

PAVLOV, V. E.

Reference literature and the role of herbaria in scientific work.
Bot. zhur. 45 no.12:1834-1835 D '60. (MIRA 13:12)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.
(Botanical research)

ВНЕШНЯЯ ПОЛИТИКА СССР

Телеграфическое агентство "Советский Союз". М., 1974.
№ 5, 199-194, 194. (МДП) 1974

1. Научно-исследовательский институт аналитической информации
и прогнозирования при ЦК КПСС.

BELOTSERKOVSKIY, M.Yu.; DIK, N.Ye.; DOBRONRAVOVA, K.I., red.;
PAVLOV, V.N., red.; BELICHENKO, R.K., mladshiy red.;
POLÓZHENTSEV', T.S., mladshiy red.

[Our native land Siberia; photo album] Nasha Rodina
Sibir'; fotoal'bom. Moskva, Izd-vo "Kysl'," 234 p.

PAVLOV, V.N.

Morphological notes on *Helictotrichon desertorum* (Less.) Pilger and
Helictotrichon mongolicum (Roshev.) Fenn. Bot.mat.Cerb. 22:70-78 '63.
(MIRA 17:2)

YEFIMENKO, L.N.; NECHIPORENKO, Ye.P.; PAVLOV, V.N.

Oxidation of tungsten disilicide. Fiz. met. i metalloved. 16 no.6:931-933 D '63. (MIRA' 17:2)

1. Fiziko-tehnicheskii institut AN UkrSSR.

S/865/62/002/000/028/042
D405/D301

AUTHORS: Rokotova, N.A., Kucherenko, T.M., Pavlov, V.N. and Trokhachev, A.I.

TITLE: Effect of sleep loss on some aspects of higher nervous activity of humans

SOURCE: Problemy kosmicheskoy biologii. v. 2. Ed. by N. Siskyan and V. Yazdovskiy. Moscow, Izd-vo AN SSSR, 1962, 273-286

TEXT: The authors investigated the effect of a sleepless night on the task of learning a working program with switches. Four young male adults (volunteers) participated in the experiments; they were awake for 24 hours (5 to 10 times, with intervals of a few days between each experiment). The subjects were placed in a separate room, around a table with four switches. The experiment involved switching off a signal lamp by means of one of the switches. The signal lamp was switched on by the experimentator in accordance with a pre-determined program. The answers of the subject are eval-

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D405/D301

Effect of sleep loss ...

uated by the time it takes to solve the problem, by the ratio of number of answers to number of signals, and by the agreement between the frequency of selecting a particular switch and the frequency given by the programme. Each experiment with the signal lamp lasted 40-60 minutes. The programs used were of two types: rigid and free. The subjects came to the experiments after a normal day of studies. The tests with the signal lamp were conducted in the evening and in the following morning (at 7 o'clock). Between the two program tests the subjects were continuously busy with observations, making entries into copybooks (each minute), etc. The overall results of the dynamics of learning of the four subjects are represented in the form of curves, characterizing the rate of change of the average time required for the solution, the number of errors, and the probability of choice of switches with increasing number of trials. The sleepless night affected only the time required for the solution of the problem in case of the rigid program, whereas the accuracy was not affected. In case of the free (stochastic) program, the quality suffered also, i.e. the problems remained unsolved, although some progress towards a solution was noted. Conclusions: A method was

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Effect of sleep loss ...

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developed for the study of the functions of the higher nervous system of adults; this method permits the analyzing of both determinate and stochastic forms of conditional reflex relations. Two types of programs were used: rigid (stereotype with probabilistic elements), and free (a stochastic model with 4 choices). The effect of sleep loss on both forms of learning was investigated. Twenty four hours of sleeplessness led to a slowing down in learning by the rigid program and to incomplete learning by the free program. There are 4 figures and 2 tables.

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ROKOTOVA, N.A.; KUCHERENKO, T.M.; PAVLOV, V.N.; TROKHACHEV, A.I.

Effect of the lack of sleep on some phases of higher nervous
activity in man. Probl.kosm.biol. 2:273-286 '62.

(MIRA 16:4)

(SLEEP--PHYSIOLOGICAL EFFECT)
(NERVOUS SYSTEM)

PAVLOV, V.N.

Some controversial problems of the classification of plants in
the western Tien Shan. Biul.MOIP.Otd.biol. 67 no.3:144 Ky-Je
'62. (MIRA 15:11)

(Tien Shan--Plant communities)

PAVLOV, V.N., inzh.; IVSHIN, V.P., inzh.

Modernization of the S-230 concrete mixer. Energ. stroi.
no.22:69-73 '61. (MIRA 15:7)

1. Stroitel'stvo Bratskoy gidroelektrostantsii (for Pavlov).
2. Leningradskiy filial Vsesoyuznogo instituta po proyektirovaniyu organizatsiy energeticheskogo stroitel'stva (for Ivshin).
(Concrete mixers)

~~1. KOGAN, P.L., kandidat tekhnicheskikh nauk; PAVLOV, Viktor Nikolaevich, kandidat tekhnicheskikh nauk; SHELKHIN, A.S., redaktor; KOGAN, P.L., tekhnicheskiy redaktor~~

[Operational adjustments of the automobile MAZ-200] Eksploatsatsionnye regulirovki avtomobilia MAZ-200. Moskva, Nauchno-tekhn.izd-vo avtotransp.lit-ry, 1957. 41 p. (MLRA 10:10)
(Automobiles)

18.1150

2308, 1471, 1182

8430₈S/189/60/000/004/004 006
B002/B060

AUTHORS:

Grigor'yev, A. T., Sokolovskaya, Ye. M., Simanov, Yu. P.,
Sokolova, I. G., Pavlov, V. N., Maksimova, M. V.

TITLE:

High-temperature Modifications of Chromium and the Phase
Diagram of the System Chromium - Molybdenum in the Region
Rich in Chromium

PERIODICAL:

Vestnik Moskovskogo universiteta. Seriya 2, khimiya, 1960.
No. 4, pp. 23 - 24

TEXT: A study of the binary system chromium - molybdenum (up to 22 wt% Mo) showed that due to the phase transformations of chromium there arise four zones of mixed crystal formation and three two-phase zones (Fig. 2), having their origin in the transformation points of chromium: 1830°C ($\epsilon \rightleftharpoons \delta$), 1650°C ($\delta \rightleftharpoons \gamma$), and 1300°C ($\gamma \rightarrow \beta$). These transformation points are also found on the heating and cooling curves of chromium iodide (Fig. 1). X-ray analysis of the chilled samples gave the following results: The ϵ -modification is a body-centered cubic crystal with $a = 2.887 \pm 3$ kX; the δ -phase is hexagonal, and for 13% Mo it has the constants $a = 2.764 \pm 3$ kX and

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84308

High-temperature Modifications of Chromium and the Phase Diagram of the System Chromium - Molybdenum in the Region Rich in Chromium S/189/60/000/004/004/006 B002/B060

c/a = 1.604; the γ -phase is a body-centered cubic crystal with a lattice constant similar to the ϵ -phase; the β -modification is probably a face-centered cubic crystal. Results obtained from studies of the systems Cr-Mo, Cr-W, Cr-Nb, Cr-Ta, Cr-Fe, Cr-Ni, Cr-Co, Cr-Fe-Ni, and Cr-Co-Ni, were communicated to the konferentsiya po zharoprochnym metallam i splavam (Conference on Heat-resistant Metals and Alloys) in April, 1958, and April, 1960, as well as to the VIII Mendeleyevskiy s"yezd (8th Mendeleyev Congress) in March, 1959. There are 2 figures and 2 non-Soviet references

ASSOCIATION: Kafedra obshchey khimii (Chair of General Chemistry).
Kafedra neorganicheskoy khimii (Chair of Inorganic Chemistry)

SUBMITTED: April 2, 1960

Card 2/2

S/081/61/000/024/061/086
B149/B138

AUTHOR: Pavlov, V. N.

TITLE: Improving the production process for fabricated concrete and reinforced concrete structures

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 24, 1961, 369, abstract 24K360 (Sb. "Primeneniye melkikh peskov v betone i metody podbora sostava betona". M., Gosstroyizdat, 1961, 15 - 18)

TEXT: The combined process was accomplished in three stages:

1. Preparation of finely ground cement-sand mixes;
2. Preparation of concrete mix in vibration mixer;
3. Vibration-gravity placing of concrete.

The high early strength of the concrete and its low shrinkage mean that the combined process can be recommended for structures with prestressed reinforcement. The combined production process results in more frost resistant concrete; its porosity is reduced to 1/2 or 1/3, and the effective use of cement increases considerably. [Abstracter's note: Complete translation.]

Card 1/1

MOSKVIN, V.M., doktor tekhn. nauk, prof.; MEDVEDEV, V.M., kand. tekhn. nauk; KAPKIN, M.M., kand. tekhn. nauk. Primalni uchastiye: IVANOV, F.M., kand. tekhn. nauk; TVETKOV, S.N., kand. tekhn. nauk; PAVLOV, V.N., inzh.; KLIMOVA, G.D., red. izd-va; BOROVNEV, N.K., tekhn. red.

