

Synthetic Zeolites: (Cont.)

158  
SOV/6246

**COVERAGE:** The book is a collection of reports presented at the First Conference on Zeolites, held in Leningrad 16 through 19 March 1961 at the Leningrad Technological Institute imeni Lenolet, and is purportedly the first monograph on this subject. The reports are grouped into 3 subject areas: 1) theoretical problems of adsorption on various types of zeolites and methods for their investigation, 2) the production of zeolites, and 3) application of zeolites. No personalities are mentioned. References follow individual articles.

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Card ~~4/12~~ 3/3

YERMOLENKO, M.F.; SHIRINSKAYA, L.P.

Cation exchange of heterovalent cations on clays. *Inv.vys.uchsb.*  
zav. khim.i khim.tekh. 5 no.3:468-473 '62. (MIRA 15:7)

1. Belorusskiy gosudarstvennyy universitet imeni Lenina,  
kafedra neorganicheskoy khimii.  
(Ion exchange)  
(Clay)

YERMOLENKO, N.F.; DEYCH, A.Ya.

Possibility of forming higher order compounds in the system  
 $\text{AlCl}_3 - \text{CS}(\text{NH}_2)_2 - \text{H}_2\text{O}$ . Izv.vya.tch.sav.; khim.i khim.tekh.  
5 no.4:536-538 '62. (MIRA 15:12)

1. Belorusskiy gosudarstvennyy universitet imeni Lenina,  
kafedra neorganicheskoy khimii.  
(Aluminum chloride) (Urea)

YERMOLENKO, N.F.; MALASHEVICH, L.N.

Adsorption of gelatin by coal and mineral adsorbents as related  
to their activity and the pH of the medium. Dokl. AN ESSR 6 no.1:  
35-38 '62. (MIRA 15:2)

1. Institut boshchey i neorganicheskoy khimii AN BSSR.  
(Gelatin)(Adsorption)

S/250/62/006/002/007/007  
I001/1201

**AUTHOR:** Yermolenko, N. F. and Modina, M. E.

**TITLE:** The change in colloidal structure of sodium stearate solutions in the presence of electrolytes and non-electrolytes

**PERIODICAL:** Akademiya nauk, Belaruskay SSR, Doklady v. 6, no. 2, 1962, 103-106

**TEXT:** This is a study of the influence of mineral salts (NaCl, Na<sub>2</sub>CO<sub>3</sub>, Na<sub>2</sub>SO<sub>4</sub>, CH<sub>3</sub>COONa) and glycerol on the structure of water solutions of sodium stearate.

Soaps prepared by the Dumanskiy and Demchenko method, 0,1 M/l water solutions of sodium stearate were used. The salts were added in quantities 0.01-0.05 M/l. The viscosity of the solution at first drops a little, then increases with greater concentrations. The lowering of the viscosity is due to the decrease of the carboxyl dissociation and hydration of the soap. Further rising of viscosity is due to the increase of complexity of structure of the colloidal sodium stearate solution.

Introduction of small quantities of a glycerol into the mixture water-sodium stearate-mineral salt slightly decreases the general viscosity of the system. Glycerol does not affect the characteristic viscosity curve of sodium stearate, obtained with addition of variable quantities of salts.



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The change in colloidal...

S/250/62/006/002/007/007  
I001/1201

There are 2 figures, 8 references are given. One English language reference reads as follows: M. I. Buerger, Z. W. Smith, J. A. de-Bretteville, F. V. Reyer — Proc. Nat. Acad. Sci. **28**, 526, 1942. [Abstractor's note: "Proc. Nat." — misprint; should probably be "Proc. Nat."]

ASSOCIATION: Belarusskiy gosudarstvennyy universitet im. V. I. Lenina (Belorussian im. I. V. Lenin State University).

SUBMITTED: November 1, 1961



Card 2/2

S/250/62/006/003/003/004  
1001/1201

**AUTHOR:** Levina, S. A., Shirinskaya, L. P., Zaretskiy, M. V. and Yermolenko, N. F.  
**TITLE:** Structure and adsorption properties of CaA-zeolites having cation exchanged forms  
**PERIODICAL:** Akademiya nauk Belaruskay SSR, Doklady, v. 6, no. 3, 1962, 164-167

**TEXT:** The work was carried to study the properties of native zeolites. Samples of zeolite CaA 202-291, from the Gorkiy base of VNIINP were dried for several hours and then ground and sifted through a screen ( $d = 0.25-0.1$  mm). Portions of 0.5 g of the zeolite were shaken for an hour at 20°C with a solution of the corresponding nitrate or chloride salts and left for 48 hrs. The amounts of displaced Ca were determined by the oxalate method or complexometrically. The following zeolites were prepared by cation exchange: Na(Ca), Li(Ca), K(Ca), Zn(Ca), Mg(Ca), Ni(Ca), Sr(Ca), Cd(Ca), Pb(Ca), Ba(Ca), Bi(Ca) NH<sub>4</sub>(Ca), Co(Ca), Rb(Ca). An X-ray tube 5CB-4 (BSV-4) was used with an iron anticathode to determine the structure of the samples. The roentgenograms were taken by the Debye method in a high resolving power camera BPC-3 (VRS-3).  $\beta$ -radiation was not filtered. The adsorption capacity of the samples with respect to water and methyl-alcohol was determined by means of a quartz spring balance, in vacuo.

The authors conclude: (1) No complete exchange occurs under the given conditions. (2) CaA-zeolites as well as their substituted forms have a simple cubic lattice structure of the type Linde 4A. (3) Changes in the

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Structure and...

S/250/62,006/003/003/004  
1001/1201

period of the lattice are established with the exchange of Ca for other ions. (4) A partial destruction of the crystal lattice occurred in some cation-exchange of zeolites Ca A. (5) Adsorption capacity can be increased by a partial substitution of Ca-ions in zeolites 5A for Li, Mg and Na ions.

The most important English-language references are: R. M. Barrer, Proc. Chem. Soc., April 1958, 99-112; R. M. Barrer, W. M. Meier, Trans, Faraday Soc., 54, 7, 1958, 1074; R. M. Milton, Pat. U.S.A. 2882244, 14/04, 1959; J. H. Esterl, Pat. U.S.A. 2847280, 12/05, 1958. There is 1 table.



ASSOCIATION: Institut obshchey i neorganicheskoy khimii AN BSSR (Institute of General and Inorganic Chemistry, AS BSSR).

SUBMITTED: December 11, 1961

Card 2/2

<sup>0</sup>  
KAMAROV, V.S.; YERMOLENKO, N.F.

Highly active adsorbent for the regeneration of oils used in power engineering. Dokl. AN BSSR 6 no. 4: 229-232 Ap '62. (MIRA 15:4)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.  
(Insulating oils) (Clay)

S/251/62/006/005/006/007  
1001/1002

**AUTHORS:** Levina, S. A., Yermolenko, N. F. and Plyushchevskiy, N. I.


**TITLE:** Investigation of mechanical strength and of adsorption activity in granulated native zeolites of different brands

**PERIODICAL:** Akademiya nauk Belaruskay SSR. Doklady, v. 6, no. 5, 1962, 311-312

**TEXT:** Granulated zeolites were heated to 350°C for 6 hrs and tested for crushing. Their sorptive activity was determined afterwards by adsorption of methyl alcohol and water vapors in vacuo by means of a quartz spring balance. There is no direct connection between the increase of binding material in the granulated samples and their strength. The strength may increase very slightly but the activity drops down considerably. Preliminary wetting for 6 hrs provides granules comparable in strength with granules of Linde firm. The activity losses are about 2%. Wetting for 24 hrs increases the strength of the granules, but losses of activity reach 8%. Additional wetting increases neither strength nor activity. Addition of organic or inorganic material did not show any positive results. There are 2 figures.

