"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A.; SIL'VESTROVICH, S.I., nauchnyy redaktor; NIKOLAYEVA, N.M., redaktor; PYATAKOVA, N.D., tekhnicheskiy redaktor

[Solubility of glass forming sodium silicate] Rastvorimost' stekloobraznykh silikatov natriia. Moskva, Gos.izd-vo lit-ry po stroit.materialam, 1957. 94 p. (MLRA 10:9)
(Sodium silicates)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A.

TRESVYATSKIY, Sergey Glebovich; CHEREPANOV, Aleksandr Mikhaylovich; BUDNIKOV, P.P., akademik, redaktor; MATVEYEV, M.A., redaktor; ROZENTSVEYG, Ya.D., redaktor izdatel'stva; VAYNSHTEYN, Ye.B., tekhnicheskiy redaktor

[High duty refractory materials and oxides] Vysokoogneuporuye materialy i izdeliia iz okislov. Pod red. P.P.Budnikova. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1957. 246 p. (MLRA 10:6)

1. Akademiya nauk Ukrainskoy SSR (for Budnikov)
(Refractory materials)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

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BUDNIKOV, P.P., red.; BUTT, Yu.M., red.; MATVEYEV, M.A., red.; TROKHIMOVSKAYA, I.P., red.; GURVICH, E.A., red.; GILENSON, P.G., tekhn.red.

[Collection of papers on the chemistry and technology of silicates] Sbornik turdov po khimii i tekhnologii silikatov. Moskva, Gos. izd-vo lit-ry po stroit. materialam, 1957. 424 p. (MIRA 11:3)
(Silicates)

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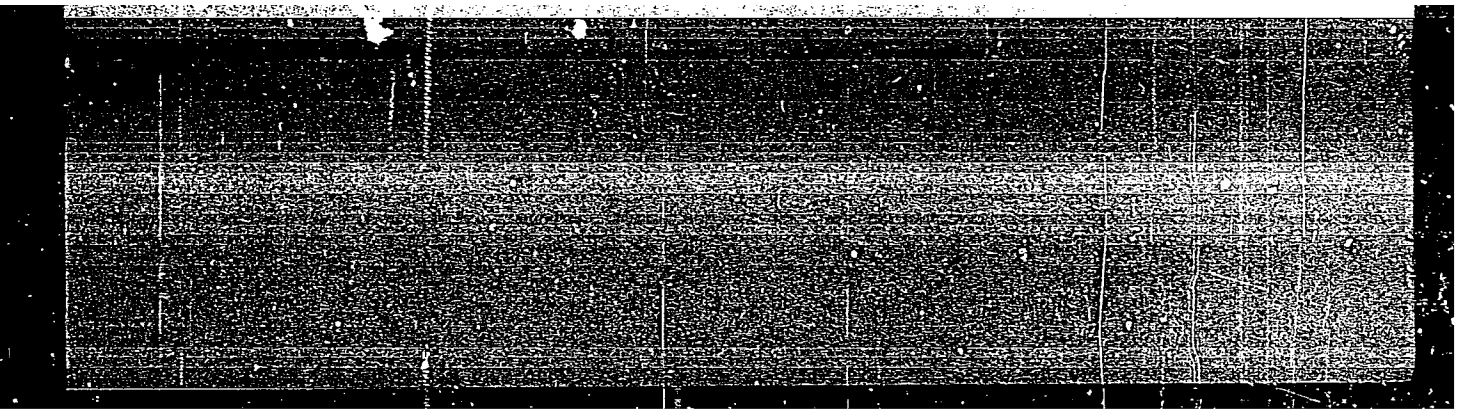

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, N.A.; TKACHENKO, K.M.

Quick prepration of foundry molds made primarily of mineral binding agents. Trudy MKHTI no.24:85-90 '57. (MIRA 11:6)
(Foundry chemistry) (Molding (Founding))

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A.

Preparation of vitreous and crystalline sodium oxide trisilicate and study of its properties and structure. Trudy MKHTI no.24: MKHTI no.24:209-219 '57. (MIRA 11:6)
(Sodium oxide) (Systems (Chemistry))
(Silicates)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A.

Hydration of glassy alkali metal silicates of constant disperity as dependent on the amount of water excess. Trudy MKHTI no.24:254-257 '57. (MIRA 11:6)

(Sodium oxide) (Alkali metal silicates)
(Hydration)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A.

Influence of dispersity on the solubility of sodium oxides with high silicate content following hydration in the vitreous state. Trudy MKHTI no.24:258-260 '57. (MIRA 11:6)
(Sodium oxide) (Solution (Chemistry))
(Vitreous state)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

ZHUMAKHOV, Ivan Mikhaylovich; MATVEYEV, M.A., otv.red.; SHOROKHOVA, A.V., red.izd-va, IL'INSKAYA, G.M., tekhn.red.

[Pumps, fans, and compressors] Nasosy, ventiliatory i kompressory. Ubletekhizdat, 1958. 598 p. (MIRA 12:2)
(Pumping machinery) (Fans, Mechanical) (Compressors)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

SOV 156 - 58-1-39/46

AUTHORS: Matveyev, M. A., Mostovaya, O. A, Tirasov, V. V.

TITLE: Investigations on the Structure of Water Glass with the Help of Ultrasonics (Issledovaniye stroyeniya zhidkogo stekla s pomoshch'yu ul'trazvuka)

PERIODICAL: Nauchnyye doklady vysshey shkoly, Khimiya i khimicheskaya tekhnologiya, 1958, Nr 1, pp. 161 - 163 (USSR)

ABSTRACT: The propagation velocity of ultrasonics in different liquids can be measured by means of the ultrasonic-interferometer. The coefficient of the adiabatic compressibility is computed by means of that velocity and the density of the liquid in question. The structure of the liquid is evaluated by the magnitude of this coefficient (Ref 1). The authors investigated sodium and potassium water glass of a different silica modulus of elasticity and of different density. The results are shown in table 1. Table 2 illustrates results of measurements in diluted solutions of sodium and potassium silicates of an equal specific density. The influence of the silica modulus of water glass on its compressibility is represented

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graphically in figure 1. Moreover, the dependence of the coefficient of the adiabatic compressibility of water glass on the silicate concentration was investigated by means of sodium tri- and disilicate samples formed in the lab. The results are shown graphically in figure 2. Henceforth it is seen that the dependence of the magnitude of the coefficient of compressibility of sodium water glass of a great silica modulus on the silicate concentration is of a linear character. The dependence of the compressibility of water glass on its density can be more easily expressed. For sodium tri- and disilicates the compressibility depends linearily on the density. The high propagation velocities of ultrasonics in solutions of water glass with great moduli (sodium and potassium) are marked by a rigidity of structure. The above mentioned measurements indicate, the higher the value of the silica modulus of water glass, i.e. the more the silicohydrogen structure branches off the more it adopts a rigid character. The velocity of propagation of ultrasonics is greater in a dense sodium-disilicate-solution of 1,3 g/cm^3 than in a potassium-disilicate-solution of equal density.

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SOV/156-58-1-33/46

Investigations on the Structure of Water Glass by the Help of Ultrasonics

Accordingly, the compressibility of a sodium-disilicate-solution is less than that of a potassium-disilicate-solution. Consequently, the structure of sodium-disilicate is more rigid than that of potassium-disilicate. There are 4 figures, 2 tables, and 1 **Soviet reference.**

ASSOCIATION: Kafedra obshchey tekhnologii silikatov i kafedra fiziki Moskovskogo khimiko-tekhnologicheskogo instituta im. D. I. Mendeleyeva (Chair of the General Silicate-Technology and Chair of Physics of the Chemico-Technological Institute imeni D. I. Mendeleyev, Moscow)

SUBMITTED: September 11, 1957

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A.

AUTHORS: Matveyev, M.A., Rabukhin, A.I., Gurvich, L.V. 72-2-5/20

TITLE: Ceramic Lining of Vibration Mills (Keramicheskaya futerovka vibromel'nits).

