

APPEL, J.
SUCIATE, Givon Namoa

APPEL-J.

(1)

Country: Czechoslovakia

Academic Degrees: / not given /

Affiliation: Microbiological Department, Research Institute of Freezing Technology
(Mikrobiologické oddelení, Vyskumný ústav mraziarenský), Bratislava.

Source: Bratislava, Farmaceutický Obzor, Vol XXX, No 6, 1961, pp 168-177

Data: "Drying Under Zero /Centigrades/ Temperature. II. Possibility of
Applying Lyophilization."
ph

209

GPO 981643

APPASOV, R.N.

Hemosporidia in horses in southern Kazakhstan and the tickcarrier
of hemosporidiosis. Izv.AN Kazakh.SSR.Ser.paraz. no.7:22-29 '49.

(MLRA 9:5)

(Kazakhstan--Hemosporidia) (Parasites--Horses) (Ticks)

USSR/Zooparasitology - Parasitic Protozoa.

G-1

Abs Jour : Ref Zhur - Biol., No 10, 1958, 43370

Author : Appasov, R.N.

Inst :

Title : Prevalence of *Balantidium Suis* Among Domestic Swine of Kazakhstan.

Orig Pub : Tr. In-ta zool. AN KazSSR, 1957, 7, 265-269.

Abstract : In 15 hog-raising farms studied in South, Southeast and Eastern Kazakhstan, hogs (of which 4453 were examined) of all ages and all breeds proved to be infected by balantidia. In sandy localities the degree of hog infection is lower (3.1%) than in the foothills and mountains (68.1%); in the spring there is less infection than in fall (36.9 and 91.0% respectively).

Card 1/1

- 1 -

COUNTRY : USSR
CATEGORY : Zooparasitology. Infusoria G
ABS. JOUR. : RZhBiol., No. 4 1959, No. 14970
AUTHOR : Appasov, R. N.
INST. : Institute of Zoology, AS KazSSR
TITLE : Balantidia of Man and of Wild and Domestic
Animals in Kazakhstan
ORIG. PUB. : Tr. In-ta zool. AN KazSSR, 1958, 9, 198-202
ABSTRACT : 232 wild animals (mammals, reptiles, fishes and
birds), 713 domestic pigs, and 467 humans were
examined for the presence of balantidia (B).
Total infestation with B (in %) was: boars 80,
domestic pigs 66.6, humans who had been in con-
tact with pigs 22.2, and children of preschool
age 2.6. Single vegetative forms of B and their
cysts were found in the contents of the large in-
testine of one common microtus (out of 18). Only
1/2

CARD:

APPASOV, R.N.

Materials on protozoan intestinal parasites of swine in some regions
of the Kazakh S.S.R. Trudy Inst. zool. AN Kazakh. SSR 9:203-209
'58.

(Kazakhstan--Protozoa, Pathogenic)
(Parasites--Swine)

(MIRA 11:7)

APPASOV, R. N.

"The Feeding Effect on the Balantidiasis of Pigs."

Tenth Conference on Parasitological Problems and Diseases with Natural Reservoirs, 22-29 October 1959, Vol. II, Publishing House of Academy of Sciences, USSR, Moscow-Leningrad, 1959.

Institute of Zoology of the Kazakh Academy of Sciences, Alma-Ata

APPASOV, R.N.

Intestinal parasites of man and swine in Alma-Ata Province.
Trudy Inst.zool.AN Kazakh.SSR 12:86-90 '60.

(MIRA 13:7)

(Alma-Ata Province--Balantidium Coli)

APPASOV, R.N.

Cultivation of swine balantidia. Trudy Inst. zool. AN Kazakh.
SSR 14:188-189 '60. (MIRA 13:12)
(Balantidium)

APPASOV, R. N.

Occurrence of intestinal protozoa in amphibians. Trudy Inst.
zool. AN Kazakh. SSR 16:213-214 '62. (MIRA 15:10)

(Kazakhstan-Protozoa, Pathogenic)
(Kazakhstan-Parasites-Amphibia)

APPASOV, R. N.

Intestinal protozoa in house mice. Trudy Inst. zool. AN Kazakh.
SSR 16:214 '62. (MIRA 15:10)

(Alma-Ata Province—Protozoa, Pathogenic)
(Alma-Ata Province—Parasites—Mice)

APPASOV, R.N.

Fauna of intestinal Protozoa of a wild boar (*Sus scrofa* L.) in
southeastern Kazakhstan. Trudy Inst. zool. AN Kazakh. SSR 19:
58-59 '63. (MIRA 16:9)

(Kazakhstan--Parasites--Wild boar)
(Kazakhstan--Protozoa, Pathogenic)

APPASOV, R.N., kand. biolog.nauk

Some data on the epizootiology of balantidiasis of swine in
Kazakhstan. Veterinariia 41 no.9:60-62 S '64. (MIRA 18:4)

1. Institut zoologii AN Kazakhskoy SSR.

APPASOV, R.N., kand. biolog. nauk

Brown rats as carriers of pathogenic intestinal parasites.
Veterinariia 42 no.8:64-65 Ag '65. (MIRA 18:11)

1. Institut zoologii AN Kazakhskoy SSR.

L 23160-66 EWT(1)/T JK

ACC NR: AP5023733 (A) SOURCE CODE: UR/0346/65/000/008/0064/0065

AUTHOR: Appasov, R. N. (Candidate of biological sciences)

ORG: Zoology Institute of the Academy of Sciences Kazakh SSR (Institut zoologii Akademii Nauk Kazakhskoy SSR)

TITLE: Gray rats -- carriers of intestinal pathogenic parasites

24
23
0

SOURCE: Veterinariya, no. 8, 1965, 64-65

TOPIC TAGS: animal disease, animal husbandry, animal parasite, rat

ABSTRACT: Investigations were conducted in Tselin Kray during 1961 to 1963 to identify the species of intestinal parasites carried by gray rats at various types of farms and meat plants. In the 1043 gray rats examined, 11 species of protozoan parasites were found (Balantidium coli, Entamoeba tuna E. histolytica, E. muris, E. coli, Amoeba muris, Endolimax muris, Jodamoeba muris, Trichomonas muris, Chilomastix muris, Lamblia muris, Coccidia) and 5 species of helminthic parasites (Hymenoleps muris, Trichocephalus muris, Tricascaris muris, Hydatigera taeniaeformis, Stongylata). Gray rats in contact with pigs were found to carry more intestinal parasites. Gray rats on dairy farms carried 2 species, gray rats at meat plants carried 5 species, and gray rats on pig farms

Card 1/2

UDC: 619:569.323.4

L 23160-66

ACC NR: AP5023733

carried from 7 to 11 species. In cross infection experiments in which pigs were infected with B. coli of gray rats and gray rats were infected with B. coli of pigs the results proved positive and confirmed literature data. Biologically, culturally and morphologically the B. coli of gray rats does not differ from the B. coli of pigs; and, the morphological and cultural properties of the histolytica type of amoeba of gray rats are identical to those of Entamoeba histolytica. On the basis of the present study it is concluded that in Tselin Kray gray rats are not only carriers of B. coli and E. coli, but are also sources of infections for pigs. Orig. art. has: 1 table.

SUB CODE: 06/ SUBM DATE: none.

111-58-7-19/27

1. G. A. Head of the Fergana Communications Office

2. B. Improving the Work of the Communications Office
 (Kontory aktivatsiya: funktsionnaya rabota kontory svyazi)

3. JOURNAL: Vestnik svyazi, 1968, Nr 1, pp 29-30 (USSR)

4. SUMMARY: The article describes how the work of the Fergana Communication Office has been improved and services to the surrounding industrial enterprises extended by the use of new equipment and techniques.
 There are 2 photos.

5. ASSOCIATION: Ferganskaya kontora svyazi i telegrafii; SSR (The Fergana Communications Office, 111-58-7-19/27)

6. Communications Development

APFAZOV, A.A.

How we improve the work of a communications office. Vest. svyazi 18
no.7:29-30 J1 '58. (MIRA 11:9)

1. Nachal'nik Ferganskoy kontory svyazi UzSSR.
(Fergana--Communication and traffic)

ACC NR: AM6021064

Monograph

UR/

Appazov, Refat Fazilovich; Lavrov, Svyatoslav Sergeyevich; Mishin, Vasilii Pavlovich

Ballistics of long-range guided rockets (Ballistika upravlyayemykh raket dal'nego deystviya) Moscow, Izd-vo "Nauka", 1966. 306 p. illus., biblio. 7000 copies printed.

TOPIC TAGS: ballistic missile, ballistics, ballistic trajectory

PURPOSE AND COVERAGE: This book serves as an introduction to the study of the ballistics of long-range missiles. It discusses flight theory and methods of calculating trajectories. The author expresses appreciation to P. P. Karaulov, S. S. Rozanov, and M. S. Florianskiy for their assistance in preparing various paragraphs of the book. There are 13 references, all Soviet.

TABLE OF CONTENTS (Abridged)

Foreword -- 5

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Part One. General movement theory

Ch. I. Coordinate systems -- 13

Ch. II. Forces and moments acting on a missile -- 20

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UDC: 629.191

ACC NR: AM6021064

- Ch. III. General equations of motion -- 44
- Ch. IV. Simplification of equations of motion -- 70
- Ch. V. Theory of flight at high altitudes -- 107

Part Two. Ballistic calculations of long-range guided missiles

- Ch. VI. Method of planning the calculation of flight characteristics -- 147
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- Ch. VIII. Stating the problem -- 213
- Ch. IX. Effect of small disturbance factors on a missile's trajectory. Dispersion calculations -- 219

Part Four. Selecting the trajectory configuration

- Ch. X. Stating the problem of the choice of a program -- 277
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SUB CODE: 16/ SUBM DATE: 21Feb66/ ORIG REF: 013/

Card 2/2

APPEK, P. YE., Prof

PA 10/49T56

USAR/Engineering
Stoves

Jul/Aug 48

"Reviews and Bibliography" 1 p

"Vest Inzhener i Tekhnik" No 4

Unfavorable reviews of following books: (1) "Album of Heating Stoves and Cookers for Air Force Living Quarters," compiled by Prof P. Ye. Appek, Consultant, Sci Res Inst of Airfield Constr (NIAS) of Army and Air Force; published by Air Dept, 1946. Treats design and installation of stoves and cookers. Contains 35 sketches. (2) "Stoves," by Engr V. F. Afanasov, published by Ministry of Command Econ RSFSR, 1947. Intended as a handbook for stove maintenance engineers. Books are not up-to-date.

10/49T56

RUMANIA / Human and Animal Morphology (Normal and Pathological). S
Nervous System. Central Nervous System.