**ASSOCIATION:** Institut obshchey i neorganicheskoy khimii AN BSSR (Institute of General and Inorganic Chemistry, AS BSSR)

**SUBMITTED:** December 28, 1961



Card 1/1

S/250/62/006/008/002/002  
1042/1242

**AUTHORS:** Levina, S. A., Plyushchevskiy, N. I., and Ermolenko, N. F.

**TITLE:** Electron microscopic investigation of the crystallization process of Type 4A zeolite

**PERIODICAL:** Akademiya nauk SSSR. Doklady, v. 6, no. 8, 1962, 500-502

**TEXT:** An aluminosilicate gel was prepared by mixing solutions of sodium aluminate and silicate; it was aged for one hour at room temperature, then heated at 95-100°C for three hours to attain complete crystallization. The resulting crystalline powder was found by X-ray diffraction to be identical with industrial Type 4A zeolite. Electron microphotographs were taken of seven samples collected at various stages of the process. The original jelly-like mass acquired a reticular structure after 10 min and a well-formed net pattern after one hour at room temperature. Distinct solid crystals appeared after subsequent heating for one hour and 35 min. There is one figure.

**ASSOCIATION:** Institut obshchey i neorganicheskoy khimii AN BSSR (Institute of General and Inorganic Chemistry, AS BSSR)

**SUBMITTED:** March 22, 1962

Card 1/1

KOMAROV, V. S.; YERMOLENKO, N. F.

Adsorption-structural and physicochemical properties of clay hydroxide adsorbents. Koll. zhur. 24, no. 6: 709-716 N-D '62.  
(MIRA 16:1)

1. Institut obshchey i neorganicheskoy khimii AN BSSR, Minsk.

(Clay) (Adsorption)

S/076/62/036/011/007/021  
B101/B180

AUTHORS: Yermolenko, N. F., and Shirinskaya, L. P. (Minsk)

TITLE: Selectivity of exchange on an NaA-type molecular sieve

PERIODICAL: Zhurnal fizicheskoy khimii, v. 36, no. 11, 1962, 2432 - 2435

TEXT: The exchange with KCl,  $\text{NH}_4\text{Cl}$ , LiCl,  $\text{RbNO}_3$ , and  $\text{AgNO}_3$  was studied on a zeolite molecular sieve of the NaA type by determining the equilibrium distribution of the ions at different initial concentrations. Results: (1) A linear dependence exists between the initial concentration of the cations  $\text{Rb}^+$ ,  $\text{K}^+$ ,  $\text{NH}_4^+$ ,  $\text{Li}^+$  and the amount of  $\text{Na}^+$  displaced from the zeolite. (2) In the presence of  $\text{Ag}^+$ , the amount of desorbed  $\text{Na}^+$  is independent of the initial electrolyte concentration. NaA is therefore recommended as a sorbent for concentrating silver traces. (3) At 0.2 N initial concentration, K the selectivity coefficient, determined graphically from the distribution curve and calculated by the law of mass action was found to agree. K is 0.65 for  $\text{Rb}^+$ , 0.57 for  $\text{Ag}^+$ , 0.43 for  $\text{K}^+$ , 0.34 for  $\text{NH}_4^+$ , and

Card 1/2

S/076/62/036/011/007/021  
B101/B130

Selectivity of exchange on an...

0.09 for  $\text{Li}^+$ . (4) K falls considerably with increasing electrolyte concentration, for  $\text{Rb}^+$ ,  $\text{K}^+$ , and  $\text{NH}_4^+$ , but shows little change for  $\text{Li}^+$ . NaA can therefore be used for separating alkali cations from their mixtures. There are 3 figures and 1 table. The most important English-language reference is: R. M. Barrer and D. A. Langley, J. Chem. Soc., nov., 3804, 3811, 1958.

ASSOCIATION: Akademiya nauk BSSR, Institut obshchey i neorganicheskoy khimii (Academy of Sciences BSSR, Institute of General and Inorganic Chemistry)

SUBMITTED: July 1, 1961

Card 2/2

11,0120  
AUTHORS:

38112  
S/020/62/144/002/025/028  
B101/B110

Komarov, V. S., Yermolenko, N. P., Academician AS BSSR, and  
Varlamov, V. I.

TITLE:

Thermocatalytic desulfurization of hydrocarbon fuels on a  
calcined clay-hydroxide catalyst

PERIODICAL:

Akademiya nauk SSSR. Doklady, v. 144, no.2, 1962, 406 - 408

TEXT:

In view of the planned raise of petroleum production in the Ural-Volga area an inexpensive industrial desulfurization process was developed. Experiments were made with an iron-containing clay-hydroxide catalyst which had been described already earlier. (DAN, 139, no. 3, 665 (1961)). Desulfurization was carried out in a heated glass tube, the air being displaced by N<sub>2</sub>. The catalyst was regenerated by blowing air through the tube at 550 - 600°C. Results: (1) 95.7 and 80.3 % S could be removed from gasoline (b.p. 40 - 200°C) containing 0.070 % S at fuel-to-catalyst ratios of 2:1 and 20:1, respectively. At ratios of 2:1 and 10:1, 92.4 and 85 - 87 % S, respectively, could be removed from ligroin (b.p. 120 - 240°C) containing 0.146 % S. (2) The catalyst could be regenerated repeatedly. After 20.  
Card 1/2



Thermocatalytic desulfurization of ...

S/020/62/144/002/025/028  
B101/B110

cycles its activity was only 7 - 10 % less. This is probably due to the deposition of Fe, Mn, Al, Mg, Cr, Si, etc. which are present in the fuels as organic complexes. (3) Losses in the form of coke, gas, and polymers amount to 3 - 5 %. (4) Consumption of catalyst per unit weight of fuel is ~0.27 % for gasoline, and ~0.40 % for ligroin. (5) The sulfur of the organic compounds is completely adsorbed by the catalyst and separated as SO<sub>2</sub> and elementary sulfur during regeneration. No corroding H<sub>2</sub>S is formed. (6) Additional cleaning of the distillate with alkali is unnecessary. The catalyst is recommended for use in refineries. There are 1 figure and 1 table.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii Akademii nauk BSSR (Institute of General and Inorganic Chemistry of the Academy of Sciences BSSR)

SUBMITTED: January 26, 1962

Сент 2/2

KOMAROV, V. S.; YERMOLENKO, N. P., akademik; VARLAMOV, V. I.;  
VOLNENKO, I. M.

Highly active ferrocenylsilicate contact catalyst for  
thermal desulfuration of petroleum products. Dokl. AN SSSR  
147 no.6:1413-1416 D '62. (MIRA 16:1)

1. Institut obshchey i neorganicheskoy khimii AN Belorusskoy  
SSR. 2. AN Belorusskoy SSR (for Yermolenko).

(Petroleum products) (Desulfuration)  
(Catalysts)

YERMOLENKO, N. P., red.; KOMMAROV, V. S., red.; TKACHEVA, T., red. izd-  
va; ATLAS, A., tekhn. red.

[Ion exchange and sorption from solutions] Ionobmen i sorb-  
tsia iz rastvorov. Minsk, Izd-vo AN Bel.SSR, 1963. 159 p.  
(MIRA 16:9)

1. Akademiya nauk BSSR. Minsk. Institut obshchey i neorgani-  
cheskoy khimii.  
(Ion exchange) (Sorption)

ACCESSION NR: AT4001412

S/3029/63/000/000/0015/0019

AUTHOR: Malashevich, L. N.; Levina, S. A.; Yermolenko, N. F.

