

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

000/76-32-2 13/37

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

SUBMITTED: March 15, 1957

Card 3/3

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

SOV/76-32-8-13/37

components in the case of comparable amounts of RbCl and KCl were carried out according to a "balance" method according to Skreynemakers, taking into account the papers by V.G. Khlopov and his students (Ref 14) as well as by G. I. Gorshchova and N. I. Silant'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 isopiestic method, as according to the data by Kharned and Ouen (Ref 20) reliable data are obtained. The results obtained prove the data obtained by other authors on the formation of discontinuous series of mixed crystals. There are 1 figure, 3 tables, and 21 references, 13 of which are Soviet

Card 2/3

AUTHORS: Ratner, A. P. (Deceased), Makarov, L. L. OSV/76-32.8-13/37

TITLE: The Thermodynamic Investigation of the System $KCl - RbCl - H_2O$
at 25°C. I. (Termodinamicheskoye issledovaniye sistemy
 $KCl - RbCl - H_2O$ pri 25°C. I.)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol. 32, Nr. 8,
pp. 1809-1816 (USSR)

ABSTRACT: The publications by D'Ans and Busch (D'Ans and Bush) (Ref 1),
Wasastjerna (Vasast'yerna) (Refs 5,6), Hovi (Govi) (Ref 7),
V.A. Rabinovich (Ref 9), Shlezinger (Ref 10), and A.V.
Storonkina and M.M. Shul'ts (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 Rb^{36} and K^{42} was
employed. The determinations of the distribution of the

Card 1/3

The Osmotic and Activity Coefficients of RbCl, CsCl and SOV/76-32-7-25/25
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

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 CaCl₂ solutions being used. The activity coefficients and the osmotic coefficients were calculated according to an equation. Besides the KJ-, NaCl- and CaCl₂-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

AUTHORS: ~~Makanov, L. B.~~, Yevstrop'yev, K. K., Vlasov, Yu. G. SOV/76-52-7-25/45

TITLE: The Osmotic and Activity Coefficients of RbCl, CsCl and KJ in Highly Concentrated Aqueous Solutions (Osmoticheskiye koefitsiyenty i koefitsiyenty 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 γ_{\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; Kharned and Ouen (Ref 2) had proved the reliability of this

Card 1/3

Thermodynamic Investigation of Cocrystallization in the
System $KCl - RbCl - H_2O$

78-1-10/43

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

SUBMITTED: August 23, 1957

AVAILABLE: Library of Congress

Card 5/5

Thermodynamic Investigation of Coocrystallization in the
System $\text{KCl} - \text{RbCl} - \text{H}_2\text{O}$

78-4-10/43

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 factors of Ratner's equation. From this the free energy of the transition 1 mole RbCl 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

$\Delta\mu_S = -(\mu_{oS} - \mu_S) = -490 \text{ cal.}$ 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 (reference 9,10). The mixed crystals are similar to the regular crystals at 25°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
System $KCl - RbCl - H_2O$

78-1-10/43

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 thoroughly to be investigated. The isotherm of solubility $KCl - RbCl - H_2O$ 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 Cocrystallization in the System 78-1-10/43
 KCl-FbCl-H₂O

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; ν_+ and ν_+' - 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

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 - H₂O (Termodinamicheskoye izucheniye sokristallizatsii v sisteme KCl - RbCl - H₂O)

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1958, Vol. 3, Nr 1, pp. 46-50 (USSR)

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

$$D = \frac{\gamma_+^{v_+}}{\gamma_+^{v_+}} = \frac{x_m^{(s)} \gamma_+^{v_+}}{m_+ \gamma_+^{v_+}} = D_0,$$

$$D_0 = \frac{a'_{Lo}}{a_{Lo}} e^{\frac{\mu_{0s} - \mu_s}{RT}}$$

Card 1/5

MAKAROV, L.L., Cand Chem Sci --(diss) "Thermodynamic study of ^{the} co-crystallization of certain alkaline/halogenides. Len, 1958. 10 pp (Len Order of Lenin State Univ in A.A.Zhdanov), 100 copies (KL, 24-58, 116)

KON-YREVA, S.S., kand. tekhn. nauk; VOROB'YEV, I.A., inzh.; MAKAROV, I.A.,
inzh.; YAKHONTOVA, N.Ye., inzh.

Monolithic polysterene plastic foams in construction. Engl. pat. 11
no.5:30-31 My '65. (Sov. 1965)

1. MAKAROV, K. V. Eng.
2. USSR (600)
4. Building Materials
7. Clay silicate. Biul. stroil. tekhn. 9. no. 19, 1952

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

L 10286-66

AGC NR: AP5025317

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

OC
Card 2/2

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

41, 55
41, 55
AUTHOR: Telesin, R. V.; Makarov, K. T.

41, 55
ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosuniversitet)

TITLE: Anisotropy of magnetic viscosity of some ferrite monocrystals with spinel and garnet structures 21, 41, 55 21, 41, 55 62 B

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+ Fe₂O₃ 44%; MgO 10+ MnO 40+ Fe₂O₃ 50%; nearly stoichiometric MnFe₂O₃; and 3Y₂O₃.5Fe₂O₃) 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. Kuritsyna (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 B_T , and the $B_T : B_m$ ratios were determined

Card 1/2

UDC: 538.245
2

KURYGIN, G.V.; MAKAROV, K.S.

Pulmonary edema and tachypnoea in white rats following the intravenous injection of platelets obtained from papain hydrolyzate of bull serum proteins. Nauch. dokl. vuz. shkoly; biol. nauki no.1:65-69 '66. (MORA 19:1)

1. Rekomendovana kafedrami patofiziologii i obshchey khimii Yaroslavskego meditsinskogo instituta. Submitted March 6, 1965.

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)

MAKAROV, K.S.

Fermentation synthesis of protein (plastin formation). Khim. belka
no.1:256-288 61. (MIRA 15:1)

(Proteins)

On the Problem of the Properties and the
Structure of Plasteins

SOV/79-29-7-2/83

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

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

SUBMITTED: May 12, 1958

Card 3/3

On the Problem of the Properties and the
Structure of Plasteins

SOV/79-29-7-9/83

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

5(3)

AUTHORS:

Makarov, K. S., Gavrilov, N. I.

SOV/79-29-7-9/33

TITLE:

On the Problem of the Properties and the Structure of Plasteins
(K voprosu o svoystvakh i stroenii 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 spectrophotometry 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

Card 1/3

MAKAROV, K. S.