[Instructions for increasing the durability of concrete in elements of marine hydraulic structures] Instruksiia po povysheniiu dolgo-vechnosti betona v konstruktsiakh morskikh gidrotekhnicheskikh sooruzhenii. Moskva, Gos. izd-vo lit-ry po stroit., arkh. i stroit. materialam, 1962. 58 p. (MIRA 15:5)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut betona i zhelezobetona, Perovo. 2. Chlen-korrespondent Akademii stroitel'stva i arkhitektury SSSR (for Moskvín). 3. Tsentral'naya laboratoriya korrozii Nauchno-issledovatel'skogo instituta betona i zhelezobetona Akademii stroitel'stva i arkhitektury SSSR (for Medvedev, Kapkin). 4. Tsentral'nyy nauchno-issledovatel'skiy institut svyazi Ministerstva transportnogo stroitel'stva SSSR (for Ivanov).
(Hydraulic structures) (Concrete construction)

ACC NR: AP6020200

SOURCE CODE: UR/0056/66/050/006/1472/1477

AUTHOR: Belyayeva, A. I.; Yeremenko, V. V.; Mikhaylov, N. N.; Pavlov, V. N.; Petrov, S. V.ORG: Physicotechnical Institute of Low Temperatures, Academy of Sciences, Ukrainian SSR (Fiziko-tehnicheskii institut nizkikh temperatur Akademia nauk Ukrainskoy SSR); Institute of Physical Problems, Academy of Sciences, SSSR (Institut fizicheskikh problem Akademii nauk SSSR)TITLE: Magnon and phonon excitation during light absorption in antiferromagnetic NiF_2

SOURCE: Zh Eksper i teor fiz, v. 50, no. 6, 1966, 1472-1477

TOPIC TAGS: magnon, phonon, magnon excitation, phonon excitation, light absorption, nickel fluoride, antiferromagnetic material, *NICKEL COMPOUND, FLUORIDE; ABSORPTION SPECTRUM, ELECTRON TRANSITION, LIGHT EXCITATION*ABSTRACT: The structure of the ${}^3A_{2g} + {}^1T_{2g}$ transition in the absorption spectrum of antiferromagnetic nickel fluoride at temperatures between 4.2 and 77K has been analyzed on the basis of experimental data on its vibrational frequencies. It has been shown that band $\nu_I = 20,622 \text{ cm}^{-1}$ and band $\nu_{II} = 20,717 \text{ cm}^{-1}$ are due to electron-magnon transitions with the formation of one and two magnons, respectively, with maximum frequencies. The maximum frequency of the magnon $\nu_m = 100 \text{ cm}^{-1}$. The magnon

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ACC NR: AP6020200

nature of band ν_1 has been confirmed by an analysis of its shape, temperature dependence of spectral position, and half-width. Orig. art. has: 5 figures, 1 formula, and 1 table. [Based on authors' abstract] [NT]

SUB CODE: 20/ SUBM DATE: 13Jan66/ ORIG REF: 002/ OTH REF: 005

Card 2/2 MCL

FAVLOV, V.M.

Interuniversity Conference on Geobotanical Regionalization.
Vest.Mosk.un.Ser.: Biol., pochv. 20 no.4:86-88 J1-Ag '85.
(MIRA 18:1)

MAYRANOVSKIY S.O. SA IZV. 1980

Electromagnetic field in the region of a metal electrode
Electrokinetic phenomena in the region of a metal electrode

1. In the case of a metal electrode in a liquid medium, the

PAVLOV, V.N.; ZOLOTCHITSKIY, Ya.M.; MAYRANOVSKIY, S.G.; TEDORADZE, G.A.

Study of the mechanism of electrochemical reduction of aromatic aldehydes and ketones on a mercury electrode by the faradic impedance method. *Elektrokhimiya* 1 no.4:427-432 Ap '65.

(MIRA 18:6)

1. Institut organicheskoy khimii AN SSSR imeni Zelinskogo i Institut elektrokhemii AN SSSR.

PAVLOV, V.N.

Performance of the new air distribution system developed by the State Scientific Research Institute of the Hydrolysis and Sulfite Alcohol Industry. Gidroliz. i lesokhim. prom. 17 no.6:17 '64.
(MIRA 17:12)

1. Leningradskiy gidroliznyy zavod.

PAVLOV, Viktor Nikolayevich, kandidat tekhnicheskikh nauk, inzhener
podpolkovnik; TARASENKOV, Vladimir Petrovich, kandidat tekhnicheskikh
nauk dotsent, inzhener-polkovnik; POCHTAREV, N.P., inzhener-
polkovnik, redaktor; MYASNIKOVA, T.P., tekhnicheskiiy redaktor

[Internal combustion piston engines] Porshnevyye dvigateli vnutren-
nego sgoraniia. Moskva, Voen.izd-vo M-va obor. SSSR, 1957. 172 p.
(Gas and oil engines) (MLRA 10:8)

SATALKIN, A.V., doktor tekhn.nauk; SENCHENKO, B.A., kand.tekhn.nauk;
KOMOKHOV, P.G.; KORNILOV, A.I., inzh.; PAVLOV, V.N., inzh.

Concrete mixes for mold rolling and vibration mold rolling.
Trudy NIIZHB no.33:271-291 '64. (MIRA 18:2)

1. Leningradskiy institut inzhenerov zheleznodorozhnogo trans-
porta (for Satalkin, Senchenko, Komokhov). 2. Orgtekhstroy
Leningradskogo soveta narodnogo khozyaystva (for Kornilov, Pavlov).

MAYRAN VSKIT, S.G.; PAVLOV, V.N.

Preliminary protonation in the reduction of aromatic ketones on a dropping mercury electrode. Zhur. fiz. khim. 38 no.7:1804-1810
Jl '64. (MIRA 18:3)

1. Institut organicheskoy khimii imeni Zelinskogo AN SSSR.

ACCESSION NO: AP4009390

S/0126/63/016/006/0931/0933

AUTHORS: Yefimenko, L. N.; Nechiporenko, Ye. P.; Pavlov, V. N.

TITLE: Oxidation of tungsten disilicide

SOURCE: Fizika metallov i metallovedeniye, v. 16, no. 6, 1963, 931-933

TOPIC TAGS: tungsten disilicide, oxidation, thermocouple, PtRh PtkRh thermocouple, oxidation curve

ABSTRACT: Oxidation of tungsten disilicide has been investigated. The process was conducted in air at a temperature range of 650-1500C. Samples 20 x 10 x 0.1 mm were produced in a vacuum of 5×10^{-5} mm Hg by filling tungsten plates with powdered silicon. Nichrome elements were used to produce temperatures up to 1000C, and silicon carbide elements were used for higher temperatures. The temperatures were measured with a PtRh-PtkRh thermocouple and were kept constant. In the course of oxidation the samples were weighed with an accuracy of ± 0.01 mg. Below 1000C the experiments were conducted uninterruptedly; above 1000C they were interrupted due to the formation of dense film on the surface of the plates. As can be seen from Fig. 1 of the Enclosure the rate of oxidation curves changed shape at various

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ACCESSION NO: AP4009390

temperatures. Up to 1000C the weight increase followed the formula $W = kt^m$, where W is the weight change per unit area (in mg/cm^2), and t is the time of oxidation (in minutes). At 1150-1250C the curves assume a descending trend because at these temperatures WO_3 becomes extremely volatile. A dense, glassy coating of SiO_2 forms at 1300C, and the process of oxidation progresses logarithmically. The formation of such a coating is described by R. Kiffer and F. Benesovsky (Symposium on Powder Metallurgy, Iron. a. Steel Inst. prep. (Tr., IV, 1953, 40). The logarithmic progress follows the expression $W = k_1 \ln(k_2 t + k_3)$, where k_1 , k_2 , and k_3 are determined by the method described by A. Champion and T. White (J. Inst. Metals, 1949, 75, 375). Metallographic and x-ray investigation disclosed the presence of W_5Si_3 under the glassy coating on WSi_2 oxidized for a long time at high temperatures. Orig. art. has: 2 graphs, 3 formulas, and 2 tables.

ASSOCIATION: Fiziko-tehnicheskii institut AN UkrSSR (Institute of Physics and Technology AN UkrSSR)

SUBMITTED: 20Mar63

DATE ACQ: 03Feb64

ENCL: 01

SUB CODE: PH, CH

NO REF SOV: 002

OTHER: 003

Card 2/3

MORGUNOV, N.I., kand.sel'skokhozyaystvennykh nauk; Primalni uchastiye:
PAVLOV, V.N.; YELSKOVA, Z.M.

Establishing artificial hayfields and permanent pastures in the
repeatedly water-logged polders of Kaliningrad Province. Nauch
trudy KOMS no.1:165-174 '50. (MIRA 15:1)
(Kaliningrad Province--Pastures and meadows)

AVETISYAN, G.A.; DIK, N.Ye.; PERMAKOV, N.P.; YUSOV, B.V.;
SHCHERBAKOV, D.I., otv. red.; DOBRONRAVOVA, K.O., red.;
PAVLOV, Y.H., red.; MEYZEROV, S.M., red.; KOSHELEVA, S.M.,
tekhn. red.

[Our motherland; photographic album] Nasha Rodina; foto-
albom. Moskva, Gos.izd-vo geogr.lit-ry, 1962. 388 p.

(MLA 15:8)

(Russia - Views)

KUL'BA, F.Ya.; MIRONOV, V.Ye.; PAVLOV, V.N.

Effect of alkali metal cations on the formation in solutions of
hydroxy complexes of bivalent lead. Zhur.neorg.khim. 6 no.12:
2814-2815 D '61. (MIRA 14:12)
(Lead compounds) (Alkali metals)

PAVLOV V. P.

Lukashev, I. I. and Pavlov, V. F. "Monocytic angina in horses," Sbornik trudov Akad'mk. vet in-ta, Vol. XIX, Issue 2, 1948, p. 161-66

SO: U-1034, 29 Oct 53, (Letovis 'Zhurnal 'nykh Statey, No. 10, 1949).

PAVLOV, V. P.

Determining the complete resistance of bubble sieve plates.
Khim prom no. 3:228-232 Mr '64. (MIRA 17:5)

PAVLOV, V. P.

"Synthesis of Tropanone. II. Searching ways for the Synthesis of the Alkaloid Scopolamine."
Preobrajensky, N. A., Rubtzov, I. A., Dankova, T. F. and Pavlov, V. P. (p. 952)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1945, Volume 15, no. 11-12.