TITLE: Ion-exchange in certain synthetic zeolites

SOURCE: Ionoobmen i sorbtsiya iz rastvorov. Minsk, 1963, 15-19

TOPIC TAGS: molecular sieve, ion exchange, cation exchange, adsorption, selective adsorption, separation, lithium ion, potassium ion, ammonium ion, silver ion, cesium ion, zeolite, natural zeolite, synthetic zeolite, cation exchanger, zeolite 13X, zeolite no. 20, zeolite P, cation, bond energy, ionic radius, ion exchange equilibrium, distribution coefficient, equilibrium constant

ABSTRACT: The authors compared zeolite 13X and a type P zeolite (see Barrer et al., J. Chem. Soc. 195, 1959) which they synthesized (No. 20) with respect to the selective adsorption of the monovalent cations  $Li^+$ ,  $K^+$ ,  $NH_4^+$ ,  $Ag^+$  and  $Cs^+$ . Equilibrium exchange was carried out by the static method without estimating the ionic strength of the solutions. K and Na were determined photometrically; Ag by Volhard's method. The results are shown in Figs. 1 and 2 of the Enclosure. As indicated by the distribution curves, the selective adsorption of the cations decreased in the order  $Ag > K > NH_4 > Cs > Li$  for zeolite 13X and the order  $Ag > K > Li$  for zeolite No. 20, the selectivity coefficient of the Ag ion being 49 in each case.

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ACCESSION NR: AT4001412

The marked difference between the selectivity coefficients of K and Li on zeolite No. 20 (3.54 and 0.03, respectively) may make this resin useful in the separation of these two alkali metals. Orig. art. has: 2 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 21Nov63

ENCL: 01

SUB CODE: MA, CH

NO REF SOV: 004

OTHER: 009

Card: 2/3

ACCESSION NR: AT4001412

ENCLOSURE: 01

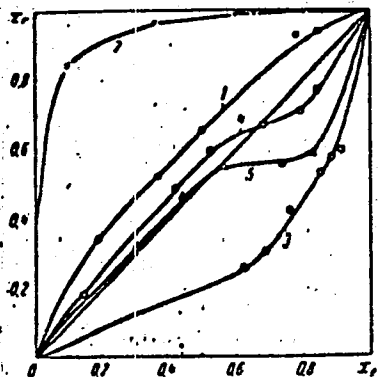


Fig. 1. Cation distribution curves on zeolite 13X:  
1 -  $K^+$ , 2 -  $Ag^+$ , 3 -  $Li^+$ ,  
4 -  $NH_4^+$ , 5 -  $Cs^+$ .

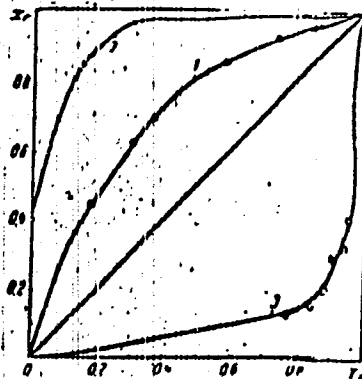


Fig. 2. Cation distribution curves on zeolite No. 20:  
1 -  $K^+$ , 2 -  $Ag^+$ , 3 -  $Li^+$ .

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ACCESSION NR: AT4001415 8/3029/63/000/000/0052/0057

AUTHOR: Levina, S. A.; Plyushchevskiy, N. I.; Yermolenko, N. F.

TITLE: Effect of ultrasonic waves on crystallization of zeolites

SOURCE: Iznobmen i sorbtsiya iz rastvorov. Minsk, 1963, 12-57

TOPIC TAGS: zeolite, molecular sieve, synthetic zeolite, zeolite 4A, preparation, crystallization, hydrothermal crystallization, gel, aluminosilica gel, sodium aluminates, sodium silicates, crystal formation, network structure, ultrasonic treatment, gel aging, heat treatment, crystallization rate, adsorption activity, ultrasonic waves

ABSTRACT: A study was made of the effect of ultrasonic irradiation (18 kilocycles/sec for 3 min.) on the crystallization of zeolite 4A. The crystallization process was followed by examining specimens under the electron microscope. Crystallization was not accelerated if ultrasonic treatment was carried out immediately after the aluminosilicate gel had been prepared. Prolonging the time of treatment to 30 min. also had no effect on the crystallization rate. However, when samples were treated for 30 min. after 1 hr. of aging at room temperature and then heated for 1 hr. and 30 min. at 80-100C, crystallization was complete in 3 hrs. as compared with 6 hrs. for the control. Thus, ultrasonic treatment is effective in accelerating the crystallization rate only if cross-linked lattices are present in the gel.

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ACCESSION NR: AT4001415

In this case, ultrasonic treatment accelerates packing in cross-linked lattices and the appearance of nucleation centers for crystallization. The adsorptive activity of treated crystals was the same as that of untreated crystals. Orig. art. has: 2 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 21Nov63

ENCL: 00

SUB CODE: MA, CH

NO REF SOV: 005

OTHER: 000

Card 2/2



YERMOLENKO, N. F. [Iarmolenka, M. F.]; YATSEVSKAYA, M. I.  
[Iatsenskaya, M. I.]

Study of the adsorption on coal from aqueous solutions of  
mixtures of surface-active substances. Vestsi AN BSSR. Ser.  
fiz.-tekh. nav. no.1:59-64 '63. (MIRA 16:4)

(Surface-active agents)  
(Adsorption)

YERMOLENKO, N.F.; SHIRINSKAYA, L.P.; ZARETSKIY, M.V.

Cation exchange reactions of alkaline earth metals on NaA type synthetic zeolite. Vestsi AN BSSR. Ser. Fiz.-tekh. nav. no.2:111-114 '63.

LEVINA, S.A.; MALASHEVICH, L.N.; YERMOLENKO, N.F.

Adsorption of dyes by synthetic zeolites. Koll. zhur. 25 no.5:  
567-571 S-O '63. (MIRA 16:10)

1. Institut obshchey i neorganicheskoy khimii AN BSSR, Minsk.

KOMAROV, V.S.; YERMOLENKO, N.F.

Bleaching and regenerating properties of clay-hydroxide  
adsorbents. Zhur. prikl. khim. 36 no.5:941-949 My '63.  
(MIRA 16:8)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.  
(Adsorbents) (Clay)

KRIVCHIK, Z.A.; YERMOLENKO, N.F., akademik

Certain features of cation exchange in an acid medium on cation  
exchangers with carboxyl functional groups. Dokl. AN SSSR 151  
no.5:1147-1149 Ag '63. (MIRA 16:9)

1. Institut obshchey i neorganicheskoy khimii AN BSSR, 2. AN BSSR  
(for Yermolenko).

(Ion exchange) (Carboxyl group)

YERMOLENKO, H.F.; EFROS, M.D.

Effect of the conditions of preparation on the phase composition, porous structure, and sorption properties of mixed oxides from oxychlorides. Dokl. AN BSSR 8 no. 3:165-168 M. '64.

(MIRA 17:5)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.

KRIVCHIK, Z.A.; YERMOLENKO, N.F.

Adsorption and ion-exchange properties of sulfurized coals. Koll.zhur.  
26 no.1:51-56 Ja-F '64. (MIRA 17:4)

1. Institut obshchey i neorganicheskoy khimii AN ESSR, Minsk.

ACCESSION NR: AP4039330

S/0250/64/008/004/0241/0245

AUTHOR: Komarov, V. S.; Yermolenko, N. V.; Varlamov, V. I.

TITLE: Thermocatalytic desulfurization of special kerosene and diesel fuel over iron aluminosilicate catalyst

SOURCE: AN BSSR. Doklady\*, v. 8, no. 4, 1964, 241-245

TOPIC TAGS: iron aluminosilicate, catalyst, thermocatalytic desulfurization, special kerosene, kerosene, diesel fuel

ABSTRACT: The activity of iron aluminosilicate catalysts in the thermocatalytic desulfurization of high-boiling petroleum distillates — special kerosene (S content, 0.125%) and diesel fuel — has been tested and the optimum desulfurization conditions and the catalyst life have been determined. The experiments were conducted in flow equipment by a standard procedure described earlier. In the case of special kerosene desulfurization, 450C was the optimum temperature. The gaseous products were 92.2—94.4% H<sub>2</sub> and

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ACCESSION NR: AP4039330

contained no  $H_2S$ , which is retained by the catalyst as iron sulfites. Because of the absence of  $H_2S$ , equipment corrosion is not a danger and chemical refining of the products is unnecessary; capital investment and production costs are, therefore, low. The loss of catalyst after 40 regenerations was only 0.28% and the degree of desulfurization averaged 88.1%, corresponding to a concentration of sulfur in the refined kerosene of 0.014%. It was concluded that this process is at present one of the cheapest and the most rational desulfurization processes for petroleum products which boil below 300C. However, the degree of desulfurization in diesel fuel at 450C depended to a great extent on the feed space velocity and on the feed/catalyst ratio. The highest degree of desulfurization (75.1%) was obtained at a space velocity of 0.3 hr and a feed/catalyst ratio of 1:1. The difficulty in desulfurizing diesel fuel apparently lies in the rapid contamination of the catalyst surface with coke. It was concluded, therefore, that desulfurization of high-boiling distillates requires a catalyst which would 1) stimulate sulfur-compound decomposition, 2) chemically bind sulfur and remove it from the reaction zone, and 3) have a low

Card 2/3

ACCESSION NR: AP4039330

coking capacity. This research was done at the Institute of General and Inorganic Chemistry, Academy of Sciences, BSSR. Orig. art. has: 1 figure and 4 tables.

