VIL'NITS'KIY, M.B.; DISHLEVIY, P.S.

Significance of Lenin's philosophical ideas for modern physics. Visnyk AN URSR 28 no.4:3-11 Ap '57. (MLRA 10:6)
(Physics--Philosophy) (Lenin, Vladimir Il'ich, 1870-1924)

VIL'NIANSKIY, S.I., professor; FUKS, S.L., professor, otvetstvennyy redaktor; SHEVSHENKO, A., redaktor; CHERNYSHENKO, Ya.T., tekhnicheskiy redaktor.

[Kreditno-raschetnye pravootnosheniia; uchebnoe posobie [Khar'kov] Izd-vo Khar'kovskogo univ. [1955] 55 p. [Microfilm] (MLRA 10:5)
(Banks and banking)

VILNIS, K.K.; POLLYAK, V.V.; STEPANENKO, M.G.

Most satisfactory temperature conditions for the melting end of glass tank furnaces. Stek. i ker. 15 no.4:1-5 Ap '58. (MIRA 11:5)

1. Institut stekla.

(Glass furnaces)

15(2), 15(6) SOV/72-59-3-3/19

AUTHORS: Vilnis, K. K., Stepanenko, M. G.

TITLE: Heat Exchange Between the Charge and the Hearth of the Glass Melting Furnace(Teploobmen mezhdu shikhtoy i plamennym prostranstvom steklovarennoy pechi)

PERIODICAL: Steklo i keramika, 1959, Nr 3, pp 8 - 11 (USSR)

ABSTRACT: The authors state that data contained in publications are very contradictory with respect to the dependence of the melting rate of glass as well as the furnace efficiency on temperature (Figs 1 and 2), and are therefore not a reliable basis for the intensification of the melting process in tank furnaces. Relatively few investigations have so far been carried out in the field of heat exchange research (D. B. Ginzburg, Ref 1). The present paper offers an explanation of heat exchange between the upper furnace structure, the charge, and the charge foam in the melting region, basing on K. K. Vilnis' paper (Ref 2). Figure 3 shows the dependence of temperature of the charge surface on the magnitude of

Card 1/2

the heat current flowing onto it, and figure 4 depicts the heat amount absorbed by the charge. Figure 5 gives the variations of temperature in every point of the charge surface. The heat amount absorbed by the melting zone depends, firstly, on the ratio of the areas occupied by the charge and the charge foam, and secondly, on the magnitude of the absolute temperature in the upper structure. The efficiency increase of tank furnaces for glass melting is not only brought about by providing high temperatures, but also by the rational exploitation of the heat exchange both in the gas zone and in the glass mass. Further accurate investigations are required for this purpose. There are 5 figures and 4 references, 3 of which are Soviet.

15(2)

AUTHORS: Vilnis, K. K., Pollyak, V. V., Soskova, V. D. SOV/72-59-6-7/18

TITLE: A Device for Taking Samples From Deep Frit Layers (Pribor dlya vzyatiya glubinnykh prob steklomassy)

PERIODICAL: Steklo i keramika, 1959, Nr 6, pp 32 - 35 (USSR)

ABSTRACT: The authors of this article discuss the disadvantages of ordinary devices for taking frit samples which do not allow to take pure samples from deep frit layers. On the basis of investigations performed by the teplotekhnicheskaya laboratoriya Instituta stekla (Laboratory for High-temperature Research of the Glass Institute) a new construction of the device as well as a new method for the afore-mentioned purpose were worked out. The new method is based on the principle that the glass frit is sucked in on a certain level by creating vacuum with an injector. The general view, the longitudinal section, and the injector of the device are illustrated in figures 1,2, and 3 and then described. There are 3 figures.

Card 1/1

VILNIS, K.K.

Thermal efficeincy of sectionalized regenerators. Stek.i ker. 17 no.2:12-15 F '60. (MIRA 13:6)
(Glass furnaces)

VILNIS, K.K.; POLLYAK, V.V.; PAVLOV, V.S.

Specific amount of glass output as an indicator of the productivity of tank furnaces. Stek.i ker. 17 no.3:9-14 Mr '60. (MIRA 13:6)

(Glass furnaces) (Glass manufacture)

VILNIS, [illegible]; STEPANENKO, M.G., doktor tekhn. nauk [deceased]; KAPLAN, A.Yu., inzh.

Optimal depth of furnaces for dark green glass. Stek. i ker. 21 no.1:9-13 Ja '64. (MIRA 17:8)

1. Institut stekla (for Vilnis, Stepanenko). 2. Krasnodarskiy stekol'nyy zavod (for Kaplan).

VILNIS, R. (Riga)

Changes in composition and properties of peat by drying it with superheated water vapor under pressure. Vestis Latv ak no.10: 65-70 '59. (EEAI 9:10)

1. Akademiya nauk Latviyskoy SSR, Institut energetiki i elektrotekhniki.
(Peat) (Water)

VILNIS,R.(Riga); MIKHAYLOV,Yu.(Riga)

Mechanical and water absorption properties of heat-treated peat briquettes. In Russian. Vestis Latv ak no.4:91-98 '60.
(KEAI 10:7)

1. Akademiya nauk Latviyskoy SSR, Institut energetiki i elektrotekhniki.
(Briquettes(Fuel)) (Peat)

Thermal decomposition of raw peat by superheated steam under pressure. R. Vilais. *Latvijas PSR Zinātņu Akad. Vēstis* 1957, No. ~~2, 111-22~~ (Russian summary, 125-6).—Peat was heated with superheated steam at 240–400° and 5–15 atm. for 0.5–3 hrs. The amt. of noncondensable gases generated was 3–7%, with compn., in %: CO_2 50–80, N_2 5–30, H_2 3–25, others 3–8. Concn. of CO_2 in gases depended more on duration than on temp. of heating. Gas evolution was rapid at the beginning, then slowed down, and finally accelerated when the moisture content went down to 70–60%. The condensate on heating for 0.6 hr. at 150–250° contained, in %: acid (given as AcOH) 0.02–0.05, NH_3 0.002–0.007, aldehydes and ketones 0.03–0.05, esters 0.03–0.06, furfurol 0.01–0.04, MeOH 0.01–0.02, traces of phenols.

A. Dravnieks

VILNIS, R.

PA - 2526

AUTHOR WILNIS R.

TITLE The Chemical Decomposition of raw Peat during the Process of Drying by means of superheated steam. ("termitscheskoje raz-loshenije syrego Torfa pri suschke peregretym parom pod dawleniem".- Russian)

PERIODICAL Latvijas PSR Zinatu Akad. Westis 1957, Vol 1, Nr 2 (115) pp 125 - 126 (U.S.S.R.)

Received: 5/1957 Reviewed: 6/1957

ABSTRACT With rising temperature decomposition increases as measured in layers of peat. The botanical composition of peat exercises influence on the process of decomposition. During the process of drying the steam contains from 0,2 to 1,3 % not condensed gases. With longer duration and increased pressure the percentage increases accordingly, and in the case of shorter duration and diminished pressure it decreases. The oxygen content in the organic mass of peat decreases with rising temperature and longer duration of the process.
The results obtained show that by the modification of the drying process and the initial material the decomposition of peat as well as the quality of the products obtained can be regulated. The results obtained by research work can be used

CARD 1/2

PA - 2526

The Chemical Decomposition of raw Peat during the Process of Drying by means of superheated steam.

for the determination of optimum conditions for the process of drying and for the purpose of obtaining high-quality peat.

ASSOCIATION: not given.
PRESENTED BY: -
SUBMITTED: -
AVAILABLE: Library of Congress.

CARD 2/2

ALABUZHEV, P.M., prof.; VIL'NIT, L.N., starshiy prepodavatel'; KOPEYKIN, G.F., starshiy prepodavatel'; TSIVINSKIY, Yu.P., inzh.

Movement of the striker and body of an electromechanical hammer drill with a striker-restraining mechanism. Izv. vys. ucheb. zav.; gor. zhur. no.6:74-80 '61. (MIRA 16:7)

1. Novosibirskiy elektrotekhnicheskiy institut. Rekomendovana kafedroy mekhaniki.
(Boring machinery)

GEL'[redacted]IN, N.I., doktor tekhn.nauk, prof.; AYNSHTEYN, V.G., kand.tekhn.nauk; KVASHA, V.B., kand.tekhn.nauk; KOGAN, A.S., inzh.; VIL'NITS, S.A., kand. tekhn.nauk

Apparatus for classifying free-flowing materials in a fluidized bed. Khim.mashinostr. no.6:11-16 N-D '63. (MIRA 17:2)

GUL', V.Ye.; TSARSKIY, L.N.; VIL'NITS, S.A.

Rupture during transition from the elastic to the brittle state [with summary in English]. Koll. zhur. 20 no.3:318-325 '58. (MIRA 11:8)
(Rubber--Testing)

VIL'NITS, S.A., GUL', V.YE.

The prospects of splitting and tissue removal of rubber, waste products in the production of commercial rubber articles.

Report submitted for the 4th Scientific research conference on the chemistry and technology of synthetic and natural rubber, Yaroslavl, 1962

VIL'NITS, S.A.

VIL'NITS, S.A. -- "Investigation of Certain Problems of the Hydro-dynamics of Non-extraction Apparatus." Sub 20 Nov 52, Moscow Inst of Fine Chemical Technology imeni M.V. Lomonosov. (Dissertation for the Degree of Candidate in Technical Sciences.)

SO: VECHERNAYA MOSKVA, January-December 1952

ZINOV'YEV, Vladimir Andreyevich, prof.; PRISHED'KO, Nikolay Avtonomovich; VIL'NITS, Samuil Avseyevich; RUZHENTSEV, S.K., prof.; MESHKOV, P.I., inzh., red.; NIKITIN, A.G., red. izd-va; MODEL', B.I., tekhn. red.

[Machine parts] Detali mashin. Pod red. Vl.A.Zinov'eva. Moskva, Mashgiz, 1960. 327 p. (MIRA 15:5)
(Machinery--Design)

SHTOKALO, I.Z., akademik, red.; BOGOLYUBOV, N.N., akademik, red.; GLUSHKOV, V.M., akademik, red.; AKHIYEZER, A.I., akademik, red.; PARASYUK, O.S., akademik, red.; KOPNIN, P.V., doktor filosofskikh nauk, red.; VIL'NITSKIY, M.B., kand. fil. nauk, red.; DYSHLEVYY, P.S., kand. fil. nauk, red.; KUCHER, V.I., red.

[Philosophical questions of modern physics; materials] Filosofskie voprosy sovremennoi fiziki; materialy. Kiev, Naukova dumka, 1964. 325 p. (MIRA 17:9)

1. Respublikanskoye soveshchaniye po filosofskim voprosam fiziki elementarnykh chastits i poley. Kiev, 1962. 2. Vitse-prezident AN Ukr.SSR (for Glushkov). 3. Ukrainskiy fiziko-tekhnicheskiy institut (for Akhiyezer). 4. Institut matematiki AN Ukr.SSR (for Parasyuk). 5. Institut filosofii AN Ukr.SSR (for Dyshlevyy, Kopnin).

VIL'SHAU, K. V.

USSR.

3700* Investigation of Rectifying Action of Laboratory Columns Filled With Porcelain Rings. Issledovanie rektifitsiruiushchego deistviia laboratornykh kolonn, napolnennykh farforovymi kol'tsami. Russian. N. I. Gel'perin and K. V. Vil'shau. Zhurnal Prikladnoi Khimii, v. 28, no. 3, Mar. 1955, p. 284-291.

Rectification of binary mixture of benzene-dichloro-ethane. Geometrical parameters of column packing. Table, graphs, diagr.

1. VIL'NER, I.A.

2. USSR (600)

4. Differential Invariants

7. Algebraic solution to the problem of anamorphosis of functions in an invariant form, Dok.AN SSSR 90 no. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953, Uncl.

1. VIL'NER, I.A.

2. USSR (600)

4. Functions

7. Algebraic solution to the problem of anamorphosis of functions in an invariant form, Dokl.AN SSSR 90 no. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953, Uncl.

USSR/Nomograms
Elliptical functions Mar 1947

"On the Nomograms of Elliptical Functions and Integrals in the Complex Domain," I. A. Vilner, 4 pp

"CR Acad Sci" Vol LV, No 9

Considerations of the problem of constructing the nomogram of any functional relation of the first class.

8T70

VIL'NER, I. A.

USSR/Mathematics - Anamorphism, 21 Mar 52
Nomography

"The Problem of Anamorphism for Analytical Functions of a Complex Variable, and the N-Functional Equations" I.A. Vil'ner

"Dok Ak Nauk SSSR" Vol 83, No 3, pp 341-344

Discusses the soln of a system of N-functional eqs (i.e., 2 determinants simultaneously equal to zero) contg u(a;b) and v(a;b), namely, a pair of conjugate harmonic functions. Obtains the criteria of nomographicability of allied eq in the complex region, together with the conditions governing the conjointness of this system of functional eqs. States that the ultimate theory is concerned with the effective soln of this system. Demonstrates theorems on the analytical dependence $\Phi(w;z) = 0$ $(z=a+bi;\ w=p+qi)$ which possesses the fundamental differential nomographic parameters 1 and J. Submitted by Acad M.A. Lavrent'yev 1 Feb 52.

227T47

PA 3C101

USSR/Mathematics - Nomography Nov 1947
Mathematics - Functions, Analytic

"Nomograms for System of Equations and Analytic Functions," I. A. Vil'ner, 4 pp

"Dok Ak Nauk" Vol LVIII, No 5

Discusses systems of the first nomographic class of which $A_1 = \frac{z_1 z_2 [\ln(z_1/z_2)]_y + z_1 [\ln z_2]_x - z_2 [\ln z_1]_f}{z_2 - z_1}$ and $A_2 = [\ln(z_2/z_1)]_x + z_1 [\ln z_2]_y - z_2 [\ln z_1]^x$ are good examples; and also systems of the second nomographic class, i.e., those systems which form graphs on four scales, x, y, z_1 and z_2 with a single plane. As a result these systems have no less than three curve lines. Submitted by

38T61

FDB

USSR/Mathematics - Nomography (Contd) Nov 1947

Academician A. N. Kolmogorov at the Mathematics Institute imeni V. A. Steklov, Academy of Sciences of the USSR.

38T61

FDB

VIL'NER, I. A.

VIL'NER, I. A.

Author: Vil'nar, I.A.

Title: A problem of anamorphism.

Journal: Doklady Akademii Nauk SSSR. 1951, Vol.77, No.2, p.177

Subject: Mathematics

From: D.S.I.R. 0451

VIL'NER, I.A.

Nomogram for converting a hyperbolic and circular tangent and cotangent to an index form. Elektrichestvo no.7:95-97 Jl '54. (MLRA 7:8)
(Nomography(Mathematics))

VIL'NER, I. A.

AID P - 471

Subject : USSR/Electricity

Card 1/1 Pub. 27 - 34/34

Author : Vil'ner, I. A.

Title : Nomogram for Conversion of the Hyperbolic and Circular Tangent and Cotangent into a Exponential Form

Periodical : Elektrichestvo, 7, 95-97, Jl 1954

Abstract : Two tables, diagram, and an explanatory text.

Institution : None

Submitted : No date

VIL'NER, I.A.

Nomogram for the solution of equation $x+jy=re^{j\theta}$. Elektrichestvo no.1:p.3 of cover Ja '54. (MLRA 7:2)

(Nomography (Mathematics))

VIL'NER, I.A.

