Makarov, K. F.

AUTHOR: Makarov, K.F.   117-3-18/28

TITLE: A Device for Milling Spiral Grooves in Bushings (Prisposobleniye
            dlya frezerovaniya spiral'nykh kanavok vo vtulkakh,

PERIODICAL: Mashinostrotiel', 1958, # 3, p 36 (USSR)

ABSTRACT: A new device has been developed and is now in use at the
            Kolomna Diesel Locomotive Plant imeni Kuybyshev (Kolomenskiy
            teplovozostroitel'niy zavod imeni Kuybysheva). It has greatly
            facilitated and speeded up the operation of cutting internal
            spiral grooves in the upper piston rod end bushings as shown in
            figure 1. This device is used on a vertical milling machine
            provided with stops which automatically switch out the longi-
            tudinal table movement, and a stop for setting the milling
            cutter for the cutting depth. The milling process has to be
            repeated for every spiral groove.
                The plant produces two types of different sizes as such
            bushings, and the device is correspondingly adjustable.
                The article gives a detailed description accompanied by a
            detailed drawing of the device.
                There are 2 figures.

AVAILABLE: Library of Congress
Card 1/1

MAKAROV, K. I.

"Kinetics of Hydrocarbon Synthesis from Carbon Monoxide and Hydrogen."
Transactions of the All-Union Scientific Research Institute of Synthetic Liquid
Fuel and Gas, Moscow, Gostoptekhizdat, 1950, volume IV.

MAKAROV, K.I.; PINCHUK, A.K.

Coking method with natural gas feed to the coke ovens. Koks i khim.
no.8:18-21 '62.   (MIRA 17:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut prirodnykh ga-
zov (for Makarov). 2. Khar'kovskiy koksokhimicheskiy zavod (for
Pinchuk).

YEFIMENKO, Trifon Alekseyevich, dots.; MAKAROV, Konstantin
Ivanovich, assistent [deceased]; PANOV, V., red.;
MOKROUSOVA, A., tekhn. red.

[Manual on the overall mechanization of chemical protection
of plants] Kompelksnaia mekhanizatsiia khimicheskoi zashchi-
ty rastenii; spravochnik. Saratov, Saratovskoe knizhnoe izd-
vo, 1963. 95 p.   (MIRA 17:3)

MAKAROV, [...]

Kinetics [...]
40-48 [...]

TESNER, P.A.; MAKAROV, K.I.; YEFIMOV, L.I.; ZHIGAREV, S.V.;
KOROLEVA, K.A.; MASHKOV, A.N.

Obtaining nonoxidizing hot gas reducers from natural gas.
Gaz. prom. 8 no.9:38-43 S '63.   (MIRA 17:8)

ANDON'YEV, S.M.; GLAZKOV, P.G. [deceased]; KUCHIN, V.A. KONDRAT'YEV, Ye.M.;
      LEVITASOV, Ya.M.; MAKAROV, K.I., PANKRATOV, F.V.; PEVNYY, N.I.;
      POKRAS, L.M., POCHTMAN, R.M.; TRONIR, F.A.; SHEYNFAYN, F.I.;
      SHKLYAR, T.I.; Prinimali uchastiye: BERMAN, M.N.; VARFALOMEYEV,
      F.L.; ROBIN, M.A.; MOYSIYEVICH, G.I.; SAPIRO, V.S.; ALEKSEYEV,
      L.M.; POPOVA, R.S.

      Heating Martin furnaces with natural gas using reformers.
      Gaz. prom. 9 no.11:14-17 '64.   (MIRA 17:12)

PECHIK, V.K.; MAKAROV, K.I.; TESNER, P.A.

Packing of porous graphite materials with pyrolytic carbon during
their thermal treatment in the atmosphere of a natural gas. Khim.
prom. 40 no.11:808-813 N '64   (MIRA 18:2)

1. Moskovskiy ordena Lenina khimiko-tekhnologicheskiy institut
imeni D.I. Mendeleyeva i Vsesoyuznyy nauchno-issledovatel'skiy
institut prirodnogo gaza.

MAKAROV, K.K.

Geology, and oil and gas potentials of the Velikiy Kenelekan and
Siligir Valleys on the southern slope of the Anabar Shield.
Trudy VNIGRI no. 130:81-106 '59.   (MTRA 14:4)
        (Anabar Shield—Petroleum geology)
                    (Anabar Shield—Gas, Natural—Geology)

MAKAROV, K.K.

Recent data on petroleum and gas manifestations in the region of the
diamond deposit of the "Udachnaya" pipe (Daldyn River, Eastern Siberia).
Dokl. AN SSSR 134 no.3:650-653 S '60.   (MIRA 13:9)

1. Vsesoyuznyy neftyanoy nauchno-issledovatel'skiy geologorazvedochnyy
institut. Predstavleno akademikom N.S.Shatskim.
            (Daldyn Valley--Petroleum geology)

MAKAROV, K. KH.

MAKAROV, K. KH. Prophylaxis and treatment of the most important infectious diseases
of the young of farm animals. Ulan-Ude. Buriat-Mongol State Publishing House, 1952.
38 pages with illustrations. Price 55 kopeks, 2,000 copies.

So: Veterinariya; 30; (3); March 1953; Uncl.
TABCON

FILIPPOV, Vasiliy Rodionovich, prof.; MAKAROV, K.Kh., spets. red.;
    IL'INA, N.N., red.; BERKOVICH, M.Z., tekhn. red.

[Cytotoxic stimulation of immunity]TSitotoksicheskaia stimu-
liatsiia immuniteta. Ulan-Ude, Buriatskoe knizhnoe izd-vo,
1960. 276 p.   (MIRA 15:12)
        (IMMUNITY)   (SERUM)

GERASIMOV, V.G.; YEFIMOV, L.I., inzh.; KEL'TSEV, V.V., kand.tekhn.nauk; MAKAROV, K.M., inzh.; PODKOPAYEV, V.F., inzh.

Steam conversion of natural gas in a water gas producer. Masl.-zhir. prom. 27 no.9:31-34 S '61.   (MIRA 14:11)

1. Moskovskiy gidrozavod (for Gerasimov). 2. Vsesoyuznyy nauchno-issledovatel'skiy institut prirodnogo gaza (for Yefimov, Kel'tsev, Makarov, Podkopayev).
                     (Gas, Natural) (Gas producers)

MAKAROV, K.S.

Raise the responsibility for the training of scientific personnel. Vest.AN
Kazakh.SSR 10 no.9:51-57 S '53.   (MLRA 6:11)

1. Zavednyushchiy otdelom aspirantury.
            (Academy of Sciences of the Kazakh S.S.R.)

USSR/Chemistry - Proteins   Dec 52
            Plasteins

"Investigation of Plasteins Obtained From Enzymatic and Acidic Hydrolyzates of Casein Preparations," K. S. Makarov, Yaroslavl State Med Inst; Central Inst of Hematology and Blood Transfusion

"DAN SSSR" Vol 87, No 4, pp 975,978

The formation of plasteins from casein was studied. The plasteins were formed by the action of enzymes on enzymatic hydrolyzates and also by the action of enzymes on acidic hydrolyzates. Plasteins were found to be insol in Perov's solvent and sol in alkali only at pH 11.0 or above. Below pH 8.5, the soln forms a gel. Casein adds 1076 equiv of NaOH, casein-plastein adds 848; Perov's protoacid adds 924 and plastein derived from Perov's protoacid adds 875. 1.341 g of oxygen were consumed in the oxidation of one g of dehydrated plastein. Plastein was also analyzed electrophoretically. Presented by Acad A. N. Nesmeyanov 29 Oct 52.

240T2

MAKAROV, K. S.

1. MAKAROV, K. S.

2. USSR (600)

4. Plasteins

7. Study of plasteins obtained from enzymatic and acidic hydrolisates of caseine preparates.
    Dokl. AN SSSR 87 No. 6, 1952

9. Monthly Lists of Russian Accessions, Library of Congress, March 1953, Unclassified.

MAKAROV, K. S.

10

(6)

The molecular weight of plasteins. S. E. Bresler, K. S. Makarov, and S. Ya. Frenkel (Inst. High-Mol. Compds., Acad. Sci. U.S.S.R., Leningrad). Biokhimiya 19, 88-95 (1954).—Sedimentation and diffusion consts. and mol. wts. of two plasteins were detd. The plasteins proved to be polydispersed low-mol. peptides with an av. mol. wt. of about 800. The presence of high-mol. fractions in plastein compns. reported by others are explainable on the basis of secondary aggregation. Plasteins contain no heavy-mol. fractions. The formula of Gutfreund and Ogston (C.A. 43, 6250f) yielded correct sedimentation consts. for low-mol. polypeptides. Calcn. of mol. wt. on the basis of distribution in the diffusion layer close to the bottom of the tube can be made with the aid of the barometric Boltzmann formula.