ASSOCIATION: Institut obshchey i neorganicheskey khimii AN BSSR  
(Institute of General and Inorganic Chemistry, AN BSSR)

SUBMITTED: 17Jan64

DATE ACQ: 09Jun64

ENCL: 00

SUB CODE: YP, GC

NO REF SOV: 009

OTHER: 000

Card 3/3

YERMOLENKO, N.F.; LEVINA, S.A.; PALSEVICH-KOLYADA, L.V.

Synthesis of zeolites with isomorphically substituted chromia, their composition, structure and sorption properties. Dokl. AN BSSR 8 no.6:394-397 Je '64.

(MIRA 17:10)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.

YERMOLENKO, N.F.; KARATAYEVA, T.P.

Structure and sorptive properties of the system of hydroxides  
 $Mg(OH)_2 - 2Fe(OH)_3$  as dependent on the conditions of preparation.  
Dokl. AN BSSR 9 no.10:668-670. 0 '65.

(MIRA 18:12)

1. Kafedra neorganicheskoy khimii Belorusskogo gosudarstvennogo  
universiteta imeni V.I.Lenina. Submitted May 29, 1965.

YERMOLENKO, N.F.; SHIRINSKAYA, L.P.; ULASIK, T.G.

Preparation of  $\text{NH}_4^-$  and H-forms of zeolites and study of their sorption properties. Dokl. AN BSSR 9 no.12:807-812 D '65.  
(MIRA 19:1)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.

YEFMOLENKO, N.F.; POPKOVICH, G.A.; KAZAK, A.F.

Structure and sorption activity of silica gel aminated by the  
coprecipitation method. Vestsi AN BSSR.Ser.khim.nav. no.2:99-  
102 '65. (MIRA 18:12)

YERMOLENKO, H.F.; KARATAYEVA, T.P.

Dependence of the structure and sorption properties of the system of hydroxides  $Mg(OH)_2 - 2Fe(OH)_3$  on the conditions of preparation and heat treatment. Dokl. AN BSSR 9 no. 11: 725-728 N '65 (MIRA 19:1)

1. Kafedra neorganicheskoy khimii Belorusskogo gosudarstvennogo universiteta imeni Lenina.

L 22081-66 EWT(m)/EWA(d)/T JW

ACC NR: AP6012661

SOURCE CODE: UR/0059/65/027/003/0388/0395

AUTHOR: Komarov, V. S.; Yermolenko, N. F.; Ermolenko, N. F.; Volnysko, I. N.;  
Volneiko, I. N. 46  
44  
3ORG: Institute of General and Inorganic Chemistry, AN BSSR, Minsk (Institut obshchey  
i neorganicheskoy khimii AN BSSR)

TITLE: Drying of air by clay adsorbents 1.44/5

SOURCE: Kolloidnyy zhurnal, v. 27, no. 3, 1965, 388-395

TOPIC TAGS: adsorption, surface tension, vapor pressure, temperature dependence,  
sorption, aluminum silicate

ABSTRACT: The results of the studies show that the best adsorption properties are exhibited by clay-hydroxide and iron aluminosilicate adsorbents activated at 120 - 200°. There is no great difference between the dynamic activities of samples activated at 120 and 200°. If the activation temperature is increased from 200 to 600°, the activity decreases somewhat. The decrease in dynamic activity of baked clay-hydroxide adsorbents is due principally to change in structure which is accompanied by an increase in the mean pore radius from 25 to 45 Å. For porous adsorbents, where adsorption and condensation occur simultaneously, the sorption potential is determined, on the one hand, by the specific surface, and, on the other, by the radius and volume of the pores. As the pore radius increases at constant specific surface, the adsorption potential decreases. The adsorption capacity and the protection time of the

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ACC NR: AP6012661

adsorbents depend greatly on the humidity of the air being dried, and, to a considerable extent, on the structure of the sorbent and the distribution of the pore volumes in radii. The adsorption capacity and the protective time vary oppositely with increase in humidity, but this is only strictly true of adsorbents having a mixed pore structure. For such adsorbents, each successive increase in volume of sorbed moisture, corresponding to a definite value of  $\Delta r$ , is always less than the preceding volume for the same value of  $\Delta r$ , i.e., for each new increase in humidity, in spite of the fact that the total absorption is increasing, the increase in sorption volume decreases. On the other hand, for adsorbents with pores of uniform size, the increase in the sorption volume first increases with increase in air humidity, and reaches a maximum value at a humidity which produces filling of the pores, the dimensions of which correspond to the maximum on the distribution curve. Here, the increase in sorption volume ( $\Delta V$ ), may, for a small increase in humidity of the gas, exceed the preceding value of  $\Delta V$  by several fold, so that the protection time of the adsorbent is increased. Practical use of adsorbents with pores of one size for complete drying is most satisfactory at a humidity of the gas such that during a dynamic experiment, capillary condensation embraces the pores lying in the region of the maximum of the distribution of volumes in radii. The protective action and the dynamic activity decrease appreciably as the temperature is increased. The effect of temperature is equivalent, on the

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one hand, to reducing the relative vapor pressure, or eliminating the larger pores, and, on the other hand, increasing the temperature increases the thermal motion of the molecules, which prevents orientation of the molecules, and keeps them from being held back in the force field of the adsorbent. Increasing the temperature also decreases the surface tension which straightens out the meniscus, increases the vapor pressure over the liquid surface in the capillary, and decreases the force of attraction of the molecules of vapor to the liquid surface having smaller curvature of the meniscus. All this evidently affects the rate of sorption of moisture, and particularly the capillary condensation rate. The moisture capacity of the adsorbent is greater for small sized granules and decreases as they become larger, due to diffusion hinderances of the molecules of moisture inside the adsorbent grains. The grain size of the adsorbent, while affecting the kinetics of the sorption process, has no effect on the degree of drying of the gas. The degree of drying of the gas appears to be a specific property of the adsorbent, and depends principally on the magnitude and chemical nature of the specific surface, the physical structure, the pore size, and the height of the adsorbent layer, as well as on the affinity of the adsorbate molecules for the surface, and the velocity of the gas stream. The adsorbent was regenerated for 1.5 hours at a temperature of 200°, after which it

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ACC NR: AP6012661

was again tested. The data show that the sorption activity of an iron aluminosilicate adsorbent remains practically unchanged even after the eighth regeneration. Nor is there any mechanical destruction of the adsorbent grains. Orig. art. has: 7 figures and 4 tables. [IPRES]

SUB CODE: 07, 20 / SUBM DATE: 26Dec63 / ORIG REF: 017 / OTH REF: 003

Card 4/4 BLG

YERMOLENKO, N.F. [Iarmolenka, M.F.]; FRODAN, L.I.

Study of cadmium tripolyphosphates based on the physicochemical  
properties of the system  $\text{Na}_5\text{P}_3\text{O}_{10} - \text{CdSO}_4 - \text{H}_2\text{O}$ . Vestnik AN BSSR.  
Ser. fiz.-tekh. nav. no. 4: 50-55 '62. (MIRA 13:4)

LEVINA, S.A.; YERMOLENKO, N.F.; MALASHEVICH, L.N.; PROKOFOVICH, A.A.

