VILESOV, F.I.

Photoelectric emission from the surface of Cr_2O_3, NiO, and ZnO. Dokl. AN SSSR 141 no.5:1068-1071 D '61. (MIRA 14:12)

1. Fizicheskiy institut Leningradskogo gosudarstvennogo universiteta im. A.A. Zhdanova. Predstavleno akademikom A.N. Tereninym.
(Photoelectricity) (Transition metals)

TERENIN, A. N.; VILESOV, F. I.

"Mass-Spectrometry of Organic Molecules with Photon Ionization."

report submitted to 11th Intl Spectroscopy Colloq, Belgrade, 30 Sep-4 Oct 63.

Physical Inst, Leningrad Univ.

VILESOV, F.I.

Photoionization of gases and vapors by vacuum ultraviolet radiation. Usp. fiz. nauk 81 no.4:669-738 D '63. (MIRA 17:1)

VILESOV, F.I.; KURBATOV, B.L.

Photoionization of esters and metal carbonyls in the gaseous phase. Dokl. AN SSSR 140 no.6:1364-1367 O '61. (MIRA 14:11)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova. Predstavleno akademikom A.N.Tereninym.
(Ionization of gases) (Carbonyl compounds) (Esters)

VILESOV, F.I.

Photoionization of vapors from organic compounds in the vacuum region of spectrum. Zhur.fiz.khim. 35 no.9:2010-2015 '61.
(MIRA 14:10)

1. Leningradskiy gosudarstvennyy universitet imeni A.A. Zhdanova.
(Ionization) (Benzene--Spectra)

KURBATOV, B.L.; VILESOV, F.I.; TERENIN, A.N., akademik

Electron distribution by kinetic energies in the photoionization of methyl derivatives of benzene. Dokl. AN SSSR 140 no.4:797-800 O '61. (MIRA 14:9)

1. Fizicheskiy institut Leningradskogo gosudarstvennogo universiteta im. A.A.Zhdanova.
(Benzene) (Photoelectricity)

S/020/61/141/005/006/018
B104/B102

AUTHOR: Vilesov, F. I.

TITLE: Photoelectric emission from Cr_2O_3, NiO, and ZnO surfaces

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 141, no. 5, 1961, 1066-1071

TEXT: The photoelectron energy distribution from Cr, Ni, and Zn oxides has been studied with the help of a retarding field in a spherical capacitor. The experimental arrangement has been described in a previous paper (F. I. Vilesov, A. N. Terenin, DAN, 133 (1960); 134, 71 (1960)). The chromium-oxide samples investigated consisted of finely dispersed layers of powder, which had been produced by burning of a thin layer of ammonium bichromate. Some of the nickel-oxide samples were industrial preparations, while others were obtained by oxidation of nickel disks in air. Some of the zink-oxide samples were obtained by precipitation of a ZnO powder emulsion in ethanol or water, while others were produced from zink oxalate by burning of pure zink or from an industrial preparation of the type "for luminophores". ZnO layers were also obtained by sublimation of zink oxide on nickel disks through burning of Zn in air. Before the

Card 1/3

S/020/61/141/005/006/018
B104/B102

Photoelectric emission from ...

measurements the samples were vacuum-annealed in the capacitor for 2-3 hr. (NiO at 200-250°C, all the other oxides at 350-400°C). The heat treatment was carried out with a small furnace attached to the rear of the photocathode. This method did not ensure complete purification of the sample surfaces. From the energy distribution curves can be seen that the energy distribution of photoelectrons is hardly affected by the method of oxide preparation. This proves that photoemission is caused by oxide electrons and not by impurity electrons. The energy distribution of photoelectrons gives information on the population of energy states. The following work functions of photoelectrons have been obtained for chromium, nickel, and zink oxides: 5.9, 5.3, and 6.3 ev. The Fermi levels with respect to the vacuum levels are at 5.9, 6.0, and 4.6 (in the same sequence). Academician A. N. Terenin is thanked for interest and suggestions. There are 3 figures and 8 references: 4 Soviet and 4 non-Soviet. The three references to English-language publications read as follows: F. J. Morin. Bell Syst. Techn. J.. July, 1047 (1958); H. E. White, Phys. Rev., 33, 538 (1929); R. Newman. R. M. Chrenko, Phys. Rev., 114, 1507 (1959).

Card 2/3

Photoelectric emission from ... S/020/61/141/005/006/018
B104/B102

ASSOCIATION: Fizicheskiy institut Leningradskogo gosudarstvennogo universiteta im. A. A. Zhdanova (Physics Institute of Leningrad State University imeni A. A. Zhdanov)

PRESENTED: March 20, 1961, by A. N. Terenin, Academician

SUBMITTED: March 1, 1961

Card 3/3

32427

S/020/61/141/006/010/021
B104/B112

24.2600 (1043, 1114, 1138)

AUTHORS: Kurbatov, B. L., and Vilesov, F. I.

TITLE: Kinetic energy distribution of electrons in the external photoelectric effect of pigment layers

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 141, no. 6. 1961, 1343-1346

TEXT: The external photoelectric effect of organic semiconductors with an equipment described in previous studies was investigated (V. I. Vilesov, A. N. Terenin, DAN, 133, no. 5 (1960); DAN 134, 71 (1960)). When carrying out the experiments, a pigment layer was either evaporated on the inner electrode from an alcohol solution or deposited by vacuum sublimation if the pigment did not disintegrate at temperatures of approximately 250-300°C. The authors infer from some considerations on photoelectric work function, position of the Fermi levels, of forbidden band width, and of electron affinity that various metastable defects may arise from far-ultraviolet irradiation, which may considerably disturb thermodynamical and electrical equilibrium. It is not possible to estimate the resulting electric field, Fermi levels and photoelectric work function of the

Card 1/~~4~~3

32427

S/020/61/141/006/010/021
B104/B112

Kinetic energy distribution ...

collector may show a considerable error. Distribution curves for malachite, crystal violet, indigo red, and indigo blue agree with the curves shown in Fig. 1. It is characteristic of this group that with a quantum energy exceeding the maximum photoelectric work function by 2.2-3 ev the maximum energy distribution of electrons is shifted to the range of lower electron energies. This may be explained by (1) photon-induced emission of strongly bound electrons, (2) by emission of weakly bound electrons with simultaneous excitation of the positive ion to one of its electron levels, or (3) discrete energy loss of electrons occurs when they move towards the surface. Fig. 2 shows the energy distribution of electrons in the photoemissive effect of alizarin blue. Quinoline blue, phenosafranine, rhodamine B, and pinacryptole yellow have similar distribution curves. The authors conclude that in these pigments a higher energy amount is transferred to vibrational degrees of freedom than in the group mentioned first. It is characteristic of all pigments investigated that the maximum of energy distribution of electrons is only slightly shifted (by 0.3-0.5 ev) if the energy of γ-quanta is increased to 4-5 ev. This was explained in previous papers by the transfer of part of the quantum energy to the excitation of electron and vibrational levels of the

Card 2/~~4~~3

32427

S/020/61/141/006/010/021
B104/B112

Kinetic energy distribution ...

absorbing molecule. To prove this statement, the authors investigated the energy distribution of electrons in photoionization of vapors of 6 Zh rhodamine. It can be observed that also in ionization of a free molecule a considerable portion of quantum energy is consumed for the excitation of electron and vibrational levels. The authors thank Academician A. N. Terenin for interest and valuable discussions. There are 3 figures, 1 table, and 9 references: 7 Soviet and 2 non-Soviet. The two references to English-language publications read as follows: H. Phillipp, E. A. Taft, L. Apker, Phys. Rev., 120, 49 (1961); L. Apker, E. Taft, J. Dickey, J. Opt. Soc. Am., 43, 78 (1953); J. Opt. Soc. Am., 43, 81 (1953).

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova (Leningrad State University imeni A. A. Zhdanov)

PRESENTED: June 12, 1961, by A. N. Terenin, Academician

SUBMITTED: June 5, 1961

Fig. 1. Energy distribution of electrons in the external photoeffect for different quantum energies. Legend: (1) 6.85 ev; (2) 7.13 ev; (3) 7.60 ev; (4) 10.10 ev.

Card 3/~~4~~3

VILESOV, F.I.; KURBATOV, B.L.; TERENIN, A.N., akademik

Electron distribution over energies in the photoionization of aromatic amines in the gaseous phase. Dokl.AN SSSR 138 no.6: 1329-1332 Je '61. (MIRA 14:6)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova.
(Electrons—Scattering) (Ionization) (Amines)

25334

S/020/61/138/006/010/019
B104/B214

11.4600

AUTHORS: Vilesov, F. I., Kurbatov, B. L., and Terenin, A. N., Academician

TITLE: Energy distribution of electrons in the photoionization of aromatic amines in the gaseous phase

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 138, no. 6, 1961 1329 - 1332

TEXT: The energy distribution of ions was investigated by the authors with the apparatus shown in Fig. 1 The necessary ultraviolet radiation was obtained by a vacuum monochromator. The electron current in this apparatus could reach the value $10^{-13} - 10^{-12}$ a and was amplified by a dynamoelectric amplifier. The intensity of light was measured by a fluorescent screen of sodium salicylate and a photomultiplier. The results are shown in Figs. 2 and 3. The energy distributions of the electrons were measured on photoionization of benzene and methyl aniline for one intensity of light. The corresponding curves for aniline and

Card 1/6

25334
S/020/61/138/006/010/019
B104/B214

Energy distribution of electrons...

dimethyl aniline largely coincide with the curve for methyl aniline. If the energy difference between the ionizing photons and the ionization potential of the molecules under investigation is small there appears only one maximum in this curve. As the energy of the quantum is increased this maximum is displaced toward the side of higher energy. On further increase of the photon energy new maxima appear in the region of smaller energies which are also displaced toward the side of higher energy as the photon energy is increased. The first group of slow electrons is observed in the case of benzene when the photon energy is 1.5±0.1 ev above the ionization potential of the benzene molecules. For aniline, methyl aniline, and dimethyl aniline these values are: 1.2, 1.2, 1.1, ev. respectively. For these three compounds third groups of slow electrons are observed at the corresponding values of 2.4, 2.3, and 2.2 ev on further increase of the photon energy. When the photon energy lies 2.8 ev above the ionization energy of dimethyl aniline a fourth group of electrons is observed. The appearance of the new electron groups is explained with the help of the following processes: 1) ionization of the molecular ions by excitation to electron and vibrational levels; 2) dissipative ionization according to one of the schemes

Card 2/6

25334

Energy distribution of electrons... S/020/61/138/006/010/019
B104/B214

$AB + h\nu \longrightarrow A^+ + B + e$ or $AB + h\nu \longrightarrow A^+ + B^-$; 3) emission of strongly bound electrons. Since no data are available at present on the electron levels of isolated ions of aromatic compounds the results obtained here cannot be fully explained. The results confirm, however, the assumption of the excitation of ions produced by the photoeffect in pigment films to the upper electron levels. There are 3 figures and 5 references: 4 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Leningradskiy godsudarstvennyy universitet im. A. A. Zhdanova
(Leningrad State University imeni A. A. Zhdanov)

SUBMITTED: March 20, 1961

Card 3/6

AKOPYAN, M.Ye.; BALYAKIN, I.I.; VILESOV, F.I.