Note on the nomogram for the solution of the equation $x+jy = re^{\theta j}$ and $w = e^{z}$. Elektrichestvo no.1:96 Ja '54. (MLRA 7:2)
(Nomography (Mathematics))

A-1

BC

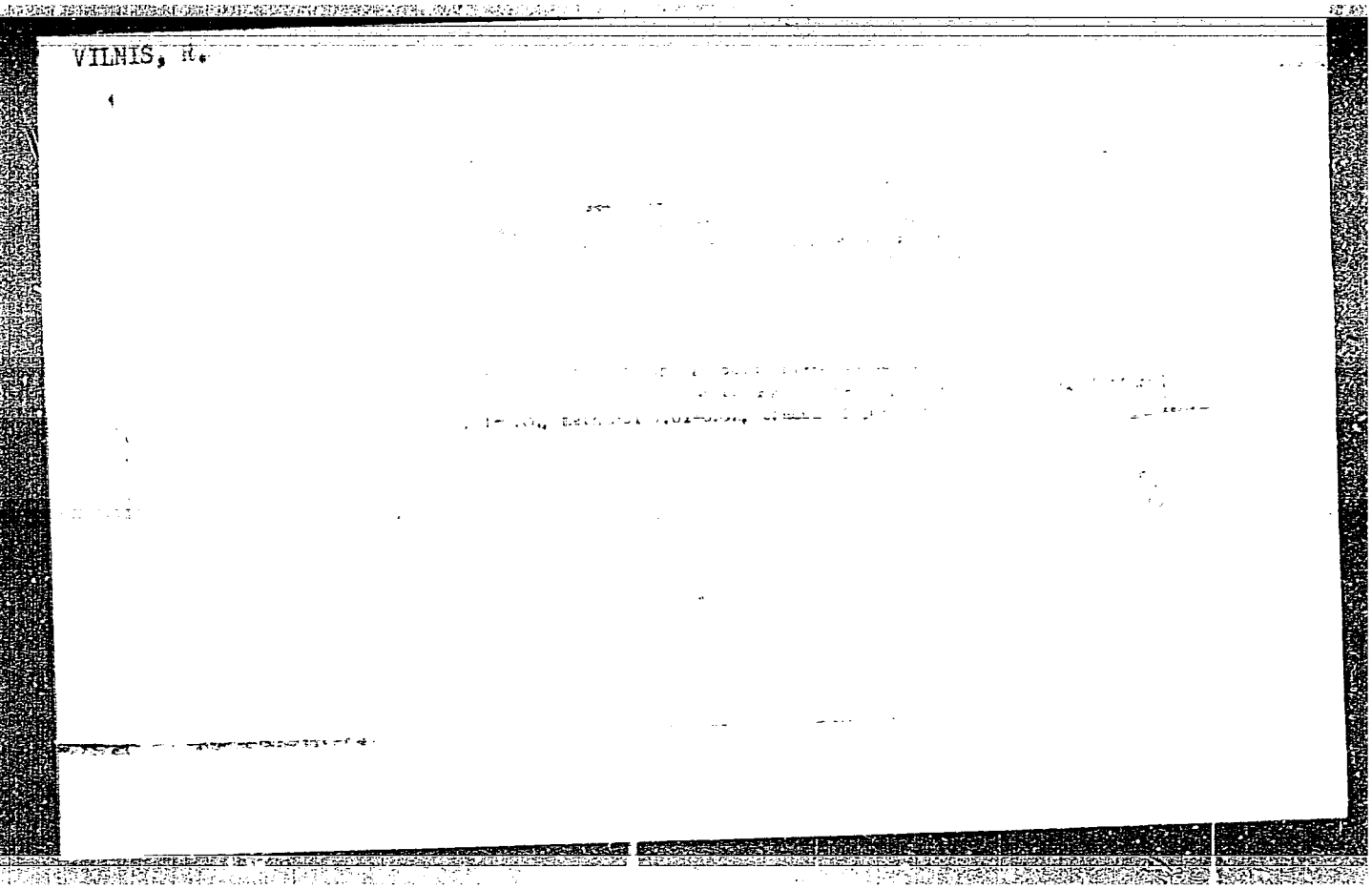
Dehydration of molten carnallite. J. E. Vilenzaki and N. P. Golubtschenko (*J. Appl. Chem. Russ.*, 1941, **14**, 39—48). —The b.p. of fused carnallite falls from 715° to 510° as the (H_2O) of the salt rises from 0·12 to 0·51%. The composition of the vapour phase over the fused salt varies according to the temp. and the H_2O content of the salt; the equilibrium coeff. is given by $K = [HCl]^2/[MgCl_2].[H_2O]$. R. T.

VILNIS, J.

Beekeepers need help; a letter to the editor.

P. 21. (PADOMJU LATVIJAS KOLCHOZENIEKS) (Riga, Latvia) Vol. 10, no. 1, Jan. 1958

SO: Monthly Index of East European Accession (EEAI) LC Vol. 7, No. 5, 1958



VIL'NIT, L.N.

Tapered wing surface guaranteeing minimum wave resistance at a given volume. Izv.vys.ucheb.zav.; av.tekh. 2 no.3:136-142 '59. (MIRA 12:12)

1. Novosibirskiy elektrotekhnicheskiy institut. Kafedra teoreticheskoy i prikladnoy mekhaniki.
(Airfoils)

ACC NR: AT[illegible] SOURCE CODE: UR/0000/66/000/000/0063/0094

AUTHOR: Vilnitis, A. Ya.

ORG: none

TITLE: Transverse edge effect in plane induction magnetohydrodynamic machinery

SOURCE: AN LatSSR. Institut fiziki. Dvizheniye provodyashchikh tel v magnitnom pole (Movement of conducting bodies in magnetic field). Riga, Izd-vo Zinatne, 1966, 63-94

TOPIC TAGS: mhd, liquid metal pump, electromagnetism, hydrodynamics

ABSTRACT: A simplified model of an induction magnetohydrodynamic machine is used and the results of calculations initially obtained for ordinary induction machinery are employed for the calculations. The analogy between problems in the thoery of rotating machinery and problems in the theory of induction mhd is described and the similarities and differences are outlined. Ways of obtaining engineering formulas from the available analytic solutions, which for the most part are in terms of series of trigonometric or other functions, are discussed. The results of calculations of the transverse edge effects, published in the literature under the assumption that the liquid metal moves like a rigid body, as well as with allowance for the properties of the liquid itself, are referred to. Separate solutions are presented for infinitely broad and for limited-width gaps. The results of the earlier theoretical papers by A. I. Vol'dek (Izvestiya vysshykh uchebnykh zavedeniy, Elektromekhanika, 1959, no. 1) are reviewed and later modifications to them are described. Other theories are

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ACC NR: AT7001355

also briefly mentioned. The possible applications of the theoretical results are discussed. It is concluded that while the distributions of the fields and currents in a rectangular plate between two infinitely broad and long inductors has been solved to a satisfactory degree, the use of computers is dictated for most applications. The application of the obtained results in design practice is limited because of the rather simplified model used compared with the complexity of the real pump. The difficulties in the development of the theory for a channel of finite width are mentioned, as well as the lack of a unified theory that makes allowance for the conditions in the liquid itself. The need for developing a hydrodynamic solution for a liquid-metal channel separated into several parts by longitudinal partitions is emphasized. Orig. art. has: 9 figures and 50 formulas.

SUB CODE: 20, 09/ SUBM DATE: 22Jul66/ ORIG REF: 011

Card 2/2

L 00468-66

ACCESSION NR: AP5019974 UR/0371/65/000/002/0003/0018

AUTHOR: Vilnitis, A. (Vilnitis, A. Ya.)

TITLE: Field and current distribution in a conducting body of rectangular section, placed between two infinite inductors and subjected to a sinusoidal traveling magnetic field

SOURCE: AN LatSSR. Izvestiya. Seriya fizicheskikh i tekhnicheskikh nauk, no. 2, 1965, 3-18

TOPIC TAGS: modified infinite waveguide, waveguide current distribution, nonconducting gap traveling wave, conducting body magnetic distribution, conducting body current distribution

ABSTRACT: Two infinitely wide and long inductors of infinite magnetic permeability are spaced 2δ apart, and carry a current load in the form of a sinusoidal traveling wave. The inductor interspace contains a conducting object of rectangular cross section 2δ thick and 2a wide extending in the direction of wave propagation. The author solves the problem of magnetic field and current distribution within the conducting body exactly in the form of single and double trigonometric series. The solution is given in four different formulations. In the region beyond the boundaries of the conducting body (where the conductivity

Card 1/2

L 00468-66

ACCESSION NR: AP5019974

is zero) the field is the same as in the absence of the conductor. The transverse component of the magnetic induction is missing but all three components of induction currents are encountered. The magnitude of such currents depends on the width of the conducting body. Orig. art. has: 100 formulas and 4 figures.

ASSOCIATION: Institut fiziki AN Latv. SSR (Physics Institute, AN Latv. SSR)

SUBMITTED: 04Sep64 ENCL: 00 SUB CODE: EC, EM

NO REF SOV: 003 OTHER: 000

Card 2/2

124-1957-1-442

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 1, p 56 (USSR)

AUTHORS: Gel'perin, N.I., Vil'nits, S.A.

TITLE: The Outflow of Liquids From Standard Short Tubes and Openings With Small Diameters (Istecheniye zhidkostey iz nasadok i otverstiy malykh diametrov)

PERIODICAL: Tr. Mosk. in-ta tonkoy khim. tekhnologii, 1955, Nr 5, pp 27-36

ABSTRACT: The article describes the test set-up and proffers the results of experiments conducted for the determination of the coefficient of discharge for eight kinds of liquids from cylindrical standard tubes with diameters varying between 0.445 and 1.5 mm and apertures between 0.25 and 1.3 mm. The project was performed to conform with the conditions obtaining during the extraction of substances by means of solvents from liquid solutions at chemical industrial plants. Experimental relationships are offered in criterional form (in terms of the Reynolds number and a term consisting of a ratio of the viscous and capillary forces) for the determination of the coeff. of discharge for solid jets and for jets broken up into detached drops, and for the determination of the boundary between these two regimens. M.S.Volynskiy

Card 1/1

1. Fluid flow--Velocity 2. Tubes--Applications

GUL', V.Ye.; VIL'NITS, S.A.

Effect of temperature on the rate of growth of cuts in vulcanized rubber. Nauch. dokl. vys. shkoly; khim. i khim. tekh. no.2:365-368 '58. (MIRA 11:6)

1. Predstavlena kafedroy fiziki Moskovskogo instituta tonkoy khimicheskoy tekhnologii im. M.V. Lomonosova.
(Rubber--Testing)

69-20-3-10/24

AUTHORS: Gul', V.Ye.; Tsarskiy, L.N.; Vil'nits, S.A.

TITLE: The Process of Rupture in the Region of Transition From the Elastic to the Brittle State (Issledovaniye protsessa razryva v oblasti perekhoda ot elasticheskogo k khrupkomy sostoyaniyu)

PERIODICAL: Kolloidnyy zhurnal, 1958, vol XX, Nr 3, pp 318-325 (USSR)

ABSTRACT: The rupture of vulcanizates is a process lasting a certain time. In the article, experiments are mentioned in which this process has been studied by means of high-speed cinematography. More than 300 moving pictures were taken. The analysis of the pictures has shown that the speed of rupture in the temperature range from +22 to -57°C is very small in the initial stages and increases rapidly immediately before the complete rupture. At a temperature decrease from +22 to 0° the rupture speed decreases from 2,500 mm/sec to 100 mm/sec. This is due to an increase in the bonds of intermolecular interaction. At temperatures of -50°C and lower the rupture speed attains a value of 3,000 mm/sec. The temperature decrease is also accompanied by a decrease of the additional orientation of the material. At very low

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The Process of Rupture in the Region of Transition From the Elastic to the Brittle State

temperatures, the reduction of additional orientation becomes so large that the speed of rupture increases again. A correlation exists not only between the temperature and the speed of rupture, but also between temperature and mechanical properties of the rubber. At the transition from the high-elastic to the brittle rupture mechanism, an abnormal change in the resistance to rupture is observed, together with a change in temperature. In the temperature regions characterized by the elastic and brittle rupture mechanisms, an increase in the stability of the material is observed. At the transition from the elastic to the brittle rupture, the stability of the material is reduced as a consequence of changes in the structural characteristics of the material.
There are 11 graphs and 8 references, 7 of which are Soviet and 1 German.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii, Moskva (Moscow Institute of Fine Chemical Technology, Moscow)

SUBMITTED: May 3, 1957

Card 2/2

1. Vulcanizates—Transition 2. Vulcanizates—Rupture

VIL'NITS, S.A.; BABITSKIY, B.L.

Results of the All-Union Scientific and Technical Conference on the Reclaiming of Polymeric Materials in the National Economy. Kauch. i rez. 24 no.2:53-54 F '65.

(MIRA 18:4)

VIL'NITS, S.A.

USSR /Chemical Technology. Chemical Products and Their Application H-2
Processes and Apparatus for Chemical Technology

Abs Jour: Referat Zhur - Khimiya, No. 1, 1958, 1506

Author : Gel'perin N.I., Vil'nits S.A.

Inst : Moscow Institute of Fine-Chemical Technology

Title : Dispersion of Liquids on Outflow from Nozzles into Air and Fluid Media.

Orig Pub: Tr. Mosk. in-ta tonkoy khim. tekhnol., 1956, No 6, 111-116

Abstract: An experimental study of the regularities of changes in the size of drops that are formed on outflow of liquids from small diameter nozzles into air, under liquid-drop conditions, and into

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USSR /Chemical Technology. Chemical Products and Their Application
Processes and Apparatus for Chemical Technology H-2

Abs Jour: Referat Zhur - Khimiya, No 1, 1958, 1506

fluids immiscible with the outflowing, under liquid-drop and jet conditions. It was found that in cases of an outflow of liquids into air and into fluid media the determinant criteria of the process are: Re, K and η_*, where Re -- Reynolds criterion; K -- a new criterion proposed by the authors ($K = W\eta/\sigma$), W -- outflow velocity, η -- viscosity, σ -- surface tension); $\eta_* = (\eta_c + 5\eta_B)/\eta_B$, η_c -- viscosity of the medium, η_B -- viscosity of outflowing liquid. As a result of processing of experimental data on outflow of liquids into air, there was derived the correlation: $d/D = 16.64 \cdot 10^3 K^{0.767}/(\eta_o^{1.7} Re^{0.92})$, wherein d -- diameter of the

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Processes and Apparatus for Chemical Technology H-2

Abs Jour: Referat Zhur - Khimiya, No 1, 1958, 1506

drop, D -- diameter of nozzle aperture, η_o -- relative viscosity of outflowing liquid (in relation to water). On outflow of liquids into other fluid media the diameters of the drops that are formed can be determined from the correlation: $d/D = 4600\ K^{0.42} / (\eta_* Re^{0.504})$. For the determination of phase contact surface in packing-free extraction apparatus there is proposed the equation: $F_1 = [\eta_* / (766.6\ D)] (Re^{0.252} / K^{0.21})$, where F_1 -- total surface of all drops on dispersion of 1 m^3 of liquid. It is noted that the last mentioned equation makes it possible to investigate the mass-exchange process during extraction and also serves for design calculations of packing free extraction apparatus. The assump-

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USSR /Chemical Technology. Chemical Products and Their Application H-2
Processes and Apparatus for Chemical Technology

Abs Jour: Referat Zhur - Khimiya, No 1, 1958, 1506

tion is made that criterion K plays an important part not only in the mathematical characterization of the process of outflow and of the processes of drop-formation, but also in those processes wherein alongside with the viscosity, are manifested the forces of surface tension.

Card 4/4

VIL'NITSKIY, Moisey Borisovich [Vil'nyts'kyi, M.B.]; KHAZANOV, S.M., red.

[Experiment in modern science] Eksperiment u suchasnii nautsi. Kyiv, Naukova dumka, 1965. 73 p. (MIRA 18:9)

VIL'NITSKIY, Moisey Borisovich [Vil'nyts'kyi, M.B.]; DYSHLEVYY, P.S., kand.filosof.nauk, otv.red.; BRATKO, Z.T., red.; MIL'OKHIN, I.D., tekhn.red.

[Some philosophical problems in the special theory of relativity] Deiaki filosofs'ki pytannia spetsial'noi teorii vidnosnosti. Kyiv, Vyd-vo Akad.nauk URSR, 1959. 194 p. (MIRA 12:12)

(Relativity (Physics))

VIL'NITSKIY, Moisey Borisovich

[History of the development of the idea of space and time in classical physics] K istorii razvitiia predstavlenii o prostranstve i vremeni v klassicheskoi fizike. Kiev, Izd-vo Akademii nauk USSR, 1955. 234 p. (MLRA 9:3)
(Physics--Philosophy)

GURVICH, Sokrat Solomonovich, dots.; VIL'NITSKIY, M.B., kand. filos. nauk, otv. red.; NICHIK, V.M., kand. filos. nauk, otv. red.; POTOTSKAYA, L.A., tekhn. red.; CHUCHUPAK, V.D., tekhn. red.

[The laws and categories of dialectics and their manifestation in medicine] Zakony i kategorii dialektiki i ikh proiavlenie v meditsine. Kiev, Gosmedizdat, 1962. 244 p. (MIRA 15:4)
(MEDICINE--PHILOSOPHY) (DIALECTICAL MATERIALISM)

VILYANSKIY, I. P. -- Moscow

"Arteriography in Cases of Obliterating Endarteritis."

Report submitted for the 27th Congress of Surgeons of the USSR, Moscow, 23-28 May 1960.

BELOV, I. V.; VIL'NYANSKIY, I. Ya.

Thermal efficiency, heat receptivity of the metal, and oxidizing capability of open hearth furnaces during oxygen and compressed air feed to the flame. Izv. vys. ucheb. zav.; chern. met. 5 no.12:153-161 '62. (MIRA 16:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metallurgicheskoy teplotekhniki.

(Open-hearth furnaces—Combustion)

BELOV, I.V.; VIL'NYANSKIY, I.Ya.

Speed of carbon oxidation and the heating of a smelting bath during the finishing period. Izv. vys. ucheb. zav.; chern. met. 6 no.4: 34-38 '63. (MIRA 16:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metallurgicheskoy teplotekhniki.

