

PHASE I BOOK EXPLOITATION

SOV/6283

Devyatova, V. A., Candidate of Geographical Sciences, and V. V. Kochetygov, compilers..

Rukovodstvo po vysotnomu vertikal'no-gorizonta'l'nomu zondirovaniyu atmosfery na samolete Il-28 (Handbook on High-Altitude Vertical-Horizontal Sounding of the Atmosphere in the Il-28). Moscow, Gidrometeoizdat, 1962. 146 p. Errata slip inserted. 600 copies printed.

Sponsoring Agency: Glavnoye upravleniye gidrometeorologicheskoy sluzhby pri Sovete Ministrov SSSR.

Ed.: V. A. Devyatova, Candidate of Geographical Sciences; Tech. Ed.: I. M. Zarkh.

PURPOSE: This handbook is intended for pilots, navigators, and on-board aerologists for high-altitude sounding in Il-28 aircraft. It may be used by synoptic meteorologists and specialists connected with the planning and supervision of sounding flights.

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Handbook on High-Altitude (Cont.)

SOV/6283

COVERAGE: The book describes methods of visual and instrumental observations of the atmosphere from Il-28 aircraft. The K4-51 recording instrument is described in detail. A new device for processing film is also described.

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Handbook on High-Altitudes (Cont.)

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AVAILABLE: Library of Congress

SUBJECT: Meteorology

Card 4/4

AD/jsj/bc
5-3-63

DEVYATOVA, V.A.

Upper-air sounding from an IL-28 airplane. Trudy TSAO no. 43:47-56
'62. (MIRA 15:7)

(Aeronautics in meteorology)

S/789/62/000/043/003/005

AUTHOR: Devyatova, V.A.

TITLE: Some characteristics of the aircraft meteorograph A-10 and its performance in the field.

SOURCE: Tsentral'naya aerologicheskaya observatoriya. Trudy, no.43. Moscow, 1962, 57-64.

TEXT: This paper reports on the field experience and, more especially, on the time-lag characteristics of the temperature (T) and relative-humidity (RH) elements of the A-10 aerometeorograph, compares the records of two instruments of that type when tested on a single flight, and sets forth proposals for design improvements. The A-10 was designed at the NIIGMP (Scientific Research Institute of Hydrometeorological Instruments) and is manufactured by the Moscow plant of "Gidrometeopribor." Details of the instrument are shown in the Nastavleniye gidrometeorologicheskim stantsiyam i postam (Instructions for hydrometeorological stations and posts), no. 4, Part IV, 1958. The aircraft-sounding lab of the Central aerological observatory indoctrinated the field-service personnel methodically in 1959-1960 (author and I. V. Pokrovskiy), and all field observatories were required to deliver operational-performance reports in 1960; the observatory of the Kazakh SSR, in addition, delivered a study of an investigation of several characteristics of
Card 1/3

Some characteristics of the aircraft meteorograph. . . S/789/62/000/043/003/005

the instrument, all of which is summarized in the present paper. On the whole, the operational experience has been favorable. The time-lag characteristics of the hair-hygrometer element and their dependence on the RH and the ventilation speed were determined by methods previously related by V. D. Reshetov (Tsentr. aerolog. obs., Trudy, no. 11, 1953) and the author (Mikroaerologicheskiye issledovaniya nizhnego kilometrovogo sloya atmosfery - Microaerological investigations of the first-km layer of the atmosphere. Leningrad: Gidrometeoizdat, 1957). Three meteorographs were first placed in a 100% RH atmosphere until the record had become stabilized and were then exposed to a flow of air with appx. 40% RH; all tests were performed at 23°C and 740 mm (also stated to have been 734 mm) Hg. The "dry-air" ventilation was performed at flow speeds of 3.5 and 0.5 m/sec. The RH-response time lag decreases with increasing ventilation rate and relative humidity. It is lower in the subject A-10 meteorograph (0.2 - 0.4 min at RH 90%; 3 min at RH 40%) than in the aircraft meteorograph CM-43 (SM-43) and the balloon meteorograph AM IIAO (AM TsAO). The time-lag characteristics of the bimetallic T element were determined by hot-air ventilation followed by ambient-air ventilation. The T time-lag coefficient was defined as that time during which the difference between the air T and the instrument T indication of the instrument was reduced by a desired ratio, namely, 2.7. Tentative values of 0.88 min at a ventilation speed of 1.5 m/sec and 0.50 min at 3 m/sec was found (somewhat better than on the CM-43 (SM-43)). The r. m. s. deviation between two simultaneously tested A-10 meteorographs lies

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Some characteristics of the aircraft meteorograph... S/789/62/000/043/003/005

within the limits of the accuracy of measurement for the RH element (except for a few gross deviations of 20 to 30%) and only slightly outside of its for the T element. A-10 shortcomings: (1) Poor operation of clockwork; (2) frequent breakage of the pressure- and T-element tape linkages (TL) in transport. Improvements made: (1) The brittle Be-bronze TL's were replaced late in 1959 with L-invar steel (H41XT - N41KhT) braces; (2) numerous minor mechanical improvements were made; (3) studies on the replacement of the hair-hygrometer element with a film-type element are in progress at the NIIGMP. There are 1 figure, 5 tables, and 3 Russian-language Soviet references.

ASSOCIATION: None given.

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PHASE I BOOK EXPLOITATION

JUN 25 1963

SOV/6283

Devyatova, V. A., Candidate of Geographical Sciences, and V. V. Kochetygov, compilers.

