bremsstrahlung, the photomultiplier and the crystal were shielded with 5 mm of lead and 11 mm of aluminum, except for the front of the photomultiplier, which had a conical opening for particle incidence (aperture angle, 40°). This counter carried out ionization measurements and particle registration at energy release in the crystal of 45 and 160 kev and 5.4 and 8.3 Mev. Both electrons and protons could be registered along the first two (45 and 160 Kev) channels. Along the other two (5.4 and 8.3 Mev) channels, the count was mainly of protons; at an electron path perpendicular to the crystal surface energy losses were about 2 Mev and oblique-paths were precluded by the thickness of the shielding. Table 1 of the Enclosure gives the minimal [illegible] particle energies registered by the counters. Orig. art. has: 2 tables and 4 formulas.

ASSOCIATION: none

ACC NR: AP7000530 SOURCE CODE: UR/0048/66/030/011/1824/1826

AUTHOR: Okhlopkov, V. P.

ORG: none

TITLE: Results of cosmic ray studies by the Elektron-2 and Elektron-4 satellites /Paper presented at the All-Union Meeting on Physics of Cosmic Radiation held in Moscow from 15 to 20 November 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 11, 1966, 1824-1826

TOPIC TAGS: primary cosmic ray, cosmic ray intensity, cosmic ray measurement, automatic space station, gas discharge counter

ABSTRACT: Experimental data are presented on primary cosmic rays obtained by a gas discharge counter with a 2.3 gxcm^{-2} shielding onboard the Elektron-2 and Elektron-4 satellites. The area of the counter carried by Elektron-4 exceeded by 1.06 that of the counter carried by Elektron-2. The threshold energy for recording protons by this counter was 48 Mev. The average counting rate of the gas discharge counter was approximately 20.5 pulse/sec which, over a 20-hr period during which the satellites were outside the radiation belts in each orbit, assured a statistical accuracy of 0.5—1.0% for Elektron-2 and 0.1—0.3% for Elektron-4. Counting rate values were obtained for the

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ACC NR: AP7000530

period 30 January 1964 to 9 February 1965. There were two types of variation in cosmic ray intensity: slow variations associated with the 11-year cycle of solar activity, and fast variations associated with a period of two weeks. In the first half of 1964 the intensity of primary cosmic rays continued to increase. For the period February-May this increase was about 10%. At the same time on the IMP-1 satellite a 15% increase was observed. For the period February-May the intensity grew at an average rate of 2%, in the period July-August at a rate of 1% per month, and in September and October the intensity remained constant. This increase in the intensity of primary cosmic rays is well correlated with an increase in the intensity of the neutron component. Orig. art. has: 2 figures.

[WA-75]
[JR]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 004

Card 2/2

VERNOV, S.N.; CHUDAKOV, A. Ye.; VAKULOV, P.V.; GORCHAKOV, Ye.V.; IGNAT'YEV, P.P.; KUZNETSOV, S.N.; LOGACHEV, Yu.I.; LYUBIMOV, G.P.; NIKOLAYEV, A.G.; OBLOPKOV, N.P.; SOSNOVETS, E.N.; TYUTOVSKAYA, M.V.

Radiation studies by means of the artificial satelite "Kosmos-17". Izv. AN SSSR Ser. fiz. 28 no.12:2058-2074 D '64 (MIRA 18:2)

L 1552-66 FSS-2/EWT(l)/FS(v)-3/FCC/EWA(d)/EWA(h) TT/GS/GW

ACCESSION NR: AT5023628 UR/0000/65/000/000/0502/0506

AUTHOR: Vernov, S. I.; Vakulov, P. V.; Zatsepin, V. I.; Logachev, Yu. I.; Okholopkov, V. P.; Chudakov, A. Ye.

TITLE: Primary cosmic radiation investigations

SOURCE: Vsesoyuznaya konferentsiya po fizike kosmicheskogo prostranstva. Moscow, 1965. Issledovaniya kosmicheskogo prostranstva (Space research); trudy konferentsii, Moscow, Izd-vo Nauka, 1965, 502-506

TOPIC TAGS: cosmic ray, cosmic radiation, primary cosmic ray, primary cosmic radiation, Elektron 2, Elektron 4

ABSTRACT: Experimental data obtained by Elektron-2 and -4 on primary cosmic radiation are presented and interpreted. The data, covering the period 31 January to 1 November 1964, were obtained primarily by means of gas-discharge counters with an average frequency of 20 pulses/sec. The apogee of the satellites was 63,000 km, keeping them outside the earth's radiation belts most of the time. The higher count frequency as the thickness of the screens was increased, made it possible to conclude that the primary radiation did not contain particles within the 50 to 110 Mev range. Two types of radiation intensity variations were distinguished:

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ACCESSION NR: AT5023628

those connected with the 11-year period of solar activity, and fast variations, with a period of the order of two weeks. The 11-year period variations grew in intensity at the rate of about 2 percent per month during the first half of 1964. During the second half of the year the intensity reached a ceiling and in October indicated a tendency to decline. These data are in fair agreement with those of the Fort Churchill and Deep River observation posts. Certain indications of a phase shift between the periods of solar activity and the intensity of cosmic rays were discerned in the sequence of monthly averages of the intensity of cosmic radiation, the relative number of solar spots, and the solar flux of 10.7-cm radio waves. These observations, however, are not considered conclusive. The short-period variations of radiation with a 1.5-percent amplitude periodically acquire a clearly cyclic character. The same observation was made in April 1963 by the Luna-4 interplanetary station. In general, however, the cyclicity is not very regular and the nature of these variations remains obscure. There are also indications of a 27-day period in the data for 1964. An attempt was made to correlate these periods with the sun's rotation. A regular coincidence was not observed, but in some cases (rotations 1792, 1793, and 1794) there was a fair indication of parallelism. The absence of a conclusive connection with the sun's rotation suggests the possibility that the short-period variations have a common

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ACCESSION NR: AT5023628

origin with the 11-year variations. It is also possible that the intensification of cosmic radiation during decline of solar activity is not monotonic, but displays ups and downs stemming from changes in the condition of its propagation or dimensions of the region of its effective scattering within the solar system. Orig. art. has: 4 figures.

[FP]

ASSOCIATION: none

SUBMITTED: 02Sep65 ENCL: 00 SUB CODE: AA, SV

NO REF SOV: 003 OTHER: 001 ATD PRESS: 4094

Card 3/3

SHCHERBAKOV, Igor' Petrovich; OKHLOPKOV, Ye.D., red.

[Forest resources of Yakutiia and their utilization] Lesnye resursy IAkutii i ikh ispol'zovanie. IAkutsk, IAkutskoe knizhnoe izd-vo, 1962. 34 p. (MIRA 17:5)

OKHLOPKOVA, A.N.

Use of the dynamic method in studying the circulation of waters in Lake Ladoga. Okeanologiia 1 no.6:1025-1033 '61. (MIRA 15:1)

1. Laboratoriya ozerovedeniya otdeleniya geologo-geograficheskikh nauk AN SSSR.

(Ladoga, Lake--Hydrology)

OKHLOPKOVA, A.N.

Wind-generated circulation of waters in bays of the northwestern part of Lake Ladoga. Trudy Lab. ozeroved. 12:111-127 '61.
(MIRA 15:3)
(Ladoga, Lake—Hydrology)

OKHLOPKOVA, T.I.

New lacquer and paint materials manufactured by the Zagorsk Paint Plant of the Moscow Region Economic Council. Lakokras.-mat.i ikh prim. no.5:81 '62. (MIRA 16:1)
(Zagorsk--Paint industry)

BRAVICHEV, V.A., dots., kand. tekhn. nauk; KORSAKOV, V.S., tekhn. nauk, prof., retsenzent; OKHLYAND, A.B., inzh., red.; SEMENCHENKO, V.A., red. izd-va; DEMKINA, N.F., tekhn. red.

[Hydraulic and pneumatic control devices for machine tools] Gidravlicheskie i pnevmaticheskie avtomatiziruiushchie ustroistva metallorezhushchikh stankov. Moskva, Izd-vo "Mashinostroyenie," 1964. 262 p. (MIRA 17:4)

OKHMAN G.

POLAND/Optics - Optical Technology K-4

Abs Jour : Ref Zhur - Fizika, No 4, 1958, No 9157

Author : Ingarden, R.S., Okhman, G.
Inst : Mathematics Institute, Academy of Sciences, Warsaw, Poland
Title : Optimum Optical Systems

Orig Pub : Syul. Pol'skoy AN, otd. 3, 1954, 2, No 6, 275-280

Abstract : Determination of a criterion that characterizes a system with the best image quality. Systems are considered with axial symmetry, consisting of homogeneous and isotropic media. For the sake of simplicity, non-self-illuminating objects are taken, and the investigation is carried out in the meridional plane. The action of an optical system is represented, using Mandel'shtam's example, as an integral equation that transforms the amplitude in the plane of the object into an amplitude in the plane of the image, the kernel of which depends only on the optical system. It is shown that an optical system having no aberration is not ideal from the point of view of the wave theory of light. Only a system satisfying definite conditions will reproduce the object with absolute similarity. The

Card : 1/2

POLAND/Optics - Optical Technology K-4

Abs Jour : Ref Zhur - Fizika, No 4, 1958, No 9157

limits of the feasibility of the above conditions for aberrations of various orders are indicated.

Card : 2/2

OKHMUSH, M.Ye. [Okhmush, M.IE.]

Reducing the amount of labor expended on the fattening of swine. Mekh. sil'. hosp. 11 no.5:6-8 My '60. (MIRA 14:3)

1. Glavnyy inzh.sovkhoza No.626, Vasil'yevskogo rayona, Dnepropetrovskoy oblasti.
(Swine--Feeding and feeds)

KHARCHENKO, V.S., inzh.; OKHMUSH, M.Ye. [Okhmush, M.IE.], inzh.

Mechanizing the processing of corncobs for cattle feeding. Mekh. sil'. hosp. 14 no.4:23-25 Ap '63. (MIRA 16:10)

LYUBINSKIY, Yu.S. [Liubyns'kyi, IU.S.], inzh.; OKHMUSH, M.Y e. [Okhmush, M.IE.], inzh.

A feed preparation shop for each swine farm. Mekh. sil'. hosp. 14 no.8:23-26 Ag '63. (MIRA 17:1)

OKHMYAN, G.L.; SULYAYEV, L.P.

Spectrophotometric investigation of the action of activated carbon on alcohols. Izv. vys. ucheb. zav.; pishch. tekh. no.6:141-143 '63. (MIRA 17:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut fermentnoy i spirtovoy promyshlennosti, khimiko-tekhnologicheskaya laboratoriya.

Okhnapkina N.A.

AUTHORS: Kheraskova, Ye.P., Okhnapkina N.A., Provorov, V.N. 32-7-9/49

TITLE: Method for the Determination of the Unbound Content of Sulphur in Rubber Substances, Containing Sulphuric Catalyzers (Metod opredeleniya svobodnoy sery v rezinakh, v sostav kotorykh vkhodyat sernosoderzhashchiye uskoriteli)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 7, pp. 798-800 (USSR)

ABSTRACT: Here the sulphite method is recommended where the rubber samples are heated with a sodium sulphite solution. The unbound sulphur enters a union with sulphite and becomes tiosulphate which can be determined by a iodometric titration. The surplus of sulphite remained unbound is bound with formalin. In the presence of sulphuric catalyzers this method cannot be used, as the results would be higher. As the other methods shown here - among them also an American method - proved as not very efficient, a new method was suggested. As adsorbents of the catalyzer and the waste products activated coal of the type (KAD), (OU) and (AP-3) was recommended. This should lead to the desired results in all cases dealt with here. There are 3 figures.