Ans Jour : Ref Zhur - Biologiya, No 9, 1958, No. 40773

Author : Hornet, Th.; Marcovici, G.; Petrescu, A.; Appol, E.
Inst : Not given

Title : Histochemical Experimental Investigation of the
Phosphatases of the Brain Under Normal Conditions
and in Disorders of Circulation

Orig Pub : Bul. stiint. Sec. med., 1956, 8, No 2, 433-444

Abstract : The alkaline phosphatase (AP), investigated by the method
of Gomori and Dorfman-Epstein, is demonstrated normally
in the cortex of the brain of rabbits in the nucleus
(in the nucleolus, in the chromatin net and in the
nuclear envelope) and in the intercellular matter. The
greatest quantity of AP is contained in the III, IV and V
layers of the cortex. In cats a markedly manifested

Card 1/2

RUMANIA/Virology. Human and Animal Viruses (Poliovirus).

Abs Jour: Ref Zhur-Biol., No 14, 1958, 62133.

Author : Ionescu-Mihaiesti, C., Hornet, Th., Appel, E.,
Zamfirescu, M.

Inst :

Title : Alkaline-Phosphatase Activity in Experimental
Poliovirus.

Orig Pub: Studii siceretari neurol. Acad. RPR. Inst. neurol.
1957, 2, No 2, 151-158.

Abstract: No abstract.

Card : 1/1

KHORNETS, T.[Hornet, T.]; VOYNESKU, S.[Voinescu, S.]; APPEL', E.
[Appel, E.]; MARKOVICH, G.[Marcovici, G.]

Small structural changes in the brain in hypertension without
vascular disorders and with acute disorders of cerebral blood
circulation. Nauch. trudy Inst. nevr. AMN SSSR no.1:444-449
'60. (MIRA 15:7)

1. Institut neurologii imeni Pavlova Akademii Rumynskoy Narodnoy
Respubliki, Bukharest.

(HYPERTENSION) (CEREBROVASCULAR DISEASE)

HORNET, Th.; CONSTANTINESCU, N.; APPEL, E.; DRAGHICI, L.

Experimental demyelinating allergic encephalomyelitis; relations
between demyelination and enzymes. Rev. sci. med. 5 no.3/4:173-
176 '60.

(ENCEPHALOMYELITIS exper.) (PHOSPHATASES physiol.)
(NEUROLOGIA pathol.)

NISSIM, F.; APPEL', E.

An experimental study of spinal cord synapses and their changes
after experimental convulsive seizures induced by electroshock.

Rev. sci. med. 5 no.3/4:219-222 '60.

(SPINAL CORD physiol.) (CONVULSIONS exper.)

UNGER, Yu.[Ungher, Yu.]; VOLANSKIY, D.[Volanschi, D.]; CHURYA, E.
[Ciurea, E.]; APPEL', E.[Appel, E.]

Changes in higher nervous activity and the electrical activity
of the brain in dogs in experimental lesion of the nonspecific
nuclei of the optic thalamus. Nauch. trudy Inst. nevr. AMN SSSR
no.1:382-394 '60. (MIRA 15:7)

1. Institut neurologii imeni Pavlova Akademii Rumynskoy Narodnoy
Respubliki, Bukharest.

(NERVOUS SYSTEM) (OPTIC THALAMUS—SURGERY)
(CONDITIONED RESPONSE)
(ELECTROENCEPHALOGRAPHY)

APPEL', E.

Role of histochemical methods in the study of the nervous system. Adenosinetriphosphatase and acetylcholinesterase in the neuroglia. Zhur. nevr. i psikh. 65 no.1:13-18 '65.
(MIRA 18:2)

1. Institut nevrologii (direktor A. Kreyndler), Bukharest.

L 23768-66 RO

ACC NR: AP6014798

SOURCE CODE: UR/0246/65/065/001/0013/0018

AUTHOR: Appel, E. -- Appel, E.

34
0

ORG: Institute of Neurology, Bucharest

TITLE: Role of histochemical methods in study of the nervous system (adenosine triphosphatase and acetylcholinesterase in neurology)

22

SOURCE: Zhurnal nevroptologii i psikiatrii, v. 65, no. 1, 1965, 13-18

TOPIC TAGS: neurology, biochemistry, histology, organic phosphorus compound, central nervous system, dog, cerebral cortex

ABSTRACT: The article contains a discussion of the significance of histochemical methods of investigating adenosine triphosphatase and acetylcholinesterase in study of the central nervous system. These methods facilitate broad morphofunctional interpretation of data and reveal tissue formations which are difficult to observe with ordinary histological methods. Data are presented on glial tissue of the canine cerebral cortex. The method of Wachstein and Meisel was used to reveal adenosine triphosphatase, and the method of Gomori was used to reveal acetylcholinesterase. Orig. art. has: 4 figures. [JPRS]

SUB CODE: 06, 07 / SUBM DATE: 31May64 / OTH REF: 006

2

Card 1/1 PB

UDC: 616.831-018.84-008.9-092.18-074

APPEL', S.A.; TILEVICH, M.I.; MONFRED, Yu.B.; MIKHANOVSKIY, D.S.; MESINEV, G.;
TATARINOV, A.S.; TULYAKOV, A.P., inzh.

Hot molding of keramzit concrete panels at the Serpukhov Housing
Construction Combine. Stroil. mat. 11 no.10:8-9 0 '65.

(MIRA 18:10)

1. Nachal'nik Serpukhovskogo domostroitel'nogo kombinata (for Appel').
2. Glavnyy inzh. Serpukhovskogo domostroitel'nogo kombinata (for Tilevich).
3. Zamestitel' direktora TSentral'nogo nauchno-issledovatel'skogo i proyektного instituta tipovogo i eksperimental'nogo proyektirovaniya zhilishcha (for Monfred).
4. Rukovoditel' laboratorii TSentral'nogo nauchno-issledovatel'skogo i proyektного instituta tipovogo i eksperimental'nogo proyektirovaniya zhilishcha (for Mikhanskiy).
5. Rukovoditel' gruppy TSentral'nogo nauchno-issledovatel'skogo i proyektного instituta tipovogo i eksperimental'nogo proyektirovaniya zhilishcha (for Mesinev).
6. Nachal'nik KPD-2 Industroyproyekta (for Tatarinov).

APPEL', S.G.

This standard should be reviewed. Standartizatsia 29 no.1:58
Ja '65. (MIRA 18x4)

KAPUSTIN, V.A.; APPEL', S.G.

Problem concerning the fuel power resources of the agricultural
districts of the Tatar A.S.S.R. Trudy Kazan.fil.AN SSSR.Ser.
energ.i vod.khoz. no.2:59-73 '61. (MIRA 15:3)
(Tatar A.S.S.R.--Fuel)

S/109/60/005/008/014/024
E140/E355

26.23.22
93/20 (1003, 1137, 1140)

AUTHOR: APP. G.
TITLE: Secondary Emission of Antimono-caesium and Bismuth-caesium Layers

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol. 5, No. 8, pp. 1291 - 1298

TEXT: No satisfactory explanation has yet been advanced for the high secondary-emission factors of Cs₃Sb films. A study has been made of Sb-Cs systems with varying compositions. A typical curve of the conductivity of the film against proportion of Cs in the system is given in Fig. 1. Curve b was measured by the author and Curve a is that of Miazawa. The intermediate maximum determined by Miazawa was less marked in the present author's measurements and was obtained only for carefully heated layers. Secondary emission was measured for the pure metal for compounds corresponding to the first and second (third in Miazawa's work) maxima and for a compound corresponding to a greater percentage of Cs than in Cs₃Sb.

Card 1/4

S/109/60/005/008/014/024
E140/E355

Secondary Emission of Antimono-caesium and Bismuth-caesium
Layers .

Acknowledgments are made to Yu.S. Filatov for translation and
to A.M. Kharchenko and S.A. Fridrikhova for assistance in
editing the paper. There are 9 figures and 2 tables.

Card 3/4

S/109/60/005/008/014/024
E140/E355

Secondary Emission of Antimono-caesium and Bismuth-caesium
Layers.

ASSOCIATION: G. Hertz Institute, Germany Academy of
Sciences, Berlin.

SUBMITTED: December 21, 1959

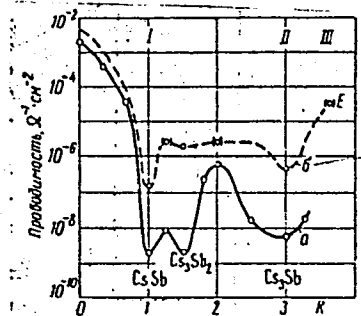


Рис. 1. Изменение проводимости
Sb — Cs в зависимости от содер-
жания Cs (R — отношение содер-
жания Cs/Sb):
а — по Мизава; б — наши измерения

Card 4/4

SLAVIK, J.; SLAVIKOVA, L.; APPELT, J.

Alkaloids of the poppy family (Papaveraceae). Pt.28. Coll Cz
Chem 30 no.3:887-891 Mr '65.

1. Institut fur medizinische Chemie, Purkyne-Universitat,
Brno. Submitted June 29, 1964.

VRTILEK, Vladimir; SLAMOVA, Ludmila; APPELT, Jiri

Changes in the cholesterol content of the body in mice after alloxan-induced diabetes. Scr. med. fac. med. Brunensis 36 no.1/2:55-60 '63.

1. Katedra lekarske chemie lekarske fakulty University J.E. Purkyne v Brne Vedouci prof. dr. Oktavian Wagner Katedra biochemie a mikrobiologie farmaceuticke fakulty University Komenskeho v Bratislave Vedouci prof. DrMr. Antonin Jindra.
(ALLOXAN DIABETES) (CHOLESTEROL)

CZECHOSLOVAKIA

SLAVIK, J.; APPELT, J.

Institute for Medical Chemistry, Purkyne University,
Brno (for both).

Prague, Collection of Czechoslovak Chemical Communications,
No 11, November 1965, pp 3687-3696.

"Papaveraceae alkaloids. Part 29: On some papaverine-
type alkaloids."

H-12

COUNTRY: : Poland

CATEGORY : Chemical Technology. Chemical Products and Their Applications--Electrochemical industry. Electro-
18563

ABS. JOUR. : RZKhim., No. 51960, No.

AUTHOR : Appelt, K., Elbanowski, M., and Janko, A.

DATE : NOT GIVEN

TITLE : Experience with the Application of Potential Measurements on Powder Electrodes and of Investigations on the Catalytic Properties of Powders in the Char-

ORIG. PUB. : Przemysl Chem, 98, No 3, 156-159 (1959)

ABSTRACT : Several new methods for the determination of the basic properties of lead powders (P) characterizing the behavior of the active mass in accumulators have been tested. Two P prepared in ball mills and a P prepared by dispersion in air [colloidal mill?] were used in the investigation. For a more complete study of the P, the properties of the tetragonal and rhombohedral modifications of PbO obtained from the P under investigation were also studied. The adsorption potential of P prepared in ball mills is

WORD: 1/4 plating. Galvanic cells.

**acterization of Lead Powders Used in Accumulators.

COUNTRY : Poland
CATEGORY :

H-12

ANG. JOUR. : RZKhim., No. 5 1960, No.