(Open-hearth process—Testing)

18.3200

SOV/133-[illegible]-10-[illegible]/33

AUTHORS: Belov, I. V. (Candidate of Technical Sciences), Vil'nyanskiy, I. Ya., Glazkov, P. G., Krasnozhen, D. Ye., Telesov, S. A., Berger, N. I. (Engineers)

TITLE: Delivery of Air to Gas Ports by Fan to Intensify the Melting Process

PERIODICAL: Stal', 1959, Nr 10, pp 889-893 (USSR)

ABSTRACT: Partial combustion of gas in the doghouse occurs by fan-blown air at an approximate pressure of 600-mm water column, improving flame characteristics and drastically cutting power consumption for air blowing (7 to 10 times) in comparison to consumption by compressors or turbo-blowers. Blowing equipment is simple and provides an easy way of controlling air supply. At Stalino and Nizhniye Sergi Metallurgical Plants (Stalinskiy zavod, Nizhne-Serginskiy zavod), fan blowing was installed in 1958. At Stalino Plant, open-hearth furnaces work by

Card 1/4

Delivery of Air to Gas Ports by Fan to Intensify the Melting Process

75-5
SOV/133-57-10-8/33

scrap-ore process with liquid cast iron and are coke-oven gas-fired. In discussing furnace performance figures and temperature rates, the authors compare the new and the original production (see table). The following engineers contributed to the research: Tuluyevskiy, Yu. N., Ofengenden, A. M., Druzhinin, I. I., Nesterovich, R. P., Pokrass, L. M., Moysiyevich, G. I., Postnikov, Yu. D., et al. The authors conclude as follows: (1) Partial gas combustion in open-hearth furnace ports by cold air blown into the doghouse is only beneficial with an adequately high level of thermal load. (2) Intensification of the melting process by the above method is recommended for overcharged and, particularly, double-charged furnaces. (3) The forced air/thermal load ratio can be adjusted by controlling temperature rates of the checkers. (4) Automatic control would greatly promote the effectiveness of partial fuel combustion in the port. There are 4 figures; 1 table; and 2 Soviet references.

Card 2/4

Delivery of Air to Gas Ports by Fan to Intensify the Melting Process

SOV/[illegible]-19-6/32

ASSOCIATION: All-Union Scientific Research Institute of Metallurgical Thermal Technology, Stalino and Nizhnye Sergi Metallurgical Plants (VNIITMT, Stalinskiy i Nizhne-Serginskiy metallurgicheskiye zavod)

Card 3/4

Delivery of Air to Gas Ports by Fan to Intensify the Melting Process

[illegible]
SOV/133-59-10-[illegible]

Basic Performance of Figures of Experimental Melting Without (numerator) and With (denominator) Air Delivery by Fan

Performance Figures	Open-hearth Furnace A	B	C
Number of Melts.....	8 / 8	2 / 3	12 / 16
Melting Period, hrs - min. ..	9—10 / 8—49	9—12 / 8—13	8—52 / 8—20
Mean Thermal Load per Melt, .. 10^6 cal/h	13.29 / 15.82	13.60 / 13.90	11.3 / 11.4
Furnace Productivity, t/h	14.92 / 15.39	14.52 / 14.82	9.43 / 9.37
Arbitrary Fuel Consumption, .. kg/t	186 / 175	182 / 158	252 / 237

Card 4/4

BELOV, I.V.; VIL'NYANSKIY, I.Ya.

Thermal efficiency of heat absorption by metals and the oxidizing capacity of open-hearth furnaces with oxygen and compressed air fed to the fuel spray. Izv. vys. ucheb. zav.; chern. met. 6 no.6:172-178 '63. (MIRA 16:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metallurgicheskoy teplotekhniki.

(Heat--Radiation and absorption)
(Open-hearth furnaces--Combustion)

VIL'NYANSKIY, L.I., kand.med.nauk; PALMY, A.Yu., kand.med.nauk (Khar'kov)

Pulmonary sarcoidosis (Boeck's disease). Klin.med. 35 no.11:47-54 N '57. (MIRA 11:2)

1. Iz Ukrainskogo nauchno-issledovatel'skogo instituta tuberkuleza (dir. - dotsent N.M.Yanov)
(SARCOIDOSIS, case reports
lungs)
(LUNG DISEASES, case reports
sarcoidosis)

KLEBANOV, M.A., prof. (Kiyev); Prinimali uchastiye: BEREZITSKIY, A.V. (Kiyev); PEKAR', P.P.; SAVENKOV, D.I.; TARANENKO, M.I.; MELAMED, M.A.; BORSHCHEVSKIY, M.L. (Odessa); VIL'NYANSKIY, L.I. (Khar'kov); SOKOLOVA, Yu.I. (Khar'kov); ABERMAN, A.A.; KULAKOVA, S.A. (Simoferopol'); FUKS, R.A. (Dnepropetrovsk); BEZNOSOVA, Zh.A. (Vinnitsa); KUKLINA, N.P. (Zhitomir); SIDORENKO, G.P. (Chernovitsy); D'YACHENKO, N.S. (Stanislav).

Reduction in the periods of therapeutic pneumothorax following its use in combination with antibacterial therapy. Vrach. delo no.12: 36-40 D '60. (MIRA 14:1)

1. Ukrainskiy institut tuberkuleza imeni F.G.Yanovskogo (for Klebanov).
2. Dispanser Yugo-Zapadnykh zheleznykh dorog (for Aberman).
(PNEUMOTHORAX) (TUBERCULOSIS)

VIL'NYANSKIY, L. I., doktor med. nauk; MASLENNIKOVA, N. K., kand. med. nauk (Khar'kov)

Use of sulfanilamide substitutes for insulin in diabetes mellitus complicated by pulmonary tuberculosis. Klin. med. 40 no.7:74-78 Jl '62. (MIRA 15:7)

1. Iz Ukrainskogo nauchno-issledovatel'skogo instituta tuberkuleza.

(SULFANILAMIDES) (DIABETES) (TUBERCULOSIS)

VIL'NYANSKIY L. I.

USSR/Pharmacology and Toxicology. Chemotherapeutic Preparations V-7
Antitubercular Drugs

Abs Jour : Ref Zhur - Biol., No 15, 1958, No 71294

Author : ~~Vil'nyanskiy L.I.~~
Inst : Kharkov Scientific Medical Society, Ukrainian Institute for the Advanced Training of Physicians
Title : Phthivazid in the Complex Treatment of Patients Affected with Tuberculosis and Diabetes Melitus

Orig Pub : Nauchn. tr. Khar'kovsk. nauchn. med. o-vo, Ukr. in-t usoversh. vrachey, 1957, cyp. 8, 110-119

Abstract : Twenty-one patients suffering from tuberculosis and diabetes melitus were treated with phthivazid (P). P was administered both alone and in combination with streptomycin or PAS, and with collapse therapy. Daily dose was 1-1.5 g.; for a course of treatment, 60-135 g. In patients with closed forms of tuberculosis, P produced an improvement, expressed in the removal of the symptoms of intoxication and resorption of the infiltrative changes in the lungs. Abatement of the

Card : 1/2

Abs Jour : Ref Zhur - Biol., No 15, 1958, No 71294

of the tuberculous outbreak in the process of treatment usually did not improve the course of diabetes melitus, and in single cases produced an increase of hyperglycemia and glycosuria. In patients with the presence of disintegration in the lungs, only in 4 out of 16 an improvement of the process was observed. The patients with diabetes melitus tolerate P well, and only in single cases an increase of inculin doses was needed. It is noted that in 4 out of 10 patients affected with tuberculosis not accompanied by diabetes, a single administration of P (0.5-1 g.) produced considerable rise of the sugar level in the blood. -- O.V. Petrova

VIL'NYANSKIY, Ya. Ye.; SAVINKOVA, Ye. I.; BYCHIKHINA, L. S.

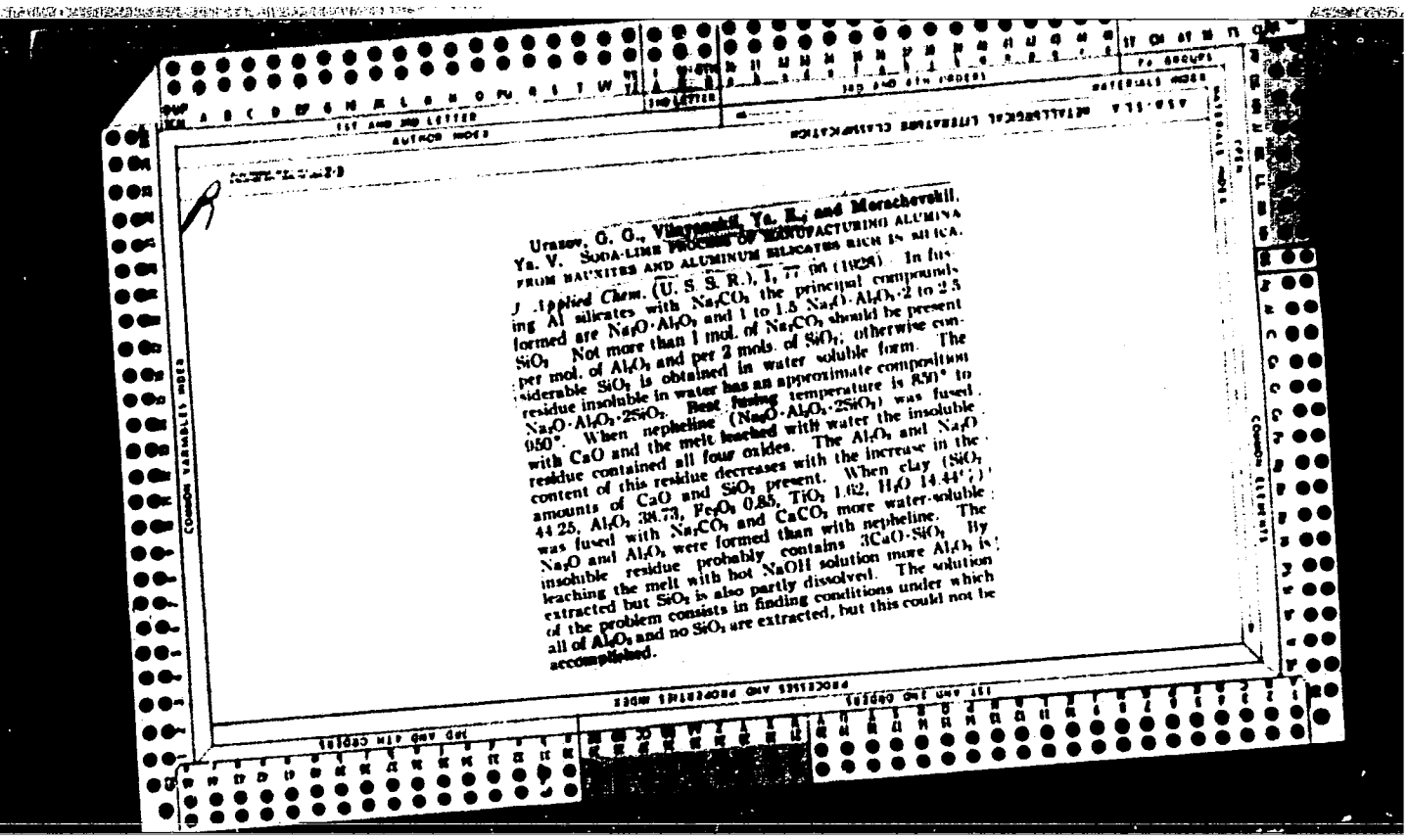
Rapid method for the determination of hydrogen in dehydrated carnallite. TSvet. met. 35 no.10:80-81 O '62. (MIRA 15:10)

(Carnallite—Hydrogen content)

KROTOV, Yu.I.; VIL'NYANSKIY, Ya.Ye.

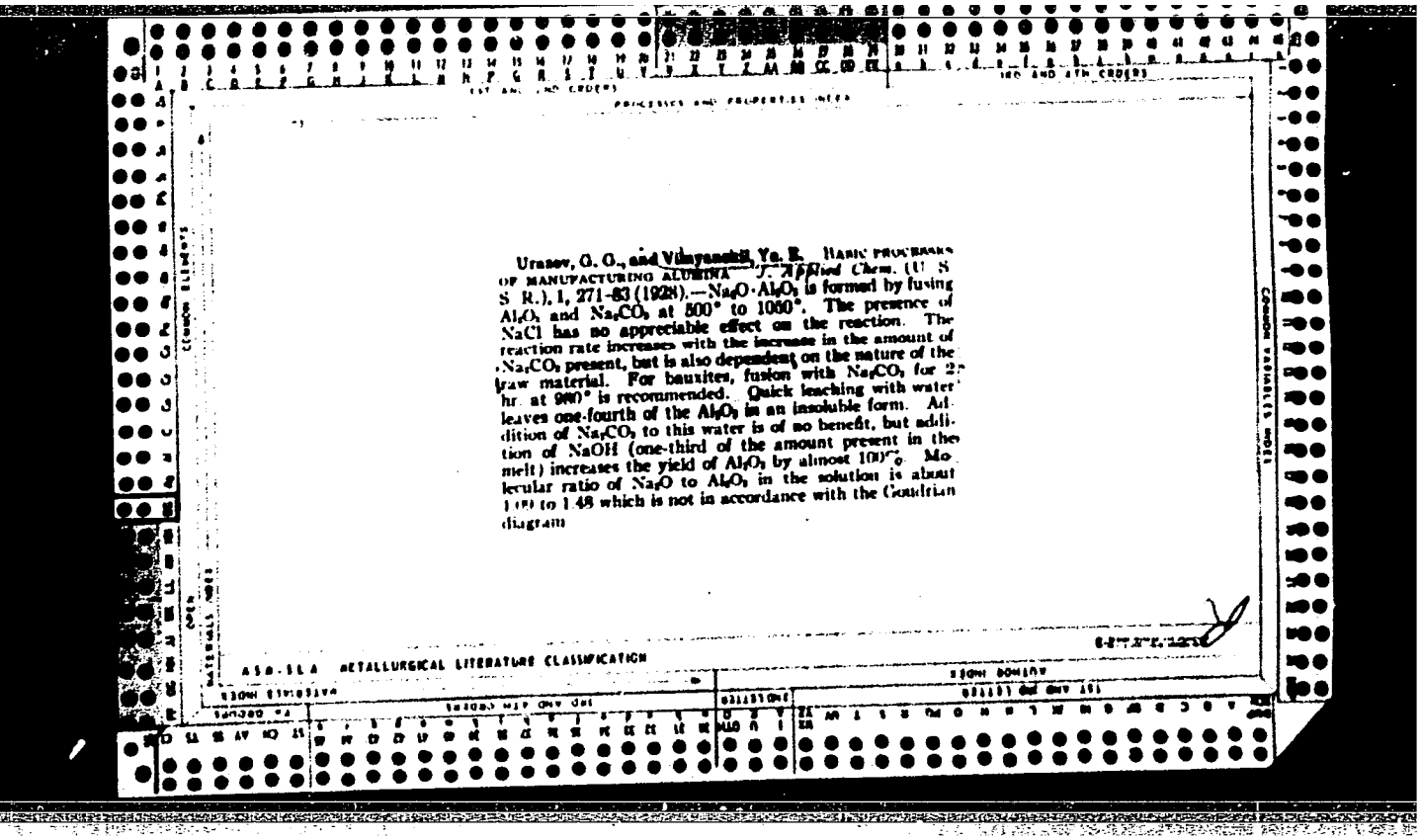
Role of a melt in the process of oxidizing roasting of chromite charges. Zhur.prikl.khim. 38 no.6:1206-1211 Je '65.
(MIRA 18:10)

1. Ural'skiy politekhnicheskiy institut imeni S.M.Kirova.



Urasov, G. G., Vlasenko, Ya. E., and Moroshevskii, Ya. V. SODA-LIME PROCESS OF MANUFACTURING ALUMINA FROM BAUXITES AND ALUMINUM SILICATES RICH IN SILICA.

Applied Chem. (U. S. S. R.), 1, 77 pp (1928). In fusing Al silicates with Na_2CO_3 the principal compounds formed are $Na_2O \cdot Al_2O_3$ and 1 to 1.5 $Na_2O \cdot Al_2O_3$·2 to 2.5 SiO_2. Not more than 1 mol. of Na_2CO_3 should be present per mol. of Al_2O_3 and per 2 mols. of SiO_2; otherwise considerable SiO_2 is obtained in water soluble form. The residue insoluble in water has an approximate composition $Na_2O \cdot Al_2O_3 \cdot 2SiO_2$. Best fusing temperature is 850° to 950°. When nepheline ($Na_2O \cdot Al_2O_3 \cdot 2SiO_2$) was fused with CaO and the melt leached with water the insoluble residue contained all four oxides. The Al_2O_3 and Na_2O content of this residue decreases with the increase in the amounts of CaO and SiO_2 present. When clay (SiO_2 44.25, Al_2O_3 38.73, Fe_2O_3 0.85, TiO_2 1.62, H_2O 14.44%) was fused with Na_2CO_3 and $CaCO_3$ more water-soluble Na_2O and Al_2O_3 were formed than with nepheline. The insoluble residue probably contains $3CaO \cdot SiO_2$. By leaching the melt with hot NaOH solution more Al_2O_3 is extracted but SiO_2 is also partly dissolved. The solution of the problem consists in finding conditions under which all of Al_2O_3 and no SiO_2 are extracted, but this could not be accomplished.