Some substituted forms of the NaX zeolite. Dokl. AN BSSR 8 no.7:  
452-454 '64. (MIRA 17:10)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.

GORMAK, A.I.; YERMOLENKO, N.F.

Use of glauconite in gas adsorption chromatography. Dokl. AN BSSR  
8 no.12:795-798 D '64. (MIRA 18:4)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.

YERMOLENKO, N.F.; EFROS, M.D.

Structure and sorptive properties of NiO - Al<sub>2</sub>O<sub>3</sub> oxides from  
oxychloride. Zhur. fiz. khim. 38 no.5:1353-1358 My '64.

(MIRA 18:12)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.

Submitted July 12, 1963.

KOMAROV, V.S.; YERMOLENKO, N.F., akademik; VARLAMOV, V.I.; FALINA, A.S.

Method of preparing kaolin-base catalysts for the cracking process.  
Dokl. AN SSSR 159 no.2:423-426 N '64. (MIRA 17:12)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.
2. AN BSSR (for Yermolenko).



POPKOVICH, G.A.; YEFMOLENKO, N.F.; SHULYAKOVSKAYA, Z.A.

Adsorption of organic acids on coals and silica gel. Vestsi AN  
BSSR.Ser.khim.nav. no.2:103-105 '65.

(MIRA 18:12)

**KOROTAYEV, Y.P.; YEREMENKO, N.F.**

Structure of coprecipitated  $Mg(OH)_2 - Fe(OH)_3$  hydroxides  
as dependent on the component ratio. Vestnik AN BSSR, Ser. Khim.  
Nov. No. 2:121-126 '65. (MIRA 18:12)

SLYUSARENKO, Ye.A.; YERMOLENKO, N.I.

Congenital valve of the bladder. Urologia no. 4:56-57 '64.

(MIRA 19:1)

1. I khirurgicheskoye otdeleniye (nachal'nik Ye.A. Slyusarenko)  
Yeletskoy zheleznodorozhnoy bol'nitsy.

YERMOLENKO, N.I.; SLYUSARENKO, Ye.A.

Aneurysm of the superior branch of the right renal vein.  
Urol. 1 nefr. no.2460 '65.

(MIRA 1961)

1. 1-ye khirurgicheskoye otdeleniye (nachal'nik Ye.A.Slyusarenko)  
Yeletskoy zheleznodorozhnoy bol'nitsy.

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 4, 15-57-4-4655D  
p 95 (USSR)

AUTHOR: Yermolenko, N. N.

TITLE: Synthesis of the High-Refraction Zirconium-Barium Glass and the Study of Its Properties (Sintez vysokoprelomlyayushchikh tsirkoniyevo-bariyevykh stekol i izucheniye ikh svoystv)

ABSTRACT: Bibliographic entry on the author's dissertation for the degree of Candidate of Technical Sciences, presented to the Belorus. politekh. in-t (Belorussian Polytechnic Institute), Minsk, 1956.

ASSOCIATION: Belorus. politekh. in-t (Belorussian Polytechnic Institute)

Card 1/1

YERMOLENKO, N.N.

66357

SOV/81-59-19-68577

15.2120

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 19, p 299 (USSR)

AUTHORS: Zhumina, L.A., Yermolenko, N.N.

TITLE: The Production of Highly-Refracting Glasses

PERIODICAL: Byul. tekhn.-ekon. inform. Sovnarkhoz BSSR, 1953, Nr 2 - 3, pp 67 - 69

ABSTRACT: The possibility of obtaining highly-refracting lead-free glasses has been investigated as well as the use of other oxides for obtaining lead-free crystal glass, the quality of which is not inferior to lead crystal glass. The synthesis is based on three compositions (cited in a table): Nr 3/IV-A; 8/I-A and 12/I-A. On the base of each composition of the initial glass two series of experimental glasses were synthesized; in these compositions the consecutive partial or complete substitution of some oxides by others was carried out. Zn oxide was chosen as an added and simultaneously substituting oxide, which increases the  $n_D$  of glass as well as the chemical and thermal resistance, improves the melting properties of the glass mass etc. The effect of some variants of combinations of other oxides ( $ZrO_2$ ,  $SiO_2$ ,  $CaO$ ) entering the composition of the synthesized glasses was also studied. The order of the sub-

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The Production of Highly-Refracting Glasses

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stitution of one oxide by the others and the compositions of the experimental glasses are given in a table. The conditions of melting and the physical-chemical properties of the obtained glasses are given. As a result of the conducted investigations two compositions of glasses of lead-free crystal glass are recommended for industrial production as having a higher  $n_D$ , a higher water resistance, and a low crystallization ability (in %): Nr 1/IV  $SiO_2$  - 54.5,  $ZrO_2$  - 9.0, BaO - 10.0, ZnO - 10.0,  $Na_2O$  - 16.5; Nr 1/IV  $SiO_2$  - 57.5,  $ZrO_2$  - 6.0, BaO - 10.0, ZnO - 10.0,  $Na_2O$  - 12.0,  $K_2O$  - 4.5.

I. Mikhaylova

4

Card 2/2

AUTHORS: Bezborodov, M. A., Yermolenko, N. N., SOV/156-58-4-41/49

TITLE: Synthesis and Investigations of Properties of Highly Refractive Zirconium-Barium Glasses (Sintez i izucheniye svoystv vysokoprelomlyayushchikh tsirkoniyavo-bariyevykh stekol)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 4, pp 768-772 (USSR)

ABSTRACT: In the present paper the synthesis of new highly refractive glasses was investigated on the basis of zirconium oxide and barium oxide. For the synthesis of the experimental glasses the phase diagram of the system  $\text{Na}_2\text{O} - \text{BaO} - \text{SiO}_2$  was taken, into which an increasing quantity of zirconium dioxide was introduced instead of  $\text{SiO}_2$ . The maximum content of  $\text{ZrO}_2$  is 24%. The light refraction of the glasses increases with the increase of the zirconium- and barium oxide content of the glasses. The crystallizability of the glasses was investigated and it was found that glasses containing 8-16% of zirconium dioxide are the most resistant to crystallization. Laboratory experiments were carried out with the addition of  $\text{CaO}$  and  $\text{K}_2\text{O}$ . The glasses were investigated as to the following properties:

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SOV/156-58-4-41/49

Synthesis and Investigations of Properties of Highly Refractive Zirconium-Barium Glasses

crystallizability, refractive index, chemical stability, softening temperature, and thermal expansion. The following zirconium-barium glasses were suggested for the use in industry: Nr 3/IV - ( $\text{SiO}_2$  - 46%;  $\text{ZrO}_2$  - 13%;  $\text{BaO}$  - 20%;  $\text{CaO}$  - 6%;  $\text{Na}_2\text{O}$  - 13%;  $\text{K}_2\text{O}$  - 2%), with refractive index 1.601. Nr 4/V - ( $\text{SiO}_2$  - 52%;  $\text{ZrO}_2$  - 13%;  $\text{BaO}$  - 9%;  $\text{CaO}$  - 11%;  $\text{Na}_2\text{O}$  - 12%;  $\text{K}_2\text{O}$  - 3%) with refractive index 1.592. There are 4 figures, 2 tables, and 15 references, 12 of which are Soviet.

ASSOCIATION: Kafedra tehnologij stekla i silikata Beloruskogo politekhnicheskogo instituta (Chair of Technology for Glass and Silicates at the Belorussian Polytechnical Institute)

SUBMITTED: April 15, 1958

Card 2/2

MAZIL'EV, L.Ya.; ZHUMINA, L.A.; YERMOLENKO, N.N.