B. S. Levine

10-15-54

MAKAROV, K.S.

Mass, absorption, electrosubmission, and spectrophotometry of plasteins. K. S. Makarov and N. I. Gavrilov. *Vestnik Moskov. Univ. 10, No. 2, Ser. Fiz.-Mat. i Estestven. Nauk No. 1, 81-6(1955); cf. C.A. 47, 5400d.*—Plasteins contain longer polypeptide chains than the initial proteins; this is confirmed by shift of absorption toward shorter wavelength region (in comparison with casein) and high Cu no. of the Cu complex. The plastein Cu complex shows an absorption max. of 560 mμ (that of casein, 555 mμ). Plasteins from albumins or from casein are electrophoretically homogeneous (curves are shown). The product from albumin has a greater tendency to gel during electro-... produced by amino acids react with alkaline proteins. In the presence of Cu complexes react with alkaline proteins in the form of Cu complex at pH 11; the Cu complexes were quite homogeneous. These show electrophoretic mobility intermediate between those of the initial proteins and their anhydroproteins. Detns. of amino N before and after electrophoresis show that while casein contains 23.9% cyclically bound N (dinitrobenzene, expressed as percentage of total N), its plastein contains 16.5% cyclic N; albumin plastein contains 5.71% N. It appears that for each ... peptide unit in plastein there is 0.9 unit of an amino acid in cyclic form; in casein this ratio is 1.4.   O. M. K...

Chair Organic Chemistry, Moscow State U.

5(3)
AUTHORS: Makarov, K. S., Gavrilov, N. I.   SOV/79-29-7-9/93

TITLE: On the Problem of the Properties and the Structure of Plasteins
           (K voprosu o svoystvakh i stroyenii plasteinov)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 7, pp 2143-2152 (USSR)

ABSTRACT: On the basis of the molecular weights of plasteins (2000-6000)
           the authors tried to apply the method of electrophoresis
           according to Tiselius (Ref 17) on paper (Ref 18) and the method
           of electric reduction (Ref 19) in connection with spectrophoto-
           metry and determinations of the copper indices in order to
           compare the plasteins with the initial albumins. Their properties
           were characterized also by determinations of amino nitrogen, the
           relative viscosity of the solutions, the titration numbers as
           well as by determination of the toxic and anaphylactic
           properties in animal experiments. For the synthesis of plasteins
           two albumins which are widely spread in animals and differ
           strongly from one another by their properties, served as initial
           substances: inhomogeneous casein, insoluble in water, and serum
           albumin of man, soluble in water. One portion of casein and
           albumin was hydrolyzed with the mucous juice of the stomachs of

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On the Problem of the Properties and the   SOV/79-29-7-9/83
Structure of Plasteins

pigs, the other one with pepsin, and the third one with
hydrochloric acid according to Perov (Ref 21). The synthesis
of the plasteins was carried out with the action of natural
gastric juice of dogs and with the action of pure pepsin.
Plasteins differ considerably from the initial albumins with
respect to all their properties. Albuminous plasteins are
relatively low-molecular, electrophoretic, homogeneous
anhydrides of amino acids, of peptide cyclic structure, and
have longer peptide chains in amino acids and a smaller amount
of ring bonds than the initial albumins. The synthesis of
plasteins is no simple process of hydrolysis. Hydrolysis and the
subsequent synthesis are accompanied by intensive regroupings in
the albumin structure. The characteristic feature of the plastein
properties consists in these regroupings. Figures 1,2,3 show

Card 2/3

On the Problem of the Properties and the   SOV/79-29-7-3/93
Structure of Plasteins

        the electrophoretic pictures, diagrams 4, 5 the spectrophoto-
        metric curves under various conditions. There are 5 figures,
        3 tables, and 28 references, 20 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet i Yaroslavskiy medi-
              tsinskiy institut (Moscow State University and Yaroslavl'
              Medical Institute)

SUBMITTED: May 12, 1958

Card 3/3

MAKAROV, K.S.

Fermentation synthesis of protein (plastein formation). Khim.belya
no.1:256-288 '61.   (MIRA 15:1)
                        (Proteins)

KOSHKINA, S.I.,dotsent; MAKAROV, K.S., dotsent.

> Lipoproteins in the blood serum in physiological pregnancy and
> toxicoses. Vop.okh.mat.i det. 7 no.12:50-52 D'62.   (MIRA 16:7)

> 1. Iz kafedry akusherstva i ginekologii (zav.-prof. Ye.K.Aleksandrov)
> i kafedry obshchey khimii (zav.-dotsent K.S.Makarov) Yaroslavskogo
> meditsinskogo instituta.
> (LIPOPROTEINS)   (PREGNANCY)   (TOXEMIA)

KURYGIN, G.V.; VAKER V, K.A.

Pulmonary edema and tachyphylaxis in white rats following the intravenous injection of histamine obtained from acid hydrolysate of bull serum proteins. Nauch. i izv. vys. shkoly; Biol. nauki no.1:65-69 '62. (MIRA 15:1)

1. Rekomendovana kafedroi normal'noi fiziologii Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta. Submitted March 1, 1965.

L 10286-66   EWT(1)/EWT(m)/T/EWP(t)/EWP(b)/EWA(c)   IJP(c)   JD
ACC NR: AP5025317   SOURCE CODE: UR/0126/65/020/003/0349/0354

AUTHOR: Telesnin, R. V.; Makarov, K. T.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosuniversitet)

TITLE: Anisotropy of magnetic viscosity of some ferrite monocrystals with spinel
and garnet structures

SOURCE: Fizika metallov i metallovedeniye, v. 20, no. 3, 1965, 349-354

TOPIC TAGS: magnetic anisotropy, magnetic viscosity, ferrite, crystallography,
crystal, garnet

ABSTRACT: The magnetic viscosity of four ferrites (MgO 24+ MnO+ 32+ Fe_2O_3 44%;
MgO 10+ MnO 40+ Fe_2O_3 50%; nearly stoichiometric $NaFe_2O_3$; and $3Y_2O_3 \cdot 5Fe_2O_3$)
was measured under pulsing conditions, in the crystallographic directions [111],
[110], and [100], by using the method developed by R.V. Telesin and E.F. Kuritz-
yna (Ferrity, Minsk, Izd. AN BSSR, 1960, p.320). The magnetic viscosity was
studied by an interpretation of the hysteresis loop and by taking the time τ,
necessary for magnetic reversal, as the value of magnetic viscosity. The values
of coercive force H_c, maximal field H_m, and the $H_c : H_m$ ratios were determined

Card 1/2   UDC: 538.245

L 1000-66
ACC NR: AP9025317

from the hysteresis loops of the samples. The graphs presenting the results showed that the viscosities of each ferrite monocrystal were different in the various crystallographic directions, i.e. that their magnetic viscosity was anisotropic. The anisotropy was the strongest in the region of the medium fields, where the ferrites had the highest viscosity. The anisotropy of magnetic viscosity of ferrite monocrystals was characterized by the ratio of viscosities in the main crystallographic directions, i.e. by the ratio $\tau_{[111]} : \tau_{[110]} : \tau_{[100]}$. The highest values of this ratio in ferrites, having the structures of spinel and garnet, were 2.3 : 1.3 : 1 and 2.4 : 1.5 : 1, respectively. The highest viscosity, during reversal of magnetization in ferrites having the spinel structure, was observed in the direction [111]; the highest viscosity in ferrites having the garnet structure was observed in the direction [100]. Orig. art. has: 5 figures and 2 tables.

SUB CODE: 20/ SUBM DATE: 26Feb65/   NR REF SOV: 006/ OTHER: 001

Card 2/2

1. MAKAROV, K. V. Eng.

2. USSR (600)

4. Building Materials

7. Clay silicate. Biul. stroil. tekh. 9. no. 19, 1952

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

KLYM, G.G., kand. tekhn. nauk; ZUR PTYK, ... , ... ; MAKAROV ... ;
inzh.; YAKHONTOV, N.N., inzh.

Monolithic polystyrene plastic foams in ... ...
no.5:30-31 Jy '65.

