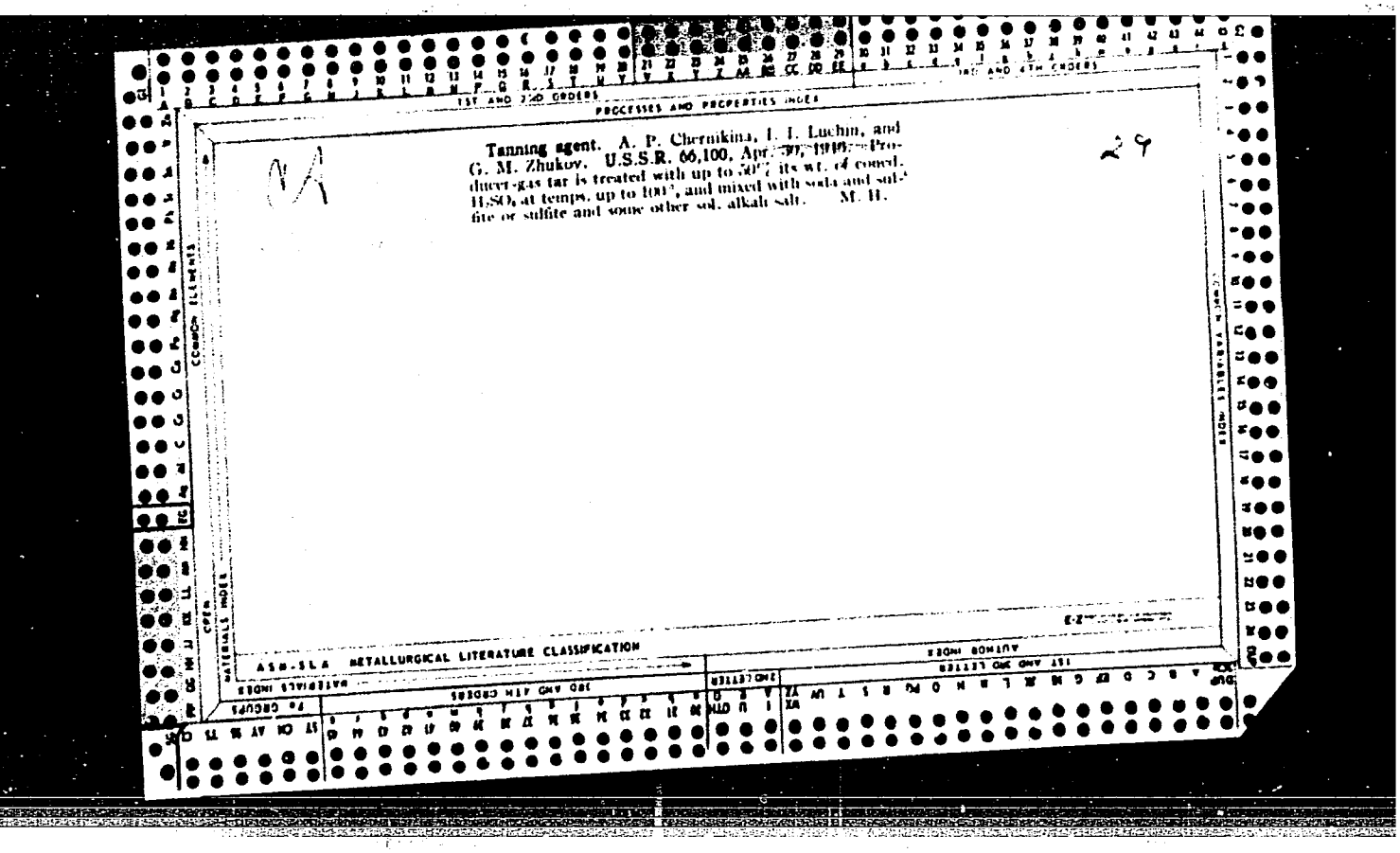

LUCHIN, I. I.

Tanning extract from gall nuts. I. I. Luchin. *Legkaya Prom.* 14, No. 1, 20-8(1954).—Gall-nut ext. proved satisfactory as a tanning agent for stiff welt and yuft types. It can also be used with other vegetable and synthetic tannins.
B. Z. Kamich

LUCHIN, I.I., inzhener; KUZ'MINA, N.I., veterinarnyy vrach

New disinfection method for raw hides from foot and mouth disease affected animals. Leg.prom. 15 no.5:39-40 My '55. (MLRA 8:7)
(Hides and skins--Disinfection) (Foot-and-mouth disease)

18(5)

SOV/132-59-4-1/17

AUTHORS: Veselevich, L.V., Lisitsyr, A.I., Luchin, N.S. and Pyatnov, V.I.

TITLE: The Ancient Zircon-Ilmenite Placer in the Meso-Cenozoic Deposits of West Siberia.

PERIODICAL: Razvedka i okhrana nedr, 1959, Nr 4, pp 1-4 (USSR)

ABSTRACT: The Tuganskoye zircon-ilmenite placer was discovered in 1956-1957. It is located on the water divide of the rivers Tom' and Yaya in the region of northern spurs of the Kuznetskiy Alatau mountain range. The Paleozoic foundation of metamorphic rocks of the region is covered by an erosion crust, 15 to 70 m thick, formed under continental conditions during a period from the Middle-Carboniferous up to Upper-Cretaceous and even Paleogene times. This crust covers both slopes of the water divide of the rivers Tom' and Yaya. Zircon and

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The Ancient Zircon-Ilmenite Placer in the Meso-Cenozoic Deposits of West Siberia.

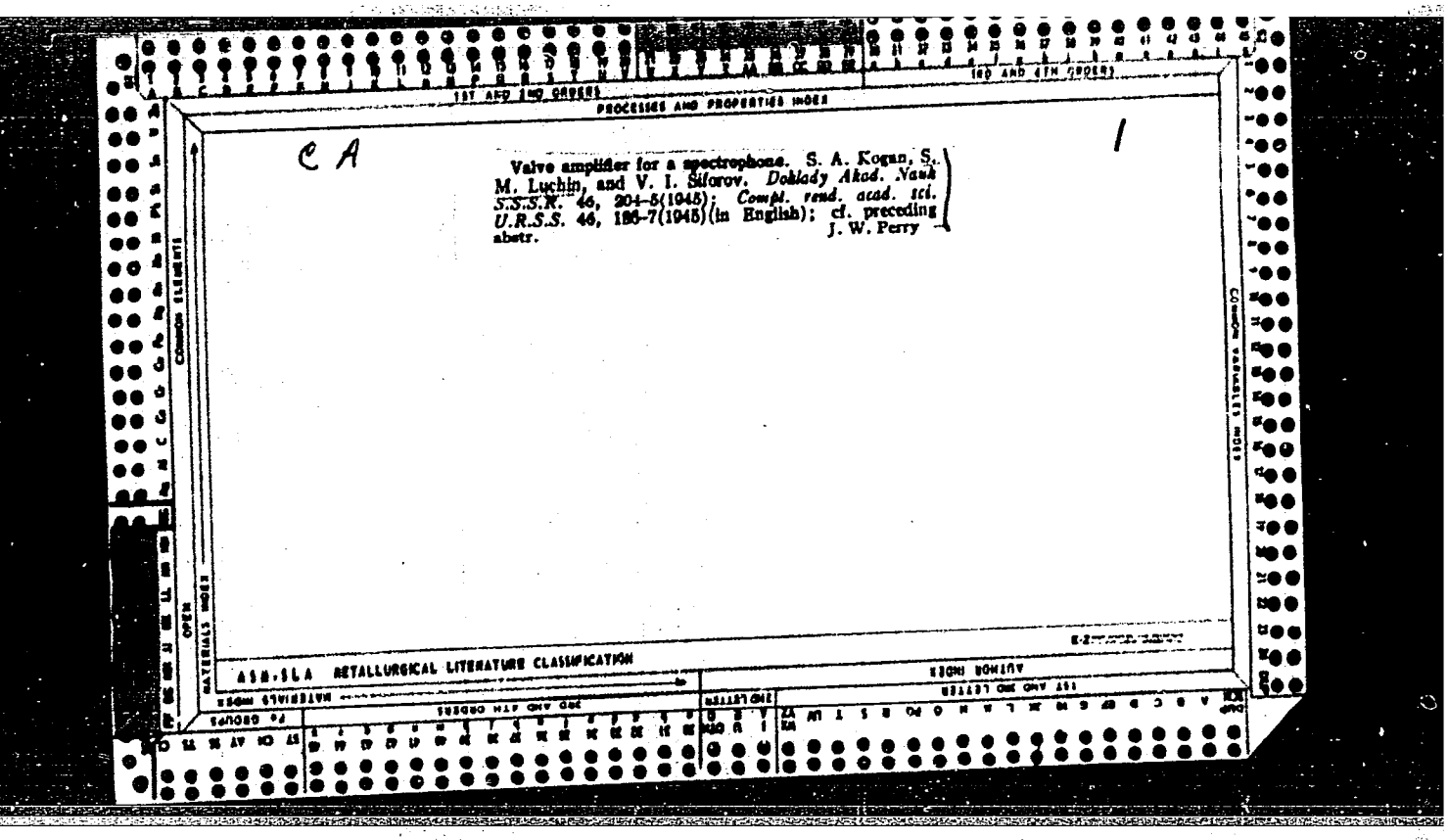
ilmenite were found in this stratum formed by the metamorphic rocks and the erosion crust. In Paleogene time, this weathered crust was again eroded by the transgressing sea, the clay fraction was washed away in the sea and the coarse-grained fraction was deposited in the coastal area. These deposits at present are divided into three suites, by their granulometric composition, the Simonovskaya, the Mariinskaya and Tuganskaya suites. The rare elements are found mainly in the Tuganskaya suite composed of variously grained sands. Commitional selective concentrates can be obtained from these sands. The Tuganskoye deposit can be exploited by opencast mining.

SOV/132-59-4-1/17

The Ancient Zircon-Ilmenite Placer in the Meso-Cenozoic Deposits of West Siberia.

ASSOCIATION: Ministerstvo geologii i okhrany nedr SSSR. (The Ministry of Geology and Conservation of Mineral Resources of the USSR. (Yeselevich, Lisitsyn, [illegible] 2) Giredmet (Pyatnov)

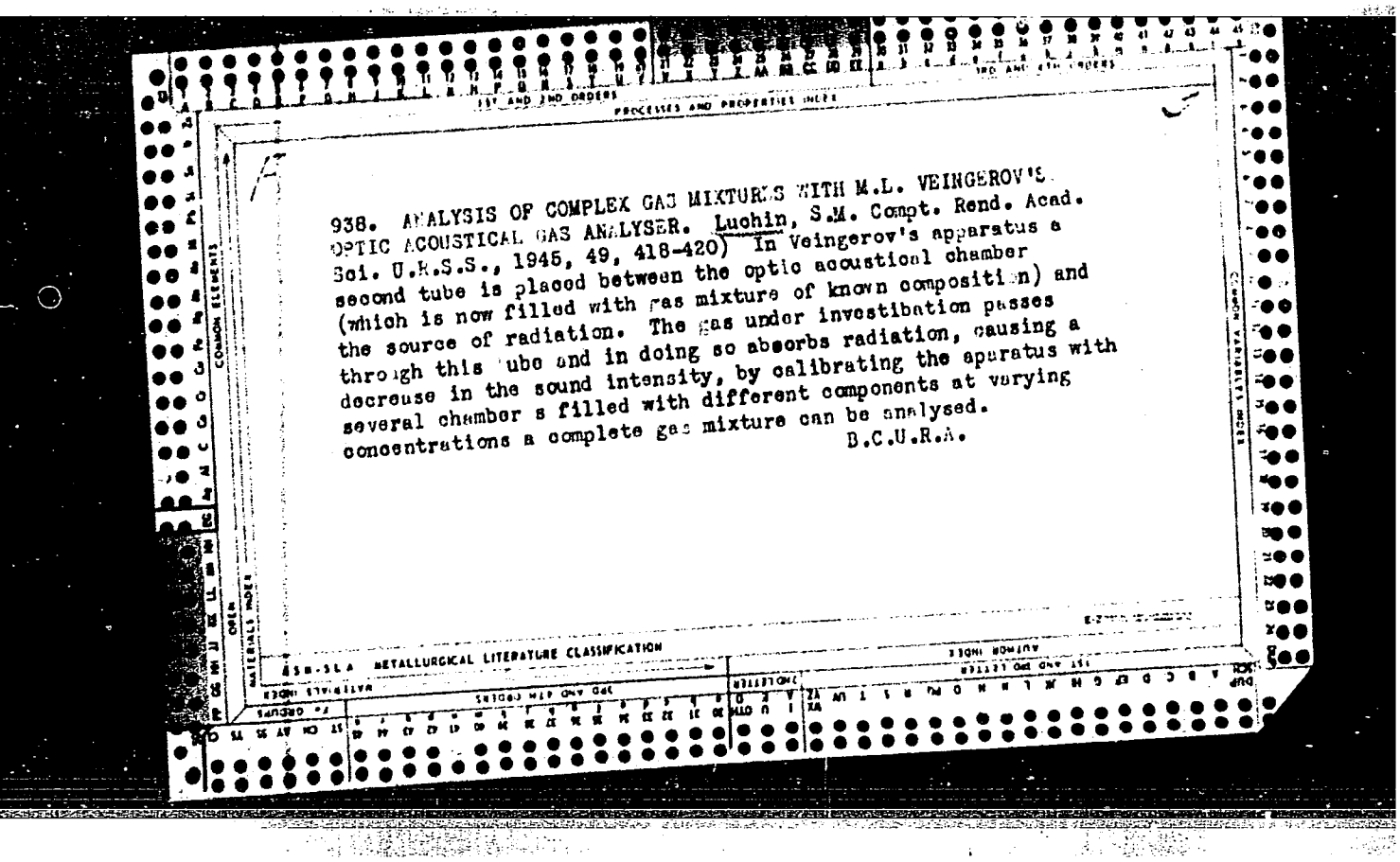
Card 3/3



CA

1

Valve amplifier for a spectrophone. S. A. Kogan, S. M. Luchin, and V. I. Sifarov. *Doklady Akad. Nauk S.S.S.R.* 46, 204–5(1945); *Compt. rend. acad. sci. U.R.S.S.* 46, 186–7(1945)(in English); cf. preceding abstr. J. W. Perry



938. ANALYSIS OF COMPLEX GAS MIXTURES WITH M.L. VEINGEROV'S OPTIC ACOUSTICAL GAS ANALYSER. Luchin, S.M. Compt. Rend. Acad. Sci. U.R.S.S., 1945, 49, 418-420) In Veingerov's apparatus a second tube is placed between the optic acoustical chamber (which is now filled with gas mixture of known composition) and the source of radiation. The gas under investigation passes through this tube and in doing so absorbs radiation, causing a decrease in the sound intensity, by calibrating the apparatus with several chamber s filled with different components at varying concentrations a complete gas mixture can be analysed.

B.C.U.R.A.

LUCHIN, S. M.

PA 26T87

USSR/Physics
Carbon
Thermophones

Dec 1946

"Electric, Optical, and Acoustic Phenomena in Carbon Particles, Part I, Electric and Acoustic Phenomena," S. M. Luchin, 4 pp

"Zhur Tekh Fiz" Vol XVI, No 10

This article describes research on some of the properties of thermophones with layers of carbon black. It was proven experimentally that carbon black could be utilized in the construction of thermophones. Submitted at the State Optical In-

ID 26T87

USSR/Physics (Contd) Dec 1946

stitute, Laboratory of Infrared Rays.

ID 26T87

LUCHIN, S. M.

FA 26T88

USSR/Physics Dec 1946
Carbon
Thermophones

"Electric, Optical, and Acoustic Phenomena in Carbon Particles, Part II, Optical, and Acoustic Phenomena," S. M. Luchin, 6 pp

"Zhur Tekh Fiz" Vol XVI, No 10

This article discusses some properties of thermophones which are generated, not by AC, but by alternating radiation. It was established that the thermal principle is present in all electro-optical-acoustic phenomena. Several suppositions are made regarding the low thermal inertia of

ID 26T88

USSR/Physics (Contd) Dec 1946

carbon black layers. Describes the method whereby the optical and acoustic effect of carbon black is utilized for measuring radiation. Submitted at the State Optical Institute, Laboratory of Infrared Rays.

ID 26T88

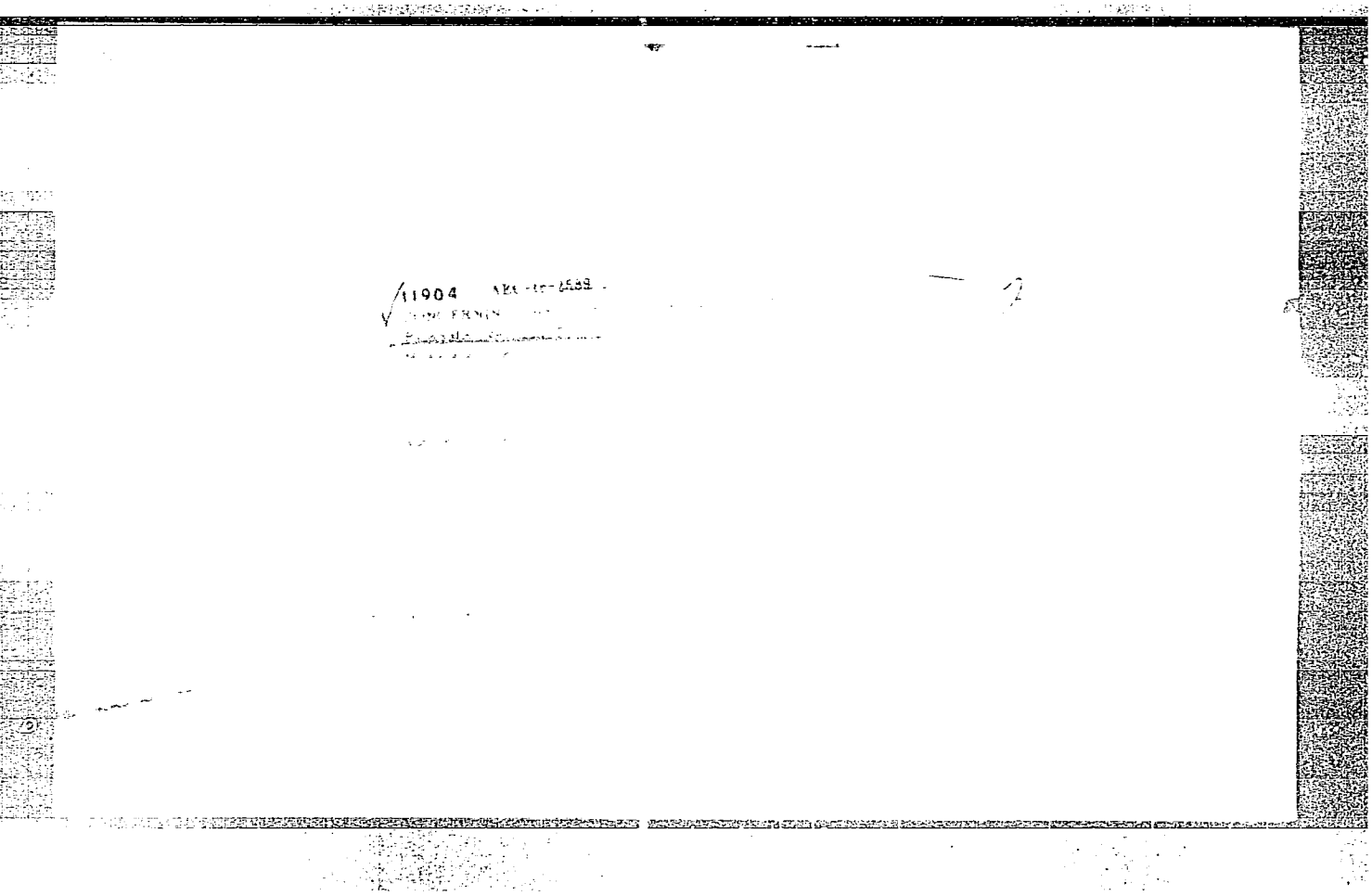
ROZHKOV, V.M.; SHOFMAN, L.A.; ROZANOV, B.V.; KUZ'KO, Yu.P.; PONGIL'SKIY, N.F.; LIVANOV, V.A.; LUCHIN, V.V.; KUZNETSOV, K.I.; TSYPER, V.A.; CHERNOSHTAN, V.K.

Points for pipe presses. Biul.TSIICHM no.9:52 160 (MIRA 15:4)
(Pipe mills--Equipment and supplies)

LUCHIN, M.

LUCHIN, M. Popularizing the method of inductive drying of the insulation of windings. Tr. From the Russian. p. 130. Vol. 15, no. 6, June 1955. WIADOMOSCI ELECTROTECHNICZNE. Warszawa, Poland.

SOURCE: EAST EUROPEAN ACCESSIONS LIST (EEAL) LC VOL. 5, NO. 6, JUNE 1956



Luchina, A. A.

USSR/Physics - Plasma oscillations

FD-1884

Card 1/1 Pub. 146-4/21

Author : Luchina, A. A.

Title : Longitudinal oscillations of plasma. I

Periodical : Zhur. eksp. i teor. fiz. 28, 17-27, January 1955

Abstract : The author solves the problem of the propagation of longitudinal waves under given conditions at the boundaries. She obtains the "dispersive" equation taking into account the motion of the ions; i.e. she investigates the stationary oscillations of plasma which are caused by Coulomb forces under assigned conditions at the boundary, and analyszes the roles played by the ions in the propagation of longitudinal waves in the plasma. She thanks N. N. Bogolyubov, G. Ya. Myakishev, A. N. Tikhonov, M. V. Keldysh, M. F. Shirokov, and Yu. L. Rabinovich. Thirteen references.

Institution: Moscow State University

Submitted : February, 1954

Luchina, A. A.

FD-1885

USSR/Physics - Plasma oscillations

Card 1/1 Pub. 146-5/21

Author : Myakishev, G. Ya., and Luchina, A. A.

Title : Longitudinal oscillations of plasma. II

Periodical : Zhur. eksp. i theor. fiz. 28, 28-37, January 1955

Abstract : On the basis of the results of work I (preceding article in the same issue) the authors investigate the dispersive properties of the waves in various particular cases. They demonstrate that in the propagation of longitudinal waves in various tubes the motion of the ions in the majority of the cases possesses essential significance. They find the magnitude of the spatial period and damping decrement as functions of the discharge parameters. They thank A. A. Zaytsev and V. N. Faddeyev. Fourteen references.

Institution: Moscow State University

Submitted : February 17, 1954

AUTHOR: A.A. Luchina SOV/109-- -4-3-13/38

TITLE: Qualitative Analysis of the Second-Order Non-Linear Differential Equation of an Oscillatory System with a Limited Incremental Region (Kachestvennyy analiz nelineynogo differentsial'nogo uravneniya vtorogo poryadka avtokolebatel'noy sistemy s ogranichennoy inkrementnoy oblast'yu)

PERIODICAL: Radiotekhnika i Elektronika, 1959, Vol 4, Nr 3, pp 440-448 (USSR)

ABSTRACT: A tuned-grid oscillator (see Fig 1) can be described by:

$$\left\{1 + \rho \Phi(x,\dot{x})\right\} \ddot{x} - 2\varepsilon \left(1 - \frac{x^2}{a^2} - \frac{\dot{x}^2}{b^2} - 2\frac{x\dot{x}}{d}\right)\dot{x} + x = 0 \quad (3)$$

where $x = Q/C$ is the voltage across the capacitor of the system, ρ is the equivalent resistance of the capacitor, $\tau = \omega_0 t$, while the remaining symbols are defined by Eq (4). The function Φ in Eq (3) is a certain bounded function of x and $\dot{x}$. Eq (3) was derived under the assumption that S is given by Eq (5),

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Qualitative Analysis of the Second-Order Non-Linear Differential Equation of an Oscillatory System with a Limited Incremental Region

where V is expressed by Eq (6). A tuned-anode oscillator (see Fig 3) is described by:

$$\ddot{x} = 2\varepsilon\left(1 - \frac{x^2}{a^2} - \frac{\dot{x}^2}{b^2} - 2\frac{x\dot{x}}{d}\right)\dot{x} + \left\{1 + \rho\Psi(x,\dot{x})\right\} x = 0, \quad (7)$$

where x denotes the current in the coil and D is the perveance of the tube; the remaining symbols are defined by Eq (8). In the case of large non-linearities, the functions Φ and Ψ in Eqs (3) and (7) can be neglected and a single differential equation is obtained. This is in the form of:

$$\ddot{x} - 2\varepsilon\left(1 - \frac{x^2}{a^2} - \frac{\dot{x}^2}{b^2} - 2\frac{x\dot{x}}{d}\right)\dot{x} + x = 0, \; \varepsilon > 0, \quad (10)$$

The solution of Eq (10) in the phase plane is in the form of Eq (11) where y is defined by Eq (12). Eq (11) belongs to the general type of equations represented by formula (13). The investigation of the equation in the phase plane can be done by means of the isoclines of the horizontal tangents. If it is assumed that $dy/dx = 0$,

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the equation of an isocline is in the form of Eq (16), so that the two branches of the isocline are given by Eq (17). The points where the tangents of the isocline are vertical can be found by equating Eq (18) to zero. This leads to Eq (19) or, if the notation of Eq (20) is adopted, the resulting expression is in the form of Eq (21). The approximate expressions for Y^2 are then in the form of Eqs (24) or (25). Eq (24) is valid for $d < o$, while Eq (25) is true for $d > o$. The above formulae are used to construct the isoclines for $d < o$ and $d > o$ and the resulting curves are shown in Fig 6. The limit cycles for the above two cases are illustrated in Fig 7. The waveforms corresponding to these limit cycles are shown in Fig 8. The author expresses his gratitude to K.F. Teodorchik for suggesting the subject,

SOV/109- - -4-3-13/38

Qualitative Analysis of the Second-Order Non-Linear Differential Equation of an Oscillatory System with a Limited Incremental Region

and for his valuable remarks, and to A.N. Tikhonov for reading the article.

Card 4/4 There are 9 figures and 4 Soviet references; one of the references is translated from English.

ASSOCIATION: Fizicheskiy Fakul'tet Moskovskogo gosudarstvennogo universiteta imeni M.V. Lomonosova
(Physics Department of Moscow State University imeni V.M. Lomonosov)

SUBMITTED: August 2, 1957

LUCHINA, A. F.; VESELOV, S. G.

Sewing

Experience in applying the sectional process for assorted styles and sizes.
Les. prom., 12, No. 9, 1952.

9. Monthly List of Russian Accessions, Library of Congress, December 1952 ~~XXXXX~~, Uncl.

YAKADIN, A.I.; LUCHINA, I.I., red.; SHKULEVA, V.S., red.; MEDVEDEV, L.Ya., tekhn. red.

[Organizing and carrying out production at a tanning extract plant] Organizatsiia i sovershenstvovanie proizvodstva na zavode dubil'nykh ekstraktov. Moskva, Gos. nauchno-tekhn. izd-vo M-va legkoi promyshl. SSSR, 1956. 25 p. (MIRA 11:10)

1. Russia (1923- U.S.S.R.) Ministerstvo legkoy promyshlennosti. Byuro tekhnicheskoy informatsii.
(Tanning materials)

Luchina K.I.

LUCHINA, K.I., sanitarnyy vrach

The Ideal Home Exhibition in England. Gig. i san. 23 no.1:57-60 Ja '58. (MIRA 11:2)

1. Iz Glavnoy gosudarstvennoy sanitarnoy inspektsii SSSR.
(HOUSING
ideal home show in Gt.Brit.)

LUCHINA, K. I.

PEROTSKAYA, A.S.; LUCHINA, K.I.

All-Union conference on noise control. Gig. & san. 23 no.3:86-88 Mr '58. (MIRA 11:4)

1. Iz Glavnoy gosudarstvennoy sanitarnoy inspektsii SSSR.
(NOISE)

PEROTSKAYA, A., sanitarnyy vrach; LUCHINA, K., sanitarnyy vrach

Sanitary requirements concerning apartment houses. Zhil. stroi. no.5:15-16 '59. (MIRA 12:8)
(Sanitary engineering) (Apartment houses)

PEROTSKAYA, A.S.; LUCHINA, K.I.

Conference on problems of noise prevention in municipal transportation. Gig.i san. 24 no.8:83-84 Ag '59. (MIRA 12:11)

1. Iz Gosudarstvennoy sanitarnoy inspektsii Ministerstva zdravookhraneniya SSSR.
(NOISE)

LUCHINA, K.I.

Planning preschool in institutions. Gig. i san. no. 10:63-67 O '60. (MIRA 13:12)

1. Glavnyy inspektor po shkol'noy gigiyene Gosudarstvennoy sanitarnoy inspektsii SSSR.
(NURSERY SCHOOLS)

LUCHINA, K.I., sanitarnyy vrach

Session on research and practice in problems of noise control in residential quarters. Gig. i san. 25 no.4:114-115 Ap '60. (MIRA 13:8)

1. Iz Gosudarstvennyy sanitarnoy inspektsii SSSR.
(NOISE)

LUCHINA, K.I.

