S/032/60/026/06/23/044
B010/B016

AUTHOR: Frontas'yev, V. P.

TITLE: Optical Method of Determining the Temperature Dependence of the Heat Conductivity of Liquids

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 6, pp. 738-740

TEXT: The coefficient of the electrical conductivity of liquids at high temperatures is approximately calculated from equation (1) which has been suggested by A. S. Predvoditelev (Ref. 1). The author of the present paper suggests to determine the refractive index for two temperatures instead of the density of the liquid. The temperature dependence of the heat conductivity λ of the liquid may be determined from equation (4) by the optical method, if λ is known for a certain temperature, and the refractive indices for two temperatures. To check this method the values for λ of some organic liquids were calculated from equation (4), compared with experimental data (Table), and found to be in good agreement. The difference of the values for aniline is assumed to be due

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Optical Method of Determining the Temperature Dependence of the Heat Conductivity of Liquids

S/032/60/026/06/23/044
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to an inexact determination of λ by L. P. Fillipov (Ref. 9). The optical method described may be defined as a quick method. A ИРФ (IRF)-23 refractometer (Ref. 4) is recommended for the measurements. N. B. Vargaftik is mentioned in the paper. There are 1 table and 9 Soviet references.

ASSOCIATION: Nauchno-issledovatel'skiy institut mekhaniki i fiziki pri Saratovskom gosudarstvennom universitete (Scientific Research Institute of Mechanics and Physics at the Saratov State University)

Card 2/2

AUTHORS: Frontas'yev, V. P., Shrayber, L. S. (Saratov)

S/076/60/034/03/030/038
B005/B016

TITLE: Method for Precision Measurements of the Refractive Index of Liquids by Means of the IRF-23 (Pulfrich Type) Refractometer in the Temperature Range 0 - 100°C

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol 34, Nr 3, pp 675-678 (USSR)

TEXT: The authors of the present paper constructed an additional device for the Pulfrich refractometer of the IRF-23 type, by means of which precision measurements of the refractive indices of liquids at higher temperatures (up to 100°C) are possible. The greatest disadvantage of all pulfrich refractometers is the open face of the prism from which the beam emerges, which is the most essential cause of temperature fluctuations in the glass of the prism and in the liquid to be investigated. At temperatures above 70°C these temperature differences bring about errors in the measurement of the angle of refraction. In the new design developed by the authors a hermetically sealed cell is used in the form of a hollow glass cylinder the surface of which is carefully polished on its interface with the prism of the refractometer. A 0.01 mm gold foil is used as a seal between the bulb and the prism. Outward heat losses of the bulb are prevented by

Card 1/3

Method for Precision Measurements of the Refractive Index of Liquids by Means of the IRF-23 (Pulfrich Type) Refractometer in the Temperature Range 0 - 100°C

S/076/60/034/03/030/038
B005/B016

a protective envelope which is kept at the same temperature as the prism. The top of the bulb is closed by a ground-in glass stopper which is also connected to the thermostat. The liquid to be investigated is thus kept at constant temperature from above and from the sides. The glass stopper has two openings through which a thermocouple and a magnetic stirrer made of platinum are introduced into the liquid. The opening for the stirrer also takes up the air and that part of the liquid which are displaced on sealing the bulb. The glass stopper rests on the liquid to be investigated during the measurement. The stopper is covered by a ground-in bell jar in the interior of which the stirrer head is suspended. The magnetic stirrer is driven by a selenoid which is put over the bell jar and actuated by alternating current. A SD-60 synchronous motor is used as interrupter. In order to keep the heat losses caused by the prism of the refractometer at a minimum, a hollow screen was attached to the prism, which is also connected with the thermostat. This screen covers the face from which the beam emerges and warrants constant temperature. In the screen two cuts are fitted for the passing light ray and for the recording of the zero-point correction. By means of a second thermostat, the prism itself is kept a constant temperature, which is

Card 2/3

FRONTAS'YEV, V.P.; SHRAYBER, L.S.

Electron polarizability change of ordinary and heavy water molecules under the effect of temperature. Zhur. strukt. khim. 6 no. 4:512-521 Jl-Ag '65 (MIRA 19:1)

1. Saratovskiy gosudarstvennyy universitet. Submitted December 19, 1964.

FRONTAS'YEV, V.P.; SAKHAROVA, Yu.G.; SAKHAROVA, N.N.

Solubility in water of complex compounds of lanthanum, cerium, praseodymium, neodymium, and samarium acetates with thiourea. Zhur.neorg.khim. 10 no.8:1816-1821 Ag '65. (MIRA 19:1)

1. Saratovskiy gosudarstvennyy universitet, kafedra neorganicheskoy khimii. Submitted December 6, 1963.

FRONTAS'YEVA, M.

Clearing-House

Mutual clearing in the national economy of the U. S. S. R., Den. i kred., No. 3, 1952.

Monthly List of Russian Accessions, Library of Congress, July 1952. Unclassified

FRONTAS'YEVA, M.

"Clearing payments in the U.S.S.R. national economy." A. Zaidenvarg; "Payment to industrial enterprises for out-of-town shipments." P. Serebrov. Reviewed by M. Frontas'eva. Den.i kred. 14 no.2:56-61 F '56. (MLRA 9:5)

(Payment)(Serebrov, P.)

FRONTCZAK, Andrzej; MULTANSKI, Stefan

Spontaneous pneumothorax. Polski tygod. lek. 14 no.30:1410-1412 27 July 59.

1. (Z III Kliniki Chorob Wewnetrznych Ak. Med. w Lodzi; kierownik: prof. dr med. Waclaw Markert)
(PNEUMOTHORAX)

FRONTCZAK, Andrzej; TYDELSKA, Egida; ULINSKA, Irena

On the differences between bacterial floras of the oral cavity and the bronchial tree observed in cases of pneumo. ia. Polski tygod. lek. 15 no.18:657-659 2 My '60.

1. Z III Kliniki Chorob Wewnetrznych A.M. w Lodzi; kierownik prof. dr. med. W. Markert i z Zakladu Analityki Klinicznej; kierownik prof. dr. med. A. Wierzbowska.
(PNEUMONIA microbiol.)
(MOUTH microbiol.)
(BRONCHI microbiol.)

FRONTCZAK, Andrzej

Behavior of the vital capacity of the lung in relation to the type of respiration and environmental air irritating the respiratory tract. Pol. tyg. lek. 18 no.17:592-593 22 Ap '63.

1. Z III Kliniki Chorob Wewnetrznych AM w Lodzi; kierownik: prof. dr. med. Waclaw Markert.
(AIR POLLUTION) (RESPIRATORY FUNCTION TESTS)
(SULFIDES)

FRONTCZAK, F.

Auxiliary power plants for track sections. p. 170.
(PRZEGLAD KOLEJOWY ELEKTROTECHNICZNY. Vol. 8, no. 6, June 1956) Warszawa, Poland)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, No. 12, Dec. 1957.
Uncl.

FRONTCZAK, Feliks, mgr inz.

Electric preheating of passenger cars on sidings. Przegl kolej elektrotech 11 no.1:7-12 Ja '64.

[illegible], S.

[illegible] Czechoslovak electrofilel [illegible].

P. 13. ([illegible]) (Warsaw, Poland) Vol. [illegible], no. 2, Feb. 1957

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

FROLTCZAK, F.

Principles of selecting the proper installation for feeding electric railroads with power. p.374

Warszaw, Poland. PRZEGLAD KOLEJOWY. Wydawnictwa Komunikacyjne
Vol.10, no.9, Sept.1958

Monthly List of East European Accessions Index, (EEAI) LC, Vol.8, no.6
June 1959
Uncl.

FRONTCZAK, Feliks, mgr inz.

Thermal loads of overhead wires and cables in installations of electric traction. Przegl kolej elektrotech 14 no.6:179-186 Je '62.

FRONTCZAK, Feliks, mgr inz.

Is the use of the We 8 and We 9 indicators necessary? Przegl kolej elektrotech. 11 no.12:306-311 D '64.

NOSKOWICZ, T.; FRONTCZAK, J.

Usefulness of small-frame radiography in detecting heart diseases. Kardiol. pol. 6 no.1:49-50 '63.

1. Z Poradni Chorob Ukladu Krazenia Kierownik: dr R. Fenigsen i z Wojewodzkiej Przychodni Przeciwgruzliczej m. Lodzi Dyrektor: dr Z. Czerwinski.
(HEART DISEASES) (THORACIC RADIOGRAPHY)

FRONTCZAK, Jozef, mgr inz.