Urazov, G. G., and Vilyanskii, Ya. E. BASIC PROCESSES OF MANUFACTURING ALUMINA. *J. Applied Chem.* (U. S. S. R.), 1, 271–83 (1928).—$Na_2O \cdot Al_2O_3$ is formed by fusing Al_2O_3 and Na_2CO_3 at 800° to 1000°. The presence of NaCl has no appreciable effect on the reaction. The reaction rate increases with the increase in the amount of Na_2CO_3 present, but is also dependent on the nature of the raw material. For bauxites, fusion with Na_2CO_3 for 2 hr. at 900° is recommended. Quick leaching with water leaves one-fourth of the Al_2O_3 in an insoluble form. Addition of Na_2CO_3 to this water is of no benefit, but addition of NaOH (one-third of the amount present in the melt) increases the yield of Al_2O_3 by almost 100%. Molecular ratio of Na_2O to Al_2O_3 in the solution is about 1.40 to 1.48 which is not in accordance with the Gouldrian diagram

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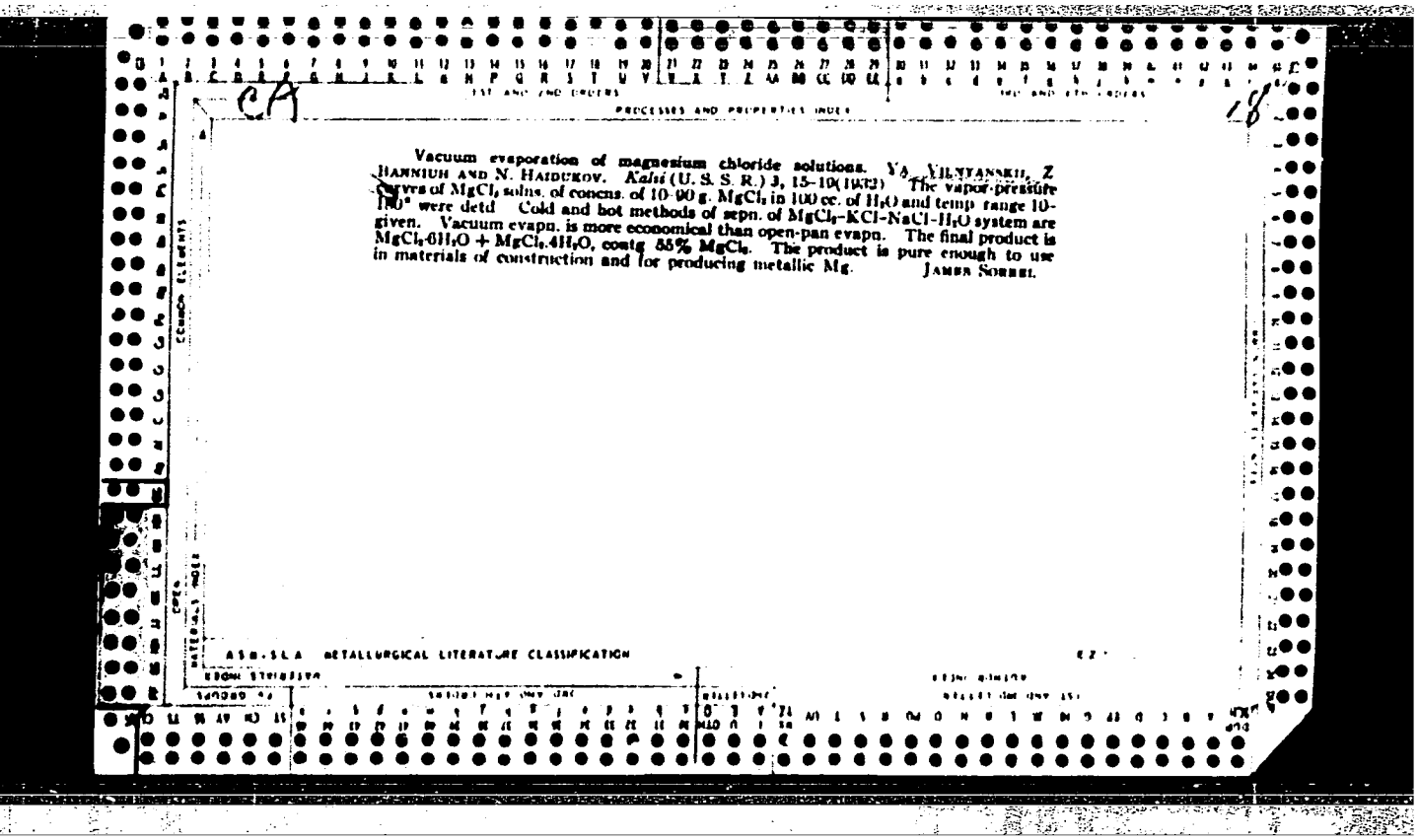

CA

18

PROCESSES AND PROPERTIES INDEX

Vacuum evaporation of magnesium chloride solutions. Ya. Yelyanskii, Z. Hannuh and N. Haidukov. *Kalii* (U. S. S. R.) 3, 15-19(1932). The vapor-pressure curves of $MgCl_2$ solns. of concns. of 10-90 g. $MgCl_2$ in 100 cc. of H_2O and temp range 10-180° were detd. Cold and hot methods of sepn. of $MgCl_2$-KCl-NaCl-H_2O system are given. Vacuum evapn. is more economical than open-pan evapn. The final product is $MgCl_2 \cdot 6H_2O + MgCl_2 \cdot 4H_2O$, contg. 55% $MgCl_2$. The product is pure enough to use in materials of construction and for producing metallic Mg. James Sorrel.

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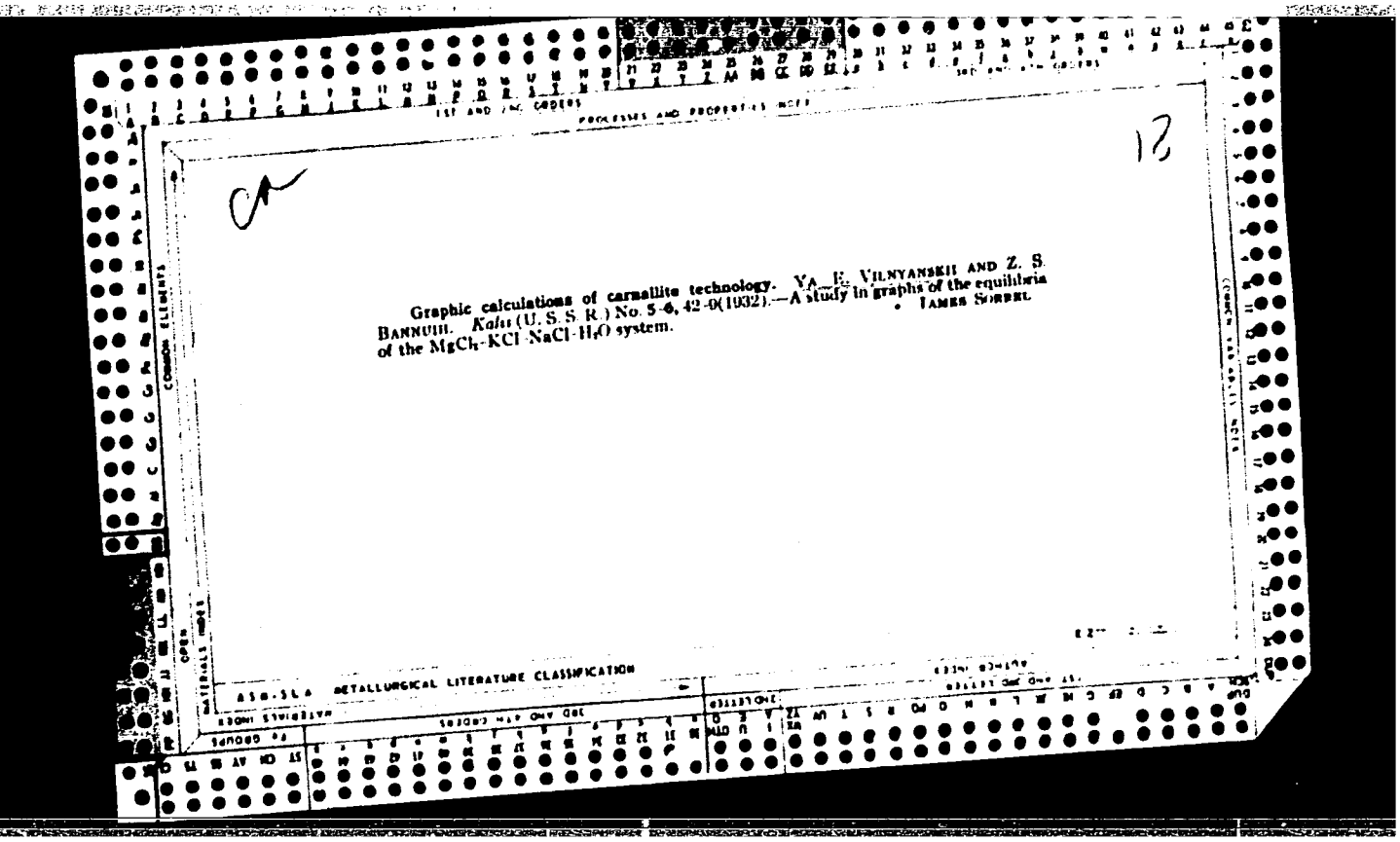
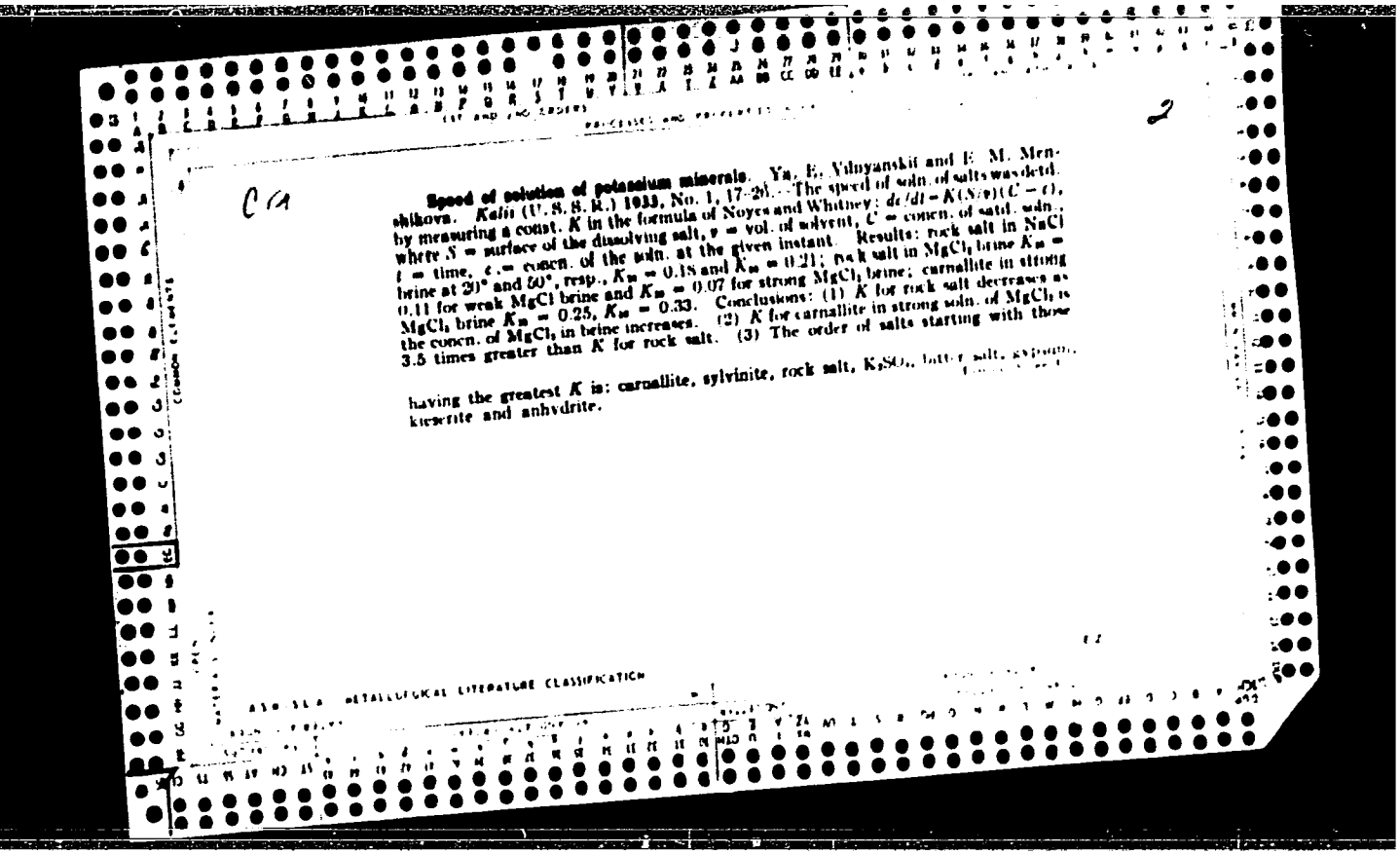


Graphic calculations of carnallite technology. Ya. E. Vilnyanskii and Z. S. Bannuin. *Kalii* (U. S. S. R.) No. 5-6, 42-9(1932).—A study in graphs of the equilibria of the $MgCl_2$-KCl-NaCl-H_2O system.

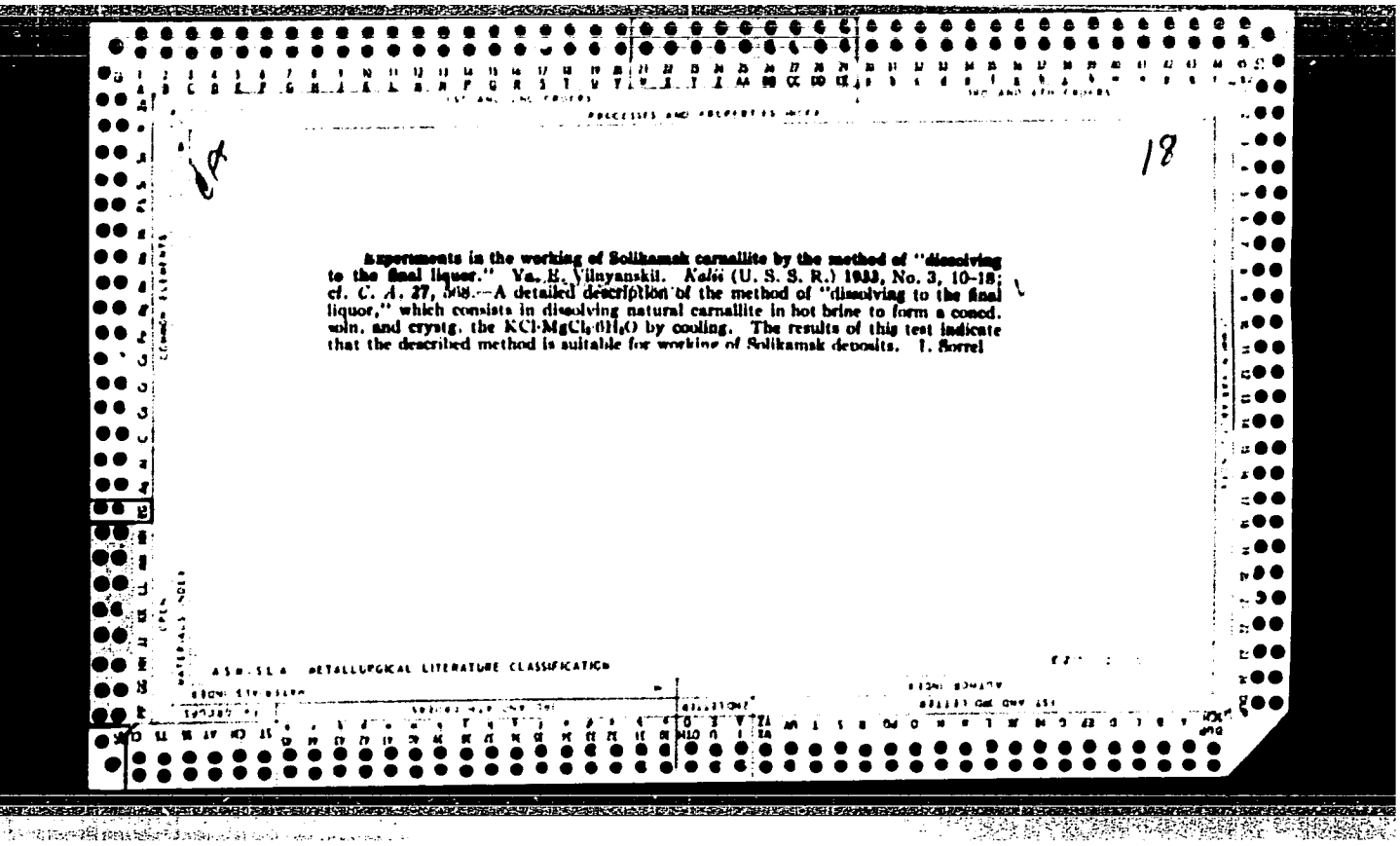
James Sorbet



CA

Speed of solution of potassium minerals. Ya. E. Vilnyanskii and E. M. Menshikova. *Kalii* (U. S. S. R.) 1933, No. 1, 17–28.—The speed of soln. of salts was detd. by measuring a const. K in the formula of Noyes and Whitney: $dc/dt = K(S/v)(C - c)$, where S = surface of the dissolving salt, v = vol. of solvent, C = concn. of satd. soln., t = time, c = concn. of the soln. at the given instant. Results: rock salt in NaCl brine at 20° and 50°, resp., $K_{20} = 0.18$ and $K_{50} = 0.21$; rock salt in $MgCl_2$ brine $K_{20} = 0.11$ for weak MgCl brine and $K_{20} = 0.07$ for strong $MgCl_2$ brine; carnallite in $MgCl_2$ brine $K_{20} = 0.25$, $K_{50} = 0.33$. Conclusions: (1) K for rock salt decreases as the concn. of $MgCl_2$ in brine increases. (2) K for carnallite in strong soln. of $MgCl_2$ is 3.5 times greater than K for rock salt. (3) The order of salts starting with those having the greatest K is: carnallite, sylvinite, rock salt, K_2SO_4, [illegible] salt, kainite, kieserite and anhydrite.