Experience in apartment house construction in foreign countries. Gig. i san. 25 no. 5:83-87 My '60. (MIRA 13:10)

1. Iz Gosudarstvennoy sanitarnoy inspektsii SSSR.
(APARTMENT HOUSES)

LUCHINA, N.N.

Biological and ecological characteristics of Kabatiella (Polysnora) lini (Laff.) Karak. Sbor. nauch. rab. Bel. otd. VBO no.3:196-201 '61. (MIRA 14:12)

(Flax--Diseases and pests)
(White Russia--Fungi, Phytopathogenic)

LUCHINA, N. N.

Cand Biol Sci - (diss) "Biological characteristics of the growth of the causative agent of polysporosis of flax (Kabatiella lini (Laff.) Karak.) under conditions of the Belorussian SSR and measures of combating it." Minsk, 1961. 21 pp; (Belorussian State Univ imeni V. I. Lenin); 220 copies; price not given; (KL, 7-61 sup, 227)

LUCHINETSKIY, Yevgeniy, zhurnalist

The love of Nikita Plakunov. Veterinariia 42 no.5:30-33 My '65.
(MIRA 18:6)

LUCHININ, A.A.

An analogue of surfaces of revolution in projective space. Izv. vys.ucheb.zav.; mat. no.6:69-72 '62. (MIRA 15:12)

1. Tomskiy gosudarstvennyy universitet imeni V.V.Kuybysheva.
(Surfaces) (Geometry, Differential)

LUCHININ, A.A.

An analog of surfaces of revolution in projective geometry. Trudy TGU 160:45-57 62.

An analog of surfaces of revolution in affine geometry. Ibid.:90-96 (MIRA 17:1)

ZHILIN, A., gvardii mayor; LUCHININ, G., gvardii leytenant, komandir vzvoda.

Raising the significance of responsibilities. Komm. Vooruzh. Sil. 46 no. 21:57-58 N '65 (MIRA 19:1)

LuCHININ, V.D.

SUBMITTED: December 7, 1957 SOV/109-3-3-22/23

AUTHORS: Golubkov, P.V. and Tsimring, Sh. Ye.

TITLE: The Second All-Union Conference on Radioelectronics of the Ministry of Higher Education of the USSR (Vtoraya vsesoyuznaya konferentsiya MVO SSSR po radioelektronike) - News Item

PERIODICAL: Radiotekhnika i Elektronika, 1958, Vol 3, Nr 3, pp 440 - 444 (USSR)

ABSTRACT: The conference took place during September 23 - 29, 1957, at Saratovskiy gosudarstvennyy universitet imeni N.G. Chernyshevskogo (Saratov State University imeni N.G. Chernyshevskiy). Apart from the universities, the conference was attended by the representatives of some scientific research institutes of the Soviet and Ukrainian Academies of Science, various industrial establishments and the interested ministries. This arrangement stimulated the discussion and evaluation of the papers presented and permitted the determination of plans for the future research to be carried out by the universities in the field of radioelectronics.

Card1/16

A.I. Shtyrov proposed (and proved by means of the "cold" reciprocity theorem) an interference method of delay systems. The method permits the investigation of delay systems. The method permits the measurement of electrical non-homogeneities of delay systems, gives a high accuracy and requires comparatively little effort. The paper "Production of Periodic Structures by Means of Ultrasonics" by Ye.M. Gershenzon was devoted to the experimental investigations of an interesting modification of a periodic structure, i.e. a regular waveguide filled with a liquid in which an ultrasonic standing wave was excited. V.P. Sazonov described the results of an investigation of the distribution of electric fields in a number of important delay systems (combs, stub systems, etc.) by means of two methods (probes with a high-resistance input) and small perturbing objects). The author also obtained the distributions of tangential components of the electric fields along certain boundary surfaces, which are of considerable interest. In a number of cases, the author also measured the coupling impedance. Some of the lectures were devoted to the problems of diffraction which are important in the analysis of the directional

Card7/16

patterns of antennae. Here one should mention the papers by Ye.N. Vasil'yev and S.M. Verevkin, dealing with the excitation of the solids of revolution. The analysis of the oscillations in π -type and toroidal volume resonators and in T -type and cross-shaped waveguides was given in the paper by V.L. Patrushev and V.M. Sedykh, respectively. A number of the papers in the Electrodynamics Section dealt with the complex phenomena appearing at the junctions of waveguides. Here, it is necessary to mention the papers: "The Calculation of Junctions" by Ya.M. Turover; "The Problem of Construction of Certain Wideband Matching Devices" by Ye.V. Anisimov and V.D. Luchinin and "Measurement of the Parameters of the Energy Outputs in U.H.F. Devices by Means of a Symmetrical Transformer" by I.A. Dukhovnikova and M.M. Rayner. The behaviour of various substances in electromagnetic fields at U.H.F. was discussed in the papers of O.V. Karpova, U.P. Radin, I.A. Shekhtman, A.I. Pilshchikov, A.L. Levinson, N.S. Sedletskaya and A.A. Kuznetsov.

The paper of N.G. Basov and his collaborators described the principle of operation of a molecular clock having an accuracy of 10^{-9}. The results of a theoretical investigation of the molecular radiation in high-frequency fields were given in the papers of V.M. Fayn, entitled "Radiation of the Molecules in Strong High-frequency Fields" and "The Spontaneous Radiation of Molecules at Ultra-high Frequencies". In the second of the above papers, the author came to the conclusion that the width of the spectral line of the spontaneous radiation at U.H.F. is finite. The author also proposed a classical analogy for the phenomenon of coherence in the spontaneous radiation.

CARD (9/16)

KALININ, V.I., prof., doktor fiziko-matem. nauk [deceased];
AKINDINOV, V.V.; GERSHTEYN, G.M.; DASHENKOV, V.M.; YEVSEYEV,
V.I.; IL'IN, V.S.; KOROSTELEV, G.N.; LUCHININ, V.D.; NAUMENKO,
Yu.P.;RYAZANOVA, T.P.; SEDIN, V.A.; TOLSTIKOV, V.A.; SHTYROV,
A.I.; AVILOV, B.I., red.; ZENIN, V.V., tekhn. red.

[Practical work in radio physics] Radiofizicheskii praktikum.
Izd.2., dop. i perer. Saratov, 1961. 277 p. (MIRA 15:1)

1. Saratov. Universitet. 2. Kafedra radiofiziki Saratovskogo
universiteta im. N.G.Chernyshevskogo (for all except Avilov,
Zenin).
(Radio)

RENGEVICH, A.A., kand.tekhn.nauk; MEKHEDA, M.K., inzh.; DASHEVSKAYA, Ye.A., inzh.; LUCHININA, R.V., inzh.; OKHRIMCHUK, O.Kh., tekhnik

Basic resistance to movement of mine cars in a train. Vop. rud. transp. no.6:318-334 '62. (MIRA 15:8)

1. Dnepropetrovskiy gornyy institut.
(Mine railroads)

LUCHININOV, S.

Velikiy korablestroitel' (Great shipbuilder) Moskva, Voyenno-Morskoye Izd-vo Voyenno-Morskogo Ministerstva SSSR, 1951. 94 p. illus., diagrs., ports.

SO: N/5
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Luchininov, S.

LUCHININOV,S., inzhener

Silhouette models. Voen.znan.31 no.4:4-5 Ap '55. (MLRA 8:10)
(Ship models)

LUCHININOV, S., inzh.-korablestroitel'

Elements of a propeller. Voen.znan. 38 no.1:34 Ja '62.
(MIRA 15:2)
(Propellers)

LUCHININOV, S.T., inzhener.

"On the 'Orel' in TSushima" by V.P. Kostenko. Reviewed by S.T.Luchinov. Sudostroenie 22 no.9:42-43 S '56. (MLRA 10:1)
(TSushima, Battle of, 1905)
(Kostenko, V.P.)

LUCHININOV, S.T.

Tenth anniversary of A.N.Krylov's death. Vest.AN SSSR 26 no.2: 141-143 F '56. (MLRA 9:6)
(Krylov, Aleksei Nikolaevich, 1863-1945)

LUCHININOV, S.T.

Academician A.N.Krylov's collected works. Reviewed by S.T.Luchininov.
Vest.AN SSSR 26 no.7:100-103 Jl '56. (MLRA 9:9)
(Krylov, Aleksei Nikolaevich, 1863-1945)

SOV/124-58-10-10736

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 10, p 3 (USSR)

AUTHOR: Luchininov, S.

TITLE: On the Collected Works of Academician Aleksey Nikolayevich Krylov (O sobranii trudov akademika Alekseya Nikolayevicha Krylova)

PERIODICAL: Tr. Nauchno-tekhn. o-va sudostroit. prom-sti, 1957, Vol 7, Nr 2, pp 343-347

ABSTRACT: Description of the 12-volume collection of works by A. N. Krylov completed by the publishers in 1956.

Reviewer's name not given

Card 1/1

LUCHININOV, S.T., otvetstvennyy red.; SHIMANSKIY, Yu.A., akademik, red.; KONTOROVICH, A.I., tekhn. red.

[Reference manual on structural mechanics of ships. Vol.1.] Spravochnik po stroitel'noi mekhanike korablia. Leningrad, Gos. soiuznoe izd-vo sudostroit. promyshl. Vol.1. 1958. 627 p. (MIRA 11:9)
(Shipbuilding) (Mechanics, Applied)

SHIMANSKIY, Yu.A., akademik, red.; SLEPOV, B.I., red.; LOKSHIN, A.Z., red.; TAUBIN, G.O., red.; CHUVIKOVSKIY, G.S., red.; CHUVIKOVSKIY, V.S., red.; LUCHINSKOY, S.T., otv.red.; OSVENSKAYA, A.A., red.; KONTOROVICH, A.I., tekhn.red.

[Handbook on structural mechanics of ships] Spravochnik po stroitel'noi mekhanike korablia. Leningrad, Gos. soiuznoe izd-vo sudostroit. promyshl. Vol.2. 1958. 528 p. (MIRA 12:1)
(Shipbuilding) (Strains and stresses)

LUCHINOV, S.T., inzh.

Remarkable book ("Reminiscences and sketches" by A.N. Krylov. Reviewed by S.T. Luchininov). Sudostroenie 24 no.4:71 Ap '58. (MIRA 11:4)

(Krylov, Aleksei Nikolaevich, 1863-1945)
(Naval architecture)

BEL'GOVA, M.A.; BOYTSOV, G.V.; KANFOR, S.S.; KOROTKIN, Ya.I.; KUZOVENKOV, B.P.; MAKSIMADZHI, A.I.; NEBYLOV, V.M.; SBOROVSKIY, A.K.; TAUBIN, G.O.; FILIPPEO, M.V.; CHUVIKOVSKIY, G.S.; SHIMANSKIY, Yu.A., akademik, red.; LUCHININOV, S.T., otv.red.; OSVENSKAYA, A.A., red.; KONTOROVICH, A.I., tekhn.red.

[Handbook on structural mechanics of ships] Spravochnik po stroitel'noi mekhanike korablia. Leningrad, Gos.soiuznoe izd-vo sudostroit.promyshl. Vol.3. 1960. 799 p.
(MIRA 14:1)

(Shipbuilding)

LUCHININOV, Sergey Timofeyevich; BERNGARD, F.A., retsenzent; APOSTOLI, B.N., retsenzent; ALEKSANDROVSKIY, G.Ye., nauchn. red.; MISHKEVICH, G.I., red.; KONTOROVICH, A.I., tekhn. red.

[Young modelmaker and shipbuilder] IUnyi modelist-korablestroitel'. Leningrad, Sudpromgiz, 1963. 191 p. (MIRA 16:11)

(Ship models)

LUCHININOV, S.T., inzh.

Academy of Sciences edition of A.N. Krylov's works. Sudostroenie 29 no.8:70-72 Ag '63. (MIRA 16:10)

(Bibliolgraphy--Krylov, Aleksei Nikolaevich)
(Bibliography--Naval architecture)

LUCHININOV, S.T.

Academician Aleksei Nikolaevich Krylov; on the 100th anniversary of his birth. Mor. sbor. 46 no.8:40-49 Ag '63. (MIRA 16:10)

(Krylov, Aleksei Nikolaevich, 1863-1945)

KURDENKOV, Kirill Nikiforovich; PREOBRAZHENSKIY, Aleksey Ivanovich; KUBISHKIN, Viktor Sergeyevich; YURKAN, Yuriy Antonovich; LUCHININOV, S.T., inzh., retsenzent; ALEKSANDROVSKIY, G.Ye., nauchn. red.; YEROMITSKAYA, Ye.Ye., red.

[We are building ships ourselves] Suda stroim sami. Leningrad, Sudostroenie, 1963. 114 p. (MIRA 17:8)

ACC NR: AP7002745 (A) SOURCE CODE: UR/0126/66/022/006/0938/0941

AUTHOR: Blyum, E. E.; Grin', A. V.; Gol'dshteyn, M. I.; Luchinskaya, E. P.

ORG: Ural Scientific Research Institute of Ferrous Metals (Ural'skiy NII chernykh metallov)

TITLE: Investigation of the hardening of low-alloy steel by vanadium nitrides

SOURCE: Fizika metallov i metallovedeniye, v. 22, no. 6, 1966, 938-941

TOPIC TAGS: ~~tensile~~ metallurgic low alloy steel, mechanical property, tensile test, testing machine, electron microscope, manganese steel, vanadium, metal hardening / 15G2 manganese steel, 15G2AF manganese steel, IM-4R ~~tensile~~ metallurgic testing machine, UEMV-100 electron microscope

ABSTRACT: The nature of the hardening of low-alloy manganese steels 15G2 and 15G2AF (0.17% C, 1.75% Mn, 0.20% Si, 0.038% N, 0.02% Al, 0.040% S, 0.020% P) treated with nitrogen and vanadium (0.01, 0.04, 0.10, 0.19, 0.23, 0.30%) is investigated and the dependence of its mechanical properties on normalizing temperature and V content is established. Melts of the steels were produced by using low-carbon steel as the charge and adding to it, in the furnace, nitrided electrolytic Mn containing 2.5% N. Six 10-kg ingots, to each of which a different amount of ferrovanadium was added, were obtained from each melt. The ingots were cut into

Card 1/3 UDC: 669.15:539.4

ACC NR: AP7002745

rods measuring 14x14 mm and subjected to recrystallization annealing at 950°C. Mechanical properties were determined after normalizing from various temperatures within the range of 920-1150° C. Tensile tests of specimens of 6 mm diameter were carried out in an IM-4R machine. Impact strength was investigated at temperatures of from +20 to -60°C. The specimens were also electronmicroscopically examined with the aid of an UEMV-100 microscope and the phase composition of the isolated particles trapped by the carbon replica was determined with the aid of electron diffraction patterns. Thermokinetic diagrams were plotted to elucidate the effect of V and N on the kinetics of austenite decomposition, this decomposition itself being investigated by the dilatometric method at 950°C. Findings: the hardness and ultimate strength and yield point of all the investigated steels increase with increase in normalizing temperature, and this increase is the higher the greater the V content of the steel is (up to 0.10-0.20% V). As the normalizing temperature increases, the amount of decomposition products increases, this being due to the dissolution of vanadium nitrides in the austenite and increase in its stability on cooling. Treatment of 15G2 steel with N and V markedly increases the stability of supercooled austenite and reduces its transformation temperature both in the pearlitic and intermediate regions. Electronmicroscopic and electron-diffraction-pattern examination shows that following normalizing from 920°C comparatively large undissolved particles of vanadium nitrides remain in the steel, whereas at normalizing from higher temperatures these particles get dissolved in the austenite and segregate in fine-disperse form on cooling; such a segrega-

Card 2/3

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tion enhances the microhardness of ferrite to 175 from 135 kg/mm^2. Thus, the increase in the strength of 15G2AF steel following its normalizing from 1050°C is attributable to the segregation of fine-dispersé vanadium nitrides in the structure of this steel as well as to the presence of decomposition products in the intermediate stage. Orig. art. has: 5 figures.

SUB CODE: 11, 13, 20/ SUBM DATE: 28Oct65/ ORIG REF: 002/ OTH REF: 004

Card 3/3

ROZENBERG, G.I., kand.med.nauk; PEKAR', P.P., kand.med.nauk;
ZELENKO, Ye.F., kand.med.nauk; SOBOLEVA, L.I., nauchnyy sotrudnik;
LUCHINSKAYA, L.Y., nauchnyy sotrudnik

Treatment of pulmonary tuberculosis with metazid and larusan.
Pat., klin. i terap. tub. no.8:126-130 '58. (MIRA 13:7)

1. Iz Kiyevskogo i Odesskogo nauchno-issledovatel'skikh institutov tuberkuleza.
(TUBERCULOSIS) (ISONICOTINIC ACID)

TARANENKO, M.I.; LUCHINSKAYA, L.V.; PEKAR', P.P.; TSITKO, T.M.

Effectiveness of the treatment of tuberculosis, with antibacterial and hormone preparations according to clinical and experimental data. Probl. tub. 42 no.12:39-44 '64.

(MIRA 18:8)

1. Kafedra tuberkuleza (zav. - dotsent M.I.Taranenko) Odesskogo meditsinskogo instituta imeni N.I.Pirogova i Odesskiy nauchno-issledovatel'skiy institut tuberkuleza (direktor M.A.Brusnikin).

S/271/63/000/002/010/030
A060/A126

AUTHORS: Luciński, Jerzy, Wieński, Jerzy

TITLE: Electronic time-delay relay

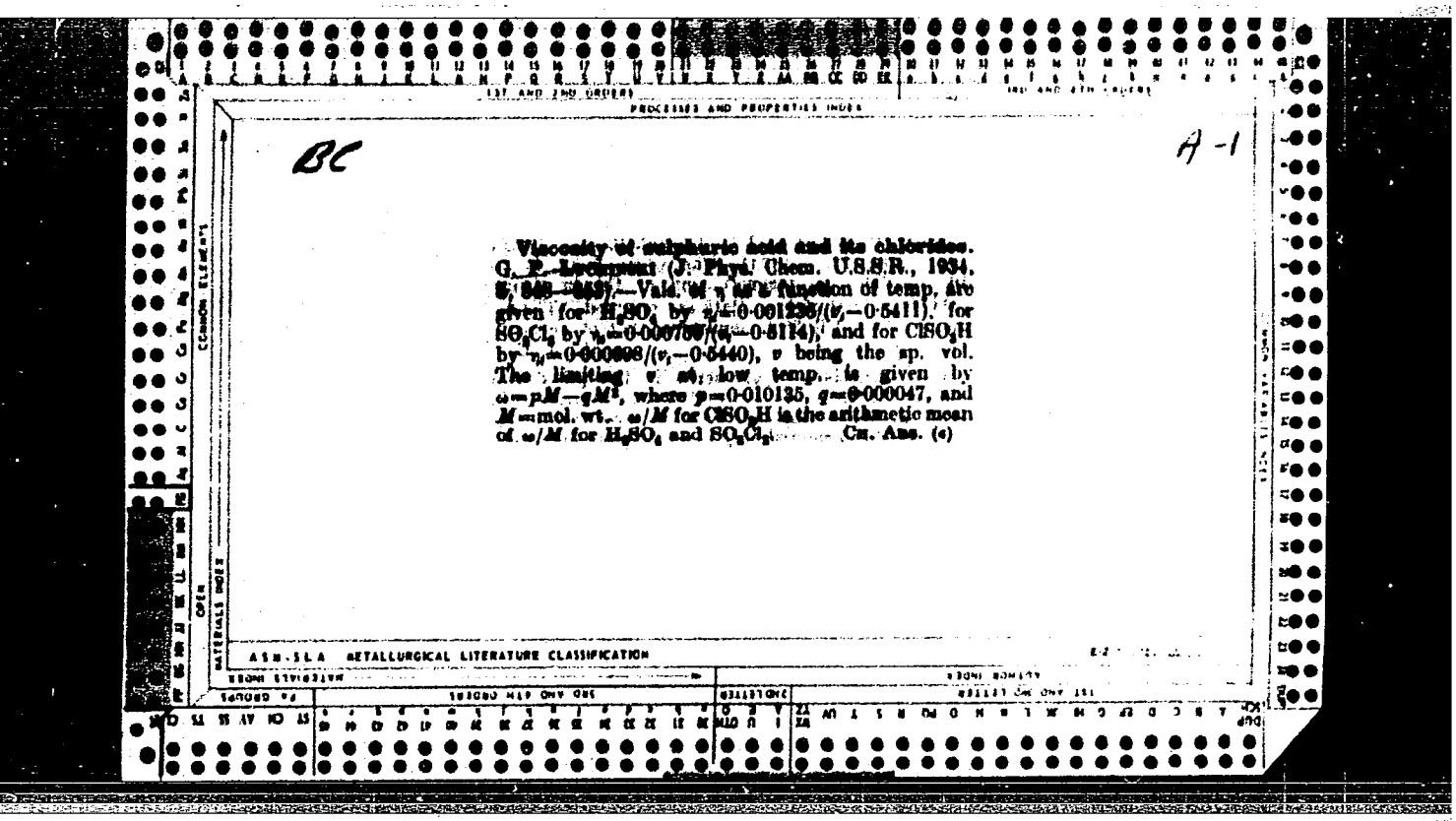
PERIODICAL: Referativnyy zhurnal, Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, no. 2, 1963, 30 - 31, abstract 2A197 P (Pol. pat. cl. 21g, 4/05, no. 44979, October 31, 1961)

TEXT: An electronic time-delay relay is proposed which differs from existing devices by the presence of a twin tube with separate cathodes, owing to which a small time-constant is attained for the capacitor charging current. The center taps of the twin windings of the power transformer are tied together, which ensures a uniform voltage distribution between the cathodes of the tubes and their common heater. There are 2 figures.

A. V.

[Abstracter's note: Complete translation]

Card 1/1

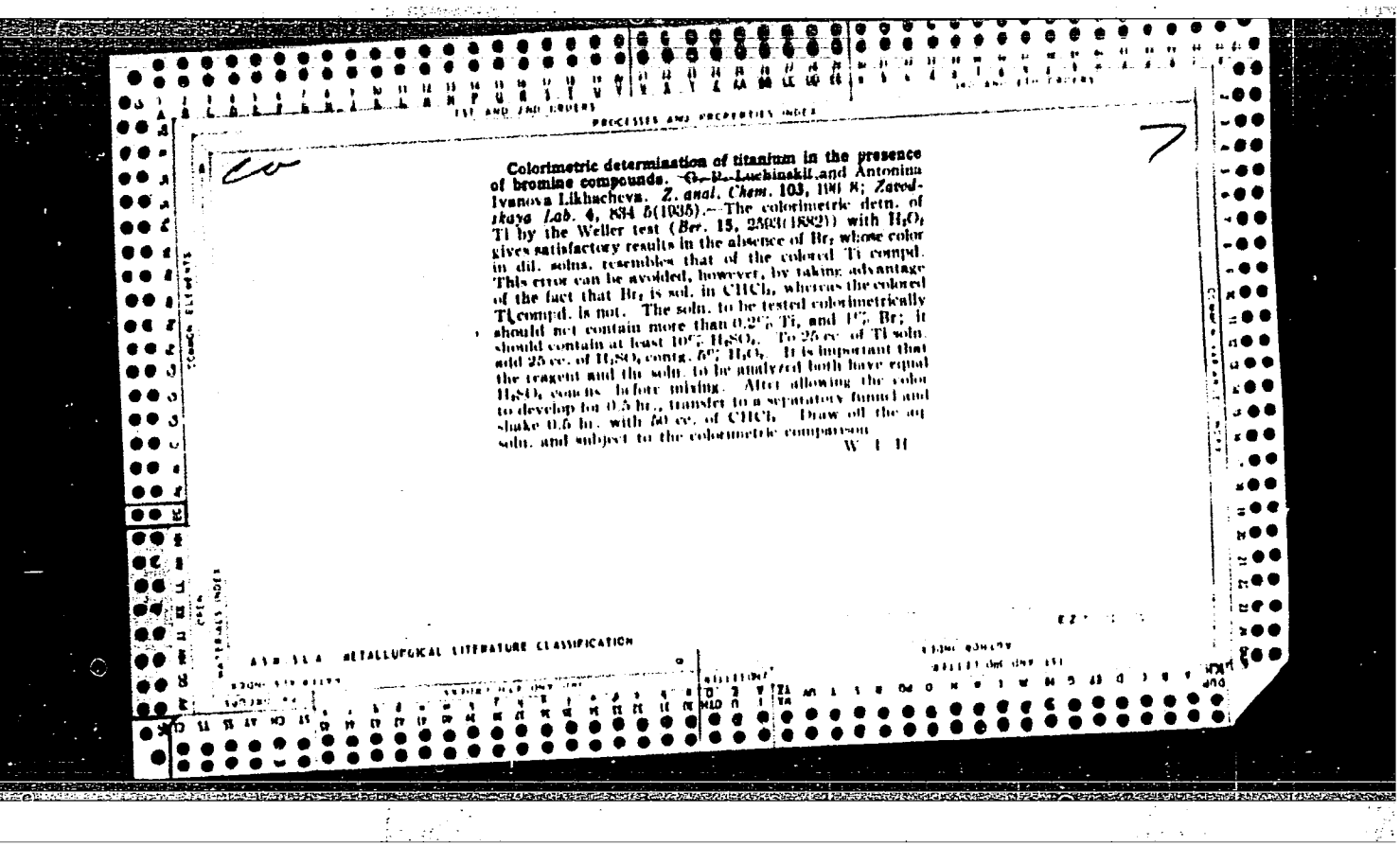


BC

A-1

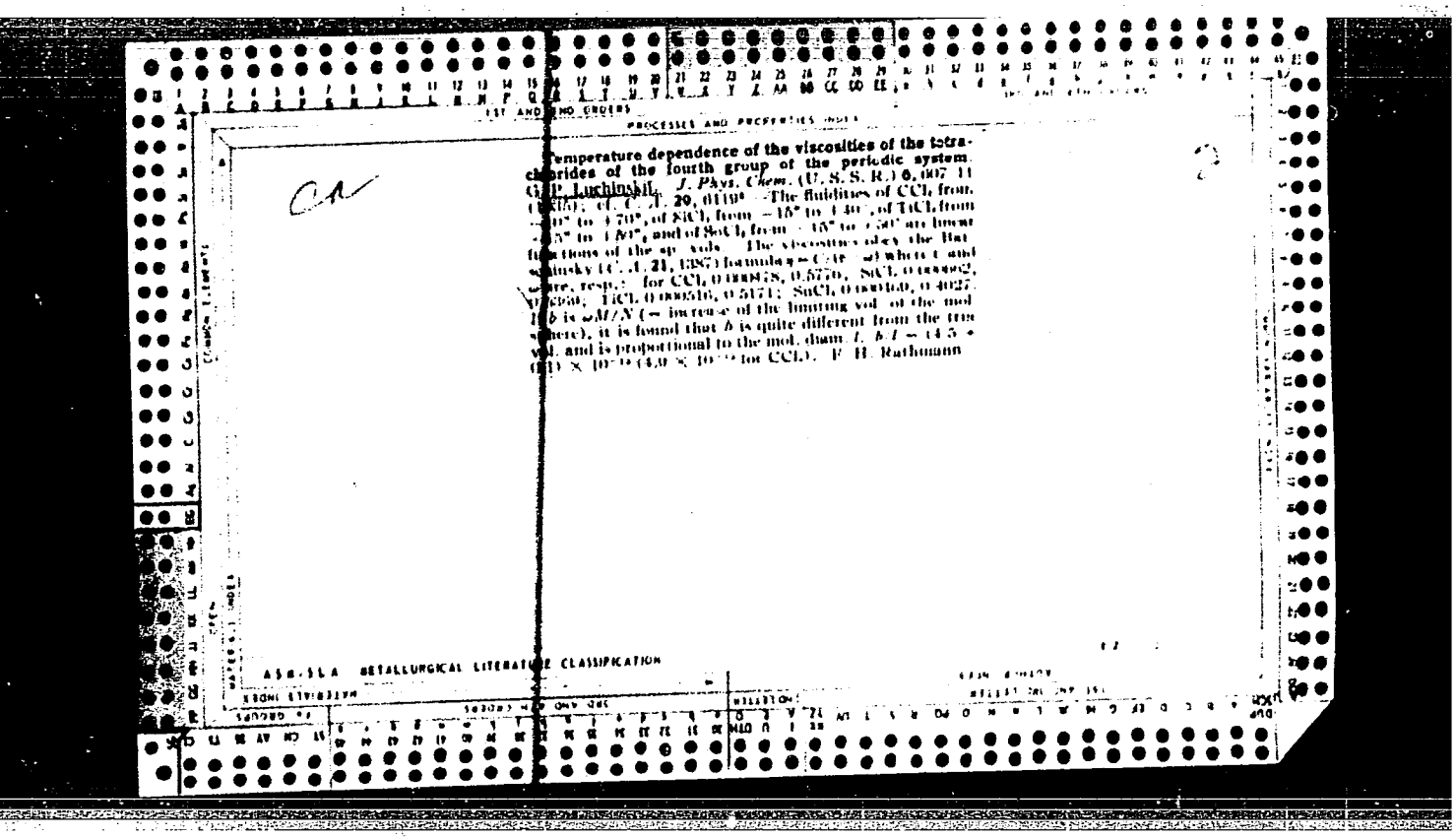
Viscosity of sulphuric acid and its chlorides. G. P. Luchinskii (J. Phys. Chem. U.S.S.R., 1934, 5, 949—959).—Vals. of η as a function of temp. are given for H_2SO_4 by $\eta = 0{\cdot}001236/(v - 0{\cdot}5411)$, for SO_2Cl_2 by $\eta = 0{\cdot}000709/(v - 0{\cdot}5114)$, and for $ClSO_3H$ by $\eta = 0{\cdot}000898/(v - 0{\cdot}5440)$, v being the sp. vol. The limiting v at low temp. is given by $\omega = pM - qM^2$, where $p = 0{\cdot}010135$, $q = 0{\cdot}000047$, and M = mol. wt. ω/M for $ClSO_3H$ is the arithmetic mean of ω/M for H_2SO_4 and SO_2Cl_2. Cu. Abs. (c)