LAKAROV, L.L.,   Cand Chem Sci —(diss) "Thermodynamic study of co-crystal-lization of certain alkaline/halogenides. Len, 1953. 15 p. (Len Order of Lenin State Univ im A.A.Zhdanov), 100 copies (KL, 1-9, 116)

-15-

MAKAROV, L. L.

AUTHORS: Ratner, A. P. (Deceased), Makarov, L. L.   78-1-10/43

TITLE: Thermodynamic Investigation of Cocrystallization in the
             System KCl - RbCl - H$_2$O (Termodinamicheskoye izucheniye
             sokristallizatsii v sisteme KCl - RbCl - H$_2$O)

ABSTRACT: According to the thermodynamic theory of electrolyte-
             distribution between the solid crystalline and the liquid
             phase, - Ratner theory - set forth 25 years ago the value
             of the fractionating coefficient D is expressed by thermo-
             dynamical functions:

$$D = \frac{\gamma'_+{}^{\nu'_+}}{\gamma_+{}^{\nu_+}} \cdot \frac{x^{(s)}m'_+{}^{\nu'_+}\zeta'_+{}^{\nu'_+}}{m_+{}^{\nu_+}\zeta_+{}^{\nu_+}} = Do,$$

$$D_o = \frac{a'_{Lo}}{a_{Lo}} \, e^{\frac{\mu_{os}-\mu_s}{RT}}$$

Card 1/5

Thermodynamic Investigation of Cocrystallization in the System   78-1-10/43
KCl-RbCl-H$_2$O

in which case $x^{(s)}$ - is the molar share of the micro component in the solid phase, whereas γ_+ and γ_+' - are the "practical" coefficients of activity of the ions of the micro- and macro-components; D - "real" fractionating-coefficient; a_{Lo} and a_{Lo}' - corresponding to the activities of the micro- and macro-components in saturated solutions, each of them in water (in the absence of other component); μ_{oS} and μ_S the chemical potential of the micro-component, corresponding in their own pure crystals and in the solid solution with a standard state; m- concentration in mol per 1000 g water; V_+ and V_+' - the cation-numbers which are formed in water with the dissociation of the salts of the micro- and macro-components; S and L indices corresponding to the solid and liquid phase. A strict analysis of these relations has not been carried out up till now for any system, since several of the above values are difficult to determine. The authors criticize the qualitative evaluations of various factors on the strength of non-strict simplifications (references 2 to 6). In this connection

Card 2/5

Thermodynamic Investigation of Cocrystallization in the   78-1-10/43
System KCl - RbCl - H$_2$O

it was more useful to study the common crystallization within a wide range of relation: from micro concentrations of one component to those of the other. In this case the application of the equation by Gibbs-Dyugem and the relations by Storonkin and Shul'ts (reference 7) with the systems concerned, becomes possible. The required values of the coefficient of activity for micro concentrations, can be determined by extrapolations of these data. Systems of alkaline halides which form anhydrous mixed crystals were selected for the sake of simplicity. Water was selected for the controlled or "third" component. In view of determining the change of the chemical potentials, the distribution of the components between the phases, as well as the dependence of the steam-pressure on the composition of the solution had thorougly to be investigated. The isotherm of solubility KCL - RbCl - H$_2$O in rectangular coordinates is shown in fig. 1. The dependence of the chemical potentials of the components on the composition of the mixed crystals K(Rb)Cl is shown in fig. 2. The values of the coefficients of activity of the components

Card 3/5

Thermodynamic Investigation of Coorystallization in the   78-4-10/43
System   KCl - RbCl - H_2O

in the solid phase are given in fig. 3. The extrapolation
was only possible for RbCl. The putting of the values
of the coefficients of activity into the equation (1) which
was determined from isopiestic data (reference 8) makes
possible the computation of all factore of Ratner's equation.
From this the free energy of the transition 1 mole RbC
from pure crystals to a mixed K(Rb)Cl in which RbCl is in
a standard state, can be determined. This free energy
amounts to

$$\Delta \mu_S = - \left(\mu_{oS} - \mu_S \right) = - 490 \text{ cal.}$$ The molar, free

energy of the formation of mixed crystals $\Delta \Phi_x$ (fig. 4)

was computed simultaneously. The entropy of mixture ΔH_x
was easily computed by comparison of this latter
value with the corresponding values ΔS_x (referenxe 9,10).
The mixed crystals are similar to the regular crystals at $25^{\circ}C$.
The concerned system is characteristic with respect to the
composition by the asymmetry of the function $\Delta \Phi_x$.

Card 4/5

Thermodynamic Investigation of Cocrystallization in the   78-1-10/43
System KCl - $RbCl$ - H_2O

There are 4 figures, 1 table, and 10 references, 3 of which
are Slavic.

SUBMITTED: August 23, 1957

AILABLE: Library of Congress

Card 5/5

AUTHORS: Makarov, L. L., Yevstrop'yev, K. K.,   SOV/76-32-7-35/45
          Vlasov, Yu. G.

TITLE: The Osmotic and Activity Coefficients of RbCl, CsCl and KJ in
          Highly Concentrated Aqueous Solutions (Osmoticheskiye koeffitsi-
          yenty i koeffitsiyenty aktivnostey RbCL, CsCl i KJ v vodnykh
          rastvorakh pri vysokikh kontsentratsiyakh)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol 32, Nr 7,
            pp 1618 - 1621 (USSR)

ABSTRACT: As in publications values of the above-mentioned coefficients
           are only found up to certain concentrations these values are
           determined in the present paper for higher concentrations at
           25°. Using the equation by Gibbs-Duhem a possibility for the
           calculation of the magnitude of the mean "practical" ion activity
           coefficient $\gamma_{\pm}$ is given for the case of the determination of
           the values of the activity of water for higher concentrations
           of the electrolytes employing the data already existing in this
           field. The isopiestic method by Robinson and Sinclair (Ref 1)
           was employed for the determination of the water activity;
Card 1/3   Kharned and Ouen (Ref 2) had proved the reliability of this

The Osmotic and Activity Coefficients of RbCl, CsCl and SOV/76-32-7-25/45
KJ in Highly Concentrated Aqueous Solutions

method. The diagram of the vacuum exsiccator used is given, from which fact may, among other things, be seen that glass and silver vessels were used. The water activity was determined according to calibration curves with NaCl and $CaCl_2$ solutions being used. The activity coefficients and the osmotic coefficients were calculated according to an equation. Besides the KJ-, NaCl- and $CaCl_2$-salts used also the method employed for the production of RbCl and CsCl is described. The investigation of the solubility of the salts was carried out according to the isopiestic method. The obtained values of the solubility at 25°, as well as those of the osmotic and activity coefficients are given in a table. There are 1 figure, 1 table, and 5 references, 1 of which is Soviet.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova
               (Leningrad State University imeni A.A.Zhdanov)

SUBMITTED.   March 15, 1957
Card 2/3

The Osmotic and Activity Coefficients of RbCl, CsCl and SCV/ˉ6-ˉ2-7-25,
KJ in Highly Concentrated Aqueous Solutions

1. Metal chlorides--Chemical properties   2. Aqueous solutions--Chemical properties
3. Rubidium chloride--Production   4. Cesium chloride--Production   5. Metal
chlorides--Adsorption

Card 3/3

AUTHORS: Ratner, A. P. (Deceased) Makarov, L. L.   T/76-32-8-13/47

TITLE: The Thermodynamic Investigation of the System KCl - RbCl - H₂O
               at 25° C ('Termodinamicheskoye issledovaniye sistem
               KCl - RbCl - H₂O pri 25° C')

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol 32, Nr 8,
               pp 1809-1814 (USSR)

ABSTRACT: The publications by Ans and Busch (d'Ans and Busch) (Ref 1,
               Wasastjerna (Wasastjerna) (Refs 5,6), Hövi (Hövi) (Ref 7),
               V. A. Rabinovich (Ref 9), Shlezinge (Ref 10), and A. V.
               Storonkin and M. L. Shults (Ref 11) are mentioned and ex-
               plained among the papers on the investigation of the problem
               mentioned above. After the thermodynamic theory by A. P.
               Ratner (Refs 12,13) a theoretic explanation is given, using
               the Nernst law of distribution as well as the Gibbs principle
               of equilibrium. From the experimental part may be seen that
               in investigating the solubility isothermal lines the method
               of the radiometric determination using Rb⁸⁶ and K⁴² was
Card 1/3   employed. The determinations of the distribution of the

