is 10.7 cal./g. Av. sp. heats of $ZnCl_2$ at 15-200° and 15-300° are 0.1008 and 0.1101, resp. Av. sp. heats of solid $NiCl_2$ at 15-300°, 15-400°, 15-500°, 15-600°, 15-700° and 15-800° are 0.1450, 0.1539, 0.1547, 0.1630, 0.1523 and 0.1470, resp.; thus they show a definite max. Sp. heat of solid $FeCl_3$ is expressed as $C = 0.09083 + 2.48 \times 10^{-4} t - 1.41 \times 10^{-7} t^2$. $FeCl_3$ melts between 640° and 700°. V. A. Kalichevsky

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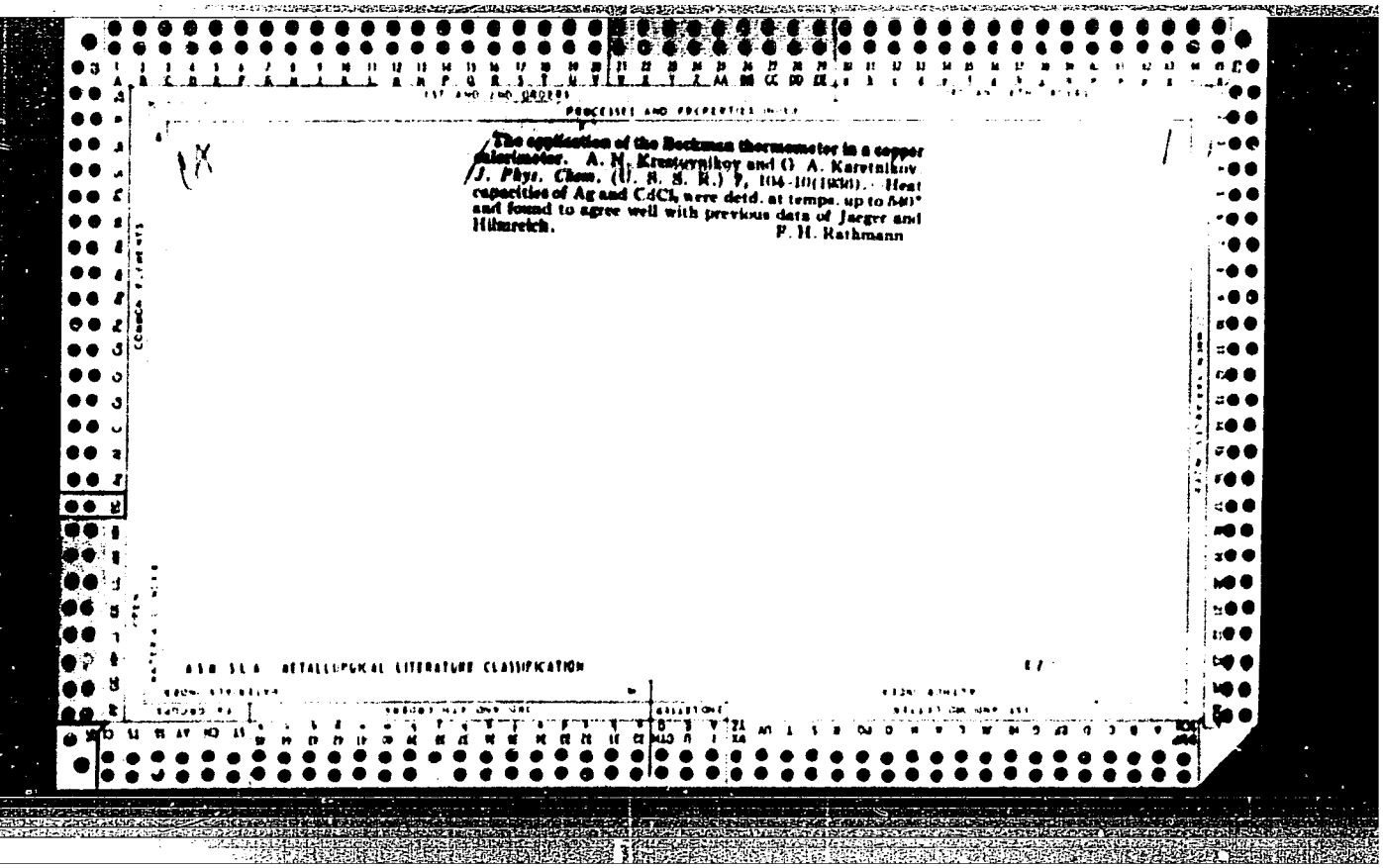

The application of the Beckman thermometer in a copper calorimeter. A. M. Krestovnikov and G. A. Karetnikov. *J. Phys. Chem.* (U. S. S. R.) 9, 104-10(1937). Heat capacities of Ag and CdCl$_2$ were detd. at temps. up to 540° and found to agree well with previous data of Jaeger and Hilmreich.

P. H. Rathmann

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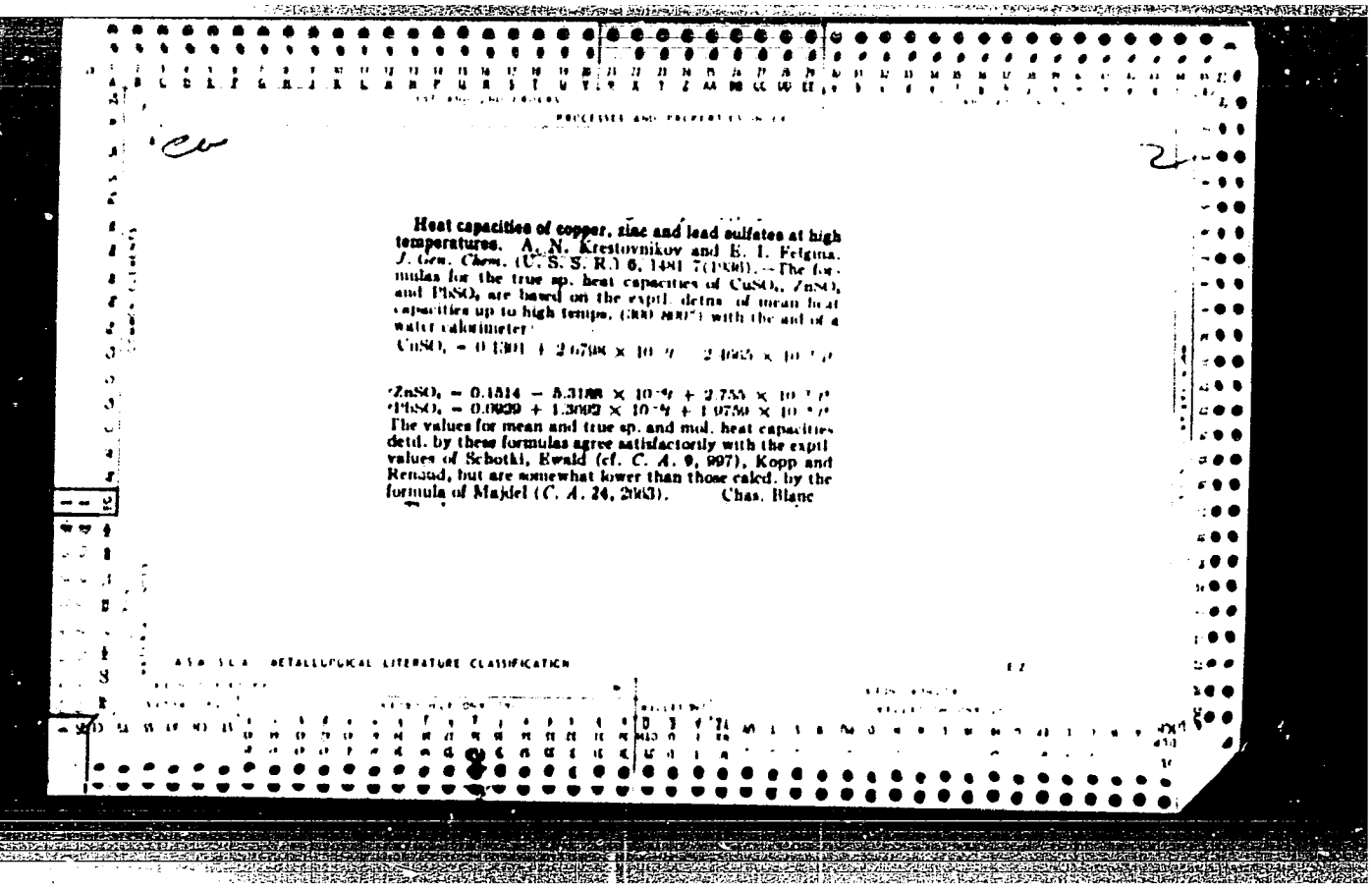