CA

22

Mechanical properties of greases. (1. Vinogradov, V. P. Pavlov, and K. I. Klimov. *Neftyanoe Ahoz* 23, No. 12, 47-51 (1947); 20, No. 1, 53-8 (1944). Curves illustrating the kinetics of elastic deformation in greases in conditions of simple shear indicate the existence of reversible creep, including elastic pre-effect and elastic after-effect. The effects are greatly accelerated after preliminary stirring or heating of the grease. During the flow of grease under pressure through capillaries, max. values of ultimate shear stress τ_{max} are observed when the pressure acts in a direction opposite to that in which the capillary was previously packed with grease. Min. values are obtained when the two directions are the same. Both the max. and min. values of τ_{max} decrease linearly with increase in temp. within the range used in the tests (10-20°) and more rapidly at reduced rates of flow. A 4:1 mixt. of grease and oil shows a substantial reduction in the area of the thixotropy hysteresis loop when tested in the rotary viscometer immediately after mixing, but the area is larger again after the grease has been allowed to rest for several days. A pressure viscometer of the const.-discharge type will give reproducible values of the flow properties of grease if the pressure is measured at the grease inlet to the capillary, rather than in the supply line for the hydraulic fluid. The former is const., while the latter decreases toward the grease inlet 65 references.

Bruno C. Metzner

CRACKS (LITERATURE)

COEN

ASB 51A DETAIL-PGICAL LITERATURE CLASSIFICATION

22

CA

The dependence of the rate of deformation of calcium greases on the shearing stress G. V. Vinogradov and V. Paskov. Doklady Akad. Nauk S.S.S.R. 58, 1361-4 (1957), of U. S. 43, 15556. In order to investigate the re-

lation between the rate of deformation D and the shearing stress, τ , flow tests through narrow capillaries were made on Solidol. The temp. range was -45 to $+80^\circ$. The results are reported in plots of $\log D$ against $f(\log \tau)$. The influence of temp. was greatest at the middle temp. range. At high loads there was an appreciable development of heat within the capillaries, which caused the curve to become steeper. As a result, in the region of high rates of deformation the curves showed deviations from Eyring's equation $\tau = A_1 + A_2 \log D + K_2 D$ (A_1 , A_2 , and K_2 are const.)

These deviations are discussed in some detail. The shear modulus and flow limits of calcium greases. G. V. Vinogradov and K. I. Klimov. Ibid. 1677-80. The deformation of Ca greases (drop point $70-80^\circ$) was measured at 10^5 . The relation between deformation and time could be represented by the equation $\log \epsilon = a + b \log(t + t_0)$. The value of b remains constant for a wide range of load, so that for the same time interval the deformation is proportional to the load. At small loads the grease behaved as a solid. As the load was increased a sharp deformation suddenly appeared which was no longer reversible. This was associated with the beginning of flow, which, however, at this point was very slow. Further expts. on Solidol with a cylinder rotating in the lubricant at a const. rate gave curves of the form $\tau = \tau_0 + c$, in which τ is the load. In this case, the load decreased to a limiting value with prolonged deformation. The values of τ sank so sharply with long continuation of deformation that only after a long resting period could the original values be reproduced. This indicates a change of structure during the deformation. Since a viscous flow occurs during deformation, the viscosity could be calculated during deformation. This value is independent of the shearing load, which is in agreement with the results obtained by Vinogradov and Paskov (cf. above) for high rates of deformation. Through Chem. Zentr. 1948, II, 42, 4. M. G. Moore

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PAYLOV, V. P.
USSR/Petroleum Industry
Lubricants - Properties

Jan 1948

"Mechanical Properties of Lubricants," G. V. Vinogradov, V. P. Pavlov, K. I. Klimov,
6½ PP

"Neft Khozyay" No 1

Discusses limited shear stresses in lubricants, and the "tikotropny" of lubricants, study of the changes occurring in the dispersed systems of lubricants when they are acted on by constant shear stresses while they are flowing. Also discusses equipment and methods to determine the viscosity of lubricants, Authors grateful for aid given by Senior Technicians L. F. Kalmykov, Yu. A. Naumov, A. V. Yarmakhov, and Laboratory Technician A. D. Gerasimova,

PA 51789

PAVLOV, V. P., Engineer, Lt.-Colonel.

Cand. Tech. Sci.

Dissertation: "Viscous properties of "Solidol" (lubricant grease)." 20 Mar 1971

Military Order of Lenin. Academy of Armored and Mechanized Troops of the
Soviet Army imeni

I. V. Stalin

SO Vecheryaya Moskva
Sum 71

C.A

Viscous properties of greases made consistent with metal stearates. G. V. Vinogradov and V. P. Pavlov. *Doklady Akad. Nauk S.S.S.R.* 71, 1067 (1959).

Curves of $\log \tau$, the shearing stress at the wall of the capillary, as a function of $\log D$, the mean rate of shear, and of $\log \tau \omega D$ against $\log D$ (where ω = viscosity of the medium), were det'd at different temps for a series of greases made up from various petroleum oils and stearates of Li, Na, K, and Ca. Deviations with different capillaries are greatest at low D ($< 10 \text{ sec}^{-1}$), but are only a few % at $D > 100 \text{ sec}^{-1}$; τ decreases with time, apparently owing to syneresis. The effect of temp is particularly marked with anhyd. Ca greases, probably in connection with phase transitions in the disperse phase. The liquefaction of elastoviscous Ca stearate gels observed by Gallay and Puddington (C.A. 39, 1345) is due not to load hardening but to deformation hardening. The viscous behavior of the stearate greases is analogous to that of the solidols; curves of the effective relative viscosity as a function of D , at different temps, are nearly parallel, as in the case of Aronson's solidols (C.A. 28, 6651). The consistence-increasing effect of Li, Na, and K stearates increases with the temp. The previously described behavior of solidols is common to all types of smooth greases with a submicrofibrillar structure.

N. Thon

PAVLOV, V. P.

23178

USSR/Chemistry - Lubricating Greases May 52

"The Rheological Properties of Bentonite Pseudogels," G. V. Vinogradov, V. P. Pavlov, K. I. Klimov, M. M. Gvozdev

"Dok Ak Nauk SSSR" Vol 84, No 2, pp 309-312

The properties of ag suspensions of alk bentonite (ascengel from Tsikhis Uland, Georgian SSR) were compared with a std lubricating grease, fatty solidol (mineral oil thickened with a calcium soap), and an oil pseudogel of activated bentonite. It was shown that it is

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possible to obtain thickening clays producing effects similar to those produced in greases by soaps. States that the results also refute the viewpoint found in the literature that pseudogels contg thickening soaps and those contg clays are different in nature. Presented by Acad A. V. Topchiyev 3 Mar 52

23178

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 8, p 95 (USSR) SOV 124 57 8 9239

AUTHOR: Pavlov, V. P.

TITLE: Investigation of the Viscosity Characteristics of Disperse Systems on a Paired Concentric-cylinder Rotary Viscosimeter (Issledovanie vyazkostnykh svoystv dispersnykh sistem na sdvoynnom rotatsionnom viskozimetre)

PERIODICAL: V sb.: Tr. 3-y Vses. konferentsii po kolloid. khimii, 1956 g. Moscow, AN SSSR, 1956, pp 144-154

ABSTRACT: A description of a paired concentric-cylinder rotary viscosimeter on which the relationship between the frictional stress and the shear velocity was determined for several disperse systems. The two inner cylinders of the viscosimeter, which were of identical diameter (38 mm) and different length (45 and 90 mm) and which were mutually connected by means of gears, were caused to rotate by means of an electric motor and a variable-speed fluid coupling. The latter device permitted a continuous variation of the angular velocity of the cylinders from 3 to 1500 rpm. The inner cylinders of the viscosimeter were supported by perfectly identical ball bearings and were contained within

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SOV 124-57-8-9239

Investigation of the Viscosity Characteristics of Disperse Systems (cont.)

the outer cylinder with a gap of 0.25 mm. The friction moment in the viscosimeter was measured with the aid of a spring dynamometer which was connected by means of a string - to the outer cylinders in such a manner that its readings were representative of the difference between the friction moments acting on the two cylinders. This artifice excluded the friction of the ball bearings and the influence of the edge effect on the friction moments to be measured. The friction moment measurements were made at a constant rpm of the inner cylinders and a constant temperature; the constancy of the latter was ensured by a thermostat. The viscosimeter described here was used to study the friction-stress/shear-velocity relationship at various temperatures for lubricating oils, concentrated clayey suspensions in water, and soap-and-oil systems. The curves of that relationship for calcium lubricating grease are adduced. Tests of the same grease on a capillary viscosimeter revealed good agreement of the results. The experiments have shown, also, that the effective viscosity coefficient of the calcium grease falls off. The principal advantage of the measurement of the viscosity of disperse systems on the above-described concentric-cylinder rotary viscosimeter as compared with measurement on the capillary type consists in the fact that the shearing stresses at the various points of the layer in the rotary-type viscosimeter are identical (at least within the limits of practical accuracy).

Card 2/2

A. I. Golubev

PAVLOV, V. P.

The viscosity properties of disperse systems in a paired rotation viscometer. V. P. Pavlov. *Trudy 3-ey Vyskozim. Konf. Kolloid. Khim. S.S.S.R., Otdel. Khim. Nauk, Minsk 1953, 144-54 (Pub. 1955).*—Two Couette type viscometers of different cylinder lengths are used and the difference between their torques is recorded; thus the end effects are eliminated. The instrument was tested on a lubricating grease consisting of spindle oil 80.5, Ca soap of cotton oil 17.3, and H₂O 2%. The results were in accord with the data obtained in a capillary viscometer. For the calcn. of the expts., the equation $D = 3D_s + r(dD_s/dr)$ was employed (D = true velocity gradient, D_s = mean velocity gradient, r = shear stress), and the agreement proves that this equation is valid for disperse systems.

J. J. Bikerman

Distr: LElj

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PAVLOV, V.P.

CHISKIS, N.M.; PAVLOV, V.P.

Using waste fats in making household soap. Masl.-zhir.prom.21
no.7:34-35 '55. (MLRA 9:1)

1.Zavod imeni Karpova.
(Oils and fats) (Soap)

65-50-4-5/12

AUTHOR: Vishnyakov, V. A., Vinogradov, G. V., et al.