✓ Electrophoresis, electroreduction, and spectrophotometry of plasteins. K. S. Makarov and N. I. Gavrilov. *Vestnik Mosk. Univ.* 10, No. 2, Ser. Fiz.-Mat. i Estestv. Nauk No. 1, 81-8 (1965); cf. *C.A.* 47, 5486d. — Plasteins contain longer polypeptide chains than the initial proteins; this is confirmed by shift of absorption toward shorter wave region (in comparison with casein) and high Cu no. of the Cu complex. The plastein Cu complex shows an absorption max. of 540 m μ , that of casein 555 m μ . Plasteins from human-serum albumin or from casein are electrophoretically homogeneous (curves are shown). The product from albumin has a greater tendency to gel during dialysis. Electrophoresis expts. were made with albumin plastein in the form of Cu complex at pH 11; the Cu complexes were again homogeneous. These show electrophoretic mobility intermediate between those of the initial proteins and their hydrolyzates. Detns. of amino N before and after electroreduction show that while casein contains 32.9% cyclically bound N (diketopiperazine, expressed as percentage of total N), its plastein contains 16.2% cyclic N; since plastein contains 5.71% N, it appears that for each tripeptide unit in plastein there is 0.9 unit of an amino acid in cyclic form; in casein this ratio is 1.4. G. M. K.

①
 Chair Organic Chemistry, Moscow State U.

MAKAROV, K. S.

10

(6)
~~The molecular weight of plasteins. S. E. Bresler, K. S. Makarov, and S. Ya. Frankel. Inst. High-Mol. Compounds, Acad. Sci. U.S.S.R., Leningrad. *Biokhimiya* 19, 84-86 (1964).— 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, 6259f) 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

ml

1. MAKAROV, K. S.
2. USSR (600)
4. Plasteins
7. Study of plasteins obtained from enzymatic and acidic hydrolyses of caseine preparates.
Dokl. AN SSSR 87 No. 6, 1952

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

USSR/Chemistry - Proteins
Plasteins Dec 52

"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

240T2

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. Mesmeyanov 29 Oct 52.

240T2

PA 240T2

MAKAROV, K. S.

MAKAROV, K.S.

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

- 1. Zaveduyushchiy otdelom aspirantury.
(Academy of Sciences of the Kazakh S.S.R.)**

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)

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

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

MAKAROV, K. KW.

MAKAROV, K. KW. 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

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.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)

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-tehnologicheskii institut imeni D.I. Mendeleeva i Vsesoyuznyy nauchno-issledovatel'skiy institut prirodnogo gaza.

ANDON'YEV, S.M.; GLAZKOV, P.G. [deceased]; KUCHIN, V.A.; KONDRAT'YEV, Ye.M.;
LEVITASOV, Ya.M.; MAKAROV, K.I.; PANKRATOV, F.V.; PEVNYI, N.I.;
POKRAS, L.M.; POCHTMAN, A.M.; TESNER, P.A.; SHEYNEAYN, F.I.;
SHKLYAR, T.I.; Primalni uchastnye; 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)

✓
U. 23020-65

ACCESSION NR: APL019567

3

External gas flow (160 ml/min) was applied to 20-mm diameter, 90-mm long cylinders located in different diameter tubes as shown in Figs. 1b and 1c on the Enclosures. The results of the experiments are shown in Figs. 2, 3, and 4 on the Enclosures. It was found that the properties of the pyrolytic carbon and the sealing effectiveness depended strongly on the free space above the surface of the specimens (see Fig. 3 on Enclosures); at a minimum free space above the specimen, the carbon formation at the surface was on the order of 10^{-5} - 10^{-6} g/cm² min; materials with apparent densities of less than 1.0 g/cm³ could be sealed significantly by this method; increasing the carbon formation rate decreased the properties of the carbon covering. The macrokinetic rate constant for the thermal conversion of methane to carbon on a porous graphite surface for temperatures of 900-10000 was found to be

$$k_p = 2.5 \cdot 10^{18} \exp(-78000/RT)$$

Orig. art. has: 7 figures, 4 tables, and 2 formulas.

ASSOCIATION: MKBT in U. I. Mendaloyeva, VNIIGas

SUBMITTED: 00

THE CODE: NI

NO REF SOV: 001

ENCL: 04

OTHER: 003

cont 2/6

1. 23720-65 EP7(a)/EPF(h)-2/EPR/ENG(3)/EPA(s)-2/ERA(m)-2/EA(h)/EWT(n)/EWP(b)/
ACCESSION NO: AFI009167 EWP(s) P1-4/P2-4/P3-10/P4-4/ 5/0000/60/000/011/0008/0013
Pub. No. 11/11

AUTHORS: Pechnik, V. K., Makarov, K. I., Tosnau, P. H.

TITLE: Sealing of porous graphitic carbon materials with pyrolytic carbon during the process of their thermal conditioning in an atmosphere of natural gas

SOURCE: Khimicheskaya promyshlennost', no. 11, 1964, 8-13

TOPIC TAGS: graphite, pyrolytic carbon, carbon/ART graphite, TR 60/500 furnace, EPV2-11 potentiometer, PG 50 graphite

ABSTRACT: Sealing of porous graphitic carbon materials with pyrolytic carbon during heat treatment in natural gas was experimentally investigated. Synthetic carbon (type ART, pores 0.6-2.0 micron, 25% porous, apparent density 1.5 g/cm³, specific area 0.58 m²/g) was placed in a TR-60/500 electric furnace (controlled by an EPV2-11 potentiometer + 30) and was subjected to either forced filtration or external flow of natural gas (81.2% CH₄, 4.0% C₂H₆, 1.4% C₃H₈, 0.53% C₄H₁₀, 0.17% CO₂, 12.7% N₂). Forced filtration with natural gas or a gas mixture (15 and 30% H₂ by volume) was performed on cylinders (90 mm long, 20 mm outside diameter, 7 mm wall thickness) at 900, 950 and 1000°C located as shown in Fig. 1a on the Endocuros.

Cont. 1/12

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)

MAKAROV, K.I.; POLYAKOVA, M.M.; SOLOV'YEV, Ye.A.

Kinetics of the heat conversion of acetane, *Gaz. prom.* 8 no. 3:
40-48 '63. (MIRA 17:31)

YE FIMENKO, Trifon Alekseyevich, dots.; MAKAROV, Konstantin
Ivanovich, assistant [deceased]; PANOV, V., red.;
MOKROUSOVA, A., tekhn. red.

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

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 gazov (for Makarov). 2. Khar'kovskiy koksokhimicheskiy zavod (for Pinchuk).

ILLEGIBLE

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031500048-6

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 II.