Heat capacities of copper, zinc and lead sulfates at high temperatures. A. N. Krestovnikov and E. I. Felgina. *J. Gen. Chem.* (U. S. S. R.) 6, 1481-7 (1936).—The formulas for the true sp. heat capacities of $CuSO_4$, $ZnSO_4$ and $PbSO_4$ are based on the expil. detns. of mean heat capacities up to high temps. (300-800°) with the aid of a water calorimeter:

$CuSO_4 = 0.1301 + 2.0708 \times 10^{-4}t - 2.1965 \times 10^{-7}t^2$

$ZnSO_4 = 0.1814 - 5.3188 \times 10^{-4}t + 2.755 \times 10^{-7}t^2$

$PbSO_4 = 0.0939 + 1.3092 \times 10^{-4}t + 1.0759 \times 10^{-7}t^2$

The values for mean and true sp. and mol. heat capacities detd. by these formulas agree satisfactorily with the expil values of Schottl, Ewald (*cf. C. A.* 9, 997), Kopp and Renaud, but are somewhat lower than those calcd. by the formula of Majdel (*C. A.* 24, 2063). Chas. Blanc

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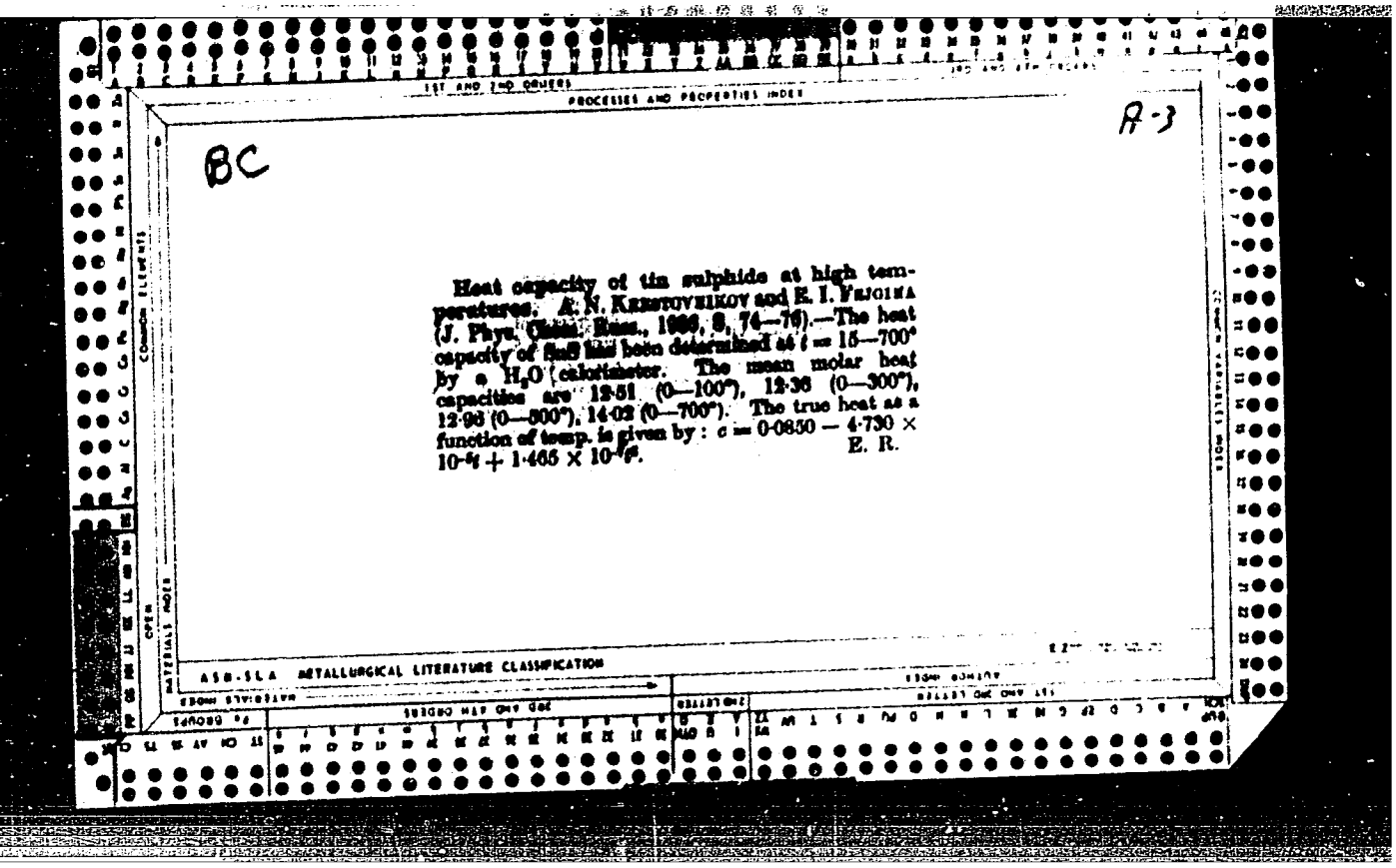

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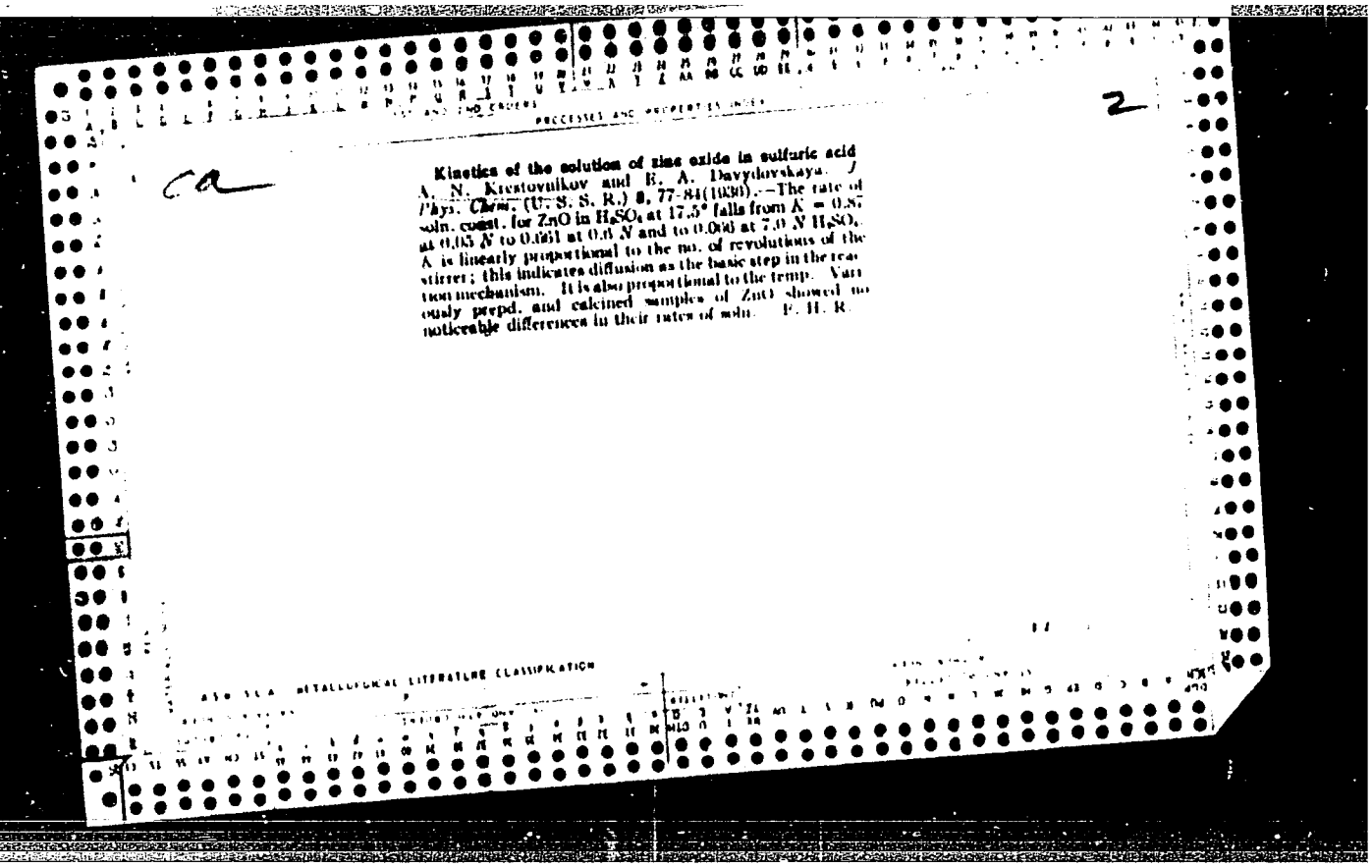