PERIODICAL: Steklo i Keramika, 1958. Nr 2, pp. 10-13 (USSR)

ABSTRACT: In order to produce a vibration mill that is proof against wear, and also in order to avoid the metal- or rubber lining in vibration mills such as are in use now, a method of fastening a ceramic lining had to be found. For test purposes the vibration mill M - 200 - 1.5 with a separate vibrator was developed by SKB VNIITISM for lining with plates made of various materials (see total view fig. 1). The lining plates are shown in form of drawings in figs. 2, 3, 4 and 5. For the fastening of these plates various kinds of adhesives were tested, and it was found that an adhesive based upon resin ED - 6 gave the best results. The production of this adhesive is then described in detail, as also, in fig. 6, the manner of fastening the ceramic plates. Tests were then carried out with lining plates of different origins. Fig. 7 shows holders with glued-on uralite plates. Figs. 8, 9 and 10 show linings of uralite, porcelain, and earthenware after having been in operation

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Ceramic Lining of Vibration Mills 72-2-5/20

for test purposes, without interruption, for 110 hours, without any damage having been found. There are 10 figures and 1 Slavic reference.

ASSOCIATION: VNIITISM

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

5(1),5(2)

AUTHORS: Martynov, Yu. M., Yakimenko, L. M., Furman, A. A., Matveyev, M. A. SOV/64-58-7-9/18

TITLE: The Technology of the Production and Use of Magnesium Chlorate for Defoliation (Tekhnologiya proizvodstva i primeneniye khlorat-magniyevykh defoliantov)

PERIODICAL: Khimicheskaya promyshlennost', 1958, Nr 7, pp 420-423 (USSR)

ABSTRACT: Mainly calcium cyanamide is used for artificial defoliation. In the cotton districts of the USSR irregular results were, however, obtained as the use of this substance depends on certain meteorological conditions. Among several preparations investigated the best results were obtained with magnesium chlorate. A comparative table of the experimental results with calcium cyanamide and magnesium chlorate for defoliation of cotton plants demonstrates that the effect of magnesium chlorate depends to a much lesser degree on temperature and meteorological conditions. The production possibilities of magnesium chlorate were studied, and it was found that favorable results are obtained after the reaction $2\ NaClO_3 + MgCl_2 \rightarrow Mg(ClO_3)_2 + 2NaCl$

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if carried out in acetone. The purity of the product obtained depends on the amount of water present in the $MgCl_2$. A further method that already can be used industrially consists in the fact that sodium chlorate is added to the fused $MgCl_2 \cdot 6H_2O$ (Ref 12); thus a solid crystalline product is obtained. The temperature is maintained at 110-120° and special melting crucibles are used. To obtain a reaction product with a minimum melting-point of 45° the ratio between magnesium chloride and sodium chlorate must be 1.3 - 1.4 . To produce one ton with 58% $Mg(ClO_3)_2 \cdot 6H_2O$ 0.44 tons of sodium chlorate and 0.56 tons of $MgCl_2 \cdot 6H_2O$ are required.

There are 2 figures, 4 tables, and 12 references, 3 of which are Soviet.

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AUTHORS: Semenov, I. N., Matveyev, M. A.

SOV/72-[illegible]

TITLE: Glasses With Increased Elastic Properties for Expansion Joints (Stekla s povyshennymi uprugimi svoystvami dlya perekhodnykh spayev)

PERIODICAL: Steklo i keramika, 1958, Nr 9, pp 14 - 15 (USSR)

ABSTRACT: The so-called expansion-joint glasses possess expansion coefficients and softening temperatures which are intermediate between those of the glasses to be joined. They permit to join glasses of differing qualities firmly and tightly. The series of expansion joint glasses which were developed in the Gosudarstvennyy nauchno-issledovatel'skiy institut stekla (State Scientific Research Institute of Glass) is made up of 8 glass types used in connection with quartz glass types up to ZS-5, and with 8 glass types for quartz glass from ZS-5 to BD-1. The causes are described which lead to the destruction of the joints between two glasses with differing physical and chemical properties. The predominant cause for such destructions is considered to be the difference of the average linear

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Glasses With Increased Elastic Properties for Expansion Joints SOV/72-59-9-5/26

expansion coefficients of the joining glasses. The internal stresses produced by this difference lead to the destruction of the joining seam. For the purpose of determining suitable joining glasses the elastic properties of glasses were investigated. Results of such tests for two types of glass A and B are given in a table. The experiments carried out with these glass types at the Institut fizicheskikh problem AN SSSR (Institute of Physical Problems AS USSR) and at the Institut fizicheskoy khimii AN SSSR (Institute of Physical Chemistry AS USSR) also furnished positive results. The B-type glass was recommended as joining glass. Its most important advantage is that this joining glass is the only one which permits to join the glass types ZS-5 and BD-1 without using a series of joining glasses. There is every reason to believe that by these methods it will also be possible to reduce the number of joining glasses for connecting quartz and ZS-5-type glasses. There is 1 table.

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Glasses With Increased Elastic Properties for Expansion Joints

SOV/72-58-3-5/25

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleyeva (Moscow Institute of Chemical Technology imeni Mendeleyev)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

SOV/72-58-1o-5/18

AUTHORS: Kitaygorodskiy, I. I., Professor, Matveyev, M. A., Sentyurin, G. G., Yagodina, A. T.

TITLE: Binder for Building Material Made From "Foam-Glass" (Vyazhushchiy material dlya stroitel'nykh izdeliy iz penostekla)

PERIODICAL: Steklo i keramika, 1958, Nr 1o, pp 22-25 (USSR)

ABSTRACT: Investigations of various binders for "foam-glass" on the basis of liquid glass and caustic magnesite, respectively, as well as of an aqueous solution of magnesium chloride were carried out. Table 1 shows the composition of binders on the basis of liquid glass and table 2 that of those on the basis of caustic magnesite. From among the properties of the binders the setting time, mechanic stability, water tightness, and the coefficient of thermal expansion (by means of the dilatometer according to Botvinkin-Solomin) and the adhesion were determined. The characteristics of properties of the investigated binders can be seen from tables 3 and 4. The binders on the basis of liquid glass proved to be insufficiently watertight. From among the mag-

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Binder for Building Material Made From "Foam-Glass" SOV/72-58-10-5/18

nesite binders, those with a content of 45 % caustic magnesite, 25 % marshallite, 4,5 % asbestos, 25 % talc gave satisfactory results. There are 4 tables.

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MATVEYEV, M.A.

PHASE I BOOK EXPLOITATION SOV/3592

Vsesoyuznoye khimicheskoye obshchestvo imeni D.I. Mendeleyeva

Silikaty; sbornik statey po khimii i tekhnologii silikatov, vyp. 1 (Silicates; Collection of Articles on the Chemistry and Production of Silicates, No. 1) Moscow, Gosstroyizdat, 1959. 105 p. Errata slip inserted. 3,000 copies printed.

Editorial Board: M.A. Matveyev (Resp. Ed.), Yu.M. Butt, and M.O. Yushkevich; Ed. of Publishing House: V.A. Rosanova; Tech. Ed.: N.I. Rudakova.

PURPOSE: This booklet is intended for chemists and geologists interested in silicate analysis.

COVERAGE: This is a collection of articles on the chemistry and technology of silicates. The contributing authors discuss the effect of admixtures on sintering processes and on the properties of Portland cements. The text also discusses the properties of certain glasses, the processing of ceramic materials, the process of drying facing tile, the stability of solid solutions of calcium alumoferrite, the activation of cement, the production of aluminous cement, the preparation of pulping rolls, the interaction of quartz with lime, and various problems related to the production of silicate-calcite materials. No personalities are mentioned. References are given at the end of each article.

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Sil'vestrovich, S.I. The Properties of Fluoride and Phosphate Opaline Glasses. 3

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

15(2), 15(6) SOV/72-59-1-6/16

AUTHORS: Matveyev, M. A., Babukhin, A. I.