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

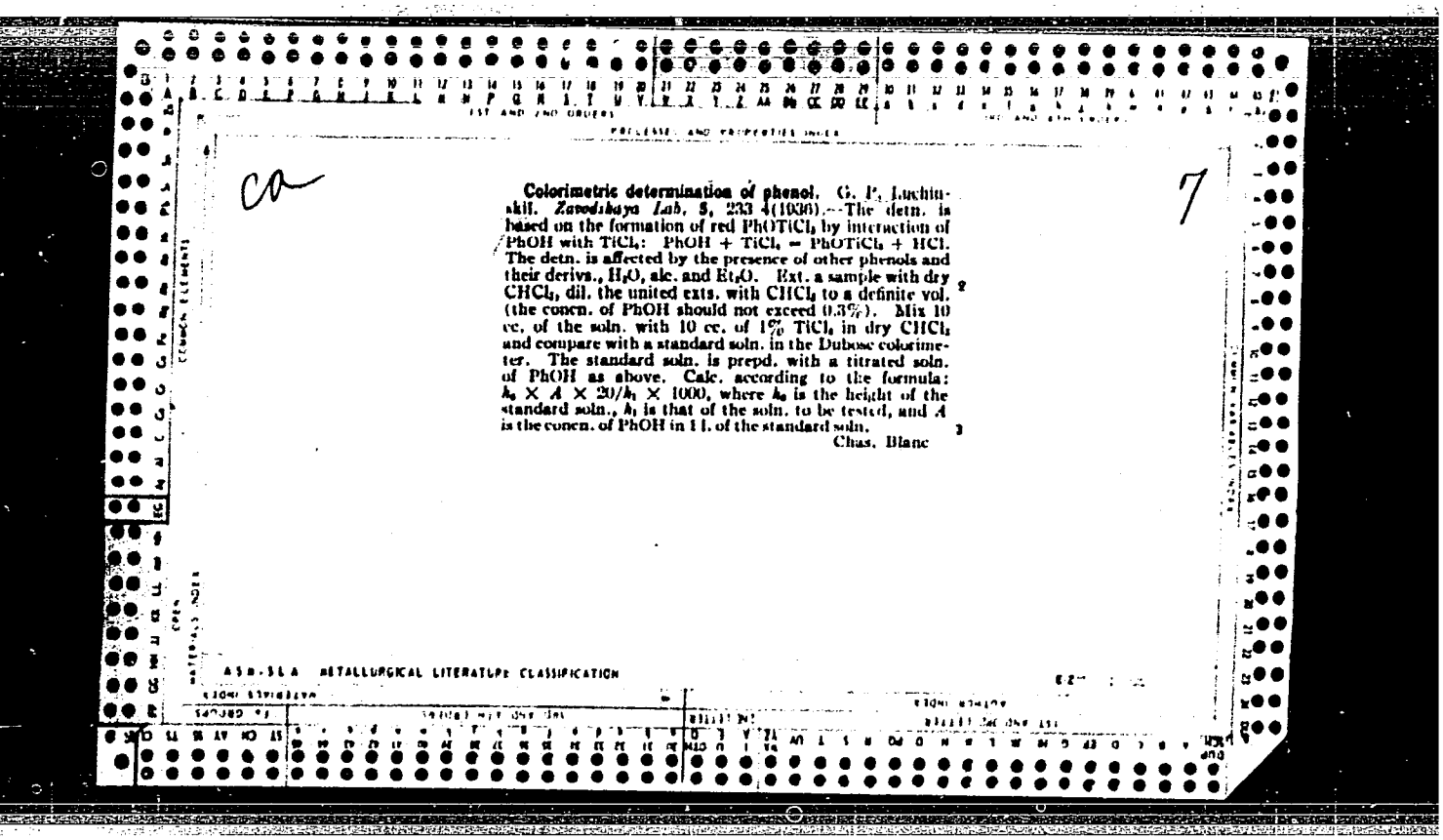


Colorimetric determination of titanium in the presence of bromine compounds. G. P. Luchinskii and Antonina Ivanova Likhacheva. *Z. anal. Chem.* 103, 190 8; *Zavodskaya Lab.* 4, 884 5(1935).—The colorimetric detn. of Ti by the Weller test (*Ber.* 15, 2593(1882)) with H_2O_2 gives satisfactory results in the absence of Br_2 whose color in dil. solns. resembles that of the colored Ti compd. This error can be avoided, however, by taking advantage of the fact that Br_2 is sol. in $CHCl_3$, whereas the colored Ti compd. is not. The soln. to be tested colorimetrically should not contain more than 0.2% Ti, and 1% Br; it should contain at least 10% H_2SO_4. To 25 cc. of Ti soln. add 25 cc. of H_2SO_4 contg. 5% H_2O_2. It is important that the reagent and the soln. to be analyzed both have equal H_2SO_4 contents before mixing. After allowing the color to develop for 0.5 hr., transfer to a separatory funnel and shake 0.5 hr. with 50 cc. of $CHCl_3$. Draw off the aq. soln. and subject to the colorimetric comparison.

W. I. H.

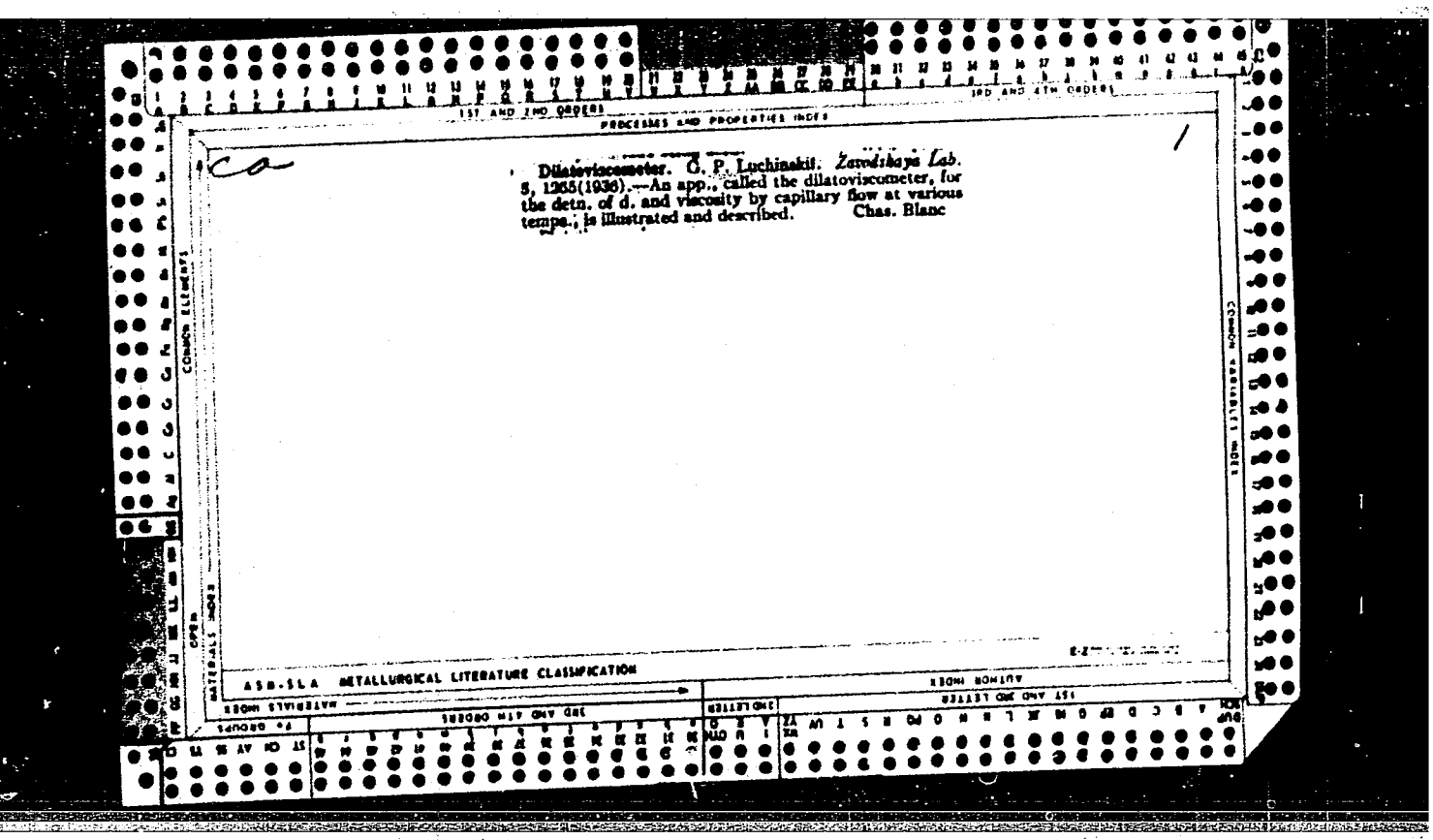


Temperature dependence of the viscosities of the tetrachlorides of the fourth group of the periodic system. G. P. Luchinskii. *J. Phys. Chem.* (U. S. S. R.) 6, 807-11 (1935); cf. *C. A.* 29, 6119[9]. The fluidities of CCl_4 from −10° to +70°, of $SiCl_4$ from −15° to +30°, of $TiCl_4$ from −15° to +80°, and of $SnCl_4$ from −15° to +50° are linear functions of the sp. vols. The viscosities obey the Batschinsky ($C. A.$ 21, 1387) formula $\eta = C/(v - \omega)$ where C and ω are, respec.: for CCl_4 0.018878, 0.5770; $SiCl_4$ 0.016902, 0.4027; $TiCl_4$ 0.020510, 0.5171; $SnCl_4$ 0.019040, 0.4027. If b is $\omega M/N$ (= increase of the limiting vol. of the mol. when 1 g. is added to the mol. diam. L, $b/L = 4.5 \times$ vol., and is proportional to the mol. diam. L, $b/L = (4.5 \times 10^{-8})$ (4.0 × 10[illegible] for CCl_4). F. H. Rathmann



Colorimetric determination of phenol. G. P. Luchinskii. *Zavodskaya Lab.*, **5**, 233-4(1936).—The detn. is based on the formation of red $PhOTiCl_3$ by interaction of PhOH with $TiCl_4$: $PhOH + TiCl_4 = PhOTiCl_3 + HCl$. The detn. is affected by the presence of other phenols and their derivs., H_2O, alc. and Et_2O. Ext. a sample with dry $CHCl_3$, dil. the united exts. with $CHCl_3$ to a definite vol. (the concn. of PhOH should not exceed 0.3%). Mix 10 cc. of the soln. with 10 cc. of 1% $TiCl_4$ in dry $CHCl_3$ and compare with a standard soln. in the Dubosc colorimeter. The standard soln. is prepd. with a titrated soln. of PhOH as above. Calc. according to the formula: $h_0 \times A \times 20/h_1 \times 1000$, where h_0 is the height of the standard soln., h_1 is that of the soln. to be tested, and A is the concn. of PhOH in 1 l. of the standard soln.

Chas. Blanc

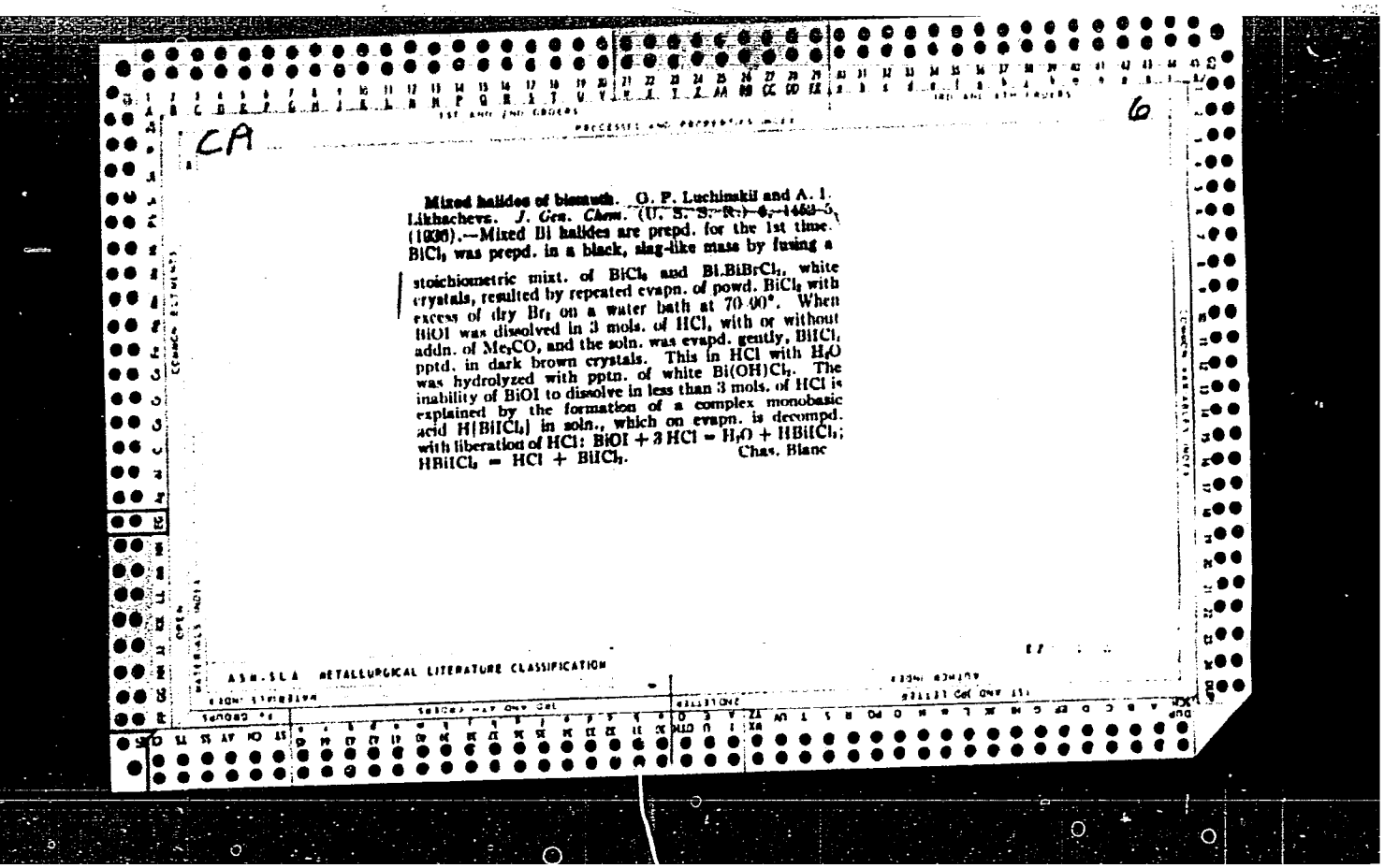


PROCESSES AND PROPERTIES INDEX

Ca

Dilatoviscometer. G. P. Luchinskiĭ. *Zavodskaya Lab.* 5, 1265(1936).—An app., called the dilatoviscometer, for the detn. of d. and viscosity by capillary flow at various temps., is illustrated and described. Chas. Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



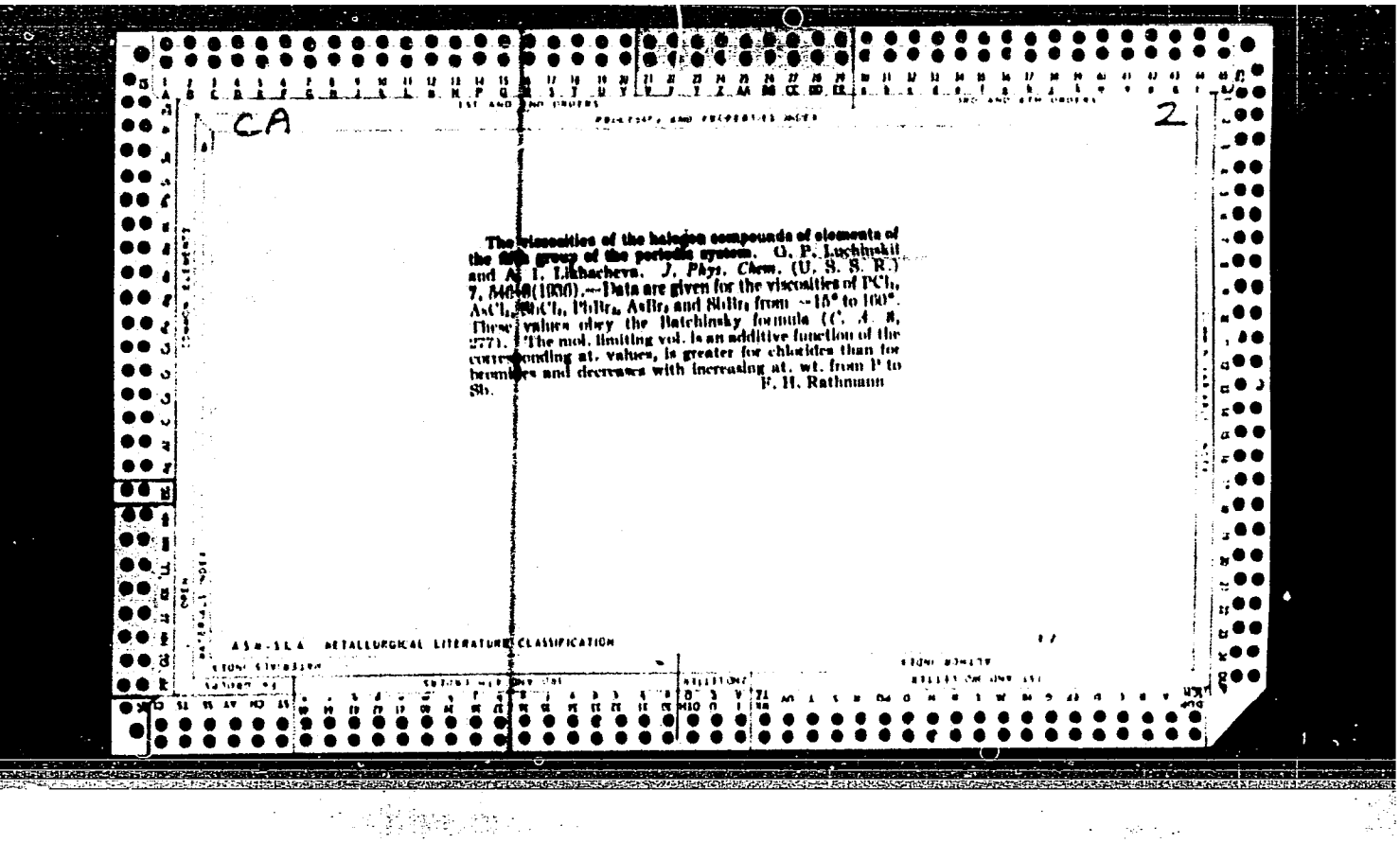
CA

6

Mixed halides of bismuth. G. P. Luchinskii and A. I. Likhacheva. *J. Gen. Chem.* (U. S. S. R.) 6, 1468–5 (1936).—Mixed Bi halides are prepd. for the 1st time. $BiCl_3$ was prepd. in a black, slag-like mass by fusing a stoichiometric mixt. of $BiCl_3$ and $Bi.BiBrCl_2$, white crystals, resulted by repeated evapn. of powd. $BiCl_3$ with excess of dry Br_2 on a water bath at 70–90°. When BiOI was dissolved in 3 mols. of HCl, with or without addn. of Me_2CO, and the soln. was evapd. gently, $BiICl_2$ pptd. in dark brown crystals. This in HCl with H_2O was hydrolyzed with pptn. of white $Bi(OH)Cl_2$. The inability of BiOI to dissolve in less than 3 mols. of HCl is explained by the formation of a complex monobasic acid $H[BiICl_3]$ in soln., which on evapn. is decompd. with liberation of HCl: $BiOI + 3\,HCl = H_2O + HBiICl_3$; $HBiICl_3 = HCl + BiICl_2$.

Chas. Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



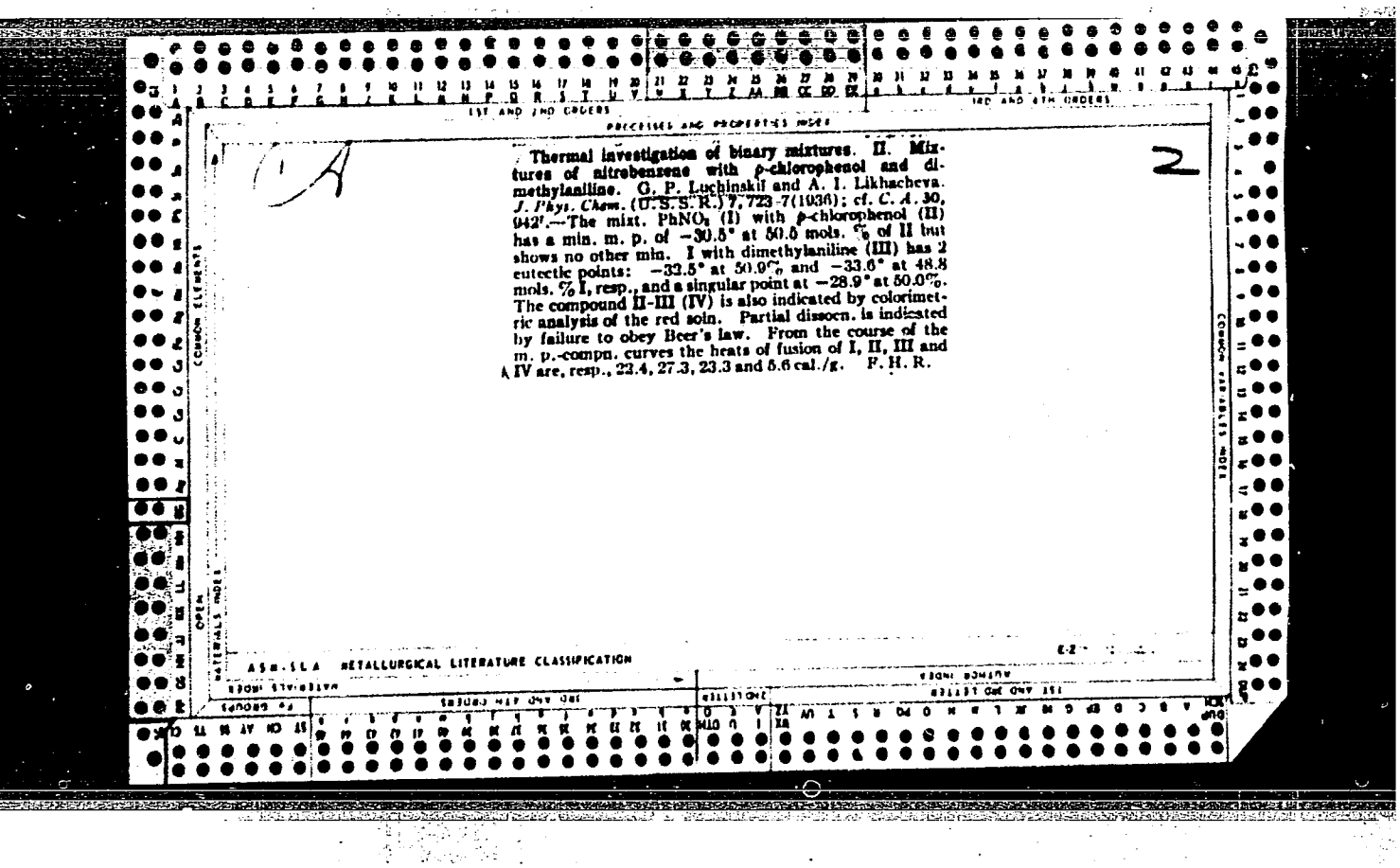
CA

2

The viscosities of the halogen compounds of elements of the fifth group of the periodic system. O. P. Lushinskii and A. I. Likacheva. *J. Phys. Chem.* (U. S. S. R.) 7, 44-50(1936).—Data are given for the viscosities of PCl_3, $AsCl_3$, $SbCl_3$, PBr_3, $AsBr_3$ and $SbBr_3$ from −15° to 100°. These values obey the Batchinsky formula (C. A. 8, 2771). The mol. limiting vol. is an additive function of the corresponding at. values, is greater for chlorides than for bromides and decreases with increasing at. wt. from P to Sb.

F. H. Rathmann

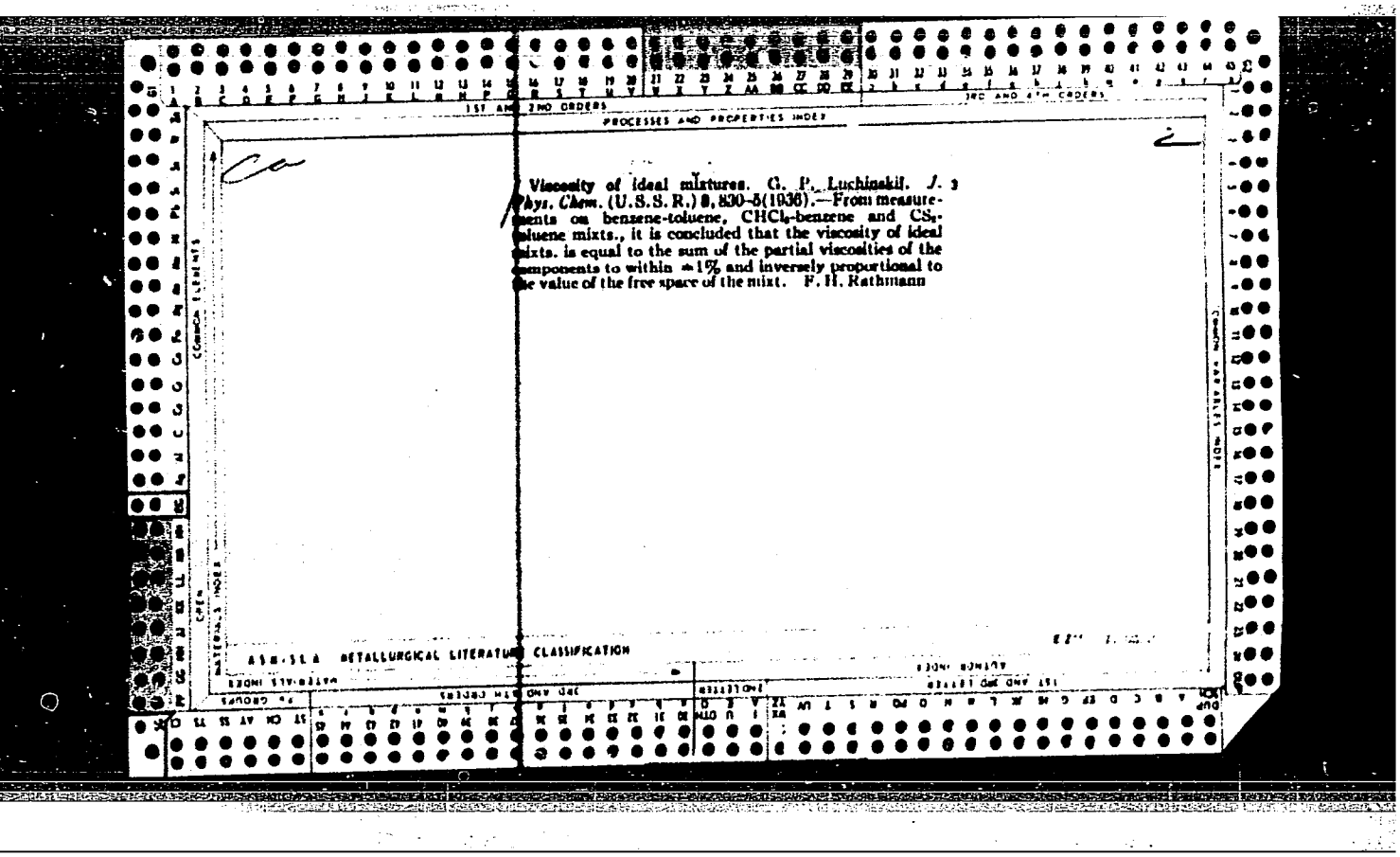
A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION



Thermal investigation of binary mixtures. II. Mixtures of nitrobenzene with *p*-chlorophenol and dimethylaniline. G. P. Luchinskii and A. I. Likhacheva. *J. Phys. Chem.* (U.S.S.R.) 7, 723-7(1936); cf. *C. A.* 30, 0427.—The mixt. $PhNO_2$ (I) with *p*-chlorophenol (II) has a min. m. p. of −30.5° at 50.0 mols. % of II but shows no other min. I with dimethylaniline (III) has 2 eutectic points: −32.5° at 50.9% and −33.6° at 48.8 mols. % I, resp., and a singular point at −28.9° at 50.0%. The compound II-III (IV) is also indicated by colorimetric analysis of the red soln. Partial dissocn. is indicated by failure to obey Beer's law. From the course of the m. p.-compn. curves the heats of fusion of I, II, III and IV are, resp., 22.4, 27.3, 23.3 and 5.6 cal./g. F. H. R.