"A guide to the technology of glass" by N.N. Pavlushkin, G.G.  
Sentiurin. Reviewed by L. I.A. Masolev, L.A. Zhumina, Nermolenko.  
Stek, 1 kor. 15 no.12:43-44 D '58. (MIRA 11:12)  
(Glass manufacture)

YERMOLENKO, N.H., kand.tekhn, nauk

Manufacture of selenium and copper ruby glasses. Sbor.nauch.  
rab.Bol.politekh.inst. no.63:53-62 '58. (MIRA 12:4)  
(Glass)

YERMOLENKO, N.N.

5(1)

PHASE I BOOK EXPLOITATION

80V/3410

Besborodov, M. A., Academician, Academy of Sciences, Belorussian SSR, and N. N. Yermolenko, Candidate of Technical Sciences

Tsirkoniyevo-bariyevyye stekla (Zirconium-barium Glasses) Minsk, Radizdat otdel BPI, 1959. 32 p. Errata slip inserted. 1,500 copies printed.

Sponsoring Agency: Belorusskiy politekhnicheskiy institut im. I. V. Stalina. Nauchno-issledovatel'skaya laboratoriya silikatov i stekla.

Ed.: N. V. Kapranova.

**PURPOSE:** This booklet is intended for research scientists, scientific research and design and planning organizations, students, and industrial engineers concerned with the synthesis and properties of glass.

**COVERAGE:** The booklet gives the results of investigations carried out in the Glass and Silicates Laboratory of the Belorussian Polytechnic Institute imeni I. V. Stalin from 1954 to 1958 to study the synthesis and properties of highly refractive zirconium-barium glasses. The authors recommend these

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## Zirconium-barium Glasses

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new glass compositions of positive technical properties for production. There are 11 figures, 7 tables and 66 references: 32 Soviet, 17 English, 2 French and 15 German. No personalities are mentioned.

TABLE OF CONTENTS: None given - the booklet is divided as follows:

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The system $\text{Na}_2\text{O}-\text{CaO}-\text{BaO}-\text{B}_2\text{O}_3-\text{Al}_2\text{O}_3-\text{ZrO}_2-\text{SiO}_2$	12
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Synthesis of glass in the system $\text{Na}_2\text{O}-\text{CaO}-\text{ZrO}_2-\text{TiO}_2-\text{SiO}_2$	15
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Zirconium-barium Glasses

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The system  $\text{Na}_2\text{O}-\text{CaO}-\text{BaO}-\text{ZrO}_2-\text{SiO}_2$

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The system  $\text{Na}_2\text{O}-\text{K}_2\text{O}-\text{CaO}-\text{BaO}-\text{ZrO}_2-\text{SiO}_2$

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AVAILABLE: Library of Congress

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3-23-60

YEMOLINSKO, N.N., kand.tekhn.nauk; LAKSIN, L.N., inzh.; KAPRANOVA, H.V.,  
red.

[Method for drawing diagrams representing multicomponent systems  
and using it in the synthesis of new glasses] Metod postroeniia  
diagramm mnogokomponentnykh sistem i ispol'sovaniia ego pri sinteze  
novykh stekol. Minsk, Redaktsionno-izdatel'skii tsentr BPI im. I.V.Stalina,  
1959. 34 p. (MIRA 13:7)

(Glass manufacture--Chemistry)

PHASE I BOOK EXPLOITATION SOV/3763

Bezborodov, M.A., N.M. Bobkova, S.M. Brekhovskikh, N.N. Kermolenko,  
E.E. Mazo, and Ye. A. Poray-Koshits

Diagrammy stekloobraznykh sistem (Diagrams of Vitriform Systems) Minsk,  
Redaktsionno-izdatel'skiy otdel BPI imeni I.V. Stalina, 1959. 313 p.  
Errata slip inserted. 1,500 copies printed.

Sponsoring Agencies: Minsk. Belorusskiy politekhnicheskiy institut. and  
BSSR. Ministerstvo vysshego, srednego spetsial'nogo i professional'nogo  
obrazovaniya.

Ed. (Title page): M.A. Bezborodov, Academician, BSSR Academy of Sciences,  
Doctor of Technical Sciences; Ed. (Inside book): N.V. Kapranova;  
Tech. Ed.: P.T. Kuz'menok.

PURPOSE: This book is intended for chemists, scientists, and engineers dealing  
with vitriform systems.

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Diagram of Vitriform Systems

804/3763

**COVERAGE:** The materials contained in this book on vitriform systems were compiled by the Scientific Research Laboratory of Glass and Silicates of the Belorussian Polytechnic Institute and the Laboratory of the Physical Chemistry of Silicates of the Belorussian Academy of Sciences. The book surveys all literature on the properties of vitriform systems available up to 1958. All vitriform systems are presented with "composition-property" diagrams. Figures 1 through 5 provide a graphic summary of the present state of knowledge of the properties of various vitriform systems. The systems are presented diagrammatically in increasing order of complexity. One-component to eight-component systems are treated. This survey shows that to date 177 systems have been studied and 568 "composition-property" diagrams have been constructed. Chapter I was written by Ye.A. Poray-Koshits. References accompany individual chapters.

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Diagram of Vitriform Systems

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7-26-60

16(2)

SOV/60-32-3-14/43

**AUTHORS:** Lambin, L.N., Yermolenko, N.N.

**TITLE:** A Method for the Plotting of Diagrams for Multi-Component Systems  
(Metod postroyeniya diagramm mnogokomponentnykh sistem)

**PERIODICAL:** Zhurnal prikladnoy khimii, 1959, Vol XXXII, Nr 3, pp 548-556  
(USSR)

**ABSTRACT:** The state of simple and multi-component systems is studied in the technology of chemistry by means of diagrams. The graphical plotting of the results of investigations permits the development of new compounds and to predict their chemical and physical properties. A quaternary system may be described by a tetrahedron [Ref 1] in the summit of which the pure components A, B, C, and D are located (Figure 1). Every point located within the tetrahedron corresponds to a certain composition of the quaternary system. There are several methods for the representation of five- and six-component systems. The components may be represented by points and the content of the corresponding substances plotted on the axis x, y, z, and t (Figure 3). This method is used by Academician N.S. Kurnakov and his school for the representation of multi-component aqueous systems, but

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## A Method for the Plotting of Diagrams for Multi-Component Systems

for use in chemical technology it is too cumbersome. In [Ref 3] a point in a four-dimensional space may be represented by the vector  $p^i p^j$  (Figure 4). Anosov proposed the "method of spiral coordinates" [Ref 5-7]. Radishchev used the points of a multi-dimensional simplex and projected this simplex on several projection planes, the number of which is determined by the number of components. M.V. Lomonosov developed two methods which are now antiquated. A six-component system may be represented by the axonometry of a five-dimensional simplex. In such a diagram sections may be made which correspond to the values of one of the components (Figure 11). A plane diagram without the conceptions of multi-dimensional geometry is also an axonometry of the simplex  $S(6)$  (Figure 12). There are 13 diagrams and 17 references, 15 of which are Soviet and 2 German.

SUBMITTED: July 25, 1957

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VERMOLENKO, N. N.

PLANNING BOOK REVISIONS SW/5/78

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Kholyn, V. I. (Candidate of Technical Sciences (Kand.). Study of  
History of Glass and Chemical) (Kand., 1960). (1960). (1960). (1960).  
1960. 196 p. (Articles 1st) (Sovetskaya nauka, 1960). 1,200 copies  
printed.

Sponsoring Agency: Khrushchev's system, (Kand.) (Kand.) (Kand.) (Kand.)  
Kand. (Kand.) (Kand.) (Kand.) (Kand.) (Kand.) (Kand.) (Kand.) (Kand.)  
I. V. Stalin.

National Board: B. N. Yermolenko, Candidate of Technical Sciences, I. E. Zhdanov,  
and L. E. Petrov; Ed. E. V. Kopylov; Tech. Ed. S. A. Pechen.

Abstract: This book is intended for chemists and physicists interested in the  
composition, structure, and properties of glass and ceramics.