TITLE: Wear Stability of Non-Metallic Grinding Substances on Vibration Grinding of Class-Ceramic Raw Materials (Iznosostoykost' nemetallicheskikh melyushchikh tel pri vibropomole stekolno-keramicheskogo syr'ya)

PERIODICAL: Steklo i keramika, 1959, Nr 1, pp 17-19 (USSR)

ABSTRACT: The possibility of an increase in wear stability had been shown by the authors and L. V. Gurvich in a previous paper (Ref 1). In the paper under review the use of Lyuberetskiy quartz sand for the tests is described. According to the data given by the spetsialnoye konstruktorskoye byuro Vsesoyuznogo tsentral'nogo nauchno-issledovatel'skogo instituta novykh problem proizvodstva stroitel'nykh materialov na baze tonkogo izmel'cheniya (SKB VNIITISM) (Special Design Office of the All-Union Central Scientific Research Institute for New Production Problems of Building Materials on the Pulverization Basis) the grinding effect of quartz sand on pulverization rises to the specific surface of 5000 cm^2/g, and thereafter drops considerably. Figure 1 shows the diagram of the grinding device used which is described in detail.

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SOV/72-59-1-6/16

Wear Stability of Non-Metallic Grinding Substances on Vibration Grinding of Glass-Ceramic Raw Materials

Glass and uralite balls, diameter: 15 to 18 mm, were used as grinding substances. Figure 2 shows the wear dependence of glass balls on the estimated amount of pulverized quartz sand with a specific surface of 3000 cm^2/g, and figure 3 the dependence of uralite balls. On account of the data given the wear constant can be estimated as 59 g/kg for glass balls and 6.8 g/kg for uralite balls. According to VNIITISM the wear constant for earthenware is 20 g/kg. There are 3 figures and 1 Soviet reference.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleyeva (Moscow Chemo-Technological Institute imeni Mendeleyev)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

AUTHORS: Matveyev, M.A. and Dyatlova, V.P. SOV/80-59-1-[illegible]

TITLE: Production of Water-Resistant Sand-Silicate Filtering Items (Polucheniye vodostoykikh peschano-silikatnykh fil'[illegible]-shchikh izdeliy)

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Nr 1, pp 50-54 (USSR)

ABSTRACT: Sand-silicate filtering items, such as plates, pipes, [illegible], are widely used in various branches of national economy. However, they possess an essential drawback of being p[illegible]rly water-resistant. The adhesive of these items, consisting of alkaline silicates with addition of silicon fluoride or sodium fluoride, dissolves during a contact with water and the items are destroyed. In order to overcome this deficiency the authors proposed a new metho[illegible] of producing a water-resistant adhesive by means of adding sodium silicate of aluminum fluoride which substitutes both sodium fluoride and alumina at the same time. With addition of 20% AlF_3 the solubility of the silicate adhesive attains a minimum, and its water-resistance rises more than 20[illegible] times. As the amount of adhesive with respect to the filler does not exceed 12%, it is recommen[illegible] to add AlF_3 to sandsilicate filters in a quantity of 2 [illegible] 2.5% of the weight of the dry mixture of components in order to obtain water-resistant filters. Their high qualities have been confirmed by the results of structural [illegible]

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SOV/[illegible] -1-

Production of [illegible]ter-resistant [illegible]-Filic[illegible]te Filtering Items

[illegible] by the tests of [illegible]ter-[illegible]
[illegible]
There are [illegible] 1 table and 7 [illegible]
[illegible]

SUBMITTED: June [illegible], [illegible]

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A.; RABUKHIN, A.I.

New methods for making pulping rolls. Silikaty no.1:78-81 '59. (MIRA 13:2)

(Woodpulp industry--Equipment and supplies)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A.; GERSHCHENKO, G.V.

Increasing the strength of quartz-cement pulping rolls. Silikaty no.1:82-87 '59. (MIRA 13:2)
(Woodpulp industry--Equipment and supplies)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A.

Rapid-hardening binders for reinforcing high-voltage insulators and its properties. Silikaty no.2:70-82 '58. (MIRA 13:6)

(Cement) (Electric insulators and insulation)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

15(2), 15(6)

SOV/72-59-3-6/19

AUTHORS: Matveyev, M. A., Rabukhin, A. I., Chernyshev, V. V., Bulgakov, V. P.

TITLE: Utilization of Soluble Glass for the Exact Casting of Products From Silicate Melts (Primeneniye rastvorimogo stekla v tochnom lit'ye izdeliy iz silikatnykh rasplavov)

PERIODICAL: Steklo i keramika, 1959, Nr 3, pp 16 - 17 (USSR)

ABSTRACT: The manufacturing technology and the properties of "diopsidite" products originating from the masterskaya novykh stroitel'nykh materialov Upravleniya stroitel'stva Dvortsa Sovetov /nyne laboratoriya kamennogo lit'ya NII Zhelezobetona/(Workshop of New Building Materials of the "Soviet Palace" Building Administration (now: Laboratory for Cement Casting NII for Reinforced Concrete) have been already earlier described by S. I. Balashov, V. V. Chernyshev, A. Ya. Libman, S. E. Zgerskiy (Ref 1). This method makes it possible to obtain products of complicated shape and especially sculptures (Figs 1 and 2). Press molds of "diopsidite" are shown in figure 3. The table shows the accuracies of this exact casting procedure. The respective

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

Utilization of Soluble Glass for the Exact Casting of Products From Silicate Melts SOV/72-59-3-6/12

cast molds are prepared by means of ethyl orthosilicate, which is, however, rather scarce and is therefore expensive. The authors of the present paper have carried out experiments to replace ethyl orthosilicate for mass production by liquid glass. They were based upon the technology of mold production, that had been earlier worked out in the MKhTI imeni Mendeleyeva dlya lit'ya metallov (M. A. Matveyev, A. I. Rabukhin (MKhTI imeni Mendeleyev for Metal Casting)). The method employed for these experiments, which yielded good results, is accurately described. There are 3 figures and 1 table.

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MATVEYEV, M.A., kand. tekhn. nauk; SMIRNOVA, K.A., kand. tekhn. nauk

Using porous ceramics in constructing dust collectors and pneumatic systems for transporting bulk materials. Stroi. mat. 5 no.6:25-27 Je '59. (MIRA 12:8)
(Ceramic materials) (Dust collectors) (Pneumatic-tube transportation)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

15(2)

AUTHORS: Ginzburg, D. B., Doctor of Technical Sciences SOV/72-59-7-9/19
Matveyev, M. A., Zherebin, S. I.

TITLE: Increase of the Working Efficiency of Glass Melting Furnaces by Sealing the Regenerative and Recuperative Systems (Povyshaniye effektivnosti raboty steklovarennykh pechey putem uplotneniya regenerativnoy i rekuperativnoy sistem)

PERIODICAL: Steklo i keramika, 1959, Nr 7, pp 26 - 30 (USSR)

ABSTRACT: The authors of this paper and I. V. Lebedev (Footnote 1) found that the air excess in the tank furnace of the Gor'kiy glassworks amounts to 15% and of the Gusevo crystal works amounts to 23%. D. B. Ginzburg, M. Ya. Magidson (Footnote 2) found in the glassworks imeni Kalinin an air excess of $\alpha = 1.2$. Therefore the authors of this paper do not agree with the statement of V. A. Krechmar and M. G. Stepanenko (Footnote 4) that the burning in the furnace in the glassworks takes place with an air excess of $\alpha = 1.5$ till 1.7. The amount of gas passing the regenerators is calculated by means of equations which are given and explained. These informations for the Gor'kiy works were published already earlier, for the Gusevo crystal works they are represented in the figure. As it may be seen from it it is possible to attain considerable savings by making

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Increase of the Working Efficiency of Glass Melting Furnaces SOV/72-59-7-9/19
by Sealing the Regenerative and Recuperative Systems

sealing tight the regenerative system of a glass melting furnace among it 5 to 6% of the fuel consumption. The authors of this paper elaborated and tested two kinds of coatings, the silicate (OZh-4)- and the magnesia coating (OM-8). Their composition, manufacturing method and properties are exactly described. The coatings OM-8 and OZh-4 proved to be the best also in the sealing of surfaces with temperatures up to 300°. On account of the experience of the Gor'kiy glassworks the coating OZh-4 can be recommended for sealing burners, regenerators and recuperators of the glass melting furnaces. There are 1 figure and 6 Soviet references.

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15(2) SOV/72-59-10-5/14

AUTHORS: Matveyev, M. A., Velya, V. V.

