The Thermal and Radiolytic Oxidation of Methyl Oleate

S/153/60/003/02/09/034
B011/B003

A large amount of oxides was also found, however. The authors assume that in addition to peroxides, oxides represent primary oxidation products of the methyl oleate. Furthermore, the authors studied the decomposition kinetics of the organic peroxides in dependence on the oxidation time of the methyl oleate (Fig. 3). They determined that peroxides decompose after the reaction of second order. The constant of the decomposition rate decreases with the intensity of oxidation (Fig. 3). The authors pointed out that a short radiation effect on the oxidation process is mainly expressed by the reduction of the induction period of the peroxide-, acid-, and oxide formation. The reduction in the induction period is proportional to the radiation dose (Fig. 5) in the case of peroxides, but is independent of the radiation dose in the case of oxides. Finally, the authors proved that the amount of peroxide yield subject to radiation is largely dependent on temperature (Fig. 7). The elimination of the radiation source strongly effects the kinetics of the accumulation of peroxides at comparatively low temperatures. Above 80° this influence cannot be observed (Fig. 6). The authors thank Professor N. A. Bakh, and

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The Thermal and Radiolytic Oxidation of Methyl Oleate

S/153/60/003/02/09/034
B011/B003

B. B. Sarayeva for having supplied the radiation source. There are 8 figures and 15 references, 6 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M. V. Lomonosova; Kafedra khimicheskoy kinetiki (Moscow State University imeni M. V. Lomonosov; Chair of Chemical Kinetics)

SUBMITTED: August 4, 1958

Card 3/3

31744
S/153/61/004/005/001/005
E134/E485

54600

AUTHORS: Burlakova, Ye.B., Gorban', N.I., Dzantiyev, B.G., Sergeyev, G.B., Emanuel', N.M.

TITLE: The effect of gamma radiation on the oxidation of methyl oleate in the presence of inhibitors of free radical processes

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy SSSR. Khimiya i khimicheskaya tekhnologiya, v.4, no.5, 1961, 751-754

TEXT: In previous work on the radiological oxidation of natural fats (Ref.1: Izv. VUZ SSSR. Khimiya i khim. tekhnologiya, v.2, 533 (1959)), the present authors had related a reduced induction period with destruction of inhibitors by radiation. In view of the complexity of natural fats, in which the quantity and structure of antioxidants is unknown, the authors decided to study methyl oleate - inhibitor systems. Diphenylamine and hydroquinone, both known as inhibitors of free radical reactions, were employed. The authors had previously (Ref.2: Izv. VUS SSSR. Khimiya i khim. tekhnologiya, v.3, 265 (1960)) studied the effect of radiation on inhibitor free methyl oleate, and considered that radiation leading

Card 1/4

The effect of gamma radiation ...

to free radical formation would destroy the inhibitors by reaction with free radicals. Samples were exposed to gamma radiation from Cobalt 60 in apparatus RUT-400 (GUT-400) and the destruction of the inhibitor was followed spectrophotometrically. Irradiation took place at 20 °C. Oxidation experiments on irradiated and non-irradiated methyl oleate were carried out at 80 °C with continuous passage of air. Experiments with inhibitor free methyl oleate were carried out simultaneously under identical conditions to obtain the rate of free radical formation. Experimental details and methods of analysis were as described in Ref. 2. Curves showing the rate of free radical formation in inhibited and non-inhibited methyl oleate were found to be parallel and differed only in their induction period. The total induction period consists of the basic induction period for the oxidation of inhibitor free methyl oleate and an additional induction period related to the concentration of inhibitor; the latter is practically completely destroyed before free peroxide radicals are observed. The additional induction period is directly proportional to inhibitor concentration, which is characteristic of inhibitors reacting with radicals. Induction periods for

irradiated material were lower than for non-irradiated material due to inhibitor destruction, and the decrease in induction period was found to be proportional to the quantity of radiation. Curves showing the relation between inhibitor concentration and induction period, and the decrease in induction period of inhibited methyl oleate with total quantity of radiation, are given as well as correlating equations. It has been shown that quantity of radiation is controlling, and that intensity has virtually no effect. At the low temperature of radiation, the induction period of non-inhibited methyl oleate was practically unaffected by radiation. The correlation between the induction period of inhibited methyl oleate and the quantity of radiation made it possible to calculate the number of radicals formed per unit of radiation. Experiments, carried out in the presence and absence of oxygen respectively, lead to the suggestion that removal of a hydroquinone type inhibitor takes place essentially by reaction with an RO_2 type radical. There are 5 figures, 1 table and 3 Soviet-bloc references.

31744
S/153/61/004/005/001/005
The effect of gamma radiation ... E134/E485

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova. Kafedra khimicheskoy kinetiki (Moscow State University im. M.V.Lomonosov, Department of Chemical Kinetics)

SUBMITTED: January 28, 1960

Card 4/4

S/204/62/002/001/001/007
I032/I232

AUTHORS: Sergeyev, G. B., Sharayev, O. K., Topchiyeva, K. V., Perel'man, A. I., and Topchiyev, A. V.

TITLE: Investigation of chromic oxide catalysts for polymerisation of ethylene by the method of electron paramagnetic resonance

PERIODICAL: Neftekhimiya, v. 2, no. 1, 1962, 18–20

TEXT: The aim of this study was the verification of the hypothesis, previously expressed by the authors, that the activity of the catalyst is produced under the action of the reacting substance, ethylene. Experiments on polymerisation of ethylene over chromic oxide catalysts were carried out and the EPR spectra of the catalyst withdrawn from the reaction zone at different stages of the process were taken. The catalyst was prepared by impregnating aluminum silicate with an aqueous solution of chromic anhydride and subsequent activation. Two varieties of the catalyst, differing by the method of activation, were used. One was activated in a current of air at 500°, the other one— under vacuum at 350°. The catalyst activated under vacuum displayed an induction period. The EPR spectra of the two varieties of catalyst, taken at identical stages of the polymerisation process, were found to be practically identical with respect both to the line width and the value of

the g factor (which was 1.97). The identity of the active centres in the two varieties of the catalyst was thus established. The observed narrow EPR line is attributed to a compound of quinquevalent chromium and the Cr^{5+} ions are considered to constitute the active centres. The induction period in the catalyst activated under vacuum is interpreted as the time necessary for the reduction of Cr^{6+} by ethylene. There are 2 figures.

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR, Khimicheskii fakultet Moskovskogo Universiteta (Institute of Petrochemical Synthesis, AS USSR, Chemistry Faculty, University of Moscow)

SUBMITTED: November 24, 1961

KOVALEV, G.N.; RAABE, G.; MALBANDYAN, R.M.; GURMAN, V.S.; SERGEYEV, G.B.

High-speed photochemical hydrobromination of ethylene and propylene at low temperatures. Dokl. AN SSSR 142 no.2:396-398 Ja '62. (MIRA 15:2)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova. Predstavleno akademikom N.N.Semenovym.

(Ethylene)
(Propene)
(Hydrobromic acid)

34828
S/020/62/142/005/020/022
B110/B101

5.1600

AUTHORS: Lishnevskiy, V. A., Uzhinov, B. M., and Sergeyev, G. B.

TITLE: Fast chemical processes at low temperatures

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 142, no. 5, 1962, 1116 - 1119

TEXT: Bromination and nitration of olefins, hydrohalogenation of olefins with double bond on the tertiary C atom, and inorganic addition and substitution reactions at low temperatures and 10^{-6} mm Hg were studied. Only the central fractions of liquids distilled several times in vacuo at low temperatures were used, and work was conducted in the dark. The heating curves were recorded with an ЭПП-09 (EPP-09) potentiometer with elevated, adjustable sensitivity, and a 180 mm high Al block (60 mm in diameter) placed in a Dewar vessel was used as heater. Since all reactions proceed at $> -196^{\circ}C$, work was possible at liquid-nitrogen temperature. 0.0009 moles of the components were frozen in the 13 mm long, narrow neck (diameter 6 mm) of the reaction vessel cooled with liquid N_2, and the temperature of

Card 1/4

the mixture was measured with a differential thermocouple. The Al block was heated at a rate of 1 deg/min. Its temperature was measured with a copper-Constantan element and an M-194 (M-194) microammeter. The products to be analyzed were collected in a vessel. To avoid an explosion, layers of 0.004 moles of components were frozen and thawed again until 3-5 ml of reaction product had formed. The yield was determined on the basis of the pressure change of a membrane thermometer. All reactions, also the chlorine addition to the double bond, were instantaneous at very low temperatures. With small initial amounts (0.0009 moles of each component at a ratio of 1:1, and 0.0018 moles of one component at 1:2), the temperature rise was some tens of degrees. The almost explosive reactions prove low activation energies, and suggest chain reactions. The decrease in activation energy as compared with the gaseous phase is probably due to the formation of intermediate molecular complexes. Only one product forms quantitatively since the addition to the double bond proceeds completely. Critical temperatures lie at -190 and -100°C. The following systems are distinguished (I) systems with critical temperatures below the melting points of the two components (isobutylene - bromine) or near the melting point of the low-

melting component (isobutylene - HCl; isobutylene - HBr; HBr - Cl); and (II) systems with critical temperatures between the melting points of the two components (propylene - bromine; isobutylene - nitrogen dioxide; propylene - nitrogen dioxide). The existence of critical temperatures is probably due to the fact that the reaction proceeds near the phase transitions. For (I), the critical temperatures are probably associated with the melting points of the mixture, for (II), with the dissolution of one component in the other, the complex formation, or the melting points of the molecular complexes. The reaction with isobutylene proceeds at lower temperature than that with propylene since isobutylene has a more polar structure. The formation of normal addition products from hydrogen halides and isobutylene proves the ionic character of the addition to the double bond. The almost instantaneous addition and substitution reactions are characteristic of the condensed state at low temperatures. The authors thank N. M. Emanuel', Corresponding Member AS USSR, for his interest. There are 2 figures, 1 table, and 7 references: 1 Soviet and 6 non-Soviet. The two most recent references to English-language publications read as follows: S. Freed, K. M. Sansier, J. Am. Chem. Soc., 74, 1273 (1952).

Fast chemical processes at... S/020/62/142/005/020/022
B110/B101

Cook et al. Canad. J. Chem., 34, 957 (1956).

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

PRESENTED: August 1, 1961, by N. N. Semenov, Academician

SUBMITTED: July 28, 1961

Card 4/4

S/205/63/003/001/025/029
E065/E485

AUTHORS: Kozlov, Yu.P., Sergeyev, G.B.