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031500048-6

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: Mashinostroi'el', 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 longitudinal 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.A.

Apparatus for studying energy and angular scattering of electrons
in a solid. Prib. i tekhn. eksp. 9 no.6:107-113 N-3 '64.
(MIRA 18:3)

1. Leningradskiy institut tochnoy mekhaniki i optiki.

12004-65
ACCESSION NR: AP4047211

ASSOCIATION: Leningradskiy tekhnologicheskii institut imeni Lensoveta
(Leningrad Technological Institute)

SUBMITTED: 09Dec63

ATD PRESS: 3120

ENCL: 00

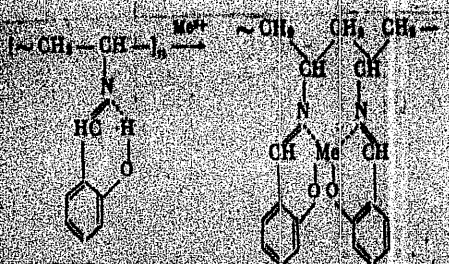
SUB CODE: 00

NO REV SOV: 007

OTHER: 004

Card 3/3

E 12004-68
 ACCESSION NR: AP4047211



The coordination polymers were amorphous colored powders insoluble in the common solvents, except the Cu- or Ni-containing polymers, which were soluble in dimethylsulfoxide. They softened above 250, and their weight loss after 2 hr at 250C in air was 5-10%. Their thermal stability depended on the meta. present, decreasing in the order:



Orig. art. has: 1 figure, 1 table, and 1 formula.
 Card 2/3

L 10004-55 EPA(s)-2/ENT(m)/ENP(s)/EPF(s)/T Pc-4/Pr-4/Pt-10 RPL 5M
ACCESSION NR: AP4047211 S/0190/64/006/G10/1829/1831
AUTHOR: Bondarenko, V. M.; Nikolayev, A. F.; Makarov, K. A.
TITLE: Coordination polymers based on poly-N-salicylidenevinylamine B
SOURCE: Vysokomolekulyarnyye soyedineniya, v. 6, no. 10, 1964, 7
1829-1831
TOPIC TAGS: coordination polymer, chelate polymer, polysalicylidene-
vinylamine
ABSTRACT: Communication 2 of the series "polyvinylamine and its
derivatives" reports the synthesis and properties of 5 coordination
polymers based on poly-N-salicylidenevinylamine (I). The coordination
polymers were prepared by reacting solutions of I in dimethylformamide
and acetates of divalent metals with coordination number 4 (Cu, Fe,
Co, Ni, and Zn) in stoichiometric ratio.

Card 1/3

L 07153-67

ACC NR: AN7001057

abandoned their residence only after a storm developed; however, no damage was inflicted on the structure by the storm. The work program was completed but the collected data have not yet been analyzed.

JPRS: 38,230

SUB CODE: 08 / SUBM DATE: none

Card 2/2 m/c

L 07153-67 EWT(1) SCTB DD

ACC NR: AN7001057

SOURCE CODE: UR/9012/66/000/247/0006/0006

AUTHOR: Makarov, K.; Polesskiy, M.

ORG: none

TITLE: Black Sea experiment

SOURCE: Pravda, 04Sep66, p. 6, col. 7-8

TOPIC TAGS: oceanography, oceanographic research facility

ABSTRACT: Somewhat more information is given on the experiences of under-water dwellers in the Black Sea in the small "house" set up beneath its waters by the sportsmen of the "Ikhtiandr" club in Donetsk. The principal objective of the experiment is to clarify the ability of man to withstand the increased pressures prevailing beneath the sea surface over an extended time. The "house", called "Ikhtiandr-66",² at a depth of 11 meters, measures two meters in length, one and one-half meters in width and two meters in height. It sits on thick reinforced concrete pilings and is securely attached to them. The house is connected to the surface by telephone. Each man is allotted a daily ration of 5,000 calories. The residents go outside from time to time for exercise. The first day the house was occupied by only one man; on the second day he was joined by another. They stayed underwater for one week and

Card 1/2

14
B

09240075

TURAYEV, N.S., dotsent, red.; MAKAROV, I.Ye., kand.tekhn.nauk, retsentsent;
SARAFANNIKOVA, G.A., tekhn.red.

[Improvement of agricultural machinery; a collection of articles]
Sovershenstvovanie sel'skokhoziaistvennoi tekhniki; sbornik statei.
Pod red. N.S. Turaeva. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.
lit-ry. Vol.2. 1957. 149 p. (MIRA 12:3)

1. Sverdlovsk. Sel'skokhozyaystvennyy institut.
(Agricultural machinery)

MAKAROV, I.V.

Building winter roads in the areas of petroleum and gas
fields of Tyumen' Province. Stroi. truboprov. 10 no.8:10-12
Ag '65. (MIRA 18:11)

7 10697-65

ACQUISITION NR: APSOL2006

Tools and oils are adequate for the local conditions - for example the special machines, lubricants, brake fluids and anti-rusts now in use on the Tselovskoye-Noril' sk gas pipeline project.

ALLOCATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: 00

NO REF SERV: 000

OTHER: 000

JPRS

3/3 1966

L 10079-45

DESCRIPTION NO: AP5012306

In addition, local wharfs are not equipped to handle freights of more than 10 tons, and each precious time is lost through faulty organization of schedules and loading-unloading operations.

In view of the rapidly increasing demand for supplies (the Tyumen-Obaysk fields received approximately 300,000 tons of freight via water during 1964, and will require an estimated 1,800,000 tons in 1965), year-round service must somehow be guaranteed. A number of rail and highway routes to the different fields are being planned, one being a truck route from Solovki to Shalimov, but these will not be ready to carry a significant body of freight within the next three or four years.

Apart from getting the river transport in order, the success of the construction work depends upon organizing truck and tractor service during the long winter period, and this in its turn requires building repair facilities and fuel depots. Several existing Soviet trucks are able to function on mountainous terrain, though even these will have to be modified to accommodate the local temperatures of lower than -40°C (-42°C for Surgut and Khanty-Mansiysk, as low as -59°C for Tazovskiy Rayon). Some research on special wheels and transmissions is needed. Some vehicles produced by the Uralynovsk plant are already being used in the area. Available low-temperature

Cont. 2/3

REGISTRATION NO: A55012366

UR/009/64/000/011/007/008

AUTHOR: Makarov, I. V.

