

L 47304-65
ACCESSION NR: AT5007921

with a packing discharger of 100 kilovolts, and work stopped on the variant with storage rings. Originally it was proposed to set up two devices: VEP-1 of 2×130 Mev energy, and VEP-2 of 2×500 Mev energy. The VEP-1 was considered as an actual model of an accelerator and as a device for conducting initial experiments at low energies. After the Panofsky report in 1958 on his work with colliding electron beams conducted in his laboratory at Stanford, construction ceased on 500-Mev storage paths and work was continued on the 2×130 -Mev installation. Instead of work on colliding electron beams with energies of 500 Mev, work at the end of 1958 was conducted with colliding positron-electron beams and the planning of the VEPP-2 device was begun, whose main elements are a strong-current electron accelerator and a high-vacuum storage path of 700 Mev energy. At the present time the VEP-1 and VEPP-2 are installed in Novosibirsk. The VEP-1 is in a state of neglect, but at the end of 1964 experiments will be begun with it. Installation of the VEPP-2 has been completed. To obtain a marked effect from the application of colliding proton beams, an accelerator is needed with an energy of at least 10 Gev. Since the ordinary accelerator at such energies is a very bulky machine, it was decided to combine the idea of colliding proton beams with the creation of an iron-less impulse accelerator with very large fields and a neutralized central busbar. This latter work of creating such a machine was reported by the authors at a Moscow conference

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held in 1956. The presence of a field with two directions in an iron-less accelerator with central busbar permits the acceleration of protons toward opposite sides in one machine, which makes possible the collision of protons in case of a suitable race-track. At the present time the Institute is developing a proton device with a magnetic field of about 200 kilogauss and radius of 2 meters for a particle energy of 12 Gev in the beam (equivalent energy is around 300Gev). Tests are being conducted on models, and an effective method of injection by overcharging of negative ions is under study. Also under development are an impulse electric power supply system of 100 million joules capacity and an hf power supply. Since 1958 the Institute has been conducting theoretical investigations on the limits of applicability of quantum electrodynamics [V. N. Bayyer, ZhETF, 37, 1490 (1959), and UFN, 78, 619 (1962)] for the calculation of the radiational corrections to the electrodynamic cross-sections [V. N. Bayyer and S. A. Kheyfets, ZhETF 40, 613-715 (1961) and Nuclear Physics (in print)], and on other problems of high-energy particle physics that are connected with the preparation of experiments on colliding beams [V. N. Bayyer, I. B. Khriplovich, V. V. Sokolov, and V. S. Synakh, in ZhTF, 1961]. The present report takes up under the mentioned three main headings the following pertinent topics: the accelerator-injection, storage paths, electron-optical channel.

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input and output system, experiments on storage, proposed work, experimental set-up, physical layout of magnets, power supply, etc. Orig. art. has: 8 figures.

ASSOCIATION: Institut yadernoy fiziki SO AN SSSR (Institute of Nuclear Physics, SO AN SSSR)

SUBMITTED: 26May64

ENCL: 00

SUB CODE: EE, NP

NO REF SOV: 012

OTHER: 003

ML
Card 5/5

KISELEV, A.V.; YASHIN, Ya.I.

Effect of the structure of silica gels on the gas-chromatographic
separation of hydrocarbons. Neftekhimia 4 no.3:494-500 My-Je '64.
(MIRA 79:2)

1. Khimicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta
im. Lomonosova i Opytno-konstruktorskoye byuro avtomatiki.

L 41281-65 EWT(m)/EPF(c)/EPR/EWP(j)/EWP(t)/EWP(b) Pc-4/Pr-4/Ps-4/Pi-4
IJP(c)/RPE JD/WJ/JH/RM
ACCESSION NR: AF5010008

UR/0204/64/004/004/0634/0640 42
37
B

AUTHOR: Kislov, A. V.; Yashin, Ya. I.

TITLE: Gas-chromatographic determination of the absolute values of the retainable volumes and heats of adsorption of hydrocarbons on silica gels of various structures

SOURCE: Neftekhimiya, v. 4, no. 4, 1964, 634-640 27

TOPIC TAGS: gas chromatography, hydrocarbon, silica, temperature, physical chemistry

Abstract: The influence of the geometrical structure of silica gels on the differential heats of adsorption and absolute values of the retainable volumes of certain C₁-C₁₀ hydrocarbons (methane, ethane, ethylene, propane, propylene, butane, pentane, hexane, heptane, octane, nonane, and decane) was investigated. The heats of adsorption of the C₁-C₁₀ hydrocarbons on silica gels of various porosities were determined from chromatograms obtained at various temperatures. An increase in the heats of adsorption with decreasing average pore diameter and with increasing number of carbon atoms in the n-alkane molecule was observed for fine-pored silica gels. When the pores were expanded, a limiting linear dependence of the differential heats of adsorption on the number of carbon atoms in the molecule was established. The difference in the heats of adsorption of saturated and unsaturated hydrocarbons with the same number of carbon atoms, characterizing the influ-

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L 41281-65

ACCESSION NR: AP5010008

5

ence of the specific interactions of the pi-electron bonds with the hydroxyl group of the silica gel surface, was found to be practically independent of its geometrical structure. The absolute (related to unit surface) values of the retainable volumes were obtained for normal hydrocarbons. "The authors thank Yu. S. Nikitin for his allotment of wide-pore silica gels, and A. V. Dryakhlova and Ye. Yu. Upervitakiy for their participation in the experimental work. Orig. art. has 4 graphs and 2 tables.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova, Khimicheskii fakul'tet (Chemistry Faculty, Moscow State University); Opytno-konstruktorское byuro avtomatiki (Experimental Design Office of Automation)

SUBMITTED: 07Oct63

ENCL: 00

SUB CODE: GC, OC

NO REF SOV: 019

OTHER: 002

JPRS

Card 2/2

KISELEV, A.V.; PETROVA, R.S.; SHCHERBAKOVA, K.D.

Gas chromatographic characteristics of the surface unit of an adsorbent. Kin. i kat. 5 no.3:526-532 My-Je '64.

(MIRA 17:11)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova, khimicheskiy fakul'tet.

GALKIN, G.A.; KISELEV, A.V.; LYGIN, V.I.

Infrared spectra and energy of interaction in the adsorption
of aromatic compounds on aerosil. Kin. i kat. 5 no.5:935-
938 S-O '64. (MIRA 17:12)

1. Institut fizicheskoy khimii AN SSSR i Moskovskiy gosudarstvennyy
universitet imeni Lomonosova, khimicheskiy fakul'tet.

GALKIN, G.A.; KISELEV, A.V.; LYGIN, V.I.

Variations in the infrared spectrum of benzene adsorbed on aerosil
as a function of coverage and dehydration of the surface. *Kin. i*
kat. 5 no.6:1040-1048 N-D '64. (MIRA 18:3)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova,
khimicheskiy fakul'tet i Institut fizicheskoy khimii AN SSSR.

L 54549-55 EWT(m)/EPF(c)/EWP(j)/T RM

ACCESSION NR: AP5023228

UR/0190/64/006/011/1962/1964

AUTHOR: Kiselev, A. V.; Eltokov, Yu. A. (El'tokov, Yu. A.)