Appropriate structure of fire clay lining of industrial chimneys. Wiad hut 16 no.10:314-315 O '60.

FRONTINSKIY, B.V.; KAVADEROV, A.V.

"Heat transfer in open-hearth furnaces" by V.S. Kocho
V.I. Grankovskii. Reviewed by B.V. Frontinskii, A.V.Kavaderov.
Stal' 21 no.12:1082-1084 D '61. (MIRA 14:12)

1. Leningradskiy politekhnicheskiy institut (for Frontinskiy).
2. Vsesoyuznyy nauchno-issledovatel'skiy institut metallurgicheskoy teplotekhniki (for Kavaderov).

(Open-hearth furnaces)
(Heat--Transmission)
(Kocho, V.S.)
(Grankovskii, V.I.)

FRONTINSKIY, Boris Vladimirovich; LUR'YE, I.N., red.; LANOVSKAYA, M.R., red. izd-va; KARASEV, A.I., tekhn. red.

[Output of open-heart furnaces] Proizvoditel'nost' martenovskikh pechei. Moskva, Metallurgizdat, 1962. 159 p. (MIRA 15:7)
(Open-hearth furnaces)

FRONTINSKIY, B.V.

Steel smelting furnace without regenerators. Trudy LPI no.253:65-78 '65. (MIRA 18:8)

FRONTCZAK, Andrzej

Value of cytological sputum examination in the diagnosis of bronchial cancer. Pol. arch. med. wewnet. 35 no. 8: 1203-1208 '65.

1. Z III Kliniki Chorob Wewnetrznych AM w Lodzi (Kierownik: prof. dr. med. W. Marlert).

[illegible], Mieczysław; [illegible], Jan

[illegible] in a case of circumscribed posterior [illegible]. Pol. przegl. endokr. 39 no.3:[illegible] 65

1. Z Poradni Wenerologicznej P/gruźliczego w Tczewie i Oddziału przewlekłego (Ordynator dr. med. H. Calvianiano).

PLAAN, O.Ya.; FRORIP, G.V., nauchnyy sotrudnik

Sterilization of thermoses and transportation boxes at the stations for artificial insemination. Veterinariia 40 no.6:75-76 Je '63. (MIRA 17:1)

1. Estonskiy nauchno-issledovatel'skiy institut zhivotnovodstva i veterinarii.

1. FROSHLOM, G. SV., MASHOVETS, V. P.

2. SSSR (600)

4. Electromotive Force

7. Calculation of the fall of potential in electrolyzers for the production of aluminum.
Zhur. priki. khim. 25 No. 11, 1952

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

28(2) PHASE I BOOK EXPLOITATION SOV/1679

Froshikov, Aleksandr Ivanovich, and Aleksandr Lukich Usan

Schetno-perforatsionnyye 45-kolonnyye mashiny; tekhnicheskoye obsluzhivaniye i remont (Forty-Five Column Punched Card Computer; Servicing and Repair) Moscow, Mashgiz, 1958. 270 p. 3,000 copies printed.

Reviewers: N.A. Vasilevskiy and I.F. Merekalov; Ed.: M.G. Rappoport; Ed. of Publishing House: A.G. Akimova; Tech. Ed.: A.F. Uvarova; Managing Ed. for Literature on Machine Building and Instrument Construction: N.V. Pokrovskiy, Engineer.

PURPOSE: The book is intended primarily for mechanics engaged in the maintenance and repair of punched card computers, and may also be useful to people employed in the field of mechanization of calculations.

Card 1/12

FROSIN, V.N.

GRINEV, A.N.; FROSIN, V.N.; TERENT'YEV, A.P.

Investigation in the field of quinones. Part 4. Synthesis of substituted naphthofurans. Zhur.ob.khim. 25 no.3:523-526 Mr '55 (MLRA 8:6)

1. Moskovskiy Gosudarstvennyy universitet
(Naphthofuran)

FROSIN, V.N.

USSR/Organic Chemistry. Synthetic Organic Chemistry. E-2

Abs Jour: Ref Zhur-Khimiya, No 6, 1957, 19173

Author : Grinyev A. N., Pan Bon Khvar, Frosin V. N., Tyerent'yev A. P.

Inst :

Title : Studies in Quinones. VIII. Condensation of Chlor-and 2, 3-dichloro-n-benzoquinone with Acetoacetic and Benzoylacetic Esters.

Orig Pub: Zh. obshch. khimiyi, 1956, 26, No 2, 561-564

Abstract: There were obtained diethyl esters of 4-chloro-2,6-dimethylbenzo-[1, 2-c; 4,5-c']-difuranedicaroxylic-3, 7 acid (I); ethyl ester of 6,7-dichloro-2-methyl-5-hydroxybenzofuranecarbonxylic-3 acid (III) by condensation of chloro-(IV) and 2,3-dichloro-n-benzoquinone (V) with $CH_3COCH_2COOC_2H_5$ (VI) and $C_6H_5COCH_2COOC_2H_5$ (VII) in alcohol, in the presence of $ZnCl_2$. To the solution of 28 g.

Card : 1/3

Moscow State U.

USSR/Organic Chemistry. Synthetic Organic Chemistry. E-2

Abs Jour: Ref Zhur-Khimiya, No 6, 1957, 19173

$ZnCl_2$ in 20 g. of abs. alcohol is added 39 g. VI, and at 80-95° is added in small portions 15 g. IV, heated for 30 min. (80°); after cooling 8.2 g. I, m. p. 164-165° (from alcohol) is obtained. Structure I is determined by its transformation at the chlorination into diethyl ester 4,8-dichloro-2, 6-dimethylbenzo-[1,2-c; 4,5-c']-difuranedicarboxylic -3,7 acid. By saponification of I with alcoholic alkali the corresponding acid is obtained, m. p. 240° (decomp. from CH_3COOH). In analogical conditions from 5 g. V, 18 g. VI, 3,8 g. $ZnCl_2$ and 5 cc abs. alcohol is obtained 2.9 g. II, m.p. 202.5° (from alc.). Structure II is determined by its transformation into the ethyl ester of 4, 6, 7-trichloro-2-methyl-5-hydroxybenzofuranecarboxylic-3 acid. Saponification of II yields the corresponding acid, m.p. 275° (dec., from a 50% CH_3COOH).

Card : 2/3

USSR/Organic Chemistry. Synthetic Organic Chemistry. E-2

Abs Jour: Ref Zhur-Khimiya, No 6, 1957, 19173

From 6 g. V, 7 g. VII, 4.75 g. $ZnCl_2$ and 6 cc abs. alcohol is obtained 5.35 g. III, m.p. 185-186° (from alc.) At the saponification of III the corresponding acid m.p. 207° (dec.) is obtained.

Card : 3/3

5 (3)

AUTHORS: Knunyants, I. L., Academician, Bykhovskaya, E. G., Frosin, V. N.

SOV/20-127-2-28/70

TITLE: Interaction Between ψ-Olefines and Hydroxylamine

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 127, Nr 2, pp 337-340 (USSR)

ABSTRACT: The addition of hydroxylamine, a nucleophilic reagent, to perfluoro olefines has a long time not been investigated. Hydroxylamine is easily added to ψ-propylene and ψ-isobutylene, as it is expected. The initially produced addition products are unstable and separate spontaneously HF during the reaction course. They are in this case transformed into fluorides of the hydroxamic acids of corresponding 2-mono-hydro-perfluoro carboxylic acids. The escaping HF is bound by hydroxylamine (see Scheme). The produced fluorides of the 2-hydro-perfluoro-propio-hydroxamic acid and 2-hydro-perfluoro-isobutyro-hydroxamic acid were isolated as complexes with alcohol or ether (according to the solvent used). They are colorless transparent liquids with an acrid smell insoluble in water, well soluble in usual organic solvents. Boiled with an aqueous bicarbonate solution, they react with ferric chloride positively to hydroxamic acid. Their structure see scheme (III) and (IV). The hydrolysis products of

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Interaction Between φ-Olefines and Hydroxylamine SOV/20-127-2-28/70

the anhydride of fluoric acid of the first of the produced acids with water, hydrochloric- and sulphuric acid are described. The methyl ester of the 2-hydro-perfluoro-propionic acid and sodium fluoride were isolated as a result of the reaction between the ether complex of the same acid and the alcoholic solution of sodium methylate. This confirms the existence of fluorine as acid fluoride in this compound. The obtained hydroxamic acids can be easily distilled in vacuum. They cleave off 2 HCl molecules in the case of heating with thionyl chloride and form cyclic compounds (see Scheme). The latter cleaves off sulphur gas under the influence of alkali and produces a hydroxamic acid salt. There is 1 Soviet reference.