The MV-3 vacuum monochromator. Prib. i tekh.eksp. 6 no.6:96-99 N-D '61. (MIRA 14:11)

1. Leningradskiy gosudarstvennyy universitet.
(Monochromators)

KURBATOV, B.L.; VILESOV, F.I.

Distribution of electrons with respect to kinetic energy in the external photoeffect from layers of various dyes. Dokl. AN SSSR 141 no.6:1343-1346 D '61. (MIRA 14:12)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova. Predstavleno akademikom A.N.Tereninym.
(Photoelectricity) (Electrons) (Dyes and dyeing)

L 6387-66

ACC NR: AP5026743 SOURCE CODE: UR/0286/65/000/017/0018/0018

INVENTOR: Ganz, S. N.; 44,55 Kuznetsov, I. Ye.; 44,5 Vilesov, G. I.; 44,5 Dobrovol'skiy, Ye. I.; 44,55 Glozman, L. P.; 44,55 Kuz', N. P. 44,55

45

B

ORG: none

TITLE: A method for reducing the tendency to caking in ammonium nitrate. Class 16, No. 174195

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 17, 1965, 18

TOPIC TAGS: fertilizer, ammonium compound, nitrate, manganese, zinc

ABSTRACT: This Author's Certificate introduces a method for reducing the tendency to caking in ammonium nitrate by treating it with a powdered material. A more effective fertilizer is produced by using a charge containing manganese silt and waste from white zinc shops. 44,55

UDC: 631.842.4

SUB CODE: GC/ SUBM DATE: 12Mar64/ ORIG REF: 000/ OTH REF: 000

Card 1/1

GANZ, S.N.; NESTERENKO, I.P.; VILESOV, G.I.

Adsorption of nitrogen oxides by a peat-ammonia sorbent.
Zhur.prikl.khim. 38 no.9:1930-1935 S '65. (MIRA 18:11)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut.

VILESOV, G.I., dots.; MEDOVSHCHIKOVA, N.A., assist.

Geometrizing and calculating gold resources in dredge dumps. Izv. vys. ucheb. zav.; gor. zhur. no.1:81-94 '58. (MIRA 11:5)

1. Sverdlovskiy gornyy institut.
(Gold dredging) (Ores—Sampling and estimation)

VILESOV, G.I., dotsent

Reducing the number of chemical analyses in the assaying of minerals in gold-bearing deposits. Izv.vys.ucheb.zav.; gor.zhur. no.3:43-52 '58. (MIRA 12:8)

1. Sverdlovskiy gornyy institut.
(Gold ores) (Assaying)

VILESOV, G.I., dots., kand.tekhn.nauk

Using the recovery method for investigating gold-bearing deposits. Nauch.dokl.vys.shkoly; gor.delo. no.4:87-90 '58. (MIRA 12:1)

1. Predstavleno kafedroy marksheyderskogo dela Sverdlovskogo gornogo instituta imeni V.V. Vakhrusheva.
(Gold--Assaying)

VILESOV, G.I., dotsent

Simple method of mine geometry calculations. Izv. vys. ucheb.
Izv vys. ucheb.zav.; gor. zhur. no.12:48-56 '58.
(MIRA 12:8)

1.Sverdlovskiy gornyy institut.
(Prospecting) (Mine surveying)

25(5)
5(0)

SOV/25-59-2-14/48

AUTHOR: Vilesov G.I., Administrative Chief of the Chemical Industry of the Lugansk Sovnarkhoz

TITLE: With the Chemists of Lugansk (U khimikov Luganska)

PERIODICAL: Nauka i zhizn', 1959, Nr 2, p 37-39 (USSR)

ABSTRACT: The article gives a survey of the achievements and planning of the chemical industry of the Lugansk Sovnarkhoz. The Donetskiy sodovyy zavod imeni V.I. Lenina (Donets Soda Plant imeni V.I. Lenin), the Kadiyevskiy sazhevyy zavod (Kadiyevka Soot Plant), the Lisichansk Chemical Combine, Rubezhnoye Chemical Combine and a number of other plants at present produce more than 300 various chemical items. From 1955 to 1958, the production was increased by more than 30%. As the first Soviet enterprise of its kind,

Card 1/4

SOV/25-59-2-14/48

With the Chemists of Lugansk

the Lisichansk Combine has started the production of higher alcohols from coke by-products. In particular, the production of isobutyl alcohol, important for the production of lacquers and plastics, has started. Also a new plant for the production of formaldehyde, and a second plant for the production of carbamide have been newly established. The Rubezhnoye Combine is one of the leading Soviet plants in the production of various semi-finished products and synthetic dyes, particularly of the so-called vat dyes. Recently the combine put into operation a new plant to produce water-soluble vat dyes. The combine also produces weed-killers, growth-stimulating agents and the preparation "M-1", which prevents germination of stored potatoes, and such unfinished products as salicylic acid for pharmaceutical plants. The combine is

Card 2/4

SOV/25-59-2-14/48

With the Chemists of Lugansk

leading in the improvement of technological methods, having adopted the industrial production of phthalic anhydride on a pulverized catalyzer. In the future, the chemical industry of the Lugansk Oblast will chiefly develop the production of synthetic materials, plastics and dyes for synthetic fibers and organize the production of rubber items intended for technical use. The Lisichansk Combine will adopt the production of "kaprolaktam" (a raw material for the production of caprone), and of "AG" sols, which are the primary materials for anid fibers. At the Rubezhnoye Combine 7 new shops will be built. The Donets Soda Plant will be rebuilt. It is planned to introduce automation and remote control at the two combines within 2 or 3 years, which will be facilitated by the use

Card 3/4

SOV/25-59-2-14/48

With the Chemists of Lugansk

of natural gas. There are 3 photos.

Card 4/4

5(2) 06209
SOV/64-59-6-1/28

AUTHOR: Vilesov, G. I.

TITLE: On Raising the Technological Level of the Chemical Industry of the Lugansk Sovnarkhoz

PERIODICAL: Khimicheskaya promyshlennost', 1959, Nr 6, pp 463 - 468 (USSR)

ABSTRACT: In the Lugansk oblast' there is located one of the larger centers of the chemical industry of the USSR. It is the home of one of the oldest chemical establishments, the Donetskiy sodovyy zavod imeni V. I. Lenina (Donets Soda Works imeni V. I. Lenin) (founded in 1890), the large enterprise of the aniline-dyes industry, the Rubezhanskiy khimicheskiy kombinat (Rubezhnoye Chemical Kombinat) (founded in 1914), the Lisichanskiy khimicheskiy kombinat (Lisichansk Chemical Kombinat), and the Kadiyevskiy sazhevyy zavod (Kadiyevka Carbon Black Works) (founded in the postwar period). After a reorganization of the industrial administration by the Upravleniye khimicheskoy promyshlennosti Luganskogo sovnarkhoza (Administration of Chemical Industry of the Lugansk sovnarkhoz) the further development of the chemical industry of this economic district was projected jointly with the research and planning institutes

Card 1/5

06209
SOV/64-59-6-1/28

On Raising the Technological Level of the Chemical Industry of the Lugansk Sovnarkhoz

in accordance with the interpretation by N. S. Khrushchev of the decisions of the May Plenary Session (1958) of the Central Committee of the CPSU and the XXI Conference of the CPSU on the Accelerated Development of the Chemical Industry, given at the Anniversary Session of the Supreme Soviet of the USSR in 1957. Data on these problems are given in great detail. Inter alia, the following statements are made: In the Lisichansk Chemical Kombinat the greater part of a waste gas rich in CO_2 had long been discharged into the open air. This waste gas, however, can be used as an addition to the carbonization gas in the Donets Soda Works only 8 km away. The construction of a pipeline for this gas, which was completed in June, resulted in a considerable improvement in the utilization of the gas. In connection with the production of formaldehyde and urea taken up in the Lisichansk Chemical Kombinat in 1958 production of the carbamide resin MF-17 was started in the Rubezhnoye Chemical Kombinat. At present, the Kombinat plans to produce a higher-grade resin of the type MF-RKhK. In 1957-58 production of pentaerythrite

Card 2/5

On Raising the Technological Level of the Chemical Industry of the Lugansk Sovnarkhoz

06209
SOV/64-59-6-1/28

was taken up in one of the establishments of the Lugansk sovnarkhoz, where a new production process was inaugurated by which the planned productive capacity was exceeded by 50%. In 1958 production of nitrolinoleum started, and more than 400,000 m^2 were produced. The types were designated as NLL and NLLTs (colored). The number of engineers and mechanics in the Lugansk sovnarkhoz has tripled since last year, and the Opytno-konstruktorskoye byuro avtomatiki Goskhimkomiteta (OKBA) (Testing and Design Office for Automation of the Goskhimkomitet (OKBA)) has been expanded. New laboratories and mechanical shops have been built. In the Rubezhnoye Chemical Kombinat there are branches of the NIOPiK and Giproorgkhim. After the Rubezhnoye Chemical Kombinat had received from the Akademiya nauk USSR (Academy of Sciences of the UkrSSR) the formula for the new insecticide "Kiyev 20-35", production was started on experimental lines. An experiment performed at the Kolkhoz imeni Kominterna Novo-Astrakhanskogo rayona Luganskoy oblasti (Kolkhoz imeni Komintern of the Novaya Astrakhan' rayon of the Lugansk oblast) on the use of urea as an additive to livestock fodder proved successful, so that the production of urea will

Card 3/5

On Raising the Technological Level of the Chemical Industry of the Lugansk Sovnarkhoz

06209
SOV/64-59-6-1/28

be eleven times increased in 1960 on account of the many different applications of the substance. It is intended to double ammonia production in 1961 and to bring it to four its present level by the end of the new Seven-year Plan. The frame filter presses of the Rubezhnoye Chemical Kombinat will be replaced by new filter presses of the type designed at the Khar'kovskiy NIIKhimmash (Khar'kov NIIKhimmash). The new Seven-year Plan envisages an increase in the production of amines by 5.8 times. In the Rubezhnoye Chemical Kombinat it is intended to raise the production of vat dyes to six times the present level by the end of the Seven-year Plan. The automation of the chemical industry of the Lugansk sovnarkhoz is being carried out by a branch of the OKBA Goskomiteta po khimii ((OKBA) of the Gos Committee for Chemistry) and the Institut avtomatiki Gosplana USSR (Institute of Automation of the Gosplan of the UkrSSR). The establishments of the Lugansk sovnarkhoz in 1958 produced 106.2% of the planned output, which meant a production increase over 1957 of 13.4%. In the contest for the title of a"Collective of Communist Work" the carbamide plant of the Lisichansk Chemical Kombinat with plant

Card 4/5

06209

On Raising the Technological Level of the Chemical Industry of the Lugansk Sovnarkhoz

SOV/64-59-6-1/28

manager Comrade Ukhanev has taken the lead as well as the mechanics brigade of the Donets Soda Works with Comrade Liverko. In the contest for the title of "Best Operator" the best results have so far been achieved by Comrades Gladkiy, Ponomarev, Krikun, and others. There is 1 figure.