Kinetics of the solution of zinc oxide in sulfuric acid. A. N. Krestovnikov and E. A. Davydovskaya. *J. Phys. Chem.* (U. S. S. R.) 8, 77-84(1936).—The rate of soln. const. for ZnO in H_2SO_4 at 17.5° falls from $K = 0.8$ at 0.05 *N* to 0.051 at 0.8 *N* and to 0.008 at 7.0 *N* H_2SO_4. *K* is linearly proportional to the no. of revolutions of the stirrer; this indicates diffusion as the basic step in the reaction mechanism. It is also proportional to the temp. Variously prepd. and calcined samples of ZnO showed no noticeable differences in their rates of soln. P. H. R.

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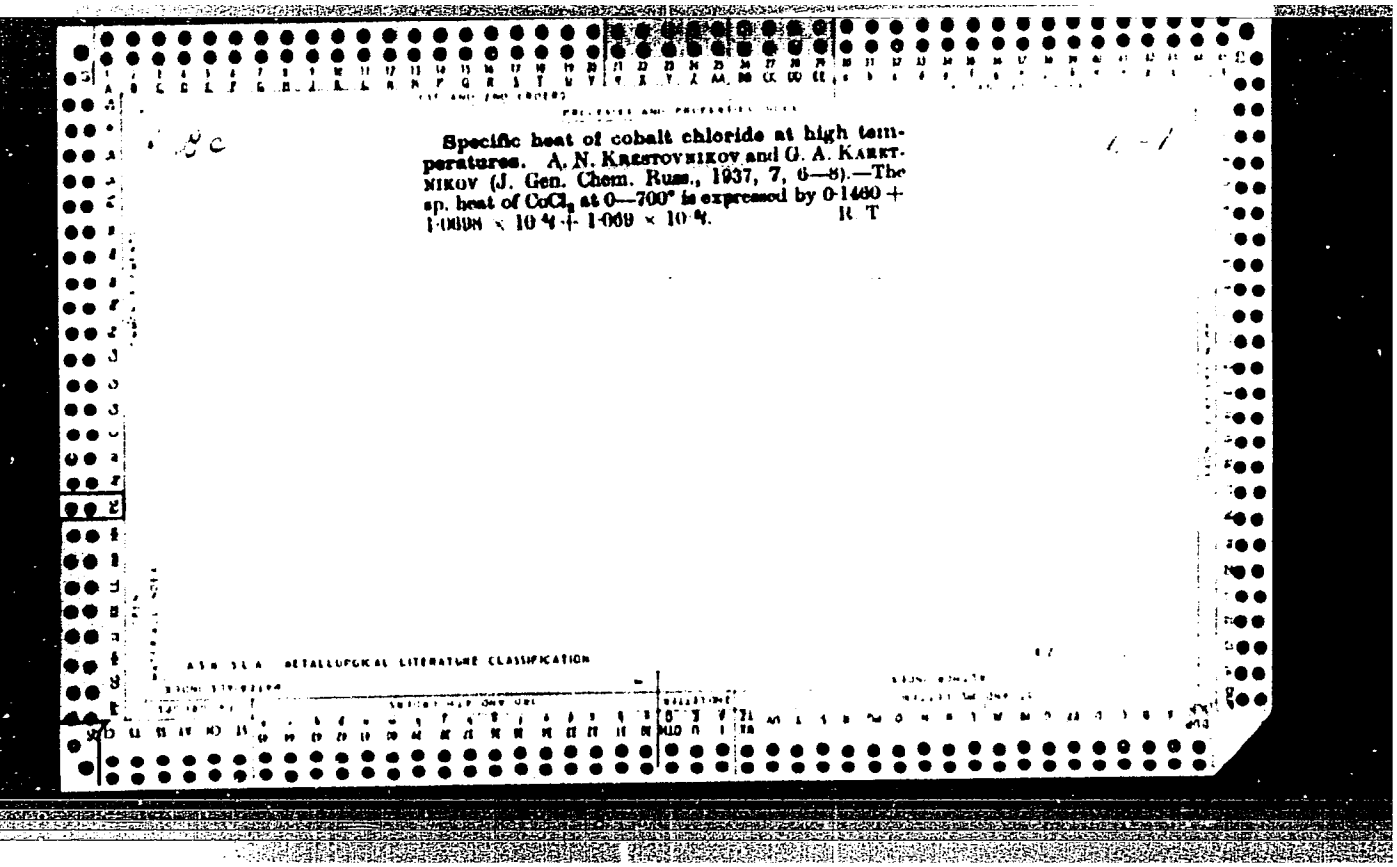

Specific heat of cobalt chloride at high temperatures. A. N. Krestovnikov and G. A. Karetnikov (J. Gen. Chem. Russ., 1937, 7, 6—8).—The sp. heat of $CoCl_2$ at 0—700° is expressed by $0{\cdot}1460 + 1{\cdot}0098 \times 10^{-4}T + 1{\cdot}069 \times 10^{-8}T^2$.

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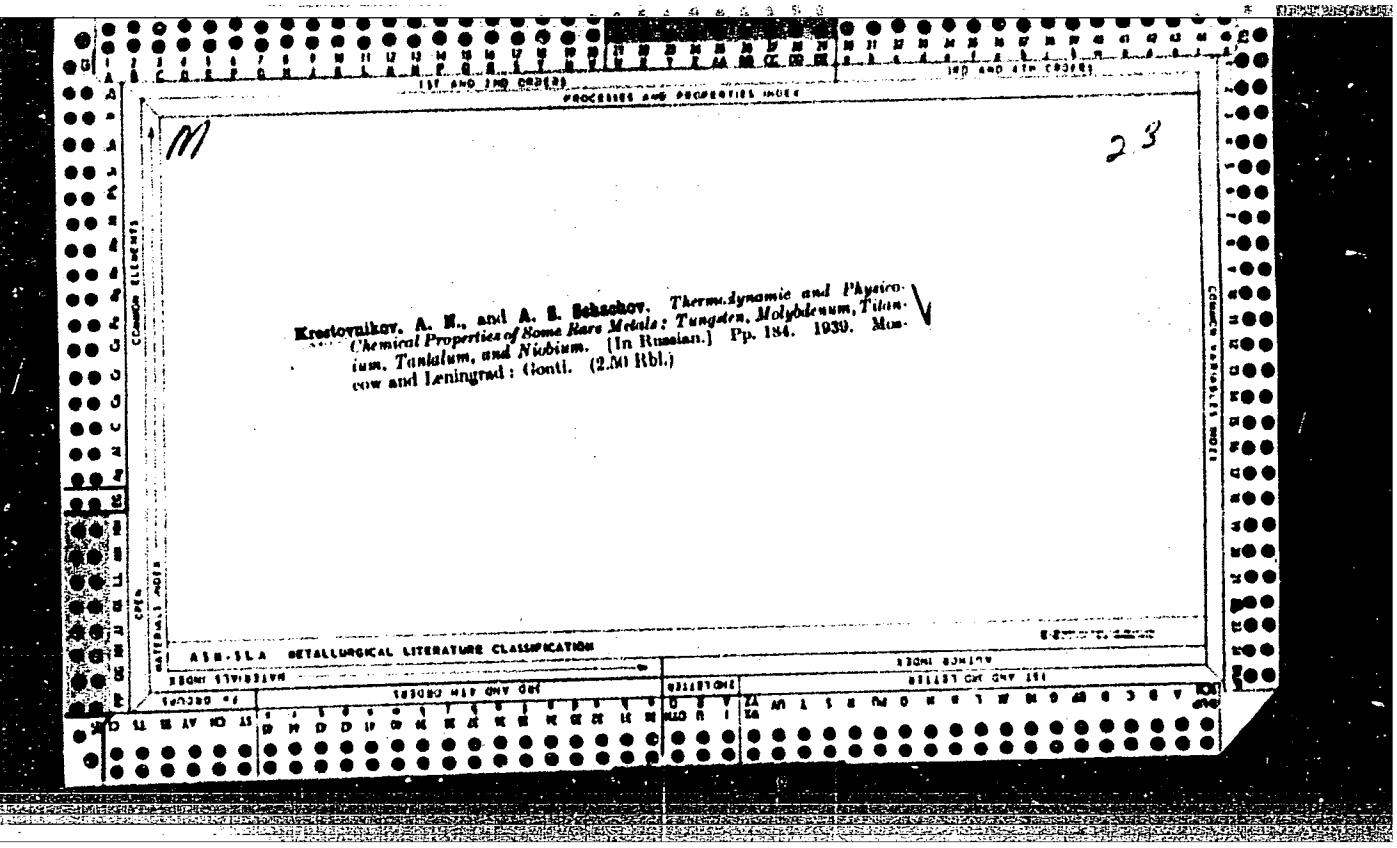