TITLE: Investigation of the Crystallization of Lithium Glasses of the Li_2O - SiO_2 System

PERIODICAL: Steklo i keramika, 1959, Nr 10, pp 14 - 20 (USSR)

ABSTRACT: The authors investigate in the paper under review the peculiarities of the crystallization of simple lithium glasses which, according to their composition, correspond to the formulas $Li_2O.(1-6)SiO_2$. The compositions of the charges of the test glasses are shown in table 1, and the results of chemical analysis of the obtained glasses in table 2. The pyrometer by N. S. Kurnakov, and platinum-platinum-rhodium thermocouples were used for the investigation. The heating curves of lithium and sodium glasses (S-SiO_2, L-Li_2O, N-Na_2O) are compared in figure 1. The thermograms of crystallized samples are shown in figure 2, and the cooling curves of lithium-silicate melts in figure 3. The course of crystallization of all examined glasses is shown in figure 4. The curves of the dependence of the crystallization temperature of glassy and melted lithium silicates

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and sodium glasses on their silicic modulus are shown in figure 5. The microstructure of the glass $Li_2O.SiO_2$ is shown in figure 6, that of the glass $Li_2O.3SiO_2$ in figure 7, that of the glass $Li_2O.4SiO_2$ in figure 8, that of the glass $Li_2O.5SiO_2$ in figures 9 and 10, and that of the glass $Li_2O.6SiO_2$ in figure 11. The dependence of the refractive index of the crystalline phase of the glasses $Li_2O.(2-6)\ SiO_2$ on the silicic modulus is shown in figure 12. The crystallization temperature of the lithium glasses $Li_2O.(2-6)SiO_2$ changes but slightly with the increase of the silicic modulus, and is $600 \pm 20^{\circ}$ for all glasses. Mixed crystals of silica are separated in the lithium disilicate during the crystallization of the lithium glasses $Li_2O.(3-6)SiO_2$ at $600 \pm 20^{\circ}$. The crystallization of lithium glasses takes places without deformation. There are 12 figures and 2 tables.

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15(2)

AUTHORS: Matveyev, M. A., Dayn, E. P. SOV/72-59-11-4/10

TITLE: The Effect of Powdered Refractory Charge Components Upon the Melting Temperature and Quality of Glass With a High Zirconium Content

PERIODICAL: Steklo i keramika, 1959, Nr 11, pp 8-12 (USSR)

ABSTRACT: The papers by I. D. Tykachinskiy, M. B. Romanovskiy, M. A. Matveyev, I. S. Koyfman, L. A. Grechanik, P. P. Budnikov, I. I. Nekrich (Footnote 1) were devoted to the investigation of soda-, soda-sulphate-, and borosilicate glasses. The present paper discusses the influence of dispersity of refractory stratum components, as well as entire charge, upon the melting temperature and quality of the glass Ts-18, which has the following composition: 62.5% SiO_2; 18% ZrO_2; 12% Na_2O; 2.5% K_2O; 5% CaO . O. K. Botvinkin, G. Ya. Ioffe, L. B. Krol', V. V. Tarasov, K. T. Bondarev (Footnote 2) report on its high chemical and thermal stability. The high refractory-oxide content accounts for the high melting point (1500-1520°) of this glass. The introduction of powdered sand and zirconium into the charge is said to constitute an effective

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The Effect of Powdered Refractory Charge Components SOV/72-59-11-4/18
Upon the Melting Temperature and Quality of Glass With a High Zirconium Content

method of lowering the melting point and improving the glass quality. This is described in detail. The degree of grinding of the material was determined by means of Tovarov's apparatus, and the grinding was carried out by the vibroplant Nr 3 (Fig 1). The fractional composition of the material was determined by means of a microscope and the apparatus designed by Figurovskiy. Tables 1 and 2 give a detailed description of the grinding of the sand, tables 3 and 4 of that of zirconium. Table 5 and figures 2-4 present the grinding of the charge under various conditions. Conclusions: The grinding of the entire zirconium-containing stratum is considered inexpedient, since soda and potash render the grinding of sand and zirconium difficult. Sand and zirconium should be added to the charge already ground. Suitably, the sand should be ground in the vibrating plant Nr 3. There are 4 figures, 5 tables, and 2 Soviet references.

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

S/123/61/000/005/010/017
A004/A104

AUTHORS: Matveyev, M.A., Rabukhin, A.I.

TITLE: Using soluble glass for waterproof molds in precision casting

PERIODICAL: Referativnyy zhurnal. Mashinostroyeniye, no. 5, 1961, 21, abstract 50157 ("Tr. Mosk khim.-tekhnol. in-ta im. D.I. Mendeleyeva", 1959, no. 27, 156-171)

TEXT: The authors describe investigations to find a possibility to replace ethyl silicate by water glass for ceramic coatings in precision casting. The work was carried out to increase the waterproofness of coatings as a result of their reaction with a magnesium fluosilicate solution and to reduce the amount of alkali in water glass on account of a decrease of its concentration and an increase of the silicic module. Water glass with the following modules was used: 2.12, 2.9, 3.99, and a specific gravity in the range of 1.012-1.3 in different relations, manufactured from chemically pure caustic soda and silicic acid by the moist alkali method, as well as magnesium fluosilicate solutions of different concentration, manufactured by way of neutralizing 15% fluosilicic acid with chemically pure magnesium oxide. The filler of the refractory coating was synthetic marshallite

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Using soluble glass ..

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A004/A104

The composition of the pattern mass was 50% paraffin and 50% stearin. The amount of marshallite in suspension is decreasing with the increase of the silicic module and the specific gravity of the water glass. When the specimens were manufactured each of the three coating layers after being covered with quartz sand were submerged for 5 minutes in the magnesium fluosilicate solution, and subsequently dried in air for 30 minutes. The melting of the pattern compound was carried out in a decinormal solution of hydrochloric acid at 80-90°C. The density of the specimens was determined on a special device whose description is given. Proceeding from the maximum density in the absence of scale on the castings, the optimum data of the technological process were determined as follows: water glass of 3.99 module and 1.15 specific gravity; marshallite content in suspension - 72.5%; magnesium fluosilicate solution with 10 - 15% $MgSiF_6$, fixing time - 5-6 min. There are 13 figures, 3 tables and 15 references.

M. Anuchina

[Abstracter's note: Complete translation]

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M. A., Doc Tech Sci -- (diss) "Research in the field of vitreous alkali silicates." Moscow, 1960. 44 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Moscow Order of Lenin Chemical Technology Inst im D. I. Mendeleyev, Chair of General Technology of Silicates); 250 copies; price not given; list of author's works at end of text (65 entries); (KL, 17-60, 149)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

SENNIK, Kiril Aleksandrovich; MATVEYEV, M.A., red.; MUKHIN, S.S., red. izd-va; GUROVA, O.A., tekhn. red.

[Mine surveying equipment] Gorno-razvedochnaia mekhanika. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po geol. i okhrane nedr, 1960. 315 p. (MIRA 14:7)

(Mine surveying--Equipment and supplies)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

PORAY-KOSHITS, Ye.A., doktor fiz.-matem.nauk, red.; AVGUSTINIK, A.I., red.; BARZAKOVSKIY, V.P., red.; BEZBORODOV, M.A., red.; BOTVINKIN, O.K., red.; VARGIN, V.V., red.; VLASOV, A.G., red.; YEVSTROP'YEV, K.S., red.; LEBEDEV, A.A., akademik, red.; MATVEYEV, M.A., red.; MOLCHANOV, V.S., red.; MYUELLER, R.L., doktor tekhn.nauk, red.; TOROPOV, N.A., red.; FLORINSKAYA, V.A., red.; YAKHKIND, A.K., red.; SUVOROV, I.V., red.izd-va; BOCHEVER, V.T., tekhn.red.

[Vitreous state; transactions of the Third All Union Conference on the vitreous state] Stekloobraznoe sostoianie; trudy Vsesoiuznogo soveshchaniia po stekloobraznomu sostoianiiu. Moskva, Izd-vo Akad. nauk SSSR, 1960. 534 p. (MIRA 13:10)

1. Vsesoyuznoye soveshchaniye po stekloobraznomu sostoyaniyu. 3d, Leningrad, 1959.

(Glass--Congresses)

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15.2120
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69747

AUTHORS: Matveyev, M. A., Velya, V. V.