Card 5/5

06218

5(1) 25(5) SOV/64-59-6-10/28

AUTHORS: Atroshchenko, V. I., Doctor of Technical Sciences, Asnin, Ya. I., Candidate of Technical Sciences, Vilesov, G. I., Nikitskaya, Z. A., Rabin, P. S.

TITLE: Removal of Salt From Industrial Condensates of Nitrogen Fertilizer Enterprises by Means of Ion Exchange Resins

PERIODICAL: Khimicheskaya promyshlennost', 1959, Nr 6, pp 499 - 501 (USSR)

ABSTRACT: The vapor condensate of the evaporators used in the nitrogen fertilizer industry is contaminated with NH_4^+ and NO_3^- ions and has to be purified prior to its further use (as a steam boiler feed). Experiments carried out under the supervision of B. D. Bryanskiy (deceased) showed that by means of ion exchange resins it is not only possible to remove salt from the condensate but to re-use the ammonium nitrate obtained if the cation exchanger is regenerated with nitric acid and the anion exchanger with an ammonia solution. Among the investigated cation exchangers the type KU-2 proved to be best; in this case the regeneration takes place by means of a

Card 1/2

06218

Removal of Salt From Industrial Condensates of Nitrogen SOV/64-59-6-10/28
Fertilizer Enterprises by Means of Ion Exchange Resins

15% solution of nitric acid, and an approximately 19% solution of ammonium nitrate is obtained. The weakly alkaline type AN-2F was selected as an anion exchanger which can be regenerated by means of a 4-5% solution of ammonia. On this basis an industrial plant with a productive capacity of 150 m^3 of condensate per hour was designed according to a plan of the Khar'kovskiy politekhnicheskiy institut imeni V.I.Lenina (Khar'kov Polytechnic Institute imeni V. I. Lenin). The plant consists of 3 cation exchange filters and 3 anion exchange filters of the same dimensions and design. The interior of the filters was covered with steel of the type 1Kh18N9T. Working data of the cation exchange filters (Table 1), and of the anion exchange filters (Table 2) are given. By using at least two filters of either type continuous production is ensured. There are 2 tables.

Card 2/2

GANZ, S.N.; VILESOV, G.I.; LOPATIN, L.V.

Carbon ammoniates, a new type of economical fertilizers. Izv.vys. ucheb.zav.; khim.i khim.tekh. 2 no.6:913-915 '59. (MIRA 13:4)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut. Kafedra oborudovaniya khimicheskikh zavodov.
(Ammines) (Fertilizers and manures)

VILESOV, G.I.[Vilesov, H.I.]

Toward a great chemical industry. Nauka i zhyttia 9 no.12: 29-32 D '59. (MIRA 13:4)

1. Nachal'nik Upravleniya khimicheskoy promyshlennosti Luganskogo sovnarkhoza.
(Lugansk Province--Chemical industries)

VILESOV, G.I.

With Lugansk chemists. Nauka i zhizn' 26 no.2:37-39 F '59.
(MIRA 12:2)

1. Nachal'nik Upravleniya khimicheskoy promyshlennosti Luganskogo sovnarkhoza.

(Lugansk Province--Chemical industries)

SOV/80-32-5-6/52

5(2)

AUTHORS: Ganz, S.N., Vilesov, G.I., Gorkman, S.I., Leybovich, S.B.

TITLE: The Combination of the Purification Process of a Nitrogen-Hydrogen Mixture From CO_2 With the Preparation of Ammonium Carbonates. Communication I.

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 5, pp 969-975 (USSR)

ABSTRACT: The separate and combined absorption of NH_3 and CO_2 depending on the physical-chemical and hydrodynamic conditions of the process is investigated here. For this purpose horizontal rotary absorbers with high rpm were used [Refs 1-4]. At a temperature of 17-18°C and a pressure of 749 mm Hg, the absorption reaches 100% at 250 rpm. If the NH_3 supply is more than 500 m^3 per m^3 of absorbent · hr, the revolutions must be increased to 850-900 per min. Under highly turbulent conditions the productivity of the apparatus is 40-41 times greater than that of packed columns. The absorption of CO_2 by ammonia water at 18°C and a supply of 500 m^3/m^3.hr at a CO_2 content of 11.8% in the gas reaches its maximum of 98.5% at 2,000 rpm. An increase of the supply rate reduces the degree of absorption. A maximum of absorption is reached at a CO_2 content of 11% in the gas. The highest

Card 1/2

SOV/80-32-5-6/52

The Combination of the Purification Process of a Nitrogen-Hydrogen Mixture From CO_2 With the Preparation of Ammonium Carbonates. Communication I.

rate of the process can be attained at a stoichiometric $NH_3:CO_2$ ratio 1:1. The combined absorption of NH_3 and CO_2 differs only slightly from the separate absorption. The degree of absorption decreases with the increase of the ammonium carbonate concentration in the solution, which is explained by the higher viscosity of the solution and the higher vapor pressure of NH_3 and CO_2. An excess of ammonia shows the most favorable results in this case.
There are: 1 diagram, 10 graphs and 4 Soviet references.

SUBMITTED: September 12, 1957

Card 2/2

GANZ, S.N.; [illegible], I.P.; VILESOV, G.I.

Purification of fuel gases by the removal of nitrogen oxides by means of flaked lime peat with the production of peat nitrogenous fertilizers. Izv. vys. ucheb. zav.; khim. i khim. tekh. 7 no.3:441-444 '64.

(MIRA 17:10)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut imeni Dzerzhinskogo, kafedra tekhnologii neorganicheskikh veshchestv.

MEL'NIKOV, N.V.; SLEDZYUK, P.Ye.; ZAV'YALOV, S.S.; BUNIN, A.I.; VASIL'YEV, M.V.; NOVOZHILOV, M.G.; ZURKOV, P.E.; IL'IN, M.V.; VILESOV, G.I.; POPOV, S.I.; SANDRIGAYLO, N.F.; SHILIN, A.N.; ZUBRILOV, L.Ye.; TSIMBALENKO, L.N.; VLOKH, N.P.; OMEL'CHENKO, A.N.

Mikhail Lazarevich Rudakov, 1912-1964; an obituary. Gor. zhur. no.9:78 S '64. (MIRA 17:12)

VILESOV, G. I.

Vilesov, G. I. "Manufacture for checking the parallelism of effective surfaces of screw micrometers," In symposium; Nekotoryye voprosy tekhniki priborostroyeniya, Moscow-Leningrad, 1948, p. 52-64

SO: U-3264, 10 April 1953, (Letopis 'Zhural 'nykh Statey, No. 3, 1949)

RABIN, P.S.; KUZYASHIN, K.A.; VILESOV, G.I.

System for salting-out utilizing the heat of the condensate.
Prom.energ. 17 no.7:5-6 Jl '62. (MIRA 15:7)
(Feed water)

KUZNETSOV, Ye.[illegible]; [illegible], V.M.; VILESOV, N.G.

Production of carbon disulfide from methane and sulfur in the high-temperature zone. Khim. volok. no.5:38-41 '65. (MIRA 18:10)

1. Moskovskiy ordena Lenina khimiko-tekhnologicheskiy institut im. D.I. Mendeleyeva.

KUZNETSOV, Yu.P.; KASATKIN, A.G.; LEKAYE, V.M.; YELKIN, L.N.; VILESOV, N.G.

Thermodynamics of the high-temperature conversion of methane by sulfur. Trudy MKHTI no.47:80-85 '64. (MIRA 18:9)

VILESOV, P.

The following papers were presented at the Annual Meeting of the German Chemical Society in Leipzig, 28 October - 1 November 1958;

BALANDIN, A. A. (AS USSR, Moscow)
"Toward the Construction of a Unified Theory of Catalysis - Structure and Energy Factors."

BORESKOV, G. K. (Physico-Chemical Inst. im Karpov, Moscow)
"Reciprocal Influence of Reagent Systems and Catalysts."

BRAUNSHTEYN, A. Ye. (Inst. of Biological and Medical Chemistry, AMN,USSR, Moscow)
"General Questions of Biological Catalysis in the Light of the Activity of the Pyridoxalenzyme."

EMANUEL, E. (Inst. Chemical Physics, AS USSR, Moscow)
"Homogeneous Catalysis and Chemical Induction in Slow Oxidation - Chain Reaction."

ROGINSKIY, S. Z.
"Mechanism and Kinetics of the Half-Life Catalyst."

SHILOV, E. and YASNIKOV, A. (Inst. Organic Chemistry, AS Ukrainian SSR)
"Mechanism of Catalytic Action of Aminoacide in the Reaction of Carbonyl Compounds."

VILESOV, P. and TERENIN, A. (Physics Inst., Leningrad State University)
"Photoelectronic Emission on the Surface of Half-Life Catalysts."

SO: Chemische Technik, October 1958, Uncl.

Vilesov, P.

TERENIN, A. and VILESOV, P. (Lenignrad)

"Photoelectronic Emission of the Surface of Semi-Conductor Catalysts," (Section A).

report submitted for Annual Meeting East German Chemical Society, 28 Oct - 1 Nov 1958, Leipzig, G. D. R.

VILESOV, S.P., prof.

Amputations and exarticulations along the length of the foot. Ortop., travm. i protez. 21 no.8:32-35 Ag '60. (MIRA 13:11)

1. Iz kliniki gospital'noy khirurgii (zav. - prof. S.P.Vilesov) Orenburgskogo meditsinskogo instituta (direktor - prof. Z.S.Khlystova).
(FOOT--SURGERY) (AMPUTATION)

MIKHAYLOV, S.S., prof., red.; SHAYKOV, A.D., kand. med. nauk, zam. red.; OLIFSON, L.Ye., dots., red.; VILESOV, S.P., prof., red.; MITROFANOV, V.G., doktor med. nauk, red.; PERVUSHIN, V.Yu., dots., red.; BOCHKAREVA, A.A., dots., red.; PIS'MENOV, I.A., ass., red.

[Nineteenth Scientific Session of the Orenburg State Medical Institute] XIX Nauchnaia sessiia Orenburgskogo Gosudarstvennogo meditsinskogo instituta. Orenburg, 1962. 144 p. (MIRA 16:11)

1. Orenburg. Gosudarstvennyy meditsinskiy institut. 2. Zaveduyushchiy Gospital'noy khirurgicheskoy klinikoy Orenburgskogo meditsinskogo instituta (for Vilesov). 3. Zaveduyushchiy kafedroy operativnoy khirurgii Orenburgskogo meditsinskogo instituta (for Mikhaylov). 4. Zaveduyushchiy fakul'tetskoy khirurgicheskoy klinikoy Orenburgskogo meditsinskogo instituta (for Mitrofanov). 5. Zaveduyushchaya Kafedroy glaznykh bolezney Orenburgskogo meditsinskogo instituta (for Bochkareva). 6. Zaveduyushchiy kafedroy obshchey khimii Orenburgskogo meditsinskogo instituta (for Olifson).