Rukovodstvo po vysotnomu vertikal'no-gorizonta'lnomu zondirovaniyu atmosfery na samolete Il-28 (Handbook on High-Altitude Vertical-Horizontal Sounding of the Atmosphere in the Il-28). Moscow, Gidrometeoizdat, 1962. 146 p. Errata slip inserted. 600 copies printed.

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Ed.: V. A. Devyatova, Candidate of Geographical Sciences; Tech. Ed.: I. M. Zarkh.

PURPOSE: This handbook is intended for pilots, navigators, and on-board aerologists for high-altitude sounding in Il-28 aircraft. It may be used by synoptic meteorologists and specialists connected with the planning and supervision of sounding flights.

Card 1/42

Handbook on High-Altitude (Cont.)

SOV/6283

COVERAGE: The book describes methods of visual and instrumental observations of the atmosphere from Il-28 aircraft. The K4-51 recording instrument is described in detail. A new device for processing film is also described.

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DEVYATOVA, V.A.; DEMENT'YEV, N.F.; YELFIMOV, A.V.; KUPIYANSKAYA, A.P.;
MAKSEMOVA, A.A.; MARGOLIN, L.M.; RUDNEV, G.V.; SIROTOV, K.M.;
SOLOPOV, A.V.

Conferences, meetings, and seminars. Meteor.i gidrol. no.11:68-
70 N '62. (MIRA 15:12)
(Hydrology—Congresses) (Meteorology—Congresses)

DEVYATOVA, V.A.

Concerning V.A. Belinskii and V.A. Pobiakho's book "Aerology."
Reviewed by V.A. Devyatova. Meteor. i gidrol. no.12:46-47
D '63. (MIRA 17:3)

ACCESSION NR: AT4028679

S/2789/63/000/050/0003/0015

AUTHOR: Devyatova, V. A.; Andreyev, B. G.

TITLE: Characteristics of the distribution of condensation nuclei in the atmosphere over Moscow according to the results of observations from an Li-2 sounding airplane

SOURCE: Tsentral'naya aerologicheskaya observatoriya. Trudy*, no. 50, 1963, 3-15

TOPIC TAGS: condensation nucleus, Li-2 airplane, atmosphere

ABSTRACT: The authors present data which characterize the distribution of condensation of nuclei in the atmosphere over Moscow produced by direct observation made during the International Geophysical Year, as well as an analysis of three horizontal flights in the Vnukovo-Voronezh-Vnukovo route. To resolve scientific and practical problems, knowledge of the problem of atmospheric condensation nuclei, their origin, physico-chemical properties, and quantitative distribution near the Earth and the free atmosphere have great significance. Condensation nuclei play an important role in the circulation of water, mineral salts, and other chemical substances on the Earth. The authors strive to produce some quantitative characteristics and to study the properties of the distribution of atmospheric nuclei concentration in the free atmosphere, dependent upon the number of meteorological factors. Materials used

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ACCESSION NR: AT4028679

for completing the work were taken from 385 airplane flights with a Sholts nuclei counter in the Moscow (Vnukovo) region from 1958 through 1961. In addition, an attempt was made to analyze the results of three horizontal flights along the Vnukovo-Voronezh-Vnukovo route. The results are presented in graphs, charts and tables. The authors drew the following conclusions: 1) distribution of condensation of nuclei by altitude in the free atmosphere bears an adequately well expressed exponential character; 2) the direct dependence between the condensation nuclei content and the free atmosphere and the intensity of turbulent exchange is confirmed by observations made during the morning and afternoon (rapid withdrawal in the morning, slowed in the afternoon); 3) the distribution of nuclei along the vertical, in a low pressure system, is more uniform than a high pressure system, which is also stipulated by a vertical exchange more developed in a low pressure system; 4) the exponential character of nuclei distribution sharply breaks up in the presence of isothermy or temperature inversion layers in the atmosphere; 5) concentration of nuclei inside a cloud is less than outside; 6) the effect of wind direction proves to be strong in the condensation nuclei content in the free atmosphere; 7) in the absence of restraining layers in the atmosphere, the increase in the number of nuclei along the vertical may be associated with the presence of another, more condensation-nuclei-enriched air mass at altitude; 8) the atmosphere-observed horizontal inhomogeneities in a distribution of condensation nuclei can arise as a result of purely local

Card 2/3

ACCESSION NR: AT4028679

factors (the presence of local sources of atmospheric contamination), as well as under the influence of the general circulation conditions. Orig. art. has: 7 figures and 4 tables.

ASSOCIATION: Tsentral'naya aerologicheskaya observatoriya (Central Aerological Observatory)

SUBMITTED: 00

DATE ACQ: 16Apr64

ENCL: 00

SUB CODE: AS

NO REF SOV: 007

OTHER: 000

Card 3/3

L 41559-65 EWT(1)/100 G7
ACCESSION NR: AT5009668

UR/2789/64/000/060/0080/0091

12
11
B+1

AUTHOR: Devyatova, V. A.; Yegorova, I. R.