18553

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : considerably higher (about 700 mv) than the potential for P prepared by dispersion (about 170 mv). X-ray structure analysis has shown that the former P contain metallic Pb and tetragonal PbO with a deformed space lattice, whereas the P prepared by dispersion contains tetragonal and rhombohedral PbO in the form of large crystallites with undeformed lattices along with metallic Pb. Measurements of catalytic activity by the peroxide oxidation of indigo carmine in the presence of a specially

CARD: 214

247

CONTENTS :
 CATEGORIZ :
 ASS. JOUR. : RZKhim., No. 1960, No. 1000
 AUTHOR :
 TITLE :
 ORIG. PUB. :
 ABSTRACT : prepared catalyst, 1960, No. 10, 1000
 refers to catalytic activity differences between the
 two groups of... It has been established that the
 nature of reaction intermediates depends
 upon specific characteristics of the nature of the
 reaction... the crystallites... the
 nature of the crystallites and the poly-
 meric modification of FeO with incompletely
 formed lattice. The nature of determining cataly-

Distr: $LiE2c(m)$

Adsorption-potential measurements on various manganese dioxides and their depolarizability. J. K. Ansel and M. Bilanowski (Centralne Lab. Akumulatorow i Ogniow, Poznan, Poland). *Electrochim. Acta* 3, 149-8 (1960) (in German).—In order to distinguish and characterize various natural and electrolytic pyrolusites which find their application in the storage-battery industry, the detn. of the adsorption potentials of powder electrodes was carried out. Such measurements very significantly sep. the samples into 2 groups, the natural and the synthetic pyrolusites, and made possible the detn. of each type within the limits of its group. Attention is called to the adsorption and ion-exchange properties of the powders. P. Van Rysselberghe

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MJC(JD)
1

APPELT, Kazimierz; CZEMPLIK, Wladyslaw; ELBANOWSKI, Marian

Studies on lead spray powder and its application in the
production of batteries for traction. Przem chem 39
no. 10:613-615 0 '60.

1. Centralne Laboratorium Akumulatorow i Ogniw, Poznan

24.2100

S/196/62/000/021/004/007
E194/E135

AUTHORS: Purol, Henryk, and Appelt, Kazimierz

TITLE: A method of determining the depolarising properties of activated charcoal and organic depolarisers and equipment for carrying out the method

PERIODICAL: Referativnyy zhurnal, Elektrotehnika i enertika, no.21, 1962, 12, abstract 21 A 72 P. (Polish pat. cl. 21b, 6/02, no.45371, February 20, 1962)

TEXT: The depolarising properties of activated charcoal or organic depolarisers are determined by discharge through a test cell in which the depolariser is maintained under constant pressure. The duration of discharge of a certain current to a certain voltage is a measure of the depolarising capacity of the given depolariser. The test cell consists of a carbon cathode, depolariser, filter paper and zinc anode. The cell is located in a tube of electrical insulating material and the depolariser is maintained under constant pressure by a spring fixed in the upper part of the tube.

VB

Card 1/2

S/196/62/000/020/005/021
E194/E155

AUTHORS: Forecki, Edward, and Appelt, Kazimierz

TITLE: Method of making manganese (accumulator) cells

PERIODICAL: Referativnyy zhurnal, Elektrotehnika i energetika, no.20, 1962, 14-15, abstract 20 A 84 P. (Polish Pat. cl. 21b, 10/01; no.45195, December 3, 1961).

TEXT: A special feature of this manufacturing patent is that the positive electrodes are pressed from a compound either containing MnO₂, acetylene carbon black, NH₄Cl and water, and not containing graphite and 12-13% water. [Abstractor's note: Sic.] To strengthen the cell surfaces they are maintained for a day under normal ambient conditions. The electrodes have good mechanical strength, despite the absence of a cover. An auto-thickening electrolyte prevents accelerated diffusion of water from the electrolyte into the electrode when the temperature is raised.

ASSOCIATION: Centralne Laboratorium Akumulatorow i Ogniwo (Central Accumulator and Battery Laboratory)

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

S/081/62/000/022/045/088
B180/B186

AUTHORS: Pióro, Jan, Appelt, Kazimierz, Kossowicz, Ludwik
TITLE: Storage battery filling compound particularly suitable for acid batteries

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 22, 1962, 345, abstract 22K173 (Pol. pat. 44821, June 20, 1961)

TEXT: An addition agent is suggested to improve the plasticity and adhesive properties of filling compounds for acid storage batteries. This is the asphalt which is obtained as a by-product from the selective refinement of oils where organic solvents are used. It contains 50-60 % aromatic hydrocarbons. The resulting composition is not subject to cracking in the temperature range from -45 to 60°C. [Abstracter's note: Complete translation.] ✓

Card 1/1

APPELTAUER, I., ing.; BARTA, T., ing.

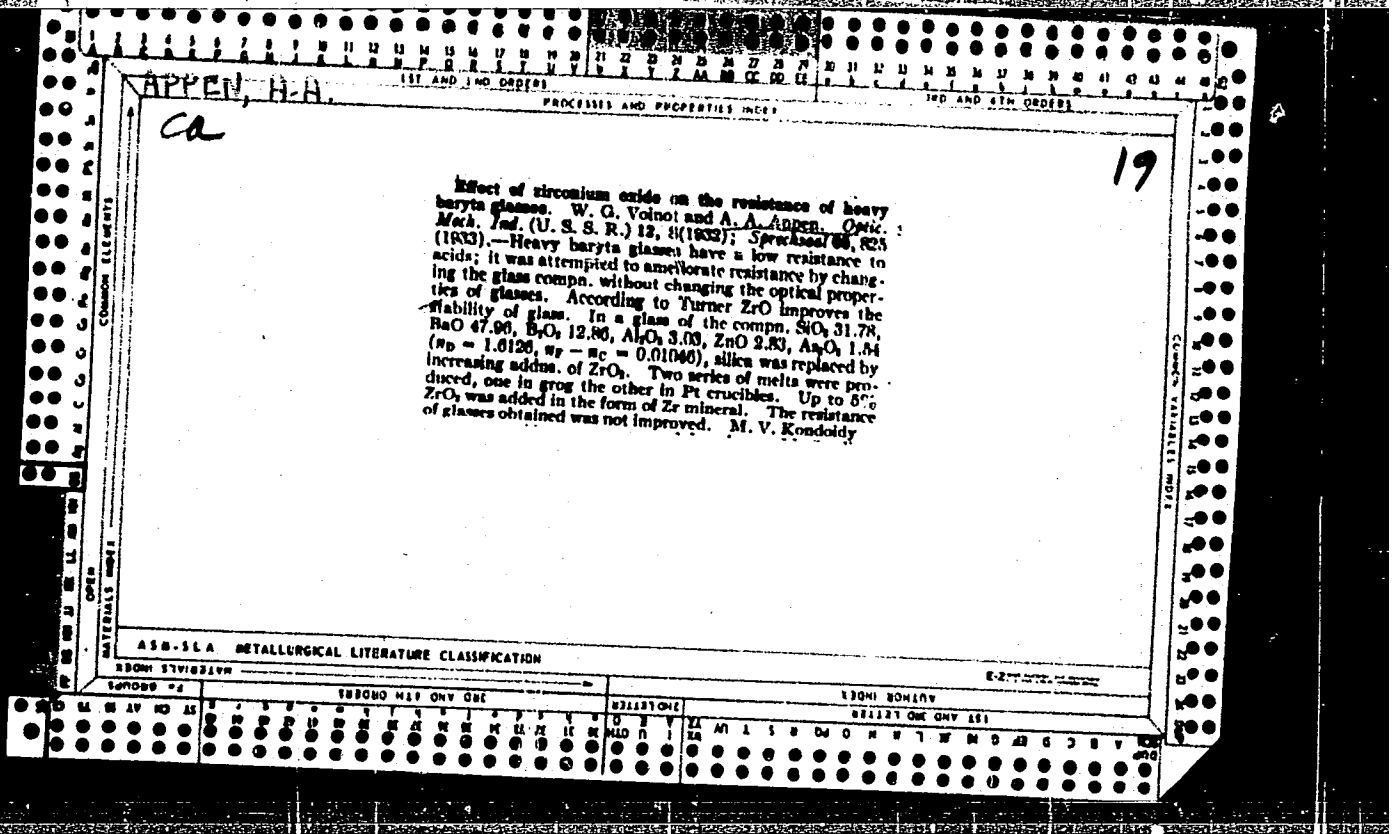
Stability of frameworks; stability calculation of
steel frames. Pt.2. Bul. cerc constr sistemat no.2:39-62
162.

1. Sectia de cercetari Timisoara, Institutul de cercetari
in constructii si economia constructiilor.

APPEL¹TAUER, I.V. [Appelltaufer, J.]; BARTA, T.A. (Rumyniya, Timishoara)

Stability of frames with columns elastically fixed on the
supports. Stroi. mekh. i rasch. soor. 5 no.3:19-24 '63.
(MIRA 16:6)

(Structural frames)



PROCESSES AND PROPERTIES INDEX

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

79

The surface tension of fused sodium and lead glasses. *Ann. Phys. Chem. Leipzig*, 1927, 1, 2428. — The surface tensions of Na₂O-SiO₂ and PbO-SiO₂ glasses were detd. by the drop-wt. method. The period of time required for the formation of the individual drops is decisive in detg. the accuracy of this method. Rapidly formed drops have too high a wt. For highly viscous glasses the min. drop wt. is first attained with a period of formation of the drop of hrs. (e. g., for the glass 79 SiO₂:21 Na₂O in 7-10 hrs.). The surface tensions of the Na glasses studied with 49.8-79.4% SiO₂ and their temp. coeffs. show a linear relation to their compn.; increasing the Na₂O content increases the surface tension somewhat. For the glasses studied the latter amounts to 283-60 dynes/cm. at 1200°. The PbO-SiO₂ glasses (with 0-01.5% SiO₂) showed a similar behavior. PbO reduces the surface tension, which for these glasses amounts to 124-220 dynes/cm. at 1000°. No breaks are found in the curves of compn. against surface tension corresponding to the compn. of known cryst. compds. of Na₂O or PbO with SiO₂. It is not known whether this fact is to be explained by the nonexistence of these compds. in the fused glass or by the indifference of the surface tension to their presence.