(ANATOMY, SURGICAL AND TOPOGRAPHICAL)
(MEDICINE, INTERNAL)

VILESOV, G.I., prof.; IVCHENKO, A.N., dotsent

Results of verifying predictions made on the basis of the geometrization of a gold ore deposit. Izv.vys.ucheb.zav.; gor.zhur. 7 no.2:64-73 '64. (MIRA 17:3)

1. Sverdlovskiy gornyy institut imeni V.V.Vakhrusheva. Rekomendovana kafedroy marksheyderskogo dela.

CHIGARKIN, A.V.; TRIFONOVA, T.M.; SMIRNOVA, R.Ya.; KAZANSKAYA, Ye.A.; VILESOVA, L.A., MUKHAMETZHANOV, S., kand. geologo-miner. nauk; GLADYSHEVA, Ye.N., kand. geogr. nauk; BAZARBAYEV, K.; KUZNETSOVA, Z.V.; ABDRAKHMANOV, S.; NAZARENKO, I.M., kand. geogr. nauk; YESAULENKO, P.I., kand. sel'khoz. nauk; LAVROVA, I.V., kand. ekonom. nauk; PAL'GOV, N.N., akademik, red.; CHEZGANOV, L., red.; NAGIBIN, P., tekhn. red.

[The Virgin Territory; brief studies on nature, population and economy]TSelinnyi krai; kratkie ocherki o prirode, naselenii i khoziaistve. Alma-Ata, Kazakhskoe gos. izd-vo, 1962. 188 p. (MIRA 15:9)

1. Otdel geografii Akademii nauk Kazakhskoy SSR (for all except Chezganov, Nagibin). 2. Akademiya nauk Kazakhskoy SSR (for Pal'gov).

(Virgin Territory—Economic geography)

PAL'GOV, N.N., otv. red.; VILESOV, Ye.N., red.; ZENKOVA, V.A., red.; MAKAREVICH, K.G., red.; CHERKASOV, P.A., red.; PAL'GOVA, Z.N., red.

[Glaciological research in Kazakhstan] Gliatsiologicheskie issledovaniia v Kazakhstane. Alma-Ata, Nauka. No.5. 1965. 189 p. (MIRA 19:1)

1. Akademiya nauk Kazakhskoy SSR, Alma-Ata, Sektor fizicheskoy geografii.

25(6) SOV/64-59-1-11/24

AUTHORS: Vanyushina, Z. S., Vilesova, M. S., Shcherba, L. D.

TITLE: Control of the Hydrogenation of Adiponitrile and of the Purification of Hexamethylenediamine by the Method of Infrared Spectroscopy (Kontrol' gidrirovaniya adiponitrila i ochistki geksametilendiamina metodom infrakrasnoy spektroskopii)

PERIODICAL: Khimicheskaya promyshlennost', 1959, Nr 1, pp 46-48 (USSR)

ABSTRACT: At the Gosudarstvennyy institut prikladnoy khimii (State Institute of Applied Chemistry) an analytic method was developed which served the examination of the reaction mixture in the continuous hydrogenation of adiponitrile (I) (Ref 1) during the synthesis of hexamethylenediamine (II). This analysis takes, however, 2.5 - 3 hours. For a faster determination of the conversion of (I) in the hydrogenation the spectrometry by the -C≡N group is suggested for the present case. The purity of (II) is particularly important for the production of nylon. It is stated that a judgment of the purity of (II) by the freezing temperature is inadequate, and that a perfect judgement is only possible on the basis of an infrared spectrum analysis in which no absorption band

Card 1/2

SOV/64-59-1-11/24

Control of the Hydrogenation of Adiponitrile and of the Purification of Hexamethylenediamine by the Method of Infrared Spectroscopy

of the -C≡N group may be observed and in which the groups NH and NH_2 appear. It is recommended to carry out the rectification of raw (II) on a rectification column (under vacuum and in nitrogen atmosphere). From the fraction $T_z = 40.0^\circ$ a control by the infrared spectrum by means of any spectrometer (e.g. IKS-11) should be carried out whereby the required rectification conditions can be established. 3 examples are given in which a column with an efficiency of about 15 theoretical bottoms in nitrogen atmosphere was applied. Results of examinations of the freezing temperature of the individual samples are indicated (Table). There are 1 table and 9 references, 1 of which is Soviet.

Card 2/2

VILESOVA, M.S.

VANYUSHINA, Z.S., kand. tekhn.nauk; VILESOVA, M.S., kand. khim. nauk;
CHISTYAKOVA, G.A., kand. khim. nauk.

Synthesis hexamethylenediamine by the catalytic hydrogenation of adiponitrile in a continuous stream. Khim. prom. no.4:205-208 Je '58. (MIRA 12:1)

(Hexanediamine) (Adiponitrile) (Hydrogenation)

AUTHORS: Klebanskiy, A. L., Vilesova, M. S. SOV/79-28-6-19/63

TITLE: Investigation in the Field of the Synthesis and Polycondensation of N-Alkyl Derivatives of the Hexamethylenediamine (Issledovaniye v oblasti sinteza i polikondensatsii N-alkilproizvodnykh geksametilendiamina) III. On the Influence of the Structure of the Substituting Radical on the Direction of Reaction of the Alkylation of Hexamethylenediamine (III. O vliyanii stronyeniya zameshchayushchego radikala na napravleniye reakstii alkilirovaniya geksametilendiamina)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 6, pp. 1524-1528 (USSR)

ABSTRACT: The earlier investigations (Ref 1) of the reduction alkylation of hexamethylene diamine made it possible to the authors to determine some dependences of the radical structure of the carbonyl compound on the reactivity in the alkylation; among the carbonyl compounds formaldehyde plays a special rôle. Different from reaction carried out earlier with formaldehyde the alkylation had to be carried out in neutral medium and the hydrochloric salt of hexamethylene diamine had to be used. At the molar ratio of diamine to aldehyde =1:2 the asymmetric N-dimethylhexamethylene

Card 1/3

SOV/79-28-6-19/63

Investigation in the Field of the Synthesis and Polycondesnation of N--Alkyl Derivatives of the Hexamethylenediamine. III. On the Influence of the Structure of the Substituting Radical on the Direction of Reaction of the Alkylation of Hexamethylenediamine

diamine (75%) of the formula $(CH_3)_2N-(CH_2)_6-NH_2$ was obtained as main product. The high-boiling fraction obtained as secondary product contained mainly the tri-substituted diamine. It is shown that the chosen direction of the reduction alkylation of hexamethylene diamine in the direction to the N,N'-dialkylation is determined by two opposite influences, viz.by the increase of the reactivity of the substituted amino group and by the steric effect of the substituent. Beginning with isopropyl and higher an exclusive direction of the reaction to the side of the N,N'-disubstitution is observed. On the introduction of the ethyl- and n-propyl radical the synthesis of the pure symmetric hexamethylene derivative is made difficult. On the introduction of the methyl the reaction takes place completely to the side of the formation of the asymmetric product of substitution. The introduction of a tertiary butyl group to the amino group of the hexamethylene diamine is not achieved whereas trimethylsilyl easily substitutes both hydrogen atoms under the formation of a four times-

Card 2/3

SOV/79-28-6-19-63

Investigation in the Field of the Synthesis and Polycondensation of N--Alkyl Derivatives of the Hexamethylenediamine. III. On the Influence of the Structure of the Substituting Radical on the Direction of Reaction of the Alkylation of Hexamethylenediamine

substituted compound. There are 2 tables and 3 references, which are Soviet.

SUBMITTED: May 25, 1957

1. Alkyl derivatives--Synthesis 2. Methyl hydrazines--Chemical reactions

Card 3/3

AUTHORS: Klebanskiy, A. L., Vilesova, M. S. SOV/79-28-6-20/63

TITLE: Investigation in the Field of the Synthesis of N-Alkylhexamethylene Diamine Derivatives and Their Polycondensations (Issledovaniye v oblasti sinteza N-alkilproizvodnykh geksametilendiamina i ikh polikondensatsii) V. Some Problems Concerning the Reaction Kinetics of the Reduction Alkylation of Hexamethylene Diamine (V. Nekotoryye voprosy kinetiki reaktsii vosstanovitel'nogo alkilirovaniya geksamitelendiamina)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 6, pp. 1528-1534 (USSR)

ABSTRACT: The purpose of the present paper was to explain:1) The dependence of the reaction velocity on the conditions under which the process takes place, and 2) the influence of the structure of the alkylating compound on the reaction velocity of the reduction alkylation of hexamethylene diamine. Based on the results which were obtained by the authors in the synthesis of N-substituted diamines it was possible when using these data to determine the course of reaction and to

Card 1/3

SOV/79-28-6-20/63

Investigation in the Field of the Synthesis of N-Alkylhexamethylene Diamine Derivatives and their Polycondensations. V. Some Problems Concerning the Reaction Kinetics of the Reduction Alkylation of Hexamethylene Diamine

carry out the comparison with various alkylating compounds. The investigation of the reaction of the reduction alkylation of hexamethylene diamine with aldehydes and ketones at increased (1oo - 5o atmospheres) as well as normal atmospheric pressure showed that this reaction apparently is of suction character which is limited by the diffusion stage of the reaction component of solution and catalyst. It was shown that the reaction velocity does not depend on the concentration of the components and their conversion in the reaction process (Figs 1 - 5). On the other hand it also considerably depends on the structure of the alkylating aldehyde or ketone. It was found that the reactions of the reduction alkylation of hexamethylene at normal pressure and above 5o atmospheres absolute pressure are of zero-th order, and within the interval of from 1o to 4o atmospheres they are of first order; this fact can be explained by the incomplete suction saturation of the catalyst within this pressure interval. It was shown that the above mentioned reaction velocity is on the one hand dependent on the relative polari-

Card 2/3

SOV/79-28-6-20/63

Investigation in the Field of the Synthesis of N-Alkylhexamethylene Diamine Derivatives and Their Polycondensations. V. Some Problems Concerning the Reaction Kinetics of the Reduction Alkylation of Hexamethylene Diamine

ty of the alkylating compounds and on the other hand by the steric hindrances caused by the structure. The second factor plays a role only in the case of ramified carbonyl compounds. There are 8 figures, 3 tables, and 3 references, 2 of which are Soviet.