TITLE: The spectra of electron paramagnetic resonance of irradiated and monomer-treated wheat-seed embryos

PERIODICAL: Radiobiologiya, v.3, no.1, 1963, 130-131

TEXT: In an attempt to clarify certain aspects of the chemical processes associated with the formation of free radicals in irradiated tissues, an investigation was carried out on the changes in the electron paramagnetic resonance (EPR) in vacuum-dried wheat embryos after exposure to a Co^{60} source at room temperature in the presence of atmospheric oxygen. After irradiation one portion of the embryos was left untreated for use as controls, a second portion was treated with water for one hour and a third was treated with a 5% vinylpirrolidone (VP) solution in water for the same period. The last two sets of embryos were dried to constant weight. EPR spectra, obtained through the use of the ЭПР-2 (EPR-2) apparatus, are shown for the treated embryos and controls. In the controls a dose of 4×10^4 r resulted in an EPR signal in the form of an asymmetrical singlet,

The spectra of electron ...

having a midwidth of 10 Oe and a q factor of 2.004. The concentration of free electrons was equal to 2.75×10^{14} and gradually increased with time and increased temperature. A higher dosage rate did not alter the spectrum. The signal was completely eliminated in the VP-treated embryos as a result of the disappearance of free radicals from the system. In the moisture-treated embryos the number of free electrons was slightly reduced but the general shape of the signal was similar to that in the control. There is 1 figure.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova, biologo-pochvennyy fakul'tet (Moscow State University imeni M.V.Lomonosov, Biology and Soil Division)

SUBMITTED: June 6, 1962

MOGER, G.G.; SERGEYEV, G.B.

Use of gas chromatography for the analysis of the products of low-temperature bromination and hydrobromination of olefins. Vest.Mosk.un.Ser.2:Khim. 18 no.2:14-16 Mr-Ap '63. (MIRA 16:5)

1. Kafedra khimicheskoy kinetiki Moskovskogo universiteta.
(Olefins) (Bromination) (Gas chromatography)

LISHNEVSKIY, V.A.; SERGEYEV, G.B.

Stepwise course of the reaction of bromine addition to propylene at low temperatures. Kin. i kat. 5 no.3:407-413 My-Je '64. (MIRA 17:11)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova, khimicheskiy fakul'tet.

KOVALEV, G.N.; SOROKIN, G.B.

Some features of the photochemical chain reaction in frozen mixtures of hydrogen bromide with ethylene. Dokl. AN SSSR 160 no.2:390-393 Ja '65. (MIRA 18:2)

1. ...skovskiy gosudarstvennyy universitet. Submitted July 11, 1964.

KOVALEV, G.N.; MASTEROVA, M.N.; SERGEYEV, G.B.

Photochemical reaction of hydrobromination in vitrous and crystalline mixtures of allyl chloride and hydrogen bromide. Dokl. AN SSSR 165 no.2:351-353 N '65. (MIRA 18:11)

1. Moskovskiy gosudarstvennyy universitet. Submitted April 13, 1965.

L 09064-67 EWT(m)/EWP(j) WW/JW/RM

ACC NR: AP6023961 SOURCE CODE: UR/0204/66/006/002/0302/0308

20
19

AUTHOR: Sergeyev, G. B.; Papisova, V. I.; Martinek, K.; Chen Ton-kha

ORG: Moscow State University (Moskovskiy gosudarstvennyy universitet)

TITLE: Reactions of nitrogen oxides with unsaturated compounds at low temperatures

SOURCE: Neftekhimiya, v. 6, no. 2, 1966, 302-308

TOPIC TAGS: nitrogen oxide, olefin

ABSTRACT: A thermographic method was used to study the reactions of N_2O_4, NO, and N_2O with ethylene, propylene, 1-butene, isobutylene, 1-hexene, cyclohexene, acetylene, methylacetylene, allene, benzene, 1,3-butadiene, 1,3-cyclopentadiene, and 1,3-cyclohexadiene at subzero temperatures. N_2O_4 reacted at a high rate with 1-butene, 1-hexene, and cyclohexene at about -40, -32, and -66° respectively, and with propylene and isobutylene at -35 and -74°. The reactions of 1,3-butadiene and 1,3-cyclopentadiene with N_2O_4 were even more vigorous. Ethylene, acetylene, cyclohexadiene and certain other compounds did not react with N_2O_4 at low temperatures. NO and N_2O did not react with any of the unsaturated compounds at low temperatures. Infrared spectroscopic analysis of the reaction products, performed after heating the reacted mixture of acyclic olefins and N_2O_4 to room temperatures, showed that chiefly nitrates and nitro compounds were formed. The reaction of N_2O_4 with olefins is explained in terms of

UDC: 546.172.5/.6+546.174]:547.31

Card 1/2

L 09064-67

ACC NR: AP6023961

complex formation. Orig. art. has: 3 figures and 2 tables.

SUB CODE: 07/ SUBM DATE: 26Aug65/ ORIG REF: 013/ OTH REF: 009

Card 2/2 nst

L 23712-66 EWT(m)/EWP(j) WW/JW/RM

ACC NR: AP5009424 SOURCE CODE: UR/0020/66/166/006/1369/1371

AUTHOR: Papisova, V. I.; Sergeyev, G. B.

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

TITLE: Low-temperature nitration of olefins with nitrogen tetroxide

SOURCE: AN SSSR. Doklady, v. 166, no. 6, 1966, 1369-1371

TOPIC TAGS: nitrogen oxide, nitration, olefin

ABSTRACT: The low-temperature nitration of olefins (ethylene, isobutylene, 1-butene, propylene, 1-hexene, cyclohexene) with nitrogen tetroxide was studied by differential thermal analysis in a vacuum unit. All the olefins except ethylene reacted vigorously with N_2O_4 at temperatures above the melting points of the olefins but below the melting point of N_2O_4 (-11.2°C). Spectroscopic analysis showed that the nitration forms addition products, i. e., nitrates and nitro compounds. By analogy with halogenation reactions of olefins, it is postulated that nitration proceeds via a stage of formation of intermediate donor-acceptor-type complexes (N_2O_4 being a weak acceptor). This hypothesis accounts for the absence of the reaction with ethylene, whose ionization potential is too high to form molecular complexes and enter into an addition reaction with N_2O_4 at low temperatures. Only polar olefins react with N_2O_4 under these

UDC: 541.11'7+541.124.2+547.311+546.174+541.126

Card 1/2

L 23712-66
ACC NR: AP6009424

conditions. A more detailed investigation of the mechanism of low-temperature nitration of unsaturated compounds is planned. The paper was presented by Academician N. N. Semenov on 3 June 1965. Orig. art. has: 3 figures, 1 table.

SUB CODE: 07/ SUBM DATE: 02Jun65/ ORIG REF: 007/ OTH REF: 003

Card 2/2

[illegible], V. I.

"Electrocardiographic Data on Athletes Under Various Training Regimes Designed to Develop Endurance by Physical Exercise." Cand Med Sci, Chernovtsy State Medical Inst; L'vov Medical Inst, L'vov, 1954. (KL Med Sci, No 4, Feb 55)

SO: Sum. No. 631, 26 Aug 55 - Survey of Scientific and Technical Dissertation Defended at USSR Higher Educational Institutions. (1h)

SERGEYEV, G.I.

TRANSMISSION PARTS - BEARINGS, GEARS, DRIVES

171/13/4 621.822.5

On the Solution of the Reynolds' Equation for Sliding Bearings

Izv. Akad. Nauk, otd. Tekh. Nauk (12), 126-128 1956

G. I. Sergeyev

U. S. S. R.

This lays down boundary conditions for the pressure function in a layer of viscous fluid in sliding bearings and similar constructions. A method is given for the integration of the complete Reynolds equation. The pressure function obtained differs from the existing approximate expressions. Bibl. 7.

SERGEYEV, G. I. (Veterinary Doctor, Kryzhopol'skii District, Vinnitsa Oblast').

"Treatment of atonia in the rumen of cattle"...

Veterinariya, vol. 39, no. 8, August 1962 pp. 53

SERGEYEV, G. K.

Effective means for improving brick quality. G. Sergeev. *Stroitel. Materialy* 2, No. 12, 27–8(1956).—Lamin ations found in cut brick are particularly pronounced when plastic fine clay is used. The defect can be reduced by holding the vacuum in the press at 680–700 mm. Hg, reducing particle size of clay introduced in the vacuum chamber of the press, and limiting the min. size of the particles of leaners added to 0.05 mm.

J. D. Gat

Metl

1

Sergeyev, G. K

USSR/Chemical Technology. Chemical Products and Their Application -- Silicates. Glass. Ceramics. Binders, I-9

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 5231

Author: Sergeyev, G.

Institution: None

Title: Production of Bricks and Roofing Tile in the Chinese People's Republic

Original Publication: Stroit. materialy, izdeliya i konstruktsii, 1956, No 8, 30-32