TITLE: Experimental helicopter soundings of the lower atmosphere

SOURCE: Tsentral'naya aerologicheskaya observatoriya. Trudy, no. 60, 1964.
Metody i rezul'taty aerologicheskikh nablyudeniy i issledovaniy (Methods and re-
sults of aerological observations and investigations), 80-91

TOPIC TAGS: meteorography, electrometeorograph, atmospheric sounding, atmospheric
helicopter probe, helicopter instrumentation, lower atmosphere, condensation
nucleus

ABSTRACT: The article discusses the organization of vertical-horizontal soundings
by means of the Ka-18 helicopter at the Tsentral'naya aerologicheskaya observator-
iya (Central Aerological Observatory). The authors describe the equipment of
the helicopter and the methodology followed in the probes, and compare the read-
ings of the helicopter electrometeorograph with those of an A-10 meteorograph and
a radio-sonde. The vertical-horizontal soundings were begun in August of 1962
for the purpose of continuing the study of the micro-aerological characteristics
of the lower layer of the atmosphere and also of developing a method of helicopter

Card 1/4

L 41569-65
ACCESSION NR: A15009668

sounding. The soundings were conducted in weather conditions permitting an ascent by the helicopter in the assigned sounding area to at least 1 km. The Ka-18 helicopter, designed by N. I. Kamov, is a 3(4)-seater of the coaxial type with two propellers located on the same axis and rotating in opposite directions. The crew consists of the pilot and one or two flight aerologists. Maximum speed is 145 km/hour, maximum vertical speed 4 m/sec, cruising speed 80 km/hour, and the practical ceiling 3,000 meters. Further details are given in the article. The helicopter electrometeorograph is designed in the form of a number of separate testing and recording units, which are listed and discussed briefly in the text. In addition to this electrometeorograph, the equipment carried on the helicopter also included an A-10 aircraft meteorograph and a Scholtz condensation nuclei counter. The total weight of the auxiliary equipment was approximately 60 kg. A detailed technical description of the various electrometeorograph components (for temperature, temperature pulsation, pressure, humidity, G-forces, power supply unit, etc.) and the manner in which this apparatus was calibrated and tested is given in the article together with an easily-read block-diagram. In their discussion of the flight conditions of the Ka-18, the authors note that the horizontal flight from the helicopter station (in the Moscow region) is

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ACCESSION NR: AT5009668

0

along a standard run (150 m) at a speed of 80-90 km/hour for about 20 min. After the helicopter has been on the ground for 10-15 minutes and the A-10 meteorograph has been installed, an ascent is made at a rate of 2-3 m/sec to an altitude of 100 m. At this altitude, there follows a five-minute horizontal flight (referred to by the authors as a "level"). These 5-minute "levels" are then repeated at altitudes of 200, 500 and, finally, every 500 meters, until the maximum altitude of the ascent is reached and the final "level" is flown. Separate sections of the paper deal with the accuracy of the measurements, a study of thermometer over-heating due to the working current, an estimate of the accuracy of the readings of the pressure, temperature, and humidity sensors, and finally a comparison of different readings obtained with various equipment and under various conditions. Among the conclusions reached by the authors, the following are particularly worthy of note: 1. The Ka-10 helicopter can be used satisfactorily for soundings in the lower 3-km layer of the atmosphere. 2. The arrangement of the sensors of the electrometeorograph and the A-10 meteorograph ensures satisfactory measurements of meteorological parameters. 3. The helicopter electrometeorograph (HEM) provides a higher temperature reading, particularly above 1 km; in the majority of cases, the temperature discrepancies noted between the radio-sonde and the A-10 meteorograph, the radio-sonde and the HEM, and the A-10 meteorograph and the HEM are less than 1°; maximum discrepancies

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I 41569-65

ACCESSION NR: AT5009668

reach 2-3°. 4. The film-type humidity sensors of the HEM and of the radio-sonde do not indicate 100%-humidity and at high humidity values a lag is observed in their readings; maximum discrepancies between the HEM and A-10 are noted, as a rule, at maximum humidity; the HEM film-type humidity sensor has a quicker reaction to humidity changes. At the upper haze boundary, in a layer of dry air, the recorded humidity change is as much as 30%. At low humidity values, the radio-sonde gives a higher humidity reading than either the HEM or A-10 sensors, as well as a smoother curve. Orig. art. has: 2 tables and 5 figures.

ASSOCIATION: Tsentral'naya aerologicheskaya observatoriya (Central Aerological Observatory)

SUBMITTED: 00

ENCL: 00

SUB COM: ES, AC

NO REF SOV: 000

OTHER: 000

MLC
Card 4/4

DEVYATOVA, V.A.

The airplane electrical hygrometer I-55 and the results of its
field tests. Trudy TSAC no.60:100-107 '64. (MIRA 18:5)

ZOLOTAREV, Ye.Kh.; BATAEV, P.S.; DEVYATOVA, V.I.

Study of repellents. Report No.11: Relation between repellency and the chemical structure of acylated piperidines and hexamethylenimines. Nauch. dokl. vys. shkoly; biol. nauki no.4:16-19 '61.

(MIRA 14:11)

1. Rekomendovana kompleksnoy laboratoriyey biologo-pochvennogo fakul'teta Moskovskogo gosudarstvennogo universitata im. M.V. Lomonosova i Institutom meditsinskoy parazitologii i tropicheskoy meditsiny.