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The Chemistry, Technology, and History (Cont.) SW/5/78

Abstract: The articles contained in this collection deal with methods of study-  
ing the properties of various glasses and ceramic compositions and the tech-  
nology of glass and ceramic manufacture. The last two articles treat the  
history of alluvial chemistry. No illustrations are included. References  
follow the articles.

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YERMOLENKO, N. N.

PHASE I BOOK EXPLOITATION

SOV/4136

Minsk. Belorusskiy politekhnicheskii institut

*Khimiya i khimicheskaya tekhnologiya silikatnykh materialov* (Chemistry and the Chemical Technology of Silicate Materials) Minsk, Red-izd. otdel BPI imeni I. V. Stalina, 1960. 165 p. (Series; Its: Sbornik nauchnykh trudov, vyp. 82) 1,000 copies printed.

Editorial Board: M. A. Bezborodov (Resp. Ed.) Academician, Academy of Sciences BSSR, L. A. Zhumina, Candidate of Technical Sciences, N. N. Yermolenko, Candidate of Technical Sciences, P. F. Mikhalevich, Candidate of Technical Sciences; Resp. Ed. for this issue: L. A. Zhumina; Ed.: N. V. Kapranova; Tech. Ed.: P. T. Kuz'menok.

**PURPOSE:** This book is intended for chemists and technicians interested in the physicochemical properties and the production of glass.

**COVERAGE:** The collection contains 20 articles which give data on the synthesis and physicochemical properties of various widely used and some experimental glass compositions. Numerous property and phase diagrams of glass compositions are given. The apparent need to conserve boron, evidenced by the third article,

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Chemistry and the Chemical Technology of Silicate (Cont.) SOV/4136

may be noteworthy. No personalities are mentioned. References accompany some articles.

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3. Bezborodov, M.A., and L.Ya. Maselev, Candidate of Technical Sciences. Development of Nonboron Glass Compositions for Water- and Petroleum-Gage Pipes and Their Testing 24
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BEZBORODOV, M.A., akademik; YERMOLENKO, N.N., kand. tekhn. nauk

Synthesis and formation of glasses in a  $\text{CaO} - \text{PbO} - \text{Al}_2\text{O}_3$   
system. Sbor. nauch. trud. Bel. politekh. inst.  
no. 82:16-23 '60.

(MIRA 15:5)

1. Akademiya nauk BSSR (for Besborodov).  
(Glass manufacture—Chemistry)

BEZBORODOV, M.A., akademik; YERMOLENKO, N.M., kand. tekhn. nauk;  
Prinimali uchastiye: KOZHUKH, V.Ye.; AKULICH, B.S.

Glasses for penicillin flasks. Sbor. nauch. trud. Bel.  
politekh. inst. no. 82:34-37 '60. (MIRA 15:5)

1. Akademiya nauk BSSR (for Bezborodov).  
(Glass containers)  
(Penicillin)

ZHUNINA, L.A., kand.tekhn.nauk; YERMOLENKO, N.N.

Derivation of formulas for leadless crystal. Sbor. nauch.  
trud. Bel. politekh. inst. no.82:94-99 '60. (MIRA 15:5)  
(Crystals)

YERMOLENKO, N.N., kand.tekhn.nauk; LAMBIN, L.N., inzh.

Graphic method of the conversion of glass composition from  
gravimetric to molar percentages and vice versa. Sbor.  
nauch. trud. Bel. politekh. inst. no.82:116-119 '60. (MIRA 15:5)  
(Glass research—Graphic methods)

29428

S/081/61/000/017/081/166  
B101/B102

152610

241800 (1063,1482)

AUTHOR: Yermolenko, N. N.

TITLE: Study of the propagation of ultrasonic oscillations in glasses

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 17, 1961, 342, abstract  
17K270 (Sb. nauchn. tr. Belorussk. politekhn. in-t, no. 86,  
1960, 84-87)

TEXT: The propagation rate of ultrasonic oscillations depends on the glass composition. If the content of  $ZrO_2$  in sodium - barium - silicate glasses is increased from 0 to 14%, the propagation rate changes from 5.16 to 5.52 km/sec. Addition of 0-18% of CaO, instead of BaO, to sodium - barium - zirconium - silicate glasses changes the propagation rate of ultrasonic waves from 5.45 to 6.1 km/sec. [Abstracter's note: Complete translation.]

X

Card 1/1



YERMOLENKO, Nikolay Nikitich; KONTSEVAYA, T.V., red.; AKALOVICH,  
~~N.M., red.;~~ DUBOVIK, A.P., tekhn. red.

[Thermal properties of glass] Termicheskie svoistva stekla.  
Minsk, Izd-vo M-va vysshego, srednego spetsial'nogo i profes-  
sional'nogo obrazovaniia BSSR, 1962. 139 p. (MIRA 15:7)  
(Glass--Thermal properties)

BEZBORODOV, M.A., akademik; YERMOLENKO, N.N., kand. tekhn. nauk;  
ZHUNINA, L.A., kand. tekhn. nauk; NOVIKOV, Ye.Z., inzh.

Light refraction and crystallizing capacity of glasses distributed  
in some sections of the system  $\text{Na}_2\text{O} - \text{CaO} - \text{BaO} - \text{ZrO}_2 - \text{SiO}_2$ .  
Sbor. nauch. trud. Bel. politekh. inst. no. 82:29-33 '60.

(MIRA 15:5)

(Glass research)

(Systems (Chemistry))

PHASE I BOOK EXPLOITATION

SOV/6139

Yermolenko, Nikolay Nikitich

Termicheskiye svoystva stekla (Thermal Properties of Glass) Minak, Izd-vo MVSS i PO BSSR, 1962. 139 p. 1150 copies printed.

Eds.: T. V. Kontsevaya and N. M. Akalovich; Tech. Ed.: A. P. Dubovik.

**PURPOSE:** This book is intended for scientists, students, and engineers and technicians in industries which produce or utilize glass.

**COVERAGE:** Research from Soviet and non-Soviet sources on the heat of expansion, softening point, and heat resistance of some glass systems is summarized. Data from 129 sources are reviewed in the main body of the work, supplemented by 131 tables and 104 figures and graphs. Theoretical problems, the thermal properties of glass, synthesis and methods of

Card 1/3

Thermal Properties of Glass

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calculating the heat of expansion of glass are also discussed. The book contains an indexed list of three one-component, 13 two-component, 70 three-component, 56 four-component, 26 five-component, and 15 multicomponent glass systems. No personalities are mentioned. The 184 references follow individual chapters.

TABLE OF CONTENTS [Abridged]:

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Thermal Properties of Glass

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Author Index

138

AVAILABLE: Library of Congress

SUBJECT: Nonmetallic Materials and Processes

Card 3/3

RB/cb/mas

12-26-62

AM4020389

BOOK EXPLOITATION

S/0784

Yermolenko, N. N. (Candidate of Technical Sciences, Docent); Zhumina, L. A.  
(Candidate of Technical Sciences, Docent) (Editors)

Synthesis of glasses and silicate materials (Sintez stekol i silikatnykh materialov) Minsk, Izd-vo MVSS i PO BSSR, 1963. 133 p. illus., biblio. 2000 copies printed. Editor: Nekhay, V. T.; Technical editor: Kislyakova, M.N.; Proofreader: Dubovik, L. A. (At head of title: Ministerstvo vysshogo, srednego spetsial'nogo i professional'nogo obrazovaniya BSSR. Belorusskiy politekhnicheskiy institut)

TOPIC TAGS: glass, silicate material, glass crystallization, glass technology, property of glass, enamels, building material, vitreous system, enamel pigment

PURPOSE AND COVERAGE: This book was written by a collective of authors from the Problemnaya Laboratoriya Stekla i Silikatov of the Belorusskiy Politekhicheskiy Institut, and reflects the results of research performed over a number of years in the Laboratory. Problems of the synthesis of glass and study of its properties in different vitreous systems are analyzed, beginning with three-component and

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AM4020389

ending with six-component systems; research on the crystallization properties of glasses synthesized on the basis of the low-melting clays of Belorussia is described, the results of research on the application of easily available raw material to glass technology are presented, and the dependence of certain properties of glasses on their chemical composition is shown. Two sections are devoted to the production of pigments for enamels and study of the properties of building materials. The technology and basic parameters of new types of glass, enamel, and ceramic material are described.