M. G. Moore

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

E-277

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|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|
| GROUP 2 | E-277 | E-277 | E-277 |
| A B C D E F G H I J K L M N O P Q R S T U V W X Y Z | A B C D E F G H I J K L M N O P Q R S T U V W X Y Z | A B C D E F G H I J K L M N O P Q R S T U V W X Y Z | A B C D E F G H I J K L M N O P Q R S T U V W X Y Z |

127 2ND 2ND PERIOD

128 2ND 4TH PERIOD

PROCESSES AND PROPERTIES INDEX

Common ELEMENTS

Common VARIATIONS INDEX

OPEN MATERIALS INDEX

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

19

The role of surface tension in the clarifying process during the fusion of glass. A. A. Appen, *Optiko-mekh. Prom.* 6, No. 8, 5-12(1936); *Chem. Zentr.* 1937, 1, 2041-7. Sugar sirup was used for model expts. and the action of alc., ether and isoamyl alc. on the elimination of small bubbles studied. The latter were produced by mixing equal parts. of sirup contg. equiv. parts. of Na_2CO_3 and HCl and stirring for a long period. Reduction of the surface tension of the sirup greatly accelerated its clarification; the ether and isoamyl alc. were most effective in this respect. The influence of a series of heavy-metal oxides, alkali sulfates and halides on the surface tension was dead. for a glass of the compn. $\text{Na}_2\text{O} \cdot 2\text{SiO}_2$. The addn. was in the ratio of 0.06 mol. R_2O_3 or M_2SO_4 or MX (X = halogen) per mol. $\text{Na}_2\text{O} \cdot 2\text{SiO}_2 \cdot \text{Cr}_2\text{O}_3$ especially and the alkali sulfates in the order Na_2SO_4 , K_2SO_4 and Ca_2SO_4 reduced the surface tension of the glass. After a thorough discussion of existing theories of the manner of action of clarifying agents, it is concluded from the present investigation that their action depends upon the facts that the surface tension of the melt is reduced and that the soln. has a high vapor tension. These properties make a rapid growth and coalescence of the original small bubbles possible.

M. G. Moore

129 2ND 4TH PERIOD

COMMON ELEMENTS

COMMON VARIATIONS INDEX

OPEN MATERIALS INDEX

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

130 2ND 4TH PERIOD

131 2ND 4TH PERIOD

132 2ND 4TH PERIOD

133 2ND 4TH PERIOD

134 2ND 4TH PERIOD

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136 2ND 4TH PERIOD

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198 2ND 4TH PERIOD

199 2ND 4TH PERIOD

200 2ND 4TH PERIOD

111 AND 120 COVERS PROCESSES AND PROPERTIES INDEX 120 AND 4TH COVERS

ca 17

Chemical compounds in glasses. A. Appen. *Uspekhi Khim.* 6, 602-69 (1937).—Phys. properties as a function of chem. compn. in both the molten and the solid state are discussed for various silicate and borate glasses. A. concludes that glass-like properties are the result of three-dimensional "polymerization" leading to very complex structures as well as of the type of valence bonds, coordination valence and the nature of the cation. Glasses cannot be regarded simply as mixts. of mols. F. H. R.

ASS. I.A. METALLURGICAL LITERATURE CLASSIFICATION

111 AND 120 COVERS 120 AND 4TH COVERS

19

Gases in bubbles present in glass. A. A. Appen and L. H. Polyakov. *Szhklovaya Pram.* 14, No. 7, 18 (1968).

(1) In the absence of refining agents during the melting of glass, bubbles contg. 80 to 100% CO₂ (when a carbonate batch is used) are formed. They are very small and remain in the melt in the form of seeds. (2) With the introduction of As₂O₃ and Sb₂O₃ into the batch, the bubbles contain 30 to 40% O and 70 to 80% CO₂. The bubbles are very small. (3) The introduction of 0.5% As₂O₃ or Sb₂O₃ with nitrate salts radically changes the compn. of the gases in the bubbles and the process of purification. In this case the characteristic compn. of gases is 80 to 90% O, 5 to 10% CO₂ and 5 to 10% N. All the bubbles are relatively large (0.5 to 2 mm.). (4) When sulfates or chlorides are used as refining agents, the bubbles in the cooled glass are almost empty in the sense of gas content, but their surface shows a residue of a hard material. This residue occurs on cooling the melt and results from the condensation of the gaseous content of the bubbles (vapors of chlorides SO₂ + O₂). (5) Indirect data show that the bubbles do not contain water steam in considerable amts. (6) The compn. of gases in bubbles formed during firing does not change during the process of melting. (7) No H or CO was detected in bubbles. (8) With regard to bubbles escaping during firing, the basic conclusion is that refining agents radically change the compn. of gases in the bubbles; in the presence of an effective refining agent the bubbles contain chiefly that gas the source of which is the refining agent. (9) The characteristic gases of small bubbles of finished optical glasses are N and carbonic acid. Bubbles were detected which are almost completely composed of an insol. residue (N). The majority of these bubbles are formed from pores of the prog body. Other bubbles are found contg. up to 99% CO₂ although no carbonates are present. They were formed probably as a result of soot falling into glass or are due to an interaction of the glass mass with CO₂ of the furnace atm. and subsequent decompn. of the reaction products. (10) Bubbles found in the finished cooled glass are radically different in gas compn. from the bubbles escaping from the melt during firing of the glass.

M. V. Condole

ASB-31A METALLURGICAL LITERATURE CLASSIFICATION

CA

19

Calculation of physical properties of silicate glasses from their composition. A. A. Appen. *Doklady Akad. Nauk S.S.S.R.* 69, 841-4 (1949). For a wide range of chem. compos., empirical formulas are derived for the calcul. of the specific or mol. vol. (V), the d. (d), the refractive index (n_D), the dispersion ($n_D - n_C$), and the thermal expansion (α) between 20 and 400°. These data (x) are functions of the mol. concn. (a_i) of the ingredient oxides composing the glass in question, and their "increments" (ϕ_i), i.e. the specif. contributions of the oxides in the additive equation $x = \sum a_i \phi_i / \sum a_i = \sum a_i \phi_i / 100$. The increments are tabulated for the most important glass-forming oxides, as calcul. from about 1800 glasses in literature. Particular equations must be derived for correcting the "anomalies" of SiO_2 , B_2O_3 , and PbO : for SiO_2 there is a system of equations, which may be illustrated by the following formulas (valid for SiO_2 above 67 mol. %): $V_{SiO_2} = 28.1 + 0.035(a - 67)$; $n_{D, SiO_2} = 1.475 - 0.0003(a - 67)$; $D_{SiO_2} = 675 \times 10^{-4}$; $SiO_2 \times 10^4 = 28 - 0.96(a - 67)$. For the ϕ_i of B_2O_3 , the formulas are much more complicated, because of the effects of different SiO_2 concn. in the range between 44 and 80%. For PbO , the ϕ_i data are calcul. with special corrections which are to eliminate the rather great anomalies. The particular effects of Al_2O_3 on the "boric acid anomaly" in the change of the coordination from $[BO_3]$ to $[BO_4]$ are considered by another correction: the ratio $(a_{SiO_2} + a_{Al_2O_3} - a_{Al_2O_3})/a_{SiO_2}$ must be introduced in the equations. The accuracy of the calcul. is $\pm 0.1\%$ for n_D ; 0.5% for d ; 0.75% for the dispersion; 3% for the thermal expansion coeffs.

W. Eitel

BTR

22

7634* The Condition and Properties of Silica in Silicate Glasses. (In Russian.) A. A. Apfen. *Zhurnal Prikladnoi Khimii*, v. 24, Sept. 1951, p. 904-914.
Discusses the above and predicts the properties of glass as a function of molar content of SiO₂. Data are tabulated and charted.

TR

22

7636* Behavior and Properties of Oxides of the Alkaline Metals in Silicate Glasses. (In Russian.) A. A. Appen. *Zhurnal Prikladnoi Khimii*, v. 24, Oct. 1951, p. 1001-1009. Tables and graphs. 10 ref.

APPEN, A. A.

USSR/Chemistry - Glass

Nov 51

"Behavior and Properties of Alkaline Earth Oxides
in Silicate Glasses," A. A. Appen

"Zhur Prik Khim" Vol XXIV, No 11, pp 1122-1130

By strict formulation of observed relationships
of properties of glasses with compn $Me_2O-MeO-SiO_2$
(Me = Be, Mg, Ca, Sr, Ba), detd av numerical value
of partial properties of a glass and discussed
its dependency on compn of glass.

204T3

CA- 47 no. 13: 6622 '53

1. APPEN, A.A.
2. USSR (600)
4. Oxides
7. Modulus of elasticity during the torsion of some materials made from chemically pure oxides (from the Journal of the American Ceramic Society, 1951 vol. 34. no. 10) Ogneypory 17 no. 11. 1952

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

APPEN, A. A.

USSR/Chemistry - Glass

Jul/Aug 52

"Contemporary Views on the Nature of Glass,"
A.A. Appen, Leningrad

"Uspekhi Khim" Vol XXI, No 4, pp 469-482

Reviews current theories and subjects to criticism theory which ascribes the complex nature of glass particles to the heterogenous quality of this material. Draws parallel between W.H. Zachariassen's theory, which assumes complete disorder, and Ye. A. Poray-Koshits' theory postulating a partly ordered

216T25

network. Cites Poray-Koshits' views as an example of the more fruitful USSR approach. Lists 31 Russian references and 4 foreign references. A note appended by the Russian editor states that the author's views are his own and that a discussion of the published article is invited.

APPEN, A.A.

USSR/Physics - Dielectric Glasses

Jun 52

"Dependence of Dielectric Permeability and Angle of Losses of Silicate Glasses on Their Composition"
A. A. Appen, R. I. Bresker

"Zhur Tekh Fiz" Vol XXII, No 6, pp 946-954

Several series of specially manufd silicate glasses of various compns were tested at room temp and at a frequency of $4.5 \cdot 10^6$ cycles. Basically the same laws as for boric glasses were found. For a number of oxides, empirical numerical values characterizing dielec permeability of oxides in glasses, were deducted. Received 30 Jul 51.

219T83

APPEN, H. A.

Behavior and properties of the heavy metal oxides of zinc, cadmium, and lead silicate glasses. A. A. APPEN, *J. Appl. Chem. (U.S.S.R.)*, 25, 1303-1309 (1952) (English translation); *Zhur. Priklad. Khim.*, 25, 1241-48 (1952); *Chem. Abstr.*, 49 [1] 578e (1955).—In silicate glasses the partial molar properties d , n_D , mol. vol. (V), and the average dispersion (D) are nearly constant for ZnO, vary for CdO, and change markedly for PbO. The partial molar coefficient of linear expansion ($\alpha_m - \alpha_0$) is constant in the case of ZnO and CdO, while for PbO it depends on the content of alkali oxides. The functions are $n_D(\text{CaO}) = 1.925 - 0.004(a - 50)$, $V_{500} = 17.0 + 0.04(a - 50)$, $D_{500} \times 10^4 = 2030 - 22(a - 50)$, $n_D(\text{PbO}) = 2.350 - 0.0067(a - 50)$, $V_{700} = 21.0 + 0.08(a - 50)$, and $D_{700} \times 10^4 = 7440 - 72(a - 50)$, where a is the total mole % of oxides $\text{SiO}_2 + \text{Al}_2\text{O}_3 + \text{B}_2\text{O}_3$ with the restrictions $80 > a > 50$, $\text{SiO}_2 > 45$, $\text{Al}_2\text{O}_3 < 15$, and $\text{B}_2\text{O}_3 < 15\%$. Similarly, if alkali oxides are present their concentrations must be $< 15\%$, except for $\text{K}_2\text{O} < 10\%$. This defines the limit of applicability of the equations, which were obtained by assuming that the partial molar properties of oxides of alkali and alkaline-earth metals remained constant, but those of SiO_2 varied linearly. A more complex behavior exists with Pb glasses. These are empirically divided into two classes, tight and loose structures. Tight structures are nonalkaline and have a constant d , while the addition of alkali causes loose packing with increasing a .