(INSECT BAITS AND REPELLENTS)
(PIPERIDINE) (METHYLENIMINE)

L 24717-66 EWT(a)/EWT(m)/EWA(d)/EWP(v)/EWP(t)/EWP(k)/EWP(h)/EWP(l) LJP(c)
ACC NR: AP6009555 JD/HW SOURCE CODE: UR/0413/66/000/005/0113/0113

INVENTOR: Devyatov, V. V. 43

ORG: none 5

TITLE: Method of pressing profiles through rotating rollers, Class 49, No. 179596 [announced by the Scientific Research Institute of Technology of the Tractor and Agricultural Machinery (Nauchno-issledovatel'skiy institut tekhnologii traktornogo i sel'skokhozyaystvennogo mashinostroyeniya)] 18 14

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no.5, 1966, 113

TOPIC TAGS: metal pressing, rotating seal

ABSTRACT: An Author Certificate has been issued for a method of extrusion profiles through rotating rolls. To carry out the extrusion without a shrinkage cavity and discard, the discard is squeezed out by two inside plungers (see Fig. 1). Orig. art. has: 1 diagram. [NT]

Card 1/2

UDC: 621.777.22-422 2

U 24/17-65

ACC NR: AP6009555

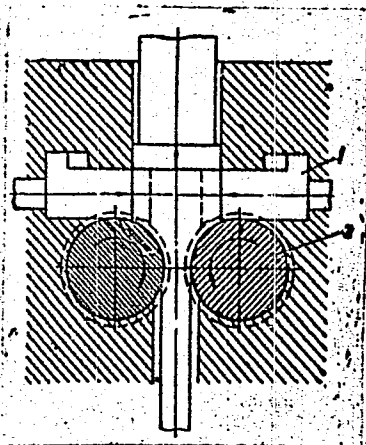


Fig. 1. Rotating rolls with side plungers. 1 - side plungers; 2 - rotating rolls.

SUB CODE: 13, 11/

SUBM DATE: 22Feb65/

Card 2/2 W

L 40052-66 EWP(k)/EWT(1)/T

ACC NR: AP6012746

SOURCE CODE: UR/0122/66/000/004/0085/0086

AUTHOR: Devyatov, V. V. (Engineer)

ORG: none

TITLE: Conference on the development of the theory and practice of utilizing ultrasonic technologySOURCE: ^v Vestnik mashinostroyeniya, no. 4, 1966, 85-86TOPIC TAGS: ~~scientific conference~~, ~~scientific research~~, ultrasonics, ultrasonic cleaning, ultrasonic machining, *ultrasonic technology, physics conference, metallurgic process*ABSTRACT: The proceedings of the Sixth Scientific-Technical Conference on the Development of the Theory and Practice of Utilizing Ultrasonic Technology are

summarized. The conference was organized by the Goskomitet po mashinostroyeniyu, TsP NTO Mashproma, and by the OKTB Mosgorsovmarkhoza; the conference was held in Moscow in October 1965. At the conference it was noted that substantial accomplishments had been realized within the current year. Specific successes occurred in the use of ultrasonics in industry; new materials and alloys were developed, and material quality and purity were improved. Over one hundred reports were given at the conference. Particular attention was devoted to the papers presented by G. I. Pogodin-Alekseyev, V. M. Gavrilov, T. Kh. Chormonov, I. I. Teumin, O. V. Abramov, V. A. Filonenko, V. I. Slotin, G. I. Eskin, B. A. Agranat, V. I. Bashkirov, and Yu. I. Kitaygorodskiy.

Card 1/2

L 40052-66

ACC NR: AP6012746

Important topics were the effects of elastic vibrations on ingots and other foundry forms, the strength and structure of alloys treated ultrasonically, crystallization processes with ultrasonics, ultrasonics used in phases (liquid versus solid) of material processing, removal of impurities by ultrasonic techniques, means of controlling ultrasonic cavitation, and others. Future needs for research in this field were discussed.

SUB CODE: 20, 11/ SUBM DATE: none

Card

2/2 *gd*

ACC NR: AP7001457

(A)

SOURCE CODE: UR/0413/66/000/021/0201/0202

INVENTOR: Devyatov, V. V.

ORG: none

TITLE: A device for pressure forming of curved surfaces. Class 49, No. 188274
[announced by Scientific Research Institute of Tractor and Agricultural Machine
Construction Engineering (Nauchno-issledovatel'skiy institut tekhnologii traktornogo
i sel'skokhozyaystvennogo mashinostroyeniya).]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 21, 1966, 201-
202

TOPIC TAGS: metalworking, metal press, metal forming press, metalworking machine

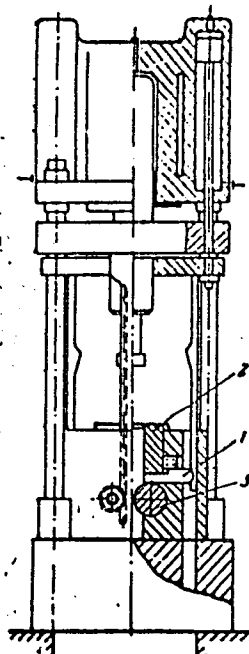
ABSTRACT: This Author Certificate presents a device for pressure forming of curved
surfaces. The device consists of a casing with two curved-surface rotary rollers
fixed within it and of a container (see Fig. 1). To conduct pressure forming with-
out leaving a residue and producing a shear drag, the device is provided with two
lateral guiding slides mounted in the casing between the container and the curved-
surface rotary rollers.

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UDO: 621.979:621.777.06

ACC NR: AP7001457

Fig. 1. 1 - lateral guiding slide;
2 - container; 3 - curved-surface
rotary rollers



Orig. art. has: 1 figure.