TITLE: Macromolecular sieves for evaluating the conformation of macromolecules

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 6, no. 11, 1964, 1962-1964

TOPIC TAGS: macromolecule, molecular sieve, adsorption, silica, silica gel, zeolite

ABSTRACT: The adsorption behavior of dilute solutions of polydimethylsiloxane (molecular weight approximately 350,000) in n-hexane was studied on uniformly porous adsorbents with different pore dimensions (macromolecular sieves): nonporous silica - aerosil, wide-pored silica gel S-41, a washed industrial sample of silica gel ShSK, granulated aluminum oxide, and pelleted zeolite 13X. Both the narrow-pored zeolite 13X and the slightly wider pored aluminum oxide adsorbed very little polydimethylsiloxane and only on the outer surface of the particles; the wide-pored silica gels exhibited great adsorption, in spite of lower specific surfaces; adsorption of polydimethylsiloxane on the silica gels and nonporous aerosil was proportional to the value of the surface, and the values per unit surface of the adsorbent practically coincided. The diameter

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L 64543-65

ACCESSION NR: AP5023218

of the polydimethylsiloxane molecules calculated from the adsorption data comprised approximately 100 A, coinciding with the value of 105 to 440 A, calculated on the basis of the Flory-Fox theory and geometrical concepts. The authors propose that in dilute n-hexane solutions, the linear macromolecules (molar length 10,000 A) interact weakly with the solvent molecules and are rolled into rather dense balls, the diameter of which comprises approximately 100 A, they note that in the field of the adsorbent, the polydimethylsiloxane macromolecules might assume other conformations (ellipsoid), in view of which the dimensions determined by the adsorption method may be too low.

Orig. art. has: 6 formulas, 1 table.

ASSOCIATION: Institut fizicheskoy khimii AN SSSR (Institute of Physical Chemistry AN SSSR)

44,65

SUBMITTED: 06Jan64

ENCL: 00

SUB CODE: 00, 00

NR REF SOV: 002

OTHER: 002

JPRS

Card 2/2

ISIRIKYAN, A.A.; KISELEV, A.V.; USHAKOVA, Ye.V.

Chemical modification of the rutile pigment surface by hexanol
and dimethyldichlorosilane. Koll.zhur. 26 no.1:45-50 Ja-F
'64. (MIRA 17:4)

1. Moskovskiy universitet, khimicheskiy fakul'tet.

BORODINA, M.L.; YERMOLAYEVA, T.A.; ISIRIKYAN, A.A.; KISELEV, A.V.;
USHAKOVA, Ye.V.

Adsorption properties of commercial samples of a rutile pigment
with a modified surface. Koll.zhur. 26 no.2:156-162 Mr-Ap
'64. (MIRA 17:4)

1. Moskovskiy universitet imeni Lomonosova, khimicheskiy
fakul'tet.

ACCESSION NR: AP4037177

8/0069/64/026/003/0324/0329

AUTHOR: Kiselev, A. V.; Ly*gin, V. I.; Solomonova, I. N.

TITLE: Infrared study of chemically modified aerosil

SOURCE: Kolloidny* zhurnal, v. 26, no. 3, 1964, 324-329

TOPIC TAGS: aerosil, modified aerosil, aerosil adsorbent, gas chromatography, infrared aerosil spectrum, substituted dichlorosilane, surface active ester, radical heat resistance, hydroxy group, aerosil adsorptive property, deuterium treatment, chlorine containing group, allyl radical

ABSTRACT: The work concerns aerosils treated with surface-active esters, allyl and chlorine-containing functional groups, for use as adsorbents and carriers for gas chromatography or fillers and pigments for polymers. The aerosil used (made by Degus) had a surface of $170 \text{ m}^2/\text{g}$. Substituted dichlorosilanes with carbon chains of various length and functional endgroups were used as modifiers in a dioxane medium.

Card

1/3

ACCESSION NR: AP4037177

obtained. "The authors wish to thank K. D. Sheherbakov and I. V. Borisenko for their help in modifying the specimens and in their analysis." Orig. art. has: 4 formulas and 1 figure.

ASSOCIATION: Moskovskiy universitet im. M. V. Lomonosova, Khimicheskiy fakul'tet (Moscow University, Chemistry Faculty)

SUBMITTED: 24Jul63

ENCL: 00

SUB CODE: 00

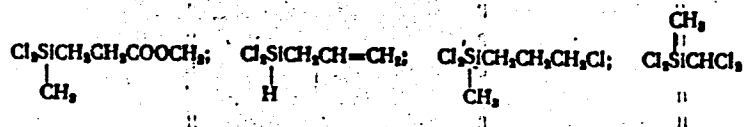
NO REF SOV: 011

OTHER: 005

3/3

Card

ACCESSION NR: AP4037177



The laboratory procedure is described. The extent of substitution of surface hydroxyl groups by organic radicals was found at less than 50% (C determination by wet combustion). The material obtained was pressed into tablets for infrared inspection. The spectra were obtained and it was concluded that mainly free surface hydroxyl groups participated in the modification reaction; the functional ester and chlorine-containing groups surface radicals are hydrogen-bonded to the remaining surface hydroxyls; and the most heat-resistant radicals were those with ester and chlorine-containing groups, allyl was less heat resistant. At the low experimental density of the modifying layer, the remaining hydroxyl groups determined essentially the adsorptive properties of the modified aerosils. Treatment with deuterium and methylation of the latter's surface revealed availability of part of the surface hydroxyls for small molecules and another part for large molecules, such as diethyl ether. For gas chromatography denser layers should be

Card 2/3

ACCESSION NR: AP4043128

S/0069/64/026/004/0458/0464

AUTHORS: Kiselev, A. V.; El'tekov, Yu. A.; Bogacheva, Ye. K.

TITLE: Effect of the nature of the filler surface on the adsorption of polymers. Adsorption of polyneopentylphthalate

SOURCE: Kolloidnyy zhurnal, v. 26, no. 4, 1964, 458-464

TOPIC TAGS: adsorption, polymer adsorption, filler surface property, adsorption kinetics, adsorption equilibrium, adsorption mechanism, porous silica gel, nonporous silica gel, hydroxylated silica gel, dehydroxylated silica gel, trimethylsilated silica gel, alumina

ABSTRACT: The kinetics and equilibrium of adsorption of polyneopentylphthalate (PNPP, $M = 2000$) from n-heptane solutions at 20C on adsorbents having different chemical nature and porosities were determined: on finely porous silica gel ShSM (mean pore diameter $d = 40A$), very wide porous silica gel S-41 ($d = 750A$, sp. surface area $s = 41 \text{ m}^2/\text{gm}$), nonporous silica gel ($s = 170 \text{ m}^2/\text{gm}$) with hydroxylated, partially dehydroxylated and 70% trimethylsilated surface, porous alumina ($d = 80A$, $s = 250 \text{ m}^2/\text{gm}$), rutile ($s = 4 \text{ m}^2/\text{gm}$) and oxidized and graphitized carbon blacks. Viscosity measurements of

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ACCESSION NR: AP4043128

the solutions showed the low molecular weight PNPP molecules were mainly adsorbed in the beginning and these were then gradually displaced by larger macromolecules. The finely porous silica gel and the rutile practically did not adsorb the polymer. Adsorption equilibrium was attained within 2 days with the aerosils, rutile and wide porous silica gel, but alumina and finely porous silica gel required several days. Comparison of the adsorption of PNPP per unit surface area of adsorbent showed very close values for the hydroxylated surface of wide porous silica gel and aerosil, and considerable divergence from those values by modified silica surfaces, rutile and carbon blacks. Comparison of the adsorption of PNPP and polyneopentylsuccinide (PNPS, $M = 4400$) on glass, aerosil and wide porous silica gel also indicates the similarity of the adsorption mechanism and the closeness of the properties of the adsorbents. The solvent significantly affected the adsorption of the polyester. The total weight of PNPP, PNPS or of polydimethylsiloxane PDMS adsorbed per unit surface of silica is close and the relative amount of PNPP and PDMS adsorbed is approximately proportional to the relative diameter of the macromolecules--10A for PNPP and 7A for PDMS.