The Thermodynamic Investigation of the System   SOV/76 32-8 13/37
KCl - RbCl - H$_2$O at 25°C I

components in the case of comparable amounts of RbCl and
KCl were carried out according to a "balance" method accord-
ing to .kreynemakers, taking into account the papers by V G
Khlopin and his students (Ref 14) as well as by G I.
Gorshtyan and N I Dilant'yeva (Refs 15 - 17). From the
results of the analysis the concentrations of the components
in the solid and liquid phase were calculated and the values
of the coefficients of fractionation were determined and
given in a table The determination of the vapor pressures
above the aqueous solutions (saturated with KCl or RbCl,
respectively at 25° was carried out according to the iso-
piestic method. as according to the data by Kharned and Cuen
(Ref 20) reliable data are obtained The results obtained
prove the data obtained by other authors on the formation of
the continuous series of mixed crystals
There are 1 figure, 3 tables, and 21 references, 13 of which
are Soviet

Card 2/3

The Thermodynamic Investigation of the System
KCl - RbCl - H₂O at 25°C. I.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova
                (Leningrad State University imeni A. A. Zhdanov)

SUBMITTED: March 15, 1957

Card 3/3

AUTHORS: Makarov, L. L., Vlasov, Yu. G.   3CV/2o-12o-1-29/63

TITLE: The Thermodynamics of the Solid Solutions CsCl - RbCl at 25°
                (Termodinamika tverdykh rastvorov CsCl - RbCl pri 25°)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 12o, Nr 1,
                pp. 111 - 113 (USSR)

ABSTRACT: The present paper determines the system CsCl - RbCl - H_2O at

                25° in order to determine the limits of the existence of the solid
                solution CsCl - RbCl and in order to investigate its thermody-
                namic properties. The experimental data as well as the results
                of the calculations carried out according to the relations by
                A. V. Storonkin and M. M. Shul'ts (Ref 2) are given in a table.
                The state of equilibrium between the liquid and solid phase was
                determined by means of a method elaborated by V. G. Khlopin which
                uses the isothermal removal of oversaturation with subsequent
                long term mixing (1o hours). The solid phase was investigated
                according to the method by Shreynemakers, using the radioactive
                isotopes Rb^{86} and Cs^{134} for the analysis. The experimental re-
                sults compiled in a table show the following:CsCl and RbCl form
Card 1/3   solid solutions with a gap of mixability reaching from lo,7 to

The Thermodynamics of the Solid Solutions CsCl - RbCl SOV/2o-12o-1-29/63
at 25°

93,3 molecular percent. The coefficients of the activity in the
saturated solutions remain constant within the limits of error
along the whole length of the isothermal line of solubility. In
the solid phase the coefficients of the activity of the solvent
on which the crystal structure of the solid solution depends are
with great accuracy equal to unity. The coefficients of the
activity of the dissolved substance maintain a constant value
different from unity. In the latter case the deviation from the
mean value is, however, greater. A table and a diagram show the
results of the final calculation of the change of the chemical
potentials $\Delta \mu_{CsCl}$ and $\Delta \mu_{RbCl}$ and of the change of the free

energy in the formation of the solid solution CsCl-RbCl. The solid
solution forms corresponding to the condition $\partial \Delta \phi / \partial x_z$, where

x_2 denotes the molecular proportion of the dissolved substance.

The composition of the saturated solutions is determined by the
coefficients of the activity of the two components. There are
Card 2/3   1 figure, 2 tables, and 3 references, 2 of which are Soviet.

The Thermodynamics of the Solid Solutions CaCl - RbCl SOV/20-120-1-29/63 at 25°

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova (Leningrad State University imeni A.A.Zhdanov)

PRESENTED: December 27, 1957, by A.N.Terenin, Member, Academy of Sciences, USSR

SUBMITTED: December 24, 1957

1. Alkali metals--Thermodynamic properties   2. Alkali metals-water systems--Analysis   3. Rubidium isotopes (Radioactive)--Applications 4. Cesium isotopes (Radioactive)--Applications   5. Mathematics --Applications

Card 3/3

S/181/6C/002/J1/20/035
B008/B014

24.7500

AUTHORS: Makarov, L. L., Lur'ye, B. G., Malyshev, V. N.

TITLE: Examination of the Densities of Mixed KCl-RbCl Crystals
and of the Diffusion of Rubidium Ions Therein

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 1, pp. 88-92

TEXT: The authors examined the densities of mixed KCl-RbCl crystals at
25°C and determined their concentration of vacancies according to Shottki
(Table 1). Fig. 1 represents the dependence of the degree of occupation
of the elementary lattice n upon the composition. The difference between
the results obtained by the authors and M. S. Ivankina (Ref. 7) is probab-
ly due to the different preparation of the samples. The configuration
component of the entropy change in the development of mixed KCl-RbCl
crystals was calculated with regard to the vacancies (Table 2). The re-
sults obtained are in agreement with experimental data. Next, the authors
studied the diffusion of Rb^+ ions at 670°C by means of the radioisotope
R^{86}. The results of diffusion measurement are given in Table 3. An analogy

Card 1/3

Examination of the Densities of Mixed KCl-RbCl   S/181/60/002/01/20/035
Crystals and of the Diffusion of Rubidium Ions   B008/B014
Therein

was found between the melting-point curves, the "outflow", the diffus.on
coefficients D, and the defectiveness of the mixed crystals. The tempira-
ture dependence of the diffusion coefficients was studied on three samples
(KCl, RbCl, and an equimolecular mixed crystal) (cf. Table 4). The results
obtained are represented as a function $\log D = f\left(\frac{1}{T}\right)$ in Fig. 3. The three

straight lines run parallel within the experimental limit of error. This
indicates that the diffusion process in the preparations under considera-
tion requires the same activation energy. Calculations have shown that it
amounts to 35000 ± 300 cal/mole. This may be explained by the fact that
the binding energy between the K^+ (or Rb^+) ions and the Cl^- anion is
virtually equal in crystals of any composition. The authors refer to
N. S. Kurnakov's papers. The X-ray structural analysis was carried out by
Ye. V. Stroganov and Engineer I. Kozhina. The authors thank Professor
A. N. Murin for his helpful advice. There are 3 figures, 4 tables, and
12 references, 5 of which are Soviet.

Card 2/3

Examination of the Densities of Mixed KCl-RbCl   S/181/60/002/01/20/035
Crystals and of the Diffusion of Rubidium Ions   B008/B014
Therein

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State
            University)

SUBMITTED: April 9, 1959

Card 3/3

S/145/60/000/005/001/010
D221/D301

AUTHOR: L.L. Makarov, Engineer

TITLE: Some problems of the theory of automatic dosimeters

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Mashinostroyeni-
                 ye, no. 5, 1960, 11 - 25

TEXT: The system of the weigher is non-linear and only its fi-
nal phase is considered, where the problem is reduced to a linear dynam-
ic system. The beam displacement as well as the trickle feed at this sta-
ge are small. Therefore, the mechanism (Fig. 1) can be reduced to the ki-
nematic chain of the beam weighing Q_b, its inertia in respect to the gra-
vity center J_b, and to the two suspended pans. One pan holds the dose and
weighs Q_1, whereas the other carries the counterbalance and weighs $Q2$.
It is assumed that the terminal knife edges and the fulcrum have finite
radii of rounding. Due to low speed the resistance produced by the vis-
cous friction is proportional to the former. The process of the dosimet-
ering is expressed analytically by the Langrange equation

Card 1/5

Some problems of the ...   S/145/60/000/005/001/010
D221/D301

$$\frac{d}{dt}\left(\frac{\partial T}{\partial \alpha'}\right) - \frac{\partial T}{\partial \alpha} + \frac{\partial U}{\partial \alpha} + \frac{\partial R}{\partial \alpha'} = M_\phi \tag{3}$$

where T is the kinetic energy; U is the potential energy; $R = 1/2\ \mu\left(\frac{d\alpha}{dt}\right)^2$.
Mathematical transformations demonstrate that the kinetic energy
of the system does not depend on angle α, and the second term of the
equation is zero. The potential energy is determined with the beam in
equilibrium ($\alpha = 0$). The final differential equation is

$$J\frac{d^2\varphi}{dt^2} + \left(\mu + \frac{l_1^2 \rho k}{g}\right)\frac{d\varphi}{dt} + \Omega c\,\varphi = l_1 \int_0^t \rho\,dt + \frac{l_1 vk}{g}\,\rho - M_0. \tag{18}$$

where $vk/g\ \rho$ represents the dynamic pressure produced by the material
fed at a speed v and intensity ρ . The quantity $l^2 \rho\,k/g$ is the coeffi-
cient of the reactive resistance. Eq. (18) is reduced to a linear dif-
ferential equation with constant parameters for the most frequent case

Card 2/5

Some problems of the ...