LUCHINSKII, G. P.

Thermal investigation of binary mixtures. II. Mixtures of nitrobenzene with *p*-chlorophenol and dimethylaniline. G. P. Luchinskii and A. I. Likhacheva. *J. Phys. Chem.* (U.S.S.R.) 7, 723-7(1936); cf. *C. A.* 30, 942⁷.—The mixt. $PhNO_2$ (I) with *p*-chlorophenol (II) has a min. m. p. of −30.5° at 50.0 mols. % of II but shows no other min. I with dimethylaniline (III) has 2 eutectic points: −32.5° at 50.0% and −33.0° at 48.8 mols. % I, resp., and a singular point at −28.0° at 50.0%. The compound II–III (IV) is also indicated by colorimetric analysis of the red soln. Partial dissocn. is indicated by failure to obey Beer's law. From the course of the m. p.-compn. curves the heats of fusion of I, II, III and IV are, resp., 22.4, 27.3, 23.3 and 5.6 cal./g. F. H. R.

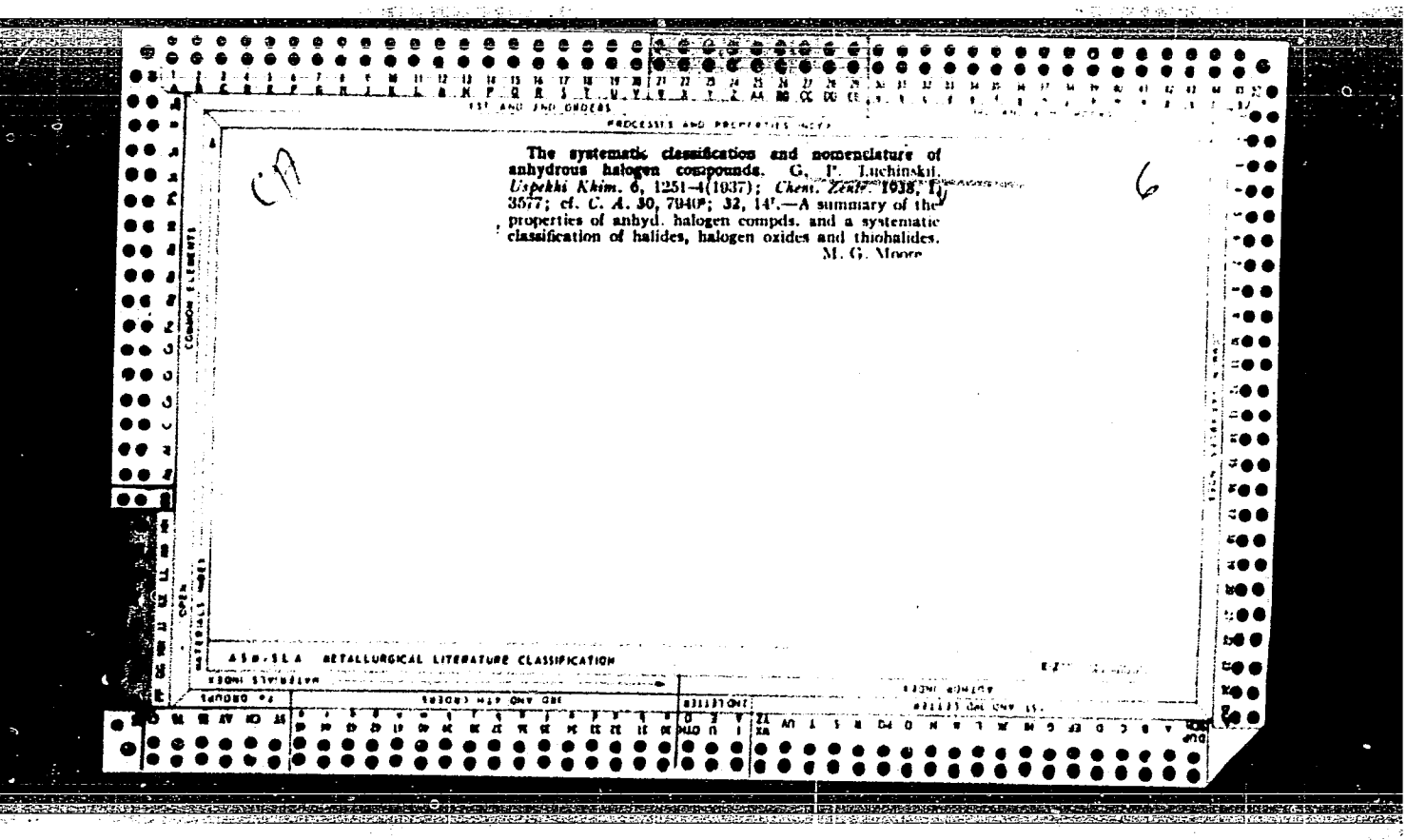


PROCESSES AND PROPERTIES INDEX

Ca

Viscosity of ideal mixtures. G. P. Luchinskiĭ. *J. Phys. Chem.* (U.S.S.R.) 8, 830–5(1936).—From measurements on benzene-toluene, $CHCl_3$-benzene and CS_2-toluene mixts., it is concluded that the viscosity of ideal mixts. is equal to the sum of the partial viscosities of the components to within ±1% and inversely proportional to the value of the free space of the mixt. F. H. Rathmann

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



The systematic classification and nomenclature of anhydrous halogen compounds. G. P. Luchinskii. *Uspekhi Khim.* 6, 1251–4(1937); *Chem. Zentr.* 1938, I, 3577; cf. *C. A.* 30, 7940⁸; 32, 14⁷.—A summary of the properties of anhyd. halogen compds. and a systematic classification of halides, halogen oxides and thiohalides.
M. G. Moore

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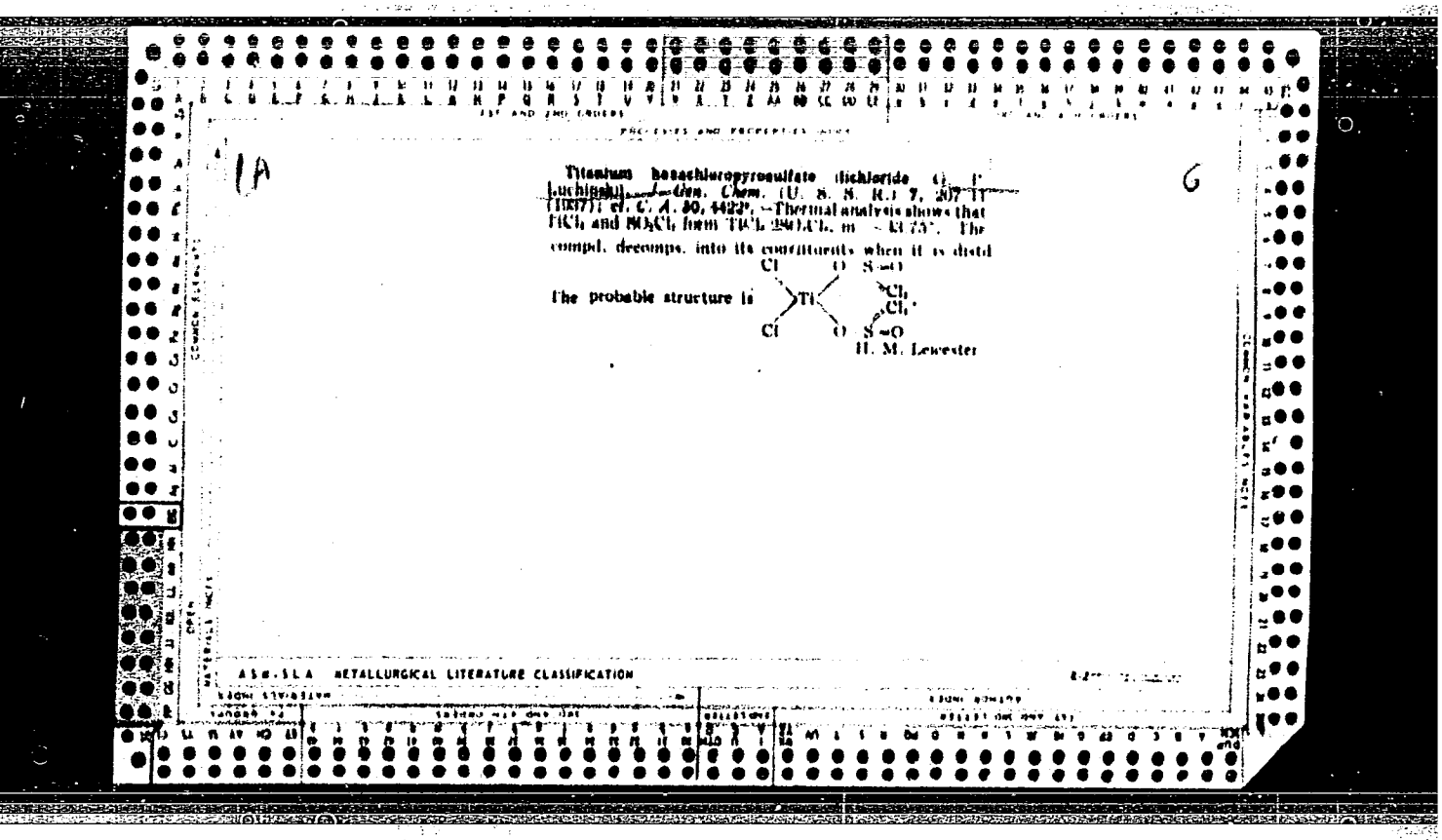


1A

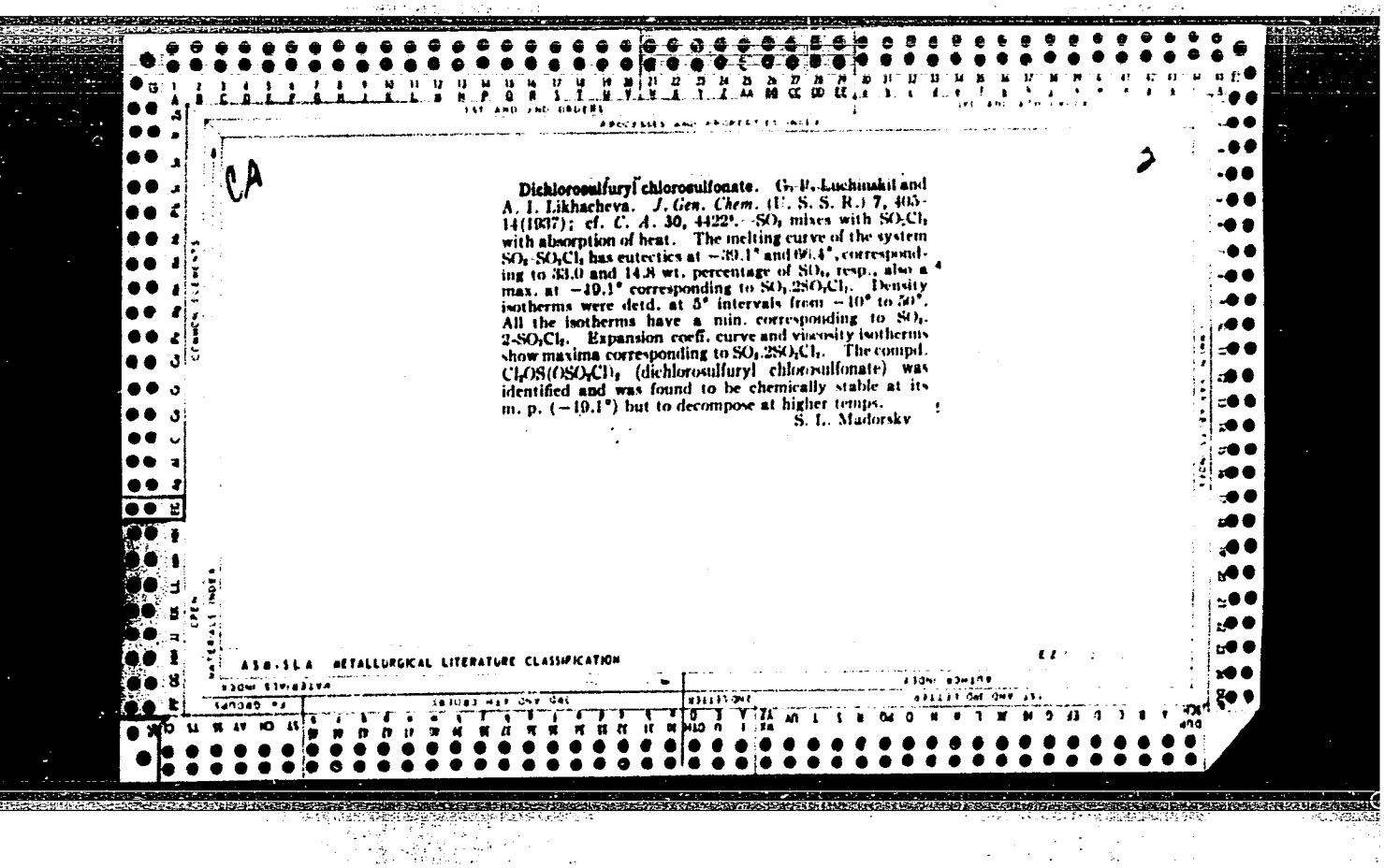
6

Titanium hexachloropyrosulfate dichloride (I. P. Lukhinskii, *J. Gen. Chem.* (U. S. S. R.) 7, 207-11 (1937); cf. *C. A.* 30, 4422⁹.—Thermal analysis shows that $TiCl_4$ and SO_2Cl_2 from $TiCl_4$·$2SO_2Cl_2$, m. ~ 43.75°. The compd. decomps. into its constituents when it is distd.

The probable structure is

H. M. Lewester

A5m-5LA METALLURGICAL LITERATURE CLASSIFICATION

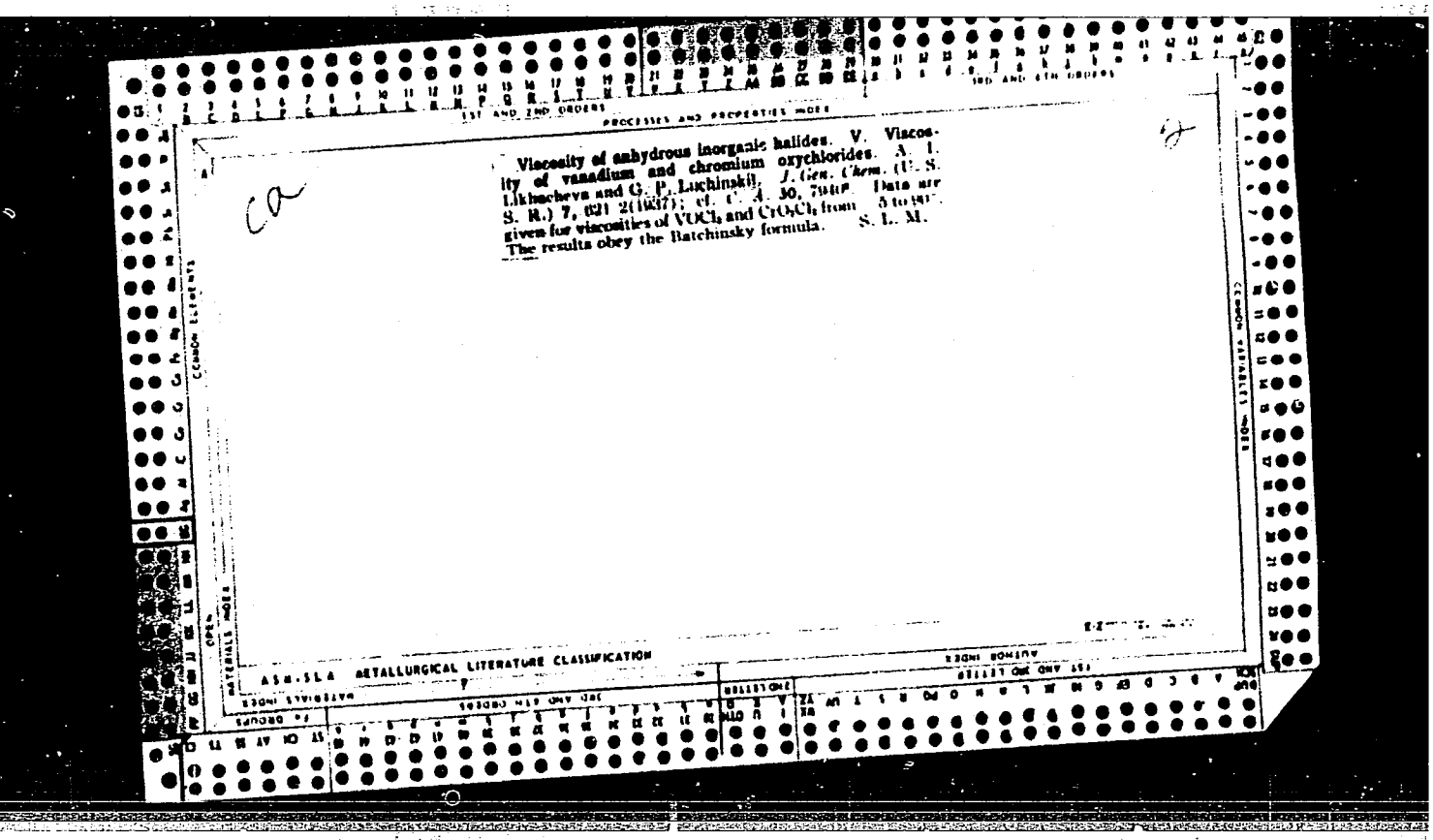


CA

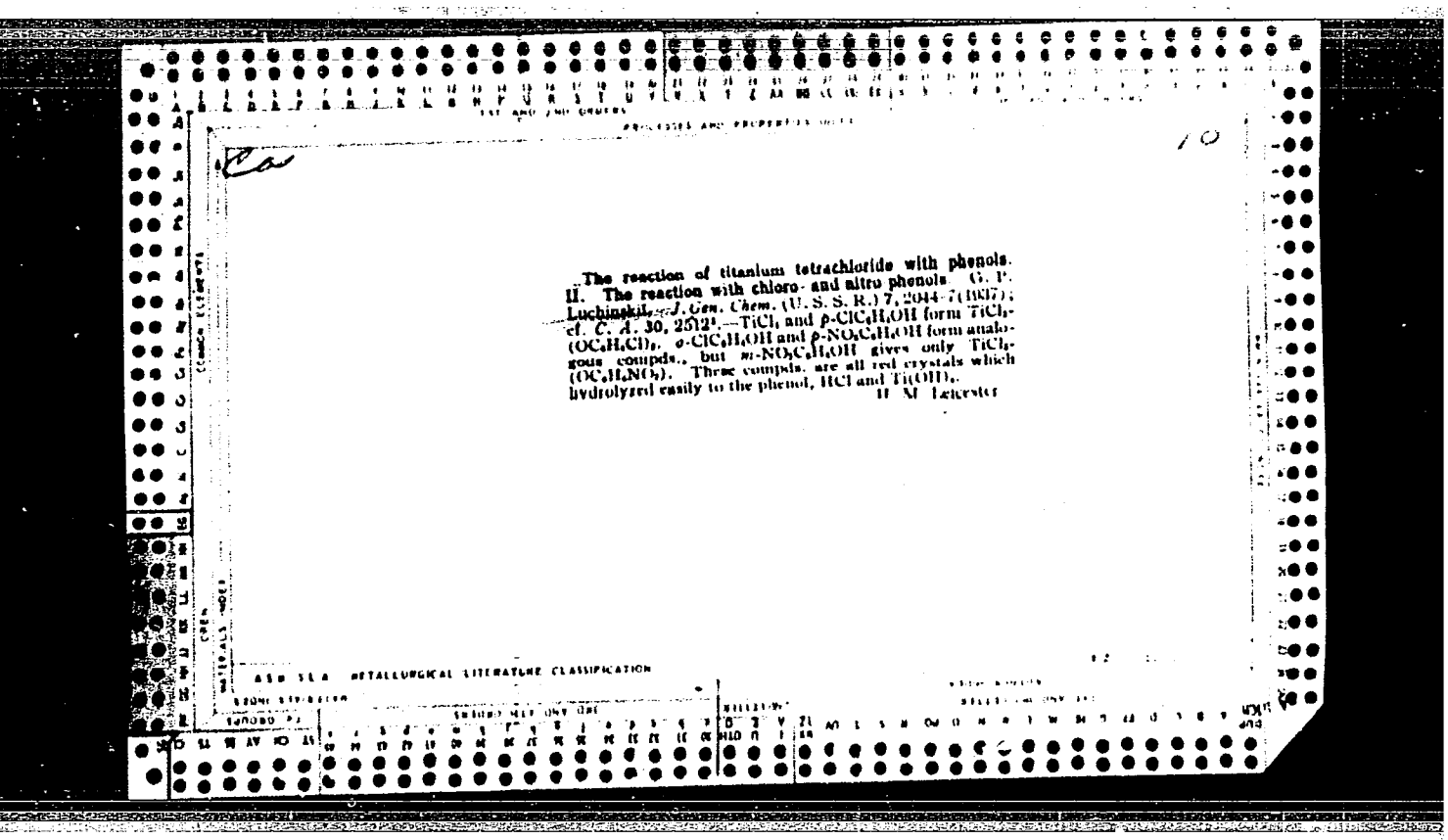
Dichlorosulfuryl chlorosulfonate. G. P. Luchmakii and A. I. Likhacheva. *J. Gen. Chem.* (U. S. S. R.) 7, 405-14(1937); cf. *C. A.* 30, 4422⁸. SO_3 mixes with SO_2Cl_2 with absorption of heat. The melting curve of the system SO_3-SO_2Cl_2 has eutectics at −39.1° and 69.4°, corresponding to 33.0 and 14.8 wt. percentage of SO_3, resp., also a max. at −49.1° corresponding to $SO_3.2SO_2Cl_2$. Density isotherms were detd. at 5° intervals from −10° to 50°. All the isotherms have a min. corresponding to SO_3.2-SO_2Cl_2. Expansion coeff. curve and viscosity isotherms show maxima corresponding to $SO_3.2SO_2Cl_2$. The compd. $Cl_2OS(OSO_2Cl)_2$ (dichlorosulfuryl chlorosulfonate) was identified and was found to be chemically stable at its m. p. (−10.1°) but to decompose at higher temps.

S. L. Madorsky

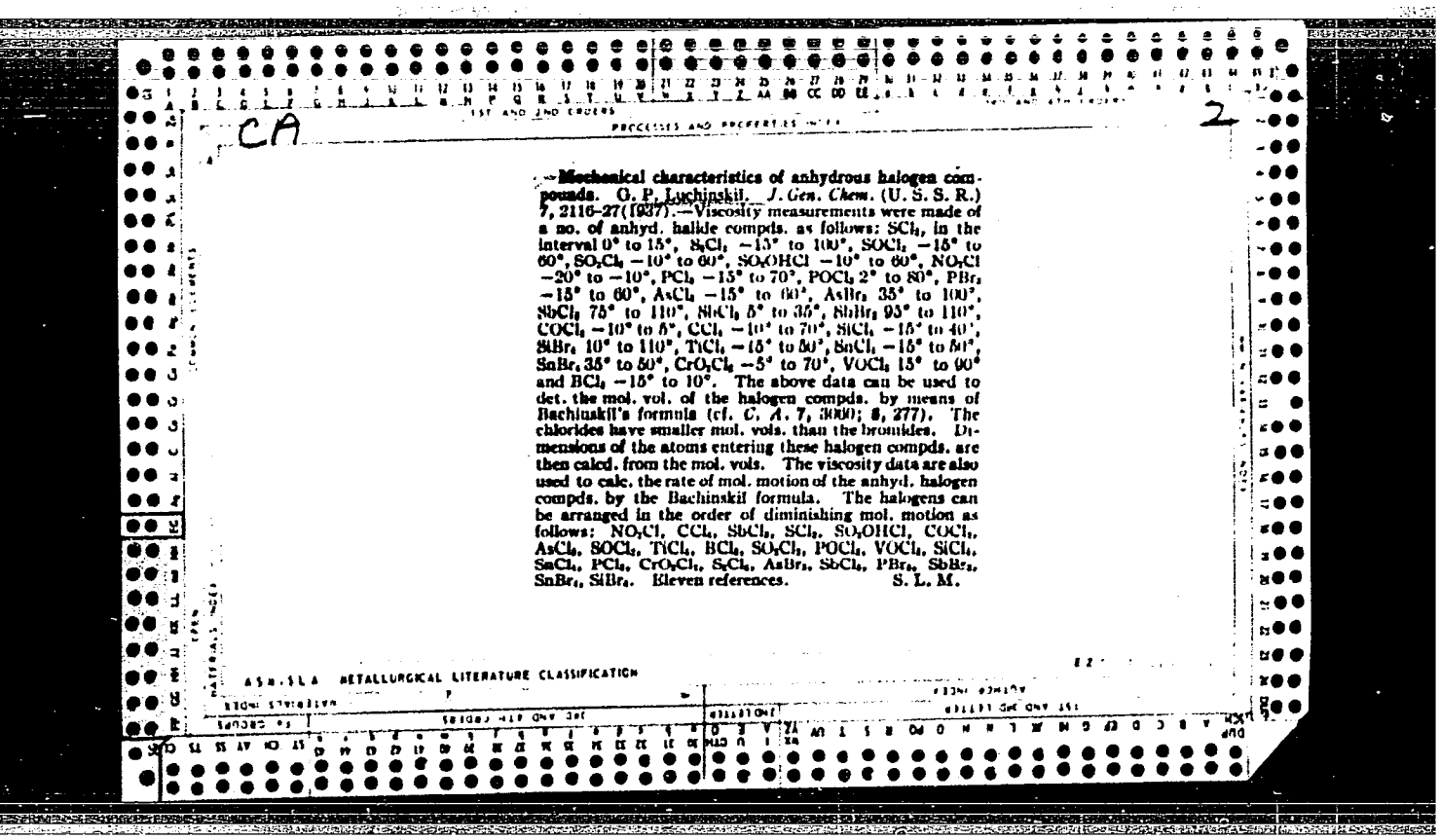
A38-51A METALLURGICAL LITERATURE CLASSIFICATION



Viscosity of anhydrous inorganic halides. V. Viscosity of vanadium and chromium oxychlorides. A. I. Likacheva and G. P. Luchinskii. *J. Gen. Chem.* (U. S. S. R.) 7, 821-2(1937); cf. C. A. 30, 7048⁸. Data are given for viscosities of $VOCl_3$ and CrO_2Cl_2 from 5 to 91°. The results obey the Batchinsky formula. S. L. M.