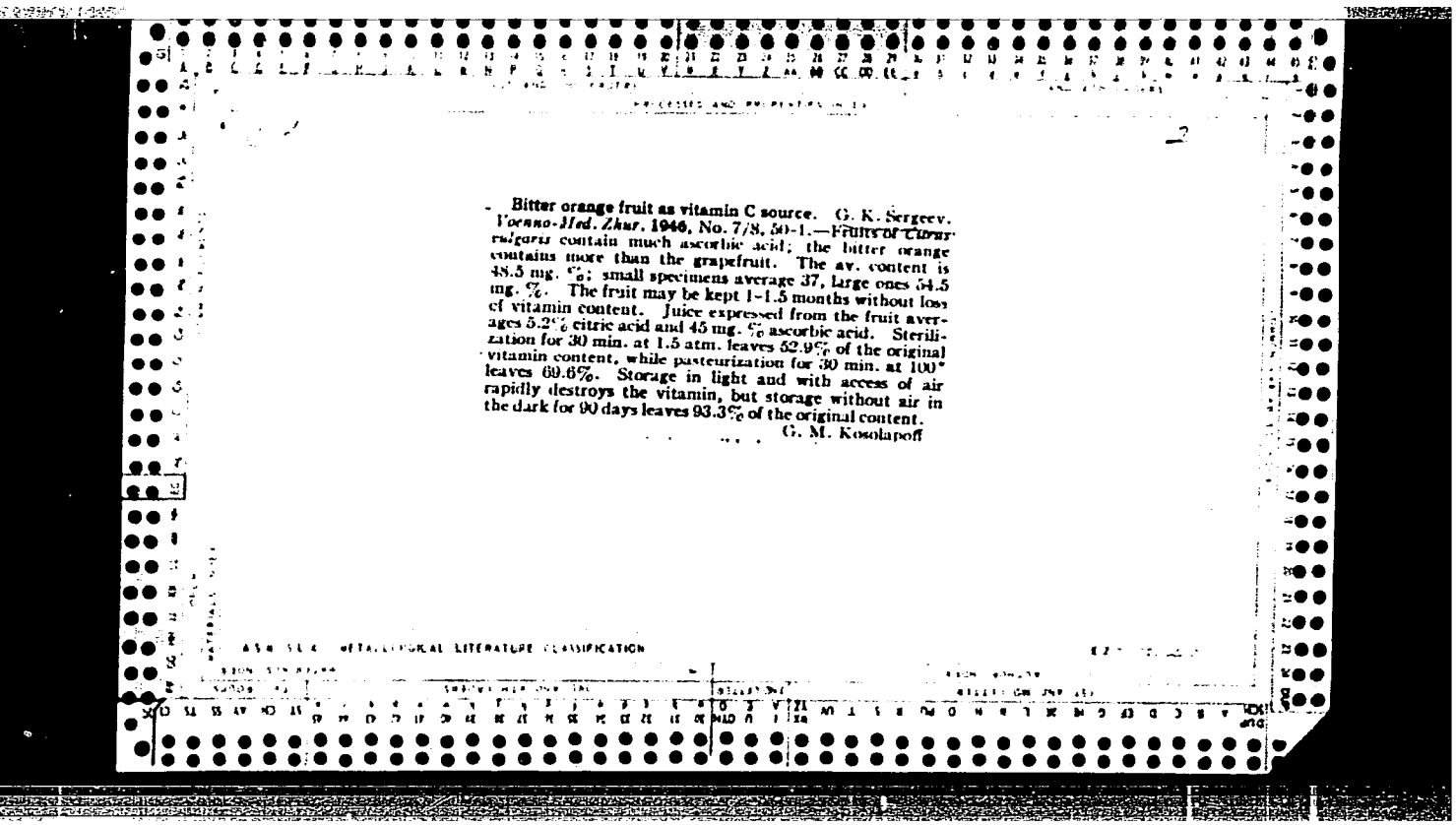
Abstract: No abstract

Card 1/1

[illegible], G. A.

Sergeyev, G. A. "Rationalizing the preparation of brick raw materials", Ye-t. stroit. materialy, 14, Issue 2, pp. 1-3.

SO: [illegible], 12 Feb. 53, (Letopis' Zhurnal'nykh Statey, No. 2, 1.47).



Bitter orange fruit as vitamin C source. G. K. Sergeev. *Voenno-Med. Zhur.* 1946, No. 7/8, 50-1.—Fruits of *Citrus vulgaris* contain much ascorbic acid; the bitter orange contains more than the grapefruit. The av. content is 48.5 mg. %; small specimens average 37, large ones 54.5 mg. %. The fruit may be kept 1-1.5 months without loss of vitamin content. Juice expressed from the fruit averages 5.2% citric acid and 45 mg. % ascorbic acid. Sterilization for 30 min. at 1.5 atm. leaves 52.9% of the original vitamin content, while pasteurization for 30 min. at 100° leaves 69.6%. Storage in light and with access of air rapidly destroys the vitamin, but storage without air in the dark for 90 days leaves 93.3% of the original content.

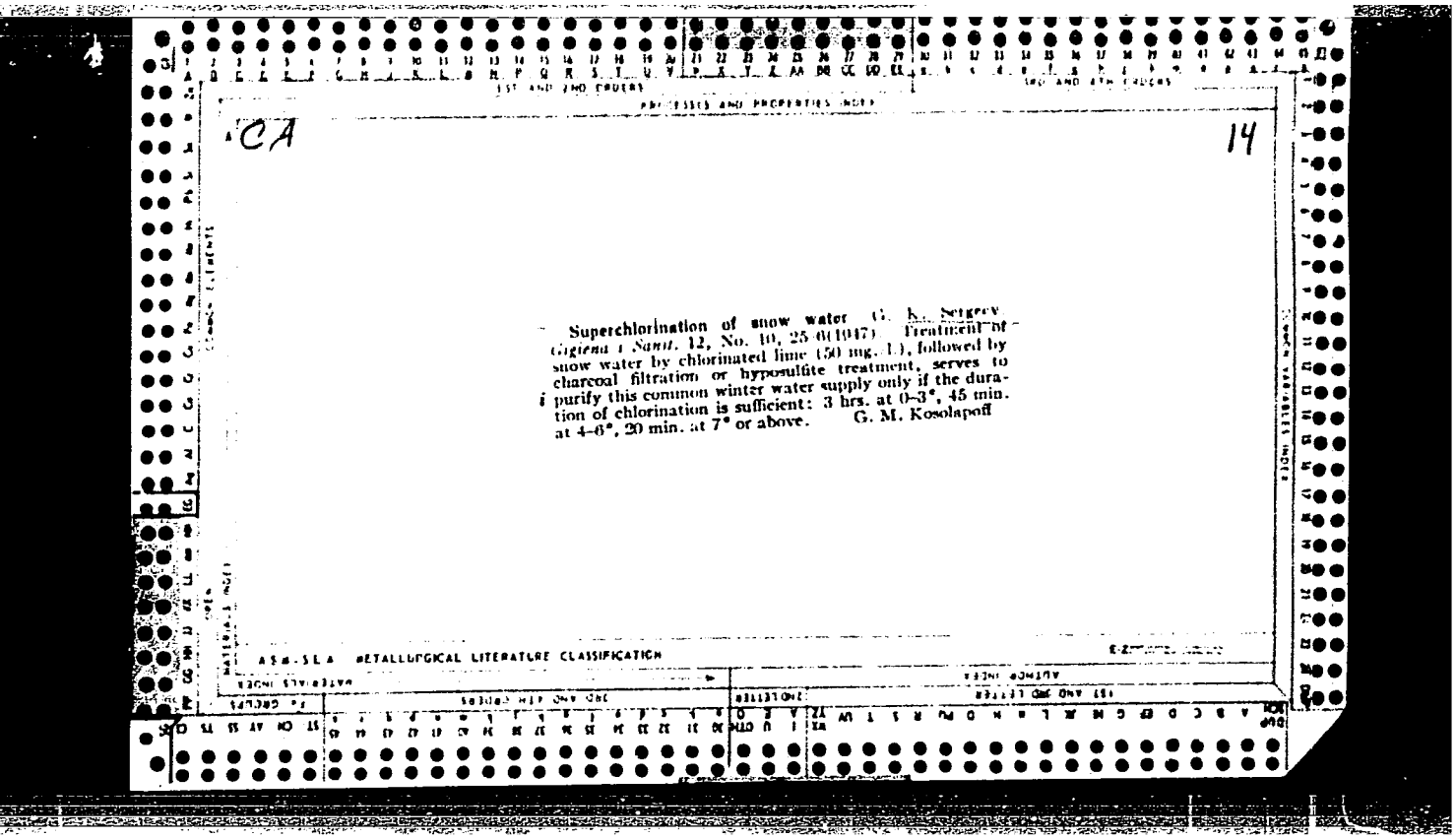
G. M. Kosolapoff

CA

14

The effectiveness of chlorination of water in wells. G. K. Sergeev. *Gigiena i Sanit.* 12, No. 1, 48(1947); *Chem. Zentr.* (Russian Zone Ed.) 1949, I, 107.—The use of 2 p.p.m. of Cl provided effective sterilization for 2–3 hrs.; 5 p.p.m. sterilized for 8 hrs., and 10 p.p.m. for 20–24 hrs. Twice daily chlorination of wells with 5 p.p.m. of Cl is recommended.
M. G. Moore

1951



CA

14

Superchlorination of snow water G. K. Sergeev. *Gigiena i Sanit.* 12, No. 10, 25-6(1947). Treatment of snow water by chlorinated lime (50 mg. l.), followed by charcoal filtration or hyposulfite treatment, serves to purify this common winter water supply only if the duration of chlorination is sufficient: 3 hrs. at 0–3°, 45 min. at 4–6°, 20 min. at 7° or above. G. M. Kosolapoff

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

SERGEYEV, G. K.

PA 65T71

USSR/Medicine - Water, Supply
Medicine - Water, Purification

Apr 1948

"Superchlorination of Snow Water," G. K. Sergeyev, ½ p

"Gig i San" No 4

In winter snow is often melted for drinking water. However, the snow around inhabited localities yields contaminated water. Author recommends amounts of chlorine to be used to purify such water.

65T71

SERGEYEV, G. M.

Anchors

Propeller anchor. Les. Prom. 12 no. 2, '52.

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

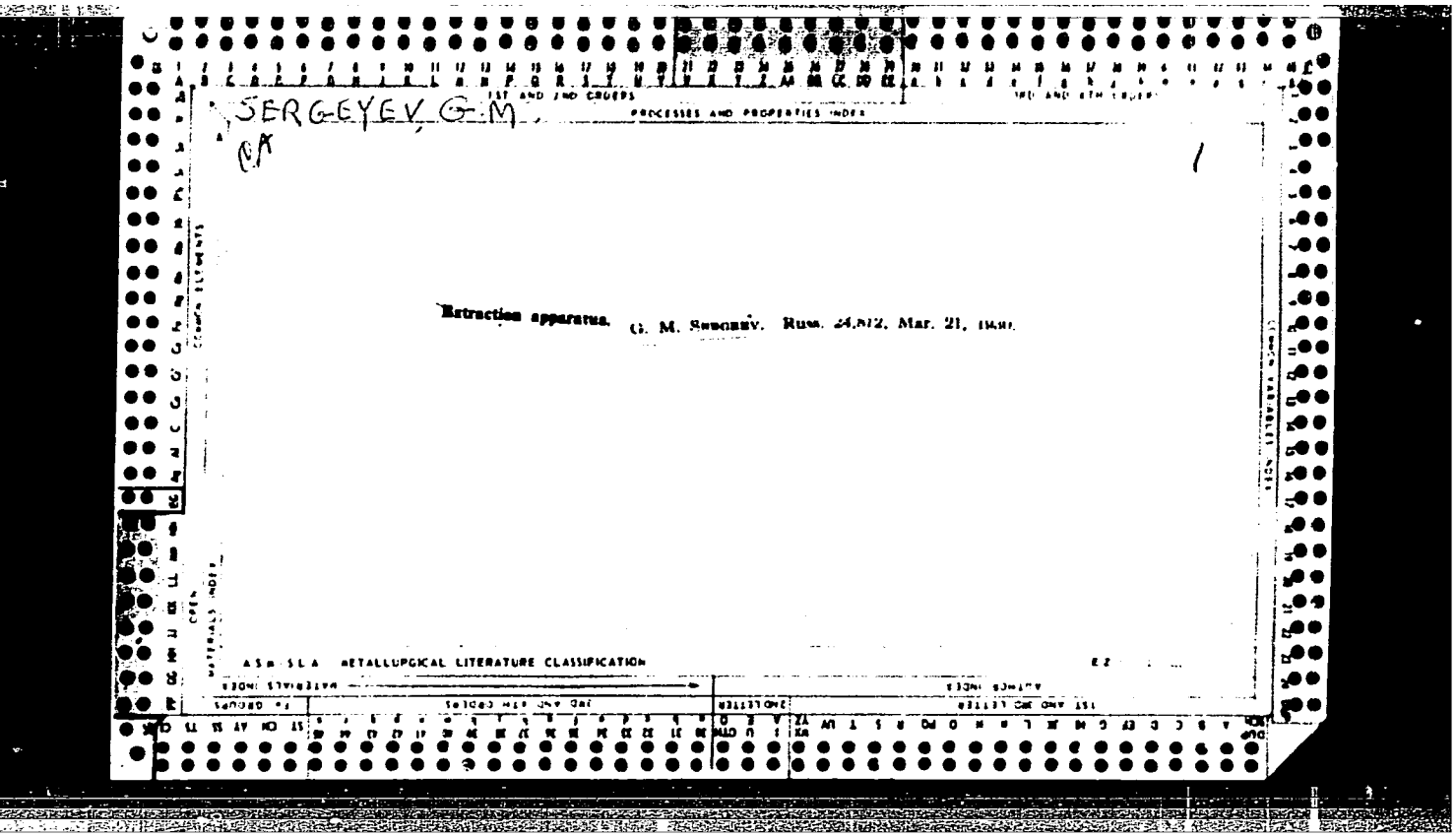
SERGEYEV, G.M.