SUBMITTED: May 12, 1959

Card 2/2

5.3600

80058

S/020/60/132/01/32/064
B011/B126

AUTHORS: Knunyants, I. L., Academician, Bykhovskaya, E. G., Frosin, V. N., Kisel', Ya. M.

TITLE: The Interaction of Fluoroolefines With Nitrosyl Fluoride

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 1, pp. 123-126

TEXT: The authors have shown that the reaction named in the title occurs easily: Nitrosyl fluoride (NOF) is added to the double bond >C—C< . Thus, on the reaction of nitrosyl fluorides with φ-isobutylene, tert-φ-nitrosoisobutane forms (boiling point +24°). 2-Nitroso-φ-propane (boiling point -13°) was prepared from φ-propylene and NOF. φ-ethylene certainly reacts with NOF, but φ-nitroso-ethane was not obtained. The latter reacts with the φ-ethylene excess and gives perfluoro-2-ethyl-1,2-oxacetidine as the main product of the reaction (analogous to Ref. 5). On the other hand, surprisingly, φ-nitrosoethane was obtained from the reaction of NOF with trifluoroethylenes. It is a blue gas with a boiling point of from -42° to -43°. Its formation is explained by means of chemical equations. The reaction of NOF and vinylidene fluorides is even more complicated: The single product obtained from it has the summation formula $(C_2F_3H_2ON)_x$. The

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The Interaction of Fluoroolefines With Nitrosyl Fluoride

S/020/60/132/01/32/064
B011/B126

authors ascribe a definite structure to it (see scheme), and explain in a further scheme the supposed conversions that lead to its formation. With the initially described main reaction, side reactions often take place: oxidation, fluorination, and nitration of the original fluoroolefine by NOF and nitrogen oxides. The latter are formed by the decomposition of NOF. Thus, from the reaction of NOF with tetrafluoroethylene, hexafluoroethane and nitrodifluoroacetic acid were formed (see scheme). From the products of the reaction of NOF with trifluoroethylene the authors obtained trifluoroacetaldehyde, trifluoroacetic acid, pentafluoroethane, and φ-nitrosoethane. Apart from φ-nitrosopropane, hexafluoropropanol-2-nitrite was obtained from the reaction between NOF and φ-propylene. It was changed into hexafluoroacetone by hydrolysis. The reactivity of fluoroolefine with NOF varies. While the hydrofluoroolefines $CF_2=CFH$ and $CF_2=CH_2$ react vigorously with NOF, so that the reaction can only take place if the reagents are diluted with an inert solvent, perfluoroolefines react with NOF under more rigid conditions. Thus, φ-isobutylene reacts at room temperature with NOF without a solvent. NOF reacts with tetrafluoroethylene and φ-propylene only on heating and in the presence of a catalyst (active carbon). Without the catalyst only nitration (and fluorination) products of φ-olefines are formed. There are 12 references, 2 of which are Soviet.

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5.3600
5.3610

80481
S/020/60/132/02/31/067
B011/B002

AUTHORS: Knunyants, I. L., Academician, Bykhovskaya, E. G., Frosin, V. N.

TITLE: Rearrangement of α,α-Difluoroalkylazides

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 2, pp. 357-359

TEXT: By heating β-monohydroperfluoropropyl- and β-monohydroperfluoroisobutylazides up to 200°, the authors obtained corresponding carbylamine fluorides. The structure of the carbylamine fluorides obtained from the thermal rearrangement of α,α-difluoroalkylazides had to be determined. From the reaction of α-monohydroperfluoroisopropylcarbylamine fluoride with aniline, the authors obtained urea identical with that obtained from α-monohydroperfluoroisopropylisocyanate and aniline (Scheme). In order to obtain the isocyanate mentioned, the reaction between φ-isobutylene and hydroxylamine (Ref. 2) was applied. The α-monohydroperfluoroisobutyrohydroxamic fluoride thus developing, was transformed into the acid chloride of the same acid on reaction with liquid HCl. Treated with silver benzoate, this acid chloride produced the benzoyl derivative of α-monohydroperfluoroisobutyrohydroxamic acid. On heating, this derivative rearranged itself and developed α-monohydroperfluoroisopropyliso-

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Rearrangement of α,α-Difluoroalkylazides

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S/020/60/132/02/31/067
B011/B002

cyanate (Scheme). The rearrangement of the perfluoroalkenazides via the corresponding "perfluoroalkenylazacarbenes" was expected, as it seems, to develop a tricycled nitrogen-containing compound. Such "azacarbenes" however, as has been already published (Ref. 2), actually develop in such a way that one fluorine atom of the γ-position passes over into the nitrogen. Due to the conjugation of bonds, such rearrangement probably takes place more quickly than a "depairing" of the electrons of the π bond whose electron density is exhausted (Scheme). By "azacarbenes" the authors mean nitrogen-containing analogs of carbenes. They develop by the generally known rearrangement of acid azides (Curtius rearrangement) resulting in the development of isocyanates. Azacarbenes are stabilized in the form of isocyanates. The above-mentioned reaction developing carbylamine fluorides is similar to the Curtius rearrangement. There are 2 Soviet references.

SUBMITTED: January 30, 1960

Card 2/2

KNUNYANTS, I.L.; FROSIN, V.N.; BYKHOVSKAYA, E.G.

Interaction of fluoroolefins with N,N-diethylhydroxylamine. Zhur.VKHO 10 no.4:470-471 '65. (MIRA 18:11)

KNUNYANTS, I.L.; BYKHOVSKAYA, E.G.; DYATKIN, B.L.; FROSIN, V.N.; GEVORKYAN, A.A.

Interaction of trifluoronitroisomethane and tert-perfluoronitroisobutane with acid phosphites. Zhur.VKHO 10 no.4:472-473 '65. (MIRA 18:11)

ACC NR: AP6025587 SOURCE CODE: UR/0413/66/000/013/0020/0020

INVENTOR: Knunyants, I. L.; Bykhovskaya, E. G.; Frosin, V. N.; Sizov, Yu. A.

ORG: none

TITLE: Method of preparation of 2-(N-alkoxy-N-alkyl)aminoethyle mercaptans. Class 12, No. 183204. [announced by Miliatry Academy for Chemical Protection (Voyennaya akademiya khimicheskoy zashchity)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 13, 1966, 20

TOPIC TAGS: alkoxyalkylaminoethyl mercaptan, ethylene sulfide, dialkylhydroxylamine, mercaptan, sulfide, hydroxylamine

ABSTRACT:

In the proposed method, 2-(N-alkoxy-N-alkyl)aminoethyl mercaptans are obtained by the reaction of ethylene sulfide with N,O-dialkylhydroxylamine at 90—100°C in an organic solvent. [W.A. 50; CBE No. 10]

SUB CODE: 07/ SUBM DATE: 20Sep65/

Card 1/1 UDC: 547.269.1'233.07

ACC NR: AP6035835

SOURCE CODE: UR/0413/66/000/020/0038/0038

INVENTOR: Knunyants, I. L.; Bykhovskaya, E. G.; Frosin, V. N.; Sizov, Yu. A.

ORG: none

TITLE: Preparation of fluorine-containing isoxazolidines. Class 12, No. 187026 [announced by Military Academy for Chemical Protection (Voyennaya akademiya khimicheskoy zashchity)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 20, 1966,38

TOPIC TAGS: fluoroisoxazolidine, nitrone, olefin, potassium fluoride, fluorinated organic compound, potassium compound, fluoride

ABSTRACT: In the proposed method, fluorine-containing isoxazolidines are obtained by treating nitrones with C_1—C_5 ϕ-olefins in an organic solvent, e.g., benzene, in the presence of potassium fluoride in an autoclave at ~20°C.

[WA-50; CBE No. 14]

SUB CODE: 07/ SUBM DATE: 20Sep65 [PS]

Card 1/1

UDC: 547.786'221.07

KNUNYANTS, I.L.; FOKIN, A.V.; KOSYREV, Yu.M.; SOROCHKIN, I.N.; FROSINA, K.V.