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ACCESSION NR: AP4043128

"The authors thank Yu. S. Nikitina for supplying silica gel S-41 and S. V. Yakubovich for supplying polyneopentylphthalate." Orig. art. has: 6 figures and 2 tables.

ASSOCIATION: Institut fizicheskoy khimii AN SSSR, Moskva
(Institute of Physical Chemistry, AN SSSR)

SUBMITTED: 02Jun63

SUB CODE: 00

NR REF SOV: 011

ENCL: 00

OTHER: 005

Card 3/3

AKSHINSKAYA, N.V.; DAVYDOV, V.Ya.; ZHURAVLEV, L.T.; KERTOYZ, Dzheffri
[Curthoys, Geoffrey]; KISELEV, A.V.; KUZNETSOV, B.V.; NIKITIN,
Yu.S.; RYBINA, V.V.

Effect of hydrothermal treatment in an autoclave on the structure
and adsorptive properties of silica gel. Koll. zhur. 26 no.5:
529-537 S-0 '64. (MIRA 17:10)

1. Moskovskiy universitet, khimicheskiy fakul'tet i Institut
fizicheskoy khimii AN SSSR.

KISELEV, A.V.; KOZLOV, G.A.; LYGIN, V.I.

Electron paramagnetic resonance spectra of graphitized carbon
black. Koll. zhur. 26 no.5:651-653 3-0 '64.

(MIRA 17:10)

1. Moskovskiy universitet imeni Lomonosova, khimicheskiy fakul'tet.

ISIRIKYAN, A.A.; KAZMENKO, I.A.; KISELEV, A.V.

Pore structure of hydrolytic titanium dioxide. Koll. zhur. 26
no.6:675-679 N-D '64 (MIRA 18:1)

1. Khimicheskiy fakul'tet Moskovskogo universiteta.

KISELEV, A.V., inzh.

A glass-type air drying filter. Elek. sta. 35 no.11:83 N '64.
(MIRA 18:1)

KISELEV, A.V.

Clamps for attaching the bags to the frames of mechanical filters.
Sakh.prom. 38 no.1:43-44 Ja '64. (MIRA 17:2)

1. Zherdevskiy sakharnyy zavod.

BEZUS, A.G.; DREVIING, V.P.; KISELEV, A.V.

Energy of adsorption of ethane and ethylene on surfaces of
varying nature. Part 1. Zhur. fiz. khim. 38 no.1:59-67
Ja'64. (MIRA 17:2)

1. Moskovskiy gosudarstvennyy universitet, khimicheskiy fakul'tet.

KISELEV, A.V.; PASKONOVA, Ye.A.; PETROVA, R.S.; SHCHERBAKOVA, K.D.

Study of the adsorption properties of carbon blacks by means
of gas chromatography. Zhur. fiz. khim. 38 no.1:161-167
Ja'64. (MIRA 17:2)

1. Khimicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta
imeni Lomonosova.

AKSHINSKAYA, N.V.; KISELEV, A.V.; NIKITIN, Yu.S.

Geometric modification of the skeleton of xerogels. Part 3.
Zhur. fiz. khim. 38 no.2:488-490 F '64. (MIRA 17:8)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova,
khimicheskiy fakul'tet.

BIBI, R.A.; KISELEV, A.V.; KOVALEVA, N.V.; TIZON, R.F.S.; KHOLMS, Dzh.M.

Adsorption and state of CO₂, SF₆, and NH₃ on a graphitized carbon surface. Zhur. fiz. khim. 38 no.3:708-718 Mr '64.

1. Khimicheskoye otdeleniye Amkhertskogo kolledzha, SSHA, i
Gruppa khimii poverkhnosti Instituta fizicheskoy khimii AN SSSR.

BIBI, R.A.; ~~KISELEV, A.V.~~; KOVALEVA, N.V.; KHOLMS, Dzh. M.; KEMPLIN,
M., Ye.R.

Adsorption and state of CO_2 , SF_6 , and NF_3 on the surface
of graphitized carbon black, Part 2. Zhur. fiz. khim. 38
no.4:939-946 Ap '64. (MIRA 17:6)

1. Gruppya khimii poverkhnosti Instituta fizicheskoy khimii
AN SSSR i Khimicheskoye otdeleniye Amkhertskego kolledzha,
SShA [Soyedinennyye Shtaty Ameriki].

BEZUS, A.G.; DREVING, V.P.; KISELEV, A.V. (Moscow)

Adsorption energy of ethane and ethylene on surfaces of
varying nature. Part 2. Zhur. fiz. khim. 38 no.4:947-
954 Ap '64. (MIRA 17:6)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova,
Khimicheskiy fakul'tet.

ACCESSION NR: AP4034593

S/0076/64/038/004/1044/1047

AUTHOR: Abramov, V. N.; Kiselev, A. V.; Ly*gin, V. I.

TITLE: Infrared study of the adsorption of phenol, aniline and nitrobenzene on Aerosil and zeolite.

SOURCE: Zhurnal fizicheskoy khimii, v. 38, no. 4, 1964, 1044-1047

TOPIC TAGS: infrared spectroscopy, adsorption, phenol, aniline, nitrobenzene, Aerosil, zeolite, molecular spectra

ABSTRACT: In this work a study was made of the change of the infrared spectrum of the hydroxyl groups on the surface of Aerosil, during the adsorption of phenol, aniline and nitrobenzene, as well as the IR spectra of these molecules themselves, upon the adsorption on Aerosil and zeolite. Fig. 1 shows the spectrum of Aerosil, evacuated at 400 C and the spectra after adsorption of phenol, aniline and nitrobenzene under saturated vapor pressure of these compounds at 25 C. Due to the overlap of absorption bands of the associated surface and intraglobular hydroxyl groups of Aerosil and phenol it is difficult to establish accurately the magnitude of the shift of the groups of Aerosil with respect to the absorption band of free

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ACCESSION NR: AP4034593

hydroxyl groups perturbed by adsorption of phenol hydroxyl. The magnitude of shift during adsorption of phenol is not more than 350 cm^{-1} . During adsorption of aniline the band lies around 3200 cm^{-1} and the shift is $\sim 550\text{ cm}^{-1}$. During adsorption of nitrobenzene the band of perturbed free hydroxyl groups on the surface of Aerosil is completely masked. Therefore, one can only say that the shift is much less during adsorption of nitrobenzene than during adsorption of phenol and aniline ($\sim 150\text{ cm}^{-1}$). The changes of IR spectra of the adsorbed molecules themselves are also shown in Fig. 1. The greatest changes are observed in the vibrational frequency of OH in the phenol and NH in the aniline. In the case of nitrobenzene no significant changes are observed. Changes of molecular spectra during the adsorption on zeolite are greater than during the adsorption on Aerosil. Orig. art. has: 1 table and 2 figures.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova, Khimicheskiy facul'tat (Moscow State University im. M. V. Lomonosov, Chemistry Department)

SUBMITTED: 05Nov63

ENCL: 01

Card 2/4

ACCESSION NR: AP4034593

SUB CODE: GC

NO REF SOV: 012

OTHER: 006

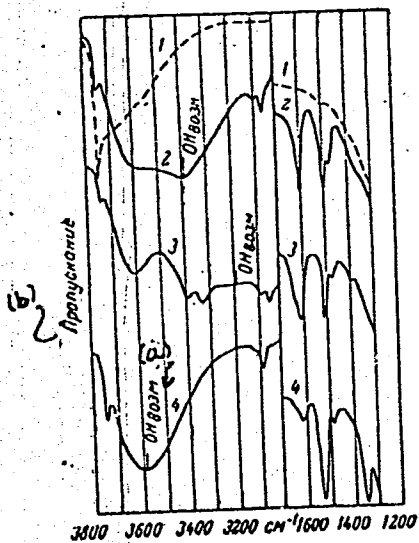
Card 3/4

ACCESSION NR: AP4034593

ENCLOSURE: 01

Fig. 1. Infrared spectrum of Aerosil

- 1) pumped down at 400 C after adsorption
- 2) phenol
- 3) aniline
- 4) nitrobenzene
- a) OH excited
- b) transmission



Card 4/4

KISELEV, A.V.; POSHKUS, D.P. [Peskus, D.P.]; AFREYMOVICH, A.Ya.