Kansk Forest-Steppe position in the landform zonal system.
Izv. Vses. geog. ob-va 95 no.6:530-532 N-D '63.
(MIRA 17:1)

SERGEYEV, G.M.

Special features of geomorphology and recent tectonics in the middle part of the Chulym Basin. Izv. AN SSSR Ser. geog. no.6: 71-75 N-D '64 (MIRA 18:1)

1. Krasnoyarskiy politekhnicheskiy institut.



SERGEYEV, G.M.

Retraction apparatus. G. M. Sergeev. Russ. 24,872. Mar. 21, 1931.

SERGEYEV, G.M., student VI kursa; KLEMPARSKAYA, N.N., professor, zaveduyushchaya; OBRAZTSOV, T.D., professor, direktor.

Study of the variability of Bacillus coli of man after being in sapropelic mud of Akachkul' lake; author's abstract. Zhur.mikrobiol.epid.i immun. no. 4:61-62 Ap '53. (MLRA 6:6)

1. Kafedra mikrobiologii Chelyabinskogo meditsinskogo instituta.
(Intestines--Bacteriology)

SERGEYEV, G. V.

(2)

The effect of biogenic stimulators upon the growth of bacteria. G. M. Sergeev (Chelyabinsk Med. Inst.) — chair of Microbiology
Zhur. Mikrobiol. Epidemiol. Immunobiol. 1954, No. 1, 40-3.—The active principles in tissue therapy are the so-called biogenic stimulating substances of animal and vegetable origin forming in tissues under unfavorable conditions. Extr. of frozen and fresh tissue (human and canine) are mixed with nutrient agar and inoculated with *Pseudomonas aeruginosa*, *Escherichia coli*, *Proteus vulgaris*, and staphylococci. Control dishes were inoculated simultaneously. After 24-hr. incubation the series contg. the stimulators showed higher bacterial counts than the controls. The most active tissues are the liver, skin, and spleen, the least active was brain. Frozen and fresh tissues have the same activity. The most suitable test organism is *P. aeruginosa*.
A. Mirkin

SERGEYEV, G.M.

Study of the effect of biogenic stimulators on the growth of bacterial cultures. Report no.2. Author's abstract. Zhur. mikrobiol. epid. i immun. no.12:81-82 D '54. (MLRA 8:2)

1. Iz kafedry mikrobiologii (zav. prof. N.N.Klemparskaya) Chelyabinskogo meditsinskogo instituta (dir. prof. G.D.Obraztsov)
(TISSUE EXTRACTS,
biogenic stimulators, eff. on bact. growth)
(BACTERIA, effect of drugs on,
biogenic stimulators)

SEROKHOV, G.N., Cand Med Sci -- (diss) "Study of the effect of extracts from human organs and tissues ~~and of animals on~~ microorganisms." Mos, 1959, 16 pp (First Mos Order of Lenin Med Inst im I.M. Sechenov) 200 copies (KL, 35-59, 117)

SERGEEV, G.M.

Studying the effect of biological stimulants on some properties of microbic cultures in in-vitro experiments. Zhur. mikrobiol. epid. i immun 28 no.2:139-140 F '57 (MLRA 10:4)
(BACTERIA) (TISSUE EXTRACTS)

KARMINSKIY, David Emmanuilovich, doktor tekhn.nauk, prof.; KORENEVSKIY, Vitaliy Ivanovich, aspirant; SERGEYEV, Grigoriy Matveyevich, assistent

Conversion of freight train brakes to an electropneumatic system. Izv. vysl ucheb. zav.; elektromekh. 3 no.4:120-128 '60. (MIRA 13:9)

1. Zaveduyushchiy kafedroy konstruksii i remonta lokomotivov Rostovskogo instituta inzhenerov zheleznodorozhnogo transporta (for Karminskiy). 2. Kafedra gidravliki Rostovskogo instituta inzhenerov zheleznodorozhnogo transporta (for Korenevskiy). 3. Rostovskiy institut inzhenerov zheleznorozhnogo transporta (for Serveyev).
(Railroads--Brakes)

[redacted], D.P., doktor tekhn. nauk, prof.; [redacted], A.V., starshiy prepodavatel'; CHERNYAK, I.M., inzh.; [redacted], S.I., inzh.

Studying the sticking of the wheels of all-metal cars. Trudy RIIZHT no.44:156-168 '64. (MIRA 19:1)

DEMENT'YEV, Nikolay Vasil'yevich; SERGEYEV, Georgiy Maksimovich; KHVOSTOVA, D.M., red.; GOLICHENKOVA, A.A., tekhn. red.

[To you, comrade voluntary police!] Tebe, tovarishch druzhinnik. Moskva, Izd-vo VTsSPS Profizdat, 1961. 126 p. (MIRA 14:11)
(Auxiliary police)

AUTHOR: Sergeyev, G. N., Engineer 133-58-5-29/31

TITLE: From the Experience of Operational Planning
(Iz opyta operativnogo planirovaniya)

PERIODICAL: Stal', 1958, Nr 5, pp 469-471 (USSR)

ABSTRACT: The Zlatoust Works produce every quarter over 200 types of steel of different profiles, fulfilling orders of 800 to 815 consumers. The system of operational planning of fulfilment of orders developed on the works is outlined.
There are 4 tables.

ASSOCIATION: Zlatoustovskiy metallurgicheskiy zavod
(Zlatoust Metallurgical Combine)

Card 1/1

VOLOSHIN, A.I.; BOGOYAVLENSKIY, K.A.; AKHTYRCHENKO, A.M.; TURIK, I.A.; ZHIDKO, A.S.; LYALYUK, V.S.; GABAY, L.I.; ONOPRIYENKO, V.P.; STARSHINOV, B.N.; BABIY, A.A.; SAVELOV, N.I.; Prinimali uchastiye: TORYANIK, E.I.; VASIL'YEV, Yu.S.; SHEMEL', T.I.; SENYUTA, V.I.; BONDARENKO, I.P.; AMSTISLAVSKIY, D.M.; ANDRIANOV, Ye.G.; SERGEYEV, G.N.; ZAMAKHOVSKIY, M.A.; LYUKIMSON, M.O.; IVONIN, V.K.; TSIMBAL, G.I.; SEN'KO, G.Ye.; KONAREVA, N.V.; SOLODKIY, Yu.L.; LUKASHOV, G.G.; TARASOV, D.A.; GORBANEV, Ya.S.; SUPRUN, I.Ye.; TIKHOMIROV, Ye.I.; KONONENKO, P.A.; PROKOPOV, V.N.; GULYGA, D.V.; PLISKANOVSKIY, S.T.; PONOMAREVA, K.Ye.

Effect of the length of coking on coke quality and the performance of blast furnaces. Koks i khim. no.12:26-32 '61. (MIRA 15:2)

1. Ukrainskiy uglekhimicheskiy institut (for Voloshin, Bogoyavlenskiy, Akhtyrchenko, Turik, Zhidko, Lyalyuk, Toryanik, Vasil'yev, Shemel'). 2. Zhdanovskiy koksokhimicheskiy zavod (for Gabay, Senyuta, Bondarenko, Amstislavskiy, Andrianov, Sergeyev, Zamakhovskiy, Lyukimson, Ivonin, TSimbal). 3. Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov (for Onopriyenko, Starshinov, Babiy, Sen'ko, Konareva, Solodkiy). 4. Zavod "Azovstal'" (for Savelov, Lukashov, Tarasov, Gorbanev, Suprun, Tikhomirov, Kononenko, Prokopov, Gulyga, Pliskanovskiy, Ponomareva).

(Coke)
(Blast furnaces)

S/133/62/000/004/001/008
A054/A127

AUTHORS: Sergoyev, G.N.; Khasin, G.A; Davidyuk, V.N., Engineers

TITLE: Casting flat alloy-steel ingots

PERIODICAL: Stal', no. 4, 1962, 309 - 312

TEXT: Besides other defects, alloy-steel and alloy ingots of the conventional square and circular section type very often have an insufficient density, mostly in the axial zone. This is caused mainly by an increased carbon content, the presence of alloying elements, impurities in the form of high-melting non-metallic inclusions and an increased gas saturation of the metal. In the bottom part of the ingot the density is usually satisfactory, due to the accelerated solidification of the metal caused by intensive cooling from the sides and from the mold bottom. Evidently, the axial porosity of the ingot can, therefore, be reduced by modifying the solidification conditions of the metal accordingly: by an increase of the heat extraction from the ingot bottom which intensifies solidification from the bottom upward or by a more thorough heating of the ingot head. These conditions can be ensured partly by a change of the ingot

Card 1/4

Casting flat alloy-steel....

geometry (greater conicity, smaller height-to-average cross section ratio, larger dead head volume) and, partly, by a more intense heating of the head. The most favorable conditions for obtaining a uniform, dense macrostructure are given in the electroslag remelting process. At the Zlatoustovskiy metallurgicheskiy zavod (Zlatoust Metallurgical Plant) tests were carried out to cast ingots requiring a uniform macrostructure. The test ingots were shorter, their height-to-cross section ratio was considerably smaller (1,65) than in the conventional ingots, their conicity was greater (up to 10%), which promotes crystallization from the bottom upwards; the weight of the liquid metal in the head was greater (up to 37% of the total ingot weight). Under these conditions the pores forming are easily filled with liquid metal and this ensures a higher density in the axial zone of the ingot. The shorter ingot shape, however, involves other difficulties: larger parts must be cropped, the yield of first-grade steel decreases, heating, forging and rolling are more difficult. Shortened ingots are, therefore, cast only in special cases (large section rods from certain steel grades and alloys). To obtain a uniformly dense macrostructure under more favorable conditions, cooling has to be accelerated. This can only be achieved, however, by an increase of the cooling surface in relation to the volume-unit of the solidifying metal, in other words, by a reduction of the