Nitration of perfluorobutadiene with nitrogen peroxide. Izv. AN SSSR Ser.khim. no.10:1772-1775 O '63. (MIRA 17:3)

FROSEL, Evzen, MUDr. Spindlerov Mlyn

District system in the mountains. Prakt. lek., Praha 34 no.11: 251-252 5 June 54.
(PUBLIC HEALTH,
in Czech., district system in mountains)

FROST, A.M.

DRINBERG, A.Ya.; DUNDYLER, B.M.; FROST, A.M.

Production and analysis of styrene and methacrylic acid copolymers.
Zhur. prikl. khim. v 31 no.5:771-777 My '58. (MIRA 11:6)
(Styrene) (Methacrylic acid)

DRINBERG, A.Ya.; FUNDYLER, B.M.; FROST, A.M.

Preparation and study of styrole and methacrylic acid copolymers. Zhur. prikl. khim. 31 no.7:1080-1086 Jl '58. (MIRA 11:9)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Polymers) (Methacrylic acid) (Styrene)

FROST, A. M., Cand Tech Sci -- (diss) "Synthesis of some carboxy-containing co-polymers of styrene and their transformation upon reaction with polyvalent metals." Leningrad, 1960. 14 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Leningrad Order of Labor Red Banner Technological Inst im Lensovet); 200 copies; price not given; (KL, 18-60, 153)

Z/011/61/018/001/010/014
E112/E453

AUTHORS: Frost, A.M. and Blagonravova, A.A.

TITLE: The reaction between binder and pigment in thin surface coating layers

PERIODICAL: Chemie a chemická technologie, 1961, Vol.18, No.1, p.33, abstract Ch 61-446 (Lakokras. Materialy, 1960, No.1, pp.32-38)

TEXT: A co-polymer of styrene-maleic anhydride, esterified with butanol, was used as binder and the effect of an addition of zinc oxide and orthophosphoric acid was studied. In the presence of an excess of zinc oxide, the zinc salt of the polymer is formed, which is converted into zinc phosphate on the addition of phosphoric acid. If this system is applied to a steel surface, the phosphoric acid will react with the steel and the co-polymer will produce tri-dimensional structures with zinc. On the basis of the above binder, primers of high-reactivity can be prepared which in some respects are superior to polyvinylbutyral resins. 1 X-ray diagram, 5 diagrams, 9 tables, 8 literature references.

[Abstractor's note: Complete translation.]

Card 1/1

GUREVICH, Ye, S.; FROST, A.M.

Compatibility of film-forming polymer solutions. Lakokras. mat. i ikh prim. no.3:11-13 '61. (MIRA 14:6)
(Polymers)
(Films (Chemistry))

GUREVICH, Ye.S.; FROST, A.M.

Use of synthetic rubber as a film-forming base. Lakokras. mat. i ikh prim. no.4:15-17 '63. (MIRA 16:10)

1. Leningradskiy filial Gosudarstvennogo nauchno-issledovatel'skogo i proyektnogo instituta lakokrasochnoy promyshlennosti.

ACCESSION NR: AP4040512 S/0303/64/000/003/0003/0008

AUTHOR: Frost, A. M.; Rozhkov, Yu. P.

TITLE: Study of the compatibility of film-forming polymers and resins

SOURCE: Lakokrasochny*ye materialy* i ikh primeneniye, no. 3, 1964, 3-8

TOPIC TAGS: chlorinated polymer, nitrile rubber, nairit, butyl rubber, rubber compatibility, rubber softening, rubber phase reversal, carboxylated rubber, polychloroprene rubber, ethylene propylene rubber

ABSTRACT: The object of the work was to study the properties of various binary systems based on chlorinated polymers and various rubber, for the purpose of determining their compatibility and selecting compositions possessing optimum properties and suitable for the production of paint and varnish coatings. In the case of nitrile rubbers, it was found that a true blending of the components with the formation of a homogeneous phase is observed within a narrow range of rubber concentrations. It is postulated that because of the presence of large substituents of like charges in the chains of the compatible polymers and because of the flexibility of the rubber molecules, softening takes place owing to an

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ACCESSION NR: AP4040512

increase in the entropy of the system at a rubber content up to 15 wt. %. As the rubber content increases, the interaction between chloring atoms and the CN groups of rubber becomes appreciable and causes the formation of a microheterogeneous disperse system. At some ratio of the components, phase reversal takes place, and the system transforms into a macroheterogeneous one. It was shown that compositions with carboxylated rubber have properties similar to those of SKN-26 rubber only when the rubber content is moderate; when it is high, the components interact with the participation of carboxyl groups. Compositions based on chlorinated polymers and polychloroprene rubber showed that the presence of like substituents in the polymer and rubber causes the entropy factor to predominate during their blending. When chlorinated polymers were blended with nairit, heterogeneous systems consisting of dispersions of rubber in polymer or of polymer in rubber were obtained. The region of phase reversal corresponds to the region of maximum lamination of the components. It was found that nonpolar rubbers (butyl and ethylene-propylene rubber) do not blend with chlorinated polymers. On the basis of an analysis of the properties of various compositions of chlorinated polymers with various rubbers, binary compositions possessing optimum properties are recommended for use in paint and varnish production.

ASSOCIATION: none

Card 2/3

L 31121-65 EWT(m)/EPF(c)/EWP(j)/T/EWP(b) Pc-4/Pr-4/ RM/JD

28
B

ACCESSION NR: AP5007164 S/0286/65/000/003/0038/0038

AUTHOR: Frost, A. M.

TITLE: A method for producing coatings on metal. Class 22, No. 167920 15

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 3, 1965, 38

TOPIC TAGS: plastic coating, polymerization, polymer film

ABSTRACT: This Author's Certificate introduces a method for producing coatings on metal by polymerization of unsaturated carboxyl-containing monomers in the presence of an initiator. In order to improve the assortment of film forming agents, butyl maleate is used.

ASSOCIATION: none

SUBMITTED: 10Oct62 ENCL: 00 SUB CODE: GC, MT

NO REF SOV: 000 OTHER: 000

Card 1/1

L 1877-66 EWT(m)/EPF(c)/EWP(j) RM

ACCESSION NR: AP5022509 UR/0303/65/000/004/0019/0022
667.621.64

AUTHOR: Rozhkov, Yu. P.; Frost, A. M.

TITLE: Effect of the properties of nitrile rubbers on their compatibility with perchlorovinyl resin

SOURCE: Lakokrasochnyye materialy i ikh primeneniye, no. 4, 1965, 19-22

TOPIC TAGS: nitrile rubber, polymer structure, resin

ABSTRACT: The effect of the properties of nitrile rubbers (SKN-18, SKN-26, SKN-40) on the physicomechanical characteristics and water resistance of two-component compositions based on the perchlorovinyl resin was investigated. The plasticizing effect of the rubber depends on the degree of polarity, which is determined by the content of nitrile groups. The compatibility of the rubber with the perchlorovinyl resin increases with the content of nitrile groups in the rubber. In its effect on the properties of the compositions, SKN-18 rubber, which is the least polar of the rubbers studied, approaches nonpolar rubbers. Less plastic rubbers are more effective plasticizers for the perchlorovinyl resin because of the low mobility of both the structural links and rubber molecules as

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L 1877-66

ACCESSION NR: AP5022509

a whole. Low-molecular rubber has a tendency to form microheterogeneous structures. A mutual relationship was established between the content of nitrile groups, plasticizing capacity of the rubber, and water resistance of the compositions. In the region of low rubber concentration, a marked increase in the vapor permeability of films whose composition includes SKN-18 is explained by the heterogeneity of the compositions in this range. The vapor permeability is determined by the diffusion of water vapor through the film and by the evaporation of the water adsorbed by the film owing to the presence of polar groups. Orig. art. has: 6 figures and 1 table.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: MT

NO REF SOV: 002 OTHER: 001

Card 2/2

L 18011-66 EWT(m)/EWP(j) RM
ACC NR: AP6004315 SOURCE CODE: UR/0303/65/000/005/0022/0025

AUTHOR: Frost, A. M.; Rozhkov, Yu. P.