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Ch. II. Crystallization capacity of glasses synthesized on the basis of low-melting clays -- 55

Ch. III. Utilization of easily available raw material in glass technology --

72

Ch. IV. Investigation of the properties of glass -- 93

Ch. V. Producing pigments for enamels -- 108

Ch. VI. Study of the properties of building materials -- 116

Literature -- 128

SUB CODE: MT

SUBMITTED: 16Sep63

NR REF SOV: 115

OTHER:029

Card 3/3



YERMOLENKO, N. N.

"Concerning glass forming agents and modifiers."

report submitted for 4th All-Union Conf on Structure of Glass, Leningrad,  
16-21 Mar 64.

ACC NR: AR6000270

UR/0031/65/000/014/1012/1012

UDC: 144125

24  
B

SOURCE: Ref. zh. Khimiya, Abs. 144125

AUTHOR: Yermolenko, M.N.; Shalimo, Z.N.

6.44  
TITLE: Study of a crystallization condition and the properties of crystallized glass in the SiO<sub>2</sub>-Al<sub>2</sub>O<sub>3</sub>-MgO-CaO-Na<sub>2</sub>O system

CITED SOURCE: Sb. Stekloobrazn. sostoyaniye. T. 3. Byp. 4. Minsk, 1964, 167-170

TOPIC TAGS: glass, glass property, chemical property, physical property, thermal heat effect

TRANSLATION: Based on non-critical components such as sand, kaolin, and dolomite, a series of glass was synthesized and studied within the range of the SiO<sub>2</sub>-Al<sub>2</sub>O<sub>3</sub>-MgO-CaO-Na<sub>2</sub>O system. By adding to them NH<sub>4</sub>F and after a supplemental heat treatment, a fine crystalline material is obtained. The relationship between crystallization properties of the tested glass and the heat treatment was studied. The material thus

obtained from crystallized glass has higher physicochemical properties. 18 references.

Author's summary

SUB CODE: 11, 07

JS  
Card 1/1

2

BOBKOVA, N.M., red.; YERMOLENKO, N.N., red.; ZHUNINA, L.A., red.

[New types of glass and glass materials] Novye stekla i steklo-  
materialy. Minsk, Nauka i tekhnika, 1965. 174 p.

(MIRA 18:11)

1. Minsk. Belorusskiy politekhnicheskiy institut.

135-9-20/24

*YERMOLENKO, N.P.*

**AUTHORS:** Yermolenko, N.P., Posyada, B.I., and Nemtsov, N.S., Engineers

**TITLE:** Health Protection During Electric Welding Operations (Ozdorovleniye usloviy truda pri elektrosvarochnykh rabotakh)

**PERIODICAL:** "Svarochnoye Proizvodstvo", 1957, # 9, p 37-39 (USSR)

**ABSTRACT:** The article discusses the harmfulness of gases and dust containing quartz, manganese and iron compounds and describes the welder's masks employed by the plant imeni Il'ich. Description of several specific mask designs is given for work conditions inside closed vessels (RR tank cars), for external work, for work on large structures, and with air pre-heating for winter work. Forced air feed is used in three models while in one a 50 cm long hose hanging down into clean air is utilized. The description of all masks is detailed and illustrated. One half-mask model on a welder's shield provides complete protection against gas and dust. It is now series-produced at the plant concerned, and over 500 pieces have been handed out to workshops for use. It is stated that the masks constitute a certain inconvenience to the welder and cause comparatively high costs for the

Card 1/2

**Health Protection During Electric Welding Operations**

135-9-20/24

plant, which could be eliminated by means of improving their design and by the production of masks at specialized factories.

The article contains 3 photographs, 2 sketches and 2 tables.

**AVAILABLE:** Library of Congress

Card 2/2

AUTHORS: Terent'yev, A. P., Obtemperanskaya, S. I., SOV/156-58-1-20/46  
Yermolenko, N. V.

TITLE: The Determination of Chlorine and Bromine in Organic Compounds  
by Means of Magnesium Nitride (Opredeleniye khloro i broma v  
organicheskikh soyedineniyakh pri pomoshchi nitrida magniya)

PERIODICAL: Nauchnyye doklady vysshey shkoly, Khimiya i khimicheskaya  
tekhnologiya, 1958, Nr 1, pp. 83-85 (USSR)

ABSTRACT: Many methods of determination of halide in organic compounds  
are known. A critical survey of the usual methods (Refs 1 -5)  
is given. These methods have certain shortcomings. The method  
suggested by the authors may be carried out easily, it is  
quick and not dangerous. It is based upon a reductive  
decomposition of a chlorine- and bromine-containing substance  
by magnesium nitride at 650 - 800°. Then the haloid ion in the  
formed magnesium hydrogen salt is determined by means of the  
argentometric titration according to Fol'gard. No quantitative  
reproducible results were obtained in the iodine determination.  
The reaction mass does not smelt with the glass and may be  
removed easily from test tube.No explosions take place if the  
reaction product is acidified. The method of production of

Card 1/2

The Determination of Chlorine and Bromine in  
Organic Compounds by Means of Magnesium Nitride

BOV/156-58-1-20/46

magnesium nitride is described. The quantitative chlorine- and bromine determination in organic compounds is divided in a semi-micromethod and a micromethod. The determination results are given in table 1 (semi-micromethod, 18 organic compounds) and in table 2 (micromethod, 8 compounds). The errors occurring do not surpass + 0.5%, compared to the content, determined theoretically. There are 2 tables and 5 references, 4 of which are Soviet.

ASSOCIATION: Kafedra organicheskoy khimii Moskovskogo gosudarstvennogo universiteta im. M. V. Lomonosova (Chair of Organic Chemistry of the Moscow State University imeni M.V. Lomonosov)

SUBMITTED: October 15, 1957

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ACCESSION NR: AP4037200

S/0125/64/000/005/0078/0079

AUTHOR: Yermolenko, O. A. (Engineer, Dnepropetrovsk)

TITLE: Pressure welding of large cross-sections

SOURCE: Avtomaticheskaya svarka, no. 5, 1964, 78-79

TOPIC TAGS: welding, pressure welding, aluminum alloy welding, solid phase welding, aluminum magnesium alloy welding, large cross section welding

ABSTRACT: A special die was used in a 1,500-2,000-ton hydraulic press employed for butt-welding pieces of AMg3 and AMg5V aluminum-magnesium alloys up to 10,000 mm<sup>2</sup> cross-section. Rectangular cross-sections, angles, and shaped sections were successfully welded. The pieces were preheated up to 0.7-0.8 of their melting temperature with a tolerance of + 30C. Pressure welding has important advantages (less labor, simpler technology, higher quality of weld) over the previously-used manual argon-arc welding. "The project was carried out

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ACCESSION NR: AF4037200

with the participation of Engineers A. I. Shestakov and V. A. Rybalko." Orig.  
art. has: 1 figure.

ASSOCIATION: Institut elektrosvariki im. Ye. O. Patona AN UkrSSR (Institute of  
Electric Welding, AN UkrSSR)

SUBMITTED: 25Jan64

DATE ACQ: 05Jun64

ENCL: 00

SUB CODE: MM

NO REF SOV: 000

OTHER: 000

Card 2/2

1. YERMOLENKO O.P.
2. USSR (600)
4. Ukrainian Literature-History and Criticism
7. Literary-critical sketches on the classics of Ukrainian literature, Visnyk AN URSR 23. no.1, 1951.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

GRITSENKO, A.F., inzh.; SHESTAKOV, A.I., inzh.; YERMOLENKO, D.Ye., inzh.

Cold-pressure welding of dissimilar metals. Svar. proisv. no.2:32-33  
P '63. (MIRA 16:2)

(Cold welding).