S/072/60/000/03/005/023
B003/B008

TITLE: Investigation of the Hydration of Simple Lithium Glasses and Their Solubility in the Hydrated State

PERIODICAL: Steklo i keramika, 1960, Nr 3, pp 18-21 (USSR)

ABSTRACT: Lithium glasses are hydrated much less than sodium glasses; the apparatus used had therefore to be altered for the hydration of lithium glasses (Fig 1). Samples of lithium glasses $Li_2O.2SiO_2$, $Li_2O.3SiO_2$, $Li_2O.4SiO_2$, $Li_2O.5SiO_2$ and $Li_2O.6SiO_2$ were hydrated in 2 fractions with a grain size of 0.06 mm and 0.075 mm respectively with steam of 100° for 4 and 6 hours respectively. Glass $Li_2O.2SiO_2$ only shows a greater degree of hydration; it depends to a considerable extent on the grain size: 1st fraction 14%, 2nd fraction 8% (Table). Further investigations were only carried out on the glass of the last mentioned composition. The solubility of the hydrated glass is higher by 78% than that of the non-pretreated glass (Fig 2). It is therefore possible to produce liquid lithium glass on an industrial scale with an aggregate accord-

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69747

Investigation of the Hydration of Simple Lithium Glasses and Their Solubility in the Hydrated State

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B003/B008

ing to M. A. Matveyev (Fig 5). It can be used as an electro-insulating adhesive material and for other technical purposes on the basis of its low electroconductivity (Fig 4). There are 5 figures, 1 table, and 2 Soviet references.

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

S/153/60/003/004/029/040/XX
B020/B054

AUTHORS: Matveyev, M. A., Mikhaylenko, Yu. Ya.

TITLE: Study of the Structure of Hydrated Sodium Silicates by the Method of Infrared Spectroscopy

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya. 1960, Vol. 3, No 4, pp. 715 - 717

TEXT: The authors attempted to determine the nature of water in sodium silicates hydrated in the vitreous and crystalline state on the basis of infrared absorption spectra of these silicates. Earlier, one of the authors (Refs.3-5) had assumed that in the hydration of alkali silicates with water the latter enters their structure by way of hydration of the alkali-metal ion, while a hydrated shell is formed around the respective ion, which determines the degree of hydration of these silicates and other physicochemical properties. It was also shown (Ref.5) that the hydration of alkali silicates proceeds according to the following general equations:

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Study of the Structure of Hydrated Sodium Silicates by the Method of Infrared Spectroscopy

S/153/60/003/004/029/040/XX
B020/B054

a) $R_2Si_nO_{2n+1} + xH_2O \longrightarrow [R(OH_2)_x]_2Si_nO_{2n+1}$

b) $R_2Si_nO_{2n+1} + (x+y)\,[H^+, OH^-] \longrightarrow [HyR_{2-y}(OH_2)_x]\,Si_nO_{2n+1} + yROH$

Specially synthesized samples of vitreous and crystalline sodium silicate were investigated. The synthesis of these silicates and the factors characterizing their structure and physicochemical properties are described in Ref.3. The infrared absorption spectra were taken by an ИКС-11 (IKS-11) spectrophotometer of crystalline $Na_2O \cdot 3SiO_2$, crystalline hydrated $Na_2O \cdot 3SiO_2$, vitreous $Na_2O\ 3SiO_2$, and vitreous hydrated $Na_2O \cdot 3SiO_2$. The absorption curves obtained are given (Fig.). For hydrated vitreous and crystalline sodium silicates, the authors found a characteristic band at 6 μ (1667 cm^{-1}) corresponding to the water molecule, which proves that in the hydration of vitreous and crystalline alkali silicates water is chemically added by way of hydration of the ions of the modifiers entering the structure of these silicates.

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

Study of the Structure of Hydrated Sodium Silicates by the Method of Infrared Spectroscopy

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B020/B054

V. A. Florinskaya and R. S. Pechenkina (Ref.1) are mentioned There are 1 figure and 9 references: 6 Soviet, 1 US, 1 Austrian, and 1 French

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut im D. I. Mendeleyeva, kafedra obshchey tekhnologii silikatov (Moscow Institute of Chemical Technology imeni D. I. Mendeleyev, Department of General Silicate Technology)

SUBMITTED: February 21, 1959

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APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A., doktor tekhn.nauk

In the glass section of the Central Board of the D.I. Mendeleev All-Union Chemical Society. Zhur. VKHO 5 no. 5:588-589 '60. (MIRA 13:12)

(Glass--Congresses)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A.; KHARMANDARYAN, K.V.

Foam volcanic tuff, a new heat insulating material. Stroi. mat. 6 no.2:36-37 F '60. (MIRA 13:6)
(Armenia—Volcanic ash, tuff, etc.)
(Insulation (Heat))

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

S/072/60/000/008/006/007/XX
B021/B054

AUTHORS: Matveyev, M. A. Smirnova, K. A.

TITLE: Ceramic Filter Elements for Selenium Production

PERIODICAL: Steklo i keramika, 1960, No. 8, pp. 30 - 35

TEXT: Selenium sulfite solutions are purified by ceramic filter elements. P. I. Galkin and M. I. Eykhmans (Vsesoyuznyy institut mineral'nogo syr'ya (All-Union Institute of Mineral Raw Materials)) studied the production of finely porous ceramics in 1930, and R. M. Yurchak and Professor R. T. Makhl' in 1939. In the present paper, the authors studied fine ceramics with addition of dolomite. Mixtures of 9-17% clay, 30-33% kaolin, 6-29% quartz sand, 5% feldspar, 0-16% body, and 0-50% dolomite were mixed in a ball mill (after previous grinding), stirred with soda and water glass, cast in plaster molds, and left standing at room temperature for 84 h. Burning at 1100°, 1160°, or 1200°C followed. Pore dimensions and filtering capacity were determined. Table 5 gives the properties of samples as dependent on burning temperature. The filtering capacity of porous ceramics, burned

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Ceramic Filter Elements for Selenium Production

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B021/B054

at 1160°C, increased with increasing dolomite content. It was found that the samples of ceramics No. 6 and No. 7 with 40, and 50% of dolomite, respectively, had the best filtering properties; they were recommended for the production of ceramic filters to purify selenium sulfite solutions. Their pore dimension is 5 - 7μ, the bending strength attains 172 kg/cm^2. There are 8 figures, 5 tables, and 4 Soviet references.

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A., doktor tekhn.nauk

Making high-strength waterproof gypsum facing tiles. Stroi. mat. 6 no.11:21-22 N '60. (MIRA 13:11)
(Tiles)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A.; VELYA, V.V.

Investigating the hydration of ordinary lithium glasses and their solubility in the state of hydration. Stek.i ker. 17 no.3:18-21 Mr '60. (MIRA 13:6)

(Glass) (Hydration)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A., SMIRNOVA, K.A.

Ceramic elements of filters used in producing selenium. Stek. i ker. 17 no.8:30-35 Ag '60. (MIRA 13:8)
(Selenium) (Filters and filtration)

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15.2100

77497
SOV/80-33-1-6/49

AUTHORS: Matveyev, M., Velya, V.