3
B

TITLE: Transport problems in developing the oil and gas fields of West Siberia and laying pipelines

SOURCE: Stroitel'stvo truboprovodov, no. 11, 1964, 7-8

TOPIC TAGS: transportation system, transportation status, pipeline transportation system, economic development

ABSTRACT: Work is being pushed on the recently opened oil and gas fields of the West Siberian Lowlands; most of these are in Tyumen'skaya Oblast, the main deposits being the Surgut'skoye, the Ust'-Baldyskoye, the Naglonskoye, the Shalimovskoye, the Igrinskoye, the Berezhovskoye and the Tazovskoye. Drilling, construction and piping operations have placed a great strain on the available transport facilities, very limited to begin with, and in this instance handicapped by the extremely severe climate. New wells in the northern part of the district are not set from major cities and supply bases 4-6 months of the year. Most materials and supplies are shipped from Irkutsk, Krasnoyarsk, Novosibirsk, Labytnanga and Krasnoyarsk, by the rail-river route; the water portion can be used only during the brief navigable period in

MAKAROV, I.V.

Simplified rating of the strength of rocks. Izv. SO AN SSSR
no.2. Ser. tekhn. nauk no.1:101-105 '64. (MIRA 17:8)

1. Sibirskiy gosudarstvennyy proyektno-konstruktorskiy
eksperimental'nyy institut gornogo mashinostroyeniya, Novo-
sibirsk.

GAL'PERIN, A., kand.tekhn.nauk; NIKOLENKO, V., inzh.; MAKAROV, I., inzh.

Operation of motor vehicles in sandy-desert regions. Avt.
transp. 40 no.5:24-26 My '62. (MIRA 15:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po
stroitel'stvu magistral'nykh truboprovodov i Glavnoye
upravleniye gazovoy promyshlennosti SSSR.
(Transportation, Automotive)

MAKAROV, I. V., inzh.

Elemental analysis of drilling with a roller bit. Gor. zhur.
no.11:41-45 N '62. (MIRA 15:10)

1. Sigiprogormash, Novosibirsk.

(Boring)

MAKAROV, I.V., inzh.

Approximate rate determination in rotary-percussion drilling. Ger.
zhur. no.3:48-50 Mr '62. (MIRA 15:?)

1. Institut Sibriprogormash, Novosibirsk.
(Boring)

SHTER, B.O.; KONDRAT'YEV, N.P.; LESNIKOVA, Ye.S.; MAKAROV, I.V.;
CHERNYSHOVA, T.Ye.; SOLGANIK, G.Ya., ved. red.; FEDOTOVA, I.G.,
tekhn. red.

[Operation and repair of transportation and hoisting machinery
of the petroleum and gas industry] Eksploatatsiia i remont trans-
portnykh sredstv i pod'emnykh mashin neftianoi i gazovoi pro-
myshlennosti; spravochnik. Moskva, Gostoptekhizdat, 1962. 396 p.
(MIRA 15:7)

(Gas, Natural---Transportation) (Petroleum---Transportation)

GAL'PERIN, Abram Isayevich; MAKAROV, Ivan Vasil'yevich; NIKOLENKO,
Viktor Filippovich; SVYATITSKAYA, K.P., ved. red.; VOKONOVA,
V.V., tekhn. red.

[Vehicles for transporting pipes and pipe sections] Mashiny
dlya perevozki trub i pletei. Moskva, Gostoptekhnizdat, 1962.
115 p. (MIRA 15:10)

(Pipe--Transportation)

MAKAROV, I.V., inzh.; MAZHINSKIY, I.S., inzh.

Machine for cleaning mine railroad tracks. Ugol' 36 no.4:34-35
Ap '61. (MIRA 14:5)

1. Sibgiprogormash.
(Mine railroads---Equipment and supplies)

MAKAROV, I.V.

Automotive transportation in construction of the Gazli-Ural gas
pipeline. Stroi. truboprov. 6 no.9:3-4 S '61. (MIRA 14:9)
(Transportation, Automotive) (Gas, Natural--Pipelines)

GAL'PERIN, A.I., kand.tekhn.nauk; NIKOLENKO, V.F., inzh.; MAKAROV,
I.V., inzh.

Standard series of pipe-transporting machines. Stroi. truboprov.
6 no.6:6-10 Je '61. (MIRA 14:7)
(Truck trailers)
(Pipe-transportation)

MAKAROV, I.V.;SHPARBERG, Ye.M.

New machinery for hydraulic haulage. Ugol' 34 no.11:29-30 N '59
(MIRA 13:3)

1. Kuznetskiy filial Giprouglemasha.
(Hydraulic machinery) (Mine haulage)

MAKAROV, I.V.

Method for analyzing the efficiency of tunneling operations. Izv.
Sib.otd.AN SSSR. no.4:22-28 '59. (MIRA 12:10)

1. "Giprouglemash", Kuznetskiy filial.
(Tunneling)

MAKAROV, I.V.

Friction of packing cups. Stan. 1 instr. 26 no. 12:18-20 D '55.
(Friction) (Packing (Mechanical engineering)) (MLRA 9:2)

ACCESSION NR: AP4040016

corresponding to a plastic flow of "brittle" material is offered. Orig. art. has:
4 figures, 12 formulas, and 2 tables.

ASSOCIATION: SibGIPROGORMASH (Siberian Branch, State Institute for
Designing Mining Machinery)

SUBMITTED: 28Apr63 DATE ACQ: 18Jun64 ENCL: 00

SUB CODE: MT NO REF SOV: 008 OTHER: 000

Card 2/2

ACCESSION NR: AP4040016

S/0288/64/000/001/0101/0105

AUTHOR: Makarov, I. V.

TITLE: Simplified method of plotting rock strength curves

SOURCE: AN SSSR. Sib. otd. Izv. Seriya tekhnicheskikh nauk, no. 1, 1964, 101-105

TOPIC TAGS: rock strength, brittle material, brittle material strength

ABSTRACT: The border envelope of Moore's circles is represented as a piecewise-smooth curve consisting of (a) a straight line parallel to $\sigma\sigma$ -axis in the region of high compression, (b) a convex curve, near the origin of coordinates, and (c) a concave curve, in the region of omnidirectional tension. The validity of such representation is theoretically proven. The principal strength characteristics of "brittle" materials can be determined from the data of three experiments (e.g., oblique shear). A method for determining the stress

Card 1/2

MEKAROV, I. V.

Approximate designation of the ...
drilling. In: ... (PAGE 108)

1. ...
...
Novosibirsk.

KAGANOV, S.Yu.; MAKAROV, I.V.; PEDANOVA, V.M.