ASSOCIATION: Scientific Research Institute for Rubber Consumer Products (Nauchno-issledovatel'skiy institut rezinovykh izdeliy shirokogo potrebleniya)

AVAILABLE: Library of Congress

Card 1/1

OKHNYANSKAYA, L. G. Cand. Med. Sci.

Dissertation: "Concerning the Spontaneous Secretion of Stomach."

27/4/50
Acad. Med. Sci. USSR

SO Vecheryaya Moskva
Sum 71

USSR/Human and Animal Physiology - The Nervous System. T

Abs Jour : Ref Zhur Biol., No 3, 1959, 13260

Author : Razumov, N.P., Okhnyanskaya, Ye.G., Osipova, V.G., Mel'nikova, M.M., Kozlov, L.A., Vakar, M.D.

Inst : State Scientific Research Institute of Labor and Union Hygiene

Title : Changes in the Higher Nervous Activity of Patients with Silicosis

Orig Pub : Tr. Yubileyn. nauchn. sessii, posvyashch. 30-letney deyat-sti Gos. n.-i. in-ta gigiyeny truda i profzabolevaniy. L., 1957, 215-221

Abstract : An investigation of conditioned and unconditioned vascular and static reflexes and a determination of sensitivity of visual, auditory, cutaneous, gustatory, and olfactory analysors in patients with silicosis

Card 1/2

COUNTRY : USSR
CATEGORY : Human and Animal Physiology, Circulation T

ABS. JOUR. : RZhBiol., No. 5 1959, No. 22098

AUTHOR : Okhnyanskaya, L.G.
INST. :
TITLE : A Few Notations on Methodology in Evaluating Plethismographic Data.

ORIG. PUB. : Byul. eksperim. biol. i med., 1957, No. 1, supplement, 57--59

ABSTRACT : A different amplitude of oscillations can occur with different subjects at the same level of water in the reservoir of a Mosso-Novitsky plethismograph. This amplitude will be greatest at an external pressure equal to the mean vascular pressure. In connection with this, the author considers that it is most correct to perform the examination at that external pressure at which the amplitude of oscillations is greatest. In order to establish a relationship between the magnitude of displacement of the water level in the conduit of the plethismograph and that shown

Card: 1/2

T-52

CA

The olfactory-humoral reflex in lead and mercury poisoning. L. G. Okhnyanskaya and D. A. Ginsburg (Ind. Hyg. Inst. Acad. Med. Sci., Moscow). *Fiziol. Zhur. S.S.S.R.* 38, 305-10(1952).—The olfactory-humoral reflex is defined as the change of the biol. activity of blood (test with isolated frog heart after stimulation with thymol or oil of rosemary; the blood is taken *from* a normal subject, then repeated after inhalation of the olfactory irritants). Workers with Pb or Hg poisoning show enhanced olfactory-humoral reflex, i.e. the blood activity rose after stimulation. In case of Pb the reflex varies inversely with the gravity of poisoning and the frog heart test shows a decrease of amplitude and frequency of the heart beat. In lead colic the effect is in opposite direction. In Hg poisoning usually the reflex is greatly increased. Coating of the nasal mucosa with procaine leads to disappearance of the reflex. G. M. Kosolapoff

Lab. Chem. Physiol.

OKHNYANSKAYA, L.O.

Studies on conditioned vasorespiratory reflex. Fiziol. zh. SSSR 39 no. 5:610-617 Sept-Oct 1953. (CLML 25:4)

1. Laboratory of Clinical Physiology of the Institute of Labor Hygiene and Occupational Diseases, Moscow.

OKHNYANSKAYA, L.G.

OSIPOVA, V.G.; OKHNYANSKAYA, L.G.

Excitability of the smell analyzer in certain occupational diseases. Gig.i san. no.3:32-38 Mr '54. (MLRA 7:2)

1. Iz Instituta gigiyeny truda i professional'nykh zabolevaniy Akademii meditsinskikh nauk SSSR.
(Occupational diseases) (Nervous system) (Smell)

OKHNYANSKAYA L.G.

DROGICHINA, E.A.; OKHNYANSKAYA, L.G.; GINZBURG, D.A.; MUMZHU, Ye.A.; SADCHIKOVA, M.N.; RYZHKOVA, M.N.

Role of the higher sections of the central nervous system in the development and course of the pathological process in some intoxications. Trudy AMN SSSR 31:9-27 '54. (MLRA 7:10)
(Nervous system) (Industrial toxicology)

OKHNYANSKAYA, L.G.

Olfactometry in mercury and lead intoxications. Trudy AMN SSSR 31:28-33 '54. (MLRA 7:10)
(Smell) (Mercury--Toxicology) (Lead poisoning)

RAZUMOV, N.P., professor; OKHNYANSKAYA, L.G.; OSIPOVA, V.G.

Some data on a study of conditioned and unconditioned reflax activities in silicosis. Bor'ba s sil. 2:270-279 '55. (MLRA 9:5)

1. Institut gigiyeny truda i profzabolevaniy Akademii meditsinskikh nauk SSSR.
(LUNGS--DUST DISEASES) (CONDITIONED RESPONSE)

OKHNYANSKAYA, L. G.

Subject : USSR/Medicine AID P - 2143

Card 1/1 Pub. 37 - 12/18

Author : Okhnyanskaya, L. G., Kand. of Med. Sci.

Title : Some remarks on the work by B. B. Koyranskiy and D. A. Zarzhevskaya "On the Protective Physiological Reactions of the Vascular System during Cooling of the Organism."

Periodical: Gig. i san., 3, 51-52, Mr 1955

Abstract : A critical review of the above work

Institution: Institute of Industrial Hygiene and Occupational Diseases, Acad. of Med. Sci., USSR

Submitted : N 11, 1954

OKHNYANSKAYA, L.G.

Unconditioned and conditioned vascular reflexes in silicosis.
Zhur. vys. nerv. deiat. 5 no.5:660-664 S-O '55. (MLRA 9:1)

1. Laboratoriya klinicheskoy fiziologii Instituta gigiyeny Truda i profzabolevaniy AMN SSSR.

(REFLEX,
conditioned plethysmographic reactions in silicosis.)
(REFLEX,
unconditioned plethysmographic reactions in silicosis)
(SILICOSIS physiology,
plethysmographic conditioned & unconditioned reactions)
(PLETHYSMOGRAPHY, in various diseases,
silicosis, conditioned & unconditioned reactions)

EXCERPTA MEDICA Sec 2 Vol 11/7 Physiology July 58

3081. SOME REMARKS CONCERNING THE METHOD OF APPRAISAL OF PLETHYSMOGRAPHIC DATA (Russian text) - Okhnyanskaya L. G. - BIULL. EKSPER. BIOL. I MED. 1957, suppl. (57-59) 43;1

The plethysmograph of Mosso-Novitskii type was used. Having regard to the dependence of the magnitude of pulse oscillations on the relation between the external pressure - the water-filled tube of the apparatus - and the internal blood pressure in the limb vessels, the author recommends that plethysmography be carried out under conditions of a constant physiological level. This requirement is met by a water level that allows the maximal oscillations for each investigated person. To make the apparatus more responsive the author recommends the use of a tube tilted to 30-40° instead of a vertical one. The comparative appraisal of the reaction should be made not by recording the amplitude of oscillations on the curve but from the displacements of the water column in the manometer tube as shown by the calibrating curve set for each plethysmograph.

To calculate the speed of the vascular reaction the author recommends to record the up and down movements on a curve and not on a straight line. Asymmetry of vascular reactions can be demonstrated only by switching the whole system or parts of it from the right arm to the left or vice versa, because it is in practice nearly impossible to attain an equal tension of the rubber in Marey's capsules while recording the plethymograms by means of two plethysmographs. (S)

LAB. Chem Physiology,
Inst. Labor Hygiene & Professional Disease, AMS USSR

GUBAR', A.V., dots.; KOSITSKIY, G.I.; KULIKOVA, V.S.; MAL'TSEVA, T.A.; MARKOVA, A.A.; MILYUTINA, L.A.; ORESHUK, F.A.; PETROV, S.I.; CHESNOKOVA, S.A.; ASRATYAN, E.A., prof., red.; OKHNYANSKAYA, L.G., red.; BUKOVSKAYA, N.A., tekhn. red.

[Manual on practical exercises for a course in normal physiology] Rukovodstvo k prakticheskim zaniatiiam po kursu normal'noi fiziologii. [By] A.V.Gubar' i dr. Moskva, Medgiz, 1963. 303 p. (MIRA 17:3)

1. Chlen-korrespondent AN SSSR(for Asratyan).

ABRAMOV, M.A.; ALIVERDIZADE, K.S.; AMIROV, Ye.M.; ARENSON, R.I.; ARSEN'YEV, S.I.; BAGDASAROV, R.M.; BAGDASAROV, G.A.; BADAMYANTS, A.A.; DANIYELIAN, G.N.; DZHAFAROV, A.A.; KAZAK, A.S.; KERCHENSKIY, M.M.; KONYUKHOV, S.I.; KRASNOBAYEV, A.V.; KURKOVSKIY, A.I.; LALAZAROV, G.S.; LARIONOV, Ye.P.; LISTENGARTEN, M.Ye.; LIVSHITS, B.L.; LISIKIAN, K.A.; LOGINOVSKIY, V.I.; LYSENKOVSKIY, P.S.; MOLCHANOV, G.V.; MAYDEL'MAN, N.M.; OKHON'KO, S.K.; ROMANIKHIN, V.A.; ROSIN, I.I.; RUSTAMOV, E.M.; SARKISOV, R.T.; SKRYPNIK, P.I.; SOBOLEV, N.A.; TARATUTA, R.N.; TVOROGOVA, L.M.; TER-GRIGORYAN, A.I.; USACHEV, V.I.; FAYN, B.P.; CHICHEROV, L.G.; SHAPIRO, Z.L.; SHEVCHUK, Yu.I.; TSUDIK, A.A.; ABUGOV, P.M., red.; MARTYNOVA, M.P., vedushchiy red.; DANIYELIAN, A.A.; TROFIMOV, A.V., tekhn.red.

[Oil field equipment; in six volumes] Neftianoe oborudovanie; v shesti tomakh. Moskva, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry. Vol.3. [Petroleum production equipment] Oborudovanie i instrument dlia dobychi nefti. 1960. 183 p. (MIRA 13:4)

(Oil fields--Equipment and supplies)

84-58-1-16/32

AUTHOR: Okhomskiy, A., Unit Commander of the ShVLP

TITLE: Training in Single-Engine Flying of the Il-14 (Obucheniye odnomotornomu poletu na Il-14)

PERIODICAL: Grazhdanskaya aviatsiya, 1958, Nr 1, pp 27-28 (USSR)

ABSTRACT: The article deals with problems and methods of training in single engine flight, as worked out by the School of Advanced Pilotage, particularly by one of its units headed by the author. The training course is divided into several stages, beginning with horizontal flight. Thereafter turns, take-off, climb, coming in for landing, commencing the second circle and visual and instrument flight are dealt with separately. Ground preparation precedes the flight exercises. The permission for this kind of training was first issued for the 1955 term. A photograph, showing a group of ShVLP students in a class which is studying aircraft landing gears under N. Plekhanov, senior instructor of the school, accompanies the text.

AVAILABLE: Library of Congress

1. Pilots - Training

Card 1/1

OKHORZIN, V. G.

Okhorzin, V. G. - "Data on the stability of colloids of blood plasma during brucellosis," Trudy Omskogo med. in-ta im. Kalinina, No. 10, 1948, p. 233-39

SO: U-3600, 10 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 6, 1949).

LATUNIN, Nikolay Ivanovich; OKHOSHIN, Leonid Ivanovich; BELYAYEV, I.A., inzh., red.; KHITROV, P.M., tekhn.red.