TITLE: Solubility Study of Li_2O-SiO_2 Glasses and of Their Crystallization Products. Kinetics Study of Solubility of Lithium Glasses and of Their Crystallization Products as a Function of Silica Content

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr. 1 pp 34-42 (USSR)

ABSTRACT: Kinetics of solution of lithium silicate glasses and of crystalline lithium silicates of different SiO_2/Li_2O ratio was studied by measuring the electric conductivity of their solutions. Silicate samples of composition $Li_2O \cdot (2\text{-}6)SiO_2$ were crystallized at 600° for 50 hours (glassy silicates were obtained by sudden cooling of melts) and were ground to pass through a screen with 10,000 openings/cm^2. Twice distilled water was

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Solubility Study of Li_2O-SiO_2 Glasses and of Their Crystallization Products. Kinetics Study of Solubility of Lithium Glasses and of Their Crystallization Products as a Function of Silica Content

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used for preparing solutions in a container of known volume for measuring conductivity. Plots of specific conductivity versus time resulted in hyperbolic curves for all lithium silicate samples (glassy and crystalline). Identical shape of the curves indicates that the solution mechanism is identical in all cases and that the extent of hydrolysis is negligible. The time for establishing equilibrium between lithium silicates and their solutions varies with SiO_2/Li_2O ratio and is greater than for corresponding sodium silicates, which were studied earlier (Matveyev, M. A., Trudy Moskov. Khim. tekhnol. inst. imeni D. I. Mendeleyeva, 20,1, 166 (1949); ibid., 25, 2, 110 (1949)) (See Fig. 4). Figure 5 shows dependence of specific conductivity of silicates at equilibrium upon the silica-lithium oxide ratio.

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

Solubility Study of Li_2O-SiO_2 Glasses and of Their Crystallization Products. Kinetics Study of Solubility of Lithium Glasses and of Their Crystallization Products as a Function of Silica Content

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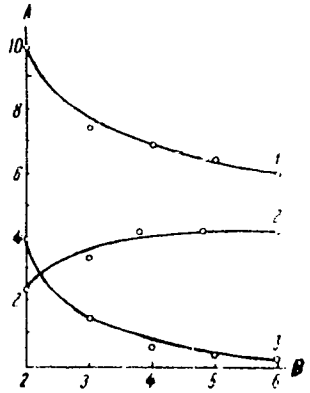
Fig. 4. Variation of time for establishing equilibrium between silicates and their solutions with silica content. (A) Time (hours); (B) silica content (SiO_2/Li_2O ratio). (1) For lithium glasses; (2) for sodium glasses; (3) for crystallization products of lithium glasses.



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Solubility Study of Li_2O-SiO_2 Glasses and of Their Crystallization Products. Kinetics Study of Solubility of Lithium Glasses and of Their Crystallization Products as a Function of Silica Content

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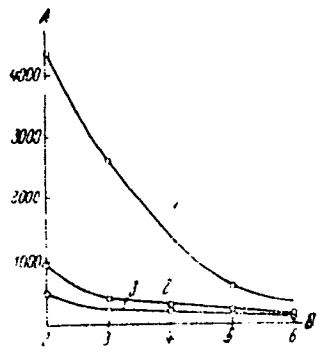
SOV/80-33-1-6/49

Fig. 5. Electric conductivity curves, characterizing dependence of solubility of alkali silicates upon silica content. (A) Specific electric conductivity $\varkappa \cdot 10^{-6}$ ($\Omega^{-1} \cdot cm^{-1}$); (B) silica-lithium oxide ratio. (1) For sodium glasses; (2) for lithium glasses; (3) for crystallization products of lithium glasses.



Card 4/7

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

Solubility Study of Li_2O-SiO_2 Glasses and Crystallization Products. Kinetics Study of Solubility of Lithium Glasses and of Their Crystallization Products as a Function of Silica Content

77497

SOV/80-33-1-6/49

It can be seen that (1) dissolution process of crystallized lithium silicates proceeds faster than that of glassy silicates, the quantity of dissolved silicate being greater for the latter; (2) while increase of SiO_2/Li_2O ratio in lithium silicates speeds up equilibrium process, increase of SiO_2/Na_2O ratio in the sodium silicates has the opposite effect; (3) equilibrium between the lithium silicates and their solutions is established much more slowly than for the sodium silicates, and the solubility of the former is lower; (4) solubility of lithium silicates is only slightly changed with increase of SiO_2/Li_2O ratio (unlike the solubility of sodium silicates). All this indicates that the mechanisms of dissolution processes of lithium and sodium silicates are different: solubility process of lithium silicates

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Solubility Study of Li_2O-SiO_2 Glasses and Crystallization Products. Kinetics Study of Solubility of Lithium Glasses and of Their Crystallization Products as a Function of Silica Content

77497
SOV/80-33-1-6/49

proceeds on the surface, while in sodium glasses it is deeper (due to a weaker bond between the sodium ions and the silica lattice). $Li_2O \cdot 2SiO_2$, in both crystalline and amorphous forms, differs markedly from the other lithium silicates in the time required for establishing equilibrium and in its greater solubility, indicating a weaker structure. This property makes $Li_2O \cdot 2SiO_2$ the only practical lithium silicate for preparation of lithium waterglass. The optimum water quantity for dissolving glassy $Li_2O \cdot 2SiO_2$ at atmospheric pressure is a 7-fold weight excess, with minimum time being 3 hours for particles of 0.06 mm diam, insuring 43-44% solution. Lithium waterglass shows well-expressed adhesive properties and has a much lower conductivity than sodium or potassium

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

Solubility Study of Li_2O-SiO_2 Glasses and Crystallization Products. Kinetics Study of Solubility of Lithium Glasses and of Their Crystallization Products as a Function of Silica Content

77497
SOV/80-33-1-6/49

silicates, making the lithium waterglass a good insulating adhesive. Solubility studies of lithium silicates (dissolution was performed in a covered glass provided with a mechanical stirrer and placed in a thermostat at 97°), measured by weighing the undissolved powder, gave results which were qualitatively identical with those established by conductivity measurements. There are 11 figures; and 5 Soviet references.

SUBMITTED: March 19, 1959

Card 7/7

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, Mikhail Alekseyevich; KUNIK, V.P., red. izd-va; PROZOROVSKAYA, V.L., tekhn. red.

[Water and compressed air supply engineering in ore dressing plants] Vodo-vozdushnoe khoziaistvo obogatitel'nykh fabrik. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po gornomu delu, 1961. 281 p. (MIRA 15:4)

(Ore dressing)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

GINZBURG, D.B., prof.; ~~MATVEYEV, M.A.,~~ prof.

Conference on the improvement of the operational efficiency of glass furnaces. Zhur.VKHO 6 no.4:458-461 '61. (MIRA 14:7)
(Glass furnaces--Congresses)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A.; BABUSHKINA, M.I.

New chemically stable material. Zhur. VKhO 6 no.6:708-709 '61.
(MIRA 14:12)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.

(Building materials)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A., prof., doktor tekhn.nauk

Simplified means of manufacturing silicate building materials under rural conditions. Stroi. mat. 7 no.7:24-26 Jl '61. (MIRA 14:7)

(Sand-lime products) (Building materils industry)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A.; RABUKHIN, A.I.

Dependence of the density of aqueous solutions of alkaline silicates on their composition. Stek. i ker. 18 no.6:12-14 Je '61. (MIRA 14:7)

(Glass manufacture)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A.; RABUKHIN, A.I.

Using aluminum phosphate compositions as a heatproof binder for cementing building materials. Ogneupory 26 no.6:281-285 '61. (MIRA 14:7)

1. Khimiko-tekhnologicheskiy institut imeni Mendeleyeva.
(Aluminum phosphates)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A.; RABUKHIN, A.I.

Compressibility of soluble glasses. Zhur.prikl.khim. 34 no.7: 1485-1490 Jl '61. (MIRA 14:7)

(Soluble glass)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A.; RABUKHIN, A.I.

Study of the effect of the physical and chemical properties of liquid glass on the technological indices of electrode coatings. Trudy MKHTI no.36:160-168 '61. (MIRA 15:7)
(Silicates) (Electrodes)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

BUTT, Yu.M., prof.; DUDEROV, G.N., dots.; MATVEYEV, M.A., prof.;
ZALKIND, I.Ya., kand. tekhn. nauk, nauchnyy red.;
SIL'VESTROVICH, S.I., kand. tekhn. nauk, nauchnyy red.;
GURVICH, E.A., red. izd-va; GOL'BERG, T.M., tekhn. red.

[General technology of silicates]Obshchaia tekhnologiia silikatov. Izd.2., perer. i dop. Moskva, Gosstroiizdat, 1962. 462 p. (MIRA 15:12)

(Silicates)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A.; KUTSENOK, B.I.