Casting flat alloy-steel...

ingot thickness. At the Zlatoust Metallurgical Plant 0.75-ton, 500 x 250 mm test ingots were cast, with a 135-kg riser, having the following characteristics (in brackets the corresponding data for conventional, 430-mm circular ingots):

Ingot weight (ton)	0.75 (0.7)
Riser weight-to-total ingot weight ratio (for liquid metal, %)	18 (37)
Conicity of the ingot (sidewise) %	5.63 (10.8)
Ingot height-to-average section ratio	2.32 (1.64
Lateral cooling surface-to-ingot volume ratio (without bottom part) dm^2/dm^3	1.16 (0.97)
Mold weight-to-ingot weight ratio (without riser)	2.29 (2.54)

The new geometry of the ingots permits a more rapid solidification. The axial zone of Р 18 (R18), ЭИ 736 (EI736), ЭИ 961 (EI961) steel ingots is fine-grained and dense; when flat, 0.75 ton R-18 high-speed steel ingots were converted into

Card 3/4

Casting flat alloy-steel...

rods at least 50 mm in diameter, the carbide non-homogeneity could be reduced to the standard degree [ГОСТ 5951-51 (GOST 5951-51)]. When flat R18, R9 and EI347 ingots were cast with petrolatum, their surface was greatly improved. The EI736 ingots, which usually have intergranular cracks and slag-inclusions in the conventional and shortened ingots, are free from these defects when they have a flat shape. There are no difficulties in heating, forging and rolling them. High-alloy steels and alloys should be cast into flat ingots of not more than 1 ton. For less alloyed steels an optimum configuration of heavy-weight flat ingots has to be developed and tested. There are 2 figures.

ASSOCIATION: Chelyabinskiy sovnarkhoz (Chelyabinsk Sovnarkhoz)

Card 4/4

KUDRYAVTSEV, N.F.; SERGEYEV, G.N.

The technique of current measurement from drift ice in regions of great depths. Trudy AANII 210:102-105 '61. (MIRA 14:11)
(Arctic regions--Ocean currents) (Sea ice)

SERGEYEV, G.N.

Seasonal variations of the carrying-out of ice from the Arctic basin into the Greenland Sea. Probl. Arkt. i Antarkt. no.10:33-38 '62. (MIRA 16:2)

(Arctic regions) (Greenland Sea—Sea ice)

24(5,7,8) PHASE I BOOK EXPLOITATION SOV/1817

Yavorskiy, Boris Mikhaylovich, Andrey Antonovich Detlaf, Lidiya Bronislavovna Milkovskaya, and Georgiy Petrovich Sergeyev

Kurs lektsiy po fizike, t. 1: Mekhanika, molekulyarnaya fizika i termodinamiki (A Course of Lectures on Physics, Vol 1: Mechanics, Molecular Physics, and Thermodynamics) Moscow, Gos. izd-vo "Sovetskaya nauka," 1958. 276 p. 30,000 copies printed.

Ed. of Publishing House: K.I. Anoshina; Tech. Ed.: M.D. Shlyk.

PURPOSE: This book is intended as a text for a correspondence course in basic physics for engineering students.

COVERAGE: This is the first volume of a three-volume correspondence course in physics for engineering students. The content of this course approximates that of the physics course offered to engineering students attending regular technical institutions of higher learning. Each chapter includes test problems, intended to develop

Card ~~1/8~~

ACCESSION NR: AT4041815 S/2563/64/000/230/0098/0106

AUTHOR: Lapin, Yu. V.; Sergeyev, G. P.

TITLE: Effect of dissociation on skin friction and heat transfer in a turbulent boundary layer

SOURCE: Leningrad. Politekhnicheskiy institut. Trudy*, no. 230, 1964. Tekhnicheskaya gidromekhanika (Technical hydromechanics), 98-106

TOPIC TAGS: dissociating boundary layer, turbulent boundary layer, dissociation effect, hypersonic flow, skin friction, heat transfer

ABSTRACT: A study of the effect of dissociation on the heat transfer and skin friction of a turbulent boundary layer is presented. A frozen turbulent boundary layer on a flat plate is considered, with the assumption of an ideal dissociating gas corresponding to the model defined by Lighthill, in which the energy of vibrational degrees of freedom of molecules is taken into account. The basic equations of momentum, mass, and energy are derived, taking into account terms

Card 1/2

ACCESSION NR: AT4041815

contributed by turbulent fluctuations and assuming a sublayer-turbulent layer model with arbitrary (though not varying significantly from 1). Prandtl and Lewis numbers. Relationships are established between total enthalpy and concentration profiles and the velocity profile in the laminar sublayer and turbulent layer, and also between density and velocity in the boundary layer. Expressions were obtained for skin friction and heat transfer coefficients and for equilibrium enthalpy. Results of the numerical calculations are given, and variations in the skin friction and heat transfer coefficients with Reynolds number for dissociating oxygen at M_e = 2, 4, and 10 are presented in graphs, together with curves calculated by W. Dorrance and experimentally obtained by P. H. Rose. Orig. art. has: 5 figures and 34 formulas.

ASSOCIATION: none

SUBMITTED: 00 ATD PRESS: 3055 ENCL: 00

SUB CODE: ME NO REF SOV: 002 OTHER: 003

Card 2/2

YAVORSKIY, Boris Mikhaylovich; DETLAF, Andrey Antonovich; MILKOVSKAYA, Lidiya Bronislavovna; SERGEYEV, Georgiy Petrovich; PERKOVSKAYA, G.Ye., red.

[Physics course] Kurs fiziki. Moskva, Vysshaia shkola. Vol.1. Izd.3., 1965. 375 p. (MIRA 18:7)

[illegible], N.--

Carding Machines

Silver control on carding machine Tekst, prom./ No. 4, 1952.
12

Monthly List of Russian Accessions, Library of Congress, June 1952. UNCLASSIFIED

SERGEYEV. G. S.

Carding Machines

Compressing the card in carding machines.
Tekst. prom. 12, No. 8, 1952,

9. Monthly List of Russian Accessions, Library of Congress, November 1952. UNCLASSIFIED.

LYUBIMOV, D.A., nauchnyy red.; SERGEYEV, G.S., otv. za vypusk; MALLER, S.Z., tekhn. red.

[Metallography and foundry practice] Metallovedenie i liteinoe proizvodstvo; sbornik statei. Sverdlovsk, 1960. 105 p. (MIRA 14:9)

1. Ural'skiy mashinostroitel'nyy zavod. Sverdlovsk. Nauchno-issledovatel'skiy institut tiazhelogo mashinostroyeniya.
(Metallography) (Founding)

SERGEYEV, G. T.

"Interrelation of Heat and Mass Transfer Processes at Vaporization."

Report submitted for the Conference on Heat and Mass Transfer, Minsk, BSSR, June 1961.

88630

S/170/61/004/002/008/018
B019/B060

11.9200

AUTHOR: Sergeyev, G. T.

TITLE: Heat and Mass Exchange in the Evaporation of a Liquid in a Forced Gas Jet

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1961, Vol. 4, No. 2, pp. 77-81

TEXT: The author studied the heat transfer in the evaporation of water, acetone, benzene, and butyl alcohol by comparison with the heat exchange of a dry body. The experimental work was conducted in a wind channel with a cross section of 0.22 m^2. The wind velocity was regulated from 3 to 15 m/sec, while temperature and humidity were under automatic control. The wind channel contained a drip pan for the liquid and a dry body: the temperatures were measured with thermocouples. Experimental results showed that the evaporation rate i_m at Reynolds numbers of from $2.5 \cdot 10^4$ to $16 \cdot 10^4$ constitutes no unambigous function of the molecular weight of the liquid. $i_m = i_m(\mu)$ is no smooth curve. This is explained by the effect

Card 1/2

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22822

S/170/61/004/005/005/015
B104/B201

AUTHOR: Sergeyev, G. T.

TITLE: Study of the external heat and mass transport in the evaporation of a liquid from a capillary-porous body

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 4, no. 5, 1961, 33-37

TEXT: Experimental results on processes of heat and mass transfer occurring in the evaporation of a liquid from the surface of a capillary-porous body, and also on the heat exchange of a dry body in a turbulent air-stream are reported. The dry and the moist body were simultaneously placed in a wind channel. The porous bodies were baskets of copper sheet covered by a capillary-porous substance. The heat transferred to the surface was abducted by water passing through the basket. The two bodies had the same dimensions (25·100·18.5 mm) and the same surface conditions. The capillary-porous surface layers were made of ceramic material. The experimental arrangement is schematically shown in Fig. 1. The closed wind channel (4) was 30 m long and had a cross section of 0.22 m^2 in its

Card 1/5

S/170/61/004/003/003/015
B104/B205

Study of the external heat and mass...

operating sections. The wind velocity was varied between 3 and 15 m/sec, temperature between 25 and 90°C, and humidity between 5 and 80 %. It was found that the intensity of heat and mass transport is directly proportional to the temperature and velocity, and inversely proportional to the humidity of the steam-air mixture. The heat exchange coefficient for moist bodies is greater than for dry ones. The largest difference (up to 20 %) was found at a low degree of air humidity. The experimental curves can be described by the formulas

$Nu_q = 0.061Re^{0.77}Pr^{0.33}Gu^{0.09}$ and $Nu_i = 0.042Re^{0.77}Pr^{0.33}(T_{dry}/T_{wet})^{1.33}$

for heat exchange [Abstracter's note: T_{dry} and T_{wet} are not exactly defined], and by $Nu_m = 0.096Re^{0.75}Pr_m^{0.33}G_u^{0.144}$ and

$Nu_m = 0.052Re^{0.75}Pr_m^{0.33}(T_{dry}/T_{wet})^{2.35}$ for mass exchange. It was found that $Nu_m > Nu_q$; both numbers and also their difference decrease with an increase in air humidity. According to a hypothesis of A. V. Lykov, the interaction of a gas stream with a surface consists not only ... the

Card 2/5

evaporation of the liquid from the free surface but also in a disrupture of water particles which enter the boundary layer where they evaporate. When a liquid evaporates from a capillary-porous body, capillaries are set free by the displacement of the evaporation surfaces into the interior. The elevated pressure in the zone of evaporation as compared to the surrounding medium results in vibration of liquid particles in the boundary layer, which extends into the capillaries. This representation of these processes justifies the introduction of the simplex T_{dry}/T_{wet} in the above equations, since the volume evaporation of liquid particles occurring under isobaric-adiabatic conditions is thus taken into account. The data on the heat exchange of a dry body, obtained at a degree of turbulence of the incident stream of 2.5 %, can be described by $Nu = 0.035Re^{0.8}Pr^{0.33}$. There are 3 figures and 5 Soviet-bloc references.