APPEN, A. A.

Chem 4

(3)

Journal of the American Ceramic Society
Vol. 37 No. 4
Apr. 1, 1954
Glass

Surface tension of silicate melts. A. A. APPEN, K. A. SHISHOV, AND S. S. KAYALOVA. *Zhur. Fiz. Khim.*, 26, 1131-38 (1952); translated in *Silikaltech.*, 4 [3] 104-105 (1953).—The surface tension of 150 silicate melts of the types $xMe_2O \cdot yMeO \cdot zSiO_2$ and $xMe_2O \cdot yMeO \cdot kMe_nO_n \cdot zSiO_2$, containing at least 50 mole % SiO_2 , was tested by the drop weight method of Harlins and Brown, and the results are given in a table. The surface tension decreases in the order $Li^+ \rightarrow Na^+ \rightarrow K^+$, i.e., with increasing radius of the cation; for bivalent metals the order is $Mg^{2+} \rightarrow Ca^{2+} \rightarrow Sr^{2+} \rightarrow Ba^{2+}$ and $Zn^{2+} \rightarrow Cd^{2+}$. For cations of the Fe group the surface tension decreases with decreasing cation radius, $Fe^{2+} \rightarrow Co^{2+} \rightarrow Ni^{2+}$. The surface tension of a Pb glass of 33.8 SiO_2 , 63 PbO , and 4.2% K_2O can be reduced by the addition of WO_3 and MO_3 and less so by CrO_3 and V_2O_5 . M.H.A.

5-21-54 mlf

APPEN, A. A.

Defended his Dissertation for Doctor of Technical Sciences in the Institute of Chemistry of Silicates, Academy of Sciences, USSR, Leningrad, 1953

Dissertation: "Some General Rules of Changes of the Properties of Silicate Glasses in Dependence on Their Composition"

SO: Referativnyy Zhurnal Khimiiya, No. 1, Oct. 1953 (W/29955, 26 Apr 54)

APPEN, A. A.

Journal of Applied Chemistry
Vol. 4 Feb. 1954
Industrial Inorganic Chemistry

(3)

Surface tension of silicate melts. A. A. Appen, K. A. Schusterman and S. S. Kavalova (Silikat Tech., 1953, 4, 104; Brit. Ceram. J., 1953, 374A).—The surface tension (σ) of 150 silicate melts of the types $x\text{Me}_2\text{O} \cdot y\text{MeO} \cdot z\text{SiO}_2$ and $x\text{Me}_2\text{O} \cdot y\text{MeO} \cdot z\text{Al}_2\text{O}_3 \cdot \text{SiO}_2$, all containing < 50% of SiO_2 , were investigated by the drop-weight method of Harkins and Brown. The σ decreases in the order $\text{Li}^+ > \text{Na}^+ > \text{K}^+$. Thus with alkali metals the σ diminishes with increasing cation radius. The same sequence was found by Badger, Parmelee, and Williams, who used a different method. With bivalent metals this relation is less definite. The order is $\text{Mg}^{2+} > \text{Ca}^{2+} > \text{Sr}^{2+} > \text{Ba}^{2+}$ and $\text{Zn}^{2+} > \text{Cd}^{2+}$, whereas according to Badger and co-workers the σ decreases in the order: $\text{MgO} > \text{ZnO}$ or $\text{Al}_2\text{O}_3 > \text{CaO}$. The difference is explained by the use of different materials for the investigation. The cations of the Fe group show a decrease of σ with decreasing cation radius in the direction $\text{Fe}^{2+} > \text{Co}^{2+} > \text{Ni}^{2+}$. Both this sequence and the finding that K_2O , B_2O_3 , and PbO greatly reduce the σ , whereas Al_2O_3 and MgO greatly increase it, are in agreement with the results of the above authors. Experiments on glass containing SiO_2 33.8, PbO 62, and K_2O 4.2% showed that the σ is markedly reduced by WO_3 and MO_3 and less so by CrO_3 and V_2O_5 .

BRIT. CERAM. RES. ASS. (C)

10-12-54
mf

APPEN, A.

"Modern concepts of the structure of glass. Tr. from the Russian," p. 85 (Analele Romane-Sovietice. Seria Chimie, Series a III-a, v. 5, no. 1, 1953, Bucuresti)

SO: Monthly List of East European Vol. 2, No 9
Accessions,/Library of Congress, September 1953, Uncl.

APPEN, A. N.

Chemical Abst.
Vol. 48 No. 6
Mar. 25, 1954
Glass, Clay Products, Refractories, and
Enameled Metals

Calculation of expansion of silicate glasses, glazes, and
enamels. A. A. Appen. *Steklo i Keram.* 10, No. 1, 7-10
(1953).—The partial coeffs. of expansion (α) of components
in silicate glasses are given by $\alpha_{SiO_2} \times 10^7 = 38 - 1.0$
($a_{SiO_2} \% - 67$); $\alpha_{B_2O_3} \times 10^7 = 130 - 5(a_{SiO_2} \% - 3)$; $\alpha_{Li_2O} \times 10^7 =$
 $12.5(4 - \psi) - 50$, where ψ is ratio of total no. of mols. of
 $Li_2O, Na_2O, K_2O, CaO, BaO, CdO$ to mols. B_2O_3 ; $\alpha_{CaO} \times$
 $10^7 = 30 - 1.5(a_{SiO_2} \% - 50)$. Values of α_i of com-
ponents of silicate glasses are tabulated. Equations are
limited to silicate glasses contg. not less than 45-50 mole %
 SiO_2 . Comparison of exptl. and calcd. data (not given)
shows the application holds for glazes and enamels.

B. Z. Kamich

3
①
Will
7-14-54

И. П. А. Н., И. М.

U.S.S.R.

Relation between the properties and constitution of glasses. V. State and properties of Al_2O_3 and TiO_2 in silicate glasses. A. A. Appen. *Zh. Priklad. Khim.* 26, 0-17 (1953). *J. Appl. Chem. U.S.S.R.* 26, 7-18 (1953). Cf. U.S. 48, 00235, 49, 0406 (English translation). The partial properties of Al in glasses have been calculated from 7 silicate glasses: $n = 1.620$, mol. vol. $V = 30.4$ cc./mole, dispersion $D \times 10^4 = 820$, and expansion $\alpha \times 10^4 = -30$. These properties are stable as seen from measurements on glasses: $16Na_2O \cdot 20MO \cdot 64SiO_2$ and $16Na_2O \cdot 20MO \cdot 10Al_2O_3 \cdot 64SiO_2$, where M is Be, Mg, Ca, Sr, Ba, Zn, Cd, or Sn. The neg. value of the partial expansion coeff. indicates that Al_2O_3 reduces the glass expansion coeff. more strongly than any previously considered impurity. By comparing n and D of Al_2O_3 in silicate glasses with those in selenium, it can be seen that Al_2O_3 undergoes changes on introduction into silicate glass. This change is attributed to a change in the coordination no. from 6 (octahedral) to 4 (tetrahedral). Partial properties of Al_2O_3 are also calculated for crystallites having a coordination no. 4 in alkali, nepheline, borate, and calcium and a coordination no. 6 in alkali, borate, and calcium. It is concluded that the possibility to be present in glasses of partial properties of a ion drops of glasses. It is shown that in $MgO \cdot Al_2O_3 \cdot 9SiO_2$ and $80Al_2O_3 \cdot 20SiO_2$ the ratio of coordination is obtained. In all instances, of all atoms Al_2O_3 (the other half Al_2O_3 will have formula $Al(AlSiO_4)$). A similar discussion of the partial properties of TiO_2 in glasses shows that they vary in wide limits. By comparing the data on glasses of the composition indicated above in which Al_2O_3 is replaced by TiO_2 , it is seen that, as the TiO_2 content of the glass, the smaller became n and D and α and a reduction of coordination no. The TiO_2 in glass technology Ti is used as a damper and a preventive against recrystallization. Optimum properties of these glasses cannot be calculated exactly owing to the variability of partial properties. S. Paksjov

APPEN, A.A.

1/4

M/ Relation between the properties and constitution of glasses. VI. The condition and properties of boron tri-oxide in silicate glasses. A. A. Appen. *J. Appl. Chem.* U.S.S.R. 26, 881-88 (1953) (Engl. translation). See C.A.B. 149: 3194c. H. L. H.

MA 83

APPENDIX A. A.

Condition and properties of boron trioxide in silicate glasses.
 A. A. APPEN. *Zhurn. Priklad. Khim.*, 26, 699-711 (1953); *Chem. Abstr.*, 49, 101 3495c (1955).—The partial properties ($\rho_{B_2O_3}$) are a function of density, n_D , molecular volume (V), average dispersion ($n_F - n_C$), and average expansion (α_{20-25}). B can be present in glasses either as B_2O_3 or $B_2O_3^{2+}$ ion, depending on the nature and amount of oxides (ratio ψ_B), $Li_2O + MO$, and amount of Al_2O_3 and SiO_2 . The structure of 2-component glasses, B_2O_3 and SiO_2 , is an addition of the structure of SiO_2 and B_2O_3 glasses so that n_D and V are additive properties of partial components with $n_{D,0} \approx 1.481$ and $V \approx 38.0$ cc./mole. In 3-component glasses with $\psi_B = Na_2O/B_2O_3 < 1/2$, $n_{D,0}$ and $V_{B_2O_3}$ remain unchanged. For $\psi_B/1/2$, $n_{D,0}$ increases to a limit value 1.719; $V_{B_2O_3}$ decreases to 18.5 cc./mole, indicating a change from coordination state 3 to coordination state 4. The values correspond to the values found in danburite, a product in which B replaces Si. Porous (leached) glasses can be obtained only at $\psi_B < 1/2$. The nature of other constituents has also a considerable influence on \bar{n} , V , \bar{g} , and α as shown on a series of glasses Na_2O 10, MO 18, B_2O_3 10, SiO_2 62% ($M = Be, Mg, Ca, Sr, Ba, Zn, Cd, Pb$), because cations of small radius retain their O more than cations of large radius, thus preventing formation of B_4 . The influence of Al_2O_3 was studied on a glass Na_2O 10.5, B_2O_3 17.5, Al_2O_3 2, SiO_2 69.8% ($n_D = 1.506$, density 2.50). Additions of CaO , SrO , BaO , ZnO , CdO , PbO to the mixture of B_2O_3 and SiO_2 also influence the properties of the glasses. The influence of Al_2O_3 on the properties of glasses is also discussed.