Molecular statistical calculation of the thermodynamic properties
of inert gases adsorbed on graphite. Zhur, fiz. khim. 38 no.6:
1514-1522 Je '64. (MIRA 18:3)

1. Institut fizicheskoy khimii AN SSSR i Institut khimii i khimi-
cheskoy tekhnologii Akademii nauk Litovskoy SSR.

DZHIGIT, O.M.; KISELEV, A.V.; MIKOS, K.N.; MJT'IK, G.G.

Heat of adsorption of water vapors on zeolite of the Na-faujasite type. Zhur. fiz. khim. 38 no.7:1791-1796 J1 '64.

(MIRA 18:3)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova, khimicheskiy fakul'tet.

ABRAMOV, V.N.; KISELEV, A.V.; LYGIN, V.I.

Analysis of the vibrational spectrum of adsorbed ammonia.
Zhur. fiz. khim. 38 no.7:1867-1870 J1 '64.

†(MIRA 18:3)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova,
khimicheskiy fakul'tet.

L 21329-65 EWT(m)/EPT(c)/EWP(j)/T Pc-4/Pr-4 BSD/SSD/AFWL/APGC(b)/ESD(ga)/
ESD(t) RM

ACCESSION NR: AP4044448

S/0078/64/038/008/2047/2054

/AUTHOR: Davydov, V. Ya.; Zhuravlev, L. T.; Kiselev, A. V.

TITLE: Infrared and mass-spectrometric studies of surface hydroxyl groups of aerosil and their reactions with chlorosilanes 7

SOURCE: Zhurnal fizicheskoy khimii, v. 38, no. 8, 1964, 2047-2054

TOPIC TAGS: silica surface, aerosil, surface hydroxyl group, infrared spectroscopy, mass spectroscopy, deuterium exchange, hydrogen bonding, chlorosilane

ABSTRACT: For the study of the properties of the hydroxyls on the surface of silica and also their reactions with $\text{ClSi}(\text{CH}_3)_3$ and $\text{Cl}_2\text{Si}(\text{CH}_3)_2$ the infrared spectroscopic method was used. For quantitative determination of the mean concentration of OH groups on the surface of silica the deuterium exchange method with mass spectrometric measurements was applied. Aerosil has a specific surface $s = 180 \text{ m}^2/\text{g}$. The infrared spectra were taken on an IKS-14 spectrophotometer with a LiF prism in the $4000\text{-}2200 \text{ cm}^{-1}$ region. Aerosil was pressed into pellets

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L 21329-65
ACCESSION NR: AP4044446

(10 x 30 mm), weighing 7-14 mg/cm². The same plates were removed from the cell after spectral investigation and were processed in reflux condensers set up with appropriate chlorosilanes at their boiling point. Such a method enables the comparison of the surface of silica before and after modification. Isotope analyses of water vapor after deuterium exchange between OH groups in silica and D₂O (99.76 mol. %) were conducted on mass-spectrometer MI-1305. On the surface of aerosil evacuated at 200C the hydrogen-bonded OH groups comprise about 50% of the total number of hydroxyl groups on its surface, i. e. free OH groups absorbing at 3750 cm⁻¹ and H-bonded groups with absorption band maximum at 3550 cm⁻¹. The sample with hydrated surface, evacuated at 200C contains about 8.0 micromolecules of OH groups per m², of which about 4.3 micromolecules/m² are free and 3.7 bonded by hydrogen molecules. The free OH groups play a deciding role in the specific adsorption of molecules with π electron pairs. It is mainly free surface hydroxyl groups which enter into the reaction with ClSi(CH₃)₃, whereas in the case of Cl₂Si(CH₃)₂, practically all of the free surface OH-groups and some of the hydrogen-bonded surface OH-groups take part.

Card 2/3

L 21329-65

ACCESSION NR: AP404446

ASSOCIATION: Institut fizicheskoy khimii, Moskovskiy gosudarstvennyy universitet
im. N. V. Lomonosova (Institute of Physical Chemistry, Moscow State University)

SUBMITTED: 20Nov63

ENCL: 00

SUB CODE: IC, GC

NO REF SOV: 016

OTHER: 009

Card 3/3

KISELEV, A.V.; KOVALEVA, N.V.; KHOPINA, V.V.

Adsorption of cyclohexane, benzene, toluene, and naphthalene from n-heptane solutions on oxidized carbon blacks and carbons treated at high temperatures. Zhur.fiz.khim. 38 no.8:2095-2098 Ag '64.

(MIRA 18:1)

1. Institut fizicheskoy khimii AN SSSR.

ARISTOV, B.G.; KISELEV, A.V. (Moscow)

Effect of the dehydroxylation of silica surface on the heats of adsorption of nitrogen and argon vapors. Zhur.fiz.khim. 38 no.8:1984-1989
Ag '64. (MIRA 18:1)

1. Institut fizicheskoy khimii AN SSSR i Khimicheskij fakul'tet
Moskovskogo gosudarstvennogo universiteta imeni M.V.Lomonosova.

AVGUL', N.N.; KISELEV, A.V.; LYGINA, I.A. (Moscow)

Standard thermodynamic characteristics of adsorption on a homogeneous surface and the activity coefficients of adsorbate in the adsorption layer. Zhur.fiz.khim. 38 no.8:2055-2058 Ag '64.

(MIRA 18:1)

1. Institut fizicheskoy khimii AN SSSR.

BEREZIN, G.I. (Moscow); KISELEV, A.V. (Moscow); KOZLOV, A.A. (Moscow)

Calorimeter for measuring heat capacities of disperse bodies and
adsorption systems from 120 to 300°K. Zhur.fiz.khim. 38 no.8:2106-
2110 Ag '64. (MIRA 18:1)

1. Institut fizicheskoy khimii AN SSSR.

KISELEV, A.V.; NIKITIN, Yu.S.; SAVINOVA, N.K.; SAVINOV, I.M.; YASHIN, Ya.I.

Use of macroporous silica gels for gas chromatographic analysis
at high temperatures. Zhur. fiz. khim. 38 no.9:2328-2330 S '64.
(MIRA 17:12)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova,
khimicheskiy fakul'teta.

ZHDANOV, S.P.; KISELEV, A.V.; LYGIN, V.I.; TITOVA, T.I. (Moskva)

Infrared spectra of synthetic faujasites of varying composition
and of water adsorbed by them. Zhur. fiz. khim. 38 no.10:2408-
2414 O '64. (MIRA 18:2)

1. Institut khimii silikatov AN SSSR i Khimicheskiy fakul'tet
Moskovskogo gosudarstvennogo universiteta imeni M.V. Lomonosova.

KISELEV, A.V.; KUBELKOVA, L.; LYGIN, V.I.

Study of the adsorption of methanol by synthetic faujasites by
the method of infrared spectroscopy. Zhur.fiz.khim. 38 no.11:
2719-2725 N '64. (MIRA 18:2)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova,
khimicheskiy fakul'tet.

KISELEV, A.V.; LYGIN, V.I.; TITOVA, T.I.

Specific adsorption of ammonia on silica and zeolite studied by
infrared spectroscopy. Zhur.fiz.khim. 38 no.11:2730-2733 N '64.
(MIRA 18:2)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova,
khimicheskiy fakul'tet.