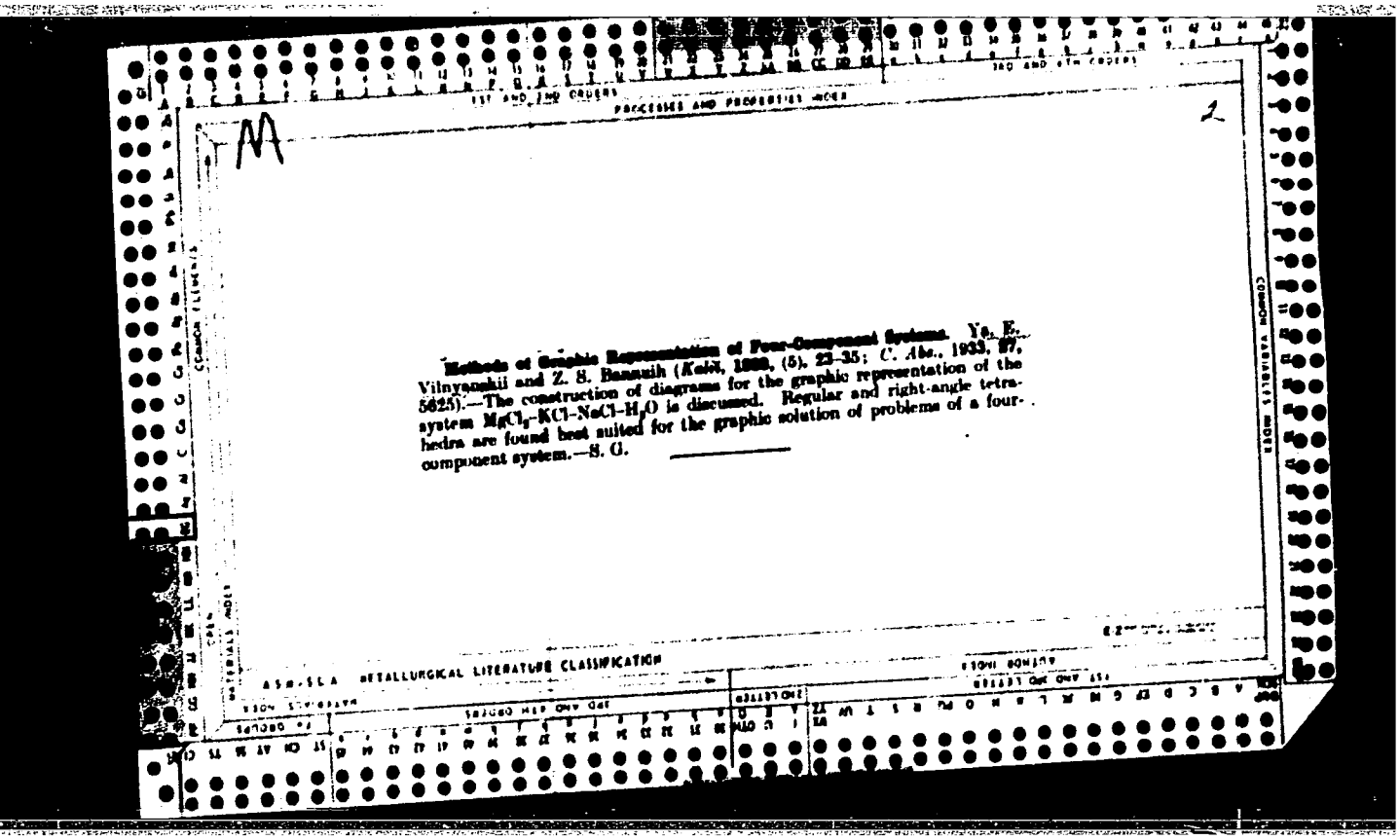
A10 B1A METALLURGICAL LITERATURE CLASSIFICATION



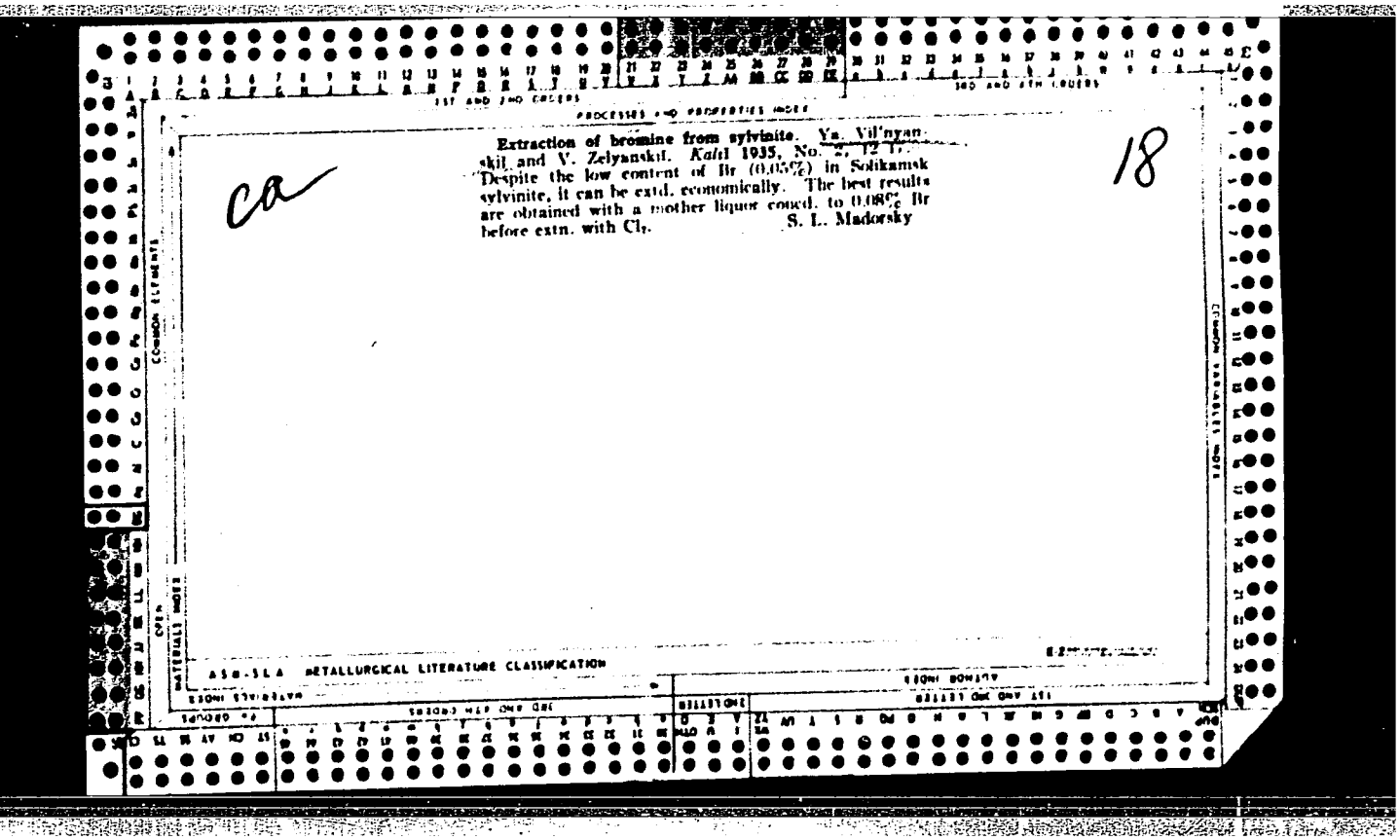
18

Experiments in the working of Solikamsk carnallite by the method of "dissolving to the final liquor." Ya. E. Vilnyanskii. *Kalii* (U. S. S. R.) 1933, No. 3, 10–18; cf. *C. A.* 27, 518.—A detailed description of the method of "dissolving to the final liquor," which consists in dissolving natural carnallite in hot brine to form a concd. soln. and crystg. the $KCl \cdot MgCl_2 \cdot 6H_2O$ by cooling. The results of this test indicate that the described method is suitable for working of Solikamsk deposits. I. Sorrel

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Methods of Graphic Representation of Four-Component Systems. Ye. E. Vilnyanskii and Z. S. Basnaih (*Kalii*, 1933, (5), 23–35; *C. Abs.*, 1933, **27**, 5625).—The construction of diagrams for the graphic representation of the system $MgCl_2$–KCl–NaCl–H_2O is discussed. Regular and right-angle tetrahedra are found best suited for the graphic solution of problems of a four-component system.—S. G.



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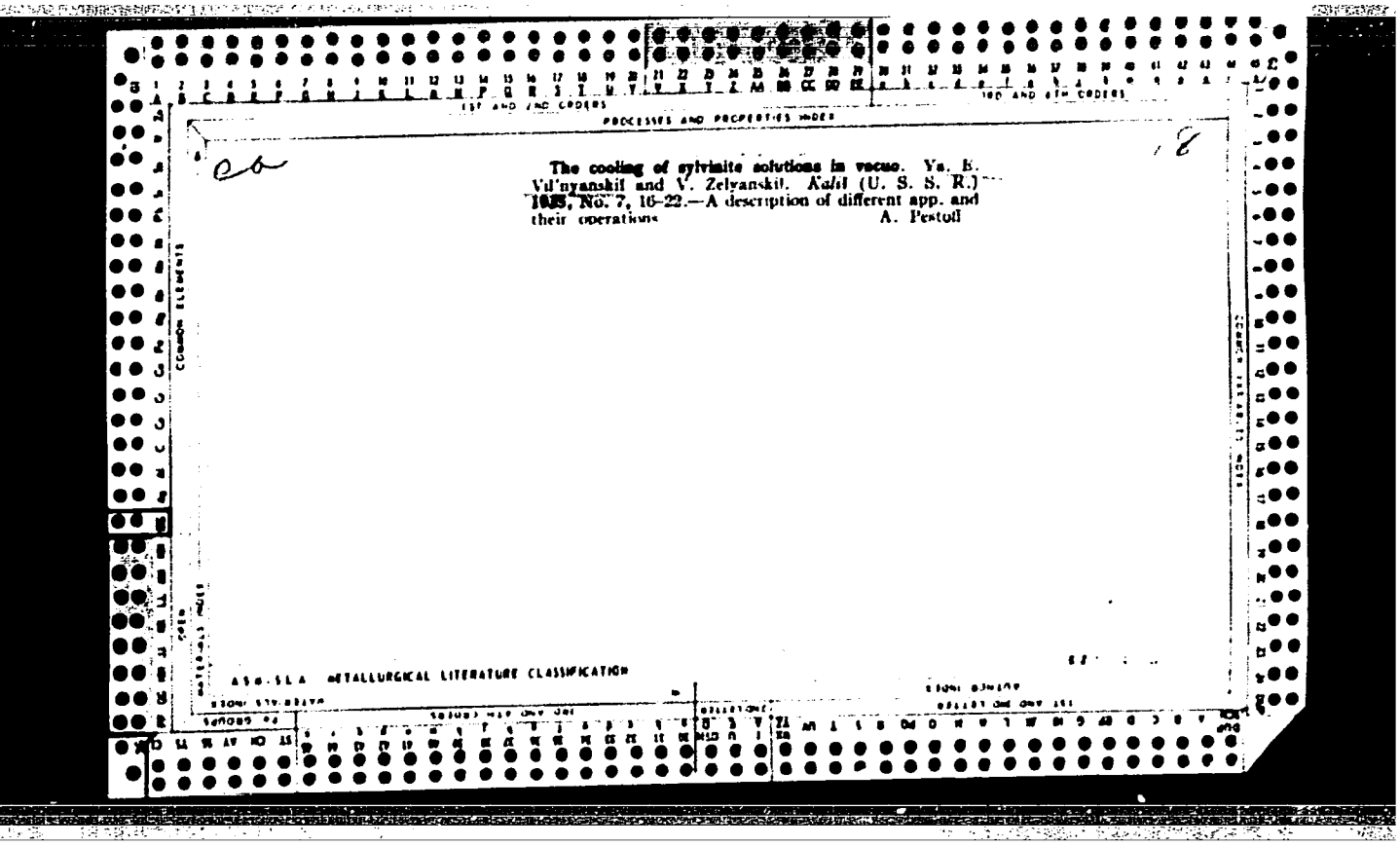
18

Extraction of bromine from sylvinite. Ya. Vil'nyan-skii and V. Zelyanskii. *Kalii* 1935, No. [illegible], 12-17.

Despite the low content of Br (0.05%) in Solikamsk sylvinite, it can be extd. economically. The best results are obtained with a mother liquor concd. to 0.08% Br before extn. with Cl_2.