TITLE: The Influence of Lubrication Media on the Wear of Ball Bearings (O vliyeniya sredstv smazki na iznos podshpivnikov kuglenykh)

PERIODICAL: Khimiya i Tekhnologiya Nefti i Gazov, 1970, No. 1, pp. 63-68 (USSR)

ABSTRACT: The changes due to abrasion in the presence of lubricating oils were investigated to obtain information on the nature of the influence of lubricants on the abrasion wear in ball bearings. The investigations were carried out on a friction apparatus (Fig.1) with 3,500 revolutions/minute; 6.325 mm diameter balls were used. Ball No. 1 was made from steel 20, and subjected to a preliminary treatment ensuring a hardness of $H_{RC} = 60 - 61$. Without lubrication oil YG-2 and YG-2 (according to GOST 1044-71, and GOST 4336-50), the oil M-13M (GOST 3530-50) and spindle oil M (GOST 1342-50) were tested, as well as a naphthenic - paraffin fraction separated from GOST 1342-50. A mineral fraction of quartz dust separated from Lubertsy quartz sand (micro hardness = approximately 1,000 kg/cm²) was used as abrasive. The size of the particles was collected: not exceeding 5, not exceeding 10, from 10 - 20, from 20 - 30 and from 30 - 40 μ . The friction rate

Cont 1/3

65-58-4-5/12

The Influence of Lubricating Material on the Wear of Ball Bearings

The tests were held in a Gonnell apparatus by air abrasion (Fig. 4); 90% abrasives were used.

Figure 3 shows the dependence of the magnitude of the wear on the rate of movement of the wear. The dependence of the wear on the concentration of dispersion of the abrasive for particles of different size is given by Fig. 5. Curve No. 4 (Fig. 3) shows the relative wear of the bearing in the dispersion of the abrasive. The condition of the lubricating medium influenced the magnitude of the wear considerably when using the viscous lubricant YC₂-2. A three to five times higher degree of wear was observed for a viscous lubricant YC₂-2 (the concentration of the abrasive between 2-20%) than in the case of oils (Fig. 4). The degree of wear was lower than when spindle oil was used. This was due to viscosity, which according to Stoke's law governs the rate of sedimentation of particles of the abrasive. In the case of spindle oil, this rate is approximately ten times lower than for the oil M-16II. The influence of the viscosity was also observed in investigations on the wear in relation to the temperature of the lubricant. During the latter experiments, viscous oils (YC₂-2), the oil M-16II, and the naphthenic-paraffin fraction of the M-14

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The Influence of Lubricating Material on the Wear of Ball Bearings

65-58-4-5/12

oil were tested at temperatures of 10-60°C. 5% of quartz dust (size = 20 - 30 mk) was added to the lubricant (Fig. 5). The experiments were carried out for 5 hours at 1400 revolutions/minute, and the temperature of the lubricant = 20°C. Fig. 7 shows the decrease of ash formation of the oil in relation to the rate and duration of the wear of the ball bearing. It was found that the wear, at a given concentration and dispersion of the abrasive, is considerably lower when non-viscous lubricants (oils) are used than for viscous lubricants. This is due to the sedimentation of the abrasive particles in non-viscous oils. When viscous oils are used at increased temperatures, the abrasive wear depends on the dispersion and concentration of the abrasive in the lubricant, and on the friction caused by the abrasive granules during the movement of the bearings. There are 7 figures and 5 references:- 1 English, 4 Russian.

Card 3/3

1. Ball bearings-Lubrication
2. Ball bearings-Performance
3. Lubricating oils-Test results
4. Lubricating oils-Test methods
5. Lubricating oils-Testing equipment

PAVLOV, V. P.

✓ Utilization of fatty tailings for the manufacture of household soap. N. M. Chiskis and V. P. Pavlov. *Maslodolno-Zhirovaya Prom.* 21, No. 7, 34-5 (1955).—Almost 93% of the fats in spent catalyst and bleaching agent were recovered. These were mixed, saponified, and grained independently of the main soap batch. V. N. K.

CH

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PAVLOV, V. P.

"Study of the Viscose Properties of Dispersed Systems in a Double Rotary Viscosimeter" (Issledovaniye byazkostnykh svoystv dispersnykh sistem na sdvoyennom rotatsionnom viskozimetre) from the book Trudy of the Third All-Union Conference on Colloid Chemistry, pp. 144-54, Iz. AN SSSR, Moscow, 1956

(Report given at above Conference, Minsk, 21.-24 Dec 53)

FAVLOV, V. P., and VINOGRADOV, G. V.

"A new method to determine the elastic properties and the relaxation phenomena, of high polymers," a paper presented at the 9th Congress of the Chemistry and Physics of High Polymers, 20 Jan-2 Feb 55, Moscow,.

B-3,084,395

PAVLOV, V.P., OSOKINA, D. N., VINOGRADOV, G. V., and GSONESKIY, M. V.

"Flow and circular birefringence of solutions and gels of ethylene oxide,"
a paper presented at the 9th Congress on the Chemistry and Physics of High
Polymers, 20 Jan-2 Feb 57, Moscow, Research Inst. Physical Chem.

B-3,004,395

PAVLOV, V. P.

"On the Characteristics of the Physico-Mechanical and Optival Properties of Concentrated Solutions of Ethyl Cellulose and Benzyl Alcohol," D. N. Osckine in collaboration with V. P. Pavlov, G. V. Vinogradov, and M. V. Gzovski (reported on the usefulness of this plastic, optically active material for the modelling of tectonic processes.)

paper presented at the First All-Union Conference on Tectonophysics, Moscow, 29 January through 5 February 1957.

Inst. of Physics of the Earth, Acad. Sci. USSR

~~RAYLTON~~ V.P.

The formation mechanism of globular graphite in magnesium cast iron. *V. P. Barlan, Invest. Akad. Nauk S.S.S.R., Metall. Ser. Nauk 1957, No. 4, 34 p.* The formation of globular graphite upon the addn. of Mg to cast iron is discussed. The suggestion is made that Mg (or its alloys), when added to cast iron, reacts on the surface with C when the temp. of 570° is reached, forming a carbide of the Mg₂C type. When heated to 610°, the carbide dissociates to Mg₂C and C, which become dispersed in the batch, and, when further heated to 1200° or higher, the carbide breaks down (Mg₂C → Mg + 3C, the C in the form of "soot"), while Mg is vaporized, bubbles through the metal, and burns above it. The "soot" particles become the actual graphite crystal nuclei, and being in a mobile liquid medium, roll and acquire a globular shape.

4E2

W. M. Sternberg

RS
MT

PAVLOV, V.P.

NUSINOV, M.D.; PAVLOV, V.P.; POZIN, A.A.; EPSHTEYN, V.G.; KUKHTENKOVA, T.I.

Mechanical properties of rubber mixtures and peculiarities of their flow through slit passages. Kauch. i rez. 16 no.8:24-27 Ag '57.

(MIRA 10:11)

1. Nauchno-issledovatel'skiy institut rezinovykh i lateksnykh izdeliy.
(Elastomers--Testing) (Rheology)

PAVLOV, V. P.

20-5-22/60

AUTHOR:
TITLE:

PAVLOV, V. P., VINOGRADOV, G. V.

New Methods and Results in the Study of Plastic Dispersion Systems: (Novyye metody i rezultaty issledovaniya plastichnykh dispersnykh sistem, Russian)

PERIODICAL:

Doklady Akademii Nauk SSSR, 1957, Vol 114, Nr 5, pp 997-1000 (U.S.S.R.)

ABSTRACT:

Plastic dispersive systems result in little deformations because of the brittleness of their structure, so that it is difficult to study relaxation processes in them. As hitherto no data have been published concerning this problem, the elaboration of a method for the study of relaxation in bodies with weak relaxation was of interest. The basic scheme of a rotation-elastoviscosimeter fitted with a rigid dynamometer is shown in form of a drawing. This dynamometer can as a rule be considered to be completely rigid. The material to be investigated is filled into the space between the core and the outer cylinder of the elastoviscosimeter. The linear displacements of this outer cylinder are increased to from 20 to 40 times their extent by means of a system of levers, after which they are increased 3000-fold by a special device, and are fixed by means of a photoregistration chamber, by means of part of the device it is possible to investigate the shearing moduli of the material under investi-

Card 1/2

PAVLOV, V. P.

SOV/5055

PHASE I BUCKA EXPLOITATION

Vesoyuznaya konferentsiya po treniyu i iznosu v mashinakh. 3d, 1958.

Gidrodinamicheskiy teoriya mazaki. Opory skol'zheniya. Smazka i smazochnyye materialy (Hydrodynamic Theory of Lubrication. Slip Bearings. Lubricating Lubricant Materials) Moscow, Izd-vo AN SSSR. 422 p. Sravna slip inserted. 3,200 copies printed. (Series: 16; Trudy, v. 3)

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Reap. for the Section "Hydrodynamic Theory of Lubrication and Slip Bearings"; Ye. M. Gut'yar, Professor. Doctor of Technical Sciences, and A. K. D'yachkov, Professor. Doctor of Technical Sciences; Resp. Ed. for the Section, Lubrication and Lubricant Materials: G. V. Vinogradov, Professor. Doctor of Chemical Sciences; Ed. of Publishing House: M. Ya. Klebanov; Tech. Ed.: O. M. Gus'kova.

PURPOSE: This collection of articles is intended for practicing engineers and research scientists.

COVERAGE: The collection, published by the Institut mashinovedeniya AN SSSR (Institute of Science of Machines Academy of Sciences USSR) contains papers presented at the III Vesoyuznaya konferentsiya po treniyu i iznosu v mashinakh (Third All-Union Conference on Friction and Wear in Machines) which was held April 15-16, 1958. Problems discussed were in Hydrodynamic Theory (Cont.)