ASSOCIATION: Institut energetiki AN BSSR, g. Minsk (Institute of Power Engineering, AS BSSR, Minsk)

SUBMITTED: February 10, 1961

SERGEYEV, G.T.

Application of the theory of similitude for investigating the processes of heat and mass transfer in liquid evaporation [with summary in English]. Inzh.-fiz. zhur. 4 no.9: 76-79 S '61. (MIRA 14:8)

1. Institut energetiki AN BSSR, g. Minsk.
(Heat--Transmission) (Mass transfer) (Evaporation)

S/862/62/002/000/005/029
A059/A126

AUTHOR: Sergeyev, G.T.

TITLE: Investigation of the process of heat and mass transfer in the evaporation of a liquid in the forced flow of a gas

SOURCE: Teplo- i massoperenos. t. 2: Teplo- i massoperenos pri fazovykh i khimicheskikh prevrashcheniyakh. Ed. by A.V. Lykov and B.M. Smol'skiy. Minsk, Izd-vo AN BSSR, 1962. 75 - 79

TEXT: In the first experimental series, the process of the evaporation of water, acetone, benzene, and butyl alcohol with open surface was studied, while in the second experimental series heat and mass transfer in the evaporation of water through a solid with surface porosity and the heat exchange in a dry solid with surface porosity were investigated. A wind tunnel with an air duct 30 m long and a cross section of the working part of 0.22 m^2 was used. As the porous solid, a porous ceramic consisting of 75% of refractory clay, 12.5% of China clay, 12% of clay, and 0.5% of water glass is used. The rate of evaporation i_m is not a well-defined function of the molecular weight of the evaporating liquid;

Card 1/3

Investigation of the process of heat and ....

it depends on the atmospheric moisture. The absolute values of the evaporation temperatures are inversely proportional to the saturated vapor pressures p_{si} of the different liquids related to the same temperature. The mass transfer coefficients in the evaporation of the studied liquids increase with increasing molecular weights of the latter. The heat-exchange coefficients α_e of evaporation were found to be greater than those, α_d, of the dry body. The results of the experimental investigation of the evaporation process show that the number $\frac{T_d - T_w}{T_d}$ called the Gukhman criterion (Gu) has to be introduced into the well-known heat and mass transfer ratios $Nu = f(Re, Pr)$, $Nu_m = f(Re, Pr_m)$, or $St = f(Re, Pr)$, $St_m = f(Re, Pr_m)$. The following critical equations were obtained from a treatment of experimental data on the evaporation of open-surface liquids: A) for heat transfer:

$$Nu = 0.086\ Re^{0.8}\ Pr^{0.33}\ Gu^{0.2}, \quad (1)$$

$$St = 0.086\ Re^{-0.2}\ Pr^{-0.67}\ Gu^{0.2}; \quad (2)$$

and B) for mass transfer:

$$Nu_m = 0.094\ Re^{0.8}\ Pr^{0.33}\ Gu^{0.2}. \quad (3)$$

Card 2/3

For the intensity of heat and mass transfer processes with the evaporation of moisture through a solid with a porous surface, the following equations were found to hold: A) for heat transfer:

$$St = 0.22\ Re^{-1/3}\ Pr^{-2/3}\ Gu^{0.1}; \quad (4)$$

and B) for mass transfer:

$$St_m = 0.19\ Re^{-1/3}\ Pr_m^{-2/3}\ Gu^{0.14}. \quad (5)$$

A.V. Nesterenko and A.V. Lykov are mentioned. There are 2 figures.

ASSOCIATION: Energeticheskiy institut AN BSSR, g. Minsk (Power Engineering Institute of the AN BSSR, City of Minsk)

SERGEYEV, G.T.; SERGEYEVA, L.A.

Experimental study of the heat and mass transfer process in evaporative cooling of bodies of various shapes. Inzh.-fiz. zhur. no.12:3-10 D'63. (MIRA 17:2)

1. Institut teplo- i massoobmena, Minsk.

ACCESSION NR: AP4044414 S/0170/64/000/008/0051/0054

AUTHOR: Sergeyev, G. T.

TITLE: Two-dimensional steady state heat conduction from finned surfaces

SOURCE: Inzhenerno-fizicheskiy zhurnal, no. 8, 1964, 51-54

TOPIC TAGS: temperature distribution, temperature gradient, heat transfer, thermal conductivity, finned surface

ABSTRACT: The heat transfer from fins with various temperature distributions at their base was discussed analytically. The ambient temperature t_c is assumed constant, and the fin thickness δ is much smaller than the length l and height h. The Fourier conduction equation is written in two dimensions

$$\frac{\partial^2 \theta}{\partial x^2} + \frac{\partial^2 \theta}{\partial y^2} = m^2 \theta,$$

where $m = \pm \sqrt{\alpha_0 / \lambda A}$, $\theta = t - t_c$, under the following boundary conditions:

$$\left.\frac{\partial \theta}{\partial y}\right|_{y=0} = 0, \quad \left.\frac{\partial \theta}{\partial y}\right|_{y=l} = 0,$$

Card 1/2

ACCESSION NR: AP4044414

$$\left.\frac{\partial \theta}{\partial x}\right|_{x=h} = 0.$$

Three temperature profiles (one straight line and two parabolic) are given as input conditions for the heated end of the fin (the base) and a finite Fourier transform method is used to solve the above equation, i.e.,

$$T(x, n) = \int_0^l \theta \cos \frac{n\pi}{l} y dy .$$

The solution is obtained in fast converging cosine and hyperbolic cosine series. The results are shown to be applicable to determining the temperature profiles in the fins as well as the heat-transfer rate to the ambient air. The error in retaining two to four terms in the expansion is shown to be less than 10%. Orig. art. has: 21 equations and 1 figure.

ASSOCIATION: Institut teplo- i massoobmena AN BSSR g. Minsk (Institute of Heat and Mass Transfer, AN BSSR)

SUBMITTED: 29Jan64 ENCL: 00

SUB CODE: TD, ME NO REF SOV: 002 OTHER: 002

Card 2/2

L 10[illegible] EWT(d)/EWP(e)/EWT(m)/EPF(c)/EPF(n)-2/EWG(m)/EPR/EWP(t)/EWP(k)/EWP(z)/
EWP(b) [illegible]

ACCESSION NR: AP5010070 UR/0170/65/008/004/0463/0466

50
49
B

AUTHOR: Sergeyev, G. T.

TITLE: Temperature field of a porous body in evaporative cooling

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 8, no. 4, 1965, 463-466

TOPIC TAGS: porous wall cooling, heat transfer, thermal conduction, evaporation, differential equation, mass transfer

ABSTRACT: The analytic solution of porous wall cooling was investigated for an infinite flat plate, a thin-walled cylinder, and a thin-walled sphere. In the last two geometries the coolant was assumed to be fed uniformly from the center toward the surface. The pores are assumed to be parallel and the temperature of the body to be the same as that of the coolant at any given point. All thermal parameters are constant. The governing heat-conduction equation is given by

$$\frac{d^2t}{d\eta^2} + \frac{1}{\eta}(\Gamma - \xi_w\eta)\frac{dt}{d\eta} - \frac{\Gamma}{\eta}\xi_w t = 0,$$

where $\Gamma = 0,1,2$ and $\eta = x,r,r$ for the flat plate, cylinder, and the sphere respectively. The boundary conditions on the outside surface of the body include heat conduction plus evaporative losses. To

Card 1/2

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ACCESSION NR: AP5010070

determine the temperature of the wall on the cool side of the surface, a heat conduction equation is given for the liquid (or gas) coolant as $\eta_1^{\Gamma}\frac{d^2t_{\text{ж}}}{d\eta_1^2}+(\Gamma\eta_1^{\Gamma-1}-\xi)\frac{dt_{\text{ж}}}{d\eta}=0$. The solutions for the temperature distributions are given in closed form. It is shown that for large heat capacities ($C\to\infty$) the temperatures of the plate, cylinder, and sphere approach that of the coolant. Orig. art. has: 15 equations.

ASSOCIATION: Institut teplo- i massoobmena AN BSSR g. Minsk (Institute of Heat- and Mass-Transfer, AN BSSR)

SUBMITTED: 25May64 ENCL: 00 SUB CODE: TD, ME

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L 63475-65 | EWP(m)/EWT(1)/FCS(k)/EWA(1) WW

ACCESSION NR: AP5020938 UR/0170/65/009/002/0163/0170
532.526

30
29
B

AUTHOR: Sergeyev, G. T.; Smol'skiy, B. M.

TITLE: Transport processes in a reacting boundary layer

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 9, no. 2, 1965, 163-170

TOPIC TAGS: boundary layer, laminar boundary layer, heat transfer, mass transfer, aerothermodynamics, mass transfer cooling, transpiration cooling, enthalpy distribution

ABSTRACT: A laminar boundary layer of compressible gas on a semi-infinite porous plate is investigated under conditions of high speed and homogeneous reaction with a uniformly injected substance. An approximate calculation of heat and mass transfer in the laminar boundary layer was carried out in the case of injection of foreign gas through a porous plate according to the law $(\rho v)_w$ = constant, Pr and Pm (thermal and diffusion Prandtl numbers) being constant and different from unity. Solving the system of differential equations of the laminar boundary layer makes it possible, after certain transformations and under certain boundary conditions, to obtain analytical expressions for enthalpy distribution and concentration in the boundary lay-

Card 1/2

L 63475-65

ACCESSION NR: AP 5020938

er. An expression which makes it possible to determine the position of the reaction front is also obtained. The possibility of applying the obtained solutions to the case of turbulent boundary layer flow is demonstrated. Orig. art. has: 43 formulas. [AB]

ASSOCIATION: Institut teplo- i massoobmena AN BSSR, Minsk (Institute of Heat and Mass Transfer, AN BSSR)

SUBMITTED: 05Feb65 ENCL: 00 SUB CODE: ME,TD

NO REF SOV: 007 OTHER: 004 ATD PRESS: 4067

Card 2/2

L 20757-66 EWP(m)/EWT(1)/EWT(m)/ETC(m)-6/T/EWA(1)/EWP(f) WW/JW/JWD/WE
ACC NR: AP6010033 SOURCE CODE: UR/0170/66/010/003/0311/0317

AUTHOR: Mosse, A. L.; Sergeyev, G. T. 20 B

ORG: Institute of Heat and Mass Transfer, AN BSSR, Minsk (Institut teplo- i massoobmena AN BSSR)

TITLE: Transport processes during the injection of a reacting fuel-oxidizer mixture into the boundary layer 21, 44, 55

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 10, no. 3, 1966, 311-317

TOPIC TAGS: boundary layer, combustion, transpiration cooling

ABSTRACT: An analysis was made of the transport processes occurring when a fuel-oxidizer mixture is injected through a porous plate into the boundary layer in an air stream. Since the mass velocity of the oxidizer is lower than that required for stoichiometric mixture formation, combustion cannot take place inside the plate. The additional required oxygen flows into the combustion zone from the air stream. The reaction zone was considered to be located at a position where the concentration is stoichiometric. The analysis yielded expressions correlating the location of the reaction front with the fuel/oxidizer ratio at the inlet to the porous plate and with the Nu and Re numbers of the air stream. The location of the reaction front was found to be

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ACC NR: AP6010033

a function of the fuel oxidizer ratio, the injection rate, and the Schmidt number. The heat transfer coefficient decreased as the injection rate increased. Orig. art. has: 26 formulas and 1 figure. [PV]

SUB CODE: 21/ SUBM DATE: 28May65/ ORIG REF: 003/ OTH REF: 002/
ATD PRESS: 4124

Card 2/2

SERGEYEV, G.V.; SUL'YE, Ye.V.