The reaction of titanium tetrachloride with phenols. II. The reaction with chloro- and nitro phenols. G. P. Luchinskii. *J. Gen. Chem.* (U. S. S. R.) 7, 2044–7 (1937); cf. *C. A.* 30, 2512.—$TiCl_4$ and p-ClC_6H_4OH form $TiCl_2(OC_6H_4Cl)_2$. o-ClC_6H_4OH and p-$NO_2C_6H_4OH$ form analogous compds., but m-$NO_2C_6H_4OH$ gives only $TiCl_3(OC_6H_4NO_2)$. Three compds. are all red crystals which hydrolyzed easily to the phenol, HCl and $Ti(OH)_4$.
H. M. Leicester



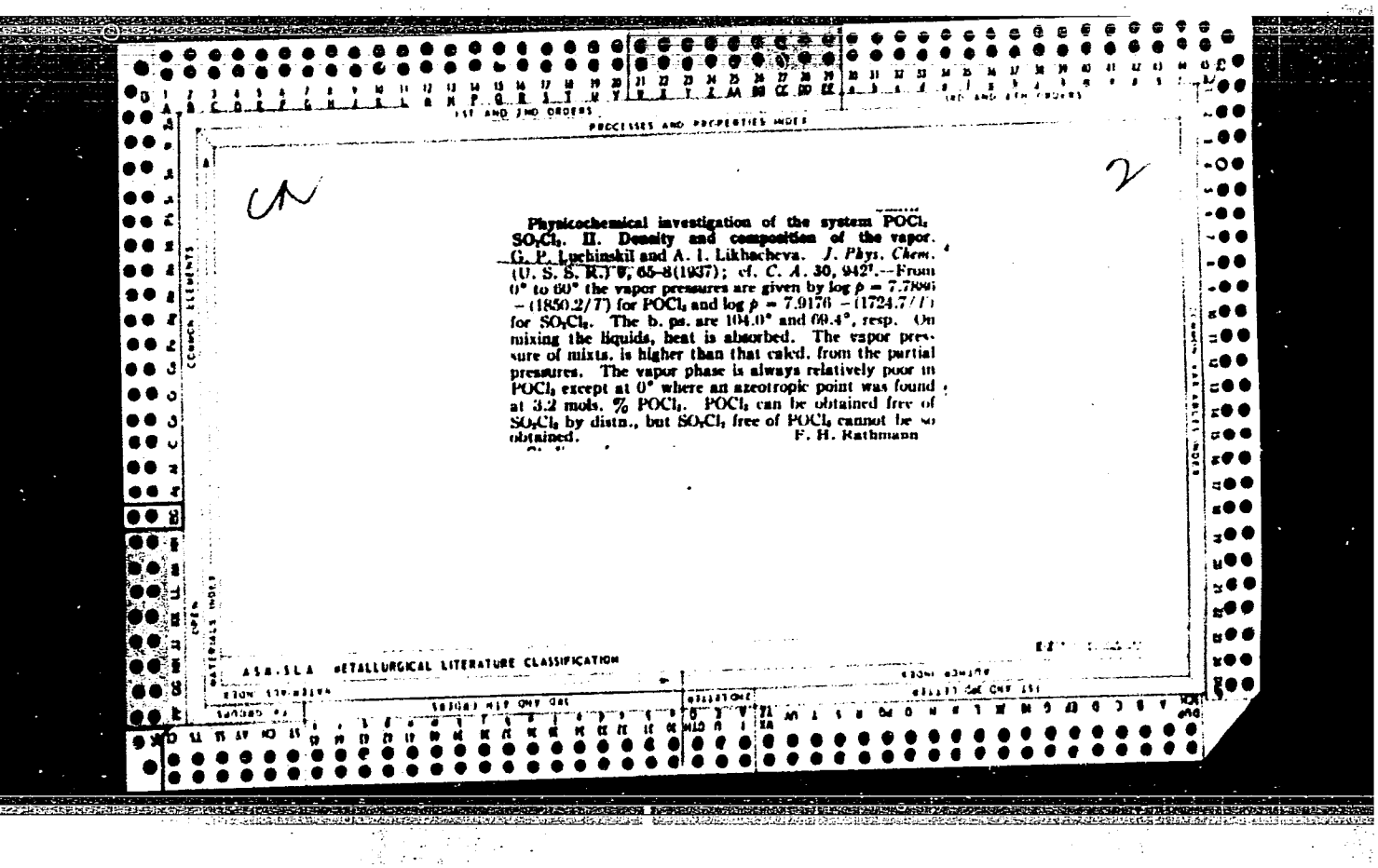
CA

2

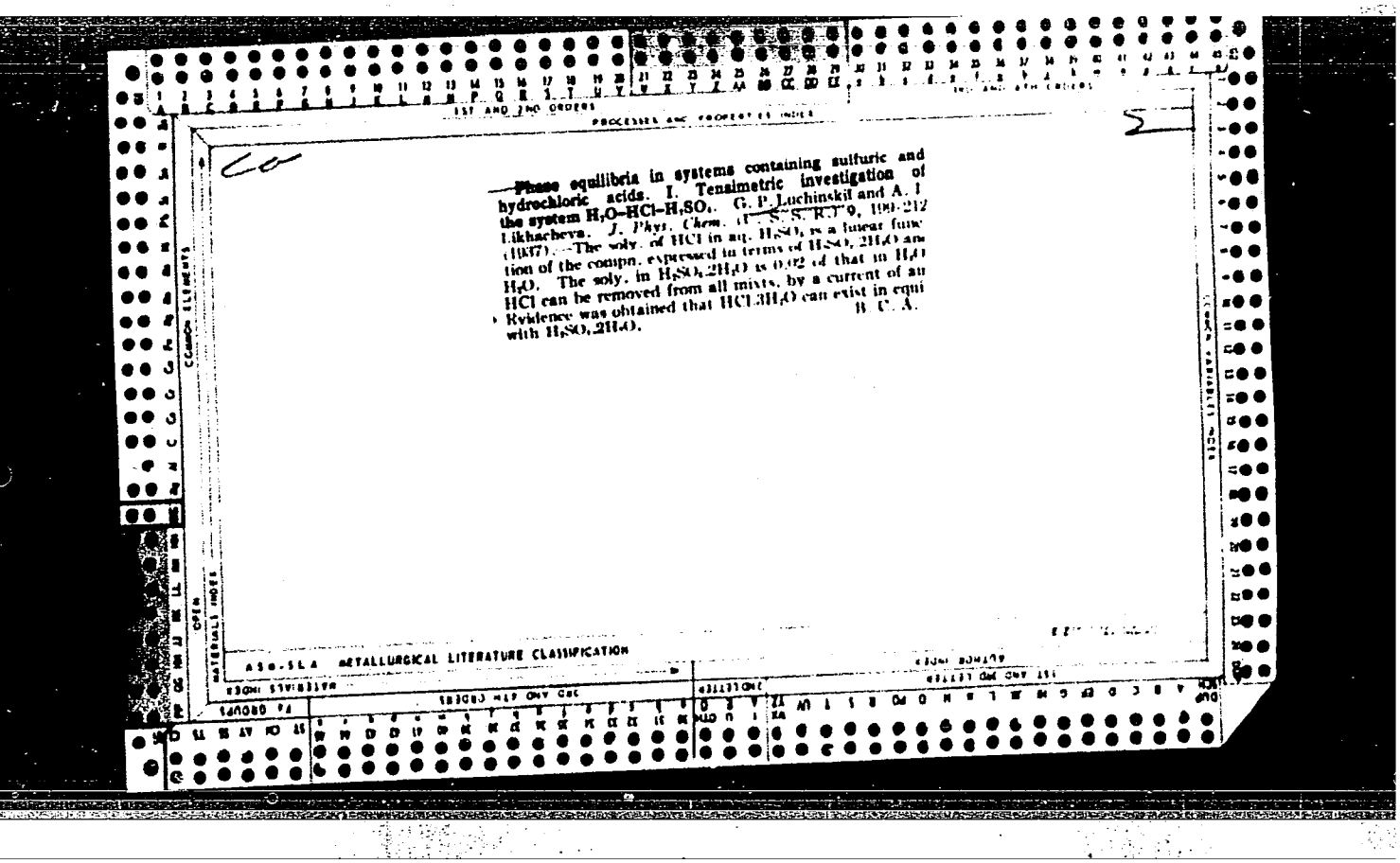
PROCESSES AND PROPERTIES INDEX

—**Mechanical characteristics of anhydrous halogen compounds.** G. P. Luchinskii. *J. Gen. Chem.* (U. S. S. R.) 7, 2116-27(1937).—Viscosity measurements were made of a no. of anhyd. halide compds. as follows: SCl_2, in the interval 0° to 15°, S_2Cl_2 −15° to 100°, $SOCl_2$ −15° to 60°, SO_2Cl_2 −10° to 60°, SO_2OHCl −10° to 60°, NO_2Cl −20° to −10°, PCl_3 −15° to 70°, $POCl_3$ 2° to 80°, PBr_3 −15° to 60°, $AsCl_3$ −15° to 60°, $AsBr_3$ 35° to 100°, $SbCl_3$ 75° to 110°, $SbCl_5$ 5° to 35°, $SbBr_3$ 93° to 110°, $COCl_2$ −10° to 5°, CCl_4 −10° to 70°, $SiCl_4$ −15° to 40°, $SiBr_4$ 10° to 110°, $TiCl_4$ −15° to 50°, $SnCl_4$ −15° to 50°, $SnBr_4$ 35° to 80°, CrO_2Cl_2 −5° to 70°, $VOCl_3$ 15° to 90° and BCl_3 −15° to 10°. The above data can be used to det. the mol. vol. of the halogen compds. by means of Bachinskii's formula (cf. *C. A.* 7, 3000; 8, 277). The chlorides have smaller mol. vols. than the bromides. Dimensions of the atoms entering these halogen compds. are then calcd. from the mol. vols. The viscosity data are also used to calc. the rate of mol. motion of the anhyd. halogen compds. by the Bachinskii formula. The halogens can be arranged in the order of diminishing mol. motion as follows: NO_2Cl, CCl_4, $SbCl_5$, SCl_2, SO_2OHCl, $COCl_2$, $AsCl_3$, $SOCl_2$, $TiCl_4$, BCl_3, SO_2Cl_2, $POCl_3$, $VOCl_3$, $SiCl_4$, $SnCl_4$, PCl_3, CrO_2Cl_2, S_2Cl_2, $AsBr_3$, $SbCl_3$, PBr_3, $SbBr_3$, $SnBr_4$, $SiBr_4$. Eleven references. S. L. M.

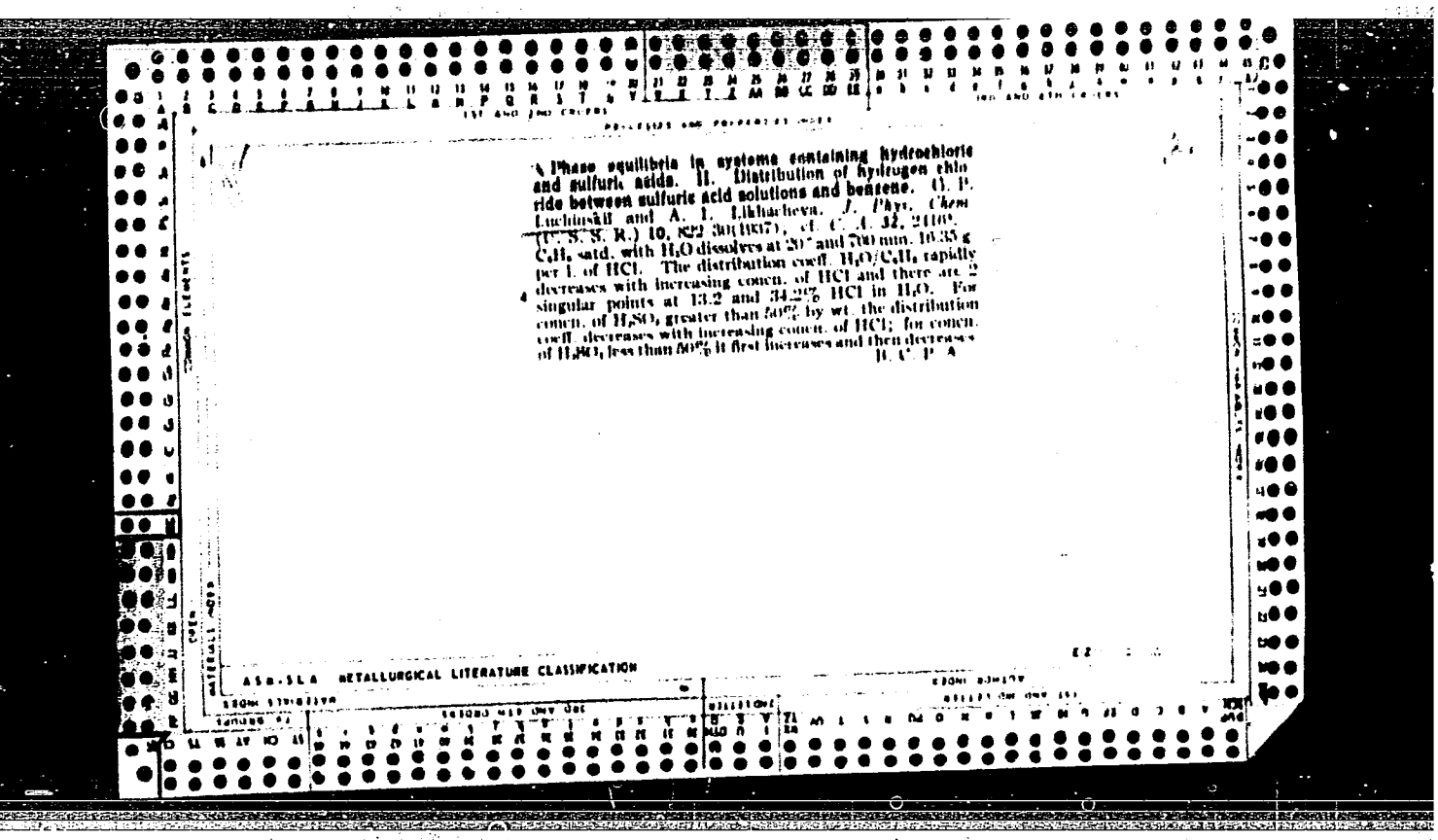
A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION



Physicochemical investigation of the system $POCl_3$ SO_2Cl_2. II. Density and composition of the vapor. G. P. Luchinskii and A. I. Likhacheva. *J. Phys. Chem.* (U. S. S. R.) 9, 65–8(1937); cf. *C. A.* 30, 942⁹.—From 0° to 60° the vapor pressures are given by $\log p = 7.7896 - (1850.2/T)$ for $POCl_3$ and $\log p = 7.9176 - (1724.7/T)$ for SO_2Cl_2. The b. ps. are 104.0° and 69.4°, resp. On mixing the liquids, heat is absorbed. The vapor pressure of mixts. is higher than that calcd. from the partial pressures. The vapor phase is always relatively poor in $POCl_3$ except at 0° where an azeotropic point was found at 3.2 mols. % $POCl_3$. $POCl_3$ can be obtained free of SO_2Cl_2 by distn., but SO_2Cl_2 free of $POCl_3$ cannot be so obtained. F. H. Rathmann

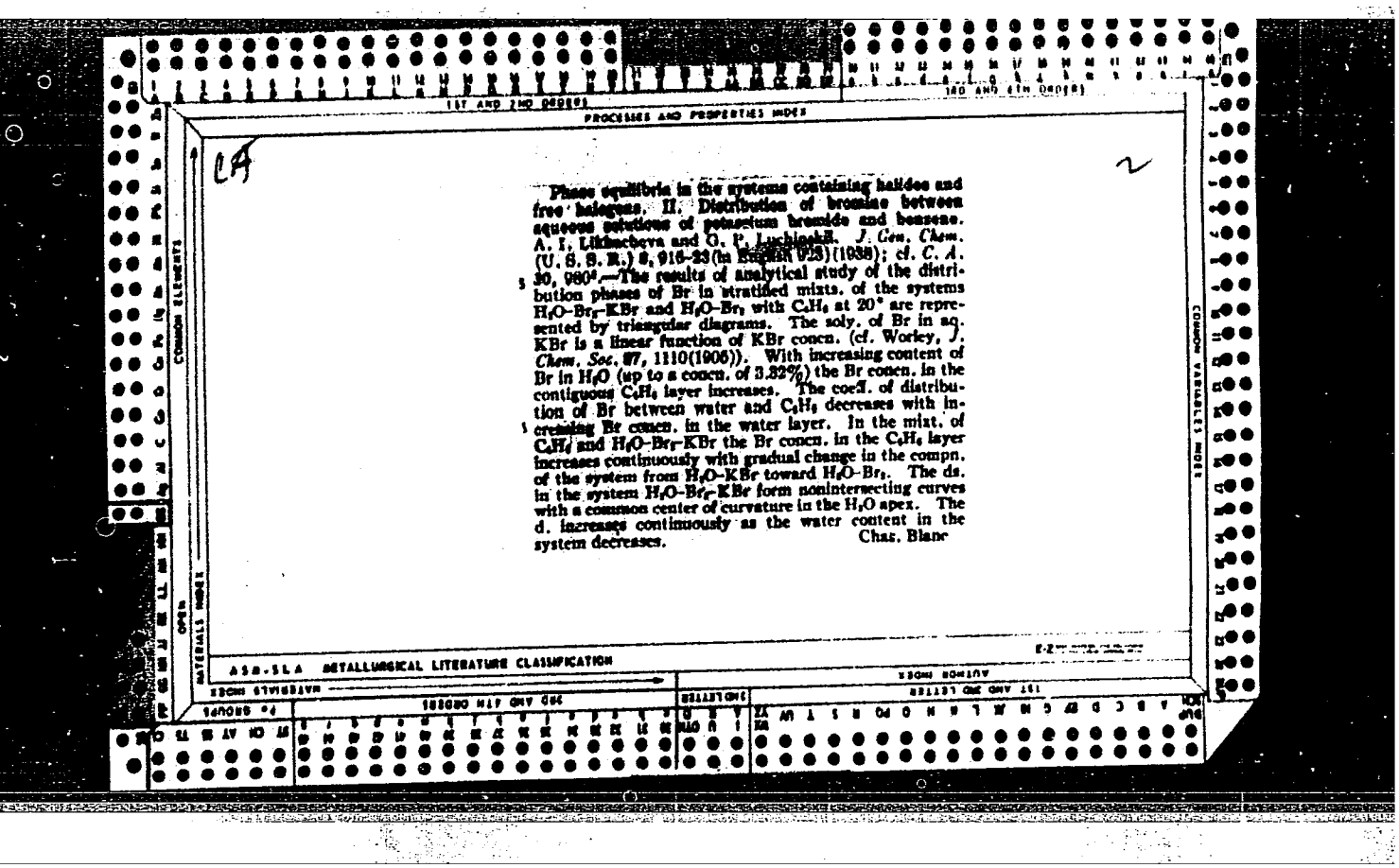


Phase equilibria in systems containing sulfuric and hydrochloric acids. I. Tensimetric investigation of the system H_2O–HCl–H_2SO_4. G. P. Luchinskii and A. I. Likhacheva. *J. Phys. Chem.* (U.S.S.R.) 9, 199-212 (1937).—The soly. of HCl in aq. H_2SO_4 is a linear function of the compn. expressed in terms of $H_2SO_4.2H_2O$ and H_2O. The soly. in $H_2SO_4.2H_2O$ is 0.92 of that in H_2O. HCl can be removed from all mixts. by a current of air. Evidence was obtained that $HCl.3H_2O$ can exist in equil. with $H_2SO_4.2H_2O$. B. C. A.



Phase equilibria in systems containing hydrochloric and sulfuric acids. II. Distribution of hydrogen chloride between sulfuric acid solutions and benzene. G. P. Luchinskiĭ and A. I. Likharheva. *J. Phys. Chem* (U.S.S.R.) 10, 822-30(1937); cf. C. A. 32, 2110⁹. C_6H_6 satd. with H_2O dissolves at 20° and 700 mm. 10.35 g per l. of HCl. The distribution coeff. H_2O/C_6H_6 rapidly decreases with increasing concn. of HCl and there are 2 singular points at 13.2 and 34.2% HCl in H_2O. For concn. of H_2SO_4 greater than 50% by wt. the distribution coeff. decreases with increasing concn. of HCl; for concn. of H_2SO_4 less than 50% it first increases and then decreases H. C. P. A

A58-51A METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

LA

2

Phase equilibria in the systems containing halides and free halogens. II. Distribution of bromine between aqueous solutions of potassium bromide and benzene. A. I. Likhacheva and G. P. Luchinskiĭ. *J. Gen. Chem.* (U. S. S. R.) 8, 918-23 (in English 923) (1938); cf. *C. A.* 30, 980⁹.—The results of analytical study of the distribution phases of Br in stratified mixts. of the systems H_2O–Br_2–KBr and H_2O–Br_2 with C_6H_6 at 20° are represented by triangular diagrams. The soly. of Br in aq. KBr is a linear function of KBr concn. (cf. Worley, *J. Chem. Soc.* 87, 1110(1906)). With increasing content of Br in H_2O (up to a concn. of 3.32%) the Br concn. in the contiguous C_6H_6 layer increases. The coeff. of distribution of Br between water and C_6H_6 decreases with increasing Br concn. in the water layer. In the mixt. of C_6H_6 and H_2O–Br_2–KBr the Br concn. in the C_6H_6 layer increases continuously with gradual change in the compn. of the system from H_2O–KBr toward H_2O–Br_2. The ds. in the system H_2O–Br_2–KBr form nonintersecting curves with a common center of curvature in the H_2O apex. The d. increases continuously as the water content in the system decreases.

Chas. Blanc

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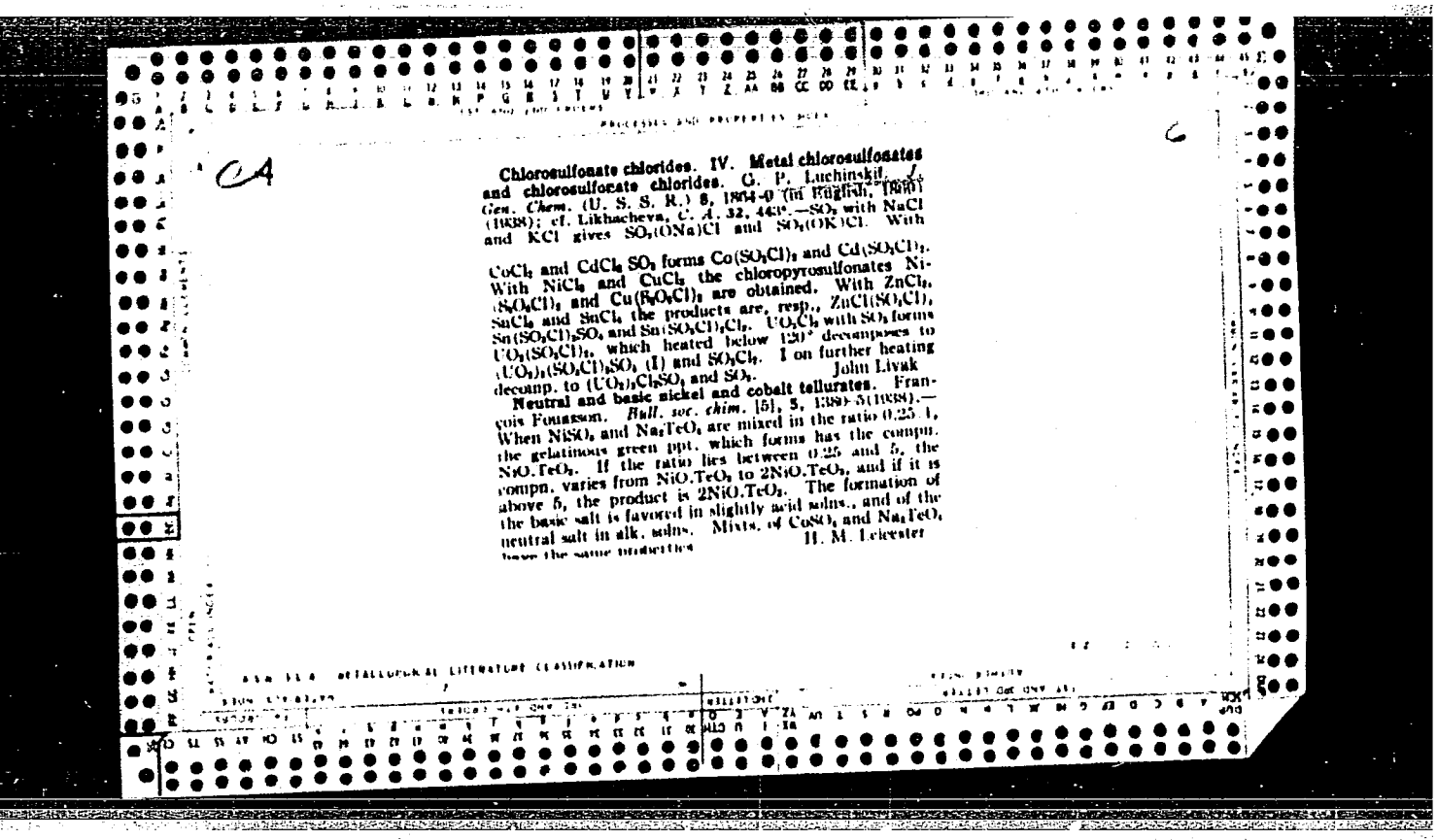


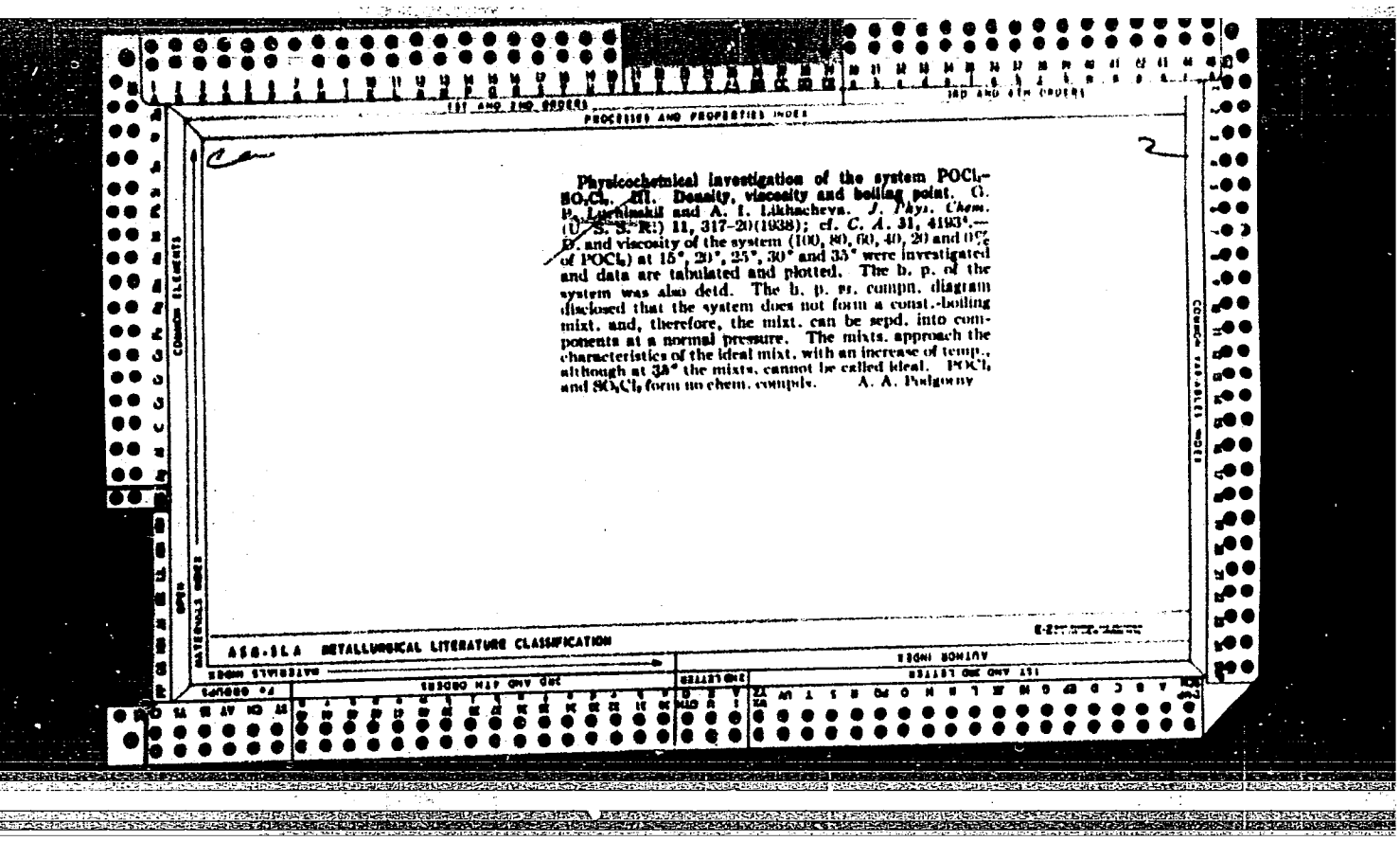
CA

Chlorosulfonate chlorides. IV. Metal chlorosulfonates and chlorosulfonate chlorides. G. P. Luchinskii, *Zhur. Obshchei Khim.* (J. Gen. Chem.) (U. S. S. R.) 8, 1804-9 (in English, 1809) (1938); cf. Likhacheva, C. A. 32, 4438.—SO_3 with NaCl and KCl gives $SO_2(ONa)Cl$ and $SO_2(OK)Cl$. With $CoCl_2$ and $CdCl_2$ SO_3 forms $Co(SO_3Cl)_2$ and $Cd(SO_3Cl)_2$. With $NiCl_2$ and $CuCl_2$ the chloropyrosulfonates $Ni(S_2O_6Cl)_2$ and $Cu(S_2O_6Cl)_2$ are obtained. With $ZnCl_2$, $SnCl_2$ and $SnCl_4$ the products are, resp., $ZnCl(SO_3Cl)$, $Sn(SO_3Cl)_2SO_4$ and $Sn(SO_3Cl)_2Cl_2$. UO_2Cl_2 with SO_3 forms $UO_2(SO_3Cl)_2$, which heated below 120° decomposes to $(UO_2)_2(SO_3Cl)_2SO_4$ (I) and SO_2Cl_2. I on further heating decomp. to $(UO_2)_2Cl_2SO_4$ and SO_3.