ORG: none

TITLE: Study of pigmented compositions based on perchlorovinyl resin and nitrile rubber

SOURCE: Lakokrasochnyye materialy i ikh primeneniye, no. 5, 1965, 22-25

TOPIC TAGS: resin, nitrile rubber, pigment

ABSTRACT: The properties of pigmented systems based on SPS perchlorovinyl resin and SKN-26 plasticizer were studied in order to establish the optimum proportions of the components. Physicomechanical properties (tensile strength, elongation, hardness), swelling in water, and vapor penetrability were measured on samples containing SPS and SKN-26 in the ratios 9:1, 5:1, 3:1, 1:1, and 3:7. Changes in the structure of the compositions associated with an increasing content of rubber and pigment were analyzed, and it was concluded that in small quantities, the rubber and pigment have the same effect on the structure of perchlorovinyl resin and are

UDC: 667.633.41

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L 18011-66
ACC NR: AP6004315

identical in many respects at higher concentrations. Experimental data showed the 3:1 composition to have the optimum properties. The composition is (in parts by weight): SPS, 75; SKN-26, 25; pigment (iron ocher and talc, 4:1), 100. It can be used for anticorrosive paints. Orig. art. has: 8 figures.

SUB CODE: 11/ SUBM DATE: 00/ ORIG REF: 008/ OTH REF: 000

Card 2/2 mgs

ACC NR: AP7000018 (A,N) SOURCE CODE: UR/0080/66/039/011/2521/2524

AUTHOR: Frost, A. M.; Uzbekova, A. Kh.

ORG: none

TITLE: Preparation of coatings by polymerization of carboxyl-group containing monomers on metal surfaces

SOURCE: Zhurnal prikladnoy khimii, v. 39, no. 11, 1966, 2521-2524

TOPIC TAGS: plastic coating, carboxylated monomer, monobutyl maleate, neutral ferric maleate, polymerization

ABSTRACT: A study has been made of the preparation of coatings by the polymerization of monobutyl maleate (MBM) on steel surfaces. Preliminary experiments showed: 1) that stoichiometric amounts of MBM and reduced iron powder react to form netural ferric maleate; and 2) that the ferric maleate polymerizes in MBM solutions in the presence of 1% burzoyl peroxide. The coatings were prepared by the polymerization of MBM on sandblasted, xylene-degreased steel surfaces in two steps, first for 2 hr at 60C and then for 2—4 hr at 110C. This stepwise temperature increase proved to be necessary to prevent decomposition of the MBM and to produce strong films. Homogeneous coatings were prepared by spraying MBM on the steel surfaces. The coatings were

 UDC: 542.951.7+66.095.263

ACC NR: AP7000018

hard, elastic and firmly adherent to the metal surface. Colored coatings were prepared by the addition to MBM of inert acid-resistant pigments such as titanium oxide, chromium oxide, red ocher, or gas black (MBM/pigment ratios varied from 5/1 to 1/2). Orig. art. has: 3 figures and 3 tables.

SUB CODE: 11, 07/ SUBM DATE: 12Oct64/ ORIG REF: 006/ OTH REF: 006
ATD PRESS: 5107

Card 2/2

ACC NR: AP7008272 (A, N) SOURCE CODE: UR/0080/67/040/001/0160/0164

AUTHOR: Uzbekova, A. Kh.; Frost, A. M.

ORG: none

TITLE: Reaction of n-monobutyl maleate with metallic iron

SOURCE: Zhurnal prikladnoy khimii, v. 40, no. 1, 1967, 160-164

TOPIC TAGS: iron, maleate, colorimetric analysis

ABSTRACT: It has been shown earlier that in preparing coatings by polymerization of carboxyl-containing monomers on metal surfaces, the monomer reacts with the metal to form salts, and the latter then polymerize or copolymerize, the overall rate of the process and nature of the products formed being dependent on both stages. In the present article, the process is examined by taking as an example the reaction of n-monobutyl maleate (MBM) with metallic iron. The composition of the reaction products was studied at one of the stages of the process by using a modified sulfosalicylate method of photocolorimetric analysis in which the total content of Fe^{2+} and Fe^{3+} was determined from the optical density of Fe^{2+} and Fe^{3+} sulfosalicylates in a weakly ammoniacal medium. MBM was found to react with metallic iron to form neutral ferrous and ferric salts soluble in excess MBM, and an insoluble basic ferrous salt. It is concluded that a rapid method of determining Fe^{3+} and Fe^{2+} in a mixture of salts dissolved in excess MBM has been perfected. Orig. art. has: 2 figures and 5 tables.

Card 1/2 UDC: 620.197.6

ACC NR: AP7008272

SUB CODE: 07/ SUBM DATE: 06Mar65/ ORIG REF: 003

2/2

S/123/59/000/006/016/025
A005/A001

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1959, No. 6, p. 211, # 21596

AUTHOR: Frost, B. R. T.

TITLE: The Structure of Liquid Metals

PERIODICAL: V sb.: Uspekhi fiz. metallov, 2, Moscow, Metallurgizdat, 1958, pp. 126-176

TEXT: The author reports on the indirect and direct experimental methods of investigating the structure of liquid metals. On the basis of the results of these investigations, he reviews various theories of the liquid state and analyzes the liquid stability. The part of the thermodynamic method is emphasized when considering the structure and behavior of liquid alloys. Depending on the nature of interatomic forces, certain deviations from the results of thermodynamic calculations for ideal solutions were obtained (chemical compounds or immiscibility). The "volatility" and the "activity" serve to account for these deviations. The measurements of the vapor pressure and the electromotive force are applied to

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experimental determinations of the activity. A brief review is given of the X-ray investigation of alloys, their density, viscosity, surface tension, diffusion, solidification, and nucleation. There are 21 figures and 127 references.

O. S. M.

Translator's note: This is the full translation of the original Russian abstract.

FROST, G., inzh.

Fluctuations in the speeds of the pulling chain of multibucket excavators and conveying machines. Sbor. trud. MISI no.39: 341-349 '61. (MIRA 16:4)

1. Institut gornykh mashin gornoy akademii, Freyberg, Germanskaya Demokraticheskaya Respublika.

(Excavating machinery)
(Conveying machinery)

FROST, J.

"Dislocation of materials in a warehouse." p. 288. (DROGWICTWO Vol. 9, No. 12, Dec. 1954. Warszawa, Poland)

SO: Monthly List of East European Accessions. (EEAL). LC. Vol. 4, No. 4, April 1955. Uncl.

FROST, O.I.

FROST, Andrey Vladimirovich, prof. [deceased]. Prinimali uchastiye: BUSHMAKIN, I.N.; VVEDENSKIY, A.A.; GRYAZNOV, V.M.; DEMENT'YEVA, M.I.; DINTSES, A.I.; DOBRONRAVOV, R.K.; ZHARKOVA, V.R.; ZHERKO, A.V.; IPAT'YEV, V.N.; KVYATKOVSKIY, D.A.; KOROBOV, V.V.; MOOR, V.G.; NEMTSOV, M.S.; RAKOVSKIY, A.V.; REMIZ, Ye.K.; RUDKOVSKIY, D.M.; RYSAKOV, M.V.; SEREBRYAKOVA, Ye.K.; STEPUKHOVICH, A.D.; STRIGALEVA, N.V.; TATEVSKIY, V.M.; TILICHEYEV, M.D.; TRIFEL', A.G.; FROST, O.I.; SHILYAYEVA, L.V.; SHCHEKIN, V.V., DOLGOPOLOV, N.N., sostavitel'; GERASIMOV, Ya.I., otv.red.; SMIRNOVA, I.V., red.; TOPCHIYEVA, K.V.; YASTREBOV, V.V., red.; KONDRASHKOVA, S.F., red. izd-va; LAZAREVA, L.V., tekhn.red.

[Selected scientific works] Izbrannye nauchnye trudy. Moskva, Izd-vo Mosk.univ., 1960. 512 p. (MIRA 13:5)

1. Chlen-korrespondent AN SSSR (for Gerasimov).
(Chemistry, Physical and theoretical)

FROST, V. A.

"Turbulence and Diffusion in the Lower Atmosphere, Proc. Roy. Soc., No 1001, Vol 186, June 1946.

SO: U-3039, 11 Mar 1953

25413
S/137/61/000/006/002/092
A006/A101

11.5300

AUTHOR: Frost, V.A.

TITLE: A mathematical model of turbulent combustion

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 6, 1961, 1, abstract 6B3 (V sb. "3-ye Vses. soveshchaniye po teorii goreniya, v. 1", Moscow, 1960, 121 - 125)

TEXT: The author derived a differential equation considering processes of turbulent transfer, molecular and accelerated molecular mixing, from a modified Markov's equation for the function of temperature distribution in a turbulent flow with heat liberation depending only on temperature. By introducing the function of the joint distribution of temperatures in two points of the flow, it is possible to compile the equation without any assumptions on the nature of mixing. The hypothesis is advanced that the law of distributing the probability of displacing the element of liquid from a given point does not depend on the location from where the element was shifted to the given point, but merely on its present location. The field of velocities is considered as known and independent

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25413

A mathematical model of turbulent combustion

S/137/61/000/006/002/092
A006/A101

on the combustion. The mathematical model of turbulent combustion obtained will make it possible to solve the problem on the nature of combustion in a turbulent flow by numerical integration.