L 23896-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 RM

ACCESSION NR: AP5002570

S/0076/64/038/012/2753/2773

AUTHOR: Kicelev, A.V.

TITLE: Molecular interactions over short distances

SOURCE: Zhurnal fizicheskoy khimii, v. 38, no. 12, 1964, 2753-2773

TOPIC TAGS: molecular interaction, intermolecular bonding, sorption, adsorbent, silica, free electron, zeolite

ABSTRACT: A review of experimental and theoretical studies on short-range intermolecular processes is presented and critically evaluated to show recent trends and future requirements in sorption research. The survey covers the 1954-64 literature on the chemistry of solid surfaces; non-specific, type-1 adsorbents and surfaces which do not carry ions, functional groups, electron-donor or -acceptor properties, or π -electron bonds; specific, type-2 adsorbents and surfaces carrying positive charges; type-3 adsorbents and solid surfaces carrying negative charges; non-specific interactions of molecules having various electron structures and of chemically saturated adsorbents of the first type; non-specific interactions, involving molecules with spherically symmetrical electron shells and π -bonds and hydroxylated silica surfaces; specific interactions, involving molecules with π -bonds and

Card 1/3

L 23896-65

2

ACCESSION NR: AP5002570

free electron pairs with the hydroxylated surface of silica, and their non-specific interaction with dehydroxylated silica surfaces; and the specific interaction of molecules with π -bonds and free electron pairs, and of the "cation" surface of zeolites and other adsorbents. The conventional classification of adsorbents and adsorbates as polar and non-polar compounds is shown not to explain recent research results satisfactorily, and specific interactions should be defined in terms of electron density, electron structure of atoms, distribution of surface charges, and dimensions of the cations and anions involved. Future research efforts should investigate the properties of solid surfaces which do not show strong non-specific interactions but which carry electron-donor links, and particularly polymers and stereospecific polymers with their electron-donor and acceptor links and functional groups. Theoretical research on molecular interactions and exact mathematical definitions of all contributing factors and forces is needed. Orig. art. has: 8 figures and 4 tables.

Card 2/3

1, 23896-65

2

ACCESSION NR: AP5002570.

ASSOCIATION: Khimicheskiy fakul'tet, Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Chemistry department, Moscow State University); Institut fizicheskoy khimii AN SSSR (Physical chemistry institute, AN SSSR)

SUBMITTED: 20Jan64

ENCL: 00

SUB CODE: GC

NO REF SOV: 054

OTHER: 036

BEZUS, A.G.; DREVING, V.P.; KISELEV, A.V. (Moscow)

Isotherms and heats of adsorption of methane on graphitized
carbon black. Zhur. fiz. khim. 38 no.12:2924-2930 D '64.
(MIRA 18:2)

1. Khimicheskiy fakul'tet Moskovskogo gosudarstvennogo uni-
versiteta imeni M.V. Lomonosova.

BELYAKOVA, L.D.; KISELEV, A.V.; KOVALEVA, N.V.

Gas chromatographic determination of hydrogen bonding energy
in adsorption layers. Dokl. AN SSSR 157 no.3:646-649 JI '64.
(MIRA 17:7)

1. Institut fizicheskoy khimii AN SSSR. Predstavleno akademikom
A.N. Frumkinym.

KISELEV, A.V.; PAVLOVA, L.F.

Use of general isotherm equations to the adsorption from benzene - n-hexane solutions on the adsorbents of different nature. Izv. AN SSSR Ser. khim. no.1:18-27 '65. (MIRA 18:2)

1. Institut fizicheskoy khimii AN SSSR.

L 29513-65 EWP(m)/EPF(c)/EWP(j)/T Po-4/Fr-4 RM

ACCESSION NR: AP5006083

8/0204/65/005/001/0136/0140

AUTHOR: Kiselev, A. V.; El'tekov, Yu. A.; Novikova, V. N.

31
30
B

TITLE: Thiophene/adsorption from solution by type X molecular sieves

SOURCE: Neftekhimiya, v. 5, no. 1, 1965, 136-140

TOPIC TAGS: molecular sieve, adsorption, thiophene, desulfurization, heptane, zeolite, benzene

ABSTRACT: A study has been made of the adsorption of thiophene from n-heptane or benzene solutions in the range of low thiophene equilibrium concentrations (mole fractions, 0—0.1) by type X zeolites. It is noted that desulfurization of liquid alkanes and cycloalkanes with zeolites is of interest. Linde 13 X and 10 X zeolites and Soviet zeolite samples were used. It was found that thiophene is readily adsorbed from n-heptane solutions in the entire range of concentrations and that even at thiophene mole fractions of the order of 0.1, thiophene virtually completely displaces n-heptane from zeolite voids. On the other hand, thiophene is very poorly adsorbed from benzene by type X zeolites. Benzene is present along with thiophene in zeolite voids in the entire range of concentrations. Orig. art. has: 2 tables and 4 figures. [SM]

Card 1/2

L 29513-65

ACCESSION NR: AF5006083

ASSOCIATION: Institut fizicheskoy khimii AN SSSR (Institute of Physical Chemistry,
AN SSSR)

SUBMITTED: 29Dec63

ENCL: 00

SUB CODE: GC, NA

NO REF SOV: 007

OTHER: 006

ATD PRESS: 3197

Card 2/2

L 33229-65 ENT(m)/T

ACCESSION NR: AP5006084

S/0204/65/005/001/0141/0148

21
13

AUTHOR: Kiselev, A. V.; Chernen'kova, Yu. L.; Yashin, Ya. I.

TYPE: Use of granulated zeolites (molecular sieves) for the gas chromatographic separation of gases and hydrocarbons

SOURCE: Neftekhimiya, v. 5, no. 1, 1965, 141-148

TOPIC TAGS: gas chromatography, granulated zeolite, molecular sieve, hydrocarbon separation, helium purification, air fractionation

ABSTRACT: Experimental results are presented for the efficiency of granulated or pelleted zeolites 5A, 10kh and 13kh in the gas chromatographic separation of helium, nitrogen, oxygen and C₁-C₃ and higher aliphatic hydrocarbons, and for the effects of carrier velocity, temperature and grain size on separation. Zeolites from the Gor'kovskaya opyt'naya baza Vsesoyuznogo nauchno-issledovatel'skogo instituta po pererabotka nefti (Gor'ki experiment station of the All-union petroleum processing scientific research institute) and Linde zeolites were dehydrated for 3-5 hrs. at 450-600C before their evaluation as column packings. The height of equivalent theoretical plates for the separation of oxygen, nitrogen and methane was shown to decrease with grain size and optimal values were measured at

Card 1/2

L 33229-65

ACCESSION NR: AP5006084

4
linear carrier gas velocities of 2.5-7 cm/sec. Temperature did not significantly affect the separation of hydrocarbons. Type 13kh zeolite is recommended for analysis of C₁-C₃ hydrocarbons at 150C but it does not give well-defined peaks for higher hydrocarbons. The temperature sensitivity of nitrogen-hydrocarbon separations and the various effects of zeolite humidity on the separation of C₂-C₃ hydrocarbon pairs can be used to achieve satisfactory separation of such mixtures. "The authors thank B. A. Lipkind for supplying the studied zeolites and L.V. D'yakhlova for her assistance in the experimental studies." Orig. art. has: 3 tables, 5 figures and 2 formulas.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow state university); Opytno-konstruktorskoye byuro avtomatiki Gosudarstvennogo komiteta po khimii (Automation experimental design bureau, State chemistry committee)

SUBMITTED: 28Dec63

ENCL: 00

SUB CODE: GC, NP

NO REF SOV: 010

OTHER: 030

Card 2/2

KISELEV, A.V.; LYGINA, I.A.