Mercury-impermeable structural materials. Zhur. VKHO 7 no.6:707-709 '62. (MIRA 15:12)

1. Moskovskiy ordena Lenina khimiko-tekhnologicheskiy institut im. D.I. Mendeleyeva i TSentral'naya nauchno-issledovatel'skaya laboratoriya po korrozii.
(Building materials--Permeability)
(Mercury)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A., doktor tekhn.nauk; SMIRNOVA, K.A., kand.tekhn.nauk

New soundproofing materials. Stroi. mat. 8 no.2:28-29 F '62. (MIRA 15:3)

(Acoustical materials)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A., prof., doktor tekhn.nauk; MATVEYEV, G.M., dotsent, kand.tekhn.nauk

"The chemistry and technology of cement" by R.Barta. Reviewed by M.A.Matveev, G.M.Matveev. Stroi. mat. 8 no.4:39-40 Ap '62. (MIRA 15:8)

(Cement) (Barta, R.)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

S/005/62/000/010/004/004
D029/D109

AUTHOR: Matveyev, M.V.

TITLE: The bonding properties of alkaline silicates hydrated in the glassy phase

PERIODICAL: Silikat Technik, no. 10, 1962, 354 - 361

TEXT: Investigations carried out by the author lead to the conclusion that the bonding properties of hydrated alkaline silicates and the dynamics of the hardening process are due to the fact that hydrate shells are formed around the ions of the alkali metal during hydration due to the adsorption of polar water molecules. The shells render the silicate particles capable of adhesion so that they can bind inert particles of other material. The hydrogen of the hydrate shells develops hydrogen bonds. Microscopic investigations revealed that new structures are formed during hydration which consist of the crystal hydrates of the silicates. These hydrates grow during drying and form a network of crystal hydrates which grow into each other and combine with the filler to a solid structure. The hydrated alkaline silicates have a brittle structure and show a weakened electrostatic binding of the ion modifiers to the silicic-acid-oxygen grid. They pass

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

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D029/D109

The bonding properties .....

easily into the mixing water and form an alkaline-silicate binder which covers the surfaces of the hydrated silicate particles and the filler particles. The hydrosilicate and filler are cemented by drying. The hydrated alkaline silicates are a mineral binder which, when mixed with an inert filler (quartz sand, chamotte, corundum, zirconium), forms a solid body when dried in air or at a low temperature. The binder can be used for the production of acid and heat proof concrete, refractory mortars, abrasives, silicate colors, mineral binders for casting molds and cores, and electrode sheathings, and also for briquetting and as basis of detergents. There are 11 figures and 1 table.

ASSOCIATION: Mendeleyev-Institut für chemische Technologie (Mendeleyev Institute for Chemical Technology) Moscow

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A.; SEMENOV, I.N.

Effect of the chemical resistance of glass and its microhardness.
Stek.i ker. 19 no.5:8-10 My '62. (MIRA 15:5)
(Glass--Testing)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A., doktor tekhn.nauk, prof.; SMIRNOVA, K.A.; USTINOVA, V.P.

Filtering ceramics made of substances based on wastes from asbestos-dressing plants. Stek. i ker. 19 no.8:28-32 Ag '62. (MIRA 15:9)

(Ceramic materials) (Filters and filtration)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A.; RABUKHIN, A.I.

Investigating the physicochemical properties of sodium and potassium silicates in connection with their structure. Trudy MKHTI no.37:32-43 '62. (MIRA 16:12)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A.

Thermographic study of sodium and lithium sil[illegible] MGETI no.37:49-57 '62.

Obtaining soluble glass from a silicate lump in a vibration mill. 120-122 (MIRA 16:12)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A.; SEMENOV, I.N.

Effect of the chemical stability of glass on its microhardness. Trudy MKHTI no.37:64-70 '62. (MIRA 16:12)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

GINZBURG, D.B., doktor tekhn.nauk, prof.; MATVEYEV, M.A., doktor tekhn. nauk, prof.; KUKSIN, I.I., inzh.

Rapid glass founding. Stek.i ker. 19 no.11:4-7 N '62. (MIRA 15:12)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.

(Glass manufacture)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, M.A.; RABUKHIN, A.I.

Mechanism of viscous flow and conductivity of water glasses. Zhur.prikl.khim. 35 no.6:1254-1260 Je '62. (MIRA 15:7)
(Soluble glass—Electric properties) (Viscosity)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

MATVEYEV, G.M. [Matsveev, H.M.]; MATVEYEV, M.A. [Matsveev, M.A.]

Thermodynamic analysis of solid-phase reactions in the system $SrCO_3$ - SrO - SiO_2. Vestsi AN BSSR. Ser. fiz.-tekh. nav. no.3: 59-62 '63. (MIRA 16:10)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

S/063/63/008/002/013/015
A057/A126

AUTHORS: Matveyev, M.A., Professor, Rabukhin, A.I., Candidate of Technical Sciences

TITLE: On the structure of liquid glasses

PERIODICAL: Zhurnal vsesoyuznogo khimicheskogo obshchestva imeni D.I. Mendeleyeva, v. 8, no. 2, 1963, 205 - 211

TEXT: In earlier works the authors investigated the density, compressibility, viscosity, and electric conductivity of more than 100 sodium and potassium water glasses of different compositions which have been synthesized from chemically pure reagents by the wet alkali method. The opinions on the structure of water glasses are contradictory and the dependence of their physico-chemical properties on the composition is not yet determined. In the present paper the authors therefore discuss their own earlier results and give the following conclusions: Water glasses are true aqueous solutions of alkali silicates. They have a double nature - showing properties of electrolyte solutions and on the other hand properties of polymer solutions. Different from polymers

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On the structure of liquid glasses

S/063/63/008/002/013/015
A057/A126

water glasses contain no polymer macromolecules, but monomer-cations of the alkali metal and polymer silicon oxide anions. The polymerization degree of the latter is low in comparison with organic polymers. These anions substitute the intermolecular water molecules in the quasi-lattice of water and form with it an indirect bond, which has a strength similar to a hydrogen bond. In the coordination sphere of the alkali cation there are the water molecules forming, if compressed, a hydrate shell. The water glasses might be considered as a low-temperature model of silicate melts with regard to viscosity and electric conductivity for that concentration range (above a density of 1.2 g/cm3) commonly used in practice. This corresponds to the mechanism of viscous flow and conductivity which is analog between these two systems - water glasses and silicate melts. There are 4 tables.

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932930006-4

S/063/63/008/002/014/015
A057/A126

[illegible]: [illegible], Professor, [illegible], V.P., Doctor of Technical Sciences

TITLE: Conference on high-temperature chemistry of silicate and oxide systems

[illegible]: Zhurnal vsesoyuznogo khimicheskogo obshchestva imeni D.I. Mendeleyeva, v. 8, no. 2, 1963, [illegible]

[illegible]: The conference on "Silicates and oxides in high-temperature chemistry" was held in Leningrad in November 1962, called in by the Institut khimii [illegible] imeni I.V. Grebenshchikova Akademii nauk SSSR (Institute of Silicate Chemistry imeni I.V. Grebenshchikov of the Academy of Sciences of the USSR) in [illegible] of the Vsesoyuznoye khimicheskoye obshchestvo imeni D.I. Mendeleyeva (All-Union Chemical Society imeni D.I. Mendeleyev). The conference discussed problems connected with the requirements of a new technique for materials with valuable properties such as refractoriness, chemical stability, mechanical strength, stability to thermal shocks, etc. About 400 participants from 82 or-

[illegible]

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A057/A126

Conference on high-temperature chemistry of ....