Method

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U S S R .

✓Relation between properties and constitution of glasses.
VII. Effect of some coloring agents and opacifiers on the
expansion coefficient of silicate glasses. A. A. Appen and
S. S. Kavalova. *J. Appl. Chem. U.S.S.R.* 1953, 5, 1023.
(1953) (Eng. translation).—See C.A. 48, 9023b.

H. L. H.

Appendix A.

Relation between properties and constitution of glasses.
 VII. Effect of some coloring agents and opacifiers on the expansion coefficient of silicate glasses. A. A. Appen and S. S. Kayalova. *Zh. Prikl. Khim.*, 26, 1137-1142 (1953) (cf. C.A.B. 28, 785b). - It was attempted to measure the coeff. α_{20-100} in a glass to which ZrO_2 and B_2O_3 were added as a nondissolved phase. The decrease in α obtained in this case seems to be as large as in the case of complete soln. of the same components. Some values were obtained upon addition of P_2O_5 , Na_2SiF_6 , Na_3AlF_6 , Cu_2O , Sb_2O_3 , the expansion coeffs. were the same for glass as opacified or transparent containing the same amt. of the components. Measurements of α on 20 glasses containing the above opacifiers and the colorants MnO , FeO , CoO , NiO , CuO , and UO_2 are tabulated. From the measurements the partial expansion coeffs. α_i are calculated as follows:

| Component | $\alpha_i \cdot 10^5$ | Component | $\alpha_i \cdot 10^5$ |
|-------------------|-----------------------|-------------|-----------------------|
| MnO | 105 | B_2O_3 | -45 |
| FeO , Fe_2O_3 | 55 | P_2O_5 | 140 |
| CoO | 50 | UO_2 | 20 |
| NiO | 50 | CaF_2 | 180 |
| CuO | 50 | Na_2SiF_6 | 340 |
| Sb_2O_3 | 75 | Na_3AlF_6 | 450 |
| ZrO_2 | -60 | CaS | 200 |

B. Pakawer

USSR/ Engineering - Glass manufacture

Card 1/1 Pub. 104 - 11/11

Authors : Appen, A. A.

Title : ~~Manual on the elimination of flaws in glass~~
Manual on the elimination of flaws in glass

Periodical : Stek. i ker. 4, 30-32, Apr 1954

Abstract : Review is presented of a book by M. A. Bezborodov, entitled "Stones and Waviness Flaws in Glass", (1953), which offers numerous suggestions for combatting flaws in glass. One USSR reference (1952).

Institution:

Submitted:

APPEN, A.A.

USSR/ Chemistry - Glass structure

Card 1/1 Pub. 104 - 3/14

Authors : Appen, A. A.

Title : Coordination structure of silicate glasses

Periodical : Stek. 1 ker. 11/3, 7-9, Mar 1954

Abstract : A study is made of the coordinate relationships in the structure of glass molecules for glasses of varying chemical composition. The coordinates are treated from a geometrical viewpoint and it is shown how the properties of glass vary with their arrangement. The conclusion is drawn that the properties of glass depend on the coordination of the cations and that this principle can be extended to molten silicates. Four Russian references; 1949-1953. Tables.

Institution:

Submitted:

1 M4

Relation between the properties and constitution of glasses. VIII. The structure of complex silicate glasses as a function of their properties.
Ann. U.S.S.R. 27, 113-11, 1954 (1954) (English transl.)
See C.A. 48, 1859g. H. L. H. 1

APPENDIX A

123. Structure of complex silicate glasses in the light of a study of their properties. — A. A. APPEN (*Zh. prikl. Khim.*, Leningr., 27, 121, 1954). The main similarity between the structure of crystalline and glassy silicates consists in the existence in both types of a continuous Si-O network and in the co-ordination principle of the arrangement of atoms in relation to each other. In both states the Si-ions can be replaced by other ions of similar radius without the destruction of the network. The most marked differences between an ideal glass and a crystal of complex composition are: (1) in a crystal, the Si-O network is symmetrical, whereas in the ideal glass it is irregular; (2) in a crystal, the cations Me^{+2} , which are outside the network, occupy definite places in the lattice, whereas in the ideal glass they are arranged statistically in the inter-network space; (3) in a crystal, isomorphous replacement of cations that are outside the network can only take place if their radii are similar, whereas in glass the ionic radii are unimportant, the preservation of the electrostatic law of valencies only being necessary; (4) in a crystal (if it is not a solid solution) the initial constituents (oxides) are in certain simple quantitative proportions, whereas, in glass, oxides can combine in any proportions. It is deduced that the main features of glass structure can be expressed by the theory which is called "network co-ordination" theory. (1 table.)

Appen, A.A.

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Structure of Glass—Report of a Symposium on the Structure of Glass, Leningrad, November 23 to 27, 1953. Edited by A. A. Lebedev, N. A. Toropov, V. P. Bagdasaryan, and A. A. Appen. Akademiya Nauk S.S.S.R., Leningrad-Moscow, 1958. 600 pp. Upon the invitation of the Institute of Silicate Chemistry of the Academy of Sciences U.S.S.R., the State Optical Institute, and the Leningrad Section, All-Union Society of Silicate Technological Research, a symposium on the structure of glass was organized, which was attended by more than 500 representatives from 90 institutions and 28 cities of the U.S.S.R. The introductory address by A. A. Lebedev emphasizes the importance of structural conversions in glass as the basis of many phenomena which cannot be explained otherwise, e.g., the annealing range of optical glass, the luminescence, and the diffraction of X rays, electrons, and neutrons. The crystallites, as assumed in some theories, in the order of magnitude of 10 to 15 μ , should be detectable through more accomplished electron microscopic methods in the future. The chain structures assumed by others are still hypothetical; their confirmation would be an important approach toward the manufacture of unbreakable glass. The titles of the papers read in the symposium are as follows: K. S. Bystrop'ev: "Crystallite theory of glass structure" (pp. 9-18). P. P. Kobeko: "Structure and properties of organic glasses" (pp. 19-25). O. K. Botvinkin: "Glass structure" (pp. 26-29). E. A. Porai-Koshits: "Possibilities and results of X-ray methods in the investigation of glassy materials" (pp. 30-48). O. A. Esin and P. V. Gel'd: "Structural

M. A. KOUTZ

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nature of glassy and liquid silicates" (pp. 44-55). B. F. Gross and V. A. Kolesova: "Combination scattering of light and structure of glassy materials" (pp. 56-61). Y. V. Tarasov: "Quantum theory of heat conductance and structure of silicate glasses" (pp. 62-69). Y. A. Florinskaya and R. S. Pechenkina: "Spectra of simple glasses in the infrared and their relations to the structure of glass" (pp. 70-95). A. A. Appen: "Coordination principle in the distribution of ions in silicate glasses" (pp. 96-106). L. I. Demkina: "Ideas on the fine structure of silicate glasses resulting from investigations on the properties of glasses in simple systems" (pp. 107-19). A. I. Stozharov: "Measurement of the thermal expansion of glass as a method for the investigation of its structure" (pp. 129-25). L. G. Mel'nichenko: "Theoretical opinions of D. I. Mendeleev on the structure of silicates and glasses and their importance for the actual science" (pp. 126-35). V. P. Barzakovskii: "Ideas of D. I. Mendeleev on the chemical character of silicates" (pp. 136-40). O. S. Molchanova: "Properties of glasses in the ternary system $\text{Na}_2\text{O}-\text{B}_2\text{O}_3-\text{SiO}_2$ " (pp. 141-44). E. A. Poral-Koshits: "Structure of Na borosilicate glasses" (pp. 145-61). S. P. Zhdanov: "Structure of glass as seen from the results of the investigation of the structure of porous glasses and films" (pp. 162-75). D. P. Dobychin: "State of SiO_2 in microporous glass" (pp. 176-80). S. K. Dubrov: "Corrosion of glassy silicates and of Na aluminosilicates by aqueous solutions in its relation to the state of SiO_2 in glass" (pp. 181-84). A. F. Zak: "Existence of distinct chemical compounds in the glass structure" (pp. 185-86). Yu. A. Gastev: "Chemical stability of glass" (pp. 187-89). N. A. Tuforovskaya: "Structural variabilities of the light refractive index of glass at temperatures below 300°C ." (pp. 199-97). D. I. Levin: "Rayleigh scattering in glasses and the glass structure" (pp. 198-201). M. M. Gurevich: "Spectral relation of

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light scattering in Na borosilicate glasses" (pp. 202-208). A. N. Sevchenko: "Application of the luminescence method for the investigation of the glassy state" (pp. 207-16). G. O. Bagdyants: "The problem of an oriented structure of glass" (pp. 216-18). V. I. Shelyubskii: "Application of the electron microscope to the investigation of glass" (pp. 219-23). L. A. Afanas'ev: "Experiments on the electronographic study of industrial glasses" (pp. 224-30). A. I. Avgurtinik: "Some properties of highly aluminous glasses" (pp. 227-29). N. V. Solomin: "Chemical compounds in borate glasses" (pp. 230-33). G. A. Kolykov: "Selective volatility of components of the system Na₂O-B₂O₃-SiO₂, a method for the investigation of the nature of the glassy state" (pp. 234-44). A. G. Bergman: "Visual-polythermic method for the investigation of crystallization in glasses and silicate systems" (pp. 245-47). V. A. Kozheurov: "Phenomenon of limited miscibility in binary silicate melts" (pp. 248-60). V. T. Slavvanskii: "Temperature function of viscosity and structure in some glassy and liquid materials" (pp. 251-55). M. M. Skornakov: "Viscosities of glasses above and below the liquidus temperature" (pp. 256-57). V. A. Ioffe: "Dielectric losses in silicate glasses" (pp. 258-63). B. I. Markin: "Electric conductance of simple borate systems in the glassy state" (pp. 264-66). V. A. Presnov: "I, Electric

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conductance of glasses in strong electric fields; II. The writing of metals by glass" (pp. 207-09). V. P. Pryanishnikov; "Electric conductance of silica glass" (pp. 270-72). K. P. Azarov; Repa; "Oxygen potential of glass" (pp. 273-75). A. G. "The glassy state of organic polymers" (pp. 276-79). L. V. Strizhevsky; Andrey; "Problems of the methodological basis of the actual ideas on the structure of glass" (pp. 283-89). The ample discussions (pp. 293 to 302) include the following main items: general remarks on the nature of glass; physical chemistry of polycrystalline systems and the glass structure; optical properties and glass structure; calorimetric and electrical properties and the structure of glass; crystallochemistry and glass structure; and problems of further development of glass science. The concluding address of A. A. Lebedev (pp. 300-02), and the official resolution of the Symposium Meeting (pp. 303-05) announce plans for another Symposium on the Structure of Liquids and, in 1956, the third Symposium on the Structure of Glass, under the auspices of the Academy of Sciences U.S.S.R. The present volume is excellently printed and illustrated; it is a real milestone in the evolution of modern investigations on glass structure.