Potential energy of Ne, Ar, Kr, Xe, and CH₄ crystal lattices. Izv.
AN SSSR. Ser. khim. no.7:1143-1151 '65. (MIRA 18:7)

1. Institut fizicheskoy khimii AN SSSR.

ARISTOV, B.G.; KISELEV, A.V.

Absolute values of nitrogen and argon vapor adsorption on hydroxylated and dehydroxylated nonporous and wide-porous silica surfaces. Koll.zhur. 27 no.3:299-306 My-Je '65.

(MIRA 18:12)

1. Institut fizicheskoy khimii AN SSSR i Moskovskiy gosudarstvennyy universitet, khimicheskiy fakul'tet.
Submitted Jan. 4, 1964.

L 54777-55

EPA(s)-2/EWT(m)/EPF(c)/EPR/ENP(j)/T¹ Pc-4/Pr-4/Ps-4/Pt-7 NR/RM

ACCESSION NK: AP5014521

UR/0069/65/027/003/0320/0325
541.183

2/7

3

AUTHOR: Borisova, F. K.; Galkin, G. A.; Kiselev, A. V.; Korolev, A. Ya.; Lygin, V. I.

TITLE: Infrared study of the nature of the active adhesion layer on the surface of polytetrafluoroethylene

SOURCE: Kolloidnyy zhurnal, v. 27, no. 3, 1965, 320-325

TOPIC TAGS: polytetrafluoroethylene, surface property, surface treatment, polymer, fluoropolymer, ir spectrum

ABSTRACT: The IR spectra of surface compounds based on polytetrafluoroethylene modified by different methods were studied using polymer films. Modification of the film by three different methods (in sodium naphthalene complex, in liquid ammonia solution of metallic sodium and in molten potassium acetate) produced hydrophobization of the surface and improved the adhesive properties of the polymer. Infrared spectra were studied in surface compounds based on multilayer polymer films before and after modification. Conjugated double bonds were found in the surface

Card 1/2

L 5477-65

ACCESSION NR: AP5014521

layers of films modified by all three treatments, yet each of the methods of modification leads to the formation of different new functional groups (CO, OH, CH₂, CH₃, NH₂). The carbonyl and hydroxyl surface groups are thermally less stable than CH₂ and CH₃ groups. The conjugated double bonds on modified film surfaces are not destroyed by heating in a vacuum up to 300°C. Orig. art. has: 1 table and 4 figures.

ASSOCIATION: none

SUBMITTED: 09Dec63

ENCL: 00

SUB CODE: 00

NO REF SOV: 009

OTHER: 014

Card 2/2

KISELEV, A.V.; NIKITIN, Yu.S.; PETROVA, R.S.; FAM NGOK TKHAN'

Study of magnesium oxide surface by adsorption and gas chromatography methods. Koll.zhur. 27 no.3:368-373 My-Je '65.

(MIRA 18:12)

1. Moskovskiy universitet imeni Lomonosova, khimicheskiy fakul'tet. Submitted Oct. 29, 1963.

KISELEV, A.V.; SHIKALOVA, I.V.

Adsorption of large-size molecules from solutions on carriers, fillers, and pigments. Part 1: Adsorption of squalene and squalane on aerosils and carbon blacks. Koll.zhur. 27 no.3:374-378 My-Je '65. (MIRA 18:12)

1. Institut fizicheskoy khimii AN SSSR, Moskva. Submitted Jan. 29, 1964.

BOGACHEVA, Ye.K.; KISELEV, A.V.; EL'TEKOV, Yu.A.

Effect of the graphitizing of channel black on the adsorption of polystyrene. Koll. zhur. 27 no.5:656-660 S-O '65. (MIRA 18:10)

1. Institut fizicheskoy khimii AN SSSR, Moskva.

ISIRIKYAN, A.A.; KISELEV, A.V.; USHAKOVA, Ye.V.

Adsorption of water, methanol, hexane, and benzene vapors on pigment
rutile modified by diethyldichlorosilane. Koll. zhur. 27 no.5:690-
696 S-O '65. (MIRA 18:10)

1. Moskovskiy universitet imeni Lomonosova, khimicheskij fakul'tet.

BOGACHEVA, Ya.K.; KISELEV, A.V.; EL'TEKOV, Yu.A.

Surface chemistry effect on the adsorption of polymer solutions
on fillers and pigments. Part 3: Adsorption of polystyrene by
titanium dioxide. Koll. zhur. 27 no.6:793-796. N-D '65.

(MIRA 18:12)

I. Institut fizicheskoy khimii AN SSSR, Moskva. Submitted
July 18, 1964.

KISELEV, A.V.; KOVALEVA, N.V.; PETROVA, R.S.

Adsorption properties of acetylene black. Koll. zhur. 27
no.6:822-827 N-D '65. (MIRA 18:12)

1. Institut fizicheskoy khimii AN SSSR i Khimicheskiy fakul'tet
Moskovskogo universiteta imeni M.V. Lomonosova. Submitted
October 14, 1964.

KISELEV, A.V., inzh.; NOVOZHILOV, B.M., inzh.

Tap switch of an arc-quenching coil manufactured by Brown-Bowery.
Elek. sta. 36 no.1:85-86 Ja '65. (MIRA 18:3)

ABRAMOV, V.N.; KISELEV, A.V.; LYGIN, V.I. (Moskva)

Vibrational spectra and state of water molecules adsorbed on
synthetic zeolites. Zhur. fiz. khim. 39 no. 1:123-128 Ja '65
(MIRA 19:1)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova,
khimicheskiy fakul'tet. Submitted May 19, 1964.

KISELEV, A.V.; POSHKUS, D.P. [Poskus, D.]

Theoretical calculation of the potential function and the thermodynamic properties of symmetrical diatomic molecules adsorbed on graphite. Adsorption of H₂ and D₂. Zhur. fiz. khim. 39 no.2:398-402. F '65. (MIRA 18:4)

1. Institut fizicheskoy khimii AN SSSR i Institut khimii i khimicheskoy tekhnologii AN Litovskoy SSR.

L 35091-65

ACCESSION NR: AP5006696

S/0076/65/039/002/0453/0455

AUTHOR: Zhuravlev, L. T.; Kiselev, A. V.

3
B

TITLE: Hydroxyl group concentration on silica surfaces

SOURCE: Zhurnal fizicheskoy khimii, v. 39, no. 2, 1965, 453-455

TOPIC TAGS: hydroxyl group concentration, Aerosil, silica gel, surface adsorption, deuterium exchange

ABSTRACT: Using the deuterium exchange method, the authors measured the concentration α_{OH} of hydroxyl groups on the surface of silica as a function of the temperature of vacuum processing. These data for Aerosil and silica gel were compared with data reported by J. J. Fripiat et al. (J. Phys. Chem., 66, 800, 1962; J. Uytterhoeven, J. J. Fripiat, M. Saeex, Bull. Soc. chim. France, 1964) who tested Aerosil and silica gel samples produced in different ways and having different structures with $LiCH_3$ and $MgCH_3I$. The results show that for a given vacuum processing temperature, the α_{OH} values for all the samples are approximately equal and that the decreases in α_{OH} during similar periods of heating are likewise approximately the same. "The authors thank Prof. Frip'ya for providing the numerical values of α_{OH} determined in his laboratory."

Card 1/2

L 35091-65

ACCESSION NR: AP5006696

Orig. art. has: 1 figure and 2 tables.

ASSOCIATION: Institut fizicheskoy khimii, Akademiya nauk SSSR (Physical chemistry institute, Academy of sciences, SSSR); Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow state university)

SUBMITTED: 30Jun64.