SUB CODE: 13/ SUBM DATE: 14Jun65

Card 2/2

L 62183-45 EWT(d)/EWT(a)/EWP(w)/EWA(a)/EWP(y) X/EWP(t)/EWP(k)/EWP(h)/EWP(z)/
EWP(b)/EWP(l)/EWA(c) DIAAP MJM/JD/HW

ACCESSION NO: AP5018151

UR/0113/65/000/007/0036/0037
531.717:539.165.3

AUTHORS: Meshcherin, V. T. (Doctor of technical sciences); Devyatova, Ye. M.

TITLE: Use of beta-radiation to control metal thickness in areas of maximum deformation of automobile fuel tanks

SOURCE: Avtomobil'naya promyshlennost', no. 7, 1965, 36-37

TOPIC TAGS: metal thickness measurement, sheet metal forming, deep drawing, isotope thickness gage / OBYu steel, STS 5 radiation counter

ABSTRACT: The use of isotopes in detecting the amount of deformation or cracks in deep-drawn parts of sheet metal (0.8-1.2 mm thick, steel OBYu used in the experiments) was investigated with particular interest directed toward application in automobile fuel tank manufacturing control. Beta-radiation from isotopes was passed through sheet metal which had been decreased in thickness 0, 5, 10, 15, or 20% (by deep-drawing), and the transmitted radiation intensity was measured with STS-5 counters as a function of distance h between source and counter (10-350 mm). It was found that the transmitted radiation increased by 16-20% with increased deformation from 0-20% (approximately linearly) at all distances, while the transmitted radiation intensity magnitude decreased by a factor of about 2 as the

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ACCESSION NR: AP5018151

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distance increased from 10-350 mm. Cracks (0.2 mm and 1.2 mm wide and L = 10-60 mm long) were machined into sheet metal samples and also obtained by deep-drawing, and transmitted radiation was measured as a function of h and L. It was found that radiation intensity increased sharply between L = 10-20 mm (factor of 4 for h = 50 mm, 0.2 mm crack width; factor of 15 for 1.2 mm crack, h = 55 mm), and then remained constant (with increasing L). Radiation transmitted through cracks was 30-20% higher for cracks obtained by deep drawing than for machined cracks. The isotope laboratory of the Moscow Automobile Factory (im. Likhachev) participated in the experiments. Orig. art. has: 1 formula and 4 figures.

ASSOCIATION: Moskovskiy stankoinstrumental'nyy institut (Moscow Machinery Instrumentation Institute)

SUBMITTED: OO

ENCL: OO

SUB CODE: IE

NO REF SOV: OOL

OTHER: OOO

Card 2/2

SAMIYEV, Kh.; DEVIATOVA, Z. Ye.

Effect of mineral nutrition on the intensity of photosynthesis
and respiration in cotton as related to varying soil moisture.
Uzb. biol. zhur. 9 no. 6:28-32 '65 (MIRA 19:1)

1. Institut eksperimental'noy biologii rasteniy AN UzSSR. Sub-
mitted September 18, 1964.

TROFIMOVA, R.K.; DEVYATOVA, Z.Ye.

Simple method for potassium determination in cotton leaves.
Dokl. AN Uz. SSR 21 no.8:42-44 '64. (MIRA 19:1)

1. Institut genetiki i fiziologii rasteniy AN UzSSR. Submitted
Feb. 8, 1962.

DEVYATOVSKAYA, L.I.

5(2) PHASE I BOOK EXPLOITATION SOV/1916

Vesoyuznoye sveshchaniye po khimii bora, 1955

Bor; trudy Konferentsii po khimii bora i yego sovedinimiy (Boron; Transactions of the Conference on the Chemistry of Boron and Its Compounds) Moscow, Gokhizdat, 1958. 189 p. Krata dtp inserted. 2,400 copies printed.

Ed.: G.P. Luchinskiy; Tech. Ed.: N.S. Lar'ye.

PURPOSE: This book is intended for chemists, as well as for industrial personnel working with boron and its compounds.

COVERAGE: This collection contains 24 studies on the chemistry, crystalline structure, physicochemical properties, and technology of boron and its compounds. Twenty-two of the studies were presented at the All-Union Conference on Boron Chemistry held at the Nauchno-Issledovatel'skiy Zhilko-Khimicheskiy Institut im. L. Ya. Karpova (Scientific Research Physicochemical Institute im. L. Ya. Karpov) in

~~December 1955.~~ Two of these articles deal with the thermochemistry of boron. The studies on "boronum" production and being published for the first time. The studies are well illustrated and accompanied by bibliographies.

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Boron; Transactions of the Conference (cont.) SOV/1916

Polyak, A.M., Ye. M. Pinyavskaya, G.B. Romov, M.I. Kozlova, and L.I. Devyatovskaya. Boric Acid Production by the Decomposition of Ureterakiye Borates With Mixtures of Nitric and Sulfuric Acids	135
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Erapsitov, S.L. A Technical and Economic Comparison of the New Methods for Boric Acid Production from Ureterakiye Borates	170

S/137/62/000/004/030/201
A006/A101

AUTHORS: Devyatovskaya, L. I., Vil'nyanskiy, Ya. Ye.

TITLE: Preparation of chromium chlorides from ferrochromium

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 4, 1962, 28, abstract 4G180
("Metallurg. i khim. prom-st' Kazakhstana. Nauchno tekhn. sb.",
1961, no. 3 (13), 59-64)

TEXT: Batches of 50 - 70 g Fe-Cr were processed with Cl-gas in a vertical laboratory furnace at 950 - 1,000°C. Fully sublimated CrCl₃, CrCl₂ and FeCl₃ were obtained. Separation of Cr and Fe from the condensate was not checked but, according to literature data, satisfactory results can be obtained. Chlorination of Fe-Cr proceeds at a higher rate and with 98% utilization of Cl-gas.