Krestovnikov, A. N., and A. S. Bobachov. *Thermodynamic and Physico-Chemical Properties of Some Rare Metals: Tungsten, Molybdenum, Titanium, Tantalum, and Niobium.* [In Russian.] Pp. 184. 1939. Moscow and Leningrad: Gontl. (2.00 Rbl.)

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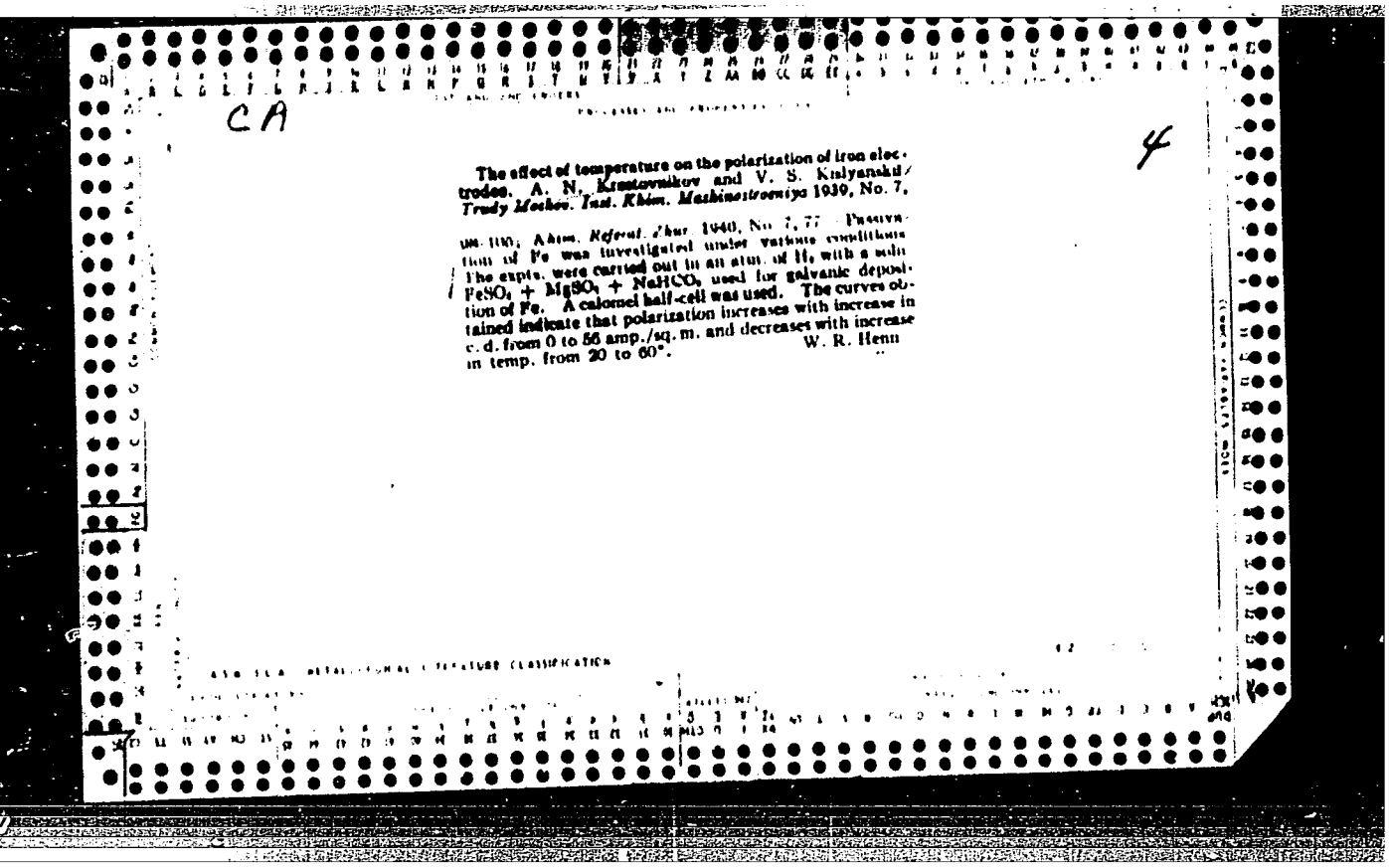

CA

4

The effect of temperature on the polarization of iron electrodes. A. N. Krestovnikov and V. S. Kulyanskii. *Trudy Moskov. Inst. Khim. Mashinostroeniya* 1939, No. 7, [illegible]; *Khim. Referat. Zhur.* 1940, No. 1, 77. Passivation of Fe was investigated under various conditions. The expts. were carried out in an atm. of H, with a soln. of $FeSO_4 + MgSO_4 + NaHCO_3$ used for galvanic deposition of Fe. A calomel half-cell was used. The curves obtained indicate that polarization increases with increase in c. d. from 0 to 55 amp./sq. m. and decreases with increase in temp. from 20 to 60°.