O. Olinkov

[Abstracter's note: Complete translation]

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S/020/60/133/04/07/031
B019/B060

AUTHOR: Frost, V. A.

TITLE: The Homogeneous Rapid Deformation of Turbulence in a Gas

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 133, No. 4, pp. 773-776

TEXT: By way of introduction the author refers to previous papers (Refs. 1, 2) in which the changes occurring in the parameters of a turbulent flow of an incompressible liquid on the passage through a compression shock had been investigated. In a similar investigation made here the compressibility of the medium is taken into account, and the results obtained make it possible to study the behavior of the turbulence in an ultrasonic flow. In a detailed derivation the author obtains relations concerning the density in the cross sections considered (jet, diffusor, or combustion chamber) and concerning the mean flow velocities, from which he estimates the change in the turbulence intensity. From formulas (13) and (14) for the longitudinal and transverse component of the velocity of turbulence the author concludes in his discussion of the results that

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The Homogeneous Rapid Deformation of Turbulence in a Gas

S/020/60/133/04/07/031
B019/B060

an acceleration of the flow brings about a strong diminution in the longitudinal and transverse components of the velocity of turbulence. This result is found in agreement with results of measurement from other papers (Refs.3, 4) and from the author's own measurements. Turbulence intensities were obtained by measuring the diffusion of helium in an ultrasonic flow. These intensities varied by 4 - 10% depending on the turbulence of the flow in the receiver. The results are tabulated in Table 1. There are 2 figures, 1 table, and 4 references: 3 Soviet, and 1 US.

PRESENTED: March 2, 1960, by G. I. Petrov, Academician

SUBMITTED: February 29, 1960

Card 2/2

32766
S/658/61/000/007/005/010
D251/D302

11.7700

AUTHOR: Frost, V.A.

TITLE: Variation of turbulence beyond the combustion zone

SOURCE: Moscow. Fiziko-tekhnicheskiy institut. Trudy, no. 1, 1961. Issledovaniya po mekhanike i prikladnoy matematike, 105 - 109

TEXT: On the basis of the theory of homogeneous rapid deformation of turbulence and of the case of variation of density, the turbulence of the wave-front is considered, the possible effect of autoturbulence being ignored. Tensor equations for the relative intensity of turbulence are obtained, and interpreted graphically. The theoretical results are compared with the experimental data of A.G. Prudnikov (Ref. 3: Izmereniya optiko-diffuzionnym metodom turbulent--nosti vozdushnykh potokov i plamen (Measurement by the Optical-Diffusion Method of the Turbulence of Air Currents and Flames) Kandidatskaya dissertatsiya, M. 1957). The following conclusions are drawn: 1) The results establish the possibility of extending the

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32766

Variation of turbulence beyond the ... S/658/61/000/007/005/010
D251/D302

theory of homogeneous rapid deformation of turbulence to the region beyond the zone of combustion; 2) The growth of turbulence is wholly accounted for by the deformation of the current, and there is no need to introduce the hypothesis of auto-turbulence. There are 2 figures and 4 references: 2 Soviet-bloc and 2 non-Soviet-bloc.

Card 2/2

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10 3100
26.2111

32767
S/658/61/000/007/006/010
D251/D302

AUTHORS: Shakhnov, I.F., and Frost, V.A.

TITLE: The flow round a flat plate of a supersonic stream of ideal gas in the presence of volumetric evolution of heat

SOURCE: Moscow. Fiziko-tekhnicheskiy institut. Trudy, no. 7, 1961. Izzledovaniya po mekhanike i prikladnoy matematike, 110 - 124

TEXT: An axi-symmetric flow of an ideal perfect gas under heat transfer conditions is considered. A cylindrical system of coordinates x, y, θ is adopted, where x is the axis of symmetry, y the distance from it, and θ the polar angle. v_x, x_y, v_θ are the projections of the velocity vector. Assuming the motion to be stationary, Euler's equations give

$$\frac{\partial}{\partial x}\frac{V^2}{2} - v_y\left(\frac{\partial v_y}{\partial x} - \frac{\partial v_x}{\partial y}\right) = -\frac{1}{\rho}\frac{\partial p}{\partial x} \qquad (1)$$

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$$\frac{\partial}{\partial y}\frac{v^2}{2} + v_x\left(\frac{\partial v_y}{\partial x} - \frac{\partial v_x}{\partial y}\right) = -\frac{1}{\rho}\frac{\partial p}{\partial y} \qquad (2)$$

and the equation of continuity is

$$\frac{d \ln \rho}{dt} + \frac{\partial v_y}{\partial y} + \frac{\partial v_x}{\partial x} = -\sigma\frac{v_y}{y} \qquad (3)$$

where ρ is the density, and p is the pressure. If c(x, y) is the amount of heat brought by unit mass of gas in unit time, then it is shown that (3) becomes

$$(a^2 - v_x^2)\frac{\partial v_x}{\partial x} - v_x v_y\left(\frac{\partial v_x}{\partial y} + \frac{\partial v_y}{\partial x}\right) + (a^2 - v_y^2)\frac{\partial v_y}{\partial y} = \qquad (10)$$

$$= (\gamma - 1)\frac{c(x, y)}{A} - \sigma\frac{a^2 v_y}{y}.$$

where a is the local velocity of sound, γ is the adiabatic index, and A is the mechanical equivalent of heat. [Abstractor's note: σ not defined]. In terms of the rate of change of entropy ds/dt, (10) may be written

X

$$(a^2 - v_x^2)\frac{\partial v_x}{\partial x} - v_x v_y\left(\frac{\partial v_x}{\partial y} + \frac{\partial v_y}{\partial x}\right) + (a^2 - v_y^2)\frac{\partial v_y}{\partial y} = \frac{a^2}{c_p}\frac{dS}{dt} - \sigma\frac{a^2 v_y}{y}$$

(10) has the same form for both vortex and potential flow. The vortex strength is obtained in the form

$$\Omega = -\frac{1}{v_x}\left[\frac{\partial I_0}{\partial y} - \frac{\gamma}{\gamma-1}p^{\frac{\gamma-1}{\gamma}}\frac{\partial \vartheta}{\partial y}\right]. \qquad (12)$$

Supersonic flow with characteristic lines y(x) is considered. Along these lines the general conditions on the characteristics of y(x) are

$$y'_{1,2} = \frac{v_x v_y \pm a\sqrt{V^2 - a^2}}{v_x^2 - a^2}; \qquad (13)$$

$$\frac{dv_y}{dx} + \frac{y'}{y'_{2,1}}\frac{dv_x}{dx} = \frac{y'}{v_x^2 - a^2}\left[\mp a\sqrt{V^2 - a^2}\,\Omega + \sigma\frac{a^2 v_y}{y} - (\gamma - 1)\frac{c(x, y)}{\Lambda}\right]. \qquad (14)$$

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In the adiabatic case, the free term $-(\gamma - 1)c(x, y)/A = -(\gamma - 1)\frac{di_0}{dt}$ is included in the planar hodograph equations. It is observed that the term giving the evolution of heat in (14) leads to the conclusion that the vortex term and the characteristic lines in the planar hodograph do not pass through the initial point. The application of the above method to the case of flow in the presence of a zone of equilibrium heat-transfer is considered. A method of calculating the increase of pressure on a point on an aerodynamic profile with small heat-exchange is given. The flow is supposed to be homogeneous and of potential type. The method of linearization of equations is used. Poisson's equation for the problem is obtained, and has the solution

$$\Phi = V_\infty \xi \sqrt{1-M^2} + \frac{1}{2\pi} \iint_S \frac{c_S(\xi', \eta')\, d\xi'\, d\eta'}{\sqrt{(\xi-\xi')^2 + (\eta-\eta')^2}}, \qquad (23)$$

where S is bounded by a Mach cone, constructed from (x, y) in front of the flow. The relation between pressure and potential is

X

$\int \frac{dp}{\rho} = \frac{1}{2} (\text{grad } \Phi)^2$ hence, ignoring second order terms gives $\frac{p'}{\rho_\infty} = - V_\infty \left\{ \frac{\partial \Phi}{\partial x} - V_\infty \right\}$, where $p' = p - p_\infty$. The necessary calculations were performed on the rapid-action electronic computer БЭЛМ (BELM) of the AS USSR. The following conclusions were drawn: 1) In the case of non-adiabatic flow the operative quantity is not the total amount of heat transferred but the intensity of its source; 2) The assumption that the flow is of a potential nature in the case of the flow round a flat plate by an undisturbed supersonic stream in the presence of a rectangular zone of heat-transfer is fully justified; 3) For small values of the power of the heat source, the linearization theory gives sufficiently good results ($c \leq 0.1 \times 10^7$). There are 6 figures and 7 references: 4 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: H. Bateman, Proceedings Nat. Acad.Sci., v.25, 1939, pp 388-391; B.L. Hicks, Quarterly of Applied Mechanics, v. 6, 1948, no. 3, pp. 221-237; A. Mager, Journal of the Aero/Space Sciences, v. 26, 1959, no. 2, pp. 99-107.