S/145/60/000/005/001/010
D221/D301

of ϱ = constant, and general solutions are given which provide the value of φ when the reduced gravity center is above, below or in line with the fulcrum. Each case is discussed in detail The curve plotted after simplifications for $c > 0$ agrees with the experimental oscillogram. When $c < 0$, there is no "balancing" of the measured dose. The corresponding curves reveal a rise of steepness with $c \to 0$. If $c = 0$, the curve of beam motion rises less abruptly than in the previous instance. For $\mu = 0$ and $c = 0$, $\varphi = 1_1 \varrho /6J \cdot t^3$. If $d\varphi_0/dt = \omega_0$, then $\varphi = \omega_0 t - b_1 q/2J \cdot t^2 + 1_1 \varrho /6J \; t^3$, where q is the underweight of the dose, and the beam is imparted a speed of ω_0. The above two equations are applied for all automatic devices which balance the dose in the last stage of the weighing process. When $c > 0$, the beam produces oscillations, the period of which is given by

$$T = 2\pi \sqrt{\frac{J}{Qc}} = 2\pi \sqrt{J\lambda} \quad \text{where} \quad \lambda = \frac{1}{Qc} \text{ is the sensitivity of the}$$

balance. The equation of the dynamic error for ϱ = constant contains variable and constant parts. The variable part of the dynamical error is proportional to the square root of the product of the weigher iner-

Card 3/5

Some problems of the ...

S/145/60/000/005/001/010
D221/D301

tia, its sensitivity, and to the rate of feed. The dynamical error caus-
es the irregular motion of the beam Its reduction requires a lower feed
and sensitivity which would affect the efficiency of the weighing mach-
ine This is overcome by various arrangements The logarithmic decrement
of damping is then discussed   There are 6 figures

ASSOCIATION: MVTU im Baumana (MVTU im Bauman)

SUBMITTED: December 3, 1959

Legend to Fig. 1:
A - position of beam during switching;
B - position of beam at the stop, when t ≠ 0;
C - position of beam at the instant that is being considered;
D - the feed of material in g/sec; v, cm/sec

Card 4/5/1

S/145/60/000/008/010/014/XX
D211/D304

AUTHOR: Makarov, L.L., Engineer

TITLE: Calculating output accuracy of proportioning automatic
               devices

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Mashinostroye-
               niye, no. 8, 1960, 58 - 67

TEXT: With the aid of the theory of random functions, dispersion
formulas are deduced for two errors occurring in automatic weight
proportioning of liquid and granulated substances: 1) The error due
to additional material falling on the balance after the latter has
responded; 2) The error in the angle of response of the balance
(two types of automatic devices are considered separately in deter-
mining the second error). A formula for total error is deduced. It
is stated that practical checking showed satisfactory agreement of
the actual dispersion with the theoretical results. There are 4 fi-
gures.

ASSOCIATION: MVTU im. N.E. Baumana (MVTU im. N.E. Bauman)
SUBMITTED: February 11, 1960
Card .1/1

S/076/60/034/009/027/04 XX
B020/B056

AUTHORS: Makarov, L. L. and Yevstrop'yev, K. K.

TITLE: Thermodynamic Study of the System KBr - KI - H₂O at 25°C

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 9,
              pp. 1967 - 1972

TEXT: The authors wanted to give a definition of the solubility isothermal
lines of the system mentioned in the title, to determine the limits of
existence of solid solutions of KBr - KI, and to determine the change in
the isobaric line potential ΔZ in their formation at 25°C. When evaluating
results, the relations suggested by I. Wasastjerna and V. Hovi (Ref. 7),
and T. H. Neuman (Ref. 8) were used. The solubility isothermal lines of the
system mentioned in the title at 25°C is given in Fig. 1, and the vapor
pressure isothermal line of water over solutions saturated with the
KBr - KI mixture is given in Fig. 2. The error in determining the activity
coefficients is estimated at $\pm$ 1 - 3%, which corresponds to an error of the
quantity ΔZ of $\pm$ 4%. For every range of existence of the solid solutions,
the constancy of the activity coefficients is characteristic. Table 4 gives

Card 1/2

Thermodynamic Study of the System   S/076/60/034/001/02 /041XX
KBr - KI - H_2O at 25°C   B020/B056

the values ΔZ calculated from the equation

$$\Delta Z_{p,T} = x_1\Delta\mu_1 + x_2\Delta\mu_2 \qquad (4),$$

where μ denotes the chemical potential. Fig. 3 shows a comparison between
the values ΔH and $T\Delta S$ for the formation of solid KBr - KI solutions from
pure crystals. Fig. 3 also gives the values of the deformation energy E,
calculated from the Neuman relation, on the assumption that disorder
prevails in the distribution of the mixing ions, and that the law of the
additivity of molecular volumes holds. The activity coefficients f_{KBr} and

f_{KI} as well as the mean ion coefficients $\gamma_{\pm KBr}$ and $\gamma_{\pm KI}$ in saturated
aqueous solutions at 25°C are given in Table 3. The authors thank Professor
A. N. Murin, Professor A. V. Storonkin, and Docent M. M. Shul'ts. There are
3 figures, 4 tables, and 16 references: 5 Soviet, 4 US, 2 German, 2 Italian,
and 3 Finnish.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova
              (Leningrad State University imeni A. A. Zhdanov)

SUBMITTED: December 16, 1958

Card 2/2

RATNER, A.P. [deceased]; MAKAROV, L.L.

    Thermodynamic investigation of the system KCl - RbCl - H_2O at
25° C. Part 2. Zhur. fiz. khim. 34 no. 11:2495-2502 N '60.
                                          (MIRA 14:1)

    1. Leningradskiy gosudarstvennyy universitet im. A.A. Zhdanova.
             (Potassium chloride)   (Rubidium chloride)

MAKAROV, L. L.

Cand Tech Sci - (diss) "Several problems of the theory of portion automatic machines." Moscow, 1961. 20 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Moscow Order of Lenin and Order of Labor Red Banner Higher Technical College imeni N. E. Bauman); 200 copies; price not given; (KL,10-61 sup, 216)

MAKAROV, L.L.; STUPIN, D. Yu.

Activity coefficients of KI and RbI in their concentrated aqueous solutions at 25°. Zhur. fiz. khim. 35 no.3:605-609 Mr '61.
(MIRA 14:3)

1. Leningradskiy gosudarstvennyy universitet im. A.A. Ahdanova.
(Potassium iodide) (Rubidium iodide)
(Activity coefficients)

MAKAROV, L.L.; STUPIN, D.Yu.

Change of isobaric potential during formation of KI - RbI solid
solutions at 25°C. Zhur. fiz. khim. 35 no. 4:743-747 Ap '61.
(MIRA 14:5)

1. Leningradskiy gosudarstvennyy universitet im. A.A. Zhdanova.
(Potassium iodide)   (Rubidium iodide)
(Solutions, Solid)

SHAUMYAN, Grigor Arutyunovich; MAKAROV, L.L., nauchnyy red.; KLIMOVICH,
Yu.G., red.; BARANOVA, N.N., tekhn. red.

[Program control of machine tools] Programmnoe upravlenie metal-
lorezhushchimi stankami. Moskva, Proftekhizdat, 1962. 174 p.
(MIRA 15:7)
(Machine tools—Numerical control)

RATNER, A.P. [deceased]; MAKAROV, L.L.

Crystallization coefficients of some alkali metal halides in the
presence of microconcentrations of one of the components. Radiokhimia
4 no.1:13-19 '62.   (MIRA 15:4)
          (Alkali metal halides) (Crystallization)

41549
S/076/62/036/010/002/005
B101/B186

AUTHORS: Makarov, L. L., and Pankov, A. G.