[Handbook for an electrician in railroad power engineering] Spravochnik elektromontera energeticheskogo khoziaistva zheleznykh dorog. Moskva, Gos.transp.zhel-dor.izd-vo, 1959. 570 p. (MIRA 13:2)

(Electric railroads)

OKHOSHIN, L.I., inzh.

New railroads where electrification has been carried out. (MIRA 13:3)
Elek.i tepl.tiaga 3 no.11:4 N '59.
(Railroads--Electrification)

OKHOSHIN, L.I., inzh.

Electric power supply systems along the railroad track.
Zhel.dor.transp. 43 no.11:47-51 N '61. (MIRA 14:11)
(Railroads--Electrification)
(Rural electrification)

LATUNIN, Nikolay Ivanovich; OKHOSHIN, Leonid Ivanovich; ZATUCHNYY, I.M., inzh., retsenzent; KALININ, V.K., kand. tekhn.nauk, red.; USENKO, L.A., tekhn. red.

[Handbook for the electrician of railroad electric power plants] Spravochnik elektromontera energeticheskogo khozyaistva zheleznykh dorog. Izd.2., perer. Moskva, Transzheldorizdat, 1963. 446 p. (MIRA 17:2)

OKHOSHIN, L.I., inzh.

Important yet still unsolved problems in the electrification of railroads. Zhel. dor. transp. 45 no.5:35-39 My '63. (MIRA 16:10)

1. Zamestitel' nachal'nika Glavnogo upravleniya Elektrifikatsii i energeticheskogo khozyaystva Ministerstva putey soobshcheniya.

ALEKSANDROV, I.B., gornyy inzh.; OKHOTA, I.Ya., gornyy inzh.

Prospects for using conveyer trains. Gor. zhur. no.6:47-49 Je '62. (MIRA 15:11)

1. Gosudarstvennyy institut po proyektirovaniyu razrabotki rudnykh mestorozhdeniy yuzhnykh rayonov SSSR, Khar'kov.
(Kursk magnetic anomaly—Conveying machinery)

OKHOTIN, A.; LOBANOV, L.

Economic problems discussed by the thirteenth session of the United Nations General Assembly [with English summary in supplement]. Vnesh. torg. 29 no.3:22-28 '59.

(MIRA 12:7)

(United Nations) (Economics)

6656. TEST RESULTS OF TWO EXPERIMENTAL SOLAR THERMO-ELECTRIC GENERATORS. Baum, V.A., and Okhotin, [illegible] (Teploenergetika (Heat Pwr Engng, Moscow), Aug. 1957, 65-70). Tests on the STG-1 and STG-2 generators are recorded. Both contained 70 blocks, each of 11 TnSb-constantan thermocouples. The STG-2 generator was used with a paraboloid mirror and produced 16.9 W at 21 V. The efficiency of the generator was 4.62% and that of the whole plant 0.8%. (L).

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24,2700

S/170/59/002/11/004/024
B014/B014

AUTHORS: Baum, V. A., Okhotin, A. S.

TITLE: The Method of Calculating Thermoelectric Solar Generators

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1959, Vol 2, Nr 11, pp 29-34 (USSR)

ABSTRACT: By way of introduction equation (1) is given for the power of a thermoelectric generator, after which the quantities occurring therein are discussed. Next, the authors discuss the nomogram shown in figure 1, which was drawn according to formula (1). This nomogram illustrates the influence of the Peltier- and Joulian heat. For the technical calculation the authors give formula (4) for the number of thermocouples and formula (5) for their length. It is noted that the unequal energy distribution of the heat flow in the focus should be taken into account. Equation (6) describes the distribution of the heat flow in the focus, equation (7) describes the energy distribution, and equation (8) is given for the power of the individual thermocouples. Experiments were made with a solar generator in order to verify formula (8). The thermocouples of this generator were set up on concentric circles. The parabolic reflector had a diameter of 2 m. The measurements shown in figure 3 indicate the nonagreement between experimental and theoretical curves. (10) gives the corrected formula (8) in which the shading of the

Card 1/2

68759

The Method of Calculating Thermoelectric Solar Generators S/170/59/002/11/004/024
B014/B014

sunlight by the thermoelectric generator is taken into consideration. The results obtained from this formula are in close agreement with experimental results (Fig 4). After a brief discussion of the heat losses the authors show that the experimental power is lower than the calculated one. This is ascribed to the shading. It is further said that the position of the thermoelectric generator on the optical axis has some influence. In the case of uniform distribution of the heat flow the influence exercised by shading is said to be not particularly strong. The power of the generator can be increased. In order to obtain such a uniform heat flow it is necessary to modify either the reflector or the thermoelectric generator. Furthermore, a decrease in uniformity of the heat flow entails a weight loss of the entire unit. There are 4 figures and 5 Soviet references.

ASSOCIATION: Energeticheskiy institut AN SSSR im. G. M. Krzhizhanovskogo, g. Moskva (Institute of Power Engineering of the AS USSR imeni G. M. Krzhizhanovskiy, City of Moscow)

Card 2/2

OKHOTIN, A. S., Cand Tech Sci -- "Study of the thermoelectric properties of compounds of tellurium and their effect upon the efficiency of solar thermogenerators." Mos, 1960 (Acad Sci USSR. Power Engineering Inst im G. M. Krzhizhanovskiy) (KL, 1-61, 195)

PHASE I BOOK EXPLOITATION SOV/4612

Akademiya nauk SSSR. Energeticheskiy institut

Teploenergetika, vyp. 2: Ispol'zovaniye solnechnoy energii (Heat Power Engineering, No. 2: Use of Solar Energy) Moscow, 1960. 195 p. Errata slip inserted. 2,500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Energeticheskiy institut imeni G.M. Krzhizhanovskogo.

Resp. Ed.: V.A. Baum, Doctor of Technical Sciences, Professor; Ed. of Publishing House: G.B. Gorshkov; Tech. Ed.: I.N. Dorokhina.

PURPOSE: The publication is intended for power engineers and economists interested in the industrial utilization of solar energy.

COVERAGE: This collection of 19 articles is a continuation of an earlier work published under the same title in 1957. The articles present results of investigations conducted in the USSR during the last three years at the Laboratory on the Use of Solar Energy and Wind in the Energeticheskiy institut AN SSSR (Power Engineering Institute of the AS USSR). Problems in determining the operational indices of solar engines, depending upon the amount of solar energy received, are analyzed. No personalities are mentioned. References follow each article.

AVAILABLE: Library of Congress

Card 4/4

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OKHOTIN, A.S.

Okhotin, A.S.

S/170/60/003/008/005/014
B019/B054

AUTHORS: Baum, V. A., Borovikova, R. P., Okhotin, A. S.

TITLE: An Investigation of the Work of Photoelectric Cells With Intense Light Fluxes

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1960, Vol. 3, No. 8, pp. 47-52

TEXT: The authors report on an investigation of the work of silicon photoelectric cells with intense light fluxes. It is pointed out that the efficiency of photoelectric cells with intense light fluxes is considerably reduced by the temperature increase. It is known that this disadvantage can be avoided by cooling. Cheap silicon cells were used in the experiments described here. At the beginning, the authors discuss the modern theory of photoelectric cells, and deal particularly with the voltampere characteristics. Fig. 1 shows the experimentally determined voltampere characteristics of a photoelectric cell in light irradiation with a power of from 0.013 to 0.097 watt/cm^2. Fig. 2 shows the dependence of the output power of p-type silicon semiconductors on irradiation. It

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An Investigation of the Work of Photoelectric Cells With Intense Light Fluxes

S/170/60/003/008/005/014
B019/B054

was shown that the power only increased up to about 0.5 watt/cm^2 with increasing irradiation, which is explained by the heating of the photoelectric cell. It was attempted to raise this upper limit of capacity by cooling the photoelectric cell by means of an experimental arrangement which allowed an irradiation of the cell up to 15 watt/cm^2. The diagram (Fig. 3) shows that the current of the photoelectric cell considerably increases with increasing irradiation, particularly with low load resistances. Fig. 4 shows the photocurrent as a function of irradiation and of load resistances; the good agreement with the results of an equation suggested by V. K. Subashiyev (Ref. 2) is pointed out here. Finally, the authors discuss the deviations of the optimum voltages of the photoelectric cell and of the optimum amperage from the theoretical values. The diagram (Fig. 5) representing the capacity increase of high- and low-resistance photoelectric cells as a function of increase in irradiation shows that the increase in output power of high-resistance cells is not particularly high whereas this increase in power is considerable in the case of low-resistance cells. There are 5 figures and 3 references: 2 Soviet and 1 US.

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An Investigation of the Work of Photoelectric Cells With Intense Light Fluxes

S/170/60/003/008/005/014
B019/B054

ASSOCIATION: Energeticheskiy institut im. G. M. Krzhizhanovskogo, g. Moskva (Institute of Power Engineering imeni G. M. Krzhizhanovskiy, Moscow)

SUBMITTED: March 10, 1960

Card 3/3

40326

S/194/62/000/006/102/232
D288/D308

26.2532

AUTHORS: Baranov, R.Kh. Gukhman, G.A., Okhotin, A.S., and Eydinova, G.T.

TITLE: Investigation of thermo-electrical properties of tellurium compounds

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 6, 1962, abstract 6-4-42 a (V sb. Teploenergetika, no. 3, M., AN SSSR, 1961, 37-57)

TEXT: Thermo-e.m.f. E, electrical conductivity σ, thermal conductivity λ and other characteristics of tellurium compounds are investigated. To obtain the E(T) dependence, the temperature of one end of the specimen was maintained at room temperature T_x, the other end was heated to T_g . T_x and T_g were measured by thermocouples; analogous branches of the latter being used to measure E. E(T) dependence was taken at constant T_x. Graphic differentiation yielded $\alpha = dE/dT$. For small $T_g - T_x$ α was obtained according to $\alpha =$

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$= E/(T_g - T_x)$. The specimen was pressed, by means of a weight, to a water cooler. The hot end was heated by a flat Mo heating element, current being supplied to it through the mounting bracket. To avoid oxidation of the specimens and ensure reliable operation of the heater, the whole equipment was placed in vacuum. Connections to the installation were led through the plate by threaded seals, evacuation was by a pump PBH-20 (RVN-20). Pressure was measured by vacuum meter ВИТ-1 (VIT-1). For Hall effect measurements a magnetic field of 6100 oe was applied. The following compounds were investigated: FeTe, CoTe, GeTe, PdTe, AgTe, Ag_3Te_2, Ag_2Te, InTe, In_2Te, SnTe, Sb_2Te_3, PbTe, Bi_2Te_3. The Te-metal alloys were prepared at varying Te concentrations - in 10 % steps, and in the zone of chemical compounds - in 2 % steps. The composition of chemical compounds was established by measuring thermal e.m.f. Measurement results are given: 1) PbTe. Curves of λ, σ, α and z vs. T are plotted, for pure PbTe and for PbTe with 0.05 %; 0.08 %; 0.01 % admixture of Cu. /a/ increases with T and does not change much with Cu content, σ drops with increasing T. At room temperatures σ changes little

Card 2/4

with Cu content and is about 900 $ohm^{-1}cm^{-1}$. With increasing concentration of the admixture the drop of $\sigma(T)$ slows down. $\lambda(T)$ curves have a minimum in the cases 1, 2, 3 and a maximum in case 4. PbTe + + 0.08 Cu is best for thermo-elements, in which case Z changes little up to 400°C, with a maximum $z = 2.5 \cdot 10^{-3}$ 1/deg. From the constancy of the sign of the Hall constant and α it is concluded that the sign of electrical conductivity (electron conduction) is constant. The temperature dependence of mobility $\mu(T)$ is given. In pure PbTe at high T, $\mu \sim T^{-5/2}$ (2-photon processes), at low T, $\mu \sim T^{-3/2}$. Effective mass values, derived from formulas for thermo-e.m.f., for different Cu concentration are correspondingly 1.5; 3; 1; $1 \cdot 10^{-7}$g at T ~ 293°K. 2) Bi_2Te_3. Curves of z, σ, λ, and α vs. T are plotted for pure Bi_2Te_3 with admixture of CuBr. Bi_2Te_3 + 0.1 % CuBr has $z = 1.1 \cdot 10^{-3}$ 1/deg. Effective mass was derived from formulas for concentration and thermo-e.m.f. taking degeneration into account. 3) Ag_2Te differs sharply from other Ag - Te compounds. /α/ increases with T, α is small and changes little with T, z increases with T and is $0.5 \cdot 10^{-3}$ 1/deg at 150°C. Destruction of the compound takes

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place at 150 - 200°C, $\mu \sim T^{-2}$. 4) SnTe. SnTe + 1 % J is best for thermoelements, then $z = 0.8 \cdot 10^{-3}$ 1/deg at 350°C. Values of z and α are stable up to 350°C, those of λ and σ - up to 500°C. 5) Sb_2Te_3. Curve for z has a maximum at 100°C; $\mu \sim T^{-1}$; α and λ increase and σ decreases with rising T. The 5 compounds described are considered as most suitable for thermo-elements. All compounds were investigated against PbTe as standard. From the obtained data of z it is concluded that the efficiency of a compound in thermo-elements increases with rising molecular weight. 7 references. [Abstracter's note: Complete translation.]