Significance of congenital bronchopulmonary cysts in the
development and course of chronic pneumonia in children.
Pediatría 41 no.9:77-81 S '62. (MIRA 15:12)

1. Iz kliniki dlya detey starshego vozrasta (zav. S.Yu.Kaganov)
i rentgenologicheskogo otdela (zav. = prof. N.A.Panov) Nauchno-
issledovatel'skogo pediatricheskogo instituta (dir. = kand.med.
nauk V.P.Spirina) Ministerstva zdoravookhraneniya RSFSR.
(PNEUMONIA) (CYSTS)

MAKAROV, I.V., kand.med.nauk

Use of anesthetic solutions in bronchography in children. Vest.
rent. i rad. 35 no. 6:71-72 N-D '60. (MIRA 14:2)

1. Iz rentgenovskogo otdeleniya (nauchnyy rukovoditel' - prof.
N.A. Panov) Gosudarstvennogo nauchno-issledovatel'skogo
pediatricheskogo instituta (direktor - doktor med. nauk A.P.
Chernikova) Ministerstva zdravookhraneniya RSFSR.
(BRONCHI--RADIOGRAPHY)

KAGANOV, S.Yu.; MIZERNITSKAYA, O.N.; MAKAROV, I.V.

Review of S.G. Zviagintseva's "Bronchial asthma in children." *Pediatrics* 37 no.10:90-91 0 '59. (MIRA 13:2)
(ASTHMA) (ZVIAGINTSEVA, S.G.)

MAKAROV I.V.

PANOV, N.A., prof.; MAKAROV, I.V., kand.med.nauk

Automatic switch for roentgen apparatus for receiving films of the chest at a specific phase of respiration. Vest.rentg. i rad. 33 no.1:76-77 Ja-F '58. (MIRA 11:4)

1. Iz Gosudarstvennogo nauchno-issledovatel'skogo pediatricheskogo instituta (dir.-kand.med.nauk V.N. Karachevtseva) Ministerstva zdravookhraneniya RSFSR.

(THORAX, radiography

automatic switch for receiving films in specific phase of resp. (Rus)

MAVAKI, I. V.

"Anatomic and Functional Changes in the Trachea and Bronchi in Children with
Koch's Disease During Chronic Pneumonia in USSR Children." *Dokl. Akad. Nauk
Sov. Union*, 1955. (23, No 14, Pt 2, p. 1055.)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Discoveries
Defended at USSR Higher Educational Institutions (16).

MAKAROV, I. T.; KORNEV, I. V.

Reducing noise in textile factories. Tekst.prom. 20 no.9:77-79
S '60. (MIRA 13:10)

(Textile machinery--Noise)

20598

S/147/61/000/001/007/016
E022/E135

Turbulent Wake Behind Aerodynamically Poor (Blunt) Bodies in a Bounded Stream

first. But the difference in static pressure in the potential flow outside the wake and that in the wake forces the flow back towards the central line and therefore the wake begins to narrow irrespective of the fact that the boundary layer grows still further. Eventually the boundary layers formed at the shoulders of the body meet at the centre of the wake and henceforth the motion of the fluid in the wake is governed by entirely new conditions.

There are 9 figures and 5 references: 4 Soviet and 1 German.

ASSOCIATION: Kafedra 201, Moskovskiy aviatsionnyy institut
(Department 201, Moscow Aviation Institute) X

SUBMITTED: August 8, 1960

Card 7/13

20598

S/147/61/000/001/007/016
E022/E135

Turbulent Wake Behind Aerodynamically Poor (Blunt) Bodies in a Bounded Stream

$$\bar{y}_{0.5} = \delta_{\eta} + 0.441\delta$$

(At $\bar{y} = \bar{y}_{0.1}$ there is $F = 0.1$ and at $\bar{y} = \bar{y}_{0.9}$, $F = 0.9$, etc.). In Figs. 6 and 7 F is given as a function of $\eta = \bar{y}/\bar{y}_{0.5}$ in the case of the fundamental portion of the wake, and $\eta = (\bar{y} - \bar{y}_{0.9})/(\bar{y}_{0.1} - \bar{y}_{0.9})$ in the case of the initial portion of the wake. Fig. 8 shows the experimental values of $\bar{y}_{0.5}$ compared with the theoretical relation $\bar{y}_{0.5} = \delta_{\eta} + 0.441\delta$ for the plate of different sizes and for the other blunt bodies. It can be seen from the graphs in Fig. 8 that in the initial portion of the wake the variation of $\bar{y}_{0.5}$ is of a complex nature and is different for different bodies, being somewhat smoother for the wedge and half-body than for the flat plate. Fig. 9 shows the growth of the thickness of the boundary layer in the wake. It can be seen that the boundary layer increases uniformly and has the same character for all the different bodies tested. As the boundary layer grows along the wake, the total thickness of the wake must also grow at

Card 6/13

20598

S/147/61/000/001/007/016

E022/E135

Turbulent Wake Behind Aerodynamically Poor (Blunt) Bodies in a Bounded Stream

essentially the same for all the bodies, irrespective of the shape of the body and the percentage of blockage of the flow. Thus the authors conclude that this function is the universal function of the wake. Theoretical computations were carried out to evaluate the function F for the case of incompressible fluid. Two different approaches were employed: 1) the "old" theory of Prandtl' (Prandtl'—Schlichting theory) and 2) the "new" theory of Prandtl'. These computational values of F are also shown in Fig.6; the first as a solid line and the second as a dotted line. As can be seen, both the theoretical solutions agree very well with the experimental data. Once the function F is known and the experimental data for $y_{0.1}$ and $y_{0.9}$ are obtained, the thickness of the core δ_g , the thickness of the boundary layer δ and the total thickness of the wake δ_{C1} can be deduced from the old Prandtl' theory (see Ref.3), as follows:

$$\delta = 1.569(y_{0.1} - y_{0.9}); \quad \delta_g = y_{0.9} - 0.136\delta; \quad \delta_{C1} = \delta_g + \delta;$$

Card 5,13

20598

S/147/61/000/001/007/016
E022/E135

Turbulent Wake Behind Aerodynamically Poor (Blunt) Bodies in a Bounded Stream

coordinate $y_{0.5}$, where $\bar{u} = \bar{u}_{0.5} = \frac{\bar{u}_{max} + \bar{u}_{min}}{2}$