Segmental-reflex paraffin therapy of peptic ulcer. Klin.med., Moskva 29 no.4:63-65 Apr 1951. (CIML 20:9)

1. Of the Institute of Therapy (Director--Prof. A.L. Myasnikov, Active Member of the Academy of Medical Sciences USSR) of the Academy of Medical Sciences USSR.

KOSTYUKHINA, N.A.; SERGEYEV, G.V.

Short-wave diathermy applied to the sinocarotid zones for treating hypertension. Trudy AMN SSSR 25:79-88 '53. (MLRA 8:8)

(DIATHERMY)
(HYPERTENSION)

SERGEYEV, G.V.

Electric sleep for treating hypertension. Vop.kur.fizioter. i lech. fiz.kul't. 21 no.4:39-45 O-D '56. (MLRA 9:12)

1. Iz Instituta terapii Akademii meditsinskikh nauk SSSR (dir. - deystvitel'nyy chlen Akademii meditsinskikh nauk SSSR prof. A.L. Myasnikov)
(HYPERTENSION) (SLEEP--THERAPEUTIC USE)
(ELECTRIC ANESTHESIA)

SERGEYEV, G.V.

Clinical and physiological observations in treating hypertension with electric anesthesia. Vop.kur.fizioter. i lech.fiz.kul't. 23 no.1:48-52 '58. (MIRA 11:3)

1. Iz Instituta terapii Akademii meditsinskikh nauk SSSR (dir. - deystvitel'nyy chlen AMN SSSR prof. A.L.Myasnikov)
(ELECTRIC ANESTHESIA) (HYPERTENSION)

SERGEYEV, G.V., (Moskva)

Electric sleep therapy in hypertension. Klin.med. 36 no.9:107-111 S '58 (MIRA 11:10)

1. Iz Instituta terapii AMN SSSR (dir. - deystvitel'nyy chlen AMN SSSR prof. A.L. Myasnikov).
(HYPERTENSION, ther.
electronarcosis (Rus))
(ELECTRONARCOSIS, ther. use
hypertension (Rus))

ZAMOTIN, B.A.; ACHINOVICH, Ye.V.; VYSOKOVSKAYA, A.P.; SERGEYEV, G.V.

"Experience in planning and organizing a set of health and antiepidemic measures in rural districts and an analysis of their effectiveness" by B.D. Petrakov. Reviewed by B.A. Zamotin and others. Zdrav. Ros. Feder. 4 no. 4:38 Ap '60. (MIRA 13:10)
(PUBLIC HEALTH, RURAL) (PETRAKOV, B.D.)

SERGEYEV, G.V.

Electrosleep as a method of neurotropic therapy of hypertension. (MIRA 15:12)
Sov.med. 26 no.10:42-46 O '62.

1. Iz Instituta terapii (dir. - deystvitel'nyy chlen AMN SSSR prof. A.L.Myasnikov) AMN SSSR.
(HYPERTENSION) (ELECTRIC ANESTHESIA)

SERGEYEV, Georgiy Vasil'yevich; MANNIKOV, M.Ye., red.

[Electrosleep treatment of hypertension patients controlled by the examination of their higher nervous activity] Lechenie elektrosnom bol'nykh gipertonicheskoi bolezn'iu pod kontrolem issledovaniia ikh vysshei nervnoi deiatel'nosti. Moskva, Meditsina, 1965. 226 p. (MIRA 18:10)

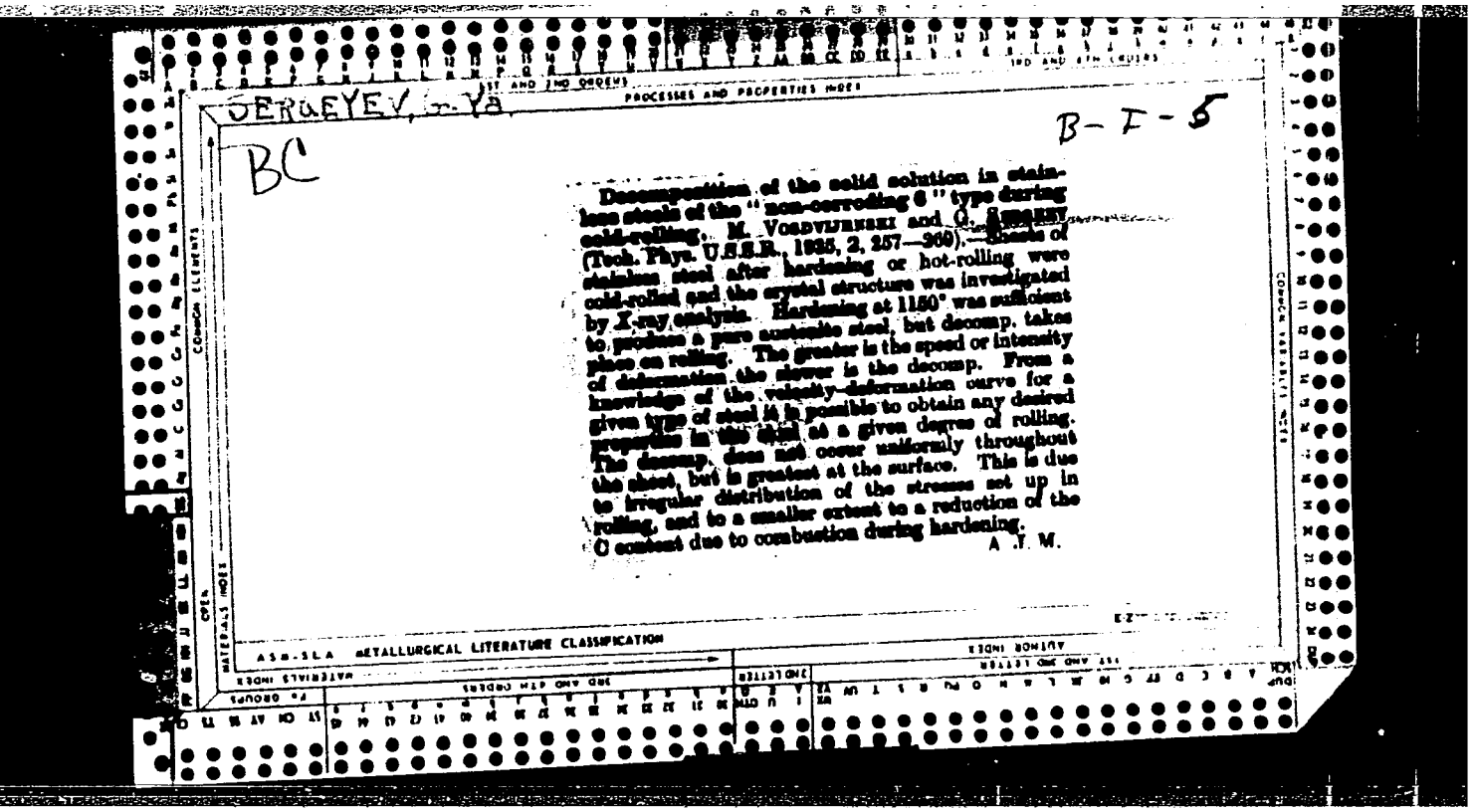
BANSHCHIKOV, V.M., prof.; LIVENTSEV, N.M., prof.; SERGEYEV, G.V., doktor med. nauk; KULIKOVA, Ye.I. (Lebedinskaya), kand. med. nauk

Conference of doctors of Moscow and Moscow Province on the problem of electrosleep. Vop. kur., fizioter. i lech. fiz. kul't. 30 no.4:375 Jl-Ag '65. (MIRA 18:9)

ACHINOVICH, Ye.B.; DRANKIN, D.I.; SERGEYEV, G.V.

Water-borne outbreak of typhoid fever. Zhur.mikrobiol.epid.i immun. 33 no.5:112-115 My '62. (MIRA 15:8)

1. Iz Kemerovskoy oblastnoy sanitarno-epidemiologicheskoy stantsii i Novokuznetskogo instituta usovershenstvovaniya vrachey.
(TYPHOID FEVER) (WATER--MICROBIOLOGY)