Podolskiy, Yu. Ya. Machine for Testing Wear-Resistant and Antifriction Properties of Lubricant Materials for High Contact Stresses and Sliding Speeds 227

Sanin, P. I., Ye. S. Shepeleva, A. V. Di'akov, and A. V. Kleyzhenov. Effect of Synthetic Additives on Lubricating Oils on Frictional Wear 234

Shurshak, I. G. Application of the Results of Wear-Resistant Tests of Lubricating Oils on Machines with Point Contact of the Friction Surfaces 239

Volumetric Mechanical Properties of Lubricant Materials Volkovskiy, D. S. (deceased), P. I. Kazhdan, and G. D. Bondarevskiy. Viscous Properties of Oil Mixtures of Different Chemical Character and of Solid Lubricants Obtained by Thickening 248

Volgarovich, M. P. and V. I. Val'dman. Investigation of the Viscous Properties of Lubricating Oils with High-Polymer Additives at Low Temperatures 256

Kuznetsov, M. R., L. A. Konovalova, Ye. A. Prokof'yeva, and V. I. Sidorenko. Effect of Temperature and Pressure on the Viscosity of Mixtures of Mineral Oils and Silico-organic Liquids 262

Mashcheninov, S. M. Practical Significance of Some Lubrication Parameters of the Mechanical Properties of Plastic Lubricants 270

Pavlov, V. P. Effects of Heat on the Flow of Plastic Lubricants 277

Sinityn, V. V. Boundary-Layer Sliding and Internal Friction of Plastic Lubricants 284

284-284-2

AUTHORS: Vinogradov, G.V., Pavlov, V.P. 69-58-2 -22,33

TITLE: The Problem of Fluidity and Stability of Structural Disperse Systems (K voprosu o tekuchesti i prochnosti strukturirovannykh dispersnykh sistem)

PERIODICAL: Kolloidnyy zhurnal, 1958, Vol XX, Nr 2, pp 248-253 (USSR)

ABSTRACT: This article contains a discussion on problems of modern rheology. The dependence of the shear stress on the deformation of bitumens which are highly viscous, weakly elastic, and structural disperse systems, is dealt with. Different methods give slightly different results. The elementary apparatus used for the investigations under discussion gives reliable results only for systems with low elastic deformations and may not always be applied to rheological processes taking place in highly elastic bodies. The juxtaposition of systems with large (aluminum naphthenate gels, etc.) and small (bitumens) elastic deformations must be met with great caution.

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69-58-2 -22/27

The Problem of Fluidity and Stability of Structural Disperse Systems

There are 4 graphs and 14 Soviet references.

SUBMITTED: July 12, 1957

1. Dispersion systems--Stability 2. Dispersion systems--Fluidity

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5(4)

SOV/26-122-4-30/57

AUTHORS: Pavlov, V. P., Vinogradov, G. V.

TITLE: The Elastic- and Strength-Properties of Plastic Dispersed Systems in Connection With the Phenomenon of Thixotropy (Uprugo prochnostnyye svoystva plastichnykh disperznykh sistem v svyazi s yavleniyem tixotropii)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 4, pp 646-647 (USSR)

ABSTRACT: The investigations were carried out by means of an elasto-viscosimeter with concentric cylinders. The authors determined the function $\tau(\gamma)$ and the shear coefficient γ of various plastic lubricants at 20° under static conditions and also for steady and non-steady revolutions of the cylindrical core of the dynamometer. τ denotes the shear stress and γ the deformation. A diagram shows the function $\tau(\gamma)$ of fatty lubricant grease found for $n = 2,4 \cdot 10^{-4}$ revolutions per minute. An other diagram gives the results obtained by measuring the coefficients of the shear of fatty lubricant grease after filling the measuring apparatus with this substance, during its relaxation, and during the tests. After the stopping of

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SOV/20-122-4-30/57

The Elastic- and Strength-Properties of Plastic Dispersed Systems in Connection With the Phenomenon of Thixotropy

the revolution of the dynamometer core, an increase in g is observed because of the thixotropic restoration of the lubricant structure. Even for $n \sim 10^{-5}$ revolutions per minute, the values of g were by 10 % lower than the corresponding values found under static conditions. The coefficient of shear g and the shear strength τ_{str} depend differently on the deformation of plastic bodies. The elasticity- and the shear-strength are caused by different kinds of bonds between the particles of the dispersed phase. There are 4 figures and 4 references, 4 of which are Soviet.

PRESENTED: May 17, 1957, by A. V. Topchiyev, Academician

SUBMITTED: May 17, 1957

Card 2/2

SOV/179-59-2-18/40

AUTHORS: Vinogradov, G.V. and Pavlov, V.P. (Moscow)

TITLE: Elastic and Strength Properties of Soft Bodies (Uprugiye i prochnostnyye svoystva myagkikh tel)

PERIODICAL: Izvestiya Akademii nauk SSSR OTN, Mekhanika i mashinostroyeniye, 1959, Nr 2, pp 134-141 (USSR)

ABSTRACT: The paper consists of material delivered to the Third World Congress on Rheology, September 1958. Experiments were carried out in a rotational elasto-viscometer with concentric cylinders, the space between which was filled with the material under investigation. In some experiments, the inner cylinder was fluted, but in others it was plain. The speed of rotation could be varied from 4×10^{-7} to 1.5×10^3 rpm. The deformation was recorded automatically by means of an optical magnification device. The rotation could be started and stopped almost instantaneously, thus permitting the stress relaxation properties to be determined. The stress/deformation/time curves are given for a grease and for pastes of bentonite in water, and deformation/velocity/time curves for the grease. The dependence of shear modulus and limiting shear strength on the deformation velocity is

Card 1/2

5(4), 10(4)

AUTHORS: Pavlov, V. P., Vinogradov, G. V.

TITLE: The Thermal Effect During the Motion and the Stopping of Flow of Anomalously Viscous Bodies (Teplovyye effekty pri techenii i ostanovke potoka anomal'no viskizhkih tel)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 1, pp 1061 - 1064 (USSR)

ABSTRACT: The processes of heat liberation in a flow are best investigated in the case of high homogeneity of the field of shearing stresses. In the present paper the thermal effects were therefore investigated by means of a rotation viscosimeter already previously described (Ref 3). The operational surfaces of the cylinder were ground. The temperature increase (ΔT) in the flow was determined with an accuracy of up to $\pm 0.005^\circ$ by means of a differential thermocouple. The time dependence of ΔT was recorded on photographic paper by means of a mirror galvanometer and a photographic camera. A typical photograph illustrates the results obtained by experiments carried out with Newton liquids. Temperature increase

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The Thermal Effect During the Motion and the Stoppage of a Flow of Anomalous Viscous Bodies

increases until it becomes steady. After this is attained, the entire energy supplied is transferred to the thermostat in form of heat and $T = \text{const}$ holds. Next, temperature distribution in the flow is investigated by analysis. The entire specific power input N_{sp} is assumed to be transformed into heat. One part of this power is used for heating the subject under investigation, the other is conveyed to the thermostat. The heat balance of the process may be expressed by the equation

$$D \cdot c \frac{d(T)}{dt} + k_1 A T = 0.$$

Here c denotes the specific heat of the subject under investigation (referred to the volume), and k_1 - the coefficient of the heat transfer from this substance to the liquid in the thermostat. Herefrom it follows for the slowing down of the flow that

Card 2/4

$$c \frac{d(T)}{dt} + k_1 A T = 0.$$

The Thermal Effect During the Motion and the Stopping
of a Flow of Anomalously Viscous Bodies

By integration of this equation

$$c \Delta T_s = -k \int_{t_0}^{t_1} \Delta T_s T dt = kmS_1 = E_1$$

is obtained, where m denotes a proportional factor. For the purpose of determining the coefficient k the author investigated the dependence of ΔT_s on D . The test objects used were Newton liquids (petroleum), plastic dispersive systems of the type of consistent lubricants, concentrated solutions of ethyl cellulose and aluminum naphthenate in some solvents, as well as other substances. It was confirmed that the equation $D = k \Delta T_s$ holds and that k does not depend on D and the

rheological properties of the substances to be investigated. Next, the phenomena accompanying slowing down of a flow of highly complicated structural systems is investigated. A diagram gives data concerning the time dependence of the integral and differential thermal effects, which are typical

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The Thermal Effect During the Motion and the Stoppage
of a Flow of Anomalously Viscous Bodies

of such substances, after a sudden stoppage of flow. The authors thank Academician V. A. Kargin for discussing this paper and for his valuable advice. There are 3 figures, 1 table, and 3 Soviet references.

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR
(Institute for Petroleum-Chemical Syntheses of the Academy of Sciences, USSR)

PRESENTED: January 5, 1959, by V. A. Kargin, Academician

SUBMITTED: December 17, 1958

Card 4/4

5(4)

SOV/20-127-2-35/70

AUTHORS: Vinogradov, G. V., Mamakov, A. A., Pavlov, V. P.

TITLE: The Flow of Anomalous Viscous Systems Under the Action of Two Pure Shearing Stresses in Mutually Perpendicular Directions

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 127, Nr 2, pp 362-365 (USSR)

ABSTRACT: In the clearance between two coaxial cylinders, both an axial and a radial flow are possible. Thus, the possibility is given of comparing different forms of flow of anomalous viscous systems under different shearing stresses and at different velocity gradients in one and the same apparatus. Grease-"solidol" consisting of 86.2% spindle oil, 12% Ca-soaps of cottonseed oil, and 1.8% water, was the material used for the experiments. A high-viscosity Newton liquid, an extract of resins and polycyclic aromatic hydrocarbons from petroleum-distillation residues, served as control liquid. The measurement was made in a system with two rotary viscosimeters with coaxial cylinders, differing by the size of the cylinders' working surfaces. Concerning the shearing stress for axial flow it holds according to references 3 - 5 :

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The Flow of Anomalous Viscous Systems Under the Action of Two Pure Shearing Stresses in Mutually Perpendicular Directions SOV/20-127-2-35/70

$\tau_{ax} = \Delta p \frac{H}{2L}$ (Δp = pressure drop per unit of length of the cleft in axial direction, H = cleft width, L = length of cylinder surface). For the velocity gradient it holds:

$\bar{D}_{ax} = Q(2\pi R^2)^{-1}$ (Q = amount of flow, R = radius of the inner cylinder). Checking revealed that the method applied yielded well reproducible results. Experimental results with "solidol" are shown in logarithmic coordinates in figure 1. Table 1 contains the values for \bar{D}_{ax} . With simultaneous axial and radial flow, Δp and the moments of resistance are measured at different D_{rad} (Fig 2). Curves 1 show the flow in the case of a purely axial flow ($D_{rad} = 0$), curves 2 - 7 show the dependence $\bar{D}_{ax}(\tau_{ax})$ for given D_{rad} . In the case of a homogeneous shearing stress field all over the clearance, the radial flow brings out a destruction of the structure and transforms the plastic body into an anomalous-viscous liquid.