gaminations were present and more than 30 papers were presented. The conference was opened by the Director of the Institute of Silicate Chemistry and Corresponding Member of the AS USSR, N.A. Toropov. In the first meeting, dedicated to problems of oxide crystal structures, the following reports were presented: N.B. Belov, "Crystallo-chemical treatment of some particularities in the behavior of oxides at high temperatures"; S.M. Ariy and M.P. Morozova, "Properties of crystalline oxides of elements of the supplementary sub-groups at high temperatures and the structure of their lattices"; I.A. Bondar', "Yttrium-alumina and lanthanum-alumina systems"; N.A. Godina, "On the production of high-refractory materials"; Ye.I. Smagina, R.N. Morzheyedova and V.S. Kutsev (Gi.Vimet), "On polymorphic transformations of Sm_2O_3"; Ya.V. Klyucharov [Tekhnologicheskiy institut imeni Lensoveta (Technological Institute imeni Lensovet)] reported on [illegible] of magnesia-chromium refractory materials and their phase transformations. [illegible] Tresvyatskiy [Institut metallokeramiki AN USSR (Institute of Powder Metallurgy of the AS UkrSSR)] demonstrated the production of large MgO monocrystals. S.V. Kukolev, Mel'nik and N.N. Shapovalova [Khar'kov, Politekhnicheskiy institut (Khar'kov Polytechnical Institute)] presented results of high-temperature syntheses of $CaO \cdot 2Al_2O_3$ and $CaO \cdot 6Al_2O_3$. The manufacture of single

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crystals of silicates by hydrothermal synthesis was demonstrated by B.N. Litvin [Institut kristallografii AN SSSR (Institute of Crystallography of the AS USSR)]. A.I. Lesnov (Institute of Silicate Chemistry) presented the paper "Effect of the gaseous medium on solid phase reactions in systems with the participation of oxides of variable valency". Academician of the AS UkrSSR P.P. Budnikov and co-workers studied processes of mullite formation, while V.A. Bron, and N.V. Semkina [Vostochnyy institut ogneuporov (Eastern Institute of Refractory Materials)] investigated structures and properties of corundum ceramics. The effect of [illegible] salts on $CaCO_3$ and CaO structures was shown by I.G. Luginina [Kazakhskiy [illegible] institut (Kazakh Technological Institute)]. Reports concerning new high-temperature production of silicate materials were presented by A.N. Luginin (Kazakh Technological Institute), A.K. Karklit, Ye.R. Skuye, L.A. Ke[illegible] and [illegible] Polonskiy [Vsesoyuznyy institut ogneuporov (All-Union Institute of Refractory Materials)], N.I. Voronin, R.I. [illegible] and D.I. Shrabman. [illegible] (Institute of Silicate Chemistry) presented a new type of thermal analysis. Precise methods for the study of physical properties at high temperatures were developed in the Institut vysokikh temperatur (Institute of High Temperatures, Moscow). A device for the measurement of heat conductivity was pre-

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S/063/63/008/[illegible]/014/015
Conference on high-temperature chemistry of ... A057/A126

[illegible] by E.E. Shpil'nayn and N.V. Boyko, while A.Ye. Sheyndlin, [illegible] Chek[illegible] [illegible] and V.A. Petrov reported upon precise measurements of corundum [illegible]ies. The radiation coefficient, electric and heat conductivity, and evaporation rates at 2,000 - 3,500 C can be measured by a device described by V.V. Fesenko and A.S. Bolgar [Institut metallokeramiki spetsial'nykh splavov AN USSR (Institute of Powder Metallurgy and Special Alloys of the AS UkrSSR)]. A high-temperature microscope was described by P.P. Rumyantseva (Institute of Silicate Chemistry). I.V. Golubtsov reported on a universal device for studies in vacuum at 3,000 C, while L.Ya. Markovskiy, A.A. Kolpakova and Yu.P. Sapozhnikov (GIPKh, Leningrad) reported on the application of the luminescence method for solid phase reaction studies. Diffusion problems were discussed by A.I. Borisenko (Institute of Silicate Chemistry), V.I. Izvekov and N.S. Gorbunov [Institut fizicheskoy khimii AN SSSR (Institute of Physical Chemistry AS USSR)], A.D. Neuymin and S.F. Pal'guyev [Institut elektrokhimii Ural'skogo filiala AN SSSR (Institute of Electrochemistry of the Ural Branch of the AS USSR)]. T.N. Rezukhina, V.A. Levitskiy and A.N. Golubenko presented results of galvanic studies of solid electrolytes in determinations of thermodynamic properties of titanates, aluminates, and chromites. V.B. Glushkova (Institute of Silicate Chemistry) presented calcula-

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Conference on high-temperature chemistry of A057/A126

tion methods of the free energy of processes in solid-phase reactions. Investigations by means of mass spectrometry were reported on by G.A. Somenov, V.I. [illegible] and I.Ye. Zimakov (Institute of Physical Chemistry of the AS USSR). The next conference will be held in 1965.

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L 10712-63 EPR/EPF(c)/EWP(q)/EWT(m)/BDS--AFFTC/ASD/ESD-3/AFGC--
Pa-4/Pr-4/Pq-4--EW/WW/WH/DJ
ACCESSION NR: AP3001651 S/0063/63/008/003/0356/0356

80
78

AUTHOR: Nabyarov, M. A.; Fomenko, I. V.

TITLE: The use of glass lubricants in the production of metallic tubing

SOURCE: Vsesoyuznoye khimicheskoye obshchestvo. Zhurnal, v. 8, no. 3, 1963, 356

TOPIC TAGS: lubricant, hot deformation of steel, boron glasses, powdered glass, 1 Kh 18 N 9 T stainless steel, metallic tubing, hot deformation of steel

ABSTRACT: The requirements of a lubricant, including a glass lubricant, usable in hot deformation of steel are: non-reactivity with formed metal or with equipment; removability of lubricant after working; and the determination of prescribed viscosity in the narrow temperature interval used in hot-forming. Glasses containing 18-20% boron and about 12% alkali oxides are not reactive with the metals, have a coefficient of expansion that permits their [illegible] removal or easy removal from the tubing formed, and have the required viscosity at working temperatures. The use of powdered glass did not provide satisfactory lubrication in the tubular extrusion of 1 Kh 18 N 9T stainless steel. A suspension of glass (in liquid glass of higher modulus and 6-12% water) on the cold billet, or use of glass fiber or

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ACCESSION NR: AP3001651

glass wool discs, gave on heating a continuous protective coating, improving surface of the tubing and increasing durability of the press by a factor of 20. Orig. art. has: 1 figure.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva (Moscow Chemical-Technological Institute)

SUBMITTED: 06Aug62 DATE ACQ: 01Jul63 ENCL: 00

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MATVEYEV, M.A.; MAZO, E.E.; VOLKODATOV, A.F.

Effect of some factors on the modulus of elasticity of glass fiber. Zhur. VKHO 8 no.5:584-586 '63.
(MIRA 17:1)

1. Institut obshchey neorganicheskoy khimii AN BSSR.

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MATVEYEV, M.A.; YAKIMOVICH, D.T.

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MATVEYEV, M.A., prof., doktor tekhn.nauk; BABUSHKINA, M.I., kand.tekhn.nauk

Silicate pastes for flat and built-up roofs. Stroi.mat. 9 no.11:32-33 N '63. (MIRA 17:4)

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MATVEJEV, M. A. [Matveyev, M.A.], prof., ScDr. (Moscow);
AGARKOV, A. S. (Moscow)

Influence of thermal history on the kinetics of alkali-silicate glass solution. Sklar a keramik 13 no. 6: 143-147 Je '63.

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MATVEJEV, M.A. [Matveyev, M.A.]; BURES, Vl. [translator]

Production and use of soluble hydrated glass. Chem prum 13 no.11:565-571 N'63.

1. Moskevsky chemickotechnologicky institut D.I.Mendelejeva (for Matvejev).

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MATVEYEV, M.A., doktor tekhn.nauk, prof.; RABUKHIN, A.I., kand.tekhn.nauk

Relation of the refractive index of liquid glass to its composition. Stek. i ker. 20 no.5:14-16 My '63. (MIRA 16:7)

1. Moskovskiy Ordena Lenina khimiko-tekhnologicheskiy institut imeni D.I.Mendeleyeva.

(Glass—Testing)

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MATVEYEV, M.A., doktor tekhn. nauk; MAZO, E.E., kand. tekhn. nauk; KACHUR, F.T., inzh.

Chemical stability of glass in orthophosphoric acid. Stek. i ker. 20 no.10:8-10 O '63. (MIRA 16:10)

1. Institut obshchey i neorganicheskoy khimii an BSSR.
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(Phosphoric acid)

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