S/081/62/000/018/007/059
B101/B186

AUTHOR: Frost, V. A.

TITLE: Change of turbulence behind the combustion zone

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 18, 1962, 49, abstract 18B337 (Tr. Mosk. fiz.-tekhn. in-ta, no. 7, 1961, 105-109)

TEXT: The general theory of isotropic turbulence T was used as a basis for studying mathematically the change in T when passing through a flame. Assuming that the intensity of T is very low compared with L/D (L - mean width, D - length of the combustion zone) it is concluded, without recourse to the hypothesis of self-turbulization of the flame, that the intensity of T may increase owing to the deformation of the flow. [Abstracter's note: Complete translation.]

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SHAKHNOV, I.F.; FROST, V.A.

Supersonic flow of an ideal gas past a horizontal plate in the presence of volume heating. Trudy MFTI no.7:110-123 '61. (MIRA 15:4)

(Aerodynamics, Supersonic)

S/658/62/000/009/001/013
A059/A126

AUTHOR: Frost, V.A.

TITLE: The asymptotic properties of a turbulent flame torch

SOURCE: Moscow. Fiziko-tekhnicheskiy institut. Trudy. no. 9, 1962. Issledovaniya po mekhanike i prikladnoy matematike. 3 - 8

TEXT: The assumption that the combustion rate u_0 is constant, if sufficient time has elapsed after the moment of ignition, leads to the conclusion that the turbulent flame torch should propagate in a way resembling the turbulent propagation of a stream in a passive substance and obeying the law:

$$\frac{1}{2}\frac{d\sigma^2}{dt} = kD, \tag{10}$$

where D is the coefficient of turbulent diffusion which is constant with depth, and σ is any characteristic width of the torch flame. The characteristic function of temperature distribution is

$$P(T, \eta) = \operatorname{erf}\left(\frac{x - f(T)}{\sigma}\right), \tag{15}$$

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where the function f (T) satisfies the equation

$$\bar{u} = \frac{\partial f}{\partial T} \left\{ \overline{\frac{dT}{dt}} \Big|_T \right\} . \qquad (16)$$

The possible physical model of such a torch flame is, moreover, found to be the surface model of turbulent combustion; the width of the instantaneous temperature region, being different from that of both the fresh mixture and of the combustion products, remains constant with time. The thickness of the region where reaction takes place and intermediate instantaneous temperatures are observed is small as compared to that of the whole combustion zone (the torch).

FROST, Wlodzimierz

Mining in the province of Great Poland. Wiadom gorn 11 no. 5:152-154 My '60.

CZECHOSLOVAKIA

FROUSIL, J., Diploma of Physician

Biophysical Institute of the Faculty of General Medicine of Charles University (Biofyzikalni ustav fakulty vseobecneho lekarstvi KU), Prague

Prague, Prakticky lekar, No 2, 1963, pp 65-67

"The Study of Erythrokinetics with the Aid of Radioisotopes."

FROVLOV, P.T., kand.tekhn.nauk

Technical and economic efficiency of using motor scrapers in the over-all mechanization of earthwork. Sbor.trud. MISI no.31:19-26 '60. (MIRA 14:3)

(Scrapes)

21(3) SOV/112-59-2-3287

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 2, p 151 (USSR)

AUTHOR: Aradenne, M., Yeger, G., Isayev, B., Roggenbuk, V., and Froylikh, G.

TITLE: Pocket-Type Gamma-Radiation Dosimeter (Karmannyy dozimetr gamma-izlucheniya)

PERIODICAL: V sb.: Issled. v oblasti dozimetrii ioniziruyushchikh izlucheniy. M., AS USSR, 1957, pp 112-114

ABSTRACT: A pocket-type electrometer with a quartz filament and a reading microscope is described. The electrometer has a linear scale calibrated in milliroentgens. The scale span is 0-200 milliroentgens. Thirty experimental models of the instrument were tested. The charge leakage never exceeded 5% per day. The reading spread of individual meters did not exceed 10%.

N.G.Z.

Card 1/1

FROYMAN, A. [redacted]

Electrostatic photography. Sov.foto 17 no.5:42-47 My '57. (MLRA 10:7)
(Xerography)

FROYMAN, A. I.

"A Manual Laboratory Heater," Zavodskaya Laboratoriya, No 8, 1952, p 1006.

FROYMAN, A.I.

lectronic Phenomena
nd Spectra

9

phys

1

Certain particulars of x-ray analysis methods based on the use of x-ray counters. A. I. Froiman. *Izvest. Akad. Nauk S.S.S.R., Ser. Fiz.* 17, 237-41(1953).—The use of ionization chambers, Geiger counter, crystal counters decreases measurement errors to 1-2% but requires a well-stabilized current, stable cathode emission, and stabilization of high-voltage losses. An electronic scheme reducing the fluctuations is described. Collimation of parallel beams by means of diaphragms rather than focusing is preferred. S. Pakswer

9/11/54

FROYMAN, A.I.

RABINOVICH, A.D.; FRIDKIN, V.M.; FROYMAN, A.I.

Use of electrets in measuring techniques. (Review) Izm.tekh.no.4: 31-34 Jl-Ag '55. (MLRA 8:10)

(Electric measurements)

GONCHARSKIY, Lush Abramovich; BERG, A.I., redaktor; DZHIGIT, I.S., redaktor; KULIKOVSKIY, A.A., redaktor; SMIRNOV, A.D., redaktor; TARASOV, F.I., redaktor; TRAMM, B.F., redaktor; CHECHIK, P.O., redaktor; SHAMSHUR, V.I., redaktor; FROYMAN, A.I., redaktor; LARIONOV, G.Ye., tekhnicheskiy redaktor

[Electron tubes with mechanical controls] Elektronnaia lampa s mekhanicheskim upravleniem. Moskva, Gos.energ. izd-vo 1956. 39 p. (Massovaia radiobiblioteka, no.243) (MLRA 9:8)
(Electron tubes)

FROYMAN, A.I.

USSR / Electricity G

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9620

Author : Froyman, A.I., Fridkin, V.M.
Inst : Institute of Crystallography, Academy of Sciences USSR, Moscow
Title : Investigation of the Hetero-Charge of Electrets Made of Carnauba Wax.

Orig Pub : Kristallografiya, 1956, 1, No 3, 342-350

Abstract : By determining the discharge current and subsequently integrating this current with respect to time, a study was made of the dependence of the value of the hetero-charge (Q) of an electret, made of pure carnauba wax, on the intensity (E) of the polarization is effected. It is established that in the range of E from 2.1 to 12 kv/cm, the value of Q is approximately the same as E at constant temperature. The process of formation of hetero-charge has an activation energy

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Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9620

Abstract : of 18,500 cal/mol. Comparison of the experimental curves for the dependence of the discharge current on the time with the theoretical curves plotted under the assumption of a purely ionic mechanism of formation and destruction of Q, shows that in the case of good agreement between the rise and the position of the maximum, the decay of the experimental curves is considerably slower than that of the theoretical ones. For full interpretation of the phenomenon it is necessary to take into account, along with the displacement of the ions, also the orientation of the dipoles. A scheme and description for a measurement setup are given.

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FROYMAN, A.I.

GONCHARSKIY, Lui Abramovich; FROYMAN, A.I., redaktor; LARIONOV, G.Ye., tekhnicheskiy redaktor

[Mechanically controlled electron tubes] Mekhanicheski upravliaemye elektronnye lampy. Moskva, Gos.energ. izd-vo, 1957. 141 p.
(Electron tubes) (MIRA 10:11)

Froyman, A. I.