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The higher D_{rad} , the lower becomes viscosity. Hence, at given D_{ax} with rising D_{rad} the shearing stress τ_{ax} drops, whereas at given τ_{ax} with rising D_{rad} also D_{ax} increases strongly.

In the case of a radial flow the plastic systems were found capable of flowing out axially under the action of much lower pressures, as compared to the absence of a radial flow. A remarkable fact is that in the case of low τ_{ax} there is a direct proportionality between D_{ax} and τ_{ax} . If D_{ax} is very large as compared to D_{rad} , and assuming high temperatures,

The effect of the radial flow becomes unimportant. The effect of the axial flow on the radial is shown in figure 3.

Figure 4 depicts the superposition of τ_{rad} and τ_{ax} .

In the case of a combined shear the flow curves lie in a fork which is formed by the curves of the purely radial and

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The Flow of Anomalous Viscous Systems Under the
Action of Two Pure Shearing Stresses in Mutually Perpendicular Directions

SOV/20-127-2-35/70

purely axial flow. The authors thank Academician V. A. Kargin for advice. There are 4 figures, 1 table, and 7 references, 6 of which are Soviet.

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR
(Institute of Petroleum-chemical Synthesis of the Academy of Sciences, USSR)

PRESENTED: March 2, 1959, by V. A. Kargin, Academician

SUBMITTED: March 21, 1959 (sic)

Card 4/4

PAVLOV, V.P.; TVERIKIN, V.T.

Machining sheet vinyl plastic. Khim.volok. no.1:67 '60.
(MIRA 13:6)

1. Mytishchinskiy zavod i Vsesoyuznyy nauchno-issledovatel'skiy
institut iskusstvennogo volokna.
(Plastics) (Vinyl compounds)

S/152/60/000,003/003'00'
B023/B060

AUTHORS: Vinogradov, G. V . Mamakov, A A . Pavlov, V P

TITLE: Homogenization and Rheological Properties of Plastic
(Consistent) Lubricants

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy Nef: 1 882, 1960,
No 3, pp 81-88

TEXT: The first author has pointed out in a previous paper that the majority of industrial lubricants are micrograined systems (Ref 1) In the study under consideration, the authors set themselves the following tasks: 1) to work out a colloid mill, where lubricants can be subjected to an intense homogenation under rigorously defined conditions; 2) to study the rheological properties of typical industrial lubricants. The test objects were lubricant 201 (ГОСТ 6267-52)(GOST 6267-52) and Grease YC_c-2 (US_s-2) ГОСТ 4366-50 (GOST 4366-50). The rheological properties of fresh and homogenized lubricants were intercompared. The determination was carried out by a plastoviscosimeter (Ref 8). The temperature was 20 °C. Fig. 1 shows the scheme and the construction of the homogenizer which is

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Homogenization and Rheological Properties of Plastic (Consistent) Lubricants

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thoroughly described along with the working principle. Homogenization was performed with an axial feed of lubricant of $2.5 \cdot 10^{-3}$ cm/sec and a deformation rate of $6.25 \cdot 10^5$ (lubricant 20¹) and $3.27 \cdot 10^5$ (synthetic grease). Phenomena of hysteresis are observed to be common to all fresh (non-homogenized) lubricants in the study of viscosity, the deformation rate varying considerably. Successive increase and decrease of the deformation rate leads in graphical representation to noncoinciding flow curves. The study of homogenized lubricants revealed two types. To the first belongs lubricant 20¹. Lubricants of this type are intensively destroyed under the action of high deformation rates. Their rheological properties are changed irreversibly. The results obtained from the study of the viscosity of lubricant 20¹ are in agreement with the determination of the limit values of durability (Table 1), which do not change after the lubricant has been allowed to rest, either. Lubricants of the 20¹ type distinguish themselves especially by their microcraininess. When subjected to an intense homogenization they excel by stable rheological properties which do not change with time and are not affected by mechanical actions, provided the intensity of such actions is lower than that of homogenization. The synthetic grease US₃-2 belongs to the second type. Here

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Homogenization and Rheological Properties
of Plastic (Consistent) Lubricants

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B02**B060

one may observe, besides irreversible changes, also such of lubricant properties with time. In addition, also phenomena of hysteresis appear here after an intense mechanical action. The principal characteristic is however, that these lubricants, when intensively homogenized, may be regarded as Newton's liquids. The viscosity of these lubricants does not depend upon the length of the "resting" period. Table 1 shows the change of the limit values of durability for both types with time. The differences between the lubricants of the first and the second type are interrelated with the differences in the structure of the disperse phase. The decisive factor, however, is the coarse-grained structure of the 201 lubricant. This structure accounts for the irreversibility of the changes of rheological properties. The inability of grease US₂-2 to restore its rheological properties after "resting" is to be explained by the fact that particles of the disperse phase of a colloidal dimension are present in grease. There are 3 figures, 2 tables, and 9 Soviet references.

ASSOCIATION: Kazanskiy khimiko-tekhnologicheskii institut im. S. M. Kirova
(Kazan. Institute of Chemical Technology named S. M. Kirov)

Card 3/4

Homogenization and Rheological Properties
of Plastic (Consistent) Lubricants

S 50/10/000/003/007/007
B077/BC60

SUBMITTED: July 28, 1959

Card 4/4

29448

S/081/61/000/017/150/166
B117/B110

11.9000

AUTHOR:

Pavlov, V. P.

TITLE:

Thermal effects accompanying the flow of plastic lubricants

PERIODICAL:

Referativnyy zhurnal. Khimiya, no. 17, 1961, 473, abstract
17M227 (Tr. 3-y Vses. konferentsii po treniyu i iznosu v
mashinakh, M., AN SSSR, v. 3, 1960, 277-284)

TEXT: A fundamental difference was established between normal liquids and structural disperse systems (plastic lubricants) while studying heat liberation during a flow of lubricants in capillary tubes and rotary viscosimeters. Heat liberation (heating) of deformable plastic lubricants (aliphatic and synthetic greases, Li lubricants, and others) passes through a maximum after a certain period, once the material flux is stopped. Heat liberation is retarded due to the energy expended to destroy the lubricant structure in the flow. Heat liberation, however, corresponds to the energy of lubricant structure formation in the state of rest. It was shown that the conversion of plastic energy stored at the beginning of deformation of plastic lubricants into heat is of no essential importance. ✓

Card 1/2

PAVLOV, V.P.

Physical region of a five-tail in terms of five invariants.
Zhur. eksp. i teor. fiz. 45 no.5:1606-1611 N '63. (MIRA 17:1)

1. Matematicheskly institut imeni V.A. Steklova AN SSSR.

BEZBOROD'KO, M.D.; VINOGRADOV, G.V.; PAVLOV, V.P.

Effect of lubricants and antiwear additives on the abrasive
wear of metals in sliding friction. *Izv.vys.ucheb.zav.;*
neft' i gaz 3 no.2:73-79 '60. (MIRA 13:6)

1. Voennoy ordena Lenina akademiya bronetankovykh voysk im.
I.V.Stalina.

(Lubrication and lubricants)

DEYNEGA, Yu.F.; DUMANSKIY, A.V.; VINOGRADOV, G.V.; PAVLOV, V.P.

Dielectric and rheological properties of disperse plastic systems.
Koll.zhur. 22 no.1:16-22 Ja-F '60. (MIRA 13:6)

1. Institut obshchey i neorganicheskoy khimii AN USSR, Kiyev.
(Oils and fats)

85707

54400

1274, 1833, 1263

S/069/60/022/004/004/005/XX
B003/B056

AUTHORS: Osokina, D. N., Gzovskiy, M. V., Vinogradov, G. V., and Pavlov, V. P.

TITLE: Investigation of the Processes of Plastic Deformation by Means of Ethylcellulose Solutions and Gels and Optical Polarization

PERIODICAL: Kolloidnyy zhurnal, 1960, Vol 22, No. 4, pp. 434-442

TEXT: The investigations described in the present paper deal with the problem as to whether it is, in principle, possible to study shear stress and rate of deformation in plastically deformable soft bodies by the method of optical polarization. The results obtained may be usefully applied in the mechanics of disperse systems, of tectonic physics, etc. The measurements were carried out in a device designed by V. P. Pavlov (Ref 13) and constructed by the Institut fiziki Zemli AN SSSR (Institute of Geophysics of the AS USSR), which simultaneously, fulfilled the function of a plastoviscosimeter and a dynamooptimeter. The device schemat-

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85707

Investigation of the Processes of Plastic Deformation by Means of Ethylcellulose Solutions and Gels and Optical Polarization S/069/60/022/004/004/005/XX B003/B056

ically shown in Fig. 1 and described in detail in the original paper contains, among other things, a KCP-5²⁸ polariscope (KSP-5), as well as a Berek compensator for measuring the optical effect. The dependence of shear stress on deformation as well as the deformation-kinetic diagrams were ascertained with the help of Pavlov's elastoplastoviscosimeter (Ref. 14). The material used was Soviet ethylcellulose of the type K-290 (K-290) with a molecular weight of $7.7 \cdot 10^4$ and a substitution degree of 46.25%. The viscosity of a 5% alcohol benzene solution was -290 centipoise at 20°C. The ethyl cellulose was used in a dissolved state in benzyl alcohol (of different concentrations) and/or in benzyl alcohol dibutylphthalate mixtures (whose mixing ratio was varied in a 30% concentration). The measured results are shown in the diagrams of Figs. 2 - 5. The modulus of shear of the ethyl cellulose solutions was between 0.01 and 1 kg/cm^2 , the viscosity between 10^2 and 10^7 poise. Owing to their mechanical properties, the solutions in benzyl alcohol corresponded to highly viscous Newton liquids having a completely linear dependence of

Card 2/3

DEYNEGA, Yu.P.; PAVLOY, V.P.; VINOGRADOV, G.V.