TITLE: Study of the RbI - CsI - H_2O system at $25^{\circ}C$

PERIODICAL: Zhurnal fizicheskoy khimii, v. 36, no. 10, 1962, 2241 - 2243

TEXT: The following aspects of the RbI - CsI - H_2O system were determined
at $25^{\circ}C$: solubility isotherms, the miscibility of components in the solid
phase, and the change in isobaric potential on formation of solid RbI-CsI
solutions. Furthermore, the activity coefficient (Table) was
determined from the data of isopiestic equilibria according to H. A. C.
McKay, J. K. Perring (Trans. Faraday Soc., 49, 163, 1953), and A. V.
Storonkin, M. M. Shul'ts (Vestn. Leningr. un-ta, no. 11, 193, 1954). The
solid phase was analyzed by using Rb^{86} and Cs^{134}. Results: (1) The
system has a eutectic point with the composition 1.42 M CsI, 7.01 M RbI,
and 17.962 mm Hg H_2O. (2) At $25^{\circ}C$ RbI and CsI form solid solutions in
extremely narrow concentration ranges; in CsCl-type solutions in the
range $0 < x_{RbI} < 0.163$, and in an NaCl-type solutions in the range
Card 1/3

Study of the RbI - CsI - H$_2$O ...   S/076/62/036/010/002/005
B101/B186

0.922 $\leqslant$ x$_{RbI}$ $\leqslant$ 1. Between 16.3 and 92.2 mole% RbI, the components do not
mix. (3) The following equation holds for the equilibrium of ternary
solutions at a constant activity a$_{H_2O}$ of water:

$1/(m_{RbI} + m_{CsI}) = 1/M_{RbI} + \alpha m_{CsI}/(m_{RbI} + m_{CsI})$, where m$_i$ and M$_i$ are the
molality of the i-th component in the ternary and binary solution,
respectively, at given a$_{H_2O}$; and α is a constant almost independent of

a$_{H_2O}$. (4) The fact that the solubility of Rb$^+$ is higher than that of

Cs$^+$, although its radius is smaller, is explained by the deviating
solubility of CsI in the series of alkali halides. There are 1 figure
and 1 table.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet
               (Leningrad State University)

Card 2/$\mathcal{f}$.3

Study of the RbI - CsI - H_2O ...

S/076/62/036/010/002/005
B101/B186

SUBMITTED: January 19, 1962

Table. Composition of coexisting phases, pressure of water vapor, activity
coefficients of components, and change in isobaric potential on formation
of 1 mole of solid RbI - CsI solutions. The horizontal line separates the
solid solutions with different crystal structures. Legend: (Γ) = solid;
($\mathcal{K}$) = liquid; По[1] = according to McKay and Perring; По[2] = according to
Storonkin and Shul'ts; $-\Delta Z$ is given in kcal/mole.

Card 3/3

SHUL'TS, M.M.; MAKAROV, L.L.; MARINICHEV, A.N.; SU YU-ZHEN' [Su Yu-jên]

Thermodynamic study of the system $NH_4Cl-NiCl_2-H_2O$ at $25°C$. Zhur. fiz. khim. 37 no.6:1219-1222 Je '63. (MIRA 16:7)

1. Leningradskiy gosudarstvenyy universitet.
        (Ammonium chloride)   (Nickel chloride)
      (Systems (Chemistry)—Thermodynamic properties)

MAKAROV, L.L.; VLASOV, Yu.G.; KOPUNETS, R.

Thermodynamic study of the system KBr - RbBr - H_2O at 5 and 45°C. Part 1. Zhur. fiz. khim. 37 no.12:2763-2767 D '63.

1. Leningradskiy universitet imeni Zhdanova.

(MIRA 17:1)

MAKAROV, L.L.; PANKOV, A.G.

System RbI - CsI - H_2O at 25°. Zhur.fiz.khim. 36 no.10:2241-2243
O '62.
(MIRA 17:4)

1. Leningradskiy gosudarstvennyy universitet.

SUL'TS, M.M.; MAKAROV, L.L.; SU YU-ZHEN' [Su Yu-jên]

Activity coefficients of $NiCl_2$ and NH_4Cl in binary and ternary solutions at $25°$. Zhur.fiz.khim. 36 no.10:2194-2198 O '62.

(MIRA 17:4)

1. Leningradskiy gosudarstvennyy universitet imeni Zhdanova.

MAKAROV, L.L.; VLASOV, Yu.G.; INTOV, V.I. (Leningrad)

Thermodynamic investigation of the system RbBr - RoI - H2O
at 25 and 45°C. Zhur. fiz. khim. 38 no.10:2403-2407   '64.

1. Leningradskiy gosudarstvennyy universitet.

MALYSHEV, V.N.; SHUL'TS, M.M.; MAKAROV, L.L.

Equilibrium of anomalous mixed crystals. Zhur. fiz. khim.
39 no.6:1504-1507 Je '65.   (MIRA 18.11)

1. Leningradskiy gosudarstvennyy universitet imeni Zhdanova.
Submitted March 25, 1964.

MAKAROV, L. M., Eng.

Bearings (Machinery)

Increasing the strength of stamps for the cold stamping of large balls. P. dsipnik No. 1, 1953.

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

KONOV, I.I.; MAKAROV, L.M.

New method for the alignment of the disk spindle axle on internal grinding machines. Podshipnik no.7:31-32 Jl '53.

(MLRA 6:8)

(Grinding and polishing)

BAYKOV, S.P., kand. tekhn. nauk; BELENKO, I.S., kand. tekhn. nauk;
BELKOV, S.F., inzh.; BELYANCHIKOV, M.P., inzh.; BERNSHTEYN,
I.L., inzh.; BOGORODITSKIY, D.D., inzh.; BOLONOVA, Ye.V.,
kand. tekhn. nauk; BROZGOL', I.M., kand. tekhn.nauk;
VLADIMIROV, V.B., inzh.; VOLKOV, P.D., kand. tekhn. nauk;
GERASIMOVA, N.N., inzh.; ZHUKHOVITSKIY, A.F., inzh.;
KABANOV, M.F., inzh.; KALEVTSOV, V.M., kand. tekhn. nauk;
KOLOTENKOV, I.V., inzh.; KONDRAT'YEV, I.M., inzh.;
KUZNETSOV, I.P., kand. tekhn. nauk; L'VOV, D.S., kand.
tekhn. nauk; LYSENKO, I.Ya., kand. tekhn. nauk; MAKAROV,
L.M., inzh.; OLEYNIK, N.D., inzh.; RABINER, Ye.G., inzh.;
ROZHDESTVENSKIY, Yu.L., kand. tekhn. nauk; SAKHON'KO, I.M.,
kand. tekhn. nauk; SIDOROV, P.N., inzh.; SPITSYN, N.A., prof.,
doktor tekhn. nauk; SPRISHEVSKIY, A.I., kand. tekhn. nauk;
CHIRIKOV, V.T., kand. tekhn .nauk; SHEYN, A.S., kand. tekhn.
nauk; NIBERG, N.Ya., nauchnyy red.; BLAGOSKLONOVA, N.Yu., inzh.,
red. izd-va; SOKOLOVA, T.F., tekhn. red.

[Antifriction bearings; manual] Podshipniki kacheniia; spra-
vochnoe posobie. Moskva, Gos. nauchno-tekhn. izd-vo mashino-
stroit. lit-ry, 1961.   828 p.   (MIRA 15:2)
            (Bearings (Machinery))

SPRISHEVSKIY, A.I., kand.tekhn.nauk; MAKAROV, L.M., inzh.

Over-all mechanization and automation in the bearing industry. Mekh. i avtom. proizv. 15 no. 5:1-7 My '61.   (MIRA 14:5)
        (Bearing industry--Technological innovations)
                    (Automation)

MAKAROV L.N.

Economic efficiency of air drilling on the strict Plateu.
Razved. 1 okh. nedr 29 no.10:30-31 C '63.
                                              (MIRA 17:12)

1. Priaral'skaya gidr.geologicheskaya ekspeditsiya.

OSTROVSKIY, L.A.; MAKAROV, L.N.

Compressed air drilling of dry and water-bearing sands. Biul. nauoh.-tekh. inform. VIMS no.2:61-63 '63.   (MIRA 18:2)

1. Priaral'skaya gidrogeologicheskaya ekspeditsiya.

MAKAROV, L.N., doc. dr. tech.

Effect of the thermal preparation of fuel and mixtures on their
technological properties and coke quality. Paliva 45 no.2.41-
45 F '65.

1. Moscow Institute of Chemical Technology, Moscow.

MAKAROV, L.N., doc. DrSo.

Coking of coal in circular kilns. Paliva 45 no.3:76-80 Mr '65.

1. D.I.Mendeleyev Institute of Chemical Technology, Moscow.

MAKAROV, L. O.

"On Some Method of Getting Shear Ultrasonic Deformations."

report submitted for Ultrasonic Symp, Santa Monica, Calif, 14-16 Oct 64.

Acoustics Inst, AS USSR.

MAKAROV, L. O., ROSENBERG, L. D., and EEBCHUK, A. S.