SUBMITTED: May 25, 1957

1. Alkyl derivatives--Synthesis 2. Methyl hydrazines--Chemical reactions

Card 3/3

Distr: 4E4j

3

1

√ Synthesis of *N*-mono- and *N,N'*-dialkyl derivatives of hexamethylenediamine. A. L. Klebanskii and M. S. Vilesova. *Khim. Nauka i Prom.* 2, 600-1(1957).—*N*-Mono- and *N,N'*-dialkyl derivs. of hexamethylenediamine (I) with radicals of different chain lengths and structure were prepd. by alkylating with aldehydes and ketones and reducing at 18-20° and 50-100 atms. pressure in EtOH with Pt-black or Raney Ni. The derivs. of I prepd. were (yield, b.p., n_D^{20}, d_{20}, and the alkylating agent given): *N,N'-di-Et*, 41%, b_1 101-5°, 1.4440, 0.825, AcH; *N,N'-di-Pr*, 68%, b_1 102-5°, 1.4451, 0.831, propionaldehyde; *N,N'-di-Bu*, 67%, b_3 131-3°, 1.4470, 0.825, butyraldehyde; *N,N'-diisopropyl*, 95%, b_1 112-15°, 1.4479, 0.818, isobutyraldehyde; *N,N'-diisopropyl*, 95%, b_1 110-12°, 1.4393, 0.816, Me_2CO; *N,N'-di-2-butyl*, 90%, b_1 115-18°, 1.4476, 0.828 (MeEt ketone); *N,N'-bis(2,6-dimethyl-4-heptyl)*, 25%, b_1 183-4°, 1.4554, 0.835, di-iso-Bu ketone; *N,N-dimethyl*, 75%, b_1 67-8°, 1.4421, 0.831, HCHO; *N-monoisopropyl*, 43%, b_1 87°, 1.4465, 0.830, Me_2CO; *N-mono-Bu* (II), 65%, b_1 101-2°, 1.4550, 0.833 (butyraldehyde). The first 5 and II had been previously prepd. (cf. Staudinger, *et al.*, *C.A.* 37, 5300² and Graf, 37, 6988³). The last 2 were prepd. in aq. solns. which reduces the probability of alkylation of the 2nd amino group. I. Bencowitz

1/1

79-28-4-48/60

AUTHORS: Klebanskiy, A. L., Vilesova M. S.

TITLE: Research in the Field of the Synthesis and Polycondensation of N-Alkyl Derivatives of Hexamethylene Diamine (Issledovaniye v oblasti sinteza i polikondensatsii N-alkilproizvodnykh geksametilendiamina) I. Synthesis of N,N'-Dialkyl Derivatives of Hexamethylene Diamine (I. Sintez N,N'-dialkilproizvodnykh geksametilendiamina)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 4, pp. 1066-1072 (USSR)

ABSTRACT: In the course of the last ten years attempts were made to modify the properties of polyamides in order to make them more elastic, softer and more hydrophile under preservation of a number of other valuable properties. Such modification can be made according to several methods. Especially the method of N-alkylation is of importance in this connection, however, it has been discussed in technical literature only insufficiently. In order to be able to produce N-alkylated polyamides with different sequence of the substituents, different degree of substitution and also with different substituents a method for the production of the corresponding

Card 1/4

79-28-4-48/60

Research in the Field of the Synthesis and Polycondensation of N-Alkyl Derivatives of Hexamethylene Diamine. I. Synthesis of N,N'-Dialkyl Derivatives of Hexamethylene Diamine

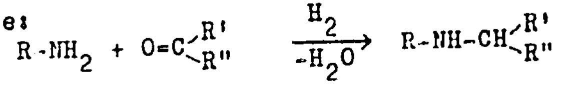
monomers (N-alkyl derivatives of hexamethylene diamine) must be available which guarantees sufficient purity of the product, the possibility of the introduction of radicals of different structure and also the possibility of conducting the reaction to the side of N-monoalkylation or the side of the symmetric N,N'-dialkylation. Moreover, the method should be simple, based on easily accessible compounds and make possible the carrying out at a larger scale. Such a method is not yet known. In technical literature the synthesis of N,N'-dialkyl diamines by amination of the corresponding dibromides (Ref 1) and by hydrogenation of the dinitriles under the presence of methyl amine (Ref 2) is described. Both methods lead to the formation of a compound of products difficult to separate. The reduction of Schiff bases of the diamines described by Staudinger is rendered difficult by the great instability of the azomethine compounds of the aliphatic series and leads to low yields of the latter (Ref 3). Since monomers of great purity are necessary for the polycondensation the method of the reductive alkylation of amines by means of aldehydes and ketones (Ref 4), which guarantees

Card 2/4

79-28-4-48/60

Resarch in the Field of the Synthesis and Polycondensation of N-Alkyl Derivatives of Hexamethylene Diamine. I. Synthesis of N,N'-Dialkyl Derivatives of Hexamethylene Diamine

great yields and the choice of reaction for the production of secondary monoamines and which meets also other demands mentioned earlier, deserves special interest. Only one patent exists for the reducing alkylation of diamines which treats the representation of N-monoalkyl compounds (Ref 5). The difficulty and the peculiarity of the alkylation reaction of diamines is based on the presence of two groups capable of reacting. The authors aimed at the elaboration of a synthesis for N,N'-dialkyl compounds of hexamethylene diamine based on the reductive alkylation according to the following scheme:



$$R\text{-}NH_2 + O{=}C\begin{smallmatrix}R'\\R''\end{smallmatrix} \xrightarrow[-H_2O]{H_2} R\text{-}NH\text{-}CH\begin{smallmatrix}R'\\R''\end{smallmatrix}$$

R', R" ... alkyl radical or hydrogen

The influence of a series of factors on the reaction velocity and the yield of N,N'-dialkyl compounds of hexamethylene diamine was investigated. The following proved to produce

Card 3/4

79-28-4-48/60

Research in the Field of the Synthesis and Polycondensation of N-Alkyl Derivatives of Hexamethylene Diamine. I. Synthesis of N,N'-Dialkyl Derivatives of Hexamethylene Diamine

optimum conditions: ethyl alcohol as solvent, a concentration of the reaction participants of 20 - 25 % (in reference to diamine), a molar ratio of diamine and the carbonyl compound of 1 : 2, platinum black (0,1 - 0,5 %) as catalyst, a reaction temperature of 20 - 25 ° (with some exceptions) and hydrogen pressure of 120 to 150 atmospheres pressure in the course of the reaction. Seven N,N'-dialkyl derivatives of hexamethylene diamine synthesized according to this method were investigated and characterized; 3 of them were represented for the first time.
In an experimental part alkylation by means of acetone and n-aldehydes of the aliphatic series are described in detail. There are 3 figures, 5 tables, and 6 references, 1 of which is Soviet.

SUBMITTED: April 11, 1957

Card 4/4

79-28-4-49/60

AUTHORS: Klebanskiy, A. L., Vilesova, M. S.

TITLE: Research in the Field of the Synthesis and Polycondensation of N-Alkyl Derivatives of Hexamethylene Diamine (Issledovaniye v oblasti sinteza i polikondensatsii N-alkilproizvodnykh geksametilendiamina) II. On the Synthesis of N-Monoalkyl Derivatives of Hexamethylene Diamine (II. O sinteze N-monoalkilproizvodnykh geksametilendiamina)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 4, pp. 1073-1075 (USSR)

ABSTRACT: The production of N-monosubstituted hexamethylene diamines by means of the normal method of reducing alkylation (Ref 1) is connected with great difficulties. The carbonyl compound may, at least in the initial stage of the reaction, react with the amino group of the free as well as with the amino group of the already monosubstituted diamine. Thus, a compound of N-mono- and N,N'-dialkyl diamines which can be separated only with difficulties and which contains a considerably part of the disubstituted components forms. In order to conduct reaction to the side of the N-monosubstitution the observation made by the authors was used that

Card 1/4

79-28-4-49/60

Research in the Field of the Synthesis and Polycondensation of N-Alkyl Derivatives of Hexamethylene Diamine. II. On the Synthesis of N-Monoalkyl Derivatives of Hexamethylene Diamine

solid hydrates insoluble in water may form from N-mono- as well as from N,N'-dialkylated diamines. For this reason the reaction is carried out best in the aqueous medium and the ratio between the quantity of the alkylating compound, and hexamethylene diamine was selected correspondingly lower (up to 1 mol per 1 mol diamine). Greater yield of N-mono-substituted diamine is achieved by the fact that it precipitates from the aqueous solution in the form of the solid hydrate. Due to this reason the probability of the reaction of the second amino group with the alkylating agent is reduced and the reaction is shifted mainly to the side of N-monoalkylation. The formation of hydrates was investigated quantitatively by the example of the disubstituted derivatives, especially by the example of N,N'-di-n-butyl and N,N'-diisopropyl hexamethylene diamine. Disubstituted diamines form crystallized white hydrates if water is added, and also in an atmosphere saturated with steam, and in air. In drying with P_2O_5 in the exsiccator water is completely separated and the re-formed diamine proves identical with

Card 2/4

79-28-4-49/60

Research in the Field of the Synthesis and Polycondensation of N-Alkyl Derivatives of Hexamethylene Diamine. II. On the Synthesis of N-Mono-alkyl Derivatives of Hexamethylene Diamine

the original diamine. It could be observed experimentally that 1 mol of the disubstituted diamine rapidly absorbs 2 mols of water and then forms a hydrate; further absorption of water takes place much more slowly. At the given conditions 1 mol diamine absorbed maximally 4 mols water. The dehydrate of the N,N'-di-n-butyl-hexamethylene diamine is insoluble in water, the dihydrate of N,N'-diisopropyl-hexamethylene diamine dissolves in the excess water. Also N,N'-diisobutyl-, N,N'-di-n-butyl-2-hexamethylene diamine and others form hydrates. Monosubstituted diamines equally form crystallized hydrates in the air (in an atmosphere saturated with steam). The decrease in the yield of N,N'-dialkyl diamines and the formation of a certain amount of N-monosubstituted diamine at the carrying out of the reaction of the reducing alkylation in water is obviously explained by the formation of these hydrates. The method of representation of mono-substituted derivatives was elaborated by means of the example of N-mono-n-butyl hexa-

Card 3/4

79-28-4-49/60

Research in the Field of the Synthesis and Polycondensation of N-Alkyl Derivatives of Hexamethylene Diamine. II. On the Synthesis of N-Monoalkyl Derivatives of Hexamethylene Diamine

methylene diamine, however, it can also be used for the synthesis of other monosubstituted derivatives which form hydrates insoluble or difficultly soluble in water. The hydrate of N-monoisopropyl-hexamethylene diamine is soluble in excess water. However, also in this case the yield of the N-monosubstituted product is increased in carrying out the reaction in the aqueous medium.

In an experimental part the alkylation by means of the n-aldehydes of the aliphatic series, and by acetone is described in detail. There are 1 figure, 2 tables, and 1 reference, 1 of which is Soviet.

SUBMITTED: April 11, 1957

Card 4/4

KLEBANSKIY, A.L.; VILESOVA, M.S.