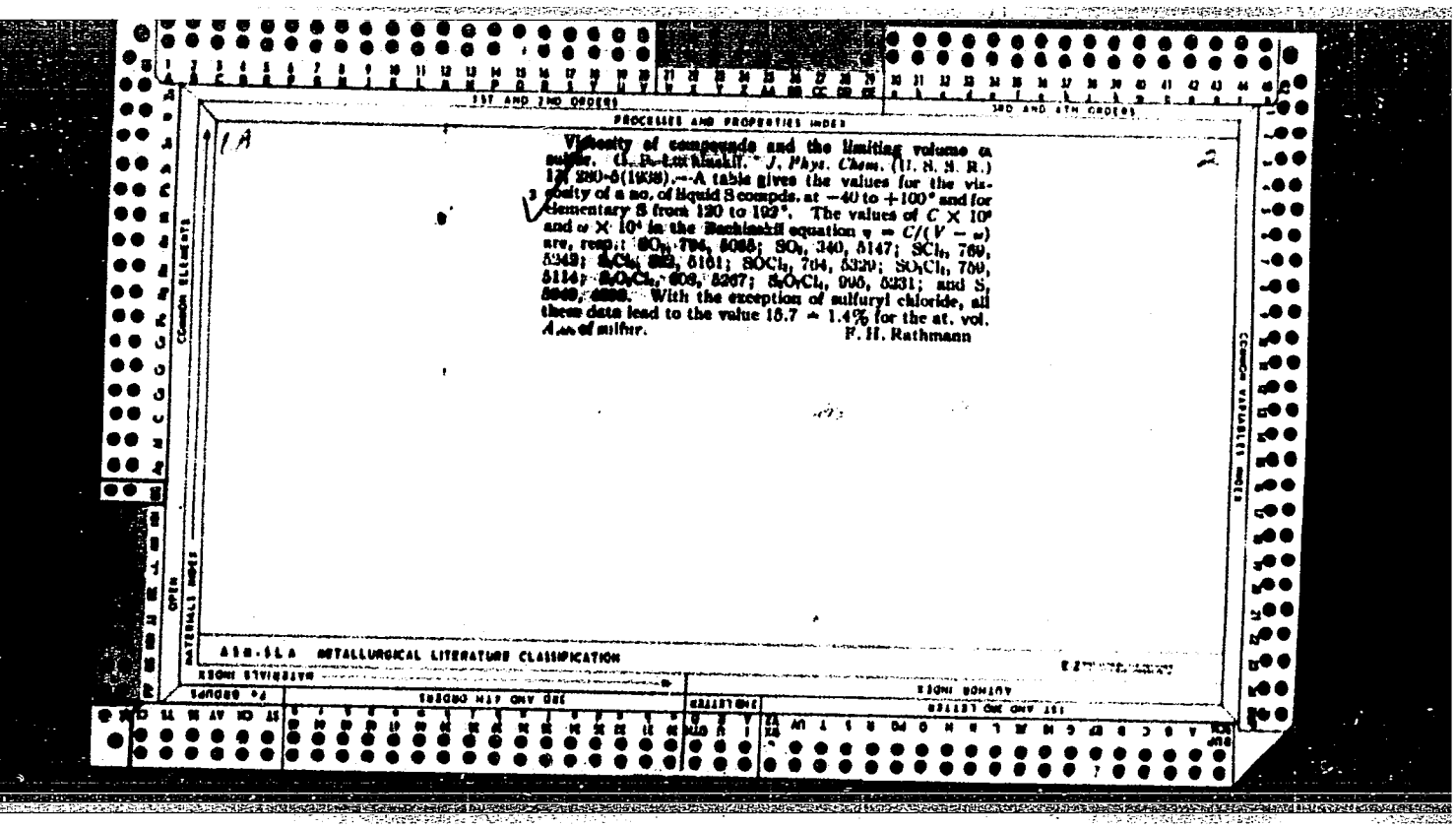
John Livak

Neutral and basic nickel and cobalt tellurates. François Fouasson. *Bull. soc. chim.* [5], 5, 1389-5 (1938).—When $NiSO_4$ and Na_2TeO_3 are mixed in the ratio 0.25–1, the gelatinous green ppt. which forms has the compn. $NiO.TeO_2$. If the ratio lies between 0.25 and 5, the compn. varies from $NiO.TeO_2$ to $2NiO.TeO_2$, and if it is above 5, the product is $2NiO.TeO_2$. The formation of the basic salt is favored in slightly acid solns., and of the neutral salt in alk. solns. Mixts. of $CoSO_4$ and Na_2TeO_3 [illegible] the same reaction.

H. M. Leicester



Physicochemical investigation of the system $POCl_3$–SO_2Cl_2. III. Density, viscosity and boiling point. G. P. Luchinskii and A. I. Likhacheva. *J. Phys. Chem.* (U.S.S.R.) 11, 317–20(1938); cf. *C. A.* 31, 4193⁵.—D. and viscosity of the system (100, 80, 60, 40, 20 and 0% of $POCl_3$) at 15°, 20°, 25°, 30° and 35° were investigated and data are tabulated and plotted. The b. p. of the system was also detd. The b. p. vs. compn. diagram disclosed that the system does not form a const.-boiling mixt. and, therefore, the mixt. can be sepd. into components at a normal pressure. The mixts. approach the characteristics of the ideal mixt. with an increase of temp., although at 35° the mixts. cannot be called ideal. $POCl_3$ and SO_2Cl_2 form no chem. compds. A. A. Bulgarov

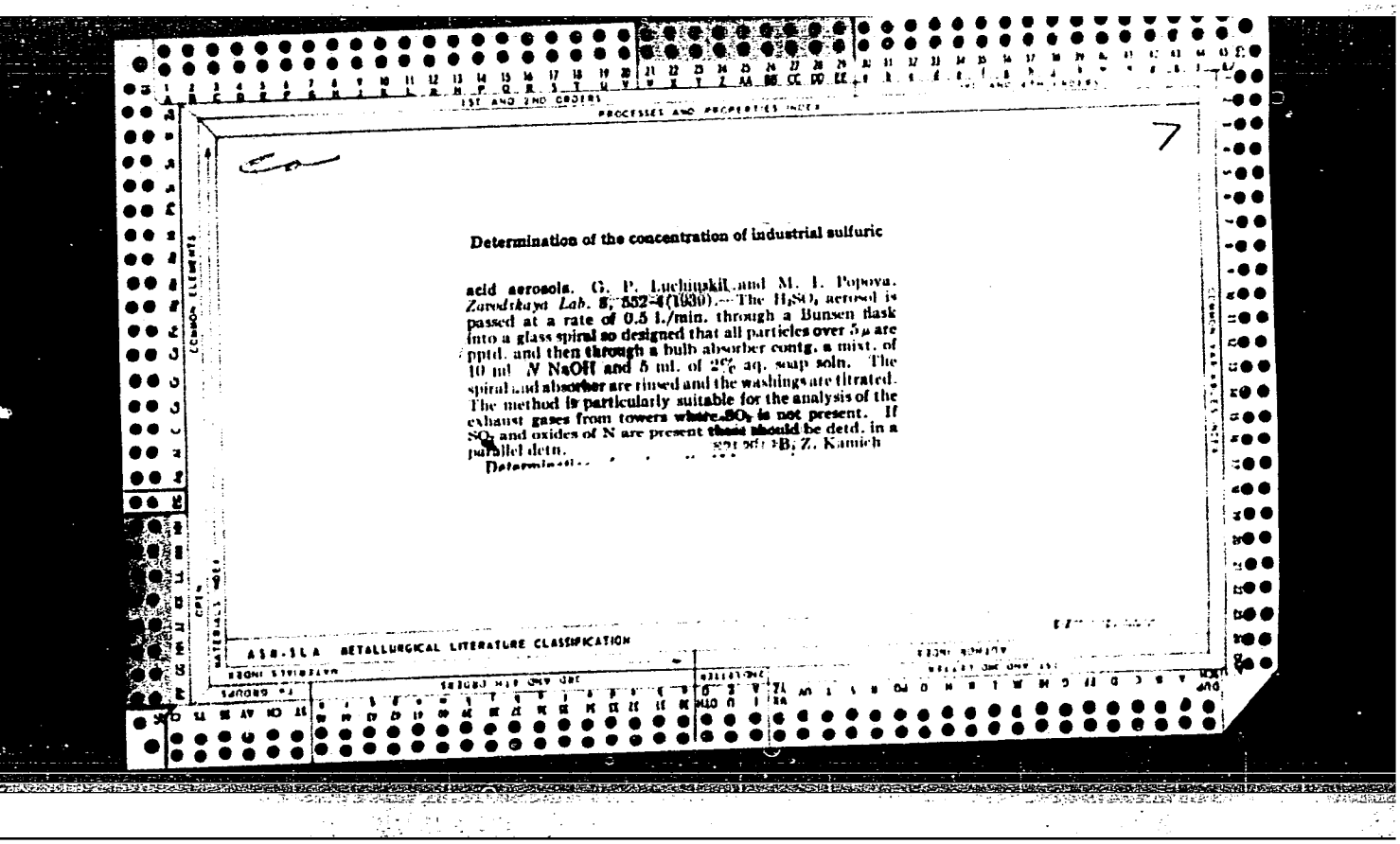


PROCESSES AND PROPERTIES INDEX

1A

Viscosity of compounds and the limiting volume of sulfur. G. B. Kistiakowsky. *J. Phys. Chem.* (U. S. S. R.) 12, 280-6 (1938).—A table gives the values for the viscosity of a no. of liquid S compds. at −40 to +100° and for elementary S from 120 to 192°. The values of $C \times 10^5$ and $\omega \times 10^4$ in the Bachinskii equation $\eta = C/(V - \omega)$ are, resp.: SO_2, 794, 8088; SO_3, 340, 8147; SCl_2, 769, 8349; S_2Cl_2, 882, 8161; $SOCl_2$, 704, 8329; SO_2Cl_2, 709, 8114; $S_2O_5Cl_2$, 608, 8267; $S_2O_7Cl_2$, 905, 8231; and S, 8049, 4880. With the exception of sulfuryl chloride, all these data lead to the value 15.7 ± 1.4% for the at. vol. A_{so} of sulfur. F. H. Rathmann

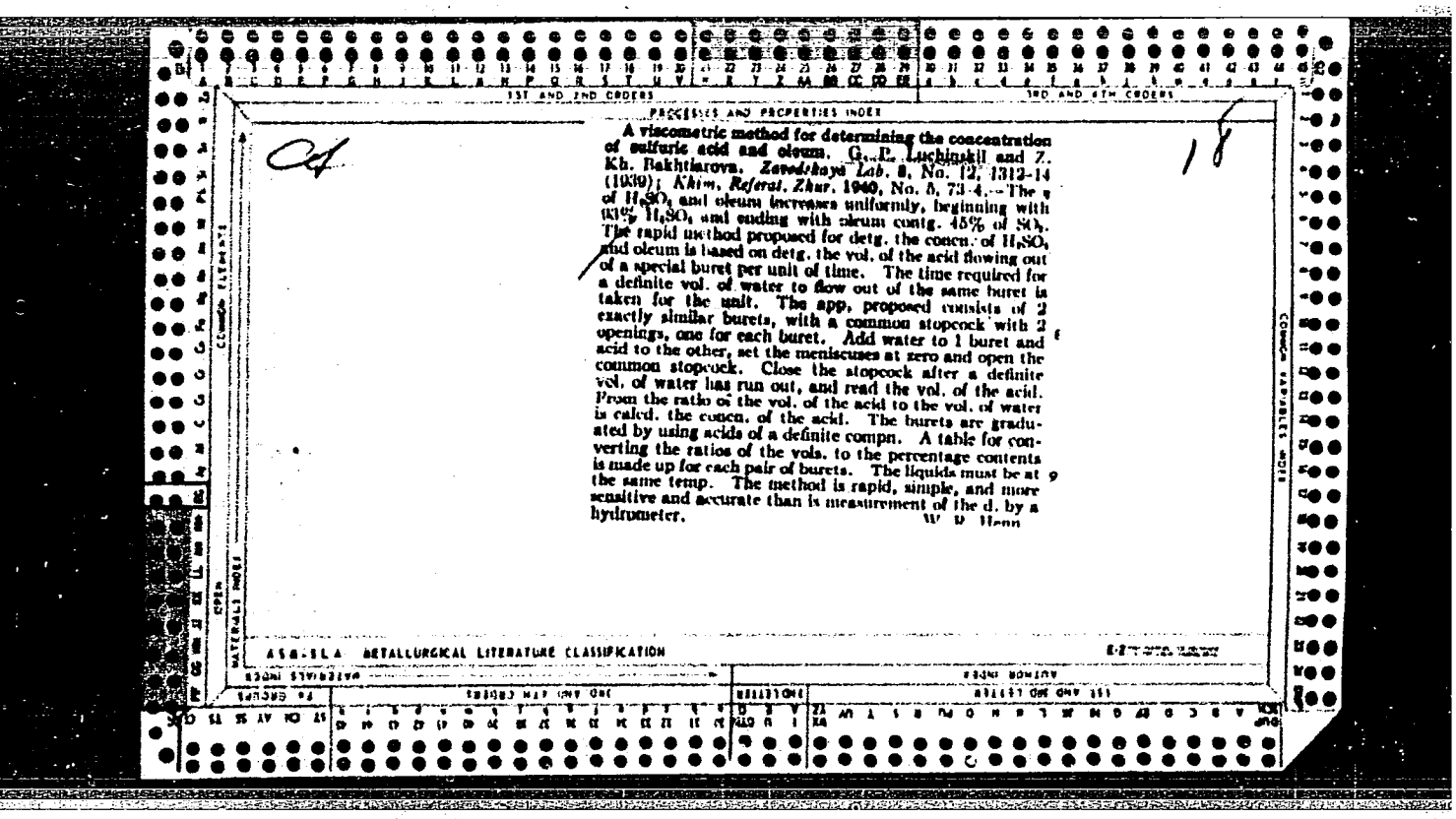
A 10-51 A METALLURGICAL LITERATURE CLASSIFICATION



Determination of the concentration of industrial sulfuric

acid aerosols. G. P. Luchinskiĭ and M. I. Popova. *Zavodskaya Lab.* 5, 552-4(1936).—The H_2SO_4 aerosol is passed at a rate of 0.5 l./min. through a Bunsen flask into a glass spiral so designed that all particles over 5 μ are pptd. and then through a bulb absorber contg. a mixt. of 10 ml. *N* NaOH and 5 ml. of 2% aq. soap soln. The spiral and absorber are rinsed and the washings are titrated. The method is particularly suitable for the analysis of the exhaust gases from towers where SO_3 is not present. If SO_3 and oxides of N are present these should be detd. in a parallel detn.

B. Z. Kamich



PROCESSES AND PROPERTIES INDEX

A viscometric method for determining the concentration of sulfuric acid and oleum. G. P. Luchinskii and Z. Kh. Bakhtiarova. *Zavodskaya Lab.* 8, No. 12, 1312-14 (1939); *Khim. Referat. Zhur.* 1940, No. 5, 73-4.—The v of H_2SO_4 and oleum increases uniformly, beginning with 93% H_2SO_4 and ending with oleum contg. 45% of SO_3. The rapid method proposed for detg. the concn. of H_2SO_4 and oleum is based on detg. the vol. of the acid flowing out of a special buret per unit of time. The time required for a definite vol. of water to flow out of the same buret is taken for the unit. The app. proposed consists of 2 exactly similar burets, with a common stopcock with 2 openings, one for each buret. Add water to 1 buret and acid to the other, set the meniscuses at zero and open the common stopcock. Close the stopcock after a definite vol. of water has run out, and read the vol. of the acid. From the ratio of the vol. of the acid to the vol. of water is calcd. the concn. of the acid. The burets are graduated by using acids of a definite compn. A table for converting the ratios of the vols. to the percentage contents is made up for each pair of burets. The liquids must be at the same temp. The method is rapid, simple, and more sensitive and accurate than is measurement of the d. by a hydrometer.

W. D. Henn

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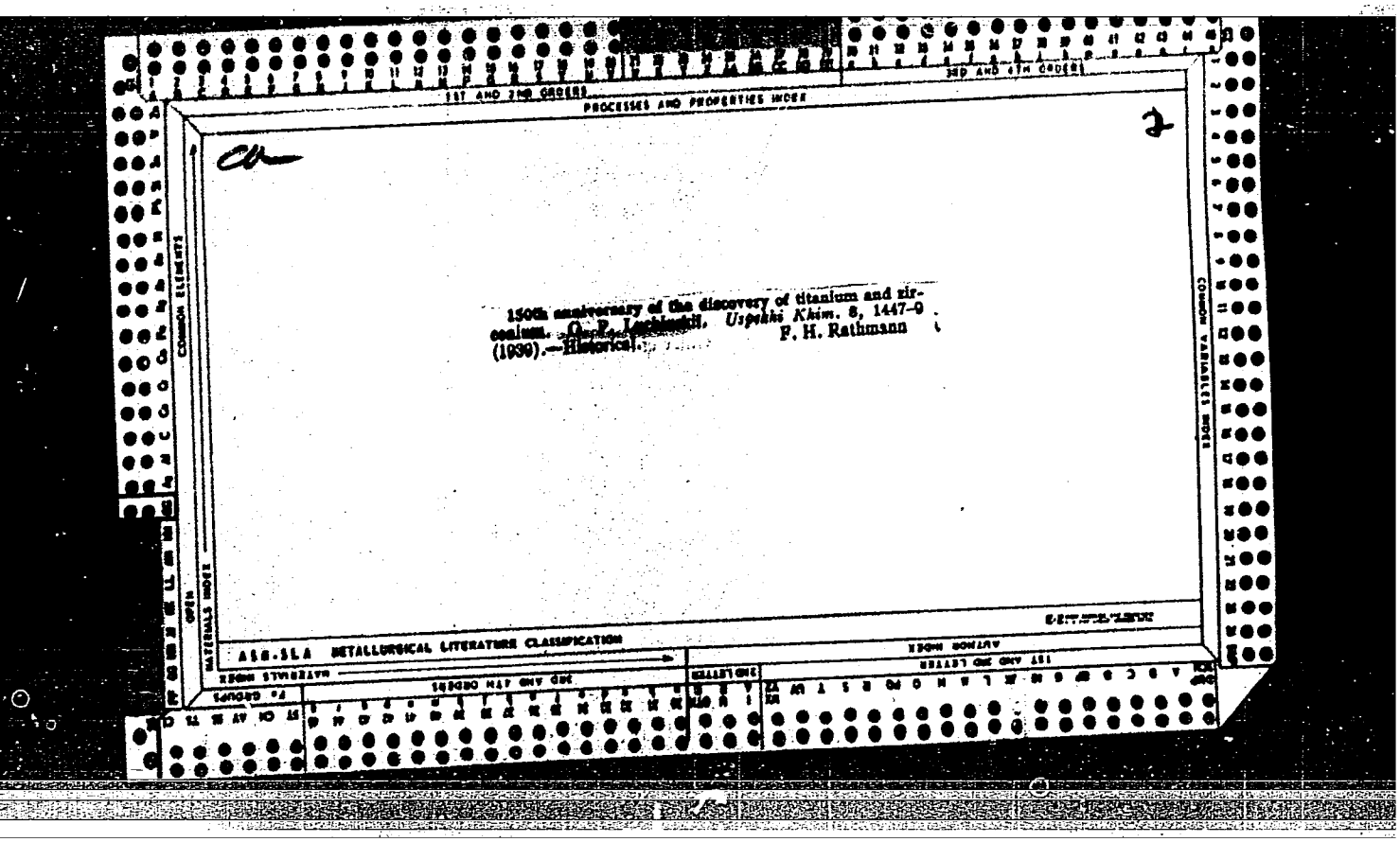
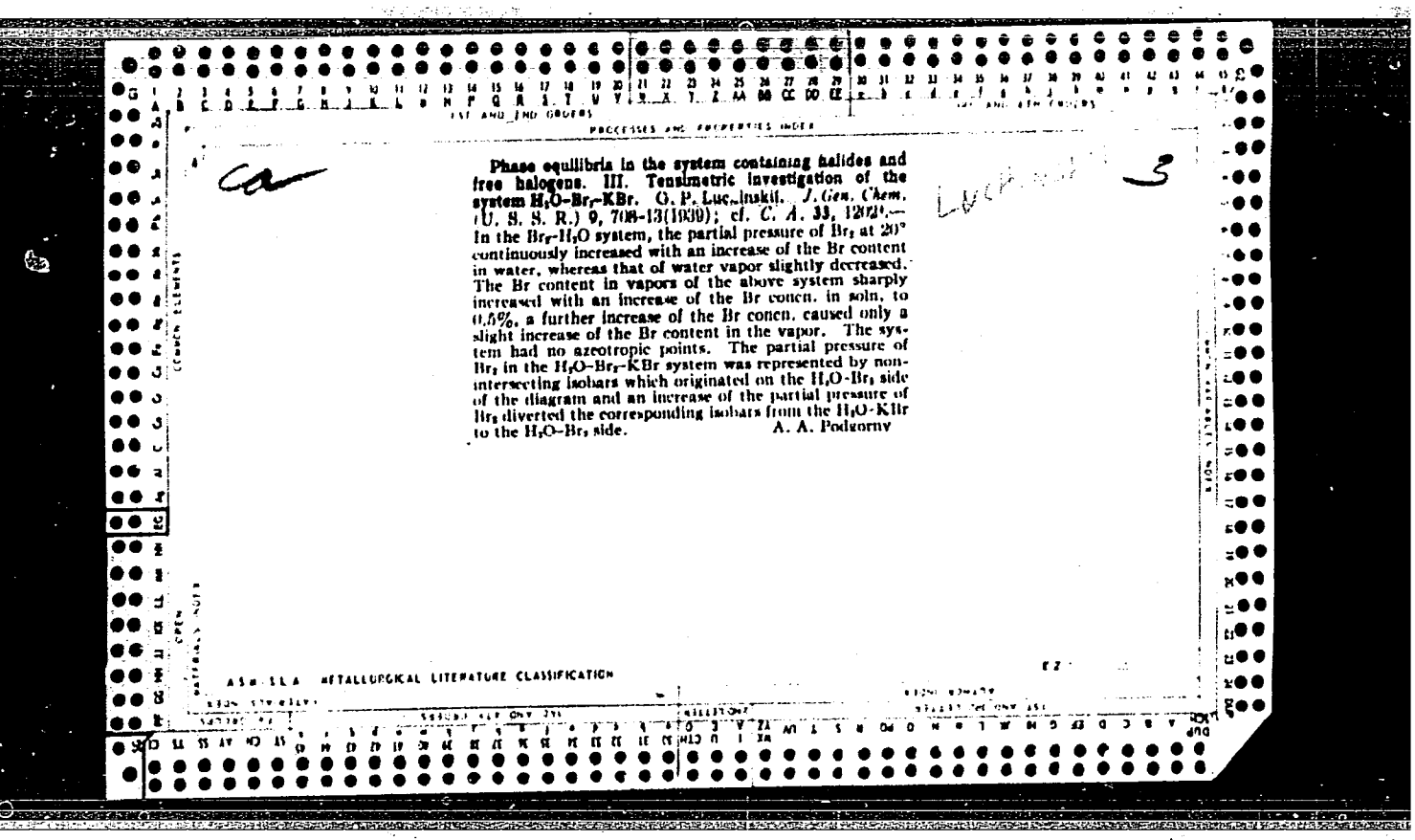
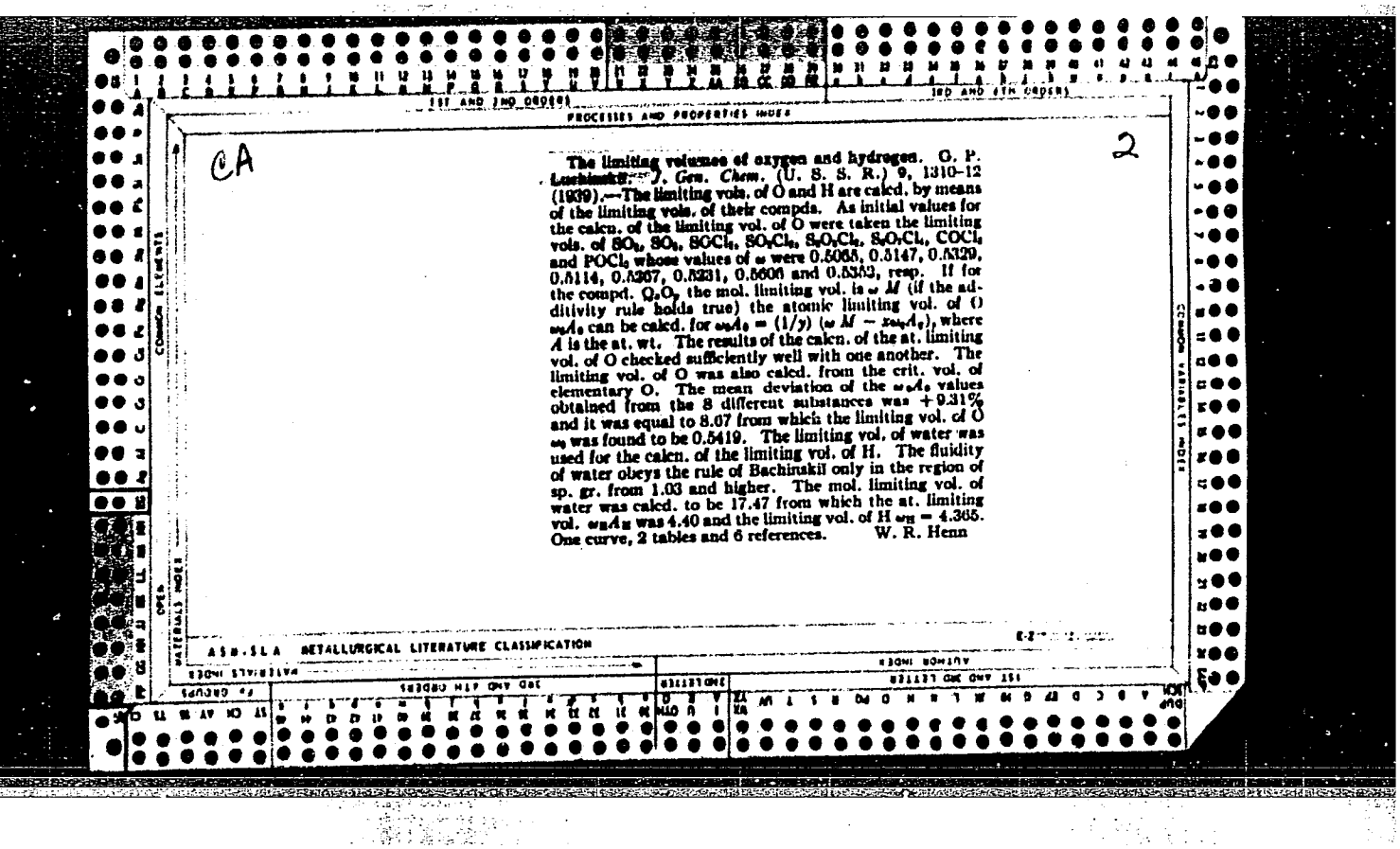




Phase equilibria in the system containing halides and free halogens. III. Tensimetric investigation of the system H_2O–Br_2–KBr. G. P. Luchinskii. *J. Gen. Chem. (U. S. S. R.)* **9**, 708-13(1939); cf. *C. A.* **33**, 1207⁴.—In the Br_2–H_2O system, the partial pressure of Br_2 at 20° continuously increased with an increase of the Br content in water, whereas that of water vapor slightly decreased. The Br content in vapors of the above system sharply increased with an increase of the Br concn. in soln. to 0.5%, a further increase of the Br concn. caused only a slight increase of the Br content in the vapor. The system had no azeotropic points. The partial pressure of Br_2 in the H_2O–Br_2–KBr system was represented by non-intersecting isobars which originated on the H_2O–Br_2 side of the diagram and an increase of the partial pressure of Br_2 diverted the corresponding isobars from the H_2O–KBr to the H_2O–Br_2 side. A. A. Podgornv