ENCL: 00

SUB CODE: IC

NO REF SOV: 012

OTHER: 006

Card 2/2

KISELEV, A.V.; POSHKUS, D.P. [Poskus, D.]; AFREYMOVICH, A.Ya.

Theoretical calculation of the potential function and thermodynamic properties of symmetric diatomic molecules adsorbed on graphite nitrogen adsorption. Zhur. fiz. khim. 39 no.5:1190-1197 My '65.

(MIRA 18:8)

1. Institut fizicheskoy khimii AN SSSR i Institut khimii i khimicheskoy tekhnologii AN Litovskoy SSR.

KISELEV, A.V.; KOZLOV, G.A.; LYGIN, V.I.

Electron paramagnetic resonance of modified Ukhta channel blacks.
Zhur. fiz. khim. 39 no.5:1256-1263 My '65. (MIRA 18:8)

1. Khimicheskiy fakul'tet Moskovskogo gosudarstvennogo
universiteta imeni M.V. Lomonosova.

ZHDANOV, S.P.; KISELEV, A.V.; NOVIKOVA, V.N.; EL'ITEKOV, YU.A.

Adsorption of thiophene from solutions by synthetic Na and Ca
faujasites. Zhur.fiz.khim. 39 no.7:1729-1732 Jul '65.

(MIRA 18:8)

1. Institut khimii silikatov i Institut fizicheskoy khimii AN
SSSR.

BOGACHEVA, Ye.K.; KISELEV, A.V.; NIKITIN, Yu.S.; EL'TEKOV, Yu.A.

Effect of the size of silica gel pores on polystyrene adsorption.
Zhur.fiz.khim. 39 no.7:1777-1780 J1 '65.

(MIRA 18:8)

1. Institut fizicheskoy khimii AN SSSR.

DAVYDOV, V.Ya.; KITSELEV, A.V.; KUZNETSOV, B.V.

Spectral and energy phenomena of the interaction of a hydroxyl group with molecules of various electronic structure. Zhur. fiz. khim. 39 no.8:2058-2064 Ag '65. (MIRA 18:9)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova, khimicheskiy fakul'tet.

ZHDANOV, S.P.; KISELEV, A.V.; LYGIN, V.I.; OVSEPYAN, M.Ye.; TITOVA, T.I.

Infrared spectra of synthetic zeolites type NaA, NaX, NH₄X and their decationized forms. Zhur.fiz.khim. 39 no.10:2453-2458 0
'65. (MIRA 18:12)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova,
khimicheskiy fakul'tet i Institut khimii silikatov AN SSSR.
Submitted July 6, 1964.

GAVRILOVA, T.B.; KISELEV, A.V.

Derivation of adsorption isotherms and rapid determination of the specific surface area by the gas chromatographic method of heat desorption. Zhur.fiz.khim. 39 no.10:2582-2585 0 '65.
(MIRA 18:12)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova, khimicheskiy fakul'tet. Submitted July 6, 1964.

BORISENKO, I.V.; KISELEV, A.V.; PETROVA, R.S.; CHUYKINA, V.K.; SHCHERBAKOVA, K.D.

Chemical modification of silica gel surface by methylchloro-
silanes for gas chromatography. Zhur.fiz.khim. 39 no.11:2685-
2690 N '65. (MIRA 18:12)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova,
khimicheskiy fakul'tet.

RIBELEV, A.V.; KOZLOV, G.A.; LYGIN, V.I.

Infrared and electron paramagnetic resonance spectra of channel
blocks. Zhur.fiz.khim. 39 no.11:2773-2778 N '65. (MIRA 18:12)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.

BROYER, P.; KISELEV, A.V.; LOPATKIN, A.A.; SHPIGIL', S.

Energy of interaction between simple molecules and faujasite-type
zeolites. Dokl. AN SSSR 161 no.4:853-856 Ap '65. (MIRA 18:5)

1. Moskovskiy gosudarstvennyy universitet. Submitted September 24,
1964.

ACC NR: AP6031651

SOURCE CODE: UR/0020/66/170/001/0139/0142

AUTHOR: Zubov, P. I.; Kiselev, A. V.; Krylova, L. M.; Sukhareva, L. A.; Lygin, V. I.

ORG: Institute of Physical Chemistry, Academy of Sciences, SSSR (Institut fizicheskoy khimii Akademii nauk SSSR); Moscow State University im. M. V. Lomosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Effect of molecular interaction between polymers and solids in the mechanical properties of polymer coatings

SOURCE: AN SSSR. Doklady, v. 170, no. 1, 1966, 139-142

TOPIC TAGS: polymer coating, molecular interaction, ~~polymer~~, ~~stress~~, internal stress, ~~coating~~ strength, ~~coating~~ adhesion, *plastic coating, polyester resin, alkyl resin, plastic filler, mechanical property*

ABSTRACT: A study has been made of the interaction of polymer functional groups with filler surfaces, and of the effect of this interaction on the internal stresses, strength, and adhesion of polymer coatings. The experiments were conducted with PN-1 polyester resin or FL-50 akyd resin, and aerosil filler, both nonmodified or modified with actadecylamine. The interaction was studied by IR spectroscopy. The results of the experiments given in graphic form indicated that the mechanical properties of polymer coatings are highly dependent on the nature of the molecular interaction between polymers and solids. Orig. art. has: 4 figures.

SUB CODE: 11, 20/ SUBM DATE: 07Dec65/ ORIG REF: 008/ OTH REF: 001

Card 1/1

UDC: 541.68

I 05821-67 EWT(m) IJP(c) GD
ACC NR: AT6031468 SOURCE CODE: UR/0000/65/000/000/0001/0012

AUTHOR: Auslender, V. L.; Blinov, G. A.; Budker, G. I.; Karliner, M. M.;
Kiselev, A. V.; Livshits, A. A.; Mishnev, S. I.; Naumov, A. A.; Panasyuk, V. S.;
Pestov, Yu. P.; Sidorov, V. A.; Sil'vestrov, G. I.; Skrinskiy, A. N.; Khabakh-
pashev, A. G.; Shekhtman, I. A.

ORG: none

TITLE: Present state of research on the VEPP-2 electron-positron ring

SOURCE: AN SSSR, Sibirskoye otdeleniye, Institut yadernoy fiziki, Doklady, 1965.
Sostoyaniye rabot na pozitron-elektronnom nakopitele VEPP-2, 1-12

TOPIC TAGS: electron, positron, electron positron storage ring, electron beam
/B-3M synchrotron, VEPP-2 electron-positron, steradian

ABSTRACT: The VEPP-2 electron-positron storage ring was designed for
experiments on the interaction of positrons and electrons with an energy of up to
2 x 700 Mev. It is basically a special type of B-3M synchrotron and is equipped
with an exterior injector, a high-vacuum storage track, a single thread system to
extract the electron beam from the accelerator and insert it into the storage ring.

Card 1/2

44
B+1

L 34419-66 EWT(m)/EWP(j) RM

ACC NR: AF6010544

(N)

SOURCE CODE: UR/0069/65/027/006/0793/0796

32
B

AUTHOR: Bogacheva, Ye. K.; Kiselev, A. V.; El'tekov, Yu. A.