Instrument for a simultaneous study of dielectric and rheological
properties of viscoplastic materials. Zav. lab. 26 no.3:353-356
'60. (MIRA 13:6)

1. Institut obshchey i neorganicheskoy khimii Akademii nauk USSR.
(Materials--Electric properties)
(Rheology)

KUSHNAREV, D.M., kand. tekhn. nauk; PAVLOV, V.P., gornyy inzh.

Using igdanite and water-containing explosives in strip mines
of the "Apatit" Combine. Vzryv. delo no. 54/11:356-362 '64.
(MIRA 17:9)

1. Gosudarstvennyy institut gornokhimicheskogo syr'ya.

PAVLOV, V.P.

Soviet electric welding devices at an international
exhibition held in Great Britain. Elektrotehnika 34
no.10:71 0 '63. (MIRA 16:11)

1. Vsesoyuznoye ob'yedineniye "Mashinokaport".

ZAV'YALOV, O.I.; PAVLOV, V.P.

Spectral representations of inelastic amplitudes in perturbation theory. Zhur.eksp.i teor.fiz. 44 no.5:1500-1508 My '63.
(MIRA 16:6)

1. Matematicheskii institut AN SSSR.
(Scattering (Physics)) (Invariants)

L 10215-63 EWT(1)/FCC(w)/
BDS--AFFTC/ASD--LJP(G)
ACCESSION NR: AP3000042 S/0056/63/044/005/1500/1508

AUTHOR: Zav'yalov, O. I.; Pavlov, V. P.

60
53

TITLE: Spectral representations of a five-point diagram in perturbation theory. 21

SOURCE: Zhurnal eksper. i teoret. fiziki, v. 44, no. 5, 1963, 1500-1508

TOPIC TAGS: perturbation theory, five-point diagrams, inelastic scattering, double dispersion relations

ABSTRACT: The analytical properties are studied of the inelastic scattering amplitude corresponding to a fifth-order loop diagram with arbitrary masses on the lines. It is found that the double spectral representations obtained (of the Mandelstam type) are needed even for the convergence of the partial-wave expansion of the inelastic amplitude. A method of investigation analogous to that used by Vladimirov (Ukr. Matem. Zhurn. vol. 12, 132, 1960) in application to loop diagrams of fourth order results in a single and in a double dispersion relation. Several restrictions on the masses and on the fixed invariants, necessary for the obtained Mandelstam representation to hold, are found.

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ACCESSION NR: AP3000042

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Even the weakest of these restrictions are violated in the physical region, and the representation does not hold true, owing to the presence of singularities in the complex plane of the spectral invariant. Perturbation theory thus indicates that in the physical region even the one-dimensional spectral representation of the amplitude for multiple production has an extremely complicated form, and the possibility of finding a region (in part physical) in which the contribution from the complex singularities can be neglected is quite attractive. "In conclusion we express our deep gratitude to V. S. Vladimirov for a number of discussions and valuable remarks. We consider it our pleasant duty to thank A. A. Logunov, M. K. Polivanov, K. A. Martirosyan, I. T. Todorov, and V. Ya. Faynberg for discussing this work." Orig. art. has: 24 formulas and 5 figures.

ASSOCIATION: Matematicheskii institut Akademii nauk SSSR (Mathematics Institute, Academy of Sciences, SSSR)

SUBMITTED: 12Apr62 DATE ACQ: 12Jun63 ENCL: 00

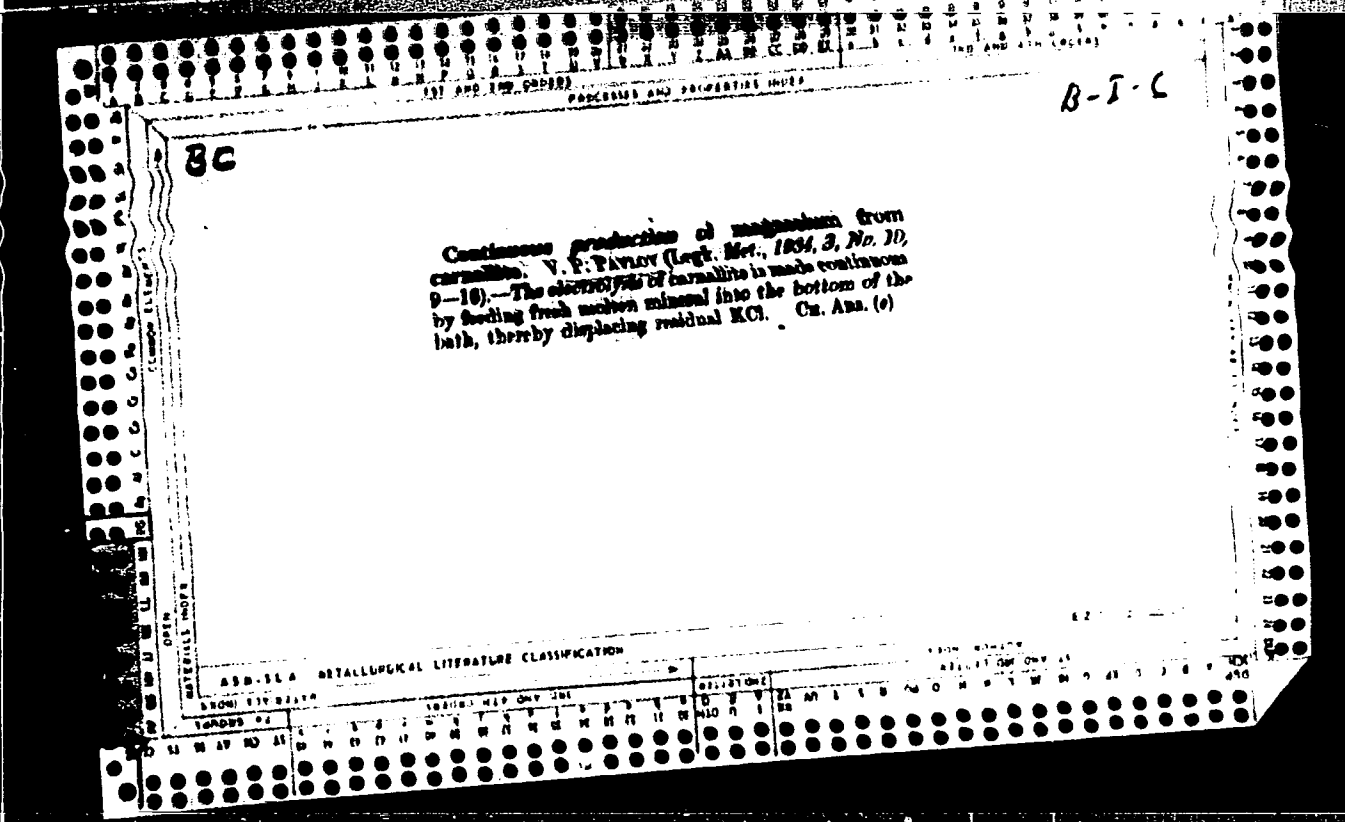
SUB CODE: PH NR REF SOV: 004 OTHER: 008

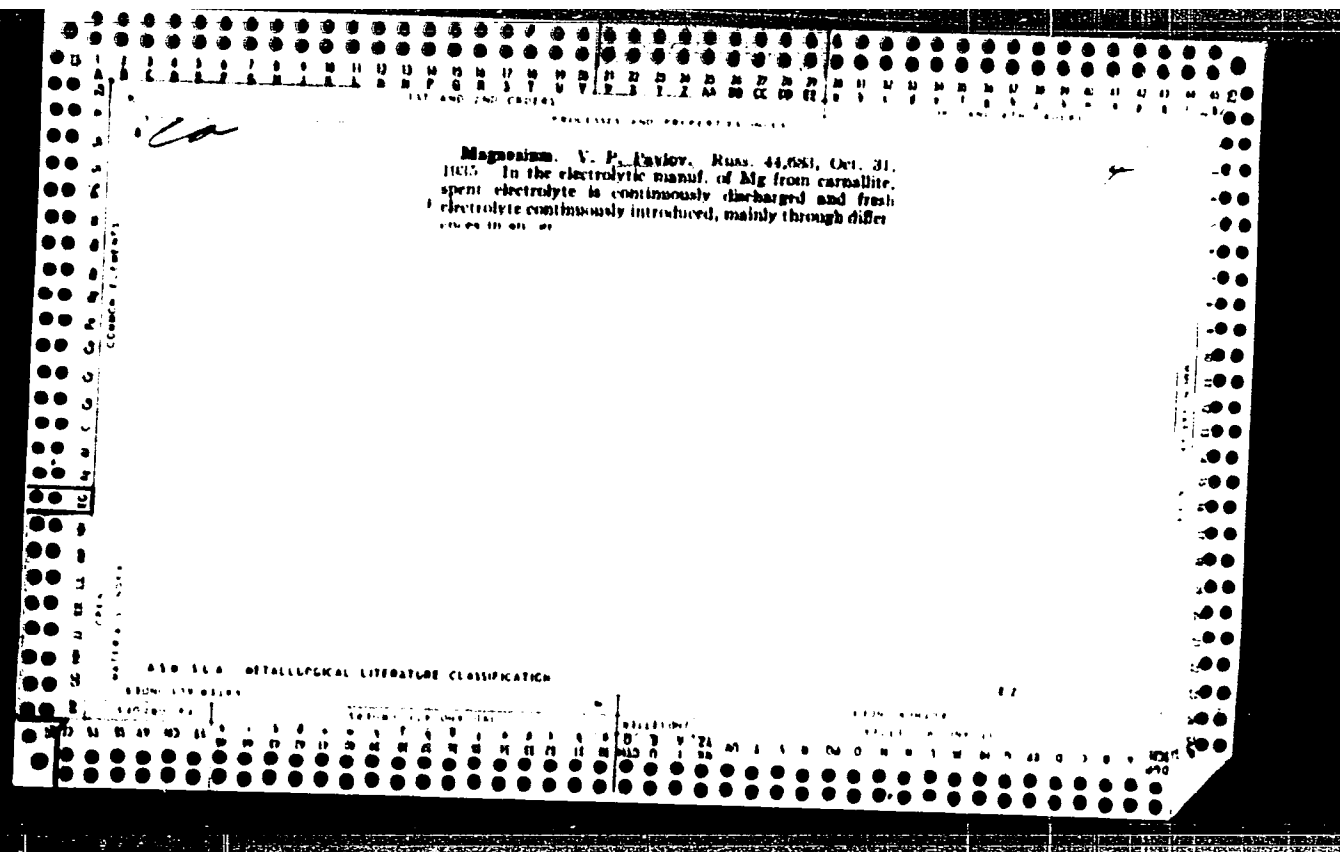
Card 2/2

PAVLOV, V. P., agronom-entomolog (Groznyy); KAZIMIROV, A., sadoved-lyubitel', personal'nyy pensioner (Luninets, Brestskoy obl.)