Card 4/4

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S/196/62/000/015/004/008
E194/E155

AUTHORS: Alatyrtsev, G.A., Baum, V.A., Malevskiy, Yu.N., and Okhotin, A.S.

TITLE: A solar thermal generator of 10 W output

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, no.15, 1962, 22, abstract 15 G 131. (Teploenergetika, no.3, M., AN SSSR, 1961, 73-81)

TEXT: Information is given about a thermo-electric generator using direct solar radiation, with a concentrator area of 1.15 m^2, and mirror reflection factor K = 0.75. The positive and negative thermo-elements are made of Sb_2Te_3 and Bi_2Te_3, respectively. The absorption factor at their hot junctions is taken as 0.9. The equipment consists of a duralumin circle carrying concentric rows of fittings to hold the facets of the concentrator which reflect the direct solar rays onto the hot junctions. During the year the position of the mirror is corrected by an annual deviation screw. During the day the mirror and generator are rotated at constant velocity by a load driven clock mechanism.
15 illustrations, 8 references.

Card 1/1 [Abstractor's note: Complete translation.]

L 29794-66 EWT(m)/ETC(f)/EWP(t)/ETI IJP(c) DS/RDW/JD

ACC NR: AP6015067 (N) SOURCE CODE: UR/0363/66/002/005/0844/0849

AUTHOR: Vukalovich, M. P.; Fedorov, V. I.; Okhotin, A. S.; Glazov, V. M.

ORG: Moscow Power Institute (Moskovskiy energeticheskiy institut); Moscow Institute of Steel and Alloys (Moskovskiy institut stali i splavov)

TITLE: Study of the heat conductivity of antimony and bismuth tellurides in the liquid phase

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 5, 1966, 844-849

TOPIC TAGS: bismuth compound, antimony compound, telluride, heat conductivity, electric conductivity, phonon scattering, semiconductor research

ABSTRACT: A technique was developed for measuring the heat conductivity of liquid semiconductors by determining the radial heat flux in a ring gap with the aid of graphite cylinders which insure reliable and reproducible results. The temperature dependence of the heat conductivity of antimony and bismuth tellurides was thus measured in the liquid state up to 1200°C and its linear increase during heating was demonstrated. The electronic component of the heat conductivity was determined in

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ACC NR: AP6015067

melts of these compounds on the basis of electrical conductivity data. The mechanism of heat conductivity in liquid Bi_2Te_3 and Sb_2Te_3-type semiconductors was found to be due (in addition to the electronic and lattice components) to a third component related to liquid and phonon-liquid scattering. A correlation was noted between the results obtained and the data of physicochemical analysis of the binary liquid systems Bi-Te and Sb-Te. Orig. art. has: 6 figures.

SUB CODE: 20/ SUBM DATE: 24Aug65/ ORIG REF: 015/ OTH REF: 006

Card 2/2

ACC NR: AT7000388 SOURCE CODE: UR/0000/66/000/000/0478/0490

AUTHOR: Konovalov, A. P.; Okhotin, A. S.; Polyakov, Yu. A.

ORG: none

TITLE: Application of the electric simulation method for the investigation of thermal and electric processes taking place in a thermoelectric energy converter.

SOURCE: Teplo- i massoperenos, t. 6: Metody rascheta i modelirovaniya protsessov teplo- i massoobmena (Heat and mass transfer, v. 6: Methods of calculating and modeling heat and mass transfer processes). Minsk, Nauka i tekhnika, 1966, 478-490

TOPIC TAGS: thermoelectric converter, simulation, analog computer, electronic simulation

ABSTRACT: As is known, a rigorous solution of the equation describing the thermal field of a thermoelectric energy converter is impossible because of the nonlinear temperature dependence of the thermal conductivity and thermal emf coefficients, and of nonlinear resistivity. Instead of using the available approximate solutions, the authors show how one can obtain the thermal field by simulating its equation with the help of an analog computer. The proposed method can be easily applied in the case of the stationary thermal mode, for which case the complete procedure is presented. The investigation of the thermoelement's operation in a nonstationary mode presents more complex problems. In particular, it necessitates the splitting of the continuous thermal system into elementary discrete volumes, each of which is replaced by an . . .

Card 1/2

ACC NR: AT7000388

equivalent electric circuit; then the thermal properties of each volume are simulated in such a way that the voltages at the junction points of the equivalent electrical scheme correspond to the temperature of the center of the volumes. Just as in the case of the stationary mode, a structural scheme for the nonstationary mode is given along with the set of differential equations by which it is described. The authors hope that the simulation method they conceived will be used in research on thermoelectric energy converters and in the planning of such devices. Orig. art. has: 14 formulas and 5 figures. [WA-51]

SUB CODE: 20/ SUBM DATE: 08Jun66/ ORIG REF: 004/ OTH REF: 001/

Card 2/2

OKHOTIN, I.K. (Gor'kiy, Kholodnyy per., d.12,kv.4)

Atypical forms of a functional ductus arteriosus. Grud. khir. 2 no.5:33-38 S-O '60. (MIRA 16:5)

1. Iz kliniki gospital'noy khirurgii (zav. - prof. B.A.Korolev) Gor'kovskogo meditsinskogo instituta na base Gorodskoy klinicheskoy bol'nitsy No.5 (glavnyy vrach - zasluzhennyy vrach RSFSR N.L. Pyatnitskiy).

(DUCTUS ARTERIOSUS) (HEART--SOUNDS)

OKHCTIN, I.K.

Ligation of a patent ductus arteriosus with simultaneous lobectomy in a 34-year old woman. Khirurgiia 36 no.3:117-118 Mr '60.
(MIRA 13:12)

(DUCTUS ARTERIOSUS) (BRONCHIECTASIS) (LUNGS—SURGERY)

KOROLEV, B.A. (Gor'kiy, nab. Zhdanova, d 8-2, kv.10);OKHOTIN, I.K.

Some problems in surgical treatment of aortic coarctation. Grud. khir 5 no.1:71-77 Ja-F'63. (MIRA 16:7)

1. Iz kliniki gospital'noy khirurgii (zav.-prof. B.A.Korolev) Gor'kovskogo meditsinskogo instituta.
(AORTA—DISEASES) (AORTA—SURGERY)

DYMNIK, I.B.; OKHOTIN, I.K.

Diagnosis of patent ductus arteriosus with a reverse shunt by selective angiocardiography. Vest. rent. i rad. 28 no.2:14-16 Mr-Ap'63. (MIRA 16:9)

1. Iz kliniki gospital'noy khirurgii (zav. - zasluzhennyy deyatel' nauki prof. B.A.Korolev) Gor'kovskogo meditsinskogo instituta imeni S.M.Kirova.

(DUCTUS ARTERIOSUS) (ANGIOCARDIOGRAPHY)

KOROLEV, B.A.; OKHOTIN, I.K.; SHVARTS, T.F.; DERYABINA, Ye.I.; YEZHOVA, T.N.; GUTENKO, V.I.

Clinical course of the defects of the interventricular septum and their surgical treatment under conditions of extracorporeal blood circulation. Uch. trudy GMI no.19:99-107 '65.

(MIRA 18:8)

1. Iz kliniki gospital'noy khirurgii Gor'kovskogo gosudarstvennogo meditsinskogo instituta imeni S.M.Kirova.

KOROLEV, B.A.; OKHOTIN, I.K.; SHVARTS, T.F.; GUTENKO, V.I.

Results of 205 operations performed on a "dry" heart under conditions of surface hypothermia. Uch. trudy GMI no.19:125-136 '65.
(MIRA 18:8)

1. Iz kliniki gospital'noy khirurgii Gor'kovskogo gosudarstvennogo meditsinskogo instituta imeni S.M.Kirova.

OSHVIN, I.K.

Use of the GAI-60 apparatus in sewing up defects of the interauricular septum on the open heart under moderate hypothermia. Nauch. trudy GMI no.19:142-144 '65. (MIRA 18:8)

1. Iz kliniki gospital'noy khirurgii Gor'kovskogo gosudarstvennogo meditsinskogo instituta imeni S.M.Kirova.

KOROLEV, B.A.; OKHOTIN, I.E.

Coarctation of the aorta; diagnosis, surgical treatment, late results. Uch. trudy GMI no.19:157-169 '65.

(MIRA 18:8)

1. Iz kliniki gospital'noy khirurgii Gor'kovskogo gosudarstvennogo meditsinskogo instituta imeni S.M.Kirova.

KORGLEV, B.A.; OKHOTIN, I.K.; BELOUSOV, Yu.V.

Surgical treatment of patent ductus arteriosus; results of 320 operations. Uch. trudy GMI no.19:175-184 '65.

(MIRA 18:8)

1. Iz kliniki gospital'noy khirurgii Gor'kovskogo gosudarstvennogo meditsinskogo instituta imeni S.M.Kirova.

BELOUSOV, Yu.V.; OKHOTIN, I.K.