From the experiments it was found that the characteristics of the wakes behind all the bodies examined were qualitatively similar. The authors distinguish two parts of the wake; the initial and the fundamental. In the initial portion the wake is developing; in the fundamental it remains almost unchanged. The velocity changes within the wake are expressed by a function

$$F = \frac{\bar{u}_{max} - \bar{u}}{\bar{u}_{max} - \bar{u}_m}$$

(in which \bar{u}_m represents the velocity along the central line of the flow), and Figs. 6 and 7 show its distribution for all the bodies investigated. Fig. 6 refers to the fundamental portion of the wake, and Fig. 7 to the initial portion. It will be seen from these figures that the character of the function F is

Card 4/13

20598

S/147/61/000/001/007/016
E022/E135**Turbulent Wake Behind Aerodynamically Poor (Blunt) Bodies in a Bounded Stream**

aligned in the direction of the flow. The static pressure was measured by means of a probe with three holes equally spaced along its periphery. It was found that this type of probe was the most accurate. Pressures were read from the manometers. The drag of a body has a substantial influence on the shape of the wake behind the body. Direct measurement of the drag in an enclosed stream is not easy, and for this reason in the present experiments drag was measured by the Jones method (Refs. 1, 2). The wake boundaries were taken as the lines where the total pressure in the wake was equal to the total pressure in the undisturbed stream. Experimental data were used to evaluate the specific axial component of velocity

$$u = \sqrt{\bar{p}_{dyn.}} \sin \alpha$$

$\bar{p}_{dyn.}$ being the specific dynamic pressure of the flow (measured dynamic pressure referred to undisturbed flow dynamic pressure). The thickness of the wake was characterised by the transverse
Card 5/73

20598

S/147/61/000/001/007/016
E022/E135

Turbulent Wake Behind Aerodynamically Poor (Blunt) Bodies in a Bounded Stream

of 14% of the cross-sectional area under the conditions approximating to those in the combustion chamber. The shapes investigated are shown in Fig.1, and the object of the experiments was to determine total pressure, static pressure, and the direction of flow over the whole wake caused by these bodies. The tunnel used for the experiments was of the straight-through type closed working section, and two-dimensional flow was simulated in it. The contraction section was designed according to the method of Witoszynski. The working section dimensions were 0.2 x 0.6 x 2 m. The measurements were taken always at the same station while the model was moved along the wind tunnel. The direction of flow (inclination of the stream lines) was measured by means of a three-tube-in-one probe, the probe inclination being adjusted until the side tubes read the same pressure, the middle top tube being used for a rough estimation of the total pressure at a given point. The exact value of the total pressure was then measured by means of a separate probe
Card 2/13

20598

26. 2.135
10 2000

S/147/61/000/001/007/016
E022/E135

AUTHORS: Abramovich, G.N., Makarov, I.S., and Khudenko, B.G.

TITLE: Turbulent Wake Behind Aerodynamically Poor (Blunt) Bodies in a Bounded Stream

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatsionnaya tekhnika, 1961, No. 1, pp. 61-73

TEXT: The theoretical solution of the processes taking place behind the flame stabilisers (intensity of burning of the mixture etc.) could appreciably ease the problem of designing highly efficient combustion chambers. However, the difficulties in obtaining such theoretical solutions are very great, mainly due to the fact that certain elementary processes of combustion are still not fully understood. In particular, the laws governing the flow of gases immediately behind the blunt bodies are still lacking, in spite of the fact that that region affects very strongly the process of combustion as well as the stability of the flame. The present article presents some experimental investigations of the structure of the turbulent wake behind blunt bodies of different form, placed in a bounded stream and causing blockage
Card 1/13

L 11061-55 INT(4)/INT(1)/INT(4)

ACC NR: AP6018906 SOURCE CODE: UR/0170/66/010/006/0707/0711

AUTHOR: Makarov, I. S. ; Khudenko, B. G. 47
B

ORG: Aviation Institute im. S. Ordzhonikidze, Moscow (Aviatsionnyy institut)

TITLE: A system of flat turbulent jets in a chamber

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 10, no. 6, 1966, 707-711

TOPIC TAGS: turbulent jet, test chamber, flow structure

ABSTRACT: The results of experimental investigations of the turbulent jets in a chamber reveal the same specific peculiarities of net flow as in infinite space: deformation of jet axes while mixing, the presence of extended and intense regions of back currents, etc. However, all these phenomena are intensified in the chamber. There is a possibility of affecting the structure of the net flow, decreasing its nonuniformity, and diminishing hydraulic losses in the chamber by changing the dimensions of lateral jets. Orig. art. has: 4 figures and 1 table. [Based on authors' abstract] [NT]

SUB CODE: 20/ SUBM DATE: 16Dec65/ ORIG REF: 002/

Card 1/1 UDC: 532.517.4

L 29331-66

ACC NR: AP6017839

were equal for all four jets. Formulas for the axial and radial velocity profiles and for the velocity of the resulting flow were developed. Orig. art. has: 3 formulas and 7 figures. [PV] 0

SUB CODE: 21/ SUBM DATE: 19Apr65/ ORIG REF: 003/ OTH REF: 002/ ATD PRESS: 5010

Card 2/2 CC

L 29331-66 EWP(m)/EWT(d)/EWT(l)/EWT(m)/T-2/EWP(f) WW/JW

ACC NR: AP6017839

SOURCE CODE: UR/0147/66/000/002/0137/0142

AUTHOR: Zhukova, L. A.; Makarov, I. S.; Khudenko, B. G. 56
B

ORG: none

TITLE: Mixing²³ of gas jets at the wall

SOURCE: IVUZ. Aviatzionnaya tekhnika, no. 2, 1966, 137-142

TOPIC TAGS: rocket engine, gas dynamics jet, jet mixing

ABSTRACT: The mixing of gas jets is of great importance in the operation of reaction engines. This problem has been studied experimentally and a method was proposed for the approximate calculation of the velocity fields of the resulting gas jet. The test assembly consisted of a square duct with three uniformly spaced nozzles located in a plane parallel to the wall and one nozzle located at a greater distance from the wall but symmetrically with respect to the three nozzles. The total pressures of the jets near the wall and the velocities were measured as a function of distance from the nozzle outlets. The experiments were conducted at discharge velocities of 30, 50, and 80 m/sec, which were equal for all four nozzles. An interesting result was that the axial velocities of the jets changed with distance at different rates, although the discharge velocities, flow rate, nozzle size, and total momentum

Card 1/2

UDC: 533.17

L 32185-66

ACC NR: AP6010859

kinetic and thermal profiles. It was found that under these conditions two density regimes were formed in the stream and the relative width of the cold nitrogen stream is smaller than the isothermal stream. Orig. art. has: 6 figures.