S. L. Madorsky

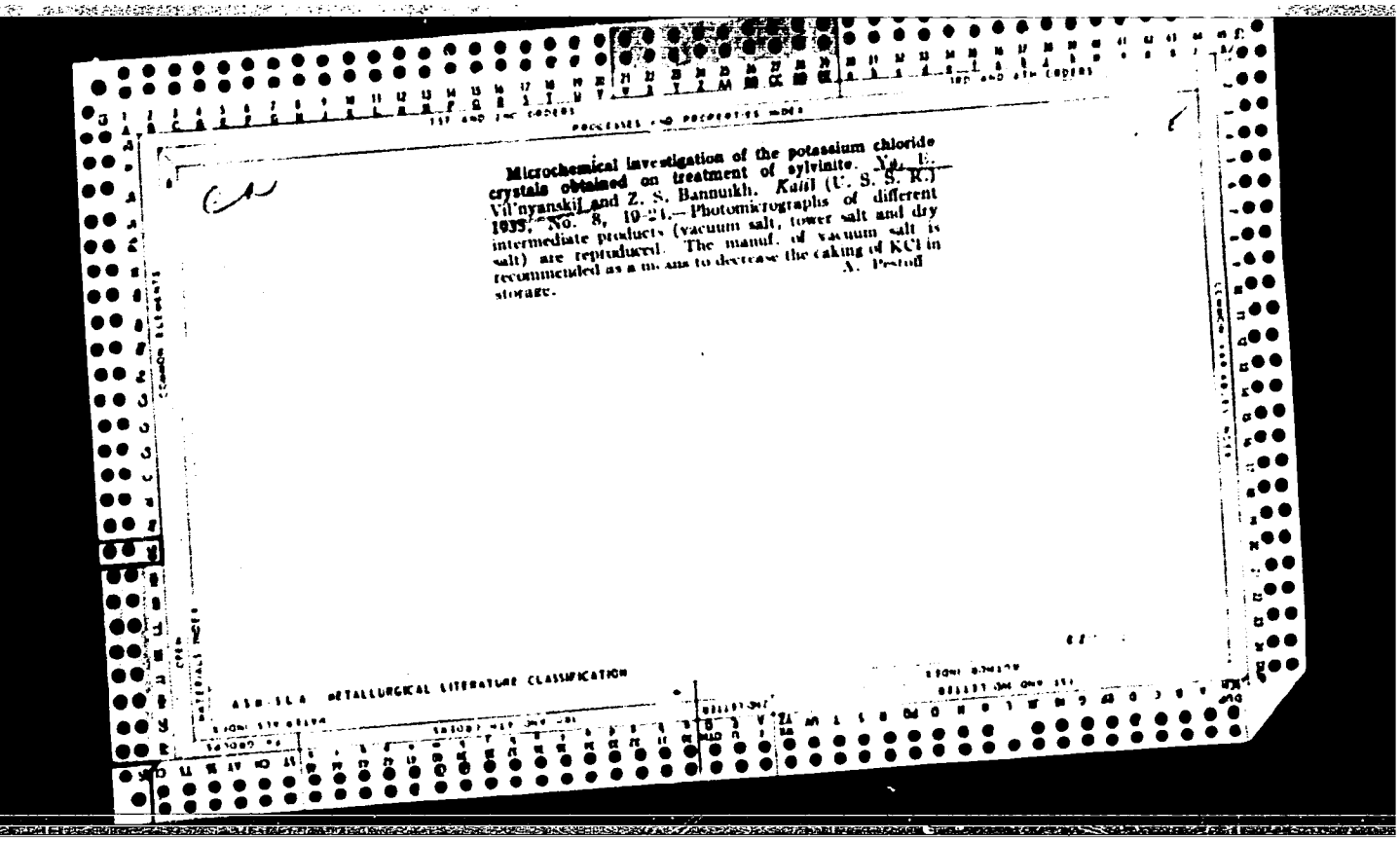
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

The cooling of sylvinite solutions in vacuo. Ya. B. Vil'nyanskii and V. Zelyanskii. *Kalii* (U. S. S. R.) **1935**, No. 7, 16–22.—A description of different app. and their operations. A. Pestoll

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Microchemical investigation of the potassium chloride crystals obtained on treatment of sylvinite. Yu. I. Vil'nyanskii and Z. S. Bannukh. *Kalii* (U. S. S. R.) 1935, No. 8, 19–21.—Photomicrographs of different intermediate products (vacuum salt, tower salt and dry salt) are reproduced. The manuf. of vacuum salt is recommended as a means to decrease the caking of KCl in storage. A. Pestrud

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

CA

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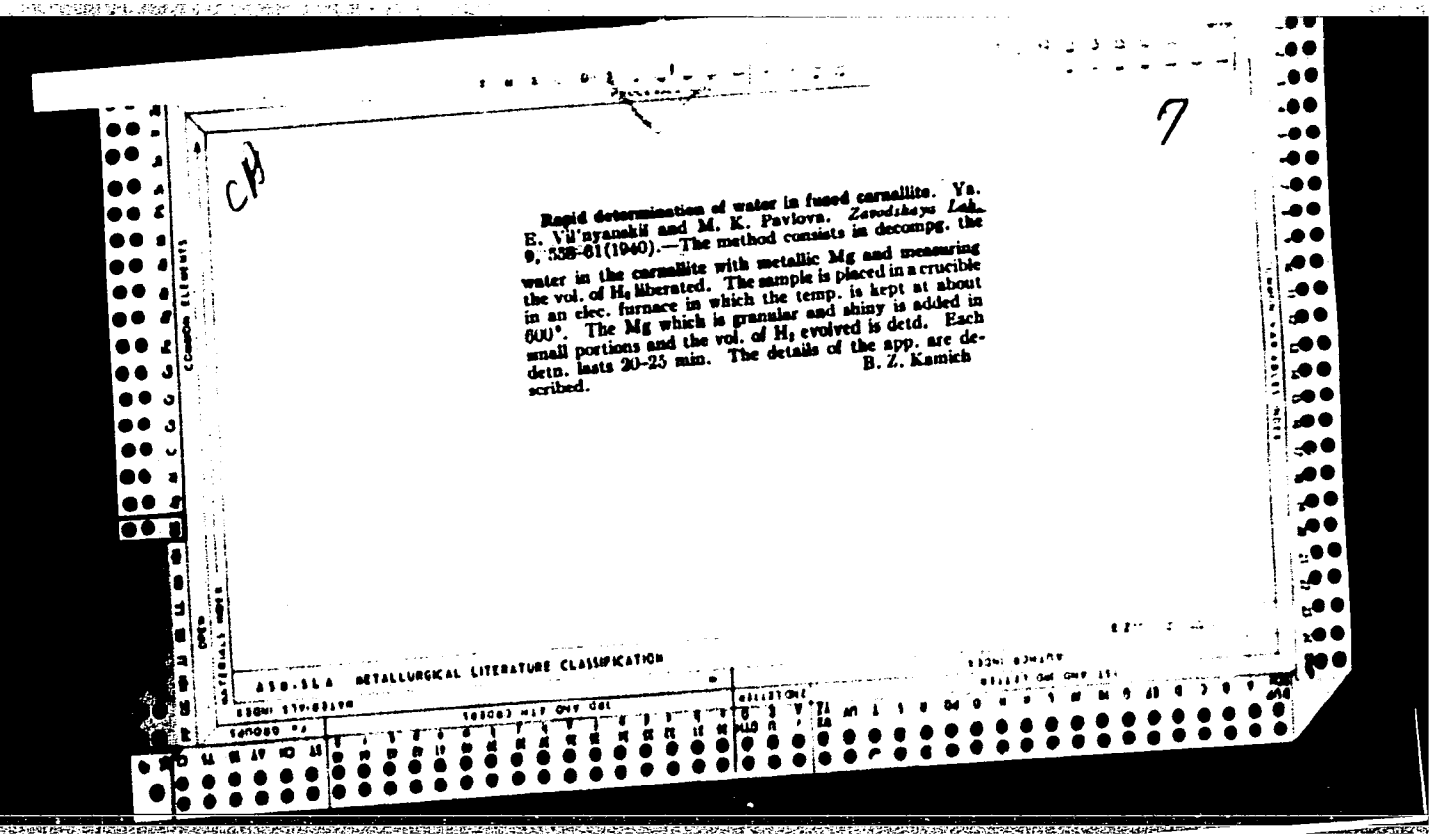
The limit of accumulation of bromine in sylvinite solution. E. Ya. Vil'yanskii and V. Zelyanskii. Kalii (U. S. S. R.) 1936, No. 3, 32-4.—A discussion.

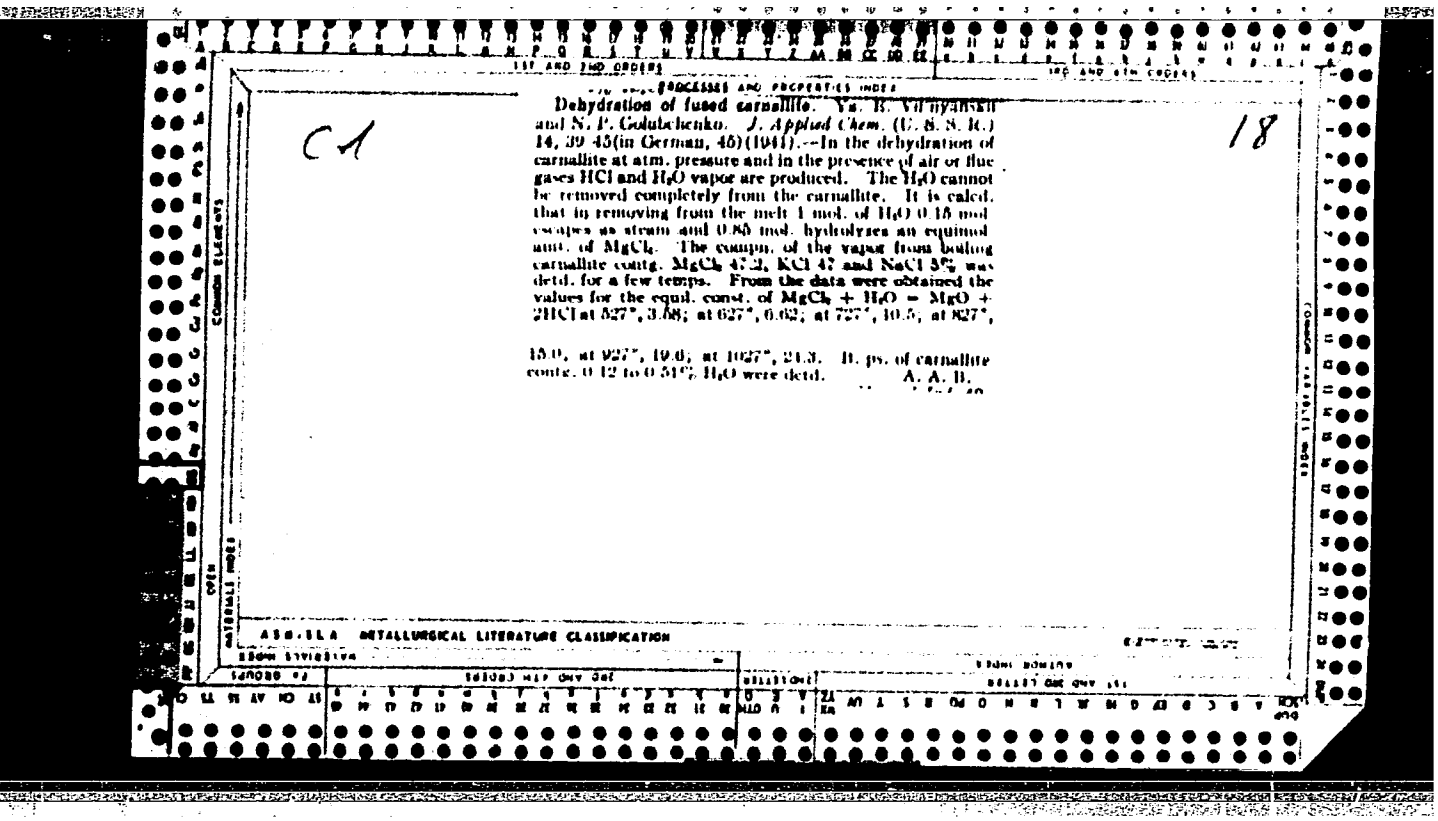
A. Pestoff

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Rapid determination of water in fused carnallite. Ya. E. Vil'nyanskii and M. K. Pavlova. *Zavodskaya Lab.* 9, 538-61(1940).—The method consists in decomps. the water in the carnallite with metallic Mg and measuring the vol. of H_2 liberated. The sample is placed in a crucible in an elec. furnace in which the temp. is kept at about 600°. The Mg which is granular and shiny is added in small portions and the vol. of H_2 evolved is detd. Each detn. lasts 20-25 min. The details of the app. are described.

B. Z. Kamich



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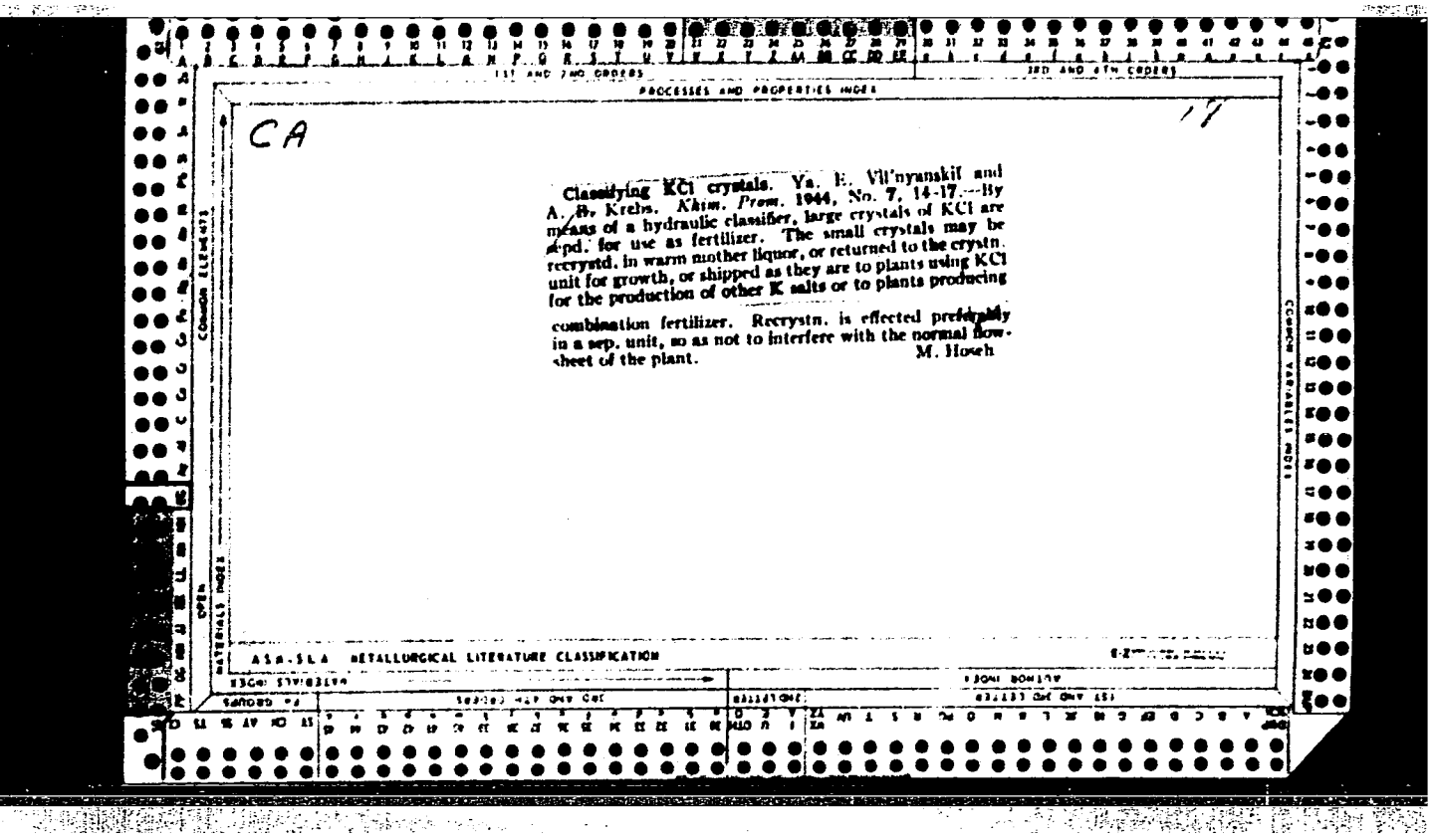
18

Dehydration of fused carnallite. Yu. K. Delimarskii and N. P. Golubchenko. *J. Applied Chem.* (U. S. S. R.) 14, 39-45(in German, 48)(1941).—In the dehydration of carnallite at atm. pressure and in the presence of air or flue gases HCl and H_2O vapor are produced. The H_2O cannot be removed completely from the carnallite. It is calcd. that in removing from the melt 1 mol. of H_2O 0.15 mol escapes as steam and 0.85 mol. hydrolyzes an equimol amt. of $MgCl_2$. The compn. of the vapor from boiling carnallite contg. $MgCl_2$ 47.2, KCl 47 and NaCl 5% was detd. for a few temps. From the data were obtained the values for the equil. const. of $MgCl_2 + H_2O = MgO + 2HCl$ at 527°, 3.68; at 627°, 6.62; at 727°, 10.5; at 827°, 15.0; at 927°, 19.6; at 1027°, 21.3. H. ps. of carnallite contg. 0.12 to 0.51% H_2O were detd. A. A. B.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