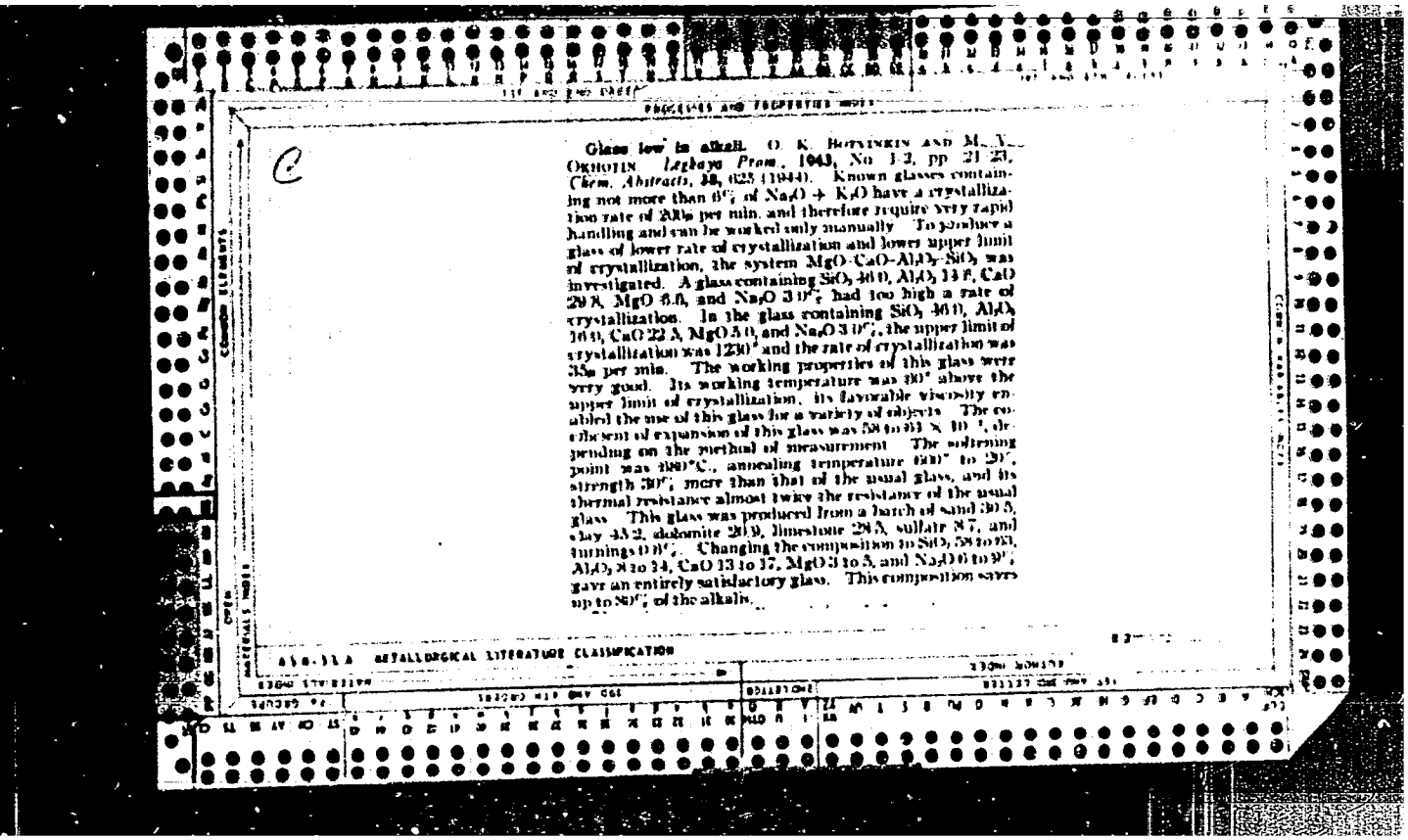
Clinical aspects and diagnosis of the patent ductus arteriosus syndrome with a reverse shunt. Uch. trudy GMI no.19:185-200 '65. (MIRA 18:8)

1. Iz kliniki gospital'noy khirurgii Gor'kovskogo gosudarstvennogo meditsinskogo instituta imeni S.M.Kirova.

KOROLEV, B.A.; OKHOTIN, I.K.

Surgery of the heart at the 4th European Cardiological Congress.
Uch. trudy GMI no.19:310-315 '65.

(MIRA 18:8)

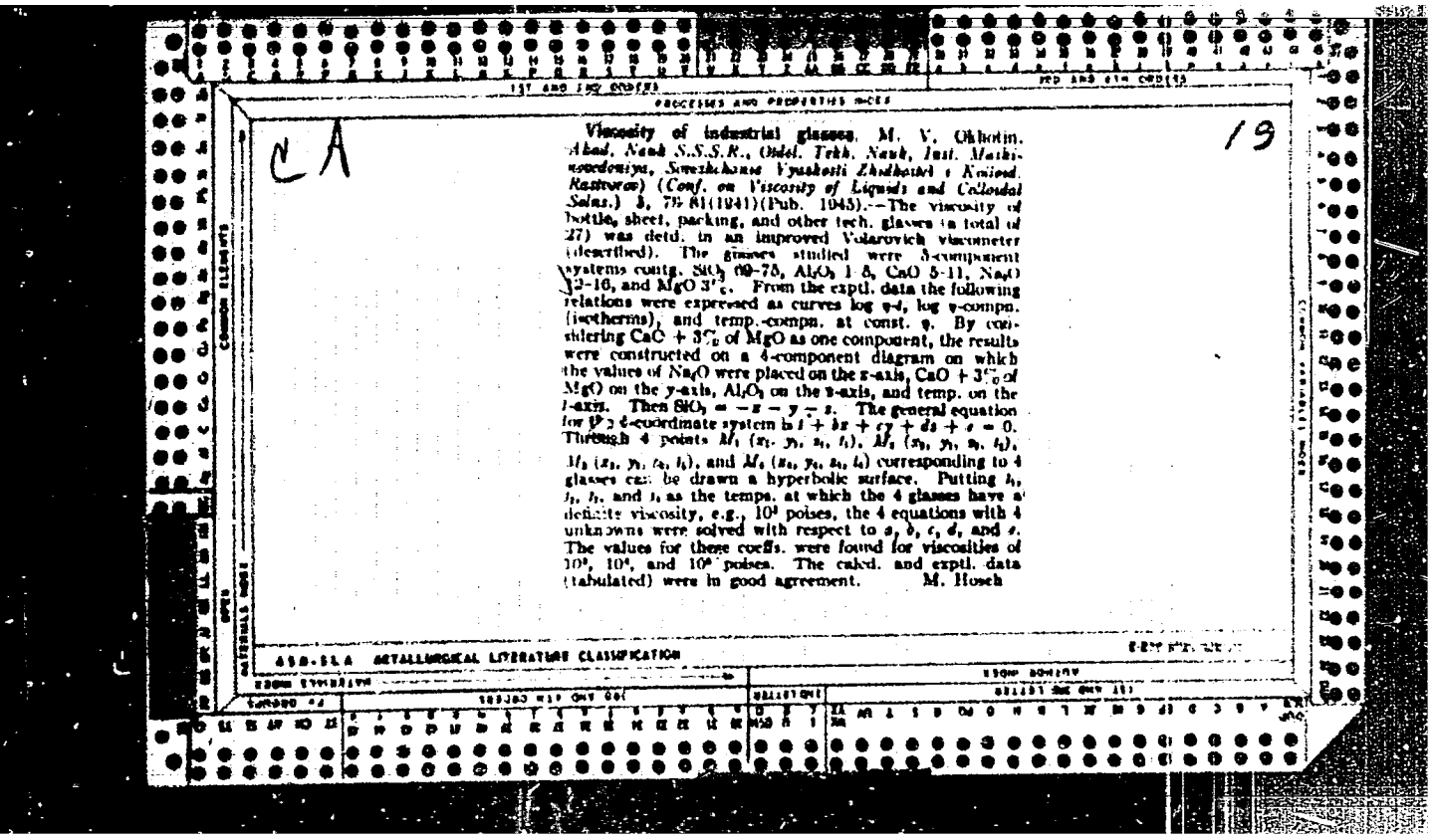


Glass low in alkali. O. K. Botvinkin and M. Y. Ogiotin. *Legkaya Prom.*, 1943, No 1-2, pp 21-23; *Chem. Abstracts*, 38, 625 (1944). Known glasses containing not more than 6% of $Na_2O + K_2O$ have a crystallization rate of 20° per min. and therefore require very rapid handling and can be worked only manually. To produce a glass of lower rate of crystallization and lower upper limit of crystallization, the system MgO-CaO-Al_2O_3-SiO_2 was investigated. A glass containing SiO_2 46.0, Al_2O_3 13.6, CaO 29.8, MgO 6.0, and Na_2O 3.0% had too high a rate of crystallization. In the glass containing SiO_2 46.0, Al_2O_3 16.0, CaO 22.4, MgO 5.0, and Na_2O 3.0%, the upper limit of crystallization was 1230° and the rate of crystallization was 35° per min. The working properties of this glass were very good. Its working temperature was 40° above the upper limit of crystallization, its favorable viscosity enabled the use of this glass for a variety of objects. The coefficient of expansion of this glass was 58 to 93 × 10⁻⁷, depending on the method of measurement. The softening point was 880°C., annealing temperature 600° to 20°, strength 30%, more than that of the usual glass, and its thermal resistance almost twice the resistance of the usual glass. This glass was produced from a batch of sand 30.5, clay 43.2, dolomite 20.9, limestone 28.5, sulfate 8.7, and burnings 0.0%. Changing the composition to SiO_2 58 to 63, Al_2O_3 8 to 14, CaO 13 to 17, MgO 3 to 5, and Na_2O 6 to 9%, gave an entirely satisfactory glass. This composition saves up to 80% of the alkalis.

A C S.

Glass

Lowering the alkali content in bottle glass. M. V. Ovsyanik, *Steklo i Keram. Prom.*, 1964, No. 2, pp. 10-12.—Several glass compositions were studied for their suitability for the production of bottles on a Lynch machine. The first series investigated contained 3 to 10 Mn_2O_3, 3 Al_2O_3, 10 CaO, 3 Fe_2O_3, 3 MgO, and 11% Na_2O. The upper limit of crystallization of these glasses containing 2, 4, and 6% Mn_2O_3 is above 1200°, and that of glasses containing 8 and 10% Mn_2O_3 is above 1150°. A study of the rate of crystallization of these glasses showed them to be unsuitable for the mechanical production of bottles. The next series of glasses studied contained Al_2O_3 3, Fe_2O_3 2, CaO 8, MgO 3, Na_2O 9, 10, and 11, and Mn_2O_3 3, 6, and 10%. In this series, glasses containing Mn_2O_3 6 and 10% and Na_2O 9% gel at 1100°, and their upper limit of crystallization is above 1150°. Glasses containing Mn_2O_3 3, 6, and 10% and Na_2O 10% have an upper limit of crystallization above 1150°; at 1100° they contain many crystals, and at 1000° they are completely gelled. Similar glasses with 11% Na_2O are preferable, inasmuch as their upper limit of crystallization is below 1150° but they are gelled at 1000°. Thus, glasses containing less than 12% Na_2O with 3, 6, and 10% Mn_2O_3 are hardly suitable for use in the mechanical production of bottles. The next series investigated contained 12, 13, and 14% Na_2O, and the Al_2O_3 was raised to 5%. The upper limit of crystallization of these glasses was above 1100°. Many of these glasses completely gelled on long keeping at 1100°. The next series of glasses contained Na_2O 12, 13, and 14%, Al_2O_3 1 or 3%, MgO 1 or 3%, and Mn_2O_3 2, 4, and 6%. Generally, glasses with less than 13% Na_2O and with more than 4% Mn_2O_3 may cause considerable difficulty when used in the mechanical production of bottles. The next series investigated contained Na_2O 13%, Fe_2O_3 1.5%, and the variable amount of other oxides as follows: SiO_2 69.5 to 74.5, Al_2O_3 1 to 3, CaO 6 to 8, MgO 1 to 3, and Mn_2O_3 1 to 3%. The coexistence of Mn_2O_3 and Fe_2O_3 improved the transparency of the glass. The preferred composition was SiO_2 72.5, Al_2O_3 1, Fe_2O_3 1.5, CaO 7, MgO 2, Mn_2O_3 3, and Na_2O 13%. The upper limit of crystallization of this glass was 1070°, the temperature of maximum rate of crystallization was 900°, and the maximum rate of crystallization 1.8 micron per min. The viscosity of this glass at 1219°, 1039°, and 914° was 10^2, 10^3, and 10^4 poises, respectively. The softening temperature of this glass was 570°, and its coefficient of linear expansion was $87.8 \cdot 10^{-7}$. This composition tested on a semiautomatic Schiller machine handled very well and gave a product of uniform color. This composition is highly recommended for use with automatic Lynch machines. M. Ho.