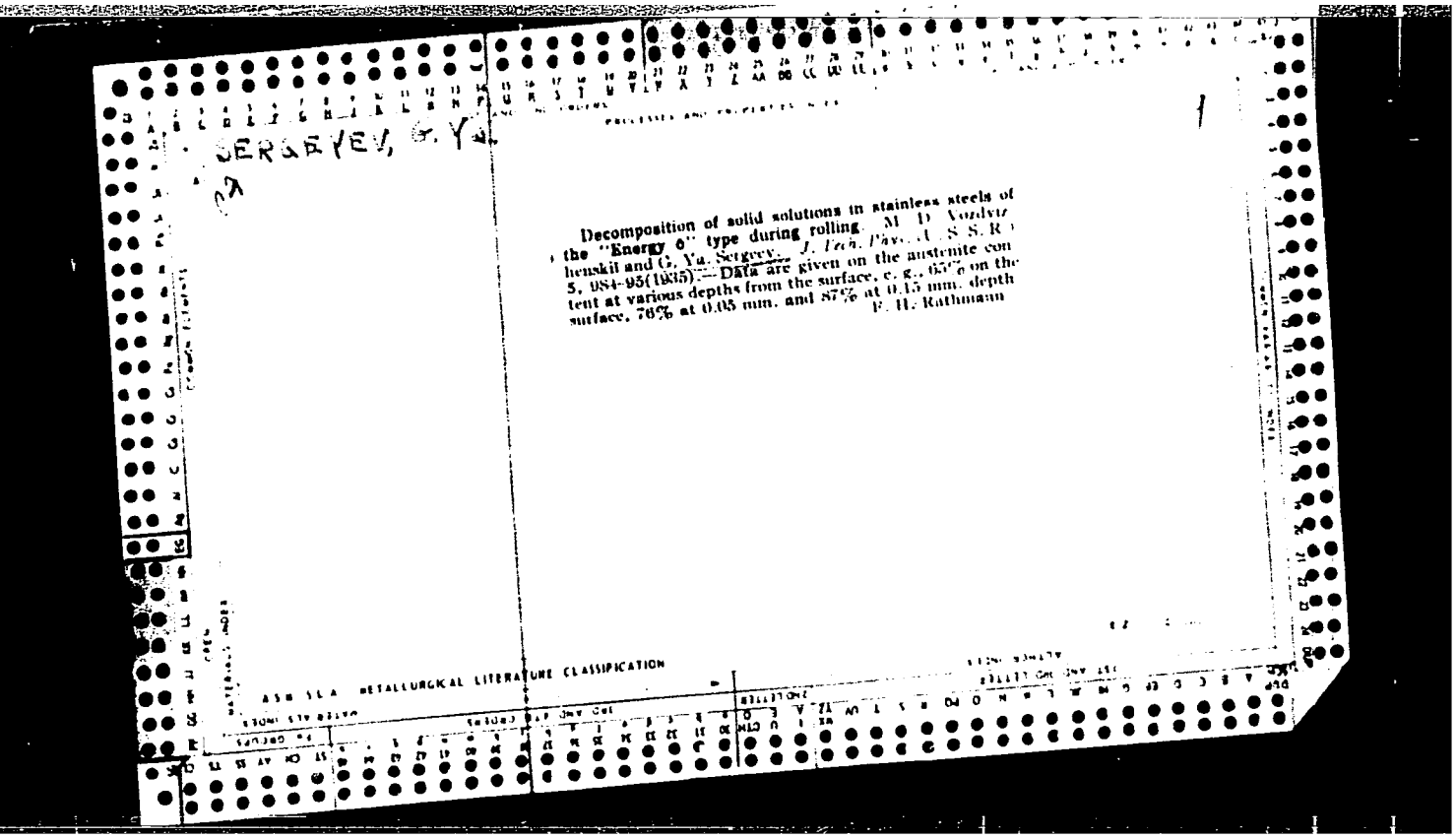
SERGEYEV, N. Ya.

BC

B-F-5

Decomposition of the solid solution in stainless steels of the "non-corroding 6" type during cold-rolling. M. Vosdvizhenski and G. Sergeyev (Tech. Phys. U.S.S.R., 1935, 2, 257—260).—Sheets of stainless steel after hardening or hot-rolling were cold-rolled and the crystal structure was investigated by X-ray analysis. Hardening at 1150° was sufficient to produce a pure austenite steel, but decomp. takes place on rolling. The greater is the speed or intensity of deformation the slower is the decomp. From a knowledge of the velocity-deformation curve for a given type of steel it is possible to obtain any desired properties in the steel at a given degree of rolling. The decomp. does not occur uniformly throughout the sheet, but is greatest at the surface. This is due to irregular distribution of the stresses set up in rolling, and to a smaller extent to a reduction of the C content due to combustion during hardening.

A. J. M.


SERGEYEV, G. Ya.

Decomposition of solid solutions in stainless steels of the "Energy o" type during rolling. M. D. Vozdvi henskil and G. Ya. Sergeyev. *J. Tech. Phys. U.S.S.R.* 5, 984-95(1935).—Data are given on the austenite con tent at various depths from the surface, e. g., 65% on the surface, 76% at 0.05 mm. and 87% at 0.15 mm. depth F. H. Rathmann

ASM STEEL METALLURGICAL LITERATURE CLASSIFICATION

LASHKO, N.F.; SERGEYEV, G.Ya.; CHICHAGOV, V.V.; GEVELING, N.V., redaktor.

[Effect of deformation on the recovery capacity of duralumin] Vliianie deformatsii na effekt vozvrata v duraliumine. Pod red. N.V.Gevelinga. [Moskva] Izd. Akademii, 1945. 98 p. (Trudy Voennoi vozdushnoi ordena Lenina akademii KA im. Zhukovskogo, vyp. 153) (MLRA 7:3)
(Duralumin) (Deformations (Mechanics))

[redacted], [redacted], Libova

"INFLUENCE OF FABRICATION ON STRUCTURE AND PROPERITIES OF URANIUM"

by [redacted]. [redacted]yev, [redacted]. [redacted]. Litova

Report presented [redacted] 2nd U.N. Atoms-for-Peace Conference, Geneva, 9-13 Sept 1958

SERGEYEV, G. I.

"The Effect of Thermal Cycling on Dimensional and Structural Stability of Various Metals and Alloys", by A. A. Bochvar, G. J. Sergeyev, A. A. Yulkova, L. I. Kolobneva, G. I. Tomson.

Report presented at 2nd UN Atoms-for-Peace Conference, Geneva, 9-13 Sept 1958

ZAYMOVSKIY, A. S. and SERGEYEV, G. Y. et. al.

"Effect of Structure and Properties of Uranium on its Behaviour under Irradiation."

paper to be presented at the 2nd UN Intl. Conf. on the peaceful uses of Atomic Energy, Geneva, 1 - 13 Sept 58.

Sergeyev, G. Ya.

AUTHORS: Bochvar, A. A., Konobeyevskiy, S. T., Zaymovskiy, A. S., Sergeyev, G. Ya., Kutaytsev, V. I., Pravdyuk, N. F., Levitskiy, B. M. SOV/89-5-1-1/28

TITLE: Investigations Carried out in the Field of the Metallography of Plutonium, Uranium, and Their Alloys (Issledovaniya v oblasti metallovedeniya plutoniya, urana i ikh splavov)

PERIODICAL: Atomnaya energiya, 1958, Vol. 5, Nr 1, pp. 5-23 (USSR)

ABSTRACTS: In the course of the present survey the principal investigations

The purpose of this survey is to study the metallography of nuclear fuels: plutonium, uranium, and their alloys. The work concerned was carried out in connection with the development of atomic power engineering in the USSR. Three principal chapters contain data concerning the following subjects:

1.) Plutonium and its alloys:
   a) Metallic plutonium
   b) Alloys with the metals of group I ($PuCu_2$, $PuCu_4$, $PuCu_5$)
   c) Alloys with the metals of group II ($PuBe_{13}$)
   d) Alloys with the elements of group III (Pu_3Al, $PuAl_2$, $PuAl_3$, $PuAl_4$)

Card 1/3

e) Alloys with the elements of group IV (Pu_6Zr)
f) Alloys with the elements of group V-VIII (PuV_2, $PuOs_2$, $PuFe_2$)
g) Alloys with the metals of actinides (PuU)

2.) Uranium and its alloys:
a) Structure and physical properties of uranium
b) Mechanic properties of coarse-grained uranium
c) Deformation of uranium when subjected to irradiation or cyclic thermal treatment
d) Change of the structure and properties of uranium as a result of thermal treatment (annealing)
e) Change of the structure and properties of uranium as a result of plastic deformation followed by annealing at temperatures of the α-range
f) Structure and properties of uranium alloys
g) Treatment of uranium by means of pressure.

3.) The influence exercised by neutron radiation upon the structure and the properties of reactor building materials and fuels. There are 17 figures, 6 tables, and 6 references, which are Soviet.

Investigations Carried out in the Field of the Metallography of Plutonium, Uranium, and Their Allcys SOV/89-5-1-1/28

SUBMITTED: March 18, 1958

1. Plutonium--Analysis 2. Plutonium alloys--Analysis 3. Uranium--Analysis 3. Uranium-alloys--Analysis 4. Reactors --Materials 5. Materials--Effects of radiation

Card 3/3

SOV/89-5-4-7/24

AUTHOR: Zaymovskiy, A. S., Sergeyev, G. Ye., Titova, V. V., [illegible] P. M., [illegible], Ya. N.

TITLE: The Influence of the Structure and Properties of Uranium on Its Behavior Under Irradiation (Vliyaniye stroyeniya i svoystv urana na yego povedeniye pod obluchcheniyem)

PERIODICAL: Atomnaya energiya, 1958, Vol 5, Nr 4, pp 413-417 (USSR)

ABSTRACT: It was possible to show that by varying the composition of the alloys and by changing the thermal treatment the consequences of the modification of the size of grain of the nucleus and the texture of uranium after irradiation can partly be eliminated. The dependence of the size of the nuclear grain of the enriched uranium, its hardness, its strength limit, and its stretching-strain limit upon the iron-, silicon-, and aluminum content in the alloy is determined by experiment. The cooling-down rate and the content of the admixtures mentioned influence the position of the β-α transformation point. At a cooling-down rate of 400°C/sec and a silicon content of 0,05 weight percents the transformation point between the β- and the α-phase decreases to 550°C. Experiments proved a 50- to 100-fold acceleration

Card 2

SOV 89-[illegible]

The Influence of the Structure and Properties of Uranium on Its Behaviour Under Irradiation

creep under irradiation (nv = 6.10^{12} n/cm^2.sec) for textured uranium as well as for uranium with a disorientated structure. The creep-rate of disorientated uranium is closely connected with the velocity of stand-by losses. The mechanical properties of uranium, especially dilatation in the reactor, were investigated experimentally. Even after a short stay of the uranium in the reactor (less than 1 hour) the relative modification of the length becomes less and the strength limit increases. The experimentally found values of G_i are considerably higher than those given in reference 5. A. G. Lanin, V. M. Peplinskaya, V. K. Zakharova, L. N. Protsenko, V. N. Golovanova, and K. [illegible] Borisov took part in the investigations. There are 10 figures, 1 table, and 12 references, 1 of which is Soviet.

[illegible]: July 21, 1958

2

SOV/89-5-4-4/24

AUTHORS: Kalashnikov, V. V., Titova, V. V., Sergeyev, G. Ya., Samoylov, A. G.

TITLE: On Uranium-Molybdenum Alloys in Reactor Construction (Survey) (Uran-molibdenovyye splavy v reaktorostroyenii. Obzor)

PERIODICAL: Atomnaya energiya, 1958, Vol 5, Nr 4, pp 421-431 (USSR)

ABSTRACT: The following data on uranium-molybdenum have been compiled on the basis of mainly foreign publications.

1) Phase diagrams and the general properties of alloys.
2) The mechanical properties of some U-Mo alloys (Mo content 2,2 to 12%).
3) Measurement stability of U-Mo alloys after cyclical treatment (heating - cooling). Here especially the papers by S. T. Konobeyevskiy are mentioned.
4) Radiation-stability and corrosion-stability of U-Mo alloys in water.

The following may be said about the use of U-Mo alloys as nuclear fuel:

a) compared to pure uranium, U-Mo alloys have a higher mechanical strength, better corrosion-resisting properties at

Card 1/2