A. Tseydler

[Abstracter's note: Complete translation]

Card 1/1

NAZARENKO, P. (Astrakhanskaya oblast'); KIL'DIBEKOV, V. (g.Slobodskoy, Kirovskaya oblast'); DEVIATOVSKIY, M. (g.Orsk); SERGIYENYA, K. (g.Khar'kov); FISHER, L.; BELYAYEV, A.; VENGEROV, A.; KRAVTSOV, S. (g.Khar'kov)

Readers relate, advise and criticise. Sov. profsoiuzy 18
no.15:26-28 Ag '62. (MIRA 15:7)

1. Neshtatnyy korrespondent zhurnala "Sovetskiye profsoyuzy" (for Nazarenko, Sergiyenya, Vengerov).
2. Sotrudnik gorodskoy gazety "Leninskiy put'" (for Kil'dibekov).
3. Sotrudnik neshtatnogo otdela oblostnogo komiteta profsoyuza rabochikh metallurgicheskoy promyshlennosti (for Devyatovskiy).
4. Predsedatel' komiteta profsoyuza elektromekhanicheskogo zavoda, g.Khar'kov (for Kravtsov).
(Socialist competition) (Ust'-Kamenogorsk—Housing)
(Kharkov—Electric equipment industry)

DEVYAT'YAROV, A., geroy Sovetskogo Soyuz (Udmurtskaya ASSR)

We are building sports installations. Voen.znan. 32 no.2:12
F '56. (MLRA 9:5)

1. Predsedatel' respublikanskogo komiteta Dobrovol'nogo obshche-
stva sodeystviya armii, aviatsii i flotu.
(Military education)

L 40986-66

ACC NR: AR6011866

SOURCE CODE: UR/0299/65/000/020/M018/M018

AUTHOR: Davyat'yarov, L. A.

TITLE: Experimental technique of autotransplanting kidneys to the neck

SOURCE: Ref. zh. Biologiya, Abs. 20M105

REF SOURCE: Sb. nauchn. rabot. In-t eksperim. biol. i med. Novosibirsk,
vyp. 2, 1964, 505-508

TOPIC TAGS: organ transplant, animal experiment, urology

ABSTRACT: Kidneys were transplanted to the carotid artery and jugular vein of 15 dogs weighing 5 to 16 kg. The right kidney was transplanted to the left side. The ureters were sectioned at a distance of 10 to 15 cm from the porta renis. Anastomoses were performed using an atraumatic twisted suture. The ureters were drawn out and attached to the skin. Ischemia lasted from 15 min to 1 hr 20 min, with a mean of 36 min. Four dogs died during the first few days and 7 dogs died during the 4th to 10th days. In 4 animals the kidney functioned from 1 to 4 mos. In two animals urination stopped, and during autopsy only a small amount of intact kidney tissue was found embedded in the scar tissue. In many cases complications were related to necrosis of the ureters and to other

Card 1/2

UDC: 577.99

L 40986-66

ACC NR: AR6011866

disorders caused by excretion of urine on the skin. L. Liozner.
Translation of abstract.

SUB CODE: 06

Card 2/2 11b

L 45732-66
ACC NR: AR6011867 SOURCE CODE: UR/0299/65/000/020/M018/M018
AUTHOR: Devyat'yarov, L. A. 22 10
TITLE: Autotransplantation of kidneys into the peritoneal cavity B
SOURCE: Ref. zh. Biologiya, Abs. 20M106
REF SOURCE: Sb. nauchn. rabot. In-t eksperim. biol. i med. Novosibirsk,
vyp. 2, 1964, 500-504
TOPIC TAGS: animal experiment, organ transplant, urology
ABSTRACT: In experiments on dogs weighing 5 to 20 kg the kidney was
transplanted to iliac vessels in 25 cases and was replanted in 11 cases.
Anastomoses were performed using an atraumatic twisted suture or a
mechanical suture. The terminal of the ureter was sectioned lengthwise
and attached to the mucosa of the bladder. When the diameter of the
kidney vessel was small or there was a vessel abnormality, the arterial
anastomosis was performed using a patch method developed by Karrel. A
contralateral nephrectomy was performed on 19 of 36 animals. The left
kidney was transplanted in all cases because it is more frequently
marked by vessel abnormalities. The ischemia period lasted 25 min and
with the use of an angiographic device was 15 to 20 min. Ten animals
Card 1/2 UDC: 577.99

L 46732-66

ACC NR: AR6011867

0

died the day after the operation. Mean survival period for the remaining animals was 11 days and the longest period was 2.5 mos. Four animals are still living. From a physiological point of view the author considers transplantation of the kidney to kidney vessels most effective and the use of an atraumatic suture for vessels best, with a mechanical suture for vessels with a diameter of approximately 2.5 mm. L. Liozner.
Translation of abstract.

SUB CODE: 06

Card 2/2 LC

DEVYAT'YAROV, N.

Victory of the agronomist. Zemledelie 24 no.12:70-72 D '62.
(MIRA 16:1)

(Krasnozhchenkovo District--Agriculture)

S/121/60/000/010/013/015
A004/A001

AUTHORS: Kleymenov, Yu. V., Devyatykh, A. S.