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Viscosity of industrial glasses. M. V. Okhotin. *Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk, Inst. Mekhanizatsii, Sovetskaya Vyssheti Zhidkostei i Kolloid. Rastvorov*) (*Conf. on Viscosity of Liquids and Colloidal Solns.*) 5, 75-81(1941)(Pub. 1945).—The viscosity of bottle, sheet, packing, and other tech. glasses (a total of 27) was detd. in an improved Volarovich viscometer (described). The glasses studied were 5-component systems contg. SiO_2 69-75, Al_2O_3 1-5, CaO 5-11, Na_2O 12-16, and MgO 3%. From the expt. data the following relations were expressed as curves log η-t, log η-compn. (isotherms), and temp.-compn. at const. η. By considering CaO + 3% of MgO as one component, the results were constructed on a 4-component diagram on which the values of Na_2O were placed on the z-axis, CaO + 3% of MgO on the y-axis, Al_2O_3 on the x-axis, and temp. on the t-axis. Then $SiO_2 = -x - y - z$. The general equation for a 4-coordinate system is $t + bx + cy + dz + e = 0$. Through 4 points M_1 (x_1, y_1, z_1, t_1), M_2 (x_2, y_2, z_2, t_2), M_3 (x_3, y_3, z_3, t_3), and M_4 (x_4, y_4, z_4, t_4) corresponding to 4 glasses can be drawn a hyperbolic surface. Putting t_1, t_2, t_3, and t_4 as the temps. at which the 4 glasses have a definite viscosity, e.g., 10^3 poises, the 4 equations with 4 unknowns were solved with respect to a, b, c, d, and e. The values for these coeffs. were found for viscosities of 10^3, 10^4, and 10^5 poises. The calcd. and expt. data (tabulated) were in good agreement. M. Hosch

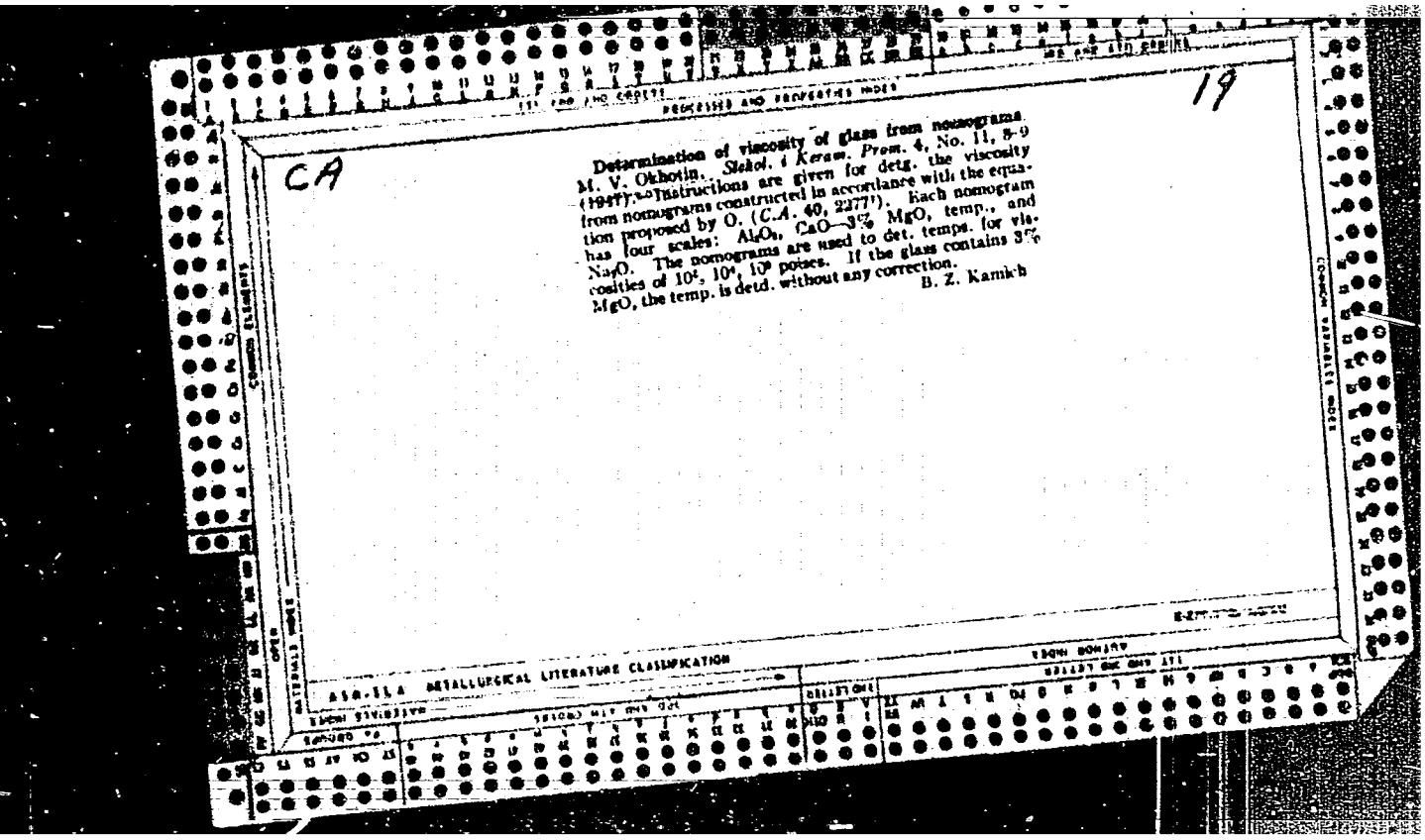
OKHOTIN, M. V.

C

9-(C)-43

Approximate calculation of viscosity of glass for given composition. M. V. Okhotin. *Steklo i Keram. Prom.*, 1947, No. 3, pp. 14–21. – The proposed method of calculating the temperature for a constant viscosity and a given glass composition is derived from experimental data on viscosity obtained with two groups of 5-component glasses. In one group the Na_2O was constant (15%), the CaO varied from 3 to 11%, and the MgO and the Al_2O_3 varied from 0 to 8%. In another group the MgO was constant (3%), Na_2O varied from 12 to 16%, CaO from 5 to 13%, and Al_2O_3 from 0 to 11%. The 5-component glass containing 3% MgO is reduced to a 4-component system by considering the CaO + 3% MgO as one component, and the glass composition can be indicated by a point in space by recording the Na_2O content along the X axis, that of CaO + 3% MgO along the Y axis, and that of Al_2O_3 along the Z axis. The percentage of SiO_2 will then be $100 - X - Y - Z$. Introducing the fourth coordinate, T (temperature in °C.), the general equation becomes $T = AX + BY + CZ + D$. This hyperplane passes through four given points corresponding to four different glass compositions, since the coordinates of each given point satisfy the equation of the hyperplane: $T_1 = AX_1 + BY_1 + CZ_1 + D$, $T_2 = AX_2 + BY_2 + CZ_2 + D$, $T_3 = AX_3 + BY_3 + CZ_3 + D$, $T_4 = AX_4 + BY_4 + CZ_4 + D$, where T_1, T_2, T_3, and T_4 are the temperatures in °C. at which these four glasses have the same viscosity. The average values of A, B, C, and D were obtained from experimental data by the method of least squares for viscosities of 10^2, 10^3, and 10^4 poises. With these values it is possible to calculate the temperature for glasses containing 3% MgO by means of the first equation. The temperature correction for variable content of MgO in glass (less than or greater than 3%) was obtained experimentally and also by calculation. In the latter method the original glass was not used; instead, another glass was used which had the same composition but contained 3% MgO but with a total content of CaO + MgO the same as in the original glass. The calculated (and experimental) results were close; the increase in temperature by substituting 1% CaO for 1% MgO was found to be 9(10)°, 8(8)°, and 8(6)°C. for viscosities of 10^2, 10^3, and 10^4 poises, respectively. Extensive tabulated data are given for various glasses obtained experimentally and by calculation.

B.Z.K.



CA

19

Determination of viscosity of glass from nomograms. M. V. Okhotin. *Steklol. i Keram. Prom.* 4, No. 11, 8-9 (1947).—Instructions are given for detg. the viscosity from nomograms constructed in accordance with the equation proposed by O. (*C.A.* 40, 2277f). Each nomogram has four scales: Al_2O_3, CaO—3% MgO, temp., and Na_2O. The nomograms are used to det. temps. for viscosities of 10^5, 10^4, 10^3 poises. If the glass contains 3% MgO, the temp. is detd. without any correction.

B. Z. Kamich

OKHOTIN, M. V.

Okhotin, M. V. - "The effect of fluorides on the viscosity of silicate glasses," Trudy Tekhn. konf-tsii rabotnikov stekol. prom-sti, Moscow, 1948, pp. 179-82

SO: U-3600, 10 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 6, 1949).

C. A.

19

Determination of the viscosity of silicate glasses as a function of temperature. M. V. Obinetin.—*Stekło i Keram.* 7, No. 5, 6-7(1950).—Calcns. are given of η for a given temp. and of temp. for a given η, with $\eta = ae^{b/T}$ or $\eta = ae^{b/T^2}$. Checks made with various glasses indicate that this equation can be used to det. η of silicate glasses and other liquids. B. Z. Kamish

C.4

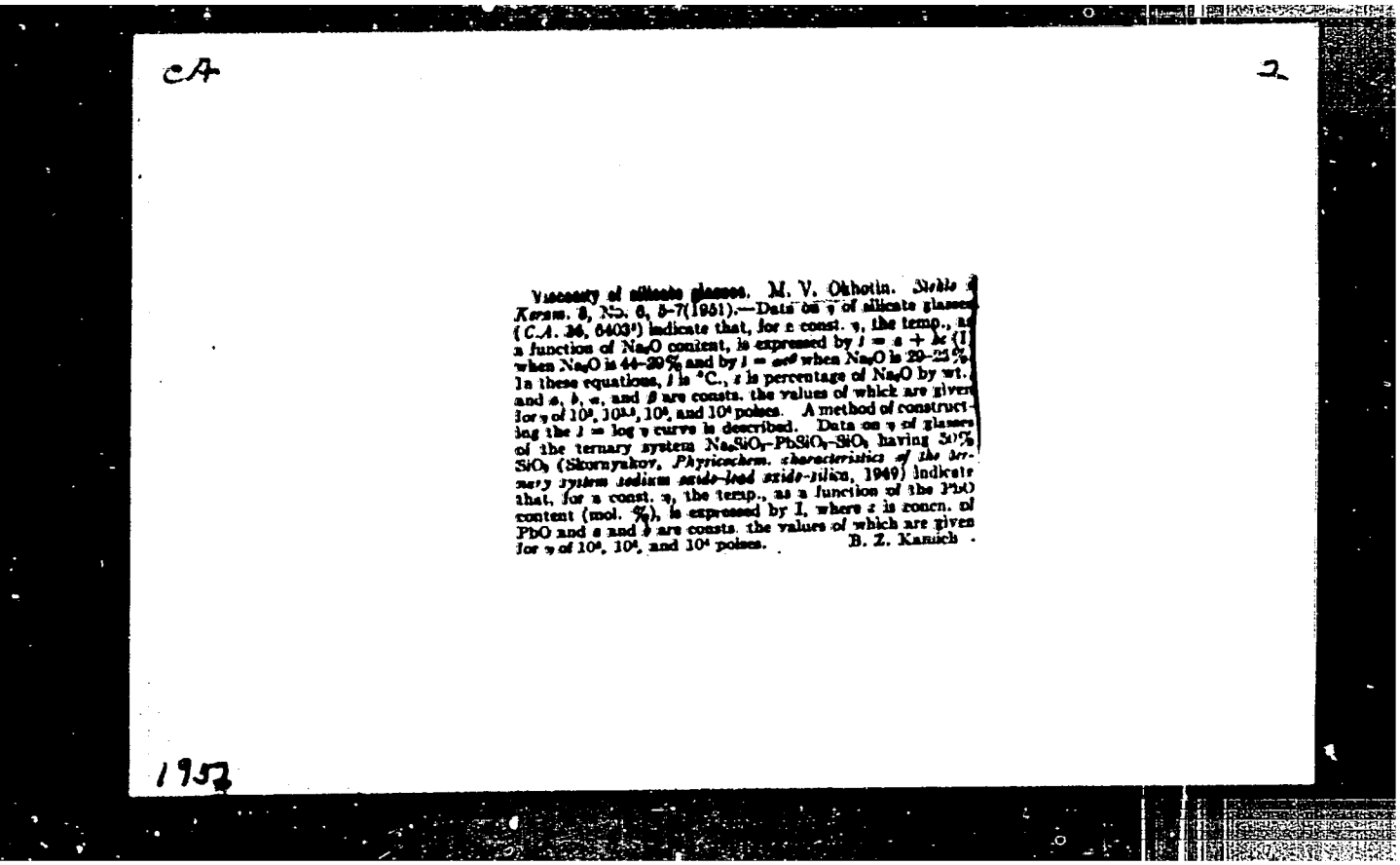
1/4

Viscosity of silicate glasses within the interval of 10^9 to 10^{13} poises. M. V. Okhotin and R. L. Tsol. *Stekło i Keram.* 7, No. 6, 13 (1950); cf. *C.A.* 43, 4435*f*; 44, 11047*h*. —Attempts to det. the viscosity (η) from the rate of flow of filament under action of its own wt. did not produce pos. results, because, under the action of surface tension, there was some shortening of the filament. This drawback was eliminated by making thin rods with spheres at the ends. A thin quartz filament was used to record elongation. Calcn. was from $\eta = Plag/3sJ$, where l is length of specimen in cm., s is area of cross section of specimen in sq. cm., Δl is elongation of specimen during time t, P is load (total wt. of $^1/_3$ of glass filament and of quartz filament), and g is gravity. B. Z. K.