Synthesis of N-mono- and N,N'-dialkyl derivatives of hexamethylenediamine. Khim.nauka i prom. 2 no.5:660-661 '57.
(MIRA 10:12)

1.Gosudarstvennyy institut prikladnoy khimii.
(Hexanediamine)

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

CA

1b

The purification of red phosphorus from yellow. O. I. VILESOV AND S. F. PROTASOV. *J. Chem. Ind.* (Moscow) 1932, No. 10, 73-6.—The mixt. of red and yellow P is heated to 250° in a current of inert gas. The yellow P volatilizes and is completely removed.

H. M. LEICESTER

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

VILESOV, N. V.

KARALYUN, V. I VILESOV, N.Y. BORBE ZA ULUCHSHENIYE DEYATEL'NOSTI
PREDPRIYATIYA. (IZ OPYTA RABOTY PART ORGANIZATSII RIZH RADIOZAVODA IM
A. S. POPOVA) SM. 6375. - NA LATYSH YAZ. SM 6376

SO: KNIZHANYA LETOPIS'NO. 6, 1955

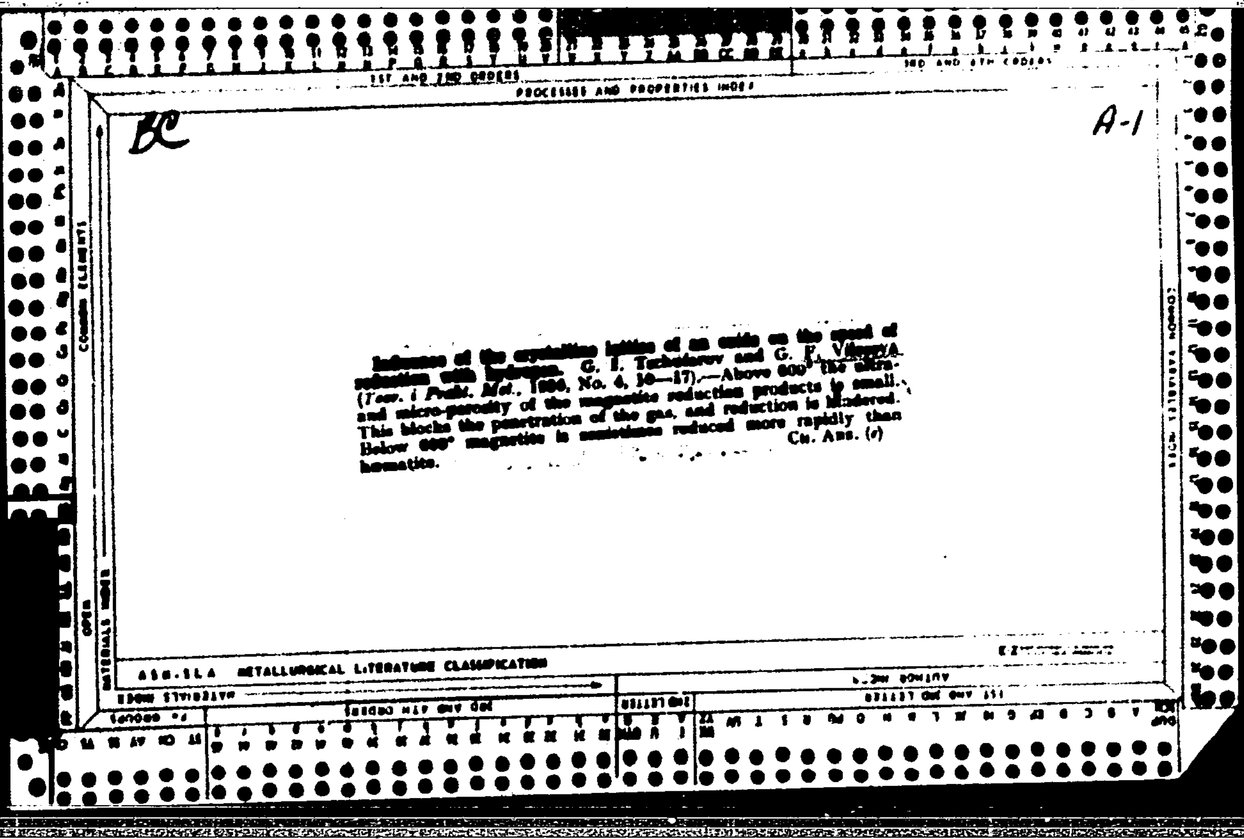
VILESOV, S.P. Doc Med Sci -- (diss) "Grafting of skin according to the method of V. P. Filatov in the restorative surgery of the lower extremity." Gor'kiy, 1957. 20 pp 20 cm. (Gor'kiy State Med Inst im S.M. Kirov). 200 copies. Bibliography at the end of ~~the~~ text (10 names). (KL, 23-57, 115)

~~-111-~~
103

VILESOV, S.P. dotsent

Plastic surgery of short leg amputation stump using V.P. Filatov's pedicle flap. Khirurgiia, no.4:29-35 Ap '55.

1. Klinika gospital'noy khirurgii (Zav-dotsent S.P. Vilesov) Chkalovskogo gosudarstvennogo meditsinskogo instituta.
(AMPUTATION STUMP, surgery,
Filatov's pedicle flap)
(SKIN TRANSPLANTATION,
Filatov's pedicle flap in surg. of amputation stump)

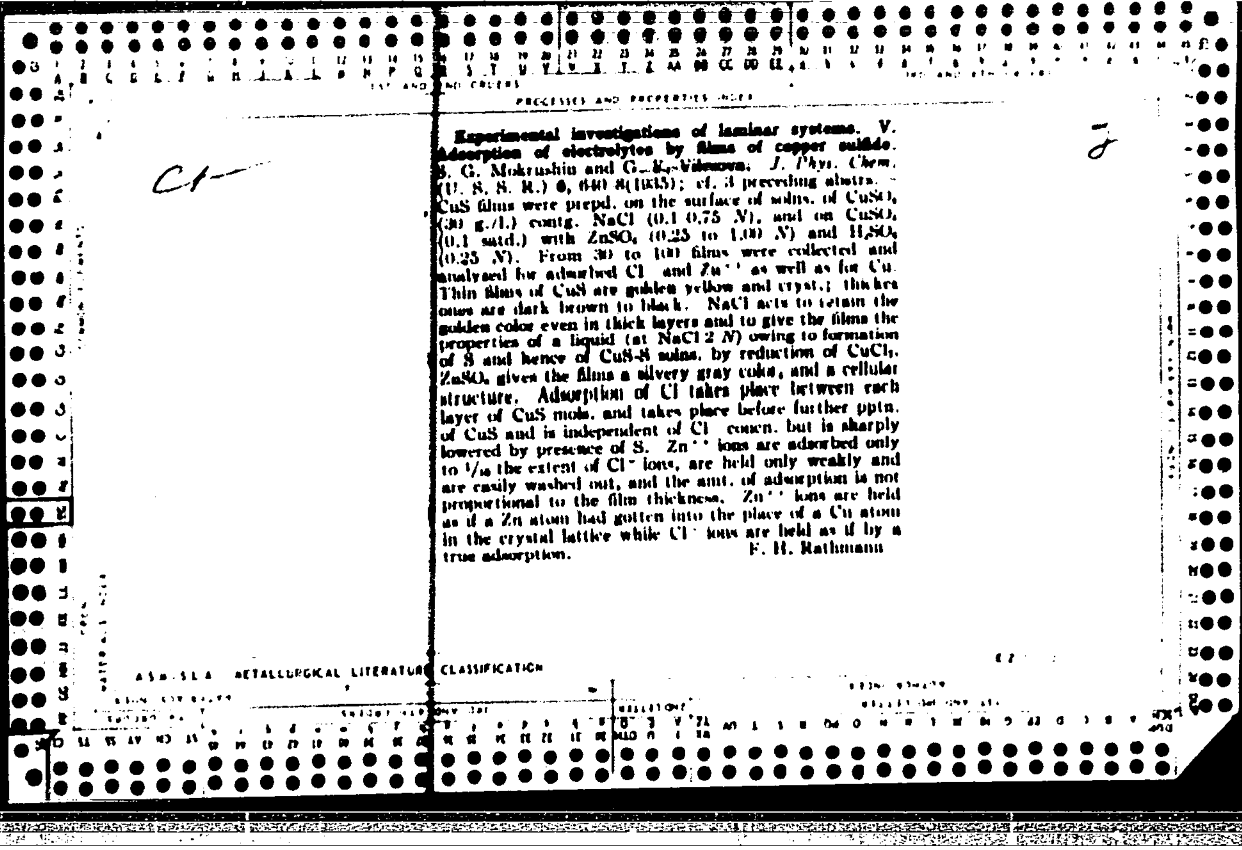


Influence of the crystalline lattice of an oxide on the speed of reduction with hydrogen. G. I. Tschufarov and G. F. Vlasova. (Teor. i Prakt. Met., 1936, No. 4, 10—17).—Above 600° the ultra- and micro-porosity of the magnetite reduction products is small. This blocks the penetration of the gas, and reduction is hindered. Below 600° magnetite is sometimes reduced more rapidly than hematite. Ch. Abs. (e)

PROCESSES AND PROPERTIES INDEX

Influence of the crystalline lattice of an oxide upon the speed of reduction with hydrogen. G. I. Chufarov and G. F. Vilesova. *Teoriya i Prakt. Met.* No. 4, 10 17 (1936).—Expts. were performed with grains of 0.5 1.0 mm. and with cubes of 5 x 5 x 5 mm. prepd. from natural crystals of hematite and magnetite. Artificial oxides were prepd. from piano wire. Reduction with H was conducted at all possible temps. up to 800 900°. Above 600° the ultra- and micro-porosity of the magnetite reduction products is small. This blocks the penetration of the gas and the reduction is hindered. But below 600° the magnetite is sometimes reduced faster than the hematite. At higher temps. the small cryst. structure favors reduction, but at low temps. it may hinder it because of its great adsorption of the reduction products. B. Z. K.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