TITLE: Inside Calipers With a Graduation Scale of 0.001 mm

PERIODICAL: Stanki i Instrument, 1959, No. 10, p. 39

TEXT: In 1960 the "Kalibr" Plant developed a new inside calipers design for dimensions in the range of 3 - 18 mm with a graduation scale of 0.001 mm. This instrument will be produced in series from 1961 on. The mechanism of the calipers in combination with the reading facilities of the indicator-type represent a wedge-shaped transmission. The MKM lever-gear head of the Leningradskiy instrumental'nyy zavod (Leningrad Instrument Plant) is used as indicating device. The new calipers measure inside dimensions by the comparison method. A set of calibration rings with an interval of 0.1 mm is used to show the deviation of the reading device when checking the dimensions of the workpiece. The measurement is effected with the aid of two balls which are placed in the seats of the measuring insertion piece. The ball displacement is transmitted to the needle-shaped wedge and further to the reading device. The inside calipers are fitted with a prop in order to facilitate the measurement of apertures the axes of which are perpen-
di

Card 1/3

Inside Calipers With a Graduation Scale of 0.001 mm

S/121/60/000/010/013/015
A004/A001

dicular to the measuring surface. The reading device of the inside calipers is fastened by a chuck ring and nut. In order to prevent a displacement of the calipers from the aperture axis by more than 0.01 mm, two centering balls are located in the same plane with the measuring balls at an angle of 90° to the measuring line. The technical specifications of the new inside calipers are given in the following table:



Card 2/3

Inside Calipers With A Graduation Scale of 0.001 mm S/121/60/000/010/013/015
A004/A001

Measuring range of one inside caliper	Number of interchangeable inserts	Measuring range of inserts in mm	Maximum measuring depth in mm	Permissible reading errors of calipers with reading device in mm, not exceeding	Reading errors caused by inaccurate centration in mm, not exceeding	Reading variations
3-6	5	3 -3.3 3.3-3.7 3.7-4.3 4.3-5.1 5.1- 6	20	± 0.002	0.001	0.001
6-10	3	6 - 7 7 -8.3 8.3-10	30	± 0.002	0.001	0.001
10-18	3	10-12 12-14.5 14.5-18	50	± 0.0025	0.002	0.001

There is one figure and 1 table.

Card 3/3

DEVIATYKH, G. G.

G. L. Starobinets, A. V. Pamfilov, G. G. Deviatykh, and G. A. Lazerko, Adsorption layers in anhydrous systems. III. Fatty acids on the surface diphenyl-amine-air. Pp. 1240-5.

The surface tension of solutions of propionic, butyric, isovaleric, isocaproic, and oleic acids in diphenyl amine were measured near the melting temperature of diphenyl amine. The lowerings of the freezing point of the solutions were determined and the thermodynamic activities of their components were calculated.

Byelorussian University
Institute of Chemistry, Minsk
October 20, 1947.

SO: Journal of Physical Chemistry (USSR) 22, 10, 1943.

DEVYATYKH, G. G.

PA 56/49791

USSR/Physics
Adsorption
Alcohols

Sep 48

"Adsorption Layers in Heterogeneous Systems: II. Alcohols Between Diphenylamine and Air," G. G. Devyatikh, A. V. Zamfilov, G. L. Starobinets, Ind Inst Invent A. A. Zhdanov, Gor'kiy, 9 pp

"Zhur Fiz Khim" Vol XIII, No 9, pp 1072-8.

Measures surface tension of solutions of ethyl, isopropyl, butyl, isobutyl, isocetyl, octadecyl, and benzyl alcohols and cyclohexanone in diphenylamine for wide ranges of concentration (from $N_2 = 0$ to

56/49791

USSR/Physics (Contd)

Sep 48

$N_2 = 0.9$) at 60° C, developing the constants of saturated adsorption layers. Submitted 17 Sep 47.

56/49791

CA

2

The method of calculating thermodynamic activity and the activities of some alcohols and fatty acids in diphenylamine. G. G. Deyyatikh and A. V. Panfilov. *Zhur. Fiz. Khim.* 33, 1218-30 (1959); cf. C.A. 53, 1238i. -- The probable error of calcd. values of the activity a_2 of Ph₂NH near its m.p. T_0 is not reduced by considering also terms contg. $(T_0 - T)^2$ in addn. to the main term L_0/RT_0 because the uncertainty of the exptl. data for the heat of melting L_0 and the heat capacities of solid and liquid Ph₂NH; the final equation is $\ln a_2 = -0.02321 (T_0 - T)/T$, T is m. p. of the soln. From this a_2 the activity a_1 of the solute is calcd. graphically by plotting P_2/N_2 against $\ln(a_2/N_2)$, N_1 and N_2 are the mole fractions of Ph₂NH and solute, resp.; the results of this procedure are compared with those of earlier graphical methods. The values of $T_0 - T$ and of the most probable a_2 for $N_2 = 0.1, 0.5,$ and 0.9 (at 83°) are for EtOH $4.7^\circ, 14.0^\circ,$ and 30.3° , and $0.073, 0.139,$ and 0.156 ; for *iso*-PrOH $5.1^\circ, 15.9^\circ,$ and 34.1° , and $0.075, 0.151,$ and 0.160 ; for BuOH $4.5^\circ, 15.0^\circ,$ and 42.5° , and $0.075, 0.156,$ and 0.184 ; for *iso*-BuOH $4.7^\circ, 15.1^\circ,$ and 32.5° , and $0.073, 0.140,$ and 0.163 ; and for *iso*-AmOH $5.0^\circ, 15.2^\circ,$ and 40.5° , and $0.077, 0.168,$ and 0.190 ; for *n*-C₁₀H₂₁OH at $N_2 = 0.01, 0.08,$ and 0.20 , $T_0 - T$ is $0.40^\circ, 2.90^\circ,$ and 4.80° and a_2 is $0.0083, 0.0385,$ and 0.0496 . Many intermediate values are reported.