SUB CODE: 20/ SUBM DATE: 10Mar65/ ORIG REF: 003

LC
Card 2/2

I 32185-66 EWP(m)/EWT(1)/EWT(m) WW/JW

ACC NR: AP6010859

SOURCE CODE: UR/0421/66/000/001/0154/0158

AUTHOR: Abramovich, G. N. (Moscow); Bakulev, V. I. (Moscow); Makarov, I. S. (Moscow); Khudenko, B. G. (Moscow)

ORG: none

TITLE: Investigation of a submerged turbulent stream of real gas

SOURCE: AN SSSR. Izvestiya. Mekhanika zhidkosti i gaza, no. 1, 1966, 154-158

TOPIC TAGS: axisymmetric flow, turbulent flow, real gas, gaseous substance, Prandtl number, nitrogen, LIQUID NITROGEN, CRITICAL PRESSURE

ABSTRACT: The results of the experimental investigation of the axisymmetric flow of liquid nitrogen¹ at supercritical pressure in gaseous nitrogen are presented. The observation of the flow with ordinary and shadowgraph cameras indicates that the liquid flow is distinguished by the absence of droplets at the boundary layer, due to vanishing surface tension at supercritical pressure. The conditions of the experiment and the apparatus used are described (the Reynolds number at the exit nozzle was in the range of 1.7 to $5.8 \cdot 10^5$). The kinetic pressure and temperature profiles were measured at upper and mid-stream sections of the flow and the data are compared with the theoretical computations. The Prandtl turbulence number was so chosen that a phenomenological constant employed in the comparison of the results was about the same for the

Card 1/2

75
B

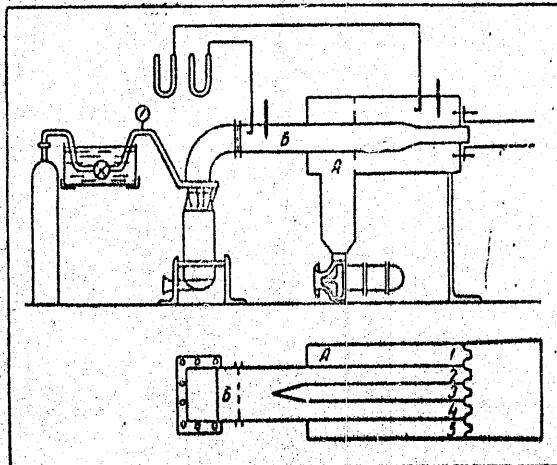
L 5150-66

ACCESSION NR: AP5020941

ENCLOSURE: 01

maximum to minimum. Quantitative processing of the experimental data shows a total analogy in the processes of heat exchange and mass exchange in the system of jets. The differences noted in the characteristics of the individual jets are presented and discussed. Orig. art. has: 4 figures and 1 table.

Fig. 1
Schematic of the
experimental device.
(A and B are
reservoirs; 1, 2, 3,
4, 5 are jets)



Card 3/3 *md*

I 5150-66

ACCESSION NR: AP5020941

ASSOCIATION: Aviatstionnyy institut im. Sergo Ordzhonikidze, Moscow (Aviation Institute) 0

SUBMITTED: 27Oct64

ENCL: 01

^{44, 55}
SUB CODE: ME, TD

NO REF SOV: 003

OTHER: 000

Card 2/3

L 5150-66 EWT(1)/EWP(m)/EWT(m) JD

ACCESSION NR: AP5020941

UR/0170/65/009/002/0180/0186
532.522

AUTHOR: ^{44,55} Makarov, I. S.; Khudenko, B. G. ^{44,55}

TITLE: A system of plane turbulent jets /

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 9, no. 2, 1965, 180-186

TOPIC TAGS: gas flow, turbulent flow, turbulent jet, turbulent mixing, carbon dioxide, jet flow, nozzle flow, heat transfer coefficient, heat transfer

ABSTRACT: The paper gives the results of investigations of the mixing of five plane turbulent air jets, flowing out into the atmosphere from slit nozzles (see Fig. 1 of the Enclosure). Identical slits (8 x 30 mm) were placed equidistant from each other (30 mm). The flow rate, temperature, concentration of carbon dioxide, and the direction of flow at various distances from the nozzle cuts (up to 350 mm) were investigated in the resultant flow. The air being fed into nozzles 2 and 4 was heated to a maximum of 80C. It is found that heat exchange in the jet begins long before the boundaries of the individual jets intersect. After the mixing of the jets (cross section - 52 mm) the temperature changes monotonically from
Card 1/3

69
66
B

09010034

7/17-25

Table 11 (continued)

...the reverse flow zone ...
 ...distance of 50-60 mm from ...
 ...stream in small dist ...
 ...atmospheric pressure ...
 ...the result ...
 ...an intrusion of ...
 ...diminished with distance ...
 ...the injection at $\alpha = 60^\circ$...
 ...of pressure and temp ...
 ...when the velocity ...
 ...increased. The pressure ...
 ...the nozzle) (Fig. 10)