W. R. Henn

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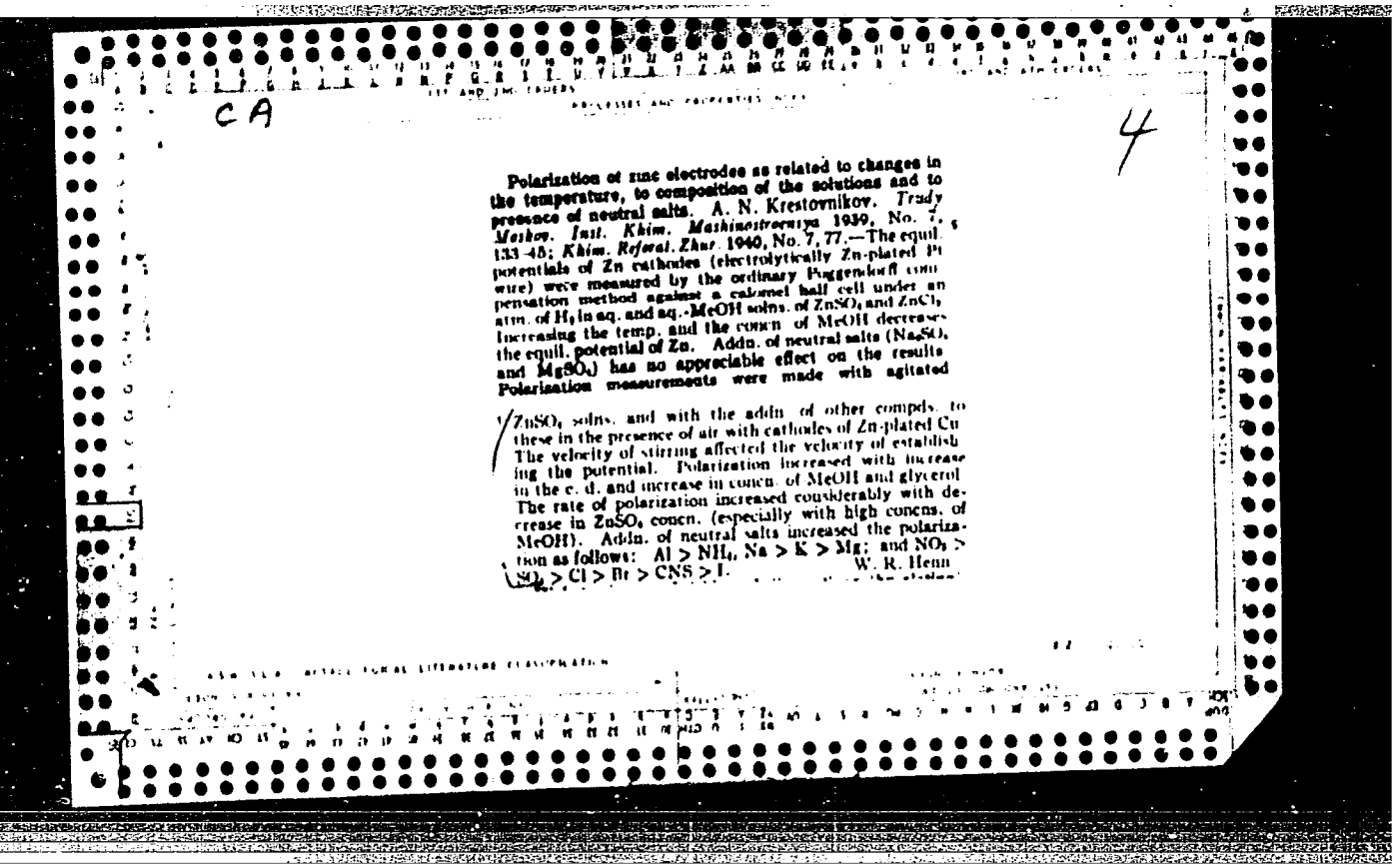

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Polarization of zinc electrodes as related to changes in the temperature, to composition of the solutions and to presence of neutral salts. A. N. Krestovnikov. *Trudy Moskov. Inst. Khim. Mashinostroeniya* 1939, No. 7, 133-48; *Khim. Referat. Zhur.* 1940, No. 7, 77.—The equil. potentials of Zn cathodes (electrolytically Zn-plated Pt wire) were measured by the ordinary Poggendorff compensation method against a calomel half cell under an atm. of H_2 in aq. and aq.-MeOH solns. of $ZnSO_4$ and $ZnCl_2$. Increasing the temp. and the concn. of MeOH decreases the equil. potential of Zn. Addn. of neutral salts (Na_2SO_4 and $MgSO_4$) has no appreciable effect on the results. Polarization measurements were made with agitated $ZnSO_4$ solns. and with the addn. of other compds. to these in the presence of air with cathodes of Zn-plated Cu. The velocity of stirring affected the velocity of establishing the potential. Polarization increased with increase in the c. d. and increase in concn. of MeOH and glycerol. The rate of polarization increased considerably with decrease in $ZnSO_4$ concn. (especially with high concns. of MeOH). Addn. of neutral salts increased the polarization as follows: Al > NH_4, Na > K > Mg; and NO_3 > SO_4 > Cl > Br > CNS > I. W. R. Henn

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KRESTOVNIKOV, A. N. (Prof. Dr.)

The thermal capacities of nonferrous metals and their compounds, Metallurgy of Non-Ferrous Metals, Moscow, 1946. Collection of Scientific Works, No. 14, Moscow Inst. of Non-Ferrous Metallurgy. Report U-3391, 22 April 1953.

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[illegible], A. [illegible]

Krestovnikov, A. N. "The specific heat of [illegible]", [illegible] trudy (Mosk. Poligr. in-t), Collection 1, 194[illegible], p. 1[illegible]-77, [illegible]

Sa: U-[illegible]1, 10 April 53, (Letopis 'Zhurnal 'nykh Statey, [illegible], 1949).

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KRESTOVNIKOV, Aleksandr Nikolayevich, professor, doktor; SHAKHOV, Aleksey Sergeyevich, dotsent, kandidat khimicheskikh nauk; URAZOV, G.G., akademik, redaktor; CHERNOV, A.N., redaktor; ARKHANGEL'SKAYA, M.S., redaktor; ATTOPOVICH, M.K., tekhnicheskiy redaktor.

[Academician Nikolai Sergeevich Kurnakov; work in the field of nonferrous metallurgy] Akademik Nikolai Semenovich Kurnakov; raboty v oblasti tsvetnoi metallurgii. Sostaviteli: A.N.Krestovnikov, A.S. Shakhov. Pod red. G.G.Urazova, Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1954. 406 p. (MLRA 7:12)
(Kurnakov, Nikolai Sergeevich, 1860-1941) (Metallurgical analysis)

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KRESTOVNIKOV, A. N.

Evaluation of changes in the equilibrium constant due to specific-heat variations of zinc during reduction of zinc oxide with carbon monoxide or hydrogen. / M. S. Vendrikh and A. N. Krestovnikov. *Sbornik Nauch. Trudov Moskov. Inst. Tsvetnykh Metal. i Zolota* 1954, No. 24, 241-62; *Referat. Zhur., Khim.* 1955, Abstr. No. 54621.—For clarifying the effect of the C_p variation of Zn on the accuracy of the calcd. equil. const. of the reactions $ZnO + CO = Zn + CO_2$ (1) and $ZnO + H_2 = Zn + H_2O$ (2) by the $\phi(T) = (\Delta H/T) + I$ and the "standard tables," the temp. dependence of K_p is calcd. for (1) and (2). As a basis for the calcns., equations giving the max. and min. values of C_p are used. At a variation of the C_p values the const. I in φT is 25% in (1) and 21.9% in (2). The variation of K_p at $T = 1120°K.$ (Standard Tables) is 19.26% (1) and 20.03% (2).

N. Vasileff

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USSR/Chemical Technology. Chemical Products and Their Application -- Electrochemical manufacturing. Electrodeposition. Chemical sources of electrical current, I-8

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 5111

Author: Krestovnikov, A. N., Gastev, S. S.

Institution: Moscow Polygraphical Institute

Title: Kinetics of Etching of Zinc Used in Printing by the Chemical Method

Original Publication: Nauch. tr. Mosk. poligr. i-nt, 1955, 3, 135-142

Abstract: Investigation of the rate of dissolution of sheet Zn used in the printing industry, in mixtures of HCl and HNO_3 (using 15 (I), 10 (II) and 5 (III) % by weight of each component in the mixture), by the method of determination of loss in weight (LW) after 5 minutes of etching (E). The E in I was started at 25° and terminated at ~100° due to natural heating. Mixtures II and III were heated at 80° before E, so that the temperature of these mixtures attained ~90° at the end of E. It is shown that with all other conditions being equal,

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USSR/Chemical Technology. Chemical Products and Their Application -- Electrochemical manufacturing. Electrodeposition. Chemical sources of electrical current, I-8

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 5111

Abstract: LW decrease in the series I > II > III. Increase in the volume of the solution from 100 to 1,100 ml, results, in general, in greater LW, and this effect increases in the series III < II < I. On decrease of the effective surface of the Zn the LW decreases in III and undergoes no change in I. The last mentioned effect is attributed to attainment, in I, of the saturation level of E products concentration, due to a high rate of dissolution. Using III as an example it is shown that the speed of stirring of the solution produces no substantial effect on LW.