CA

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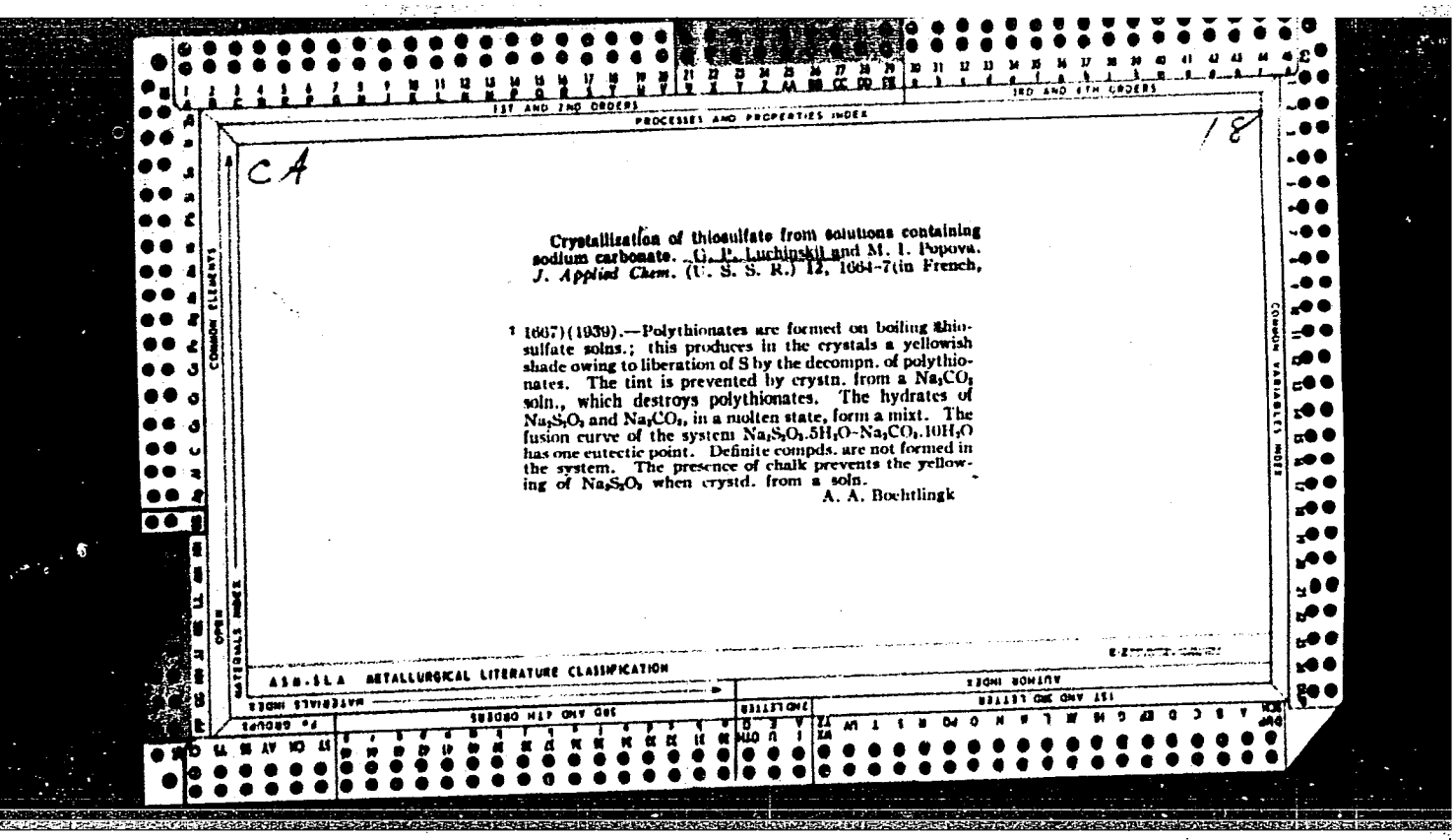
The limiting volumes of oxygen and hydrogen. G. P. Luchinskiĭ. *Zhur. Obshchei Khim.* (J. Gen. Chem.) (U. S. S. R.) 9, 1310–12 (1939).—The limiting vols. of O and H are calcd. by means of the limiting vols. of their compds. As initial values for the calcn. of the limiting vol. of O were taken the limiting vols. of SO_2, SO_3, $SOCl_2$, SO_2Cl_2, $S_2O_5Cl_2$, $S_2O_7Cl_2$, $COCl_2$ and $POCl_3$ whose values of ω were 0.5065, 0.5147, 0.5129, 0.5114, 0.5207, 0.5231, 0.5606 and 0.5353, resp. If for the compd. Q_xO_y the mol. limiting vol. is ωM (if the additivity rule holds true) the atomic limiting vol. of O $\omega_O A_O$ can be calcd. for $\omega_O A_O = (1/y)(\omega M - x\omega_Q A_Q)$, where A is the at. wt. The results of the calcn. of the at. limiting vol. of O checked sufficiently well with one another. The limiting vol. of O was also calcd. from the crit. vol. of elementary O. The mean deviation of the $\omega_O A_O$ values obtained from the 8 different substances was +9.31% and it was equal to 8.07 from which the limiting vol. of O ω_O was found to be 0.5419. The limiting vol. of water was used for the calcn. of the limiting vol. of H. The fluidity of water obeys the rule of Bachinskiĭ only in the region of sp. gr. from 1.03 and higher. The mol. limiting vol. of water was calcd. to be 17.47 from which the at. limiting vol. $\omega_H A_H$ was 4.40 and the limiting vol. of H $\omega_H = 4.365$. One curve, 2 tables and 6 references. W. R. Henn

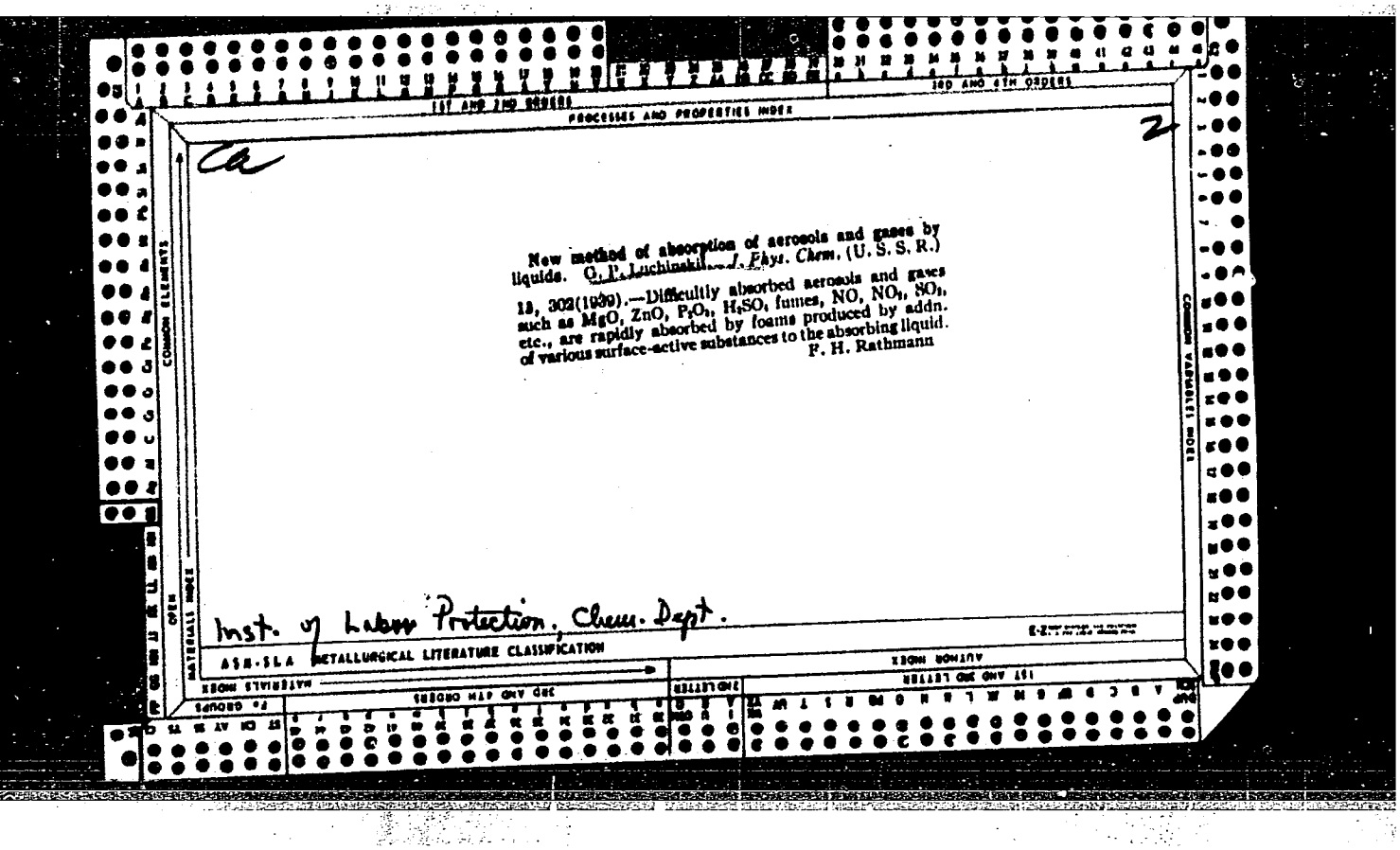


CA

18

Crystallization of thiosulfate from solutions containing sodium carbonate. G. P. Luchinskiĭ and M. I. Popova. *J. Applied Chem.* (U. S. S. R.) 12, 1664-7(in French, 1667)(1939).—Polythionates are formed on boiling thiosulfate solns.; this produces in the crystals a yellowish shade owing to liberation of S by the decompn. of polythionates. The tint is prevented by crystn. from a Na_2CO_3 soln., which destroys polythionates. The hydrates of $Na_2S_2O_3$ and Na_2CO_3, in a molten state, form a mixt. The fusion curve of the system $Na_2S_2O_3.5H_2O$-$Na_2CO_3.10H_2O$ has one eutectic point. Definite compds. are not formed in the system. The presence of chalk prevents the yellowing of $Na_2S_2O_3$ when crystd. from a soln.

A. A. Bochtlingk



Ca

2

New method of absorption of aerosols and gases by liquids. O. P. Luchinskii. *J. Phys. Chem.* (U. S. S. R.) 13, 302(1939).—Difficultly absorbed aerosols and gases such as MgO, ZnO, P_2O_5, H_2SO_4 fumes, NO, NO_2, SO_2, etc., are rapidly absorbed by foams produced by addn. of various surface-active substances to the absorbing liquid.
F. H. Rathmann

Inst. of Labor Protection, Chem. Dept.

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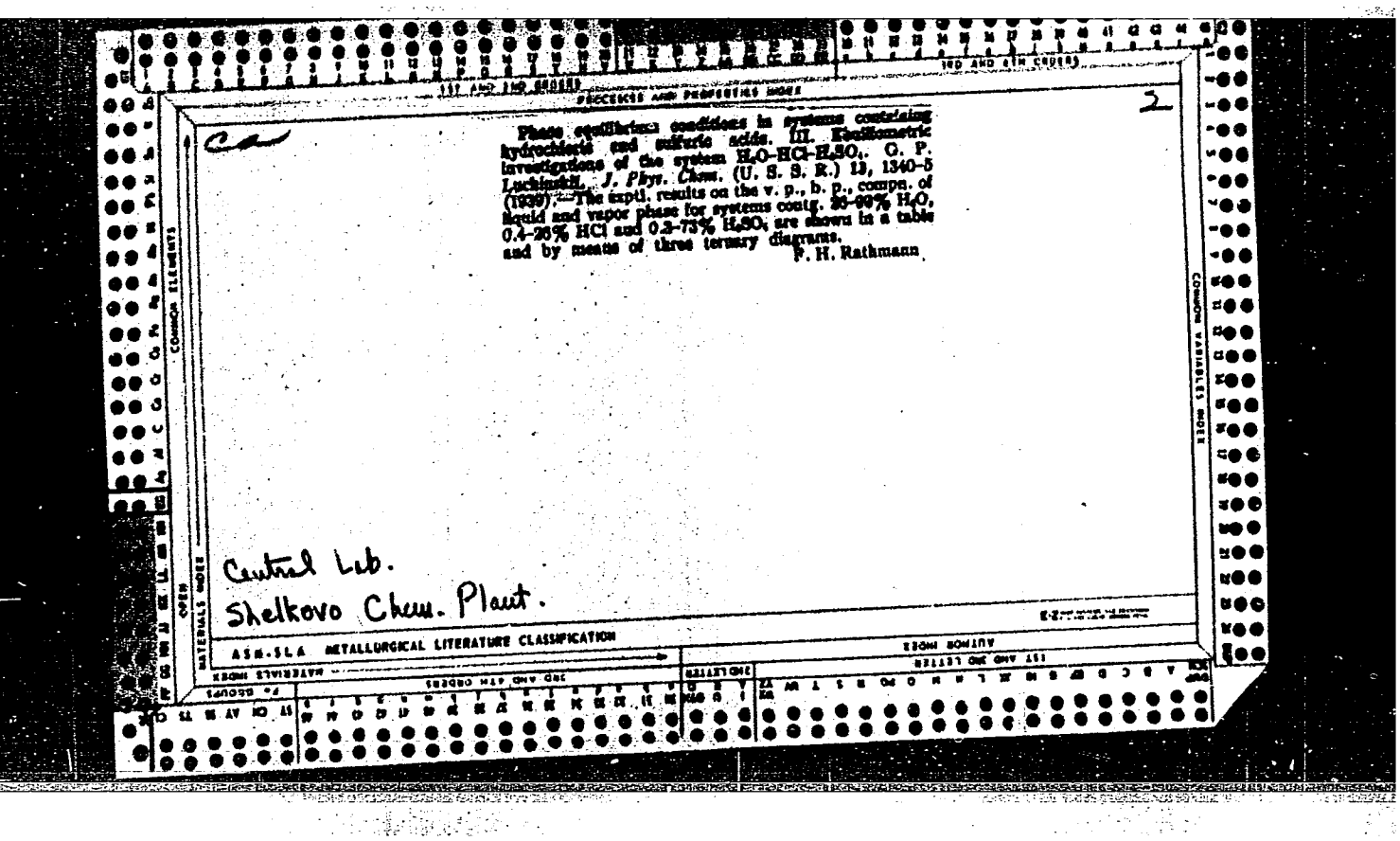

Phase equilibrium conditions in systems containing hydrochloric and sulfuric acids. III. Isothermetric investigations of the system H_2O-HCl-H_2SO_4. G. P. Luchinskii. *J. Phys. Chem.* (U. S. S. R.) 13, 1340-5 (1939).—The exptl. results on the v. p., b. p., compn. of liquid and vapor phase for systems contg. 20-90% H_2O, 0.4-20% HCl and 0.2-73% H_2SO_4 are shown in a table and by means of three ternary diagrams.
F. H. Rathmann

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Shelkovo Chem. Plant.

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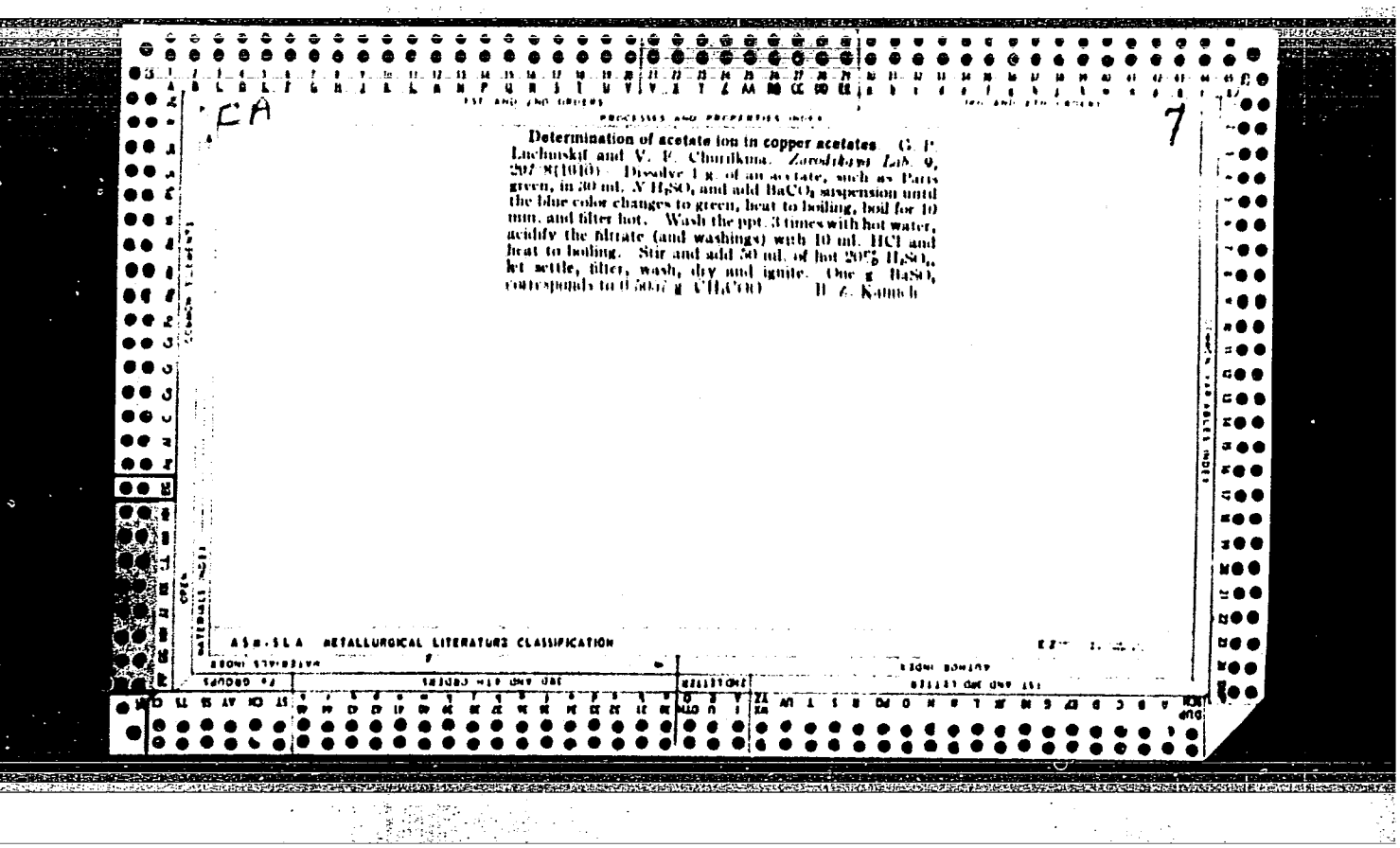

CA

7

Determination of acetate ion in copper acetates. G. P. Luchinskiĭ and V. P. Churilkina. *Zavodskaya Lab.* 9, 207–8(1940). Dissolve 1 g. of an acetate, such as Paris green, in 30 ml. *N* H_2SO_4 and add $BaCO_3$ suspension until the blue color changes to green, heat to boiling, boil for 10 min. and filter hot. Wash the ppt. 3 times with hot water, acidify the filtrate (and washings) with 10 ml. HCl and heat to boiling. Stir and add 50 ml. of hot 20% H_2SO_4, let settle, filter, wash, dry and ignite. One g. $BaSO_4$ corresponds to 0.501 g. CH_3CO. H. Z. Kamich

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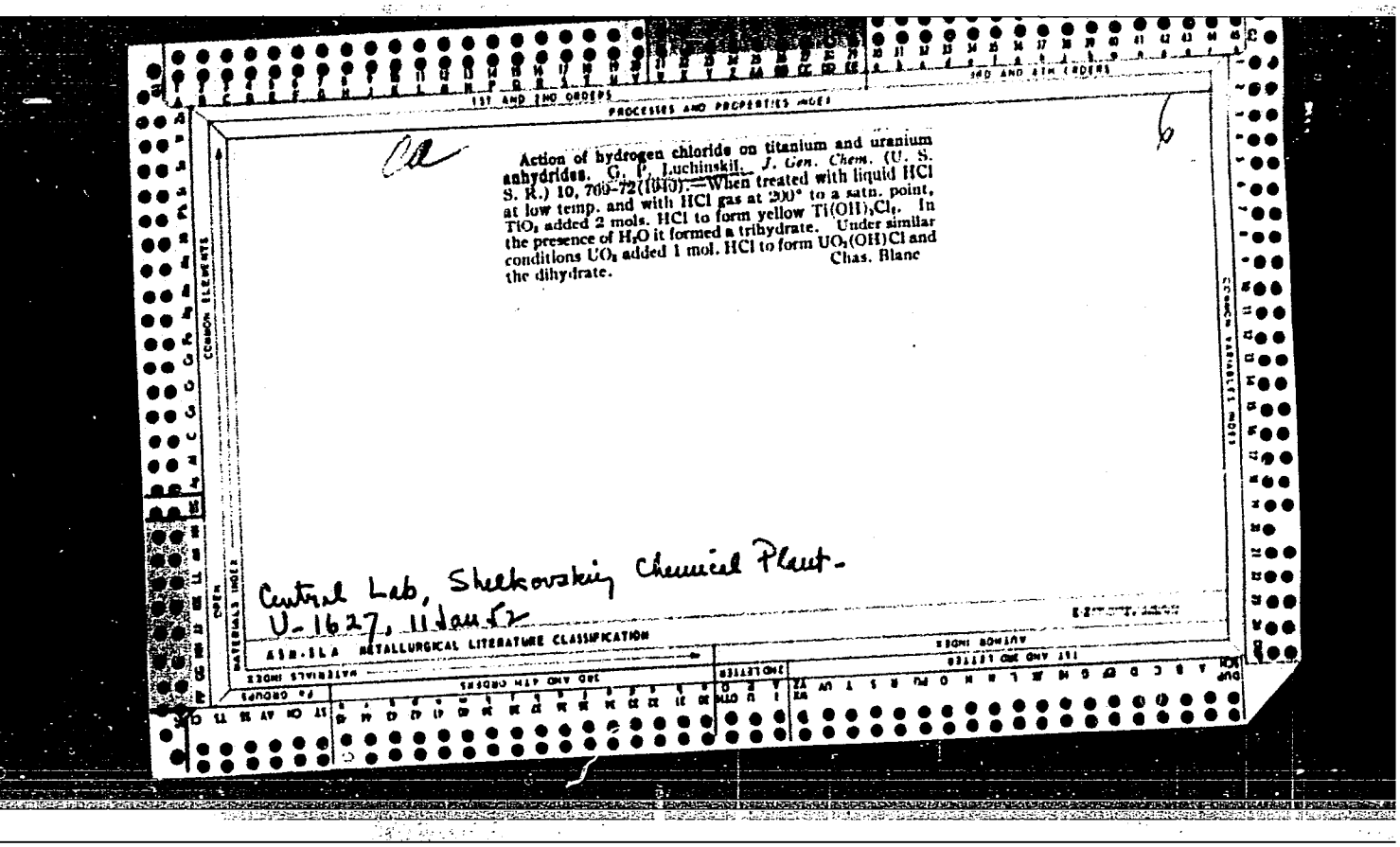

PROCESSES AND PROPERTIES INDEX

Action of hydrogen chloride on titanium and uranium anhydrides. G. P. Luchinskii. *J. Gen. Chem.* (U. S. S. R.) 10, 705–72(1940).—When treated with liquid HCl at low temp. and with HCl gas at 200° to a satn. point, TiO_2 added 2 mols. HCl to form yellow $Ti(OH)_2Cl_2$. In the presence of H_2O it formed a trihydrate. Under similar conditions UO_3 added 1 mol. HCl to form $UO_2(OH)Cl$ and the dihydrate.
Chas. Blanc

Central Lab, Shelkovskiy Chemical Plant.
U-1627, 11 Jan 52

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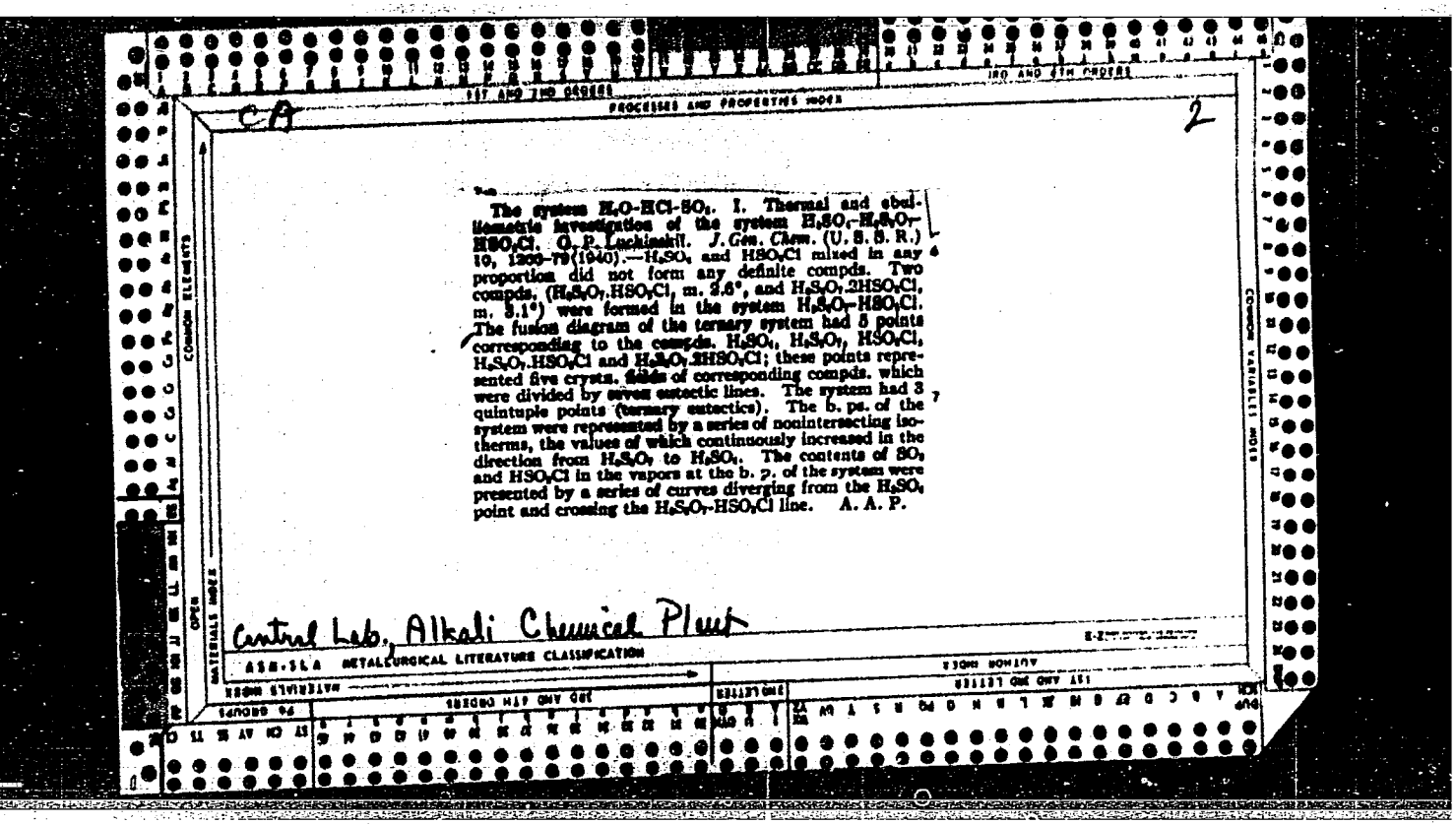


CA 2

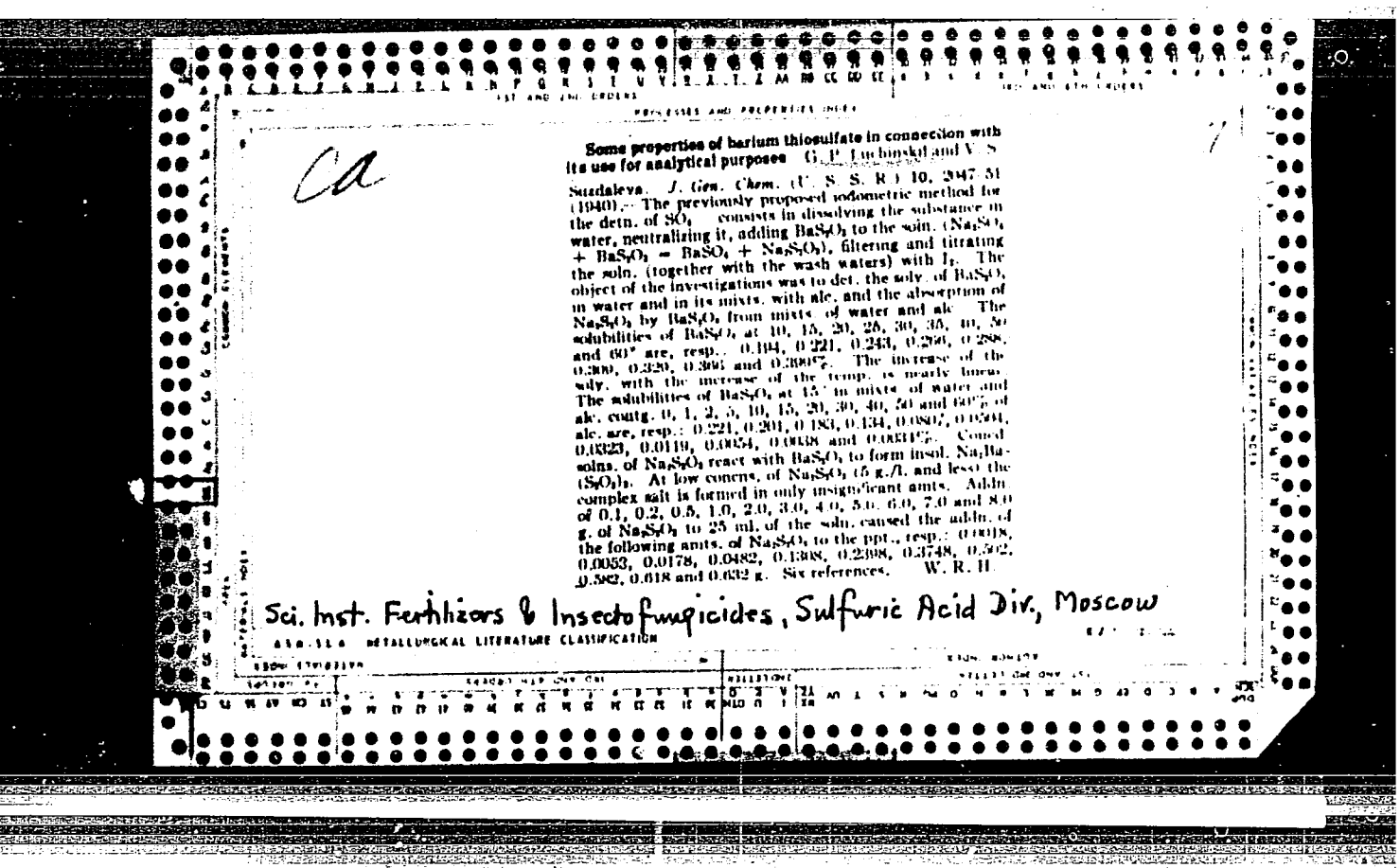
The system H_2O-HCl-SO_3. I. Thermal and ebulliometric investigation of the system H_2SO_4-$H_2S_2O_7$-HSO_3Cl. O. P. Lachinskii. *J. Gen. Chem.* (U. S. S. R.) 10, 1269–79 (1940).—H_2SO_4 and HSO_3Cl mixed in any proportion did not form any definite compds. Two compds, ($H_2S_2O_7$.HSO_3Cl, m. 2.6°, and $H_2S_2O_7$.$2HSO_3Cl$, m. 3.1°) were formed in the system $H_2S_2O_7$-HSO_3Cl. The fusion diagram of the ternary system had 5 points corresponding to the compds. H_2SO_4, $H_2S_2O_7$, HSO_3Cl, $H_2S_2O_7$.HSO_3Cl and $H_2S_2O_7$.$2HSO_3Cl$; these points represented five crysts. fields of corresponding compds. which were divided by seven eutectic lines. The system had 3 quintuple points (ternary eutectics). The b. ps. of the system were represented by a series of nonintersecting isotherms, the values of which continuously increased in the direction from $H_2S_2O_7$ to H_2SO_4. The contents of SO_3 and HSO_3Cl in the vapors at the b. p. of the system were presented by a series of curves diverging from the H_2SO_4 point and crossing the $H_2S_2O_7$-HSO_3Cl line. A. A. P.