W. B. B. S. L.

Handwritten initials: W/B, PM, and a signature.

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

Abst Journal: Referat.Zhur - Khimiya, No 2, 1957, 5162

Author: Appen, A. A.

Institution: Academy of Sciences USSR

Title: Chemism of the So-Called "Microheterogeneity of Glass"

Original

Publication: Sb. Stroyeniye stekla, M.-L., AN SSSR, 1955, 306-310

Abstract: The theory of random network does not negate the presence in glass of chemical compounds in general, but of only definite compounds. The gist of indefinite chemical compounds in silicate glasses consists in statistical distribution of metal ions in a medium of silicon-oxygen framework, wherein local neutralization of positive and negative valences is retained; positive ions cannot be present in immediate vicinity of one another. In contrast with the theory of Zachariasen-Warren, there must be present in glass, in addition to definite chemical compounds as a typical component part, also definite compounds

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APPEN, A. A. and VARGIN, V.

"Le Titane Dioxyde dans le Verre," (Diagramme d'equilibre et proprietes des verres au titane), a paper presented at the International Commission on Glass (4th Congress, held in Paris 2-7 July 1956)

E-2964

APPEN, A. A. Dr.

"Some 'Anomalies' of the Properties of Silicate Glasses (The Experiment of Calculating and Interpretation)," a paper presented at the International Commission on Glass (4th Congress, held in Paris 2-7 July 1956)

E-2964

APPENDIX A.2

875. Effect of iron oxides on thermal expansion of ground-coat enamel for vitreous
A. A. AYREN, P. I. BRASKER and I. A. KUZNETSOVA (Zh. Prikl. Khim., Leningr., 29: 1753, 1956). In Russian.

Thermal expansion of ground-coat enamel for vitreous
expansion of rods 180 mm. long and 3-6 mm. dia. of

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fused glazes was measured in the range 20° to 350°. The ground-coat enamel used to determine effect of Fe oxides was of the following composition (wt%): SiO₂, 49; Al₂O₃, 6.9; BaO, 12.7; CaO, 5.1; Na₂O, 5.6; ZnO, 1.1; MnO, 1.1; CoO, 0.5; Na₂SiF₆, 9. The first series of tests was made with Fe₂O₃; the second series with FeO in the form of Fe(COO)₂·2H₂O containing 40.27% FeO. Not only do Fe oxides not increase the expansion coefficient of the ground-coat enamel; the opposite effect was observed. (3 tables.)

10M

~~APPEN, A.A.~~, doktor khim. nauk.

Structure of silicate glasses in relation to their general properties.
Khim. nauka i prom. 3 no.1:57-65 '58. (MIRA 11:3)
(Glass)

GALANT, Ye.I.; APPEN, A.A.

Alumino-boric anomaly of the optical properties of silicate glass.
Zhur.prikl.khim. 31 no.11:1741-1744 N '58. (MIRA 12:2)
(Glass—Optical properties)

APPEN, A. A.

Inst. for Silicate Chem. Acad. Sci., Leningrad.

"The Alumina Boron Anomaly of Silicate Glasses."

report to be submitted at 5th Intl. Congress on Glass, Intl Commission on
(ICG). Munich, Germany 29 Jun to 4 Jul 1959..

24(6)

SOV/181-1-10-6/21

AUTHORS:

Appen, A. A., Kan Fu-hsi

TITLE:

Electric Properties of Aluminosilicate-, Borosilicate- and Aluminoborosilicate Glasses

PERIODICAL:

Fizika tverdogo tela, 1959, Vol 1, Nr 10,
pp 1529 - 1537 (USSR)

ABSTRACT:

Data known from a large number of publications by Western and Soviet scientists (N. M. Verebeychik, V. I. Odelevskiy, V. A. Ioffe and L. A. Grechanik) are supplemented here by a series of new data. ϵ , $\text{tg}\delta$, and $\lg \kappa$ of four glasses ($\text{Na}_2\text{O} \cdot \text{Al}_2\text{O}_3 \cdot \text{SiO}_2$; $\text{Na}_2\text{O} \cdot \text{B}_2\text{O}_3 \cdot \text{SiO}_2$; $\text{Na}_2\text{O} \cdot \text{B}_2\text{O}_3 \cdot \text{Al}_2\text{O}_3$; $\text{Na}_2\text{O} \cdot \text{MeO} \cdot \text{B}_2\text{O}_3 \cdot \text{Al}_2\text{O}_3 \cdot \text{SiO}_2$ (MeO = BeO, CaO, SiO or BaO)) are measured at 150°C. Results are listed in tables 2-3. The dielectric properties were measured by means of an MLYe-1 bridge, an IP-3 Q-meter and one developed by the firm Tesla. An LM-2 megohmmeter combined with a mirror galvanometer was used to measure the electrical conductivity. The dependences of the ϵ -values on the chemical composition of the glass are given in figures 1-5, the dependences of the

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Electric Properties of Aluminosilicate-, Borosilicate- SOV/181-1-10-6/21
and Aluminoborosilicate Glasses

$tg\delta$ and $lg K$ -values on the chemical composition of the glass in figures 2,6,9, and 12, the frequency dependence of the $tg\delta$ -value on the chemical composition of the glass in figures 3 and 10, the temperature dependence of the $tg\delta$ -value on the chemical composition of the glass in figures 4 and 7, the dependence of the $\Delta\epsilon$ -value on the chemical composition of the glass at $1 \cdot 10^6$ cycles and room temperature in figure 8, and the dependence of the $\Delta lg K$ -value on the chemical composition of the glass at $150^\circ C$ in figure 11. Final digest: 1) The replacement of SiO_2 by Al_2O_3 results in an increase of dielectric losses and electrical conductivity in all these glasses. Depression effects and aluminum-boron anomalies with respect to the quantities $tg\delta$ and K could not be observed. 2) During the exchange mentioned under 1) also the dielectric constant rises in general. Only in glasses containing B_2O_3 the ϵ -value drops and the aluminum-boron anomaly appears. 3) The replacement of SiO_2 by B_2O_3 is characterized by a maximum on the ϵ -curve (boron anomaly). 4) Maxima are visible on the curves of temperature dependence of $tg\delta$ within the range $80-100^\circ K$. There are 12 figures, 3 tables, and 12

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5(2)

SOV/80-32-5-9/52

AUTHORS: Appen, A.A., Kan Fu-hsi

TITLE: The Investigation of the Optical Properties of Sodium Alumo-Boro-Silicate Glasses. Communication I.

PERIODICAL: Zhurnal prikladnoy Khimii, 1959, Vol 32, Nr 5, pp 983-991 (USSR)

ABSTRACT: Boron and aluminum ions have two coordination numbers and their oxygen tetrahedra often substitute isomorphously the silicon tetrahedra. The simultaneous presence of Al_2O_3 and B_2O_3 in the glass causes a change of its properties which is called alumo-boric anomaly [Ref 1]. The following series of glasses are investigated here:I. $16 Na_2O \cdot y B_2O_3 \cdot x Al_2O_3 \cdot (84-x-y) SiO_2$, where x is 0, 4, 8, 12;
y 0, 4, 8, 12, 16, 20, 24, 32.II. $(32-y) Na_2O \cdot y B_2O_3 \cdot x Al_2O_3 \cdot (68-x) SiO_2$, where x is 0, 4, 8, 12;
y 0, 4, 8, 12, 16, 20, 24, 28, 32.III. $(20-y) Na_2O \cdot y B_2O_3 \cdot x Al_2O_3 \cdot (80-x) SiO_2$, where x is 0, 4, 8, 12;
y 0, 4, 8, 12.

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SOV/80-32-5-9/52

The Investigation of the Optical Properties of Sodium Alumino-Boro-Silicate Glasses.
Communication I.

The substitution of silica by alumina increases the refraction index. If silica is substituted by boric anhydride, maxima appear, on the curves of n_D change. The change of density proceeds in the same way as the change of the refraction index. In the substitution of silica by alumina the average dispersion increases continuously for all $\text{Na}_2\text{O}:\text{B}_2\text{O}_3$ ratios, in the substitution by boron oxide it does not change. It has been shown that in borosilicate glasses the boron ion gains oxygen from Na_2O and assumes the quaternary coordination (BO_4). At low $\text{Na}_2\text{O}:\text{B}_2\text{O}_3$ ratios the substitution of silica by alumina causes the transition of the aluminum tetrahedron (AlO_4) into the compound and the boron tetrahedron (BO_4) is converted to the tertiary coordination. In the substitution process the molecular refraction

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The Investigation of the Optical Properties of Sodium Alumo-Boro-Silicate Glasses.
Communication I.

SOV/80-32-5-9/52

increases rectilinearly, so that the rule of additivity is observed.
There are: 9 graphs, 2 tables and 8 references, 2 of which are
Soviet, 4 English, 1 American and 1 French.

SUBMITTED: July 12, 1958

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5(2)

SCY/80-32-5-10/52

AUTHORS: Appen, A.A., Kan Fu-hsi

TITLE: The Investigation of the Optical Properties of Potassium Alumo-Boro-Silicate Glasses. Communication II.

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 5, pp 991-995 (USSR)

ABSTRACT: Potassium glasses have a high viscosity in the molten state which makes it difficult to obtain homogeneous samples, especially at a high content of alumina. The following glasses are investigated here:

I. $16 K_2O \cdot y B_2O_3 \cdot x Al_2O_3 \cdot (84-x-y) SiO_2$, where x is 0, 4, 8, 12;
y 0, 4, 8, 12, 16, 20, 24, 32.II. $(32-y) K_2O \cdot y B_2O_3 \cdot x Al_2O_3 \cdot (68-x) SiO_2$, where x is 0, 4, 8;
y 0, 4, 8, 12, 16, 24, 28.

The change of optical properties is similar to that in sodium glasses. In the series I at low $K_2O:B_2O_3$ ratios the refraction index decreases sharply, if silica is substituted by alumina, i.e. the alumo-boric anomaly manifests itself clearly. The change of density corresponds

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SOV/80-32-5-10/52
The Investigation of the Optical Properties of Potassium Alumo-Boro-Silicate Glasses.
Communication II.

to the change of the refraction index, but the maxima do not coincide on the curves of n_D and d change. The molecular refraction increases rectilinearly. In Series II the substitution causes the same complex phenomena which are observed in the corresponding sodium glasses. The similarity between potassium and sodium glasses is explained by the fact that the difference in the stability of the bonds Na-O and K-O is slight [Ref 2]. There are: 7 graphs, 2 tables and 2 references, 1 of which is Soviet and 1 American.