CA

17

A formula for the temperature function of the viscosity of silicate glasses. M. V. Okhotin. *Doklady Akad. Nauk S.S.S.R.* 71, 827–8(1950).—The formula of Frenkel (*C.A.* 20, 3254) and Khalkin (*Zhur. Eksptl. i Teoret. Fiz.* 6, 251(1936)) are discussed, and the calcn. of their consts. is demonstrated for a given normal soda-lime silicate (window) glass. The deviations of the calcd. from the observed viscosities are rather great in Frenkel's formula (up to 15%), and with Khalkin's equation intolerable discrepancies are observed, especially at temps. below 1000°. Much more satisfactory results are found for a modified Frenkel formula: $\eta = a \cdot e^{b/T^n}$, in logarithmic form: $\eta = \log a + (b/T^n) \times \log e$ (temp. in Celsius degrees). The deviations from the measurements are only 4% at 900°, and less than 1% at higher temps. W. Eitel



CA

2

Viscosity of silicate glasses. M. V. Okhotin. *Steklo i Keram.* 8, No. 6, 5-7(1951).—Data on η of silicate glasses (*C.A.* 36, 6403[3]) indicate that, for a const. η, the temp., as a function of Na_2O content, is expressed by $t = a + bc$ [I] when Na_2O is 44–29% and by $t = \alpha\beta^c$ when Na_2O is 29–23%. In these equations, t is °C., c is percentage of Na_2O by wt., and a, b, α, and β are consts. the values of which are given for η of 10^3, $10^{3.5}$, 10^4, and 10^4 poises. A method of constructing the t = log η curve is described. Data on η of glasses of the ternary system Na_2SiO_3–$PbSiO_3$–SiO_2 having 50% SiO_2 (Skornyakov, *Physicochem. characteristics of the ternary system sodium oxide-lead oxide-silica*, 1949) indicate that, for a const. η, the temp., as a function of the PbO content (mol. %), is expressed by I, where c is concn. of PbO and a and b are consts. the values of which are given for η of 10^3, 10^4, and 10^5 poises. B. Z. Kanich

1952

OKHOTIN, V. V.

Journal of Applied Chemistry
June 1954
Industrial Inorganic Chemistry

Effect of alumina on the surface tension of glass. M. V. Okhotin and I. G. Bazhenuk-Melikova (*Steklo i Keramika*, 1953, [illegible]; *Glass Ind.*, 1954, 35, 78).—The addition of up to 5½ % of Al_2O_3 to the three glasses Na_2O 16, 16, 13·5, CaO 6, 8, 8, and MgO 3, 3, 3%, respectively, increased the surface tension (at 750—810°) by 3—6%. This explains the advantage of small additions of Al_2O_3 in the drawing of glass sheet.

J. A. SUGDEN.

OKHOTIN, M.V.; BAZHBEUK-MELIKOVa, I.G.

Surface tension of glass in a highly viscous condition. Steklo i Keram. 9, No.4, 12-14 '52. (MLRa 5:5)
(CA 47 no.18:9582 '53)

OKHOTIN, M.V.; BAZHENUK-MELIKOVA, I.O.

Effect of alumina on surface tension of glass in highly viscous condition.
Steklo i Keram. 9, No.6, 3-4 '52. (MIRA 5:7)
(CA 47 no.18:9582 '53)

OKHOTIN, M.V.; TSOY, R.I.

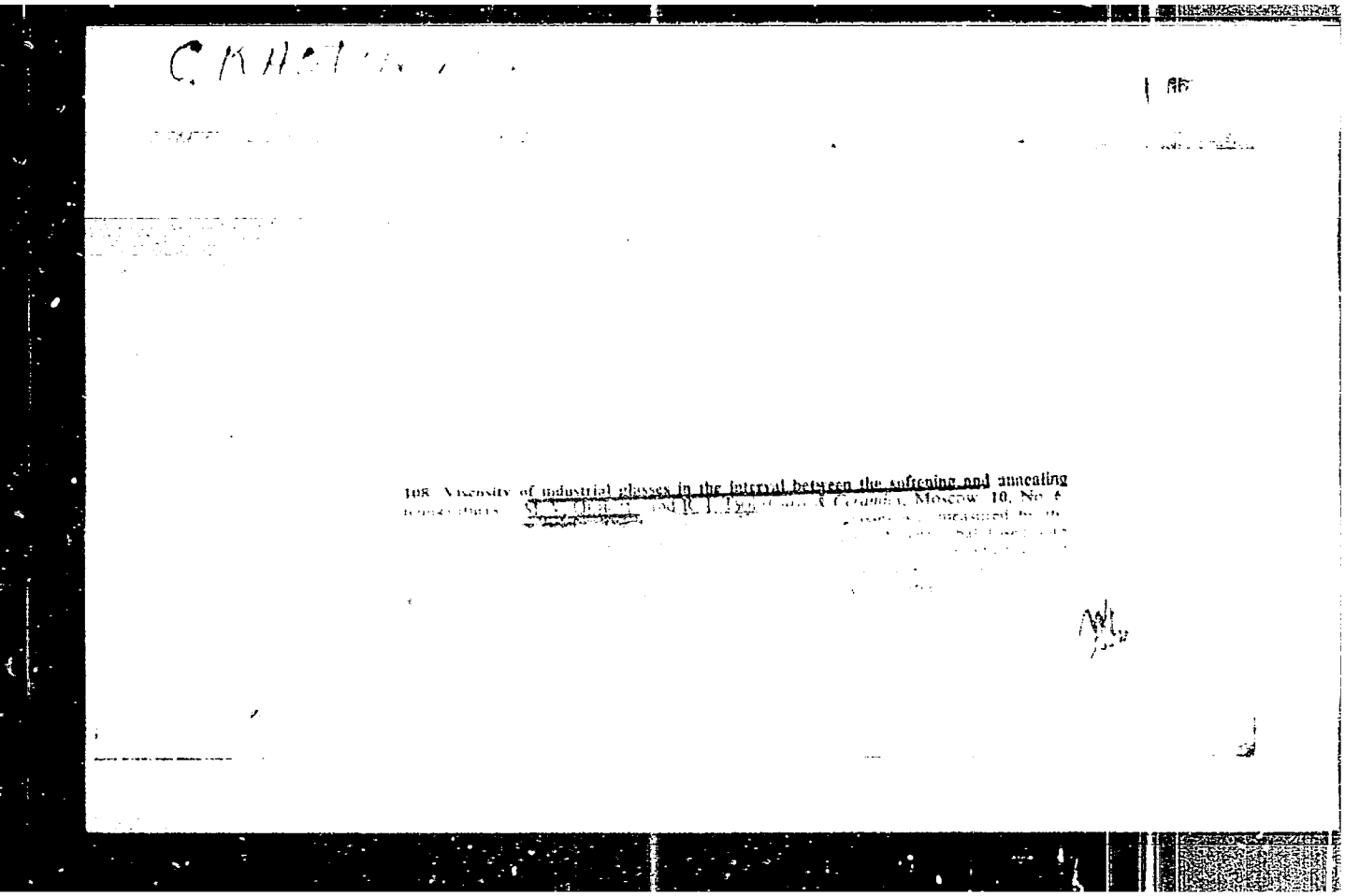
Viscosity of sodium-calcium-aluminum-silicate glasses within the interval of $10^{12.5}$ to 10^{3} poises. Steklo i Keram. 9, No.8, 3-6 '52. (MLRA 5:8)
(CA 47 no.18:9581 '53)

OKHOTIN, M. V.; BAZHENOK-BELIKOVA, I. G.

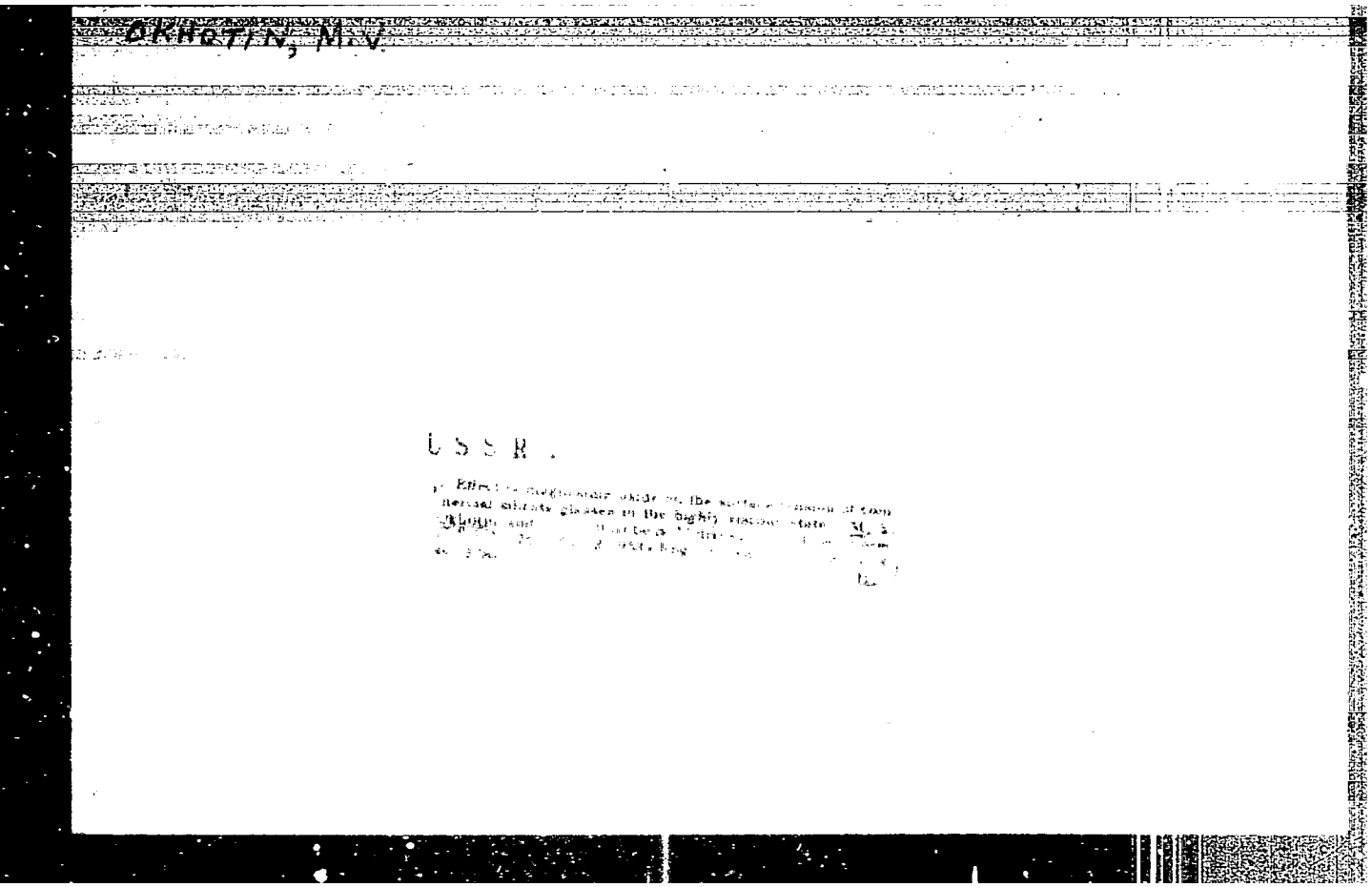
Surface Tension

Dependence of the surface tension of silicate glasses on temperature, Zhur. fiz. khim. 26, No. 12, 1952.