"Mechanism of Destruction of Solid Surface Films by Acoustically Induced Cavitation," Paper presented at the Second International Congress on Acoustics, Cambridge, Mass., 17-23 Jun 56.

Acoustical Institute, of the AS USSR, Moscow, USSR.

Category : USSR/Acoustics - Ultrasound

J-4

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 2139

Author   : Bebchuk, A.S., Makarov, L.O., Rozenberg, L.D.
Inst   : Acoust. Inst., Acad. of Science USSR; Scient. Res. Inst. of Min. of Radio-
           technical Industry, Moscow.
Title   : On the Mechanism of Cavitational Destruction of Surface Films in the Sonic
           Field.

Orig Pub : Akust. Zh., 1956, 2, No 2, 113-117

Abstract : The subject of the study was a thin layer of rosin, coated in the form of an
           alcohol solution on the surface of a glass plate and then dried out. The
           better to distinguish the fragments of the film from cavitational bubbles,
           pulverized graphite was introduced into the layer. The film was placed in a
           cuvette measuring 4 x 1 x 5 cm, filled with distilled water. The sound pres-
           sure was produced in the cuvette with a magnetostriction vibrator operating
           at 8 kc. The distruction of the film by cavitation was photographed with a
           motion picture camera capable of up to 4000 frames per second. A study of the
           film obtained showned that at least two destruction mechanisms take place.
           The first is due to the flapping of the bubbles near the surface of the film,
           and leads to strong local damages; the second is due to the penetration of
           the bubbles under the film, causing the latter to peel.

Card   : 1/1

AUTHOR: Makarov, L.O. and Yakhimovich, D.F.   46-1-18/20

TITLE: Notes on a patent (Ob odnom avtorskom Svidetelstve.)

PERIODICAL: "Akusticheskiy Zhurnal" (Journal of Acoustics), 1957,
            Vol. III, No. 1, pp. 91 - 92, (U.S.S.R.)

ABSTRACT: It is usually understood, with relation to the ultra-sound
            reinforcing systems, that the relevant apparatus has been
            first produced by W.P. Mason and R.F. Wick (1), for whom a
            U.S.A. patent No. 2573168, with priority from May 23, 1950,
            was granted.
                Attention is drawn to the fact that there is an earlier
            patent for such a system, granted to Russian scientists,
            M.G. Lozinski and L.D. Rozenberg. $\wedge$ = 85193 with priority
            from 4th August, 1949 (4), which seems to be much more
            advanced as to the general theory and in its construction.

            There are 4 references, of which one is Russian.

SUBMITTED: November 17, 1956.

AVAILABLE:

Card 1/1

46-4-15/17

AUTHORS: Makarov, L.O. and Ro........., L.D.

TITLE: On the Mechanism of .... (C ....tra-
        vuitov.. .. isu.i)

PERIODICAL: A..ustic ..u.y Zu.r..t, 1.57, Vol.III, Nr 4, ...7 -...
        (USSR)

ABSTRACT: In a prev.... ....'R .i' the a.th... h.. ..u.....
        ..e foll....., on. ...s..ble .... for ... . of
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        .nni.il.t... of a cavitation bubble(2).r.i.l.. ... .n, ..r
        ..' th. ..rf... l..r.. .. .. of ....l..'.
        b.tw... th. l..r an. .. ..oli.. Fur...... .i...t.,
        .si..ri.gh s.ed photo.gra..y, .ave .ow .r..n th.. th. ....m
        .ech.ni.. .... .ll b. ch. ...u.in.... ... ...t. m..h..
        s.o. th.. .....n. ..., ..th ....n...... .....m..t
        th. sp.i .u.. .....th. u...... .l.... .. ..
        b...l..) ... .d .. .l.... ..u.. ... . .. Th.. .
        .... R.r.i..... .. ..

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45-4-15/17

On the Mechanics of Plasma to Plasma.

ASSOCIATION: Acoustics Institute of the Academy of Sciences of the USSR, Moscow (Akusticheskiy institut Akademii Nauk, Moskva)

SUBMITTED: September 15, 1957.

AVAILABLE: Library of Congress.

Card 2/2   1. Ultrasonic cleaning-Application

AUTHORS: Rozenberg, L. D. , Makarov, L. O.   2C-2-11/6C

TITLE: On the Causes of the Swelling of the Surface of a Liquid
                Under the Influence of Ultrasonics (O prichinakh vspuchi-
                vaniya poverkhnosti zhidkosti pod deystviyem ul'trazvuka)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 2, pp.275-276
                (USSR)

ABSTRACT: The paper under review shows that radiation pressure is not
                the only cause for this swelling of a liquid surface. The
                same effect can also be brought about by the so-called sound
                wave, the velocities of which in water can reach values of
                0,5 to 1,0 m/sec. The radiation pressure is one of the
                ponderomotoric forces of the sonic field and therefore is
                propagated with sound velocity. Naturally, also the beginning
                of all perturbations caused by this force is propagated in
                space with the same velocity. The sound wind belongs to the
                group of the hydrodynamic effects. In order to separate these
                phenomena it therefore will be of advantage to employ the
                investigation of a convexity.
Card 1/3   The paper under review gives a clear picture of the basic

On the Causes of the Swelling of the Surface of a Liquid Under the Influence of Ultrasonics

2C-2-11/60

scheme of the experiment by means of a sketch. In a plane glass box (dimensions 50 x 50 x 15 mm) made of optical glass there is a layer of water and above it a layer of transformer oil. Through an opening in the rubber bottom of the box the end of an exponential concentrator is introduced, which is excited by a magnetic structure radiator of a frequency of 24 kilohertz. This process was recorded on normal 35 mm cinema film by a Zeiss slow motion cinema camera with a speed of 2000 pictures per second. In the moment when the sound is switched on at the end of the vibrator, there begins a turbulent occurrence of fine bubbles; the sonic wind carries these bubbles with it and at the end of the vibrator new bubbles are constantly created. Although the velocity of the shift of the front edge of the bubble cloud depends on the velocity of the sonic wind, these two velocities are not the same. A diagram shows the dynamic aspects of the phenomenon. The following can be assumed to be proved: Under the conditions prevailing in the experiment under discussion, a swelling of the separating surface between two liquids is observed, and this swelling is caused not by the pressure of the radiation, but

Card 2/3

20_2-11/60

• On the Causes of the Swelling of the Surface of a Liquid Under the Influence
of Ultrasonics

              rather by the sonic wind. There are 2 figures, and 2 references,
              1 of which **is Soviet** .

ASSOCIATION: Acoustic Institute of the **AS** USSR
                 (Akusticheskiy institut Akademii nauk SSSR)

PRESENTED: January 3, 1957, by N. N. Andreyev, Academician

SUBMITTED: December 21, 1956

AVAILABLE: Library of Congress

Card 3/3

MAKAROV, L. O.

"The Waveguide Properties of Ultrasonic Concentrating Rods.

Paper presented at the 5th All-Union Conference on Acoustics, Moscow, 26 May - 2 June.

SOV-46-4-3-10/18

AUTHOR: Makarov, L. O.

TITLE: Scientific-Technical Conference n the Application of Ultra-
sonic Vibrations to the Study of Properties, Testing and
Processing of Metals and Alloys (Nauchno-tekhnicheskaya
konferentsiya po voprosam primeneniya ul'trazvukovykh
kolebaniy dlya issledovaniya svoystv, kontrolya kachestva
i obrabotki metallov i splavov)

PERIODICAL: Akusticheskiy Zhurnal, 1958, Vol 4, Nr 3, .. 291-292
(USSR)

ABSTRACT: This conference took place in Kiyev on April 21-23, 195..
300 delegates from the Soviet Union took part. Professor
I. G. Polotskiy (Institute of Physics of Metals of the
Academy of Sciences, Ukrainian SSR) and his collaborators
reported results of studies of the effect of ultrasonic
waves on phase transformations in metals and alloys. They
also reported results on the determination of elastic con-
stants using ultrasonic vibrations. G. S. Pisarenko and
V. A. Kuz'menko reported results on the elastic constants

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SOV-46-4-3-16/18

Scientific-Technical Conference on the Application of Ultrasonic
Vibrations to the Study of Properties, Testing and Processing of
Metals and Alloys

of metals and alloys. Other contributors were L. D. Roze -
berg (Acoustics Institute, Academy of Sciences, USSR),
D. F. Yakhimovich (OKB ENIMS), Dotsent L. G. Merkulov (Lenin-
grad Electro-technical Institute), I.N. Yermolov (VIAM) and
others. Most of the papers read at one conference were
concerned with applications of ultrasonic waves under
industrial conditions.