Card 2/2

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PAZUKHIN, Vasiliy Aleksandrovich; FISHER, Aleksandr Yakovlevich; KRESTOVNIKOV, A.N., professor, doktor, retsenzent; MEYERSON, G.A., professor, doktor, retsenzent; ZHUKOVSKIY, Ye.I., professor, doktor, retsenzent; MEN'SHIKOV, M.I., kandidat tekhnicheskikh nauk, retsenzent; SAMSONOV, G.V., kandidat tekhnicheskikh nauk, retsenzent; MESHCHERYAKOV, S.I., kandidat tekhnicheskikh nauk, retsenzent; SAMSONOV, G.V., redaktor; ARKHANGEL'SKAYA, M.S., redaktor izdatel'stva; BERLOV, A.P., tekhnicheskiy redaktor

[Vacuum in metallurgy] Vakuum v metallurgii. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1956. 520 p.
(Vacuum) (Metallurgy) (MLRA 9:12)

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

BELYAYEV, Anatoliy Ivanovich; ZHEMCHUZHINA, Yelena Aleksandrovna; FIRSANOVA, Lidiya Alekseyevna; SKLYARENKO, S.I., professor, doktor, retsenzent; KRESTOVNIKOV, A.N., professor, doktor, retsenzent; CHERNOV, A.N., redaktor; [illegible]SKAYA, M.S., redaktor izdatel'stva; ATTOPOVICH, M.K., tekhnicheskiy redaktor

[Physical chemistry of soluble salts] Fizicheskaia khimiia rasplavlennykh solei. Moskva, Gos. nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1957. 359 p. (MIRA 10:11)
(Salts, Soluble)

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

Krestovnikov A. N.

3-2-23/32

AUTHOR: Krestovnikov, A.N., Professor, Vigdorovich, V.N., Assistant

TITLE: Lecture Demonstrations on Chemical Kinetics (O lektsionnykh demonstratsiyakh po khimicheskoy kinetike)

PERIODICAL: Vestnik vysshey shkoly, Feb 1957, # 2, p 67-68 (USSR)

ABSTRACT: The author begins with the statement that there are no manuals describing demonstrations of physical chemistry, which causes the lecturer much difficulty when he tries to teach by illustration. One of the most interesting sections of physical chemistry is chemical kinetics, but there are few means of demonstrating experiments in this science. For some years, the instructors of the Chair of Physical Chemistry of the Moscow Institute of non-ferrous Metals and Gold, in the course of their lectures, have shown experiments illustrating the peculiarities of chemical reaction kinetics. For this purpose the reaction of resolving hydrogen peroxide is being used. The author goes on to describe the various phases of resolution and then describes 3 more experiments.

ASSOCIATION: The Moscow Institute of Non-ferrous Metals and Gold imeni M.I. Kalinin (Moskovskiy institut tsvetnykh metallov i zolota imeni M.I. Kalinina)

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137-58-4-6570

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 36 (USSR)

AUTHORS: Krestovnikov, A. N., Kurumchin, Kh. A.

TITLE: Kinetics of the Dissolution of Copper in a Mixture of Sulfuric Acid and Ammonium Nitrate (Kinetika rastvoreniya medi v smesi sernoy kisloty s azotnokislym ammoniyem)

PERIODICAL: Sb. nauchn. tr. Mosk. in-t tsvetn. met. i zolota i VNITO tsvetn. metallurgii, 1957, Nr 26, pp 212-221

ABSTRACT: The rate of dissolution of Cu in a mixture of H_2SO_4 and $(NH_4)NO_3$ rises with the strength of the acid. A considerable speed is attained at a concentration of 400 g/l H_2SO_4 at room temperature and at 100 g/l at 60°C. The amount of Cu going into solution is virtually directly proportional to the duration of the contact. The rate of solution of Cu rises with increase in the strength of the $(NH_4)NO_3$. Calculation of the relationship between the rate and the temperature shows that the process of dissolution of Cu is diffusive at temperatures under 50° and becomes kinetic at higher temperatures.

L. P.

Card 1/1

1 Copper--Solubility--Kinetics 2 H_2SO_4 and $(NH_4)NO_3$--Applications

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

SOV/137-58-7-14197

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 7, p 33 (USSR)

AUTHOR: Krestovnikov, A. N.

TITLE: Specific Heat and Heat Content of Magnesium (Teployemkost' i teplosoderzhaniye magniya)

PERIODICAL: Sb. nauchn. tr. Mosk. in-t tsvetn. met. i zolota i VNITO tsvetn. metallurgii, 1957, Nr 26, pp 222-226

ABSTRACT: The bibliographic data on the specific heat C_p and the heat content H_p of magnesium for ultra-low, low, room, and high (up to 1500°C) temperature is critically examined and recommendations are given for their utilization in thermodynamic and metallurgical calculations. For the calculation of C_p in the interval 0-651° (melting point) the following equation is proposed: $C_p = 5.85 + 2.8 \cdot 10^{-3} t$; for the calculation of H_p (in the same range) the equation: $H_p = 5.85t + 1.4 \cdot 10^{-3} t^2$ is set forth.

1. Magnesium--Specific heat 2. Magnesium--Thermodynamic properties

Yu. Z.

Card 1/1

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

SOV/137-58-7-14198

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 7, p 33 (USSR)

AUTHOR: Krestovnikov, A. N.

TITLE: Specific Heat and Heat Content of Tin (Teployemkost' i teplosoderzhaniye olova)

PERIODICAL: Sb. nauchn. tr. Mosk. in-t tsvetn. met. i zolota i VNITO tsvetn. metallurgii, 1957, Nr 26, pp 227-232

ABSTRACT: An evaluation of the reliability of bibliographical data on the specific heat C_p and the heat content H_p of Sn at ultralow, low, room, and high (up to 1000°C) temperatures. Recommendations for thermodynamic calculations are given. For the calculation in the range 0-231.8° (melting point) the author offers the following equations: $C_p = 6.34 + 0.352 \cdot 10^{-2} t$ and $H_p = 6.34\, t + 0.176 \cdot 10^{-2} t^2$. The author proposes the adoption of a constant C_p for liquid Sn equal to 7.0 cal/g·atom. Bibliography: 29 references.

1. Tin--Specific heat 2. Tin--Thermodynamic properties Yu. Z.

Card 1/1

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

SOV/137-58-7-14199

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 7, p 34 (USSR)

AUTHORS: Krestovnikov, A. N., Vendrikh, M. S., Feygina, Ye. I.

TITLE: Specific Heat and Heat Content of Compounds of Cadmium, Mercury, Arsenic, Antimony, and Bismuth (Teployemkost' i teplosoderzhaniye soyedineniya kadmiya, rtuti, mysh'yaka, sur'my i vismuta)

PERIODICAL: Sb. nauchn. tr. Mosk. in-t tsvetn. met. i zolota i VNITO tsvetn. metallurgii, 1957, Nr 26, pp 233-258

ABSTRACT: A critical evaluation of bibliographical data on the specific heat and heat content of CdO, CdS, $CdCl_2$, HgO, HgS, Hg_2SO_4, HgCl, $HgCl_2$, As_2S_3, As_2O_3, As_2O_5, Sb_2O_3, Sb_2O_4, Sb_2O_5, Sb_2S_3, $SbCl_3$, Bi_2S_3, and Bi_2O_3 has been conducted. The most reliable values and equations for utilization in thermodynamic and metallurgical calculations were selected. Bibliography: 25 references.

1. Intermetallic compounds--Specific heat 2. Intermetallic compounds--Thermodynamic properties

Yu. Z.

Card 1/1

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

SOV/137-58-10-21470

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 144 (USSR)

AUTHORS: Krestovnikov, A. N., Vendrikh, M. S.

TITLE: Specific Heat of Chromium Boride (Teployemkost' borida khroma)

PERIODICAL: Sb. nauchn. tr. Mosk. in-t tsvetn. met. i zolota, Nauchno-tekhn. o-vo tsvetn. metallurgii, 1957, Nr 30, pp 135-137

ABSTRACT: The mean specific heat of CrB_2 (70% Cr, 29.9% B, 0.05% C 0.40% Fe) was determined on a water calorimeter set for the temperature range from room temperature to 300, 400, 500, 600, 700, and 800°C. On the basis of the data obtained the following equation for the relationship of specific heat to temperature was developed by the method of least squares: $c = 0.1342 + 1.03 \cdot 10^{-4} T$. An equation for the true specific heat capacity, $c = 0.1061 + 2.06 \cdot 10^{-4} T$, was also obtained.