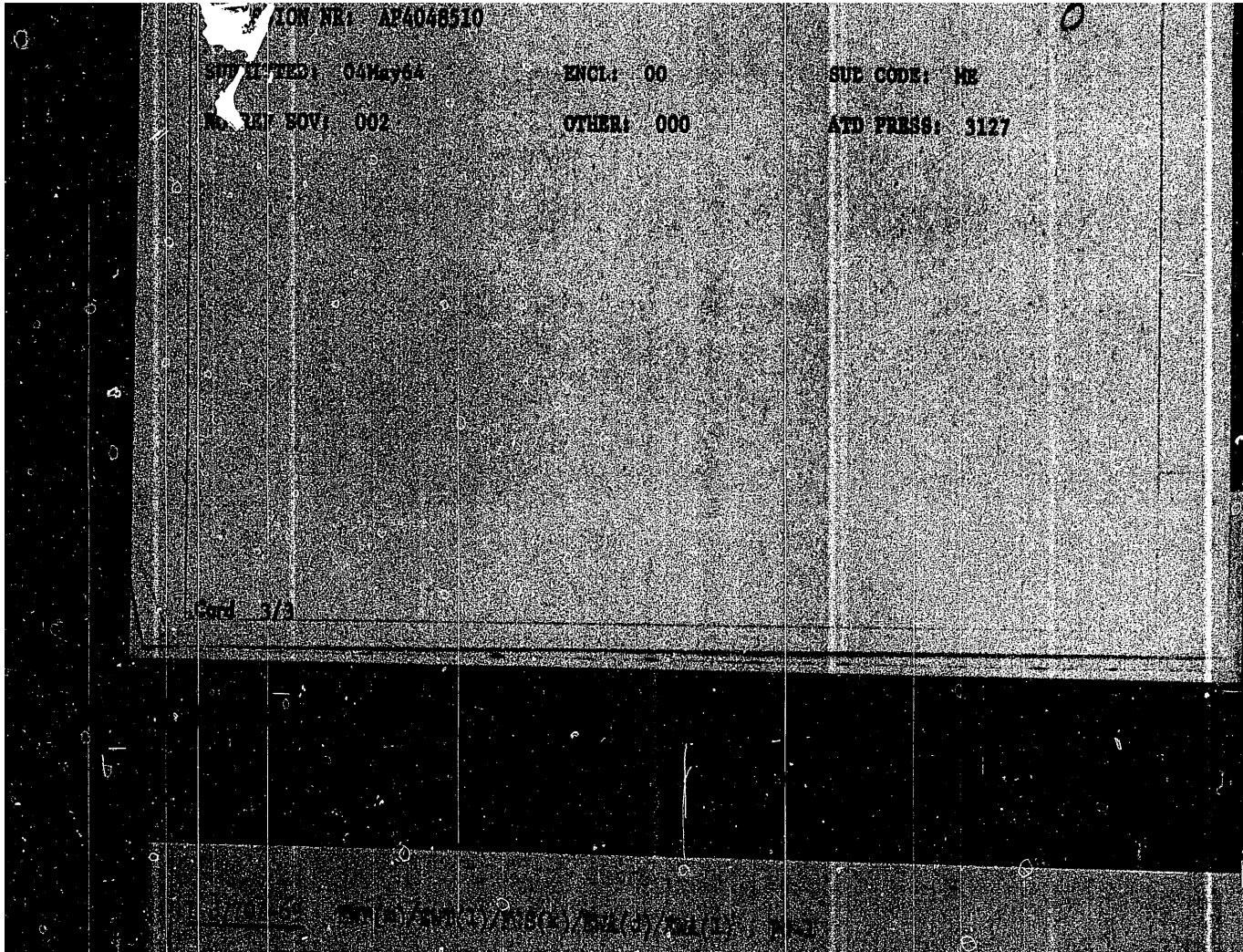
...the pressure was lower again ...
 ...disappeared with distance ...
 ...nozzle. The high pressure ...
 ...from the nozzle decreased ...
 ...The temperature fields showed ...
 ...from the side where ...
 ...into the cold jet ...
 ...The velocity, pressure, and ...
 ...of the main jet with the higher ...
 ...was of the same general ...
 ...closer to the ...
 ...of the main jet decreased and ...
 ...also increased as mixing oc ...
 ...Figure and 1 table

(25)

...Avia-Shemya Institute in Berg Ordina ... Moscow (Aviation)

...EIGHT: 00 ... SUB CODE: ME
 ...OTHER: 000 ... ADD PRESS: 3224

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031500048-6



FORM NO: AP4048510

SHIP METHOD: 04MAY64

ENCL: 00

SUB CODE: HE

NO. OF BOV: 002

OTHER: 000

ATD PRESS: 3127

END 3/3

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031500048-6

A-12470-65
ACCESSION NR: AP4048510

refraction coefficient profiles for the resulting (mixed) flow. It is shown that the velocity distribution in the boundary layer during the mixing of the two jets has a universal character, with respect to both the mixing of two jets and the mixing of a jet with stationary air. During the mixing of the two jets, their axes deviate from the initial direction; this phenomenon is attributed to the ejection of the surrounding air by the jets. The ejection sets the air in motion. Since the turbulent pulsations do not penetrate deep into the air, the air motion has a potential character and occurs without the loss of total pressure. A decreased static pressure (with respect to the atmospheric pressure) was observed between the two jets which leads to deviation of the jets, drawing them closer together. Analysis of the experimental data showed that the equations for calculating the boundaries of a submerged turbulent jet are applicable to the boundaries of two mixing jets. The equation for calculating the change in velocity on the axis of a single turbulent jet is also applicable to the change in velocity on the axes of two mixing jets. Orig. art. has: 6 figures and 10 formulas.

ASSOCIATION: none

Card 1/3

1 12470-43 BMT (3)/BWT(1)/BWP(a)/BWT(a)/BWP(1)/BWP(2)/BWS(1)/BWA(1) P1-1/P2-4
ACCESSION NR: AP/048510 ASD(p)-3/ABDC(a) NR 8/0147/64/000/004/0067/0076

AUTHOR: Zhukova, L. A.; Makarov, I. S.; Khudonko, B. G.

TITLE: Mixing of plane-parallel turbulent jets

SOURCE: IVUZ, Aviatzionnaya tekhnika, no. 4, 1964, 67-76

TOPIC TAGS: jet mixing, plane parallel jet, turbulent jet, air jet, carbon dioxide admixture

ABSTRACT: Experimental results are presented on the mixing of two plane-parallel turbulent air jets discharging into the atmosphere from square nozzles, 10 x 40 mm in size, at velocities ranging from 20 to 56 m/sec. The distance between the nozzles was varied from 40 to 120 mm. The resulting concentration fields of an admixture gas (CO₂) during the mixing of the two jets was also investigated at a constant distance between the nozzles and at velocities of 20-30 m/sec. To shape the jets, they were discharged into a space enclosed between two plates. The measurements were taken at a distance of 40 mm from the nozzle. The initial jets contained 10% CO₂. The experimental data were treated mathematically in dimensionless parameters to obtain the total pressure, relative velocity, and

Card 1/1

MAKAROV, I.S.

Detection of coded signals recorded on a magnetic carrier.
Radiotekhnika 18 no.11:50-56 N '63. (MIRA 10:12)

1. Deystvitel'nyy chlen Nauchno-tekhnicheskogo obshchestva
radiotekhniki i elektrosvyazi imeni Popova.

MAKAROV, I.S.

Boundary effect of a magnetic recording head. Radiotekhnika 18
no.7:66-72 J1 '63. (MIRA 16:10)

1. Deystvitel'nyy chlen Nauchno-tekhnicheskogo obshchestva
radiotekhniki i elektrosvyazi im. A.J.Popova.

ACC NR: AR6009' 59

main motor without differential transmission, the author carries out a thorough mathematical analysis of the operating conditions of the reduction mill and presents a graph method of calculating the regimes of operating speeds of the reduction mill. Further, the author presents nomograms for determining the parameters of the auxiliary motor of a reduction mill with a differential reducing gear. 9 illustrations. I. Kul'bachnyy. [Translation of abstract]

SUB CODE: 13, 11

Card 2/2 of