1. Acoustics--USSR

Card 2/2

MAKAROV, L. O.

PHASE I BOOK EXPLOITATION   SOV/3528

Moscow. Dom nauchno-tekhnicheskoy propagandy

Primeneniye ul'trazvuka v promyshlennosti; sbornik statey (In-
dustrial Use of Ultrasound; Collection of Articles) Moscow,
Mashgiz, 1959. 301 p. 8,000 copies printed.

Sponsoring Agency: Obshchestvo po rasprostraneniyu politicheskikh
i nauchnykh znaniy RSFSR.

Ed. (Title page): V.F. Kozdrev, Doctor of Physical and Mathematical
Sciences, Professor; Ed. (Inside book): O.F. Kobelova, Engineer;
Tech. Ed.: V.D. El'kind; Managing Ed. for Literature on Machinery
and Instrument Manufacturing (Mashgiz): N.V. Pokrovskiy, Engineer.

PURPOSE: This book is intended for engineers and technicians engaged
in the application of ultrasonics in machinery manufacture and in
other branches of industry.

COVERAGE: This is a collection of papers read at the first all-
Union conference on the use of ultrasonics in industry. Attention
is focused mainly on the description of ultrasonic equipment and
on the use of ultrasound for the machining of hard materials and
for flaw detection. The effect of ultrasound on metal-crystalliza-
tion processes is also discussed. No personalities are mentioned.
References accompany many of the papers.

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MAKAROV, L.O.

Use of ultrahigh-speed cinematography in the investigation of phenomena occuring in the acoustic field of fluids. Usp.nauch.fot. 6:211 '59. (MIRA 13:6)

(Ultrasonic waves--Industrial applications)
(Motion-picture photography, High speed)

24(1)

AUTHOR: Makarov, L.O.

TITLE: On the Operation of a Rod-Type Concentrator Under a Load (O rabote sterzhnevogo kontsentratora v nagruzhnom rezhime)

PERIODICAL: Akusticheskiy zhurnal, 1959, Vol 5, Nr 3, pp 372-374 (USSR).

ABSTRACT: Assuming that a rod-type acoustic concentrator possesses some of the properties of a transformer with distributed parameters, it can be shown that the input impedance $\dot{z}_{BX}$ of an exponential half-wave concentrator (Fig 1) is given by

$$\dot{z}_{BX} = N^2 \dot{z}_H, \tag{1}$$

and that of a stepped half-wave concentrator (Fig 2) by

$$\dot{z}_{BX} = N^4 \dot{z}_H, \tag{2}$$

where $\dot{z}_H$ is the impedance of a load at the output, $N = \sqrt{S_{BX}/S_{BыX}}$ is the "area coefficient", S_{BX} and $S_{BыX}$ are the input and output cross-sectional areas of the concentrator. If the load impedance and properties of the contact between the acoustic source and the concentrator are known, matching conditions for the system radiator-concentrator-load can be found. The author deals also with the travelling-wave ratio (t.w.r.) defined as

$$\mathfrak{E} = (1 - R)/(1 + R)$$

Card 1/2

On the Operation of a Rod-Type Concentrator Under a Load

where R is the reflection coefficient. Fig 3 shows the values of the t.w.r. plotted against the load coefficient $r_0/\rho_0 c$ (r_0 is the active component of the load impedance and $\rho_0 c$ is the wave impedance of the material used to make a concentrator). The continuous curves in Fig 3 represent an exponential concentrator of Fig 1 and the dashed curves represent a stepped concentrator of Fig 2. Fig 3 shows that between the load coefficient values of zero and 1.0 the t.w.r. of a stepped concentrator is smaller than that of an exponential concentrator for the same values of N (the area coefficient) and k (the displacement gain coefficient). After a short discussion of the use of concentrators in ultrasonic machining the author concludes that, although they have a high displacement-gain coefficient, stepped concentrators should be avoided when dealing with materials which are difficult to work and the wear on the instrument is great. There are 2 figures and 5 references, 4 of which are Soviet and 1 English.

ASSOCIATION: Akusticheskiy institut, AN SSSR, Moskva (Acoustics Institute, Ac.Sc. USSR, Moscow)

SUBMITTED: November 6, 1958

Card 2/2

MAKAROV, L. O.

PHASE I BOOK EXPLOITATION   SOV/4876

Borisov, Yulian Yaroslavovich, and Leonid Olegovich Makarov

Ul'trazvuk v tekhnike nastoyashchego i budushchego (Ultrasound in Engineer-
   ing Today and in the Future) Moscow, Izd-vo AN SSSR, 1960. 86 p.
   25,000 copies printed. (Series: Akademiya nauk SSSR. Nauchno-populyarnaya
   seriya)

Resp. Ed.: L. D. Rozenberg; Ed. of Publishing House: Ye. P. Moskatov;
   Tech. Ed.: G. S. Simkina.

PURPOSE: This booklet is intended for physicists and engineers interested in
   the scientific and practical applications of ultrasound.

COVERAGE: The booklet is one of a popular science series and discusses prac-
   tical possibilities of ultrasound engineering, some problems in ultrasonics
   which require laboratory research, and the use of ultrasound in the control
   and analysis of industrial processes, for precipitating dust and smoke, in

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Ultrasound in Engineering Today and in the Future   SOV/4876

medicine, etc. Figures and drawings of some Soviet ultrasonic equipment are included. Some American and English ultrasonic equipment and contributions to the field are also discussed. No personalities are mentioned. There are no references.

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From the Author

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S/194/61/000/008/056/092
D201/D304

AUTHOR: Makarov, L.O.

TITLE: Waveguide properties of rod ultrasonic transmitters

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika,
                 no. 8, 1961, 9, abstract 8 E67 (V sb. Primeneniye
                 ul'trazvuk. kolebaniy dlya issledovaniya svoystv
                 kontrolya kachestva i obrabotki metallov i splavov,
                 Kiyev, AN USSR, 1960, 44-53)

TEXT: Relative merits are considered of exponential and
tapered transmitters (T) used at ultrasonic benches for processing
brittle materials and in other installations. It is shown that al-
though the gain of a tapered T is proportional to the square of the
area factor and that of an exponential T is proportional to its
first power, the tapered shape cannot be considered as showing more
possibilities, since the examination of matching properties of T
shows that the use of tapered T should not be recommended especially

Card 1/2

Waveguide properties...

S/194/61/000/008/056/092
D201/D304

in processing hard materials when the wear of the instrument is
considerable. It is especially emphasized that in designing T - the
right choice of the instrument should be governed by the load. 2
figures. 4 references. /Abstracter's note: Complete translation_7

Card 2/2

ZHUKOVSKIY, S.R.; KAZANTSEV, V.F.; MAKAROV, L.O.

Using high speed cinematography for investigating the processes
occurring in fluids under the action of ultrasonic waves. Zhur.
nauch.i prikl.fot.i kin. 5 no.2:133-140 Mr-Ap '60. (MIRA 14:5)

1. Kafedra uchebnoy i nauchnoy fotografii i kinematografii
Moskovskogo gosudarstvennogo universiteta im. M.V.Lomonosova i
Akusticheskiy institut AN SSSR.
        (Motion-picture photography—Scientific applications)
                (Ultrasonic waves)

S/046/60/006/01/30/033
B008/B011

AUTHOR: Makarov, L. O.

TITLE: Scientific-technical Conference on the Application of
             Ultrasonics in Welding

PERIODICAL: Akusticheskiy zhurnal, 1960, Vol. 6, No. 1, pp. 138-139

TEXT: This is a report on the Scientific-technical Conference on the
Application of Ultrasonics in Welding held in Moscow from December 9 to
10, 1959. At this Conference, which had been convened by the sektsiya
svarki metallov NTO Mashproma (Metal Welding Section of the NTO of Mashprom),
11 lectures and reports were heard. On the first day, 7 lectures were de-
voted to problems of ultrasonic cold welding of metals and plastics. On
the second day, 5 lectures dealt with problems of the action of ultrasonics
on the welding seam structure in electric welding. The major part of the
studies reported on had been conducted at the Institut metallurgii im.
A. A. Baykova AN SSSR (Institute of Metallurgy imeni A. A. Baykov AS USSR)
and the Moskovskoye vyssheye tekhnicheskoye uchilishche im. N. E. Baumana
(Moscow Technical College imeni N. E. Bauman) in cooperation with the

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