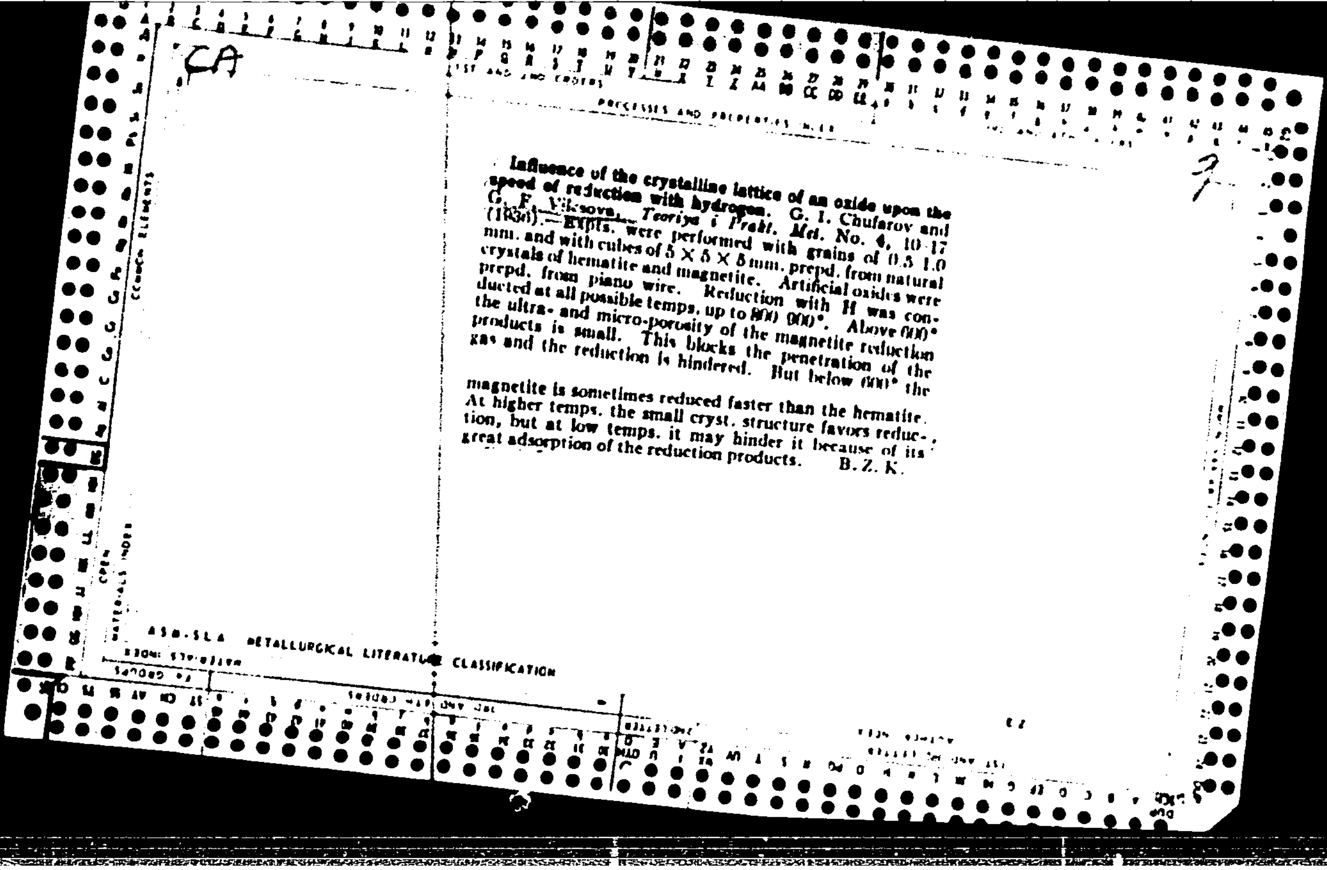
Cl—

3

Experimental investigations of laminar systems. V. Adsorption of electrolytes by films of copper sulfide. S. G. Mokrushin and G. K. Vikonova. *J. Phys. Chem.* (U. S. S. R.) 6, 640-8(1935); cf. 3 preceding abstrs. — CuS films were prepd. on the surface of solns. of CuSO$_4$ (30 g./l.) contg. NaCl (0.1-0.75 *N*), and on CuSO$_4$ (0.1 satd.) with ZnSO$_4$ (0.25 to 1.00 *N*) and H$_2$SO$_4$ (0.25 *N*). From 30 to 100 films were collected and analyzed for adsorbed Cl$^-$ and Zn^{++} as well as for Cu. Thin films of CuS are golden yellow and cryst.; thicker ones are dark brown to black. NaCl acts to retain the golden color even in thick layers and to give the films the properties of a liquid (at NaCl 2 *N*) owing to formation of S and hence of CuS-S solns. by reduction of CuCl$_2$. ZnSO$_4$ gives the films a silvery gray color, and a cellular structure. Adsorption of Cl takes place between each layer of CuS mols. and takes place before further pptn. of CuS and is independent of Cl$^-$ concn. but is sharply lowered by presence of S. Zn^{++} ions are adsorbed only to 1/10 the extent of Cl$^-$ ions, are held only weakly and are easily washed out, and the amt. of adsorption is not proportional to the film thickness. Zn^{++} ions are held as if a Zn atom had gotten into the place of a Cu atom in the crystal lattice while Cl$^-$ ions are held as if by a true adsorption.

F. H. Rathmann

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

PROCESSES AND PROPERTIES INDEX

7

Influence of the crystalline lattice of an oxide upon the speed of reduction with hydrogen. G. I. Chufarov and G. F. Viksova. *Teoriya i Prakt. Met.* No. 4, 10-17 (1936).—Expts. were performed with grains of 0.5 1.0 mm. and with cubes of 5 × 5 × 5 mm. prepd. from natural crystals of hematite and magnetite. Artificial oxides were prepd. from piano wire. Reduction with H was conducted at all possible temps. up to 800 900°. Above 600° the ultra- and micro-porosity of the magnetite reduction products is small. This blocks the penetration of the gas and the reduction is hindered. But below 600° the magnetite is sometimes reduced faster than the hematite. At higher temps. the small cryst. structure favors reduction, but at low temps. it may hinder it because of its great adsorption of the reduction products. B. Z. K.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

ACC NR: AP6032504 (A,N) SOURCE CODE: UR/0413/66/000/017/0070/0070

INVENTOR: Zhigach, A. F.; Sobolevskiy, M. V.; Sorokin, P. Z.; Sarishvili, I. G.; Shpak, V. S.; Vilesova, M. S.

ORG: none

TITLE: Preparative method for boron-containing polymers. Class 39, No. 185487

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 17, 1966, 70

TOPIC TAGS: ~~boron-containing polymer~~, liquid polymer, ~~low molecular weight polymer,~~ chemical synthesis , glycol, polyester resin, decaborane, dicarboxylic acid

ABSTRACT: An Author Certificate has been issued for a method for preparing boron-containing liquid polymers with a molecular weight of 1500—3000 based on polyester-decaborilene [sic]. The method involves preparation of two individual low-molecular-weight esters by reacting at 180C: 1) di(hydroxymethyl)decaborilene [sic] with a dicarboxylic acid [unspecified]; and 2) the dicarborxylic acid with a glycol [unspecified]. The two esters are mixed, heated to about 200C, and held at this temperature in a inert gas for about 50 hr.

SUB CODE: 21, 07/ SUBM DATE: 21Jul62/

Card 1/1 UDC: 678.86.27

KLEBANSKIY, A.L.; VILESOVA, M.S.

Synthesis and polycondensation of N-acryl derivatives of hexamethylenediamine. Part 3: Effect of structure of the substituting radical on the direction of alkylation reaction of hexamethylenediamine. Zhur.ob.khim. 28 no.6:1524-1528 Je '58.
(Hexanediamine) (Alkylation)

KLEBANSKIY, A.L.; VILESOVA, M.S.

Synthesis of N-alkyl derivatives of hexamethylenediamine and their polycondensation. Part 5: Various problems in reducing alkylation kinetics of hexamethylenediamine. Zhur.ob.khim. 28 no.6:1528-1534 Je '58. (MIRA 11:8)
(Hexanediamine) (Alkylation)

AUTHORS: Klebanskiy, A. L., Vilesova, M. S. SOV/79-28-7-11/64

TITLE: Investigation in the Field of the Synthesis of the N-Alkyl Derivatives of Hexamethylene Diamine and Their Polycondensations (Issledovaniye v oblasti sinteza N-alkilproizvodnykh geksametilendiamina i ikh polikondensatsii) V. On the Reaction Mechanism of the Reduction Alkylation of Hexamethylene Diamine (V. O mekhanizme reaktsii vosstanovitel'nogo alkilirovaniya geksametilendiamina)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol 28, Nr 7, pp 1767 - 1772 (USSR)

ABSTRACT: The problem of the possible intermediate products and of the role played by the catalyst is of importance for the explanation of the reaction mechanism of the reduction alkylation of hexamethylene diamine. It is generally assumed that in such reactions an azomethine base, i.e. Schiff's base (Ref 1) occurs as intermediate product. In order to determine its presence in the case investigated the reduction velocities of the mixture of hexamethylene diamine butyric acid aldehyde and of the corresponding azomethine base with the formula $CH_3CH_2CH_2CH=NH(CH_2)_6NH=CHCH_2CH_2CH_3$ were compared to each

Card 1/3

other in alcoholic solution. From figure 1 may be seen that the reduction of the above mentioned mixture takes place considerably more rapidly than that of the pure Schiff's base. The investigations showed that according to the infrared spectra and the polarographic data obtained a Schiff's base is present in the mixture of hexamethylene diamine and butyric acid aldehyde. In the hydration with hydrogen the reduction velocity of Schiff's base is considerably higher at the moment of separation than that of the mixture of hexamethylene diamine and the carbonyl compound. A reaction mechanism of the reduction alkylation is suggested according to which the diamine and the carbonyl compound are individually chemically absorbed, converted and reduced in the absorbed state. The velocity of the reduction alkylation is determined by the chemical absorption of the single reaction component. The reduction of the base existing in the solution does not determine the course of the process as a whole. There are 3 figures, 1 table, and 3 refer-

Investigation in the Field of the Synthesis of the N-Alkyl Derivatives of Hexamethylene Diamine and Their Polycondensations. V. On the Reaction Mechanism of the Reduction Alkylation of Hexamethylene Diamine SOV/79-28-7-11/64

ences, 3 of which are Soviet.

SUBMITTED: May 25, 1957

1. Methyl amines--Synthesis 2. Methyl amines--Reduction
3. Alkyl derivatives--Synthesis 4. Catalysts--Performance
5. Infrared spectrum--Applications 6. Condensation reactions

Card 3/3

AUTHORS: Klebanskiy, A. L., Vilesova, M. S. SOV/79-28-7-12/64

TITLE: Investigation in the Field of the Synthesis of N-Alkyl Derivatives of Hexamethylene Diamine and Their Polycondensations (Issledovaniye v oblasti sinteza N-alkilproizvodnykh geksametilendiamina i ikh polikondensatsii) VI. The Synthesis of the Polyamines Proceeding From the N-Alkylated Hexamethylene Diamine The Synthesis of the Partially N-Alkylated Polyamides (VI. Sintez poliaminov na osnove N-alkilirovannogo geksametilendiamina. Polucheniye chastichno N-alkilirovannykh poliamidov)

PERIODICAL: Zhurnal obshchey khimii, Vol 28, Nr 7, pp 1772 - 1776 (USSR),1958

ABSTRACT: In the present investigation the author synthetized products of various substituted diamines (in the positions N_ and N') and their mixtures with not-substituted diamines in order to disturb the crystalline structure of the polyamide and to furnish it with elastic properties. The N,N'-disubstituted diamines which by polycondensation lead to polyamides without hydrogen bindings between the chains were then treated with diisocyanate. Thus two types of polyamides were obtained which were principally different from each other. The first type is formed by polycondensation

Card 1/3

Investigation in the Field of the Synthesis of N-Alkyl Derivatives of Hexamethylene Diamine and Their Polycondensations. VI. The Synthesis of the Polyamines Proceeding From the N-Alkylated Hexamethylene Diamine. The Synthesis of the Partially N-Alkylated Polyamides SOV/79-28-7-12/64

and consists of comparatively short polymer molecules combined by hydrogen. The properties of these products are not only determined by the number of the existing hydrogen bindings but also by the structure of the substituted radical. The polymers of the second type do not have such a binding. Their basic polyamide chains are lengthened and cause valence bridge bonds between the chains to be formed with diisocyanate at the expense of the reaction of their end groups, which are produced in the reaction of the diisocyanate with the forming carbamide groups. These polymers (of second type) are of importance for the modification of their physicochemical properties. Polyamides of various degree and of different order with respect to their N-substitution, based on the conversion of the N,N'-di- and N-monoisopropyl hexamethylene diamine with adipic acid were obtained and characterized. There are 2 figures, 3 tables, and 7 references, 3 of which are Soviet.