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



108. Viscosity of industrial glasses in the interval between the softening and annealing [illegible] Moscow 10, No. 6 [illegible] measured by the [illegible]



OKhotin, M.V.

Effect of MgO on surface tension of commercial silicate glasses in a highly viscous state. M. V. [illegible] and [illegible] Mezhova. *Zhur. Prikl. Khim.*, 26 [12] 1329-32 (1953).

Alumina magnesia glasses containing 18 Na_2O, 6 CaO, 0 to 4 MgO, 5 Al_2O_3, and 70 to 75% SiO_2 were tested. A vertically suspended thread of glass was heated over a small length in the upper section, and the temperature was determined at which the thread contracted at first under the influence of the surface tension and then extended under the influence of the weight of the thread. Calculation was made from $\sigma = Pl/4\pi$, where P is weight of thread from [illegible] and l point of zero deformation and r radius of thread. Diameters of threads were 0.17 to 0.2 mm and lengths were [illegible] mm. Surface tension decreased with rising temperature. The function was linear. Surface tension increased with Mg [illegible] content. The isotherms were linear. [illegible] Chem. Abstr. 1953 [illegible] 1963.

B.Z.Jr.

OKHOTIN, M. V.

A formula expressing the connection between the rate of crystallization and viscosity of commercial sodium-calcium-magnesium-alumino-silicate glasses. M. V. Okhotin ... 1953, No. 11 12 17; Referat. ... 1954, No. 13734.—The formula of Leont'eva expresses the dependence of the rate of crystn. of silicate glasses from viscosity: $v = K_1/\eta + K_2 \log \eta$, where K_1 and K_2 are const. and η is the coeff. of viscosity in poises. This formula holds only for the temp. region below the max. rate of crystn. By assuming that within small temp. intervals (separately above and below the temp. of the max. rate of crystn.) the relation of log v and log η to $1/T$ is linear, the following formula is derived: $v = A\eta^B$, where A and B are consts. A table listing rates of crystn. of 12 glasses obtained exptly., calcd. by the L. formula and by the O. formula is given. The table shows that the newly proposed formula expresses the rates of crystn. with greater accuracy. M. Hosch

OKHOTIN, M. V.

Surface tension of aluminum-magnesium glasses in high-viscosity state. M. V. Okhotin and L. G. Bashkirtsev-Mogilevka. *Trudy Khimiko-Tekhnol. Inst. Gorkogo*, No. 23, 18-22(1953); *Referat. Zhur. Khim.* 1953 No. 2[illegible]. The effect of Al_2O_3 and MgO on the surface tension of glass was studied by the filament method. In the glasses under study, the surface tension has a linear relation to the temp. regardless of temp. Al_2O_3 of up to 5% of MgO content of SiO_2 increases the surface tension. The linear nature of the isotherms is connected with the absence of definite [illegible] compds. Additions of up to 1% of SiO_2 by Al_2O_3 increases surface tension. Increasing Al_2O_3 up to 2% lowers the surface tension. A further increase in Al_2O_3 again raises the surface tension. The extreme nature of the isotherms is connected with the solubility of compd formation, and it is assumed that replacing SiO_2 by Al_2O_3 causes structural changes in the glass. The temp.-surface tension relations in silicate glasses are given over a wide range of temps.

M. Hosch

USSR/ Chemistry - Analysis methods

Card 1/1 Pub. 104 - 3/12

Authors : Okhotin, M.V., Dr. of Chem. Sc., Professor

Title : Viscosity of industrial silicate glass determined according to nomograms

Periodical : Stek. i ker. 1, 7-11, Jan 1954

Abstract : Nomograms formulated according to formula $t = ax + by + cz + d$ (t = temperature; x = percentage volume of Na_2O; y = percentage volume of $CaO + MgO$; z = percentage volume of Al_2O_3; a, b, c, d, = coefficients), were introduced for the determination of the viscosity of industrial silicate glass in intervals of from 10^3 - 10^{13} poises. Examples are given showing how these nomograms are used in determining the viscosity of glass. Two references: 1 USA and 1 USSR (1942-1952). Tables; nomograms.

Institution: .....

Submitted: .....

OKHOTIN, M. V.

USSR/Miscellaneous Glass Industry

Card : 1/1

Authors : Okhotin, M. V., Dr. of Chem. Sc. Prof; Levina, K. S. and Ilyas[illegible]

Title : Crystallization of silicate glass investigated by the hardening [illegible]

Periodical : Stek. i Ker., No. 6, 8 - 11, June 1954

Abstract : The process of crystallization of silicate glass was investigated by the hardening method. The linear rate of crystallization of [illegible] tested sample was determined at temperatures ranging from 80° and higher. In the temperature range approaching the maximum limit of crystallization the determinations were made every 25°. The test arrangement and results obtained are described. Table, drawings, graphs.

Institution : ....

Submitted : ....

OKHOTIN, M V.

USSR/ Chemistry - Glass manufacture

Card 1/1 Pub. 104 - 3/14

Authors : Okhotin, M. V., Dr. Chem. Sci., Prof.; and Levina, R. S.

Title : Effect of increasing the MgO content on the crystallization of glass.

Periodical : Stek. i ker. 11/11, 6-9, Nov 1954

Abstract : Seventeen types of glass are discussed, which differ in composition. These are divided into six groups in accordance with the maximum number of crystallic forms for each. Graphs are presented which show the speed of crystallization for all seventeen types in accordance with the formula, $V = f(t^{\circ})$. It is found that as the proportion of MgO is increased in substitution of CaO, the speed of crystallization is reduced. Graphs; table.

Institution: .....

Submitted: .....

OKH...

Crystallization of Na-Ca-Mg-Al borosilicate glasses. M. V. Okhotin and ... Trudy ... Nauch.-Issledovatel. ... 1954, ... 11-14; Referat. Zhur. Khim. 1956, Abstr. No 38342.—An investigation is made on the crystn. speed of ... borosilicate glasses with the purpose of finding the effect of B_2O_3 on the properties of ... glasses. In most of the ... lowers ... in place of SiO_2 and CaO ... and Na_2O, increases the crystn. ... recommended for use in industry.

N. Vasilieff

OKhotin, M.V.

USSR/ Chemistry - Chemical technology

Card 1/1 Pub. 147 - 9/27

Authors : Okhotin, M.V.

Title : The effect of viscosity on the rate of crystallization of silicate glass

Periodical : Zhur. fiz. khim. 28/2, 254-257, Feb 1954

Abstract : The problem concerning the effect of viscosity on the crystallization of silicate glass is analyzed. Data obtained in accordance with formulas derived by A.A. Leontyev and the author are given for types of glass the compositions of which are described in one of the tables. Three [illegible] references (1932-1947). Tables.

Institution: The Glass Institute, Moscow

Submitted : April 19, 1953

Okhotin, M. V.

Effect of soda-potash mixture on the crystallization and fusion of window pane glass. M. V. Okhotin, I. D. Tykachinskii, R. S. Levina, G. S. Bogdanova, and S. Yu. Rul. *Trudy Vsesoyuz. Nauch.-Issledovatel. Inst. Stekla* 1954, No. 34, 3-9; *Referat. Zhur., Khim.* 1955, No. 811.— The suitability of the soda-potash mixt. obtained as a by-product in Al_2O_3 plants operating on nepheline in glass melting was investigated. The mixt. contained K_2CO_3 32.8 and Na_2CO_3 63.8%. Exptl. glass was melted in crucibles and kept for 4 hrs. at 1430°. The glass was then poured from the crucibles, annealed, and its physicochem. properties were examd. visually. It was concluded that the soda-potash mixt. could be used in batches of sheet glass to replace soda partly or entirely, in the latter case the working temp. of the glass was raised by 40-50°. A glass contg. in its alk. component 7.5% K_2O was in its properties identical with a glass contg. only Na_2O. M. Florin

(4)

OKHOTIN, K. V.

Journal of Applied Chemistry
June 1954

(2) 3

Viscosity of sodium-calcium-aluminium silicate glasses. K. V. Okhotin and R. L. Tsai (*Steklo i Keramika*, 1952, 9, 3; *Glass Ind.*, 1954, 35, 104—105).—Fibre extension measurement data (505—802°) for 23 glasses are recorded (log η = 6·35—8·74).

J. A. Sudden.

OKHOTIN, M. V.

USSR/ Chemistry - Physical chemistry

Card 1/1 Pub. 147 - 2/21

Authors : Okhotin, M. V.

Title : Calculation of the viscosity of silicate glass in the interval of $10^6 - 10^{10}$ poises

Periodical : Zhur. fiz. khim. 29/10, 1751-1754, Oct 1955

Abstract : It is shown that by using a certain exponential formula which expresses the relation between viscosity and temperature it is possible to calculate the temperature at a given viscosity for silicate glass of a certain composition. It was established experimentally that by empl[illegible] poises for types of glass in which the Na_2O content varied [illegible] 16%, the CaO content from 5 to 9%, MgO [illegible] 5% and [illegible] These [illegible]

Institution : Institute of Glass, Moscow

Submitted : May 31, 1954

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

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 5188

Author: Tykachinskiy, I. D., Botvinkin, O. K., Puneyeva, L. I., Levina, R. S., Okhotin, M. V., Rogozhin, Yu. V., Syritskaya, Z. M.

Institution: None

Title: Development of Alkali-Free and Low-Alkali Glass Compositions and of the Technology of Their Melting and Fabrication

Original Publication: Steklo i keramika, 1956, No 6, 1-6

Abstract: Presentation of the results of work on the development of boron-free, alkali-free or low-alkali glasses, suitable for mechanized manufacture of mass production articles. Selection of the compositions was based on a four component system SiO_2-Al_2O_3-CaO-MgO, and research dealt primarily with the region of ternary eutectic, of MP 1,222°, having the composition (in % by weight): SiO_2 61.9, Al_2O_3 18.5, CaO 10.2 and MgO 9.4. To facilitate melting additions of CaF_2, B_2O_3, Na_2O,

Card 1/2

OKHOTIN, M.V.

Dependence of the viscosity of silicate glass on its chemical composition in the interval of 10^3 - 10^7 poises. Zhur.prikl. khim. 29 no.8:1287-1292 Ag '56. (MIRA 10:10)
(Viscosity) (Glass manufacture--Chemistry)

OKHOTIN, M.V., doktor khimicheskikh nauk, professor; LEVINA, R.S., kandidat tekhnicheskikh nauk.

Comparing data on the crystallisation and viscosity of the most efficiently composed industrial glasses used in the vertical drawing of sheet glass. Trudy VNIIStekla no.36:3-19 '56. (MLRA 9:11)

(Glass manufacture)