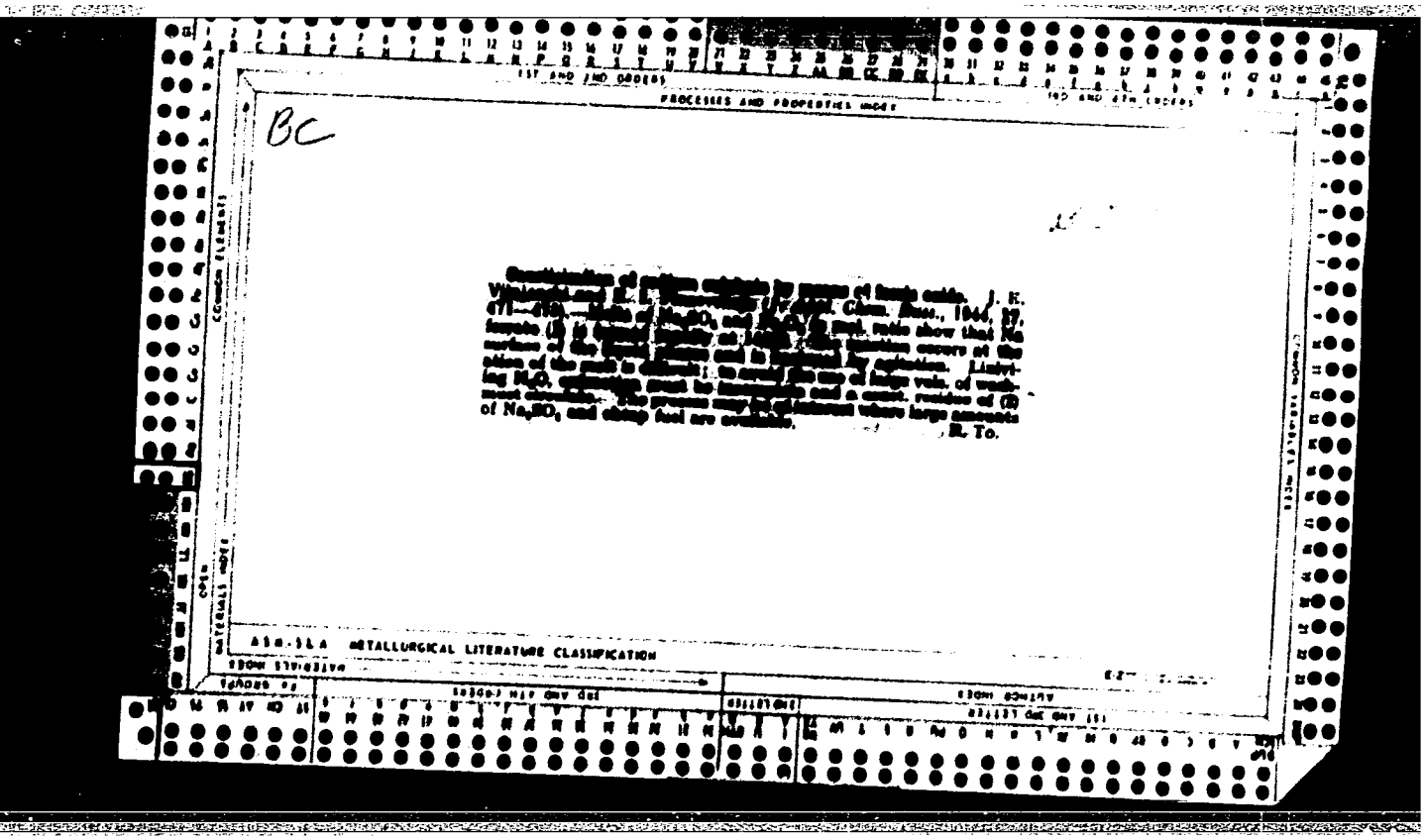


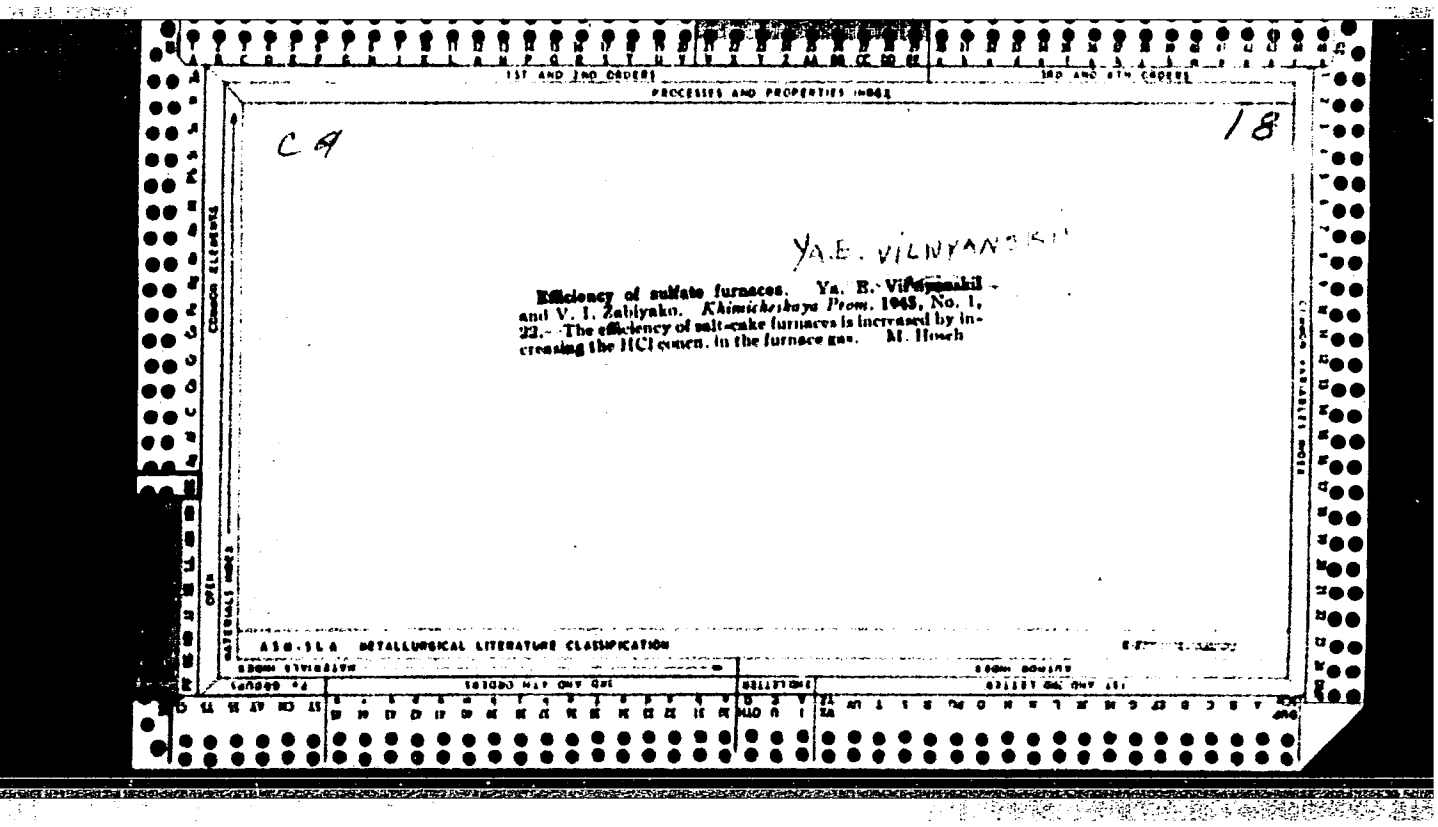
CA

17

Classifying KCl crystals. Ya. E. Vil'nyanskif and A. B. Krelis. *Khim. Prom.* 1944, No. 7, 14-17.—By means of a hydraulic classifier, large crystals of KCl are sepd. for use as fertilizer. The small crystals may be recrystd. in warm mother liquor, or returned to the crystn. unit for growth, or shipped as they are to plants using KCl for the production of other K salts or to plants producing combination fertilizer. Recrystn. is effected preferably in a sep. unit, so as not to interfere with the normal flow-sheet of the plant.

M. Hoseh



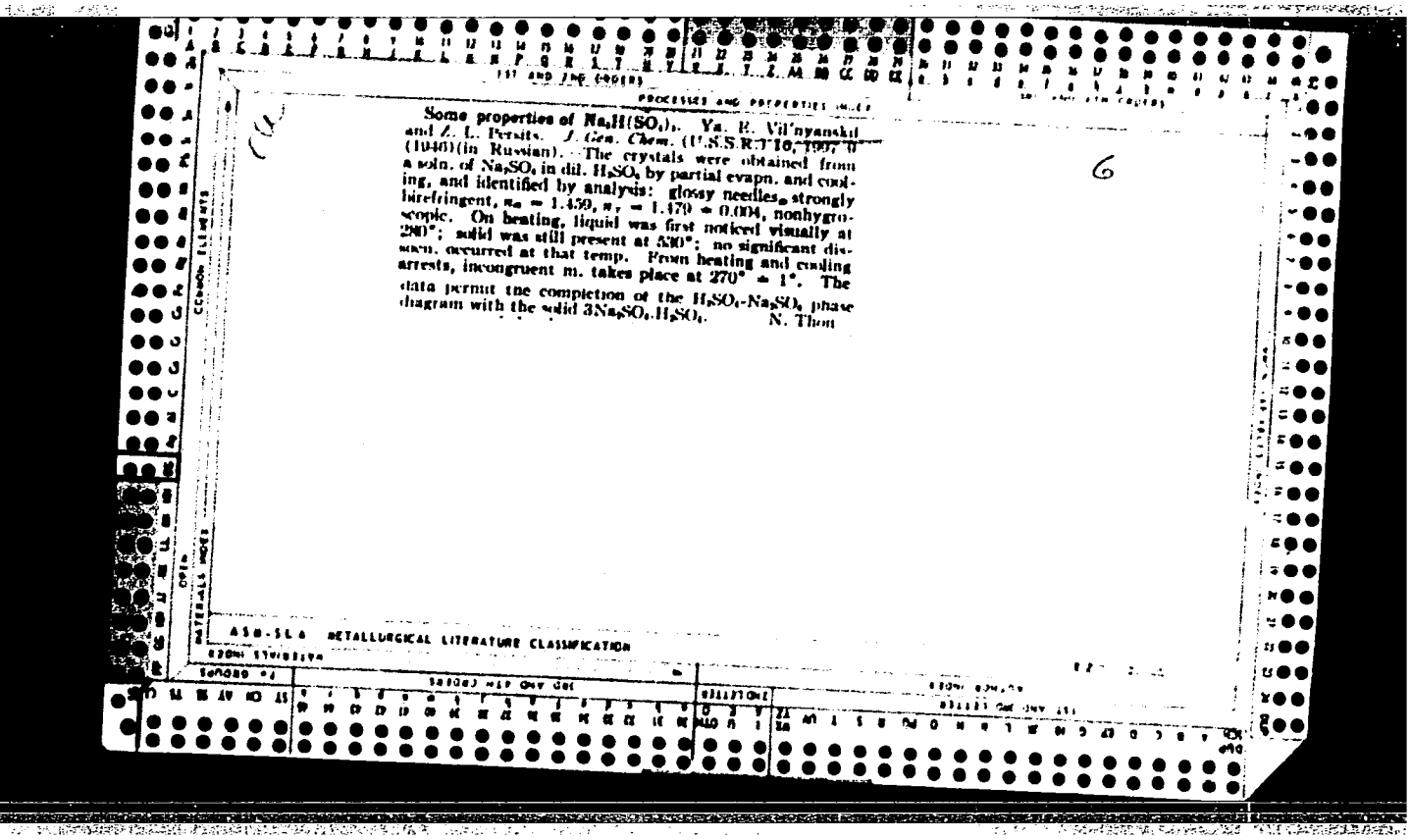


CA

18

YA.E. VILNYANSKII

Efficiency of sulfate furnaces. Ya. E. Vil'nyanskii and V. I. Zabiyako. *Khimicheskaya Prom.* 1948, No. 1, 22.—The efficiency of salt-cake furnaces is increased by increasing the HCl concn. in the furnace gas. M. Hosch



Some properties of $Na_3H(SO_4)_2$. Ya. E. Vil'nyanskii and Z. L. Persits. *J. Gen. Chem.* (U.S.S.R.) 10, 1997, 0 (1940)(in Russian). The crystals were obtained from a soln. of Na_2SO_4 in dil. H_2SO_4 by partial evapn. and cooling, and identified by analysis: glossy needles, strongly birefringent, $n_\alpha = 1.459$, $n_\gamma = 1.479 \pm 0.004$, nonhygroscopic. On heating, liquid was first noticed visually at 280°; solid was still present at 330°; no significant dissocn. occurred at that temp. From heating and cooling arrests, incongruent m. takes place at 270° ± 1°. The data permit the completion of the H_2SO_4-Na_2SO_4 phase diagram with the solid $3Na_2SO_4.H_2SO_4$.

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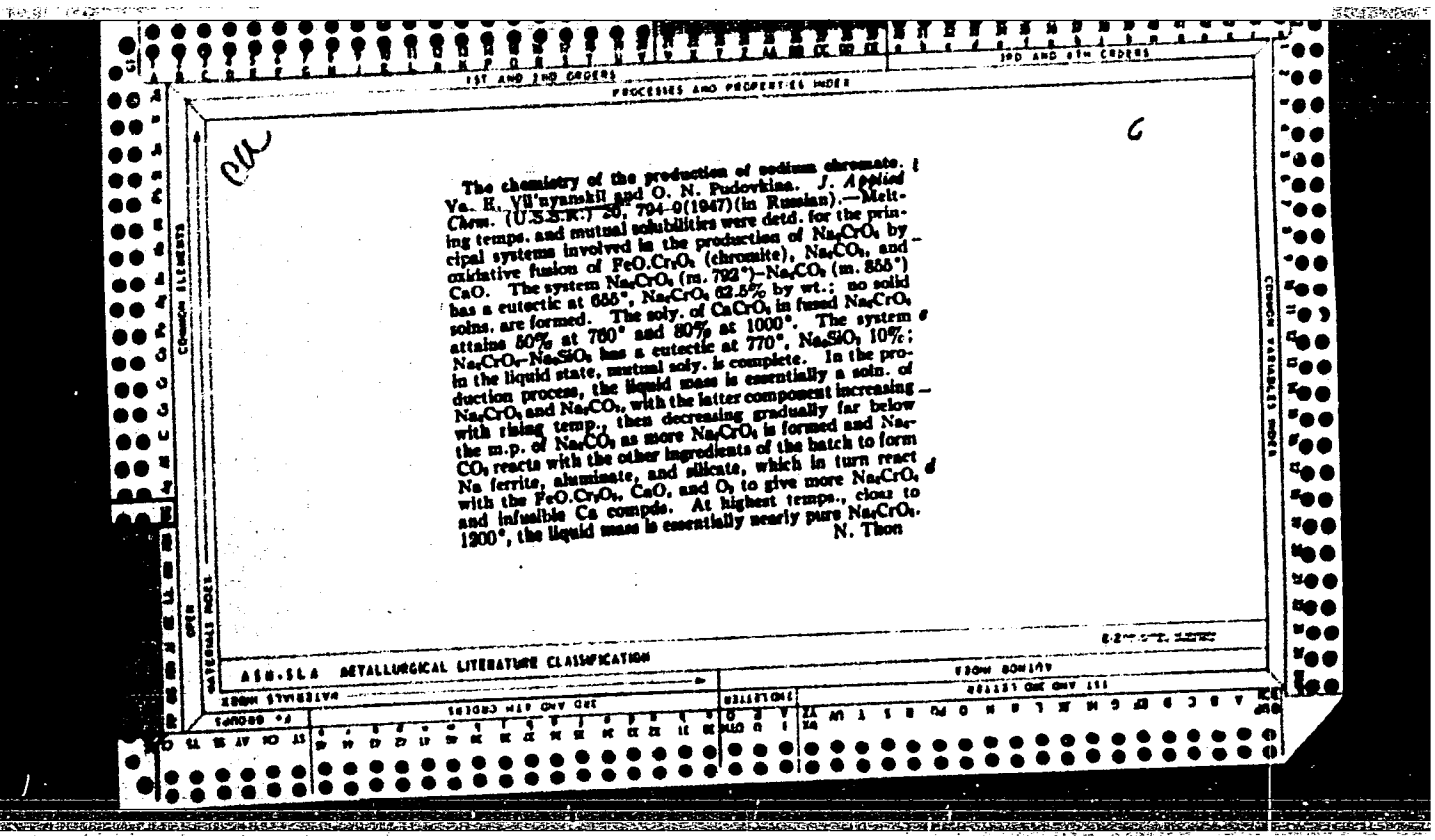

The chemistry of the production of sodium chromate. Ya. E. Vil'yanskii and O. N. Pudovkina. *J. Applied Chem.* (U.S.S.R.) 20, 794-9(1947)(in Russian).—Melting temps. and mutual solubilities were detd. for the principal systems involved in the production of Na_2CrO_4 by oxidative fusion of $FeO.Cr_2O_3$ (chromite), Na_2CO_3, and CaO. The system Na_2CrO_4 (m. 792°)–Na_2CO_3 (m. 858°) has a eutectic at 650°, Na_2CrO_4 62.5% by wt.; no solid solns. are formed. The soly. of $CaCrO_4$ in fused Na_2CrO_4 attains 80% at 780° and 80% at 1000°. The system Na_2CrO_4–Na_2SiO_3 has a eutectic at 770°, Na_2SiO_3 10%; in the liquid state, mutual soly. is complete. In the production process, the liquid mass is essentially a soln. of Na_2CrO_4 and Na_2CO_3, with the latter component increasing with rising temp., then decreasing gradually far below the m.p. of Na_2CO_3 as more Na_2CrO_4 is formed and Na_2CO_3 reacts with the other ingredients of the batch to form Na ferrite, aluminate, and silicate, which in turn react with the $FeO.Cr_2O_3$, CaO, and O_2 to give more Na_2CrO_4 and infusible Ca compds. At highest temps., close to 1200°, the liquid mass is essentially nearly pure Na_2CrO_4.