Central Lab, Alkali Chemical Plant

LUCHINSKIY, G. P.; CHURILKINA, V. F.

"Research in the Field of the Chemistry of Arsenic-Containing Salts I. The Formation of Arsenites of Copper in an Aqueous Medium," Zhur. Obshch. Khim., 10, No 15, 1940. Sci. Inst. of Fertilizers, Insecticides, and Fungicides, Alkaline Chemical Plant. Received 5 April 1940.

U-1610, 3 Jan 1952.



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Some properties of barium thiosulfate in connection with its use for analytical purposes G. P. Luchinskii and V. S. Sazdaleva. *J. Gen. Chem.* (U. S. S. R.) 10, 347-51 (1940).—The previously proposed iodometric method for the detn. of SO_4 consists in dissolving the substance in water, neutralizing it, adding BaS_2O_3 to the soln. (Na_2SO_4 + BaS_2O_3 = $BaSO_4$ + $Na_2S_2O_3$), filtering and titrating the soln. (together with the wash waters) with I_2. The object of the investigations was to det. the soly. of BaS_2O_3 in water and in its mixts. with alc., and the absorption of $Na_2S_2O_3$ by BaS_2O_3 from mixts. of water and alc. The solubilities of BaS_2O_3 at 10, 15, 20, 25, 30, 35, 40, 50 and 60° are, resp., 0.194, 0.221, 0.243, 0.260, 0.288, 0.309, 0.329, 0.366 and 0.3807%. The increase of the soly. with the increase of the temp. is nearly linear. The solubilities of BaS_2O_3 at 15° in mixts. of water and alc., contg. 0, 1, 2, 5, 10, 15, 20, 30, 40, 50 and 60% of alc. are, resp.: 0.221, 0.201, 0.183, 0.134, 0.0807, 0.0504, 0.0323, 0.0119, 0.0054, 0.0038 and 0.0031%. Concd. solns. of $Na_2S_2O_3$ react with BaS_2O_3 to form insol. $Na_2Ba(S_2O_3)_2$. At low concns. of $Na_2S_2O_3$ (5 g./l. and less) the complex salt is formed in only insignificant amts. Addn. of 0.1, 0.2, 0.5, 1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0 and 8.0 g. of $Na_2S_2O_3$ to 25 ml. of the soln. caused the addn. of the following amts. of $Na_2S_2O_3$ to the ppt., resp.: 0.0008, 0.0053, 0.0178, 0.0482, 0.1308, 0.2398, 0.3748, 0.502, 0.562, 0.618 and 0.632 g. Six references. W. R. H.

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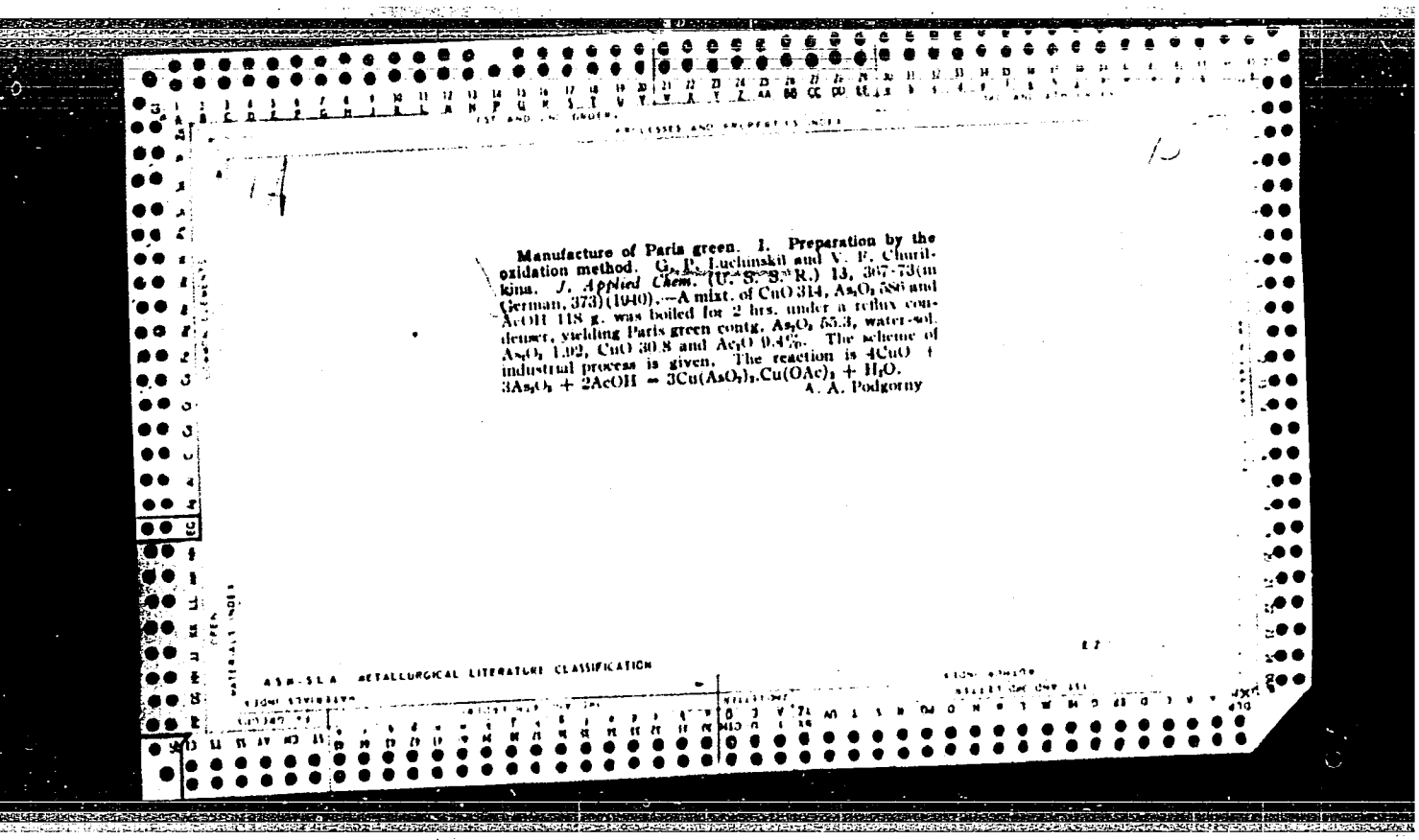
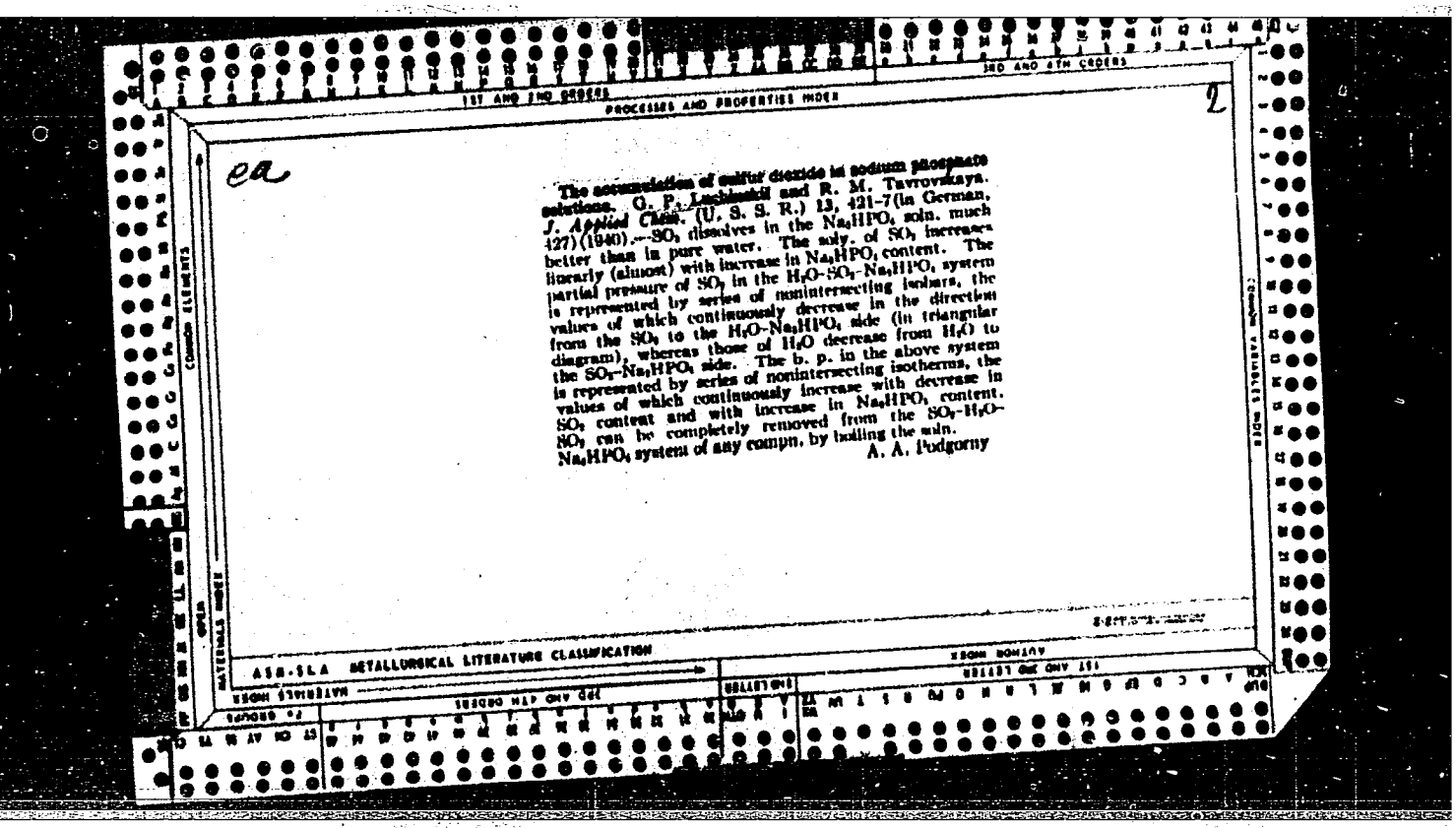


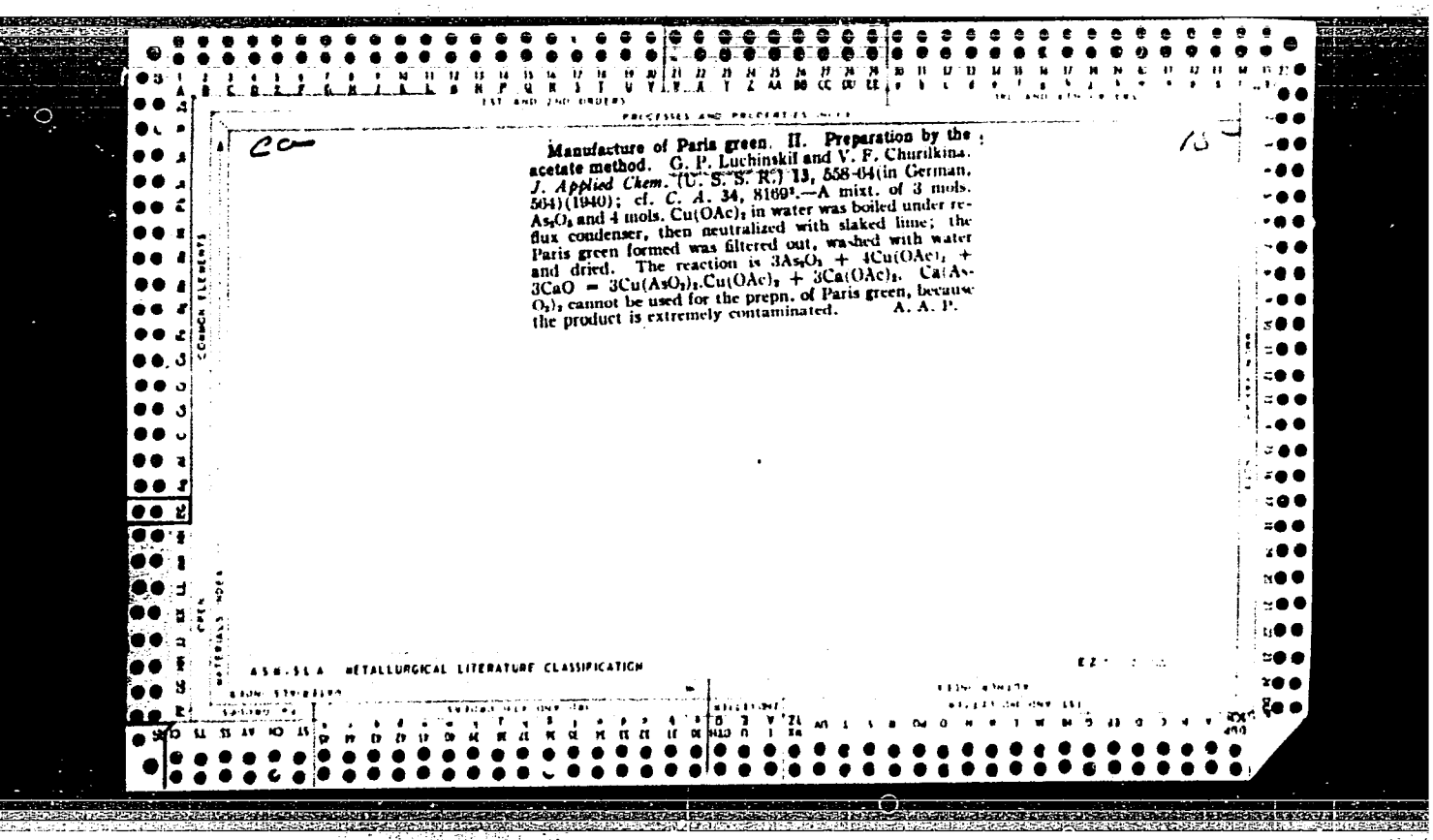
Manufacture of Paris green. I. Preparation by the oxidation method. G. P. Luchinskii and V. F. Churilkina. *J. Applied Chem.* (U.S.S.R.) 13, 367-73(in German, 373)(1940).—A mixt. of CuO 314, As_2O_3 586 and AcOH 118 g. was boiled for 2 hrs. under a reflux condenser, yielding Paris green contg. As_2O_3 55.3, water-sol. As_2O_3 1.02, CuO 30.8 and AcO 0.4%. The scheme of industrial process is given. The reaction is $4CuO + 3As_2O_3 + 2AcOH = 3Cu(AsO_2)_3.Cu(OAc)_2 + H_2O$.

A. A. Podgorny



The accumulation of sulfur dioxide in sodium phosphate solutions. G. P. Luchinskiĭ and R. M. Tavrovskaya. *J. Applied Chem.* (U. S. S. R.) 13, 421-7(in German, 427)(1940).—SO_2 dissolves in the Na_2HPO_4 soln. much better than in pure water. The soly. of SO_2 increases literarly (almost) with increase in Na_2HPO_4 content. The partial pressure of SO_2 in the H_2O-SO_2-Na_2HPO_4 system is represented by series of nonintersecting isobars, the values of which continuously decrease in the direction from the SO_2 to the H_2O-Na_2HPO_4 side (in triangular diagram), whereas those of H_2O decrease from H_2O to the SO_2-Na_2HPO_4 side. The b. p. in the above system is represented by series of nonintersecting isotherms, the values of which continuously increase with decrease in SO_2 content and with increase in Na_2HPO_4 content. SO_2 can be completely removed from the SO_2-H_2O-Na_2HPO_4 system of any compn. by boiling the soln.

A. A. Podgorny



Manufacture of Paris green. II. Preparation by the acetate method. G. P. Luchinskiĭ and V. F. Churilkina. *J. Applied Chem.* (U. S. S. R.) 13, 558-64(in German, 564)(1940); cf. *C. A.* 34, 8169⁸.—A mixt. of 3 mols. As_2O_3 and 4 mols. $Cu(OAc)_2$ in water was boiled under reflux condenser, then neutralized with slaked lime; the Paris green formed was filtered out, washed with water and dried. The reaction is $3As_2O_3 + 4Cu(OAc)_2 + 3CaO = 3Cu(AsO_2)_2.Cu(OAc)_2 + 3Ca(OAc)_2$. $Ca(AsO_2)_2$ cannot be used for the prepn. of Paris green, because the product is extremely contaminated. A. A. P.

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Ca

1

G. P. LUCHINSKII

Manufacture of Paris green III Solubility and hydrolysis of Paris green. G. P. Luchinskii and V. F. Chupilkina. *J. Applied Chem.* (U. S. S. R.) 13, 1500-01 (in French, 1501 [illegible]; cf. C. A. 35, [illegible]. Paris green did not dissolve in water but hydrolyzed in part, probably according to $Cu_3(As_2O_4)_3.Cu(AcO)_2 + H_2O \rightarrow Cu_2(OH)_2(As_2O_4)_2.Cu(AcO)_2 + As_2O_3$. Hydrolysis proceeded regularly in time and did not decrease even on splitting off 25% of the total As_2O_3. The fact of removal of As_2O_3 during hydrolysis cannot be used as an index for quality of Paris green. The so-called water-sol. As_2O_3 is a conventional and arbitrary nomenclature and has no value for the classification of the product. Paris green cannot be prepd. in pure form by pptn. in an aq. medium. Paris green is sol. in an aq. soln. of AcOH, with partial sepn. of $Cu(OAc)_2$; the soly. depends on the compn. of AcOH and is max. (1.1%) in 20% soln. Pure Paris green can be prepd. by the pptn. from the soln. contg. AcOH and $Cu(OAc)_2$. A. A. Podgorny

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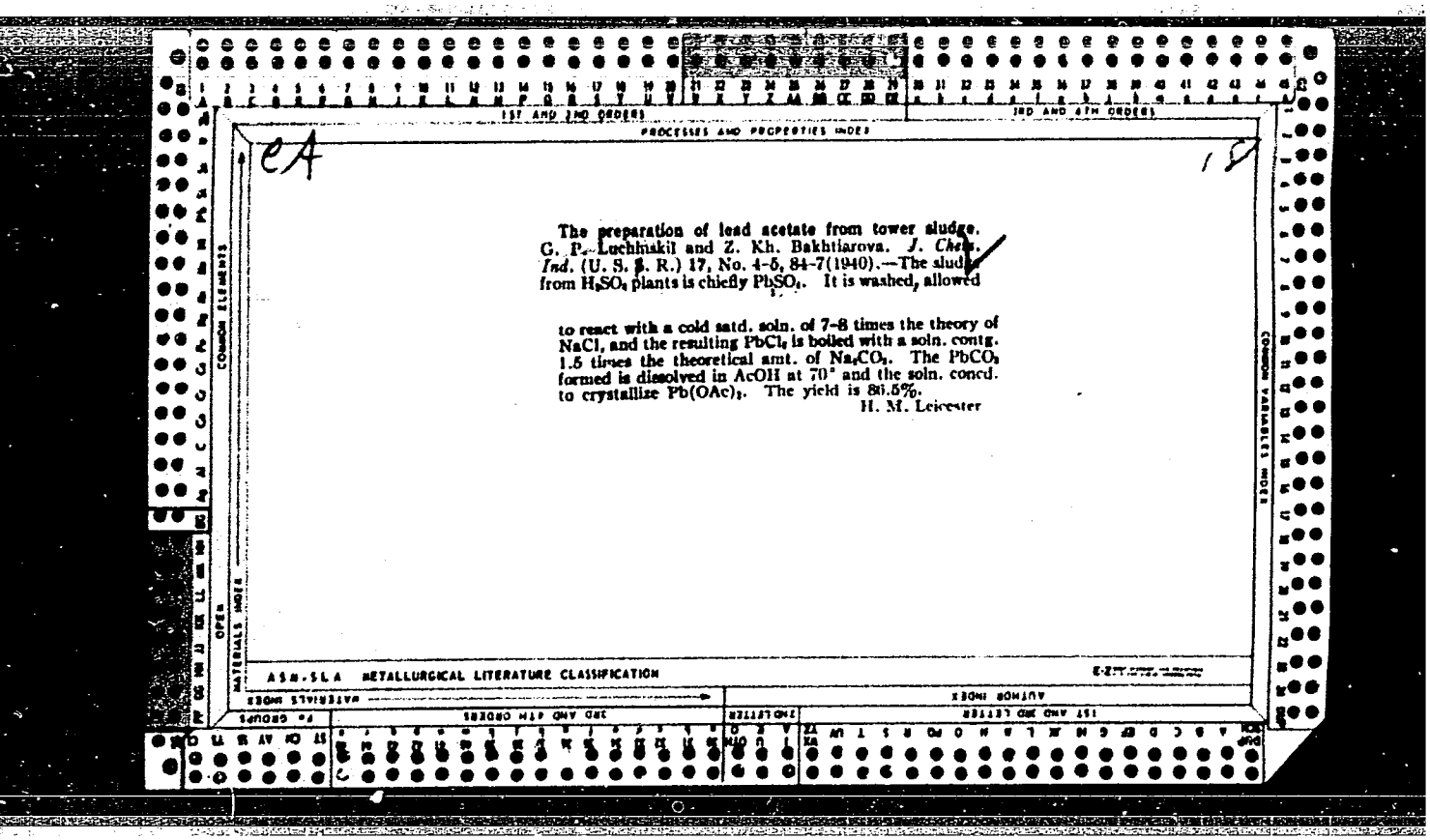

The preparation of lead acetate from tower sludge. G. P. Luchhiskil and Z. Kh. Bakhtiarova. *J. Chem. Ind.* (U. S. S. R.) 17, No. 4-5, 84-7(1940).—The sludge from H_2SO_4 plants is chiefly $PbSO_4$. It is washed, allowed to react with a cold satd. soln. of 7-8 times the theory of NaCl, and the resulting $PbCl_2$ is boiled with a soln. contg. 1.5 times the theoretical amt. of Na_2CO_3. The $PbCO_3$ formed is dissolved in AcOH at 70° and the soln. concd. to crystallize $Pb(OAc)_2$. The yield is 86.5%.

H. M. Leicester

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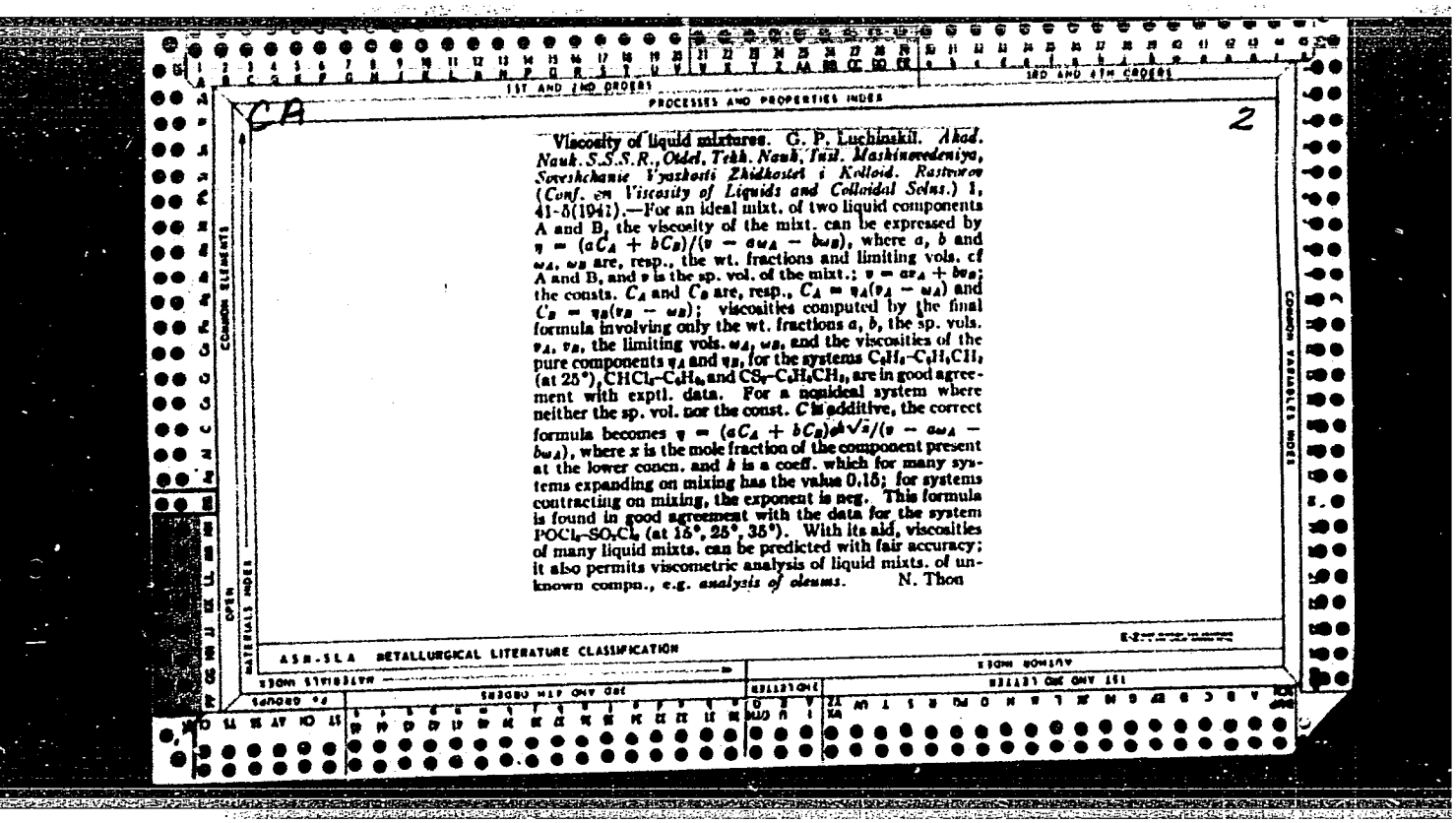

PROCESSES AND PROPERTIES INDEX

CA 2

Viscosity of liquid mixtures. G. P. Luchinskii. *Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk, Inst. Mashinovedeniya, Soveshchanie Vyazkosti Zhidkostei i Kolloid. Rastvorov (Conf. on Viscosity of Liquids and Colloidal Solns.)* 1, 41-8(1941).—For an ideal mixt. of two liquid components A and B, the viscosity of the mixt. can be expressed by $\eta = (aC_A + bC_B)/(v - a\omega_A - b\omega_B)$, where a, b and ω_A, ω_B are, resp., the wt. fractions and limiting vols. of A and B, and v is the sp. vol. of the mixt.; $v = a\nu_A + b\nu_B$; the consts. C_A and C_B are, resp., $C_A = \eta_A(\nu_A - \omega_A)$ and $C_B = \eta_B(\nu_B - \omega_B)$; viscosities computed by the final formula involving only the wt. fractions a, b, the sp. vols. ν_A, ν_B, the limiting vols. ω_A, ω_B, and the viscosities of the pure components η_A and η_B, for the systems C_6H_6–$C_6H_5CH_3$ (at 25°), $CHCl_3$–C_6H_6, and CS_2–$C_6H_5CH_3$, are in good agreement with exptl. data. For a nonideal system where neither the sp. vol. nor the const. C is additive, the correct formula becomes $\eta = (aC_A + bC_B)\phi^{\sqrt{x}}/(v - a\omega_A - b\omega_B)$, where x is the mole fraction of the component present at the lower concn. and b is a coeff. which for many systems expanding on mixing has the value 0.18; for systems contracting on mixing, the exponent is neg. This formula is found in good agreement with the data for the system $POCl_3$–SO_2Cl_2 (at 15°, 25°, 35°). With its aid, viscosities of many liquid mixts. can be predicted with fair accuracy; it also permits viscometric analysis of liquid mixts. of unknown compn., e.g. *analysis of oleums.* N. Thon

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