L. B.

1. Chromium borides--Specific heat

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

SOV/137-58-11-21954

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 11, p 17 (USSR)

AUTHORS: Krestovnikov, A. N., Vendrikh, M. S.

TITLE: The Heat Capacity of Copper, Zinc, and Lead and the Influence of Heat-capacity Data Scatter on the Equilibrium Constant of the Elementary Oxide and Sulfide Reduction Reaction (Teployemkosti medi, tsinka i svintsa i vliyaniye razbrosa dannykh po teployemkostyam na konstantu ravnovesiya elementarnoy reaktsii vosstanovleniya okisla i sul'fida)

PERIODICAL: Sb. nauchn. tr. Mosk. in-t tsvetn. met. i zolota, Nauchno-tekhn. o-vo tsvetn. metallurgii, 1957, Nr 30, pp 235-253

ABSTRACT: A study is made of the influence of heat-capacity data scatter versus temperature for the reduction reactions of certain oxides and sulfides of heavy nonferrous metals. Two methods of analysis are employed. The first method is based on direct experimental determination of reaction equilibrium, upon which the equilibrium constant K_p is then calculated for the given temperature. The expanded equation for the reaction isochores and isobars is employed to find the free energy, ΔZ. This method permits only implicit determination of

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The Heat Capacity of Copper, Zinc, and Lead (cont.)

the influence of scatter of c_p data upon K_p, i.e., in the form of the influence of scatter upon the integration constant. Therefore, analysis by the first method is performed only for the reduction reactions of Cu_2O, ZnO, and ZnS by CO and H_2. The second method of analysis involves the utilization of tables of standard values and the Temkin-Shvartsman method of calculation. This method is used to study the influence of c_p-data scatter versus temperature upon the K_p of the reactions of Cu_2O, Cu_2S, ZnO, ZnS, PbO, and PbS with CO and H_2. The influence of c_p-data scatter upon K_p is determined in explicit form and it is shown that these values are of identical orders of magnitude.

G. F.

Card 2/2

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

SOV/137-58-12-24040

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 12, p 17 (USSR)

AUTHORS: Krestovnikov, A. N., Torogova, T. G.

TITLE: Determining the Free Energy of Zinc Ferrite Formation (K voprosu opredeleniya svobodnoy energii obrazovaniya ferrita tsinka)

PERIODICAL: Sb. nauchn. tr. Mosk. in-t tsvetn. met. i zolota, nauchno-tekhn. o-vo tsvetn. metallurgii, 1957, Nr 30, pp 362-367

ABSTRACT: The reduction of Zn ferrite by carbon monoxide and dissociation of the ferrite are experimentally studied with the object of calculating the free energy of the reaction of zinc ferrite formation from ZnO, Fe_2O_3, and O_2. A monometric method of determining the ferrite dissociation pressure made possible a more precise calculation of the isobaric reaction potential. The dissociation pressures and free energies of dissociation of Zn ferrite in the 1200-1300°C range are presented. The free energies of Zn ferrite formation from the elements are confirmed by calculations on the data of other authors. The results obtained yield the free energy of ferrite formation in the 1000-1300° interval, which is 1-3 kcal/mole, indicating that Zn ferrite is unstable under these conditions. L. P.

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KARSTOVNIKOV, A.N.

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Special cases in which a new type of equilibrium diagram of two-component systems becomes possible. A. N. Krestovnikov and V. N. Vigdorovich (M. I. Kalinin Inst. Non-Ferrous Metals and Gold, Moscow). Zhur. Fiz. Khim. 31, 1345-61(1957).—Application of the "isobaric potential" (thermodynamic potential, Gibbs' free energy function) yielded geometric proof of interaction between components of binary systems such that on the diagram of state there is a point at a definite pressure and temp. on the ordinate of one of the components at which 4 lines of phase transformations intersect and form 5 phase areas. The nature of the changes in the interaction of the components with changes in pressure and temp. when passing through the ternary point is discussed. W. M. Sternberg

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5(2) PHASE I BOOK EXPLOITATION SOV/2128

Kreyter, V.M., V.V. Aristov, I.S. Volynskiy, A.N. Krestovnikov, and V.V. Kuvichinskiy

Povedeniye zolota v zone okisleniya zoloto-sul'fidnykh mestorozhdeniy (Behavior of Gold in the Oxidation Zone of Gold-Sulfide Deposits) Moscow, Gosgeoltekhizdat, 1958. 266 p. 3,000 copies printed.

Ed. of Publishing House: V.P. Skvortsov; Tech. Ed.: K.V. Krynochkina

PURPOSE: This book is intended for geologists, mineralogists, and other scientists studying gold-bearing ores and gold deposits.

COVERAGE: The work attempts to create a practical basis for appraising the importance of primary and secondary ore zones containing gold deposits resulting from hypergenetic migration. Minerals containing native gold in macroscopic, microscopic, and submicroscopic quantities, as well as the regions in which these minerals occur, are indicated. The authors cite references to studies made on the genesis of hypogene and supergene gold. Gold solution and its reaction in liquids having a different chemical composition are

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discussed, and findings from numerous experiments are analyzed. The Maykain and Dzhusely deposits of Kazakhstan and the Blyava and Novyy Sibay deposits of the Southern Urals are analyzed geologically and mineralogically and the results presented in tables and graphs. Results of microscopic analysis of gold are also discussed and illustrated. This work has been completed under the direction of V.M. Kreyter who wrote Chapters I, V, and VI. Chapter III and the first and second parts of the Chapter II were written by V. V. Aristov. Chapter VII and the third part of the Chapter II were written by I.S. Volynskiy. V.V. Kuvichinskiy wrote the first part of Chapter IV. Numerous Soviet geologists and mineralogists are mentioned in the text. The authors thank P.S. Belov, former Chief Engineer of the Zolotorazvedga Trust, I.N. Plaksin, T.N. Shadlun, D.S. Kreyter, and G.G. Rusetskaya. The book contains numerous pictures, graphs and tables. There are 120 references: 78 Soviet, 27 English, 12 German, 3 French.

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

SOV/137-58-10-20464

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 17 (USSR)

AUTHORS: Krestovnikov, A.N., Vendrikh, M.S.

TITLE: The Specific Heat of Zirconium Boride (Teployemkost' borida tsirkoniya)

PERIODICAL: Izv. vyssh. uchebn. zavedeniy. Razd. tsvetn. metallurgiya, 1958, Nr 1, pp 73-75

ABSTRACT: The average specific heats of Zr boride are (in cal/g): for 20-400°C, 0.1332; for 20-500°, 0.1369; for 20-600°, 0.1414; for 20-700°, 0.1410; and for 20-800°, 0.1442. The data obtained are used to compile equations for the average and true specific and molecular heat capacities. The deviation of the values found from those calculated by the Maydel' equation (by the rule of additivity) is <10%.

B. L.

1. Zirconium borides--Specific heat

Card 1/1

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

VIGDOROVICH, V.N.; MAL'TSEV, M.V.; KRESTOVNIKOV, A.N.

Investigating the structure and properties of ternary system copper-aluminum-titanium alloys. Izv. vys. ucheb. zav.; tsvet. met. no.2:142-152 '58. (MIRA 11:8)

1. Moskovskiy institut tsvetnykh metallov i zolota. Kafedra metallovedeniya.

(Phase rule and equilibrium)
(Copper-aluminum-titanium alloys--Metallography)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

KRESTOVNIKOV, A. N.

AUTHORS: Vigdorovich, V.N., Krestovnikov, A.N. and Val'tsev, M.V. 24-2-22/28

TITLE: Investigation of the state copper-titanium diagram (Issledovaniye diagrammy sostoyaniya med'-titan).

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, No.2, pp. 145-148 (USSR).