SUBMITTED: September 29, 1958

Card 2/2

BORISENKO, Anatoliy Isidorovich; APPEN, A.A., doktor khim. nauk, otv. red.;
SHENGER, I.A., red. izd-va; BLEYKH, E.Yu., tekhn. red.

[Protection of molybdenum from high-temperature gas corrosion] Za-
shchita molibdena ot vysokotemperaturnoi gazovoi korrozii. Otvet.
red. A.A.Appen. Moskva, Izd-vo Akad. nauk SSSR, 1960. 82 p.
(MIRA 14:7)

(Molybdenum—Corrosion)

APPEN. A.A.

PAGE 1 FROM REPRODUCTION 50/5035

Vesoyuznnoye soveshchaniye po stekloobrazovaniyu sostoyalnoye 16-20 noyabrya 1959 (Vitreous State; Transactions of the Conference on the Vitreous State. Held in Leningrad on November 16-20, 1959) Moscow, Izd-vo AN SSSR, 1960. 5 1/2 p. Errata slip inserted. 3,200 copies printed. (Series: Itz: Trudy)

Sponsoring Agencies: Institut khimii silikatov Akademi nauk SSSR, Vesoyuznnoye khimicheskoye obshchestvo imeni D.I. Mendeleeva and Gosudarstvennyy ordena Lenina opticheskoy institut imeni S.I. Vavilova.

Editorial Board: A.I. Augustinik, V.P. Parzakovskiy, M.A. Berborodov, O.K. Potvinik, V.Y. Margis, A.G. Vlasov, K.S. Ievatroyev, A.A. Lebedev, N.A. Katveev, V.S. Kochimov, R.L. Myuller, Ye.A. Poray-Koshits, Gaidman, N.A. Toropov, V.A. Pioninskaya, A.K. Yashkina; Ed. of Publishing House: I.V. Suvorov; Tech. Ed.: V.T. Bochever.

PURPOSE: This book is intended for researchers in the science and technology of glasses.

COVERAGE: The book contains the reports and discussions of the Third All-Union Conference on the Vitreous State, held in Leningrad on November 16-19, 1959. They deal with the methods and results of studying the structure of glasses, the relation between the structure and properties of glasses, the nature of the chemical bond and glass structure, and the crystallochemistry of glasses. Fused silica, mechanism of vitrification, optical properties and glass structure, and the electrical properties of glasses are also discussed. A number of the reports deal with the dependence of glass properties on composition, the tinting of glasses and radiation effects, and mechanical, technical, and chemical properties of glasses. Other papers treat glass semiconductors and soda borosilicate glasses. The conference was attended by more than 100 delegates from Soviet and East German scientific organizations. Among the participants in the discussions were N.V. Solzhen, Y. Korshinsky, Yu.A. Gaster, V.P. Pryanishnikov, Yu. Ya. Gotlib, O.P. Khabalov, K.T. Pioninskaya, G.P. Mikhaylov, S.M. Petror, A.N. Lazarev, D.I. Levin, A.V. Shatilov, K.T. Pioninskaya, A.K. Kunzetov, E.V. Degtyarova, G.V. Byurazovskaya, A.A. Kalenay, M.M. Shorubay, P.A. Eskin, E.K. Keller, Ya.A. Kuznetsov, V.P. Podzav, R.S. Shcherba, Z.G. Pimenet, and O.S. Molchanova. The final session of the Conference was presided by Professor I.I. Kityagorodskiy, Honored Scientist and Engineer, Doctor of Technical Sciences. The following institutes were cited for their contribution to the development of glass science and technology: Gosdarstvennyy opticheskoy institut (State Optical Institute), Institut khimii silikatov AN SSSR (Institute of Silicate Chemistry, AS USSR), Fizicheskoy institut AN SSSR (Phys. Institute AS USSR), Fiziko-tekhnicheskoy institut AN SSSR (Physico-technical Institute AS USSR), Fiziko-tekhnicheskoye nauchnoye issledovaniye institut AN SSSR (Physico-technical Research Institute AS USSR), Institut fiziki AN SSSR, Laboratory of Physical Chemistry of Silicates, Belorusskaya SSR, Minsk), cheskoj khimii AN SSSR, Minsk (Institute of General and Inorganic Chemistry, Academy of Sciences, Belorusskaya SSR, Minsk), Institut vyzhishchekulyarnykh soedyneniy AN SSSR (Institute of High Molecular Compounds, AS USSR), Gosdarstvennyy institut stekla (State Institute for Glass), Gosdarstvennyy institut elektrotekhnicheskoy stekla (State Institute for Electrical Glass), Gosudarstvennyy institut elektrotekhnicheskoy stekla (State Institute for Electrical Glass), Fizicheskoye nauchnoye issledovaniye universitet (Leningrad State University), Institute, Iznaki, Leningrad, tekhnologicheskoy institut (Moscow Institute of Chemical Technology), Khimicheskoye nauchnoye issledovaniye institut (Leningrad Technological Institute), Leningradskiy politekhnicheskoy institut (Leningrad Polytechnical Institute), Belorusskiy politekhnicheskoy institut Minsk (Belorussian Polytechnical Institute, Minsk), Novosibirskiy politekhnicheskoy institut (Novosibirsk Polytechnic Institute), and Sverdlovskiy politekhnicheskoy institut (Sverdlovsk Polytechnic Institute). The Conference was sponsored by the Institute of Silicate Chemistry AS USSR (Acting Director - A.S. Gollib), the Vesoyuznnoye khimicheskoye obshchestvo imeni D.I. Mendeleeva (All-Union Chemical Society imeni D.I. Mendeleeva), and the Gosudarstvennyy ordena Lenina opticheskoy institut imeni S.I. Vavilova (State Order of Lenin' Optical Institute imeni S.I. Vavilov). The 15 resolutions of the Conference include recommendations to organize a Center for the purpose of coordinating the research on glass, to publish a new periodical under the title "Fizika i khimiya stekla" (Physics and Chemistry of Glass), and to join the International Committee on Glass. The Conference thanks A.A. Gaid, Academician, Professor, and Chairman of the Organization of Consultants; Ye.I. Mendelitskiy, Doctor of Physics and Mathematics, Member of the Organizational Committee; and R.L. Myuller, Doctor of Chemical Sciences, Member of the Organizational Committee. The editorial board thanks G.M. Bartenev, M.V. Vol'kenskiy, I.I. Korshinsky, D.P. Bobryshin, S.M. Dzhurvo, V.A. Ioffe, and B.T. Kolomyetv. References accompany individual reports.

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Appen, A.A., and Man Fuchai. Boric and Aluminoboric Anomalies of Silica Glass Properties 493

Gelant, Ye. I. Refractive Index and Coordination Transformations of Alumino-Borosilicate Glasses 499

Zhdanov, S.P. On the Structural Transformations in Glasses Containing B₂O₃ 502

Pafonov, L.A. Thermochemical Study of Soda Borosilicate Glasses 507

Voyshvillo, N.A. On the Structure of Soda Borosilicate Glass Subjected to Long Heat Treatment 511

Kokhonov, Kh.B. Effect of Heat Treatment on the Low-Temperature Thermal Capacity of Soda-Borosilicate Glass 514

Perey-Koshits, Ye.A. [Doctor of Physics and Mathematics], S.P. Zhdanov, and S.S. Andreyev. On Some of the Debatable Problems Relating to the Structure and Anomalous Properties of Soda Borosilicate Glasses 517

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Vitreous State (Cont.) SOV/5035 522

Discussion

Final Session of the Conference

On the State and on the Further Tasks Connected With the Solution of Glass Structure Problems (Resolution of the Third All-Union Conference Held During November 16-21, 1959) 528

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S/081/61/000/023/039/061
B138/B101

AUTHORS: Appen, A. A., Kan Fu-hsi

TITLE: Boric and aluminoboric anomalies in the properties of silicate glasses

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 23, 1961, 341, abstract 23K266 (Sb. "Stekloobrazn. sostoyaniye", M.-L., AN SSSR, 1960, 493-498. Diskuss. 522-524)

TEXT: Changes in the properties of the systems $Me_2O - B_2O_3 - Al_2O_3 - SiO_2$ and $Me_2O - MeO - B_2O_3 - Al_2O_3 - SiO_2$ are studied, due to the substitution of SiO_2 by Al_2O_3 in the presence of varying quantities of B_2O_3 in alkaline. The effect of the introduction of Al_2O_3 is mainly dependent on the Me_2O/B_2O_3 ratio. Also, soda and potash glasses behave differently from lithium ones. The anomalous effects are revealed most clearly in the refractive index, and also in the density, hardness and elastic modulus. A logical explanation of these effects is provided on the basis of the skeletal coordination structure of glass. [Abstracter's note: Complete translation.]
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APPEN A.A.

APR 1966
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3rd All-Union Conference on the Vitreous State
Stable 4 keratka, 1960, Nr 3, pp 45-46 (USSR)

The 3rd All-Union Conference on the Vitreous State was held in Leningrad at the end of 1960. It was organized by the Institute of Glass and Ceramics of the Academy of Sciences of the USSR. The main objective of the conference was to discuss the results of the 1959 International Conference on the Vitreous State held in Moscow. The conference was attended by 100 scientists from 15 countries. The main topics discussed were: the structure of glasses, the mechanism of vitrification and the properties of glasses. The conference was held in the form of a series of lectures and discussions. The results of the conference are reported in the present volume.

At the 3rd meeting, 3 reports dealt with the investigation results of sodium-boron-silicate glasses. The first report, by V. I. Golovinskiy, V. I. Gubanov, and V. I. Gubanov, dealt with the structure of glasses. The second report, by V. I. Golovinskiy, V. I. Gubanov, and V. I. Gubanov, dealt with the mechanism of vitrification. The third report, by V. I. Golovinskiy, V. I. Gubanov, and V. I. Gubanov, dealt with the properties of glasses.

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The 6th meeting dealt with the electric properties of glasses. The first report, by L. M. Kolyvashina, dealt with the structure determination of glasses. The second report, by L. M. Kolyvashina, dealt with the structure determination of glasses. The third report, by L. M. Kolyvashina, dealt with the structure determination of glasses. The fourth report, by L. M. Kolyvashina, dealt with the structure determination of glasses. The fifth report, by L. M. Kolyvashina, dealt with the structure determination of glasses. The sixth report, by L. M. Kolyvashina, dealt with the structure determination of glasses.

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The 7th meeting dealt with the structure determination of glasses. The first report, by L. M. Kolyvashina, dealt with the structure determination of glasses. The second report, by L. M. Kolyvashina, dealt with the structure determination of glasses. The third report, by L. M. Kolyvashina, dealt with the structure determination of glasses. The fourth report, by L. M. Kolyvashina, dealt with the structure determination of glasses. The fifth report, by L. M. Kolyvashina, dealt with the structure determination of glasses. The sixth report, by L. M. Kolyvashina, dealt with the structure determination of glasses.

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