ORG: Institute of Physical Chemistry, AN SSSR, Moscow (Institut fizicheskoy khimii)

TITLE: Effect of surface chemistry on the adsorption of polymer solutions on fillers and pigments. Part 3. Adsorption of polystyrene by titanium dioxide

SOURCE: Kolloidnyy zhurnal, v. 27, no. 6, 1965, 793-796

TOPIC TAGS: adsorption, polystyrene, titanium oxide, toluene, carbon tetrachloride, pigment

ABSTRACT: The adsorption of polystyrene on various samples of pigment rutile from dilute solutions in CCl₄ and toluene was studied at 20°C in order to determine the nature of the adsorption of these macromolecules and the extent to which it is affected by modification of the pigment surface. The specific viscosity of the CCl₄ solution of polystyrene in contact with rutile was found to decrease monotonically during the first ten days. The specific viscosity of the equilibrium solution indicates that the latter is depleted of the high-molecular polystyrene fraction, which is adsorbed preferentially. The values of polystyrene adsorption from CCl₄ solutions per unit surface were similar for rutile and graphitized carbon black samples. This is attributed to the presence of steric hindrance effects in specific

UDC: 541.183.23

Card 1/2

L 35408-66 EWT(m)
ACC NR: AP6026839

SOURCE CODE: UR/0069/66/028/001/0003/0010

AUTHOR: Akshinskaya, N. V.; Davvdov, V. Ya.; Kiselev, A. V.; Nikitin, Yu. S. 36
B

ORG: Chemical Faculty, Moscow University im. M. V. Lomonosov (Khimicheskiy fakul'tet Moskovskiy gosudarstvennyy universitet)

TITLE: Spectroscopic and adsorption study of geometrically modified wide-pore silicagels containing ultrapores

SOURCE: Kolloidnyy zhurnal, v. 28, no. 1, 1966, 3-10

TOPIC TAGS: silica gel, IR spectroscopy, adsorption, porosity, gas chromatography

ABSTRACT: Industrial, laboratory, and experimental silica gels subjected to hydrothermal treatment in an autoclave, were investigated by IR spectroscopy for adsorption of D₂O vapor (to determine the number of exchangeable OH groups) and by measuring adsorption. It was established that all of these silicagels had in addition to wide pores ultrapores that were accessible to water molecules but inaccessible to molecules of benzene, methyl alcohol, or krypton. The ultrapores could be eliminated by treatment at high temperatures. The degree to which they were closed by sintering depended on the conditions of treatment. While some of the ultrapores still remained after sintering in air at 750° or in vacuo at 800°, they were eliminated practically completely after treatment of the silicagels in a stream of water vapor at 750° or higher temperatures.

Card 1/2

UDC: 541.183.25
29/6 2590

L 35408-66

ACC NR: AP6026839

The presence of ultrapores does not significantly affect the adsorption capacity or separation by gas chromatography in work with large hydrocarbon molecules. However, it does interfere when the molecules have protruding groups such as NH, OH, or CO. Orig. art. has: 3 figures and 3 tables. [JPRS: 36,455]

SUB CODE: 07, 20 / SUBM DATE: 03May65 / ORIG REF: 015

Card 2/2 *Ludhi*

L 37205-66 EWP(e)/EWT(m)/EWP(j)/EWP(t)/ETI IJP(c) RM/JD/JW/JG
ACC NR: AP6014406 (A) SOURCE CODE: UR/0062/66/000/004/0638/0642

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TITLE: Adsorption of argon, nitrogen, n-hexane and benzene vapors on
boron nitride and molybdenum sulfide

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 4, 1966, 638-
642

TOPIC TAGS: adsorption, gas adsorption, argon, nitrogen, benzene, hexane

ABSTRACT: Isotherms for the adsorption of argon, nitrogen, n-hexane
and benzene on BN and MoS₂ were constructed and compared with data for
hydroxylated and dehydroxylated silica gel, barium sulfate, carbon
black, magnesium oxide and hydroxide and Aerosil as adsorbents. The
adsorption of argon per unit surface of adsorbent varies greatly
according to the adsorbent since the occurring electrokinetic reactions
depend on concentration, dimensions and polarizability of atoms on the

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ACC NR: AP6014406

adsorbent surface. Adsorption of nitrogen, n-hexane and benzene on the different adsorbents is more nearly similar. This is because in the adsorption of these molecules having π -bonds with peripheral electron density concentration there occurs an additional more specific reaction between the protonized hydrosyl groups and the surface cations with the π -bonds of the adsorbed molecules. The adsorption of n-hexane vapor on nonpolar surfaces of BN and MoS₂ is significantly greater than the adsorbability of benzene vapor in almost all relative pressure ranges. The adsorbability of BN and MoS₂ with respect to n-hexane is intermediate to that of carbon black and magnesium oxide. BN samples were supplied by R. M. Matveyevsk, and MoS₂ samples, by coworkers L. N. Sinyurikhin and Z. S. Rubtsov of the VNIINP Institute. The authors express their appreciation. Orig. art. has: 5 figures, and 1 table.

SUB CODE: 07/ SUBM DATE: 29Nov63/ ORIG REF: 010 OTH REF: 006

Card

2/2 //LP

ZIBITSKER, D.Ye.; KISELEV, A.V.

Epidemiology and prophylaxis of Botkin's disease in preschool children's establishments. Vop. virus 8 no.1:118 Ja-F'63.
(MIRA 16:6)

1. Belorusskiy institut epidemiologii, mikrobiologii i gigi-
yeny.

(HEPATITIS, INFECTIOUS)

ZIBITSKIE, D.Ye.; NISELEV, A.V.

Planned γ -globulin prophylaxis of Botkin's disease with consideration of the duration of the induced immunity. Zhur.mikrobiol., epid. i immun. 42 no.3:116-122 Mr '65. (MIRA 18:6)

1. Belorusskiy institut epidemiologii, mikrobiologii i gigiyeny.

L 25793-66 EWT(m) IJP(c)
ACC NR: AP6016377

SOURCE CODE: UR/0089/65/019/006/0502/0505

AUTHOR: Auslender, V. L.; Blinov, G. A.; Budker, G. I.; Karliner, M. M.; Kiselay, A. V.; Livshits, A. A.; Mishnev, S. I.; Naumov, A. A.; Panasyuk, V. S.; Pestov, Yu. N.; Sidorov, V. A.; Sil'vestrov, G. I.; Skriskiy, A. N.; Khabakhashev, A. G.; Shekhtman, I. A. 56
8

ORG: none

TITLE: Status report on the VEPP-2 positron-electron storage ring

SOURCE: Atomnaya energiya, v. 19, no. 6, 1965, 502-505

TOPIC TAGS: electron positron pair, electron interaction, synchrotron, electron scattering, luminescence, betatron/B-3M synchrotron

ABSTRACT: The VEPP-2 was designed for electron-positron interaction experiments at energies of 2 X 700 Mev. as reported in the "Proceedings of the International Conference on Accelerators", Dubna, 1963. Work accomplished in the two years following that conference includes the following: start-up of the synchrotron injector, accumulation of large electron currents in the storage ring, study of instability related to the interaction of the beam with the resonator, and the accumulation of positrons. At present the VEPP-2 is being used to study the interaction of two beams and to measure the luminescence from the small-angle positron-electron scattering. An over-all schematic diagram of the VEPP-2 is shown, including its connection to a B-3M synchrotron. The latter operates in light-duty mode at 200 Mev, and its 100 ma output pulse is shorter than 20 nsec. Its energy scattering is less than 2% and pulse repetition frequency is about 3 cycles. The storage ring is a weakly focussing racetrack with four identical rectilinear segments 60 cm long. The equilibrium orbit radius is 150 cm and the aperture is 19
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ACC NR: AP6016377

8 X 14 cm. One segment of the ring is the experimental working section; the opposite section is a resonator; the remaining two are used to inject electrons and positrons. The experiments made and the operation of the equipment are described in detail. It is noted with interest that when betatron oscillations are excited by individual inflector pulses, most of the initial oscillation amplitude decays in a time interval much shorter than the natural radiation decay time. Orig. art. has: 4 figures. [JPRS]

SUB CODE: 20 / SUBM DATE: none / ORIG REF: 006 / OTH REF: 001

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END

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Kirillov, V.K.
to

Kiselev, A.V.