Readers' letters. Zashch. rast. ot vred. i bol. 6 no.6:13
'61. (MIRA 16:4)

(Plants, Protection of)





1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

*** 4th AND 5TH CODES ***

1PD AND 4TH CODES

BC

B-I-4

Production of magnesium by the electrolysis of its oxide in a solution of fluorides. Y. P. PAVLOV and V. E. IVANOVA (Leib. Mat., 1936, 4, No. 3, 31-30).—The solubility of MgO in the systems BaF₂-MgF₂-NaF and CaF₂-MgF₂-NaF is >0.3%. For the electrolysis of MgO the proportions of MgF₂ in the electrolyte must suffice to form the compounds BaF₂·MgF₂ and NaF·MgF₂, as otherwise Na will be deposited. Electrolysis of Mg from these solutions is difficult because of the frequent occurrence of the anode effect. (U. S. Pat. 2,100,000)

COMMON ELEMENTS

INTERNALLY INDEXED

ASB-514 METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND LETTERS

3RD AND 4TH LETTERS

5TH AND 6TH LETTERS

7TH AND 8TH LETTERS

9TH AND 10TH LETTERS

11TH AND 12TH LETTERS

13TH AND 14TH LETTERS

15TH AND 16TH LETTERS

17TH AND 18TH LETTERS

19TH AND 20TH LETTERS

21ST AND 22ND LETTERS

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31ST AND 32ND LETTERS

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35TH AND 36TH LETTERS

37TH AND 38TH LETTERS

39TH AND 40TH LETTERS

41ST AND 42ND LETTERS

43RD AND 44TH LETTERS

45TH AND 46TH LETTERS

47TH AND 48TH LETTERS

49TH AND 50TH LETTERS

18

Metallic Powders and Dusts. V. P. Pavlov. (*Lepkie Metalli (Light Metals)*), 1968, (11), 57-60.—[In Russian.] A description of the manufacture of aluminium powder.—D. N. S.

ASD-51A METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

COMMON VARIANTS INDEX

COMMON ELEMENTS

MATERIALS INDEX

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

COMMON VARIANTS INDEX

COMMON ELEMENTS

MATERIALS INDEX

Electrolytic baths for aluminum foundation A. I. Pavlov *Light Metal*, No. 2, 13 to 184, *Chem. Zvezd.* 1938, 2, 2051. The use of liquid cathodes in the electrolysis of Al_2O_3 as recommended by Belyaev (cf. preceding abstract) does not reduce the sp. consumption of elec. energy and therefore is of no economic advantage. In order to obtain a bath with a lower sp. energy consumption (e. g., an output of 75 g per kw-hr) good thermal insulation must be provided and the anodic c. d. reduced (e. g., to 0.6 amp. per sq. cm.). A reduction in the sp. resistance of the bath is also desirable and can perhaps be attained by the addn. of LiF. M. G. Moss

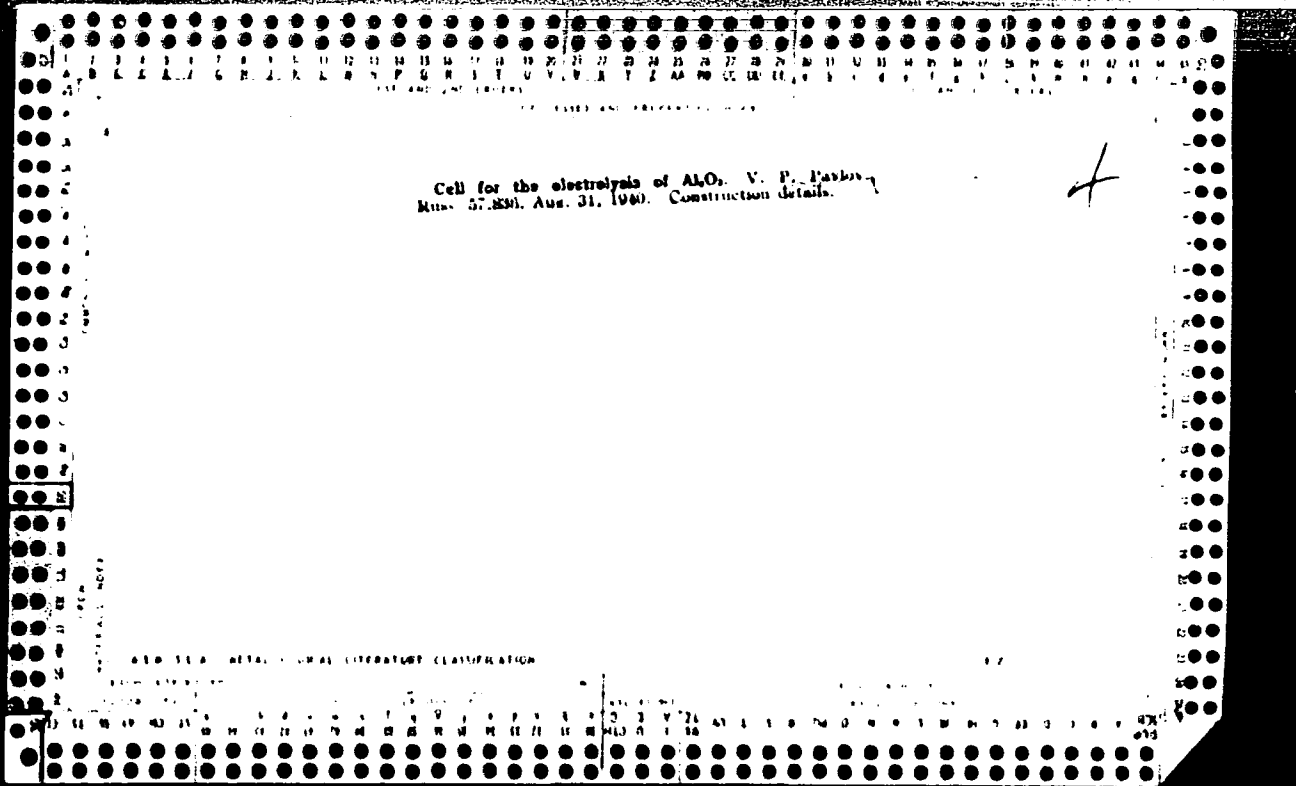
ASD 55.6 METALLURGICAL LITERATURE CLASSIFICATION

Electrolysis of magnesium oxide (in a fused fluoride bath) V. P. Pavlov and A. M. Romanovskii *Zh. Fiz. Khim.*, No. 4, 18-21 (1937); cf. C. I. 29, 6000 MgO was electrolyzed in a 40-kw cell with an electrolyte con-

sisting of MgF_2 61, BaF_2 32 and NaF 7%. This electrolyte dissolved less than 1% MgO at 800°. During electrolysis MgO was constantly added to prevent a decrease in its content and consequent anode effect. The M_2 obtained was more resistant to corrosion than Mg obtained by electrolysis of $MgCl_2$. H. W. Rothermel.

ASB 51.6 METALLURGICAL LITERATURE CLASSIFICATION

12



V.P. PAVLOV

Rational Construction of a Low-Frequency Induction Furnace for Melting Non-Ferrous Alloys. V. P. Pavlov
~~Ho~~ (Leningrad, *Proizvodstvo*, 1954, (2), 13-14). [in Russian]

A design of an L.F. induction furnace with a tapping hole directly connected to the channel of the furnace is suggested.

- V. K.

PAVLOV, V.P.

U S S R .

✓ Production of High-Strength Cast Iron by Inoculation with an Alloy of Magnesium and Ferrasilicon. V. P. Pavlov. (Litolnoe Proizvodstvo, 1954, (8), 3-4). (In Russian) Methods are proposed for inoculating cast iron with magnesium without removing the ladle from the runner. In the first method the ladle is provided with an iron lid which is placed under a hole in the runner, the shape of the lid being such that a chamber is formed between runner and ladle. The iron passes through the chamber which is connected to a fan for removing fumes. In the second, the iron from the runner enters the ladle through a slot in its iron lid, while the fumes are removed through a chamber which is permanently attached under the runner. In each case the alloy is introduced as an ingot on the end of an iron bar. The deposit of magnesia which quickly forms on the lid prevents adhesion of iron splashes.--S. X.

SIMFOROV, G.Ye., gorny inzhener; TENETKO, A.A., gorny inzhener; PAVLOV, V.P.,
gorny inzhener.

Measures to increase the life span of ore chutes and delivery ramps.
Ger.shur.no.12:56-57 D '55. (MIRA 9:4)
(Krivoy Rog--Mining engineering)

DEKABRUN, Ye.I., inzhener; PAVLOV, V.P., inzhener.

Inoculation practice. Lit.proizv. no.1:32 Ja '56. (MLRA 9:5)
(Magnesium alloys)