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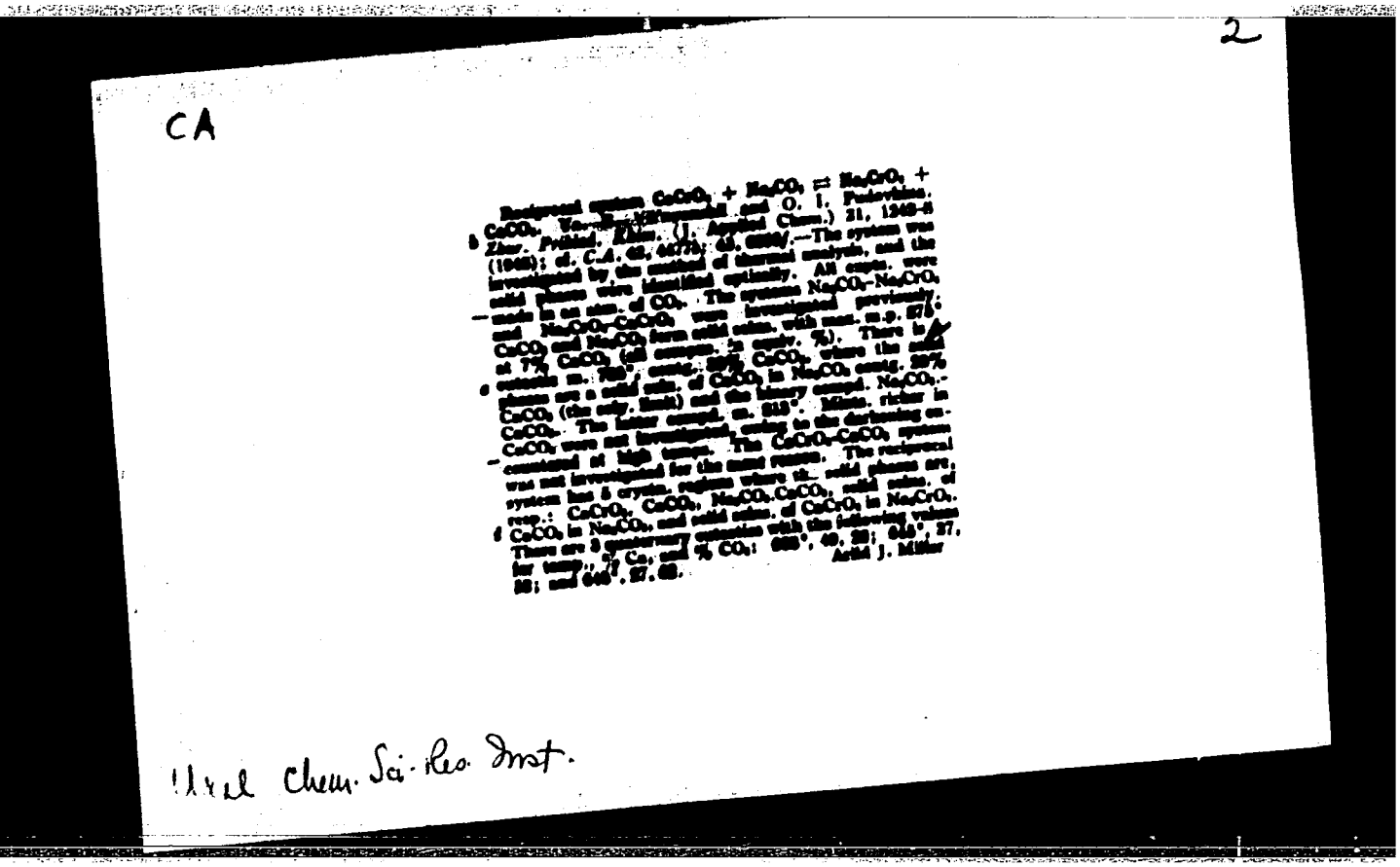
Binary system sodium chromate-calcium chromate. Ya. E. Vil'nyanskii and O. I. Fedot'eva. *Zhur. Obshchei Khim.* (*J. Gen. Chem.*) 18, 1033-6(1948).—The system was studied by thermal analysis and microscopic examn. The m.p. of mixts. rises from that of pure Na_2CrO_4 (790°) to a max. of 812° at about 15 mol.% $CaCrO_4$, and then drops to the eutectic at 740°, with the formation of solid solns. over the whole range. The eutectic occurs at 48.4 mol.% $CaCrO_4$, and is in equil. with a solid soln. contg. 44 mol.% $CaCrO_4$ and with pure $CaCrO_4$. The m.p. rises sharply from the eutectic towards higher concns. of $CaCrO_4$: at 80 mol.% $CaCrO_4$ the m.p. is about 975°. No measurements were made beyond this point because of decompn. of the $CaCrO_4$. Arild J. Miller

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



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Natl Chem. Sci. Res. Inst.

VIL'MYANSKIY, YA. YE.

22955 O roli ferrata natriya v protsesse obrazovaniya khromata natriya iz sody i estestvennogo khromita. Zhurnal prikl. Khimii, 1949, No. 7, C. 683-88. Bibliogr: 9 Nazy.

SO: LETOPIS' NO 31, 1949

PROCESSES AND PROPERTIES INDEX

Role of sodium ferrate in the formation of sodium chromate from soda and natural chromite. Ya. I. Vil'nyanskii and O. I. Pudovkina. *Zhur. Priklad. Khim.* 22, 1061-8(1949); cf. C. A. 43, 1177b. (J. Applied Chem.)—In the fusion of natural $Cr_2O_3.FeO$ with Na_2CO_3 in air or O_2 at 1000-1200°, large hexagonal plates (up to 1 mm.) of Na_2FeO_4 are readily identified by their red to orange-yellow color and birefringence, n_g = 2.81, n_p > 2.43, and are easily distinguished from the much finer, and more highly birefringent Fe_2O_3 grains. Formation of ferrate is observed under the same conditions in fusion of ready-made ferrite, according to $Na_2Fe_2O_4$ + Na_2CO_3 + 1.5 O_2 = 2 Na_2FeO_4 + CO_2, confirmed by detns. of active O. The stability of Na_2FeO_4 above 1150° is due to its soln. in fused Na_2CO_3; in the free state, Na_2FeO_4 decomposes at that temp. Some amt. of Na_2FeO_4 is formed also when $Na_2Fe_2O_4$ is heated, in air or O_2, with Na_2CrO_4 to 1200°, but none is formed when Fe_2O_3 is heated with Na_2CrO_4. The Na_2CrO_4 plays only the role of solvent which prevents decompn. of the Na_2FeO_4 formed. If Na_2CO_3 is added to $Na_2Fe_2O_4$ + Na_2CrO_4, the yield of Na_2FeO_4 increases. Replacement of Na_2CO_3 by $CaCO_3$ is unfavorable. A batch of 0.70 g. Cr_2O_3, 2.22 g. Na_2CO_3, 0.08 g. MgO, heated 30 min. at 1150° in O_2 (7.5 l./hr.) dild. by N_2 yielded 91-3% conversion to Na_2FeO_4. Crystals of Na_2FeO_4 were identified also in samples from industrial fusion of mixts. of chromite, Na_2CO_3, and dolomite.

N. Thon

METALLURGICAL LITERATURE CLASSIFICATION

VIL'NYANSKIY, Ya. Ye.

USSR.

Solid solutions of magnesium hydroxychloride in magnesium chloride. Ya. E. Vil'nyanskii and E. I. Savinkova (Ural. S. M. Kirov Polytech. Inst.). *J. Appl. Chem. U.S.S.R.* 26, No. 8, 735-9(1953)(Engl. translation); *Zhur. Prikład Khim.* 26, 808-12(1953).—Equil. compns. of solid solns. of $MgOHCl$ in $MgCl_2$ were detd. in mixts. of HCl and H_2O vapor at equil. vapor compns. ranging from 50.7 to

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88.48 mole % Cl and at temps. of 400, 450, 500, and 550°.
These results showed that the compn. of the solid soln. was
sharply changed on changing compn. of the gas phase and
was almost independent of temp. at const. gas-phase
compn. The content of MgOHCl in the solid solns. was
bounded by a certain limit at each temp.; the value of this
limit increases with increasing temp. For the reaction
$MgCl_2$ (solid soln.) + $H_2O_{(g)}$ ⇌ MgOHCl (solid soln.) +
$HCl_{(g)}$ at the given temps. the following thermodynamic
equil. consts., K, were calcd.: 300°, 0.412; 400°, 0.427;
500°, 0.434; 600°, 0.440; 700°, 0.447. For solid solns.
$N_1MgCl_2.N_2MgOHCl$ the following activities of $MgCl_2$, a_1,
and MgOHCl, a_2, were calcd. at 500° (N_2, a_1, a_2): 0.06,
0.940, 0.060; 0.10, 0.900, 0.100; 0.15, 0.854, 0.148; 0.20,
0.808, 0.189; 0.25, 0.775, 0.221; 0.30, 0.739, 0.247; 0.35,
0.718, 0.263; 0.40, 0.707, 0.271. The activities at the other
temps. differ from those at 500° by less than 0.01. The
following results were obtained for the soly. of MgOHCl in
cryst. $MgCl_2$ (temp., mole % MgOHCl, mole % HCl in the
gas phase): 310°, 12, 75.4; 342°, 15, 70.6; 385°, 20, 64.4;
420°, 25, 60.0; 450°, 30, 56.3; 467°, 35, 54.2; 480°, 40,
52.0. For the reaction, $MgCl_2$ (satd. solid soln.) +
$H_2O_{(g)}$ ⇌ $MgOHCl_{(s)}$ + $HCl_{(g)}$, the values found for K
and the isobaric thermodynamic potential, $\Delta F°$ (cal./mole),
were (temp., K, $\Delta F°$): 310°, 3.400, −1420; 342°, 2.820,
−1270; 385°, 2.235, −1050; 420°, 1.935, −910; 450°,
1.745, −800; 467°, 1.645, −720; 480°, 1.585, −690.
For the reaction $MgCl_{2(s)}$ + $H_2O_{(g)}$ = $MgOHCl_{(s)}$ +
$HCl_{(g)}$, the following equations were calcd.: $\Delta H°$ =
$-2170 - 0.11T + 5.8 \times 10^{-4}T^2 - 2.06 \times 10^5 T^{-1}$ and
$\Delta F° = -2170 + 14.07T \log T - 5.8 \times 10^{-4}T^2 - 1.03 \times$
$10^5 T^{-1} - 33.97$. The entropy and heat of formation of
$MgOHCl_{(s)}$ at 25° were calcd. to be 17.2 e.u. and −19.312
kcal./mole, resp. It is impossible to eliminate hydrolysis
completely during dehydration of $MgCl_2$ if even a small
amt. of H_2O vapor is present in the dehydrating furnace to-
gether with the HCl. A. P. Mill.

Vil'nyanskiy, Ya. Ye.

AID P - 3730

Subject : USSR/Chemistry

Card 1/1 Pub. 152 - 10/16

Authors : Vil'nyanskiy, Ya. Ye. and Ye. I. Savinkova

Title : Thermal dissociation of magnesium hydroxychloride

Periodical : Zhur. prikl. khim. 28, 8, 864-871, 1955

Abstract : The mechanism of the reaction was studied by changing one of the three equilibrium factors. When heated in an inert gas mixture, magnesium hydroxychloride decomposes with evolution of HCl and H_2O-vapor and formation of solid solutions of MgCl(Cl,OH). Three tables, 1 diagram, 3 references, all Russian (1935-1953).

Institution : Ural Polytechnic Institute im. S. M. Kirov

Submitted : D 14, 1953

USSR/Inorganic Chemistry - Complex Compounds C.

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4083

Author : Bannykh, N.S., Vil'nyanskiy Ya.Ye.
Title : Contribution to the Study of Acid Sulfates of Potassium

Orig Pub : Zh. obshchey khimii, 1956, 26, No 4, 952-955

Abstract : $K_3H(SO_4)_2$ (I) was prepared by cooling an aqueous solution of K_2SO_4 (II) and H_2SO_4 (III) from 80° to room temperature. In polarized light, the crystals of I showed strong double refraction; the refraction coefficients n_p and n_g are, respectively, 1.474 and 1.525. On heating in the range of 207-213° one modification of I is converted to the other. Melting of I is incongruent; the melting point determined from thermal analysis data if of 268 ± 3°. Melting of I takes place according to peritectic reaction type, involving the formation of crystalline II and of a liquid phase which the authors

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USSR/Inorganic Chemistry - Complex Compounds C.

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4083

consider to be a saturated solution of II in fused $KHSO_4$. Beginning with 350° the solution undergoes decomposition with evolution of water vapor. By the method of optical analysis it was ascertained that on cooling of melts containing 67.22% II and 32.78% III, 68.31% II and 31.69% III or 69.09% and 30.91% III, crystals of I separate. From binary mixtures containing 69.85% II and 30.15% III or 71.44% II and 28.56% III, on cooling, II crystallizes out. The authors arrive at the conclusion that compounds X and Y, which have been reported previously (Kendall J., Landon, M.L., J. Amer. Chem. Soc., 1920, 42, 2131), are actually I and II, with a transformation point of I into II at 268°. On the basis of the results obtained, the authors have partially supplemented the solubility diagram of the II-III system.

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VIL'NYANSKIY, Ya.Ye.;BAKINA, N.P.

Solubility of water and of magnesium oxide in fused carnallite. Zhur. prikl. khim. 29 no.4:561-565 Ap '56. (MLRA 9:11)
(Carnallite) (Magnesium oxides)

VIL'NYANSKIY, Ya.Ye.; PERSITS, Z.L.

Theory of the sodium silicate method used in the production of sodium tungstate from calcium tungstate. Zhur. prikl. khim. v. 31 no.5:669-674 My '58. (MIRA 11:6)

1.Ural'skiy politekhnicheskiy institut im. S.M. Kirova.
(Sodium silicates) (Sodium tungstates) (Calcium tungstates)

5(1)
AUTHORS: Savinkova, Ye. I., Vil'nyanskiy, Ya.Ye. SOV/153-2-1-12/25

TITLE: On the Velocity of Dehydrogenation From Melted Carnallite During Chlorination (O skorosti obezvodorozhivaniya rasplavlennogo karnallita v protsesse khlorirovaniya)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1959, Vol 2, Nr 1, pp 59-63 (USSR)

ABSTRACT: Carnallite is partially hydrolyzed during dehydrogenation. Accordingly, it retains dissolved OH^- ions (Ref 1) and suspended particles of magnesium oxide after the melting process. Such a melt is sometimes chlorinated before the electrolysis for the purpose of transforming magnesium oxide into magnesium chloride; the simultaneous extraction of hydrogen forms the subject of this article. For laboratory experiments artificial carnallite was employed which had passed through the first stage of dehydrogenation in a rotary furnace. It contained 3.6% MgO and 0.08% H. It was also used for investigating the industrial procedure. Figure 1 shows a series of laboratory experiments concerning the chlorination of melted carnallite by means of a chlorine-air mixture without reducing agent. Table 1 contains the relative velocities of the extraction of hydrogen (as

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mentioned in the title) by various gas mixtures (air, air - chlorine 1:1, chlorine). The results yielded by a works chlorinator are listed in table 2. Figure 2 shows the hydrogen content in various points of the chlorination range as a function of time. On the basis of these results the authors arrived at the following conclusions: (1) In the case of bubbling chlorination the above-mentioned velocity follows approximately the kinetic law of second order reactions. (2) This velocity rises with the concentration of chlorination in the gas mixture and with the increasing content of the reducing substance (carbon) in the suspension. (3) Hydrogen cannot be completely extracted from melted carnallite during the chlorination within finite time since the curve of the hydrogen waste gases follows an asymptotic course. There are 2 figures, 2 tables, and 2 Soviet references.

ASSOCIATION: Ural'skiy politekhnicheskiy institut; Kafedra tekhnologii neorganicheskikh veshchestv (Ural Polytechnic Institute, Chair of Technology of Inorganic Substances)

AUTHORS: Teterevkov, A.I., Vil'nyanskiy, Ya.Ye. SOV/80-32-2-38/56

TITLE: On the Role of Mass Exchange Between Gas and Liquid in the Process of the Chlorination of a Magnesium Oxide Suspension in Molten Chloride (O roli massoobmena mezhdu gazom i zhidkost'yu v protsesse khlorirovaniya suspenzii okisi magniya v khloridnom rasplave)

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol XXXII, Nr 2, pp 438-440 (USSR)

ABSTRACT: Metal chlorides may be produced by the chlorination of the metal oxides. The chlorination of oxides suspended in molten salt in a bubbling plate apparatus is investigated here. Coke was used as a reducer. Chlorination rate increases with the chlorine concentration. The chlorine consumption increases with the lowering of the chlorine concentration in the gaseous phase. The number of plates has a positive influence on the chlorination rate. There is a two-sided mass-exchange: the absorption of chlorine and the desorption of carbon oxides. The increase of the gas speed increases the rate of chlorination.
There are 2 tables, 2 graphs, and 3 references, 2 of which are Soviet, and 1 English.

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Ural Polytech Inst. im S. M. Kirov