ABSTRACT: The method of zonal recrystallisation and thermal analysis was used by the author for solving the problem of presence of eutectic transformation $L \rightarrow \alpha + \beta$ taking place at the temperature 870 $\pm$ 1°C for a composition at the eutectic point of 17.1% Ti. The solubility of titanium in copper was determined by micro-hardness measurements; 7.4% Ti is the maximum limit solubility at the temperature of the eutectic horizontal. The results graphed in Fig.3 of the changes of the chemical composition along the length of a specimen of an alloy with 17.6% Ti content after zonal recrystallisation (head and tail parts) indicate the existence of a range of homogeneity corresponding to the inter-metallide $\beta(Cu_3Ti)$, the lower limit of which is about 19.6% Ti at the eutectic temperature; the micro-hardness of the compound equalled 370 $\pm$ 15 kg/mm^2. On

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Investigation of the state copper-titanium diagram . 24-2-22/23

the basis of the obtained results, a variant of the copper angle of the diagram of state Cu-Ti is drawn for titanium contents up to 20%.
There are 4 figures and 7 references - 6 Russian, 1 English.

SUBMITTED: August 1, 1957.

AVAILABLE: Library of Congress.

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APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

GERASIMOV, Ya.I.; KRESTOVNIKOV, A.N.

Thermodynamics of zinc oxide reduction by carbon monoxide and carbon.
Izv.vys. ucheb. zav.; tsvet. met. no.3:54-62 '58.
(MIRA 11:11)

1. Moskovskiy gosudarstvennyy universitet i Moskovskiy institut tsvetnykh metallov i zolota.
(Oxidation-reduction reaction) (Zinc oxide)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

KRESTOVNIKOV, A.N.

24-57-3-14/38

AUTHORS: Vigdorovich, V.N., Krestovnikov, A.N., Mal'tsev, M.V.(Moscow)

TITLE: Microhardness Measurements in the Study of Solid Solutions of the Three Component Systems (Issledovaniye tverdykh rastvorov trekhkomponentnoy sistemy metodom mikrotverdosti)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1957, Nr 3, pp 110-113 (USSR)

ABSTRACT: A series of Cu-Al, Cu-Ti, and Cu-Al-Ti alloys were prepared for experiments, the aim of which was to establish the ultimate solubility of Al and Ti in Cu and to investigate the dependence of the microhardness of a solid solution on the composition of the alloys. Changes in the microhardness with respect to composition and temperature of Cu-Al and Cu-Ti alloys allowed establishment of the most probable limit of the solubility of Ti in Cu, the "Solidus" temperature and the limit of the solubility of a ternary solid solution. Mirco-hardness versus composition curves confirmed a complicated structure of the solid solution in the two phase system - the microhardness of such solid solutions increased as the composition of the alloy entered the two-phase [illegible]. Changes in the microhardness of a solid solution obtained from the study of one-phase and two-phase systems seem to plot the solubility isotherms and thus supplied information in regard

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24-57-3-14/25

Microhardness Measurements in the Study of Solid Solutions of the Three Component Systems.

ing the solubility of Al and Ti in Cu. Analysis of these results has shown that the introduction of Ti essentially increases the solubility of Al in Cu especially at higher temperatures and the introduction of Al lowers the solubility of Ti in Cu. Hardening of the solid solution which accompanies the solubility of Al and Ti in Cu could be produced to a certain extent by a relative mutual solubility of the components. This mutual solubility is governed by the atomic structure, type, and the dimensions of the crystal lattice of the component. As the solubility of Ti in Cu is accompanied by a larger alteration of the crystal lattice than in the case of the solubility of Al in Cu it is to be expected that the microhardness due to Ti will be greater than that due to Al with respect to the same Cu content of an alloy. This was confirmed experimentally and is in accordance with theoretical interpretation. The introduction into the metal lattice of Cu (highly "populated" by s-electrons) of a transition metal, Ti (which has 3d subgroup not completely filled by electrons) leads to extra stronger valency forces which are

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Microhardness Measurements in the Study of Solid Solutions of the Three Component Systems.

due to an "overlapping" of these s and d electrons. Thus the addition of 1% Ti (by weight) increases the microhardness by 33 kgm/mm^2 whereas the same addition of Al (by weight) by only 12,4 kgm/mm^2. The increase in the microhardness of the studied alloys was found to be proportional and linear up to the ultimate concentration. In the case of ternary solid solutions the increase in the microhardness was found to be the sum total of the increases in the microhardness of the corresponding binary solid solutions. There are 5 figures and 8 references, all of them Soviet.

ASSOCIATION: Institut tsvetnykh metallov i zolota im. M. I. Kalinina. (Institute of Non-Ferrous Metals and Gold im. M. I. Kalinin)

SUBMITTED: November 27, 1957.

Card 3/3 1. Alloys--Microhardness--Determination

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

KRESTOVNIKOV, A.N

3-58-4-20/34

AUTHOR: Krestovnikov, A.N., Professor and Vigdorovich, V.N. Assistant

TITLE: Three-Dimensional Models of Structural Diagrams (Prostranstvennyye modeli diagramm sostoyaniya)

PERIODICAL: Vestnik Vysshey Shkoly, 1958, # 4, pp 62 - 65 (USSR)

ABSTRACT: As the graphic representation of multi-component chemical systems is complicated, and difficulties arise when it proves necessary to illustrate lectures by graphic diagrams, the author recommends using models similar to those widely applied when teaching descriptive geometry, stereometry, analytical geometry, etc.

Models of structural diagrams of multi-component systems are not available in shops selling visual aids, but they can easily be made in the school laboratories or workshops.

There are 2 drawings.

ASSOCIATION: Moskovskiy institut tsvetnykh metallov i zolota imeni M.I. Kalinina (The Moscow Institute of Non-Ferrous Metals and Gold imeni M.I. Kalinin)

AVAILABLE: Library of Congress

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

KRESTOVNIKOV, A.N., prof.; GASTEV, S.S., dotsent; GUBINA, V.V., assistent

Rate of etching of zinc used in printing and recovery of etching solutions. Nauch. trudy MPI no.7/8:247-253 '58. (MIRA 14:12)
(Zincography)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

SOV/137-59-3-6192

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 3, p 178 (USSR)

AUTHORS: Krestovnikov, A. N., Vygodskiy, I. A.

TITLE: Some Regularities in the Phase Diagrams of Binary Metallic Systems (Nekotoryye zakonomernosti v diagrammakh sostoyaniya dvoynykh metallicheskikh sistem)

PERIODICAL: Sb. nauchn. tr. Nauchno-tekhn. o-vo tsvetn. metallurgii, Mosk. in-t tsvet. met. i zolota, 1958, Nr 29, pp 5-9

ABSTRACT: On the basis of a survey of the liquidus curves of real binary metallic systems comprising intermetallic compounds which have either a singular point or nonsingular gently-shaped maxima the authors derive an equation that satisfies the liquidus curves and the loop formed by a curve that intersects itself at the singular point.

L. V.

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SOV/81-59-10-35211

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 10, p 265 (USSR)

AUTHORS: Krestovnikov, A.N., Gastev, S.S.

TITLE: Kinetics of Dissolution of Binary Solid Copper-Based Solutions (With the Same Atomic Percentage Composition) in a Solution of Sulfuric Acid

PERIODICAL: Sb. nauchn. tr. Nauchno-tekhn. o-vo tsvetn. metallurgii. Mosk. in-t tsvetn. met. i zolota, 1958, Nr 29, pp 196-198

ABSTRACT: The study of the rate of dissolution of binary solid solutions of Ni, Zn, Al and Mn (5 atomic %) on Cu base in 60% - H_2SO_4 at 80°C, which has been determined by the analysis of the solution and by the change in the weight of the samples after every 100 hours in the course of 1,000 hours, has shown that this rate increases along the series Ni < Zn < Al < Mn. The content of Mn in the solution in the dissolution of Mn-Cu-alloy is ~5 atomic %. The Ni, Zn and Al content in individual samples of the solution varies from 4 to 9 atomic %.

G. Florianovich

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APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420

KRESTOVNIKOV, A.N.; VENDRIKH, M.S.

Thermodynamics of titanium diboride. Izv. vys. ucheb. zav.; tsvet. met. 2 no.2:54-57 '59. (MIRA 12:7)

1.Moskovskiy institut tsvetnykh metallov i zolota, Kafedra fizicheskoy khimii.

(Titanium borides--Thermal properties)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420