SUBMITTED: May 31, 1957

Card 2/3

Investigation in the Field of the Synthesis of N-Alkyl Derivatives of Hexamethylene Diamine and Their Polycondensations. VI. The Synthesis of the Polyamines Proceeding From the N-Alkylated Hexamethylene Diamine. The Synthesis of the Partially N-Alkylated Polyamides SOV/79-28-7-12/64

1. Alkyl derivatives--Synthesis 2. Amides--Synthesis 3. Condensation reactions

Card 3/3

SOV/79-28-7-13/64

AUTHORS: Klebanskiy, A. L., Vilesova, M. S.

TITLE: Investigation in the Field of the Synthesis of the N-Alkyl Derivatives of Hexamethylene Diamine, and Their Polycondensations (Issledovaniye v oblasti sinteza N-alkilproizvodnykh geksametilendiamina i ikh polikondensatsii) VII. The Complete Production of N-Alkylated Polyamides and the Coupling of Their Chains With Diisocyanate (VII. Polucheniye polnost'yu N-alkilirovannykh poliamidov i sochetaniye ikh tsepey diizotsianatom)

Periodical: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 7, pp. 1777 - 1781 (USSR)

ABSTRACT: Diisocyanate was by many scientists (Ref 1) used as means for the lengthening of the polyester chains. This method is employed in the synthesis of N-substituted polyamides for the first time; it consists of two stages: 1) A complete synthesis of the N-substituted polyamides proceeding from adipinic acid and N,N'-dialkyl hexamethylene diamine with various substituents. 2) The lengthening of the chains of the obtained polyamide, and transformation of the linear polymer into a space polymer by a reaction with diisocyanate according to the mentioned scheme.

Card 1/3

Investigation in the Field of the Synthesis of the N-Alkyl Derivatives of Hexamethylene Diamine, and Their Polycondensations. VII. The Complete Production of N-Alkylated Polyamides and the Coupling of Their Chains With Diisocyanate

SOV/79-28-7-13/64

In order to secure the chain formation of the polyamide in the lengthening by means of diisocyanate a polymer with secondary amino groups at the chain terminals had to be obtained, which was achieved by excess diamine. Therefore no salts served as initial products but a free substituted diamine and adipinic acid. Concluding N-alkylated polyamides were synthetized with different substituents and it was shown that polyamides with ramified radicals (isopropyl-,butyl-2-) of wax-like character as well as those with line radicals (n-propyl-,n-butyl-) of balsam-like character are soluble in benzene. It was found that in the conversion of the N-alkylated polyamides with diisocyanate a lengthening of the chains take place on which occasion polymers with ramified substituents form solid, and even brittle products, whereas such with linear substituents form elastic products. The second treatment with excess diisocyanate leads to polyamides of space structure. There are 1 figure, 4 tables, and 3 references, 2 of which are Soviet.

Card 2/3

Investigation in the Field of the Synthesis of the N- SOV/79-28-7-13/64
Alkyl Derivatives of Hexamethylene Diamine, and Their Polycondensations. VII. The Complete Production of N-Alkylated Polyamides and the Coupling of Their Chains With Diisocyanate

SUBMITTED: May 31, 1957

1. Alkyl derivatives--Synthesis 2. Amides--Production 3. Amides --Molecular structure 4. Diisocyanates--Molecular structure

Card 3/3

AUTHORS: Vanyushina, Z. S., Candidate of Technical Sciences, Vilesova, M. S., Candidate of Chemical Sciences, Chistyakova, G. A., Candidate of Chemical Sciences

SOV/64-58-4-3/20

TITLE: The Synthesis of Hexamethylene Diamine by the Catalytic Hydration of Adiponitryl in a Continuous Current (Sintez geksametilendiamina putem kataliticheskogo gidrirovaniya adiponitrila v nepreryvnom potoke)

PERIODICAL: Khimicheskaya promyshlennost', 1958, Nr 4, pp. 205-208 (USSR)

ABSTRACT: In the experimental part of this paper the collaborators of the GIPKh, I. L. Bagal and M. V. Loginova, took part. As hexamethylenediamine is an important raw material various production methods were worked out with data having been obtained that differ to a great extent. There are only two patents for the continuous production on which there are, by the way, no prescriptions for a corresponding mode of operation and for a corresponding apparatus. In the present paper cobalt catalysts on carriers were used which

Card 1/3

The Synthesis of Hexamethylene Diamine by the Catalytic Hydration of Adiponitryl in a Continuous Current SOV/64-58-4-5/20

had already proved to be of optimal usability in the discontinuous production; the hydration was carried out by means of the apparatus shown in a diagram. The method of the analysis of the reaction mixture was worked out with the help of the collaborators of the GIPKh, I. V. Selyakh and S. Z. Akimova. Active aluminum oxide proved best as catalyst carrier; the production technique of the catalyst is mentioned. From the mentioned experimental results may be seen that a contact load of from 0,2 to 0,3 ml/ml · hour (adiponitryl-catalyst) is optimal as well as a temperature of 100°. The ratio adiponitryl: ammonia is to be 1 : 8 mole and that of adiponitryl: hydrogen ≅ 1 : 20 mole, with about a yield of 85-90% hexamethylenediamine being obtained under the above mentioned conditions at 200 atmospheres. Finally the technical and economic advantages of the continuous method as compared to the discontinuous method are mentioned. The collaborators of the GIPKh (State Institute for Applied Chemistry) I. L. Nagel and M. V. Loginova took part in the experimental part of this work. There are 1 figure, 4 tables, and 19 references which are Soviet.

Card 2/3

SOV/64-58-4-3/20

The Synthesis of Hexamethylene Diamine by the Catalytic Hydration of Adiponitryl in a Continuous Current

1. Cyclohexanes--Synthesis 2. Hydrazine--Synthesis 3. Adiponitryl--Catalysis
4. Cobalt catalysts--Applications

Card 3/3

SOV/79-28-6-19/63

AUTHORS: Klebanskiy, A. L., Vilesova, M. S.

TITLE: Investigation in the Field of the Synthesis and Polycondensation of N-Alkyl Derivatives of the Hexamethylenediamine (Issledovaniye v oblasti sinteza i polikondensatsii N-alkilproizvodnykh geksametilendiamina) III. On the Influence of the Structure of the Substituting Radical on the Direction of Reaction of the Alkylation of Hexamethylenediamine (III. O vliyanii stroyeniya zameshchayushchego radikala na napravleniye reaktsii alkilirovaniya geksametilendiamina)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 6, pp. 1524-1528 (USSR)

ABSTRACT: The earlier investigations (Ref 1) of the reduction alkylation of hexamethylene diamine made it possible to the authors to determine some dependences of the radical structure of the carbonyl compound on the reactivity in the alkylation; among the carbonyl compounds formaldehyde plays a special rôle. Different from reactions carried out earlier with formaldehyde the alkylation had to be carried out in neutral medium and the hydrochloric salt of hexamethylene diamine

Card 1/3

SOV/ 79-28-6-19/63

Investigation in the Field of the Synthesis and Polycondensation of N--Alkyl Derivatives of the Hexamethylenediamine. III. On the Influence of the Structure of the Substituting Radical on the Direction of Reaction of the Alkylation of Hexamethylenediamine

had to be used. At the molar ratio of diamine to aldehyde =1:2 the asymmetric N-dimethylhexamethylene diamine (75 %) of the formula $(CH_3)_2N-(CH_2)_6-NH_2$ was obtained as main product. The high-boiling fraction obtained as secondary product contained mainly the tri-substituted diamine. It is shown that the chosen direction of the reduction alkylation of hexamethylene diamine in the direction to the N,N'-dialkylation is determined by two opposite influences, viz. by the increase of the reactivity of the substituted amino group and by the steric effect of the substituent. Beginning with isopropyl and higher an exclusive direction of the reaction to the side of the N,N'-disubstitution is observed. On the introduction of the ethyl- and n-propyl radical the synthesis of the pure symmetric hexamethylene derivative is made difficult. On the introduction of the methyl the reaction takes place completely to the side of the formation of the asymmetric product of substitution. The introduction of a tertiary butyl group to the amino group of the hexamethylene diamine is not

Card 2/3

SOV/79-28-6-19/63

Investigation in the Field of the Synthesis and Polycondensation of N--Alkyl Derivatives of the Hexamethylenediamine. III. On the Influence of the Structure of the Substituting Radical on the Direction of Reaction of the Alkylation of Hexamethylenediamine

achieved whereas trimethylsilyl easily substitutes both hydrogen atoms under the formation of a four times-substituted compound. There are 2 tables and 3 references, which are Soviet.

SUBMITTED: May 25, 1957

1. Alkyl derivatives--Synthesis 2. Methyl hydrazines--Chemical reactions

Card 3/3

AUTHORS: Klebanskiy, A. L., Vilesova, M. S.

SOV/ 79-28-6-20/63

TITLE: Investigation in the Field of the Synthesis of N-Alkylhexamethylene Diamine Derivatives and Their Polycondensations (Issledovaniye v oblasti sinteza N-alkilproizvodnykh geksametilendiamina i ikh polikondensatsii) V. Some Problems Concerning the Reaction Kinetics of the Reduction Alkylation of Hexamethylene Diamine (V. Nekotoryye voprosy kinetiki reaktsii vosstanovitel'nogo alkilirovaniya geksametilendiamina)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 6, pp. 1528-1534 (USSR)

ABSTRACT: The purpose of the present paper was to explain: 1) The dependence of the reaction velocity on the conditions under which the process takes place, and 2) The influence of the structure of the alkylating compound on the reaction velocity of the reduction alkylation of hexamethylene diamine. Based on the results which were obtained by the authors in the synthesis of N-substituted diamines it was possible when using these data to determine the course of reaction and to

Card 1/3