48-10-2/20

AUTHOR: None given

TITLE: Materials of the 2nd All-Union Conference on X-ray Spectroscopy; Moscow, January 31 to February 4, 1957 (Materialy II Vsesoyuznogo soveshchaniya po rentgenovskoy spektroskopii; Moskva, 31 yanvarya - 4 fevralya 1957 g.)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya fizicheskaya, 1957, Vol 21, Nr 10, pp 1341 - 1342 (USSR)

ABSTRACT: The Second All-Union Conference on X-ray Spectroscopy was held from January 31 to February 4, 1957. Thirty-three reports were given, 18 of which appear in this issue. The remaining are: Introductory Remarks by Ya. S. Umanskiy; Calculating the Structure of X-ray Emission Spectra of Self-Regulating Alloys by A. N. Orlov and A. V. Sokolov (UFAN SSSR); Contemporary Methods of X-ray Spectra Registration by M. A. Blokhin and A. I. Froyman (RGU and Khimfak MGU); High Stability lower Sources for X-ray Spectra Installations by A. I. Froyman; Prospective Applications of Electrostatic Photography (xerography) in X-ray Spectral and X-ray Structural Analysis by A. I. Froyman; Investigation of the Fine Structure of X-ray K-Spectra of Absorption and Emission of Some Elements of the Iron Group by I. B. Borovskiy, V. P. Bykov and

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Materials of the 2nd All-Union Conference on X-ray Spectroscopy; Moscow, January 31, to February 4, 1957

A. I. Kozlenkov (Fizfak MGU); Interrelationship of Some X-ray Spectral and Magnetic Characteristics of Iron-Base Alloys by S. A. Nemnonov and K. M. Kolabova (UFAN SSSR); Investigation of Binding Forces in Solid Iron-Molybdenum Solutions According to the Fine Structures of X-ray Absorption Spectra by V. A. Trapeznikov and S. A. Nemnonov (UFAN SSSR); On the Theory of Solid Solutions Based on Transitional Metals by I. B. Borovskiy and K. P. Gurov (IMET AN SSSR); Relationship of Temperature and Concentration of Fine Structure of X-ray Absorption Spectra of Solids and an Investigation of Binding Forces by V. A. Trapeznikov; Investigation of X-ray L-Spectra of Some Rare-earth Element Compounds by N. V. Troneva, I. D. Marchukova and I. B. Borovskiy (Fizfak MGU); Investigation of X-ray Emission K Lines of β-Group Titanium in Carbides and Some Other Compounds by E. Ye. Vaynshteyn and Yu. N. Vasil'yev (GEOKhI AN SSSR); X-ray Spectral Investigation of Molybdenum L Spectra in Some Alloys and Compounds by V. A. Batyrev, I. B. Borovskiy and S. A. Ditsman (IMET AN SSSR); Some Satelites of Spectral Lines by T. I. Kakushadze (Georgian Teacher's Institute); X-ray Spectral Investigation of Sulphur-containing Samples by M. A. Blokhin, P. S. Nesterenko and A. T. Shuvayev (RGU).

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L 08728-67 EWT(1)/EWT(m)/EWP(j) IJP(c) RM/GW
ACC NR: AP7001651 SOURCE CODE: UR/0138/65/000/011/0034/0035

AUTHOR: Karp, G. A.; Mayzelis, B. A.; Rokhman, A. N.; Trofimovich, D. P.; Froyman, A. V.; Shopolov, M. I. 26

ORG: Scientific Research Institute of Rubber and Latex Products (Nauchno-issledovatel'skiy institut rezinovykh i lateksnykh izdeliy)

TITLE: Study of the effect of stresses arising during the swelling of gel on the quality of meteorological radiosonde envelopes 15

SOURCE: Kauchuk i rezina, no. 11, 1965, 34-35

TOPIC TAGS: radiosonde, meteorologic balloon

ABSTRACT: In the manufacture of radiosonde envelopes, an important parameter is the magnitude of the stress arising in the course of swelling of the gel. The effect of this parameter on the tensile properties of type-150 envelopes was studied. The stress was varied by changing the duration of syneresis from 10 min to 7 hr, which caused changes in stress ranging from 5 to 11 kg/cm^2. In order to characterize the tensile properties of envelopes of the same size but prepared in different ways, use was made of the so-called quality factor (ratio of ultimate elongation of envelope to ultimate elongation of sample). To determine this factor on an instrument for two-dimensional deformation, the ultimate elongations of samples

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cut out of envelopes with various stresses in the gel were measured. The ultimate elongations of these samples were all found to be equal on swelling and amounted to $\lambda = 8.8$. On the basis of tests of samples and envelopes, the dependence of the quality factor of radiosonde envelopes was plotted versus the stress in the gel during swelling. The following parameters are recommended for adoption in the manufacture of type-150 envelopes: gel swelling, up to $\lambda = 4.2$; stress in gel during swelling, 8 ± 0.5 kg/cm^2. Orig. art. has: 1 figure. [JPRS]

SUB CODE: 08 / SUBM DATE: none / ORIG REF: 007

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9(4), 9(6)

AUTHOR: Froymovich, B. N., Engineer SOV/119-59-5-18/22

TITLE: The Portable 14-Canal Oscillograph of the Type N700(POB-14M) (Perenosnyy chetyrnadtsatikanal'nyy ostsillograf tipa N700(POB-14M))

PERIODICAL: Priborostroyeniye, 1959, Nr 5, p 30 (USSR)

ABSTRACT: The Kishinevskiy zavod elektroizmeritel'nykh priborov (Kishinev Factory of Electric Measuring Devices) started the delivery of the 14-canal oscillograph of the type N700(POB-14M), which was developed at the Institut fiziki Zemli im. O. Yu. Shmidta AN SSSR (Institute of Physics of the Earth imeni O. Yu. Shmidt of the AS USSR) and at the VNIIEP (All-Union Scientific Research Institute of Electric Measuring Devices). Such an oscillograph is a universal self-recording device for recording high-frequency and also low-frequency processes. This is possible because the device contains galvanometers with different frequencies of natural oscillations and with a wide interval in the velocities of motion of the photolens. The technical data of the different variants of this oscillograph are compiled in a table. The insulation of the lead-in wires is calculated for a voltage of 500 v. A figure shows a general view of this device. The most important properties of this oscillograph are as follows: 1) It writes on oscillograph paper 120 mm wide. 2) It

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The Portable 14-Canal Oscillograph of the Type N700(POB-14M) SOV/115-59-5-18/22

has 2 exchangeable lens cases with small and high writing velocities. 3) The change-speed gear and the cases permit the engagement of different velocities of motion of the photolens. 4) The time marks are plotted as thin strokes. 5) The recording process can be observed on a ground-glass screen. 6) The oscillograph is fed by a d.c. or a.c. source of 24 v. The current intensity required is 6 a at the most. 7) To extend the measuring range, the oscillograph can be connected with a 12-decadic magazine of shunts and resistors (in the shape of a trunk of 370 × 250 × 140 mm weighing 7 kg). 8) For work at low temperatures (up to 0°C), an electric heater with temperature regulator is connected to the device. 9) This oscillograph can be operated by remote control from a separate panel. 10) The outside dimensions of the oscillograph (with lens case) are 420 × 240 × 270 mm, its weight without case is 17 kg. The barrel case, the electric heater, the shunt and resistor magazine, and also the remote-control panel will be supplied on special order as from 1960. There are 1 figure, 1 table and 1 Soviet reference.

Card 2/2

FROYSHTETER, G. B.

FROYSHTETER, G. B. "Investigation of the aerodynamics of a hot layer of fuel." Acad Sci Ukrainian SSR. Inst of Heat Power Engineering. Kiev, 1956. (Dissertation for the Degree of Candidate in Technical Science)

So: Knizhnaya letopis', No. 15, 1956. Moscow.

FROYSHTETER, G.B.; YAMPOL'SKIY, N.G.

Mechanically fired furnace for small lignite lumps. Spirt. prom. 22 no.3:15-19 '56. (MLRA 9:11)

1. Ukrainskiy nauchno-issledovatel'skiy institut mestnoy i toplivnoy promyshlennosti.
(Furnaces) (Lignite)

FROYSHTETER, G.B., starshiy nauchnyy sotrudnik

Improving the operation of Peko dryers. Torf. prom. 35 no. 4:30 '58. (MIRA 11:7)

1. Nauchno-issledovatel'skiy institut mestnoy i toplivnoy promyshlennosti Gosplana USSR.
(Drying apparatus)