J. J. Bikerman

CA

Adsorption layers in nonaqueous systems. IV. Aliphatic alcohols and acids in nitrobenzene. A. V. Pamirov, G. G. Deryatykh, and L. V. Shirshova (Inst. Inst., Gorki). *Zhur. Fiz. Khim.* 24, 392-8(1950); *cf. C.A.* 43, 1278i. — Lowering ($\Delta\sigma$) of surface tension at 65° (determined by the method of max. bubble pressure) and depression of m.p. of PhNO₂ by alcohols and acids were, if the mole fraction of the added compd. was 0.1, 0.3, 0.5, 0.7, and 0.9, for EtOH 9.9, 15.0, 17.0, 18.2, and 20.1 g./sec.², resp., and 3.3, 6.0, 6.9, 8.9, and 20.6°, resp.; for iso-PrOH 13.9, 18.5, 19.1, 20.3, and 21.5 g./sec.² and 3.5, 4.3, 5.6, 6.3, and 11.7°; for BuOH —, 15.5, 17.1, 17.9, and 18.7 g./sec.² and —, 5.0, 6.4, 8.3, and 25°; for iso-BuOH 11.4, 17.5, 19.1, 19.7, and 21.6 g./sec.² and 3.0, 5.0, 5.6, 6.0, and 10.8°; for iso-AmOH 12.0, 17.3, 18.8, 19.3, and 20.0 g./sec.² and 3.8, 5.1, 5.0, 7.2, and 18.5°; for PrCOOH 4.3, 8.7, 11.4, 14.4, and 15.0 g./sec.² and 3.7, 10.0, 14.0, 20.0, and 23.2°; and for isovaleric acid 7.1, 12.0, 14.0, 19.8, and 18.4 g./sec.² and 3.5, 6.0, 14.4, 24.6, and 30.5°. From these data the adsorption of the additive was calculated by 2 different methods. Contrary to the case of aq. solns., $\Delta\sigma$ in PhNO₂ depends on the nature of the polar group rather than on the chain length. The dependence of adsorption on system, is different for solns. in PhNO₂ and in PhNH₂. J. J. Mikusman

DEVYATYKH, G. G.

USSR/Atomic and Molecular Physics - Statistical Physics. Thermo- D-3
dynamics.

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 8986

Author : Devyatykh, G.G., Zorin, A.D.

Inst : ~~Gorkiy~~ University ; *Inst. Chem.*

Title : Determination of the Relative Vapor Pressures of $C^{13}H_4$ and O_2^{18} by the Rayleigh Distillation Method.

Orig Pub : Zh. fiz. khimii, 1956, 30, No 5, 1133-1139

Abstract : The Rayleigh distillation method was used to determine the relative vapor tension of $C^{13}H_4$ and O_2^{18} in the temperature range from the normal boiling point to the triple point. The results of the measurements are expressed by the following equations:

$$\ln(P_{C^{13}H_4} / P_{C^{12}H_4}) = 0.00396 + 0.6686/T,$$

$$\ln(P_{O_2^{18}} / P_{O_2^{16}}) = 0.849/T - 0.000451.$$

In the authors' opinion, CH_4 is best used for concentrating C^{13} by the fractional distillation method; to use O_2 for the concentration of O^{18} makes no sense (it is more convenient to fractionalize the water).

УДК 621.372.001.01

PHASE I BOOK EXPLOITATION 307/1297

Yessoyuznaya nauchno-tekhnicheskaya konferentsiya po primeneniyu radioaktivnykh i stabil'nykh izotopov i izlucheniya v narodnoy khozyaystve i nauke, Moscow, 1957

Pol'zovaniye izotopov. Nauchnyye gamma-ustanovki. Radiometriya i dosimetriya; trudy konferentsii... (Isotope Production and High-energy Gamma-Radiation Facilities...)

Sponsoring Agency: Akademiya nauk SSSR; Glavnoye upravleniye po ispol'zovaniyu atomnoy energii SSSR.

Editorial Board: Prolov, Yu.S. (Resp. Ed.), Zhavoronkov, M.N., V.V. Lashchinskiy, N.I. Mal'ko, A.K. Alekseyev, B.A. Kochkarev, Popova, G.B. (Secretary); Tech. Ed.: Novichkov, K.D.

PERSONS: This collection is published for scientists, technologists, persons engaged in medicine or medical research, and others concerned with the production and/or use of radioactive and stable isotopes and radiation.

COVERAGE: Thirty-eight reports are included in this collection under three main subject divisions: 1) production of isotopes; 2) high-energy gamma-radiation facilities; and 3) radiometry and dosimetry.

TABLE OF CONTENTS:

PART I. PRODUCTION OF ISOTOPES

Prolov, Yu.S., V.V. Kochkarev, and Ye.Ye. Kulish. Development of Isotope Production in the Soviet Union. This report is a general survey of production methods, apparatus, raw materials, applications, investigations, and future prospects for radio isotopes in the Soviet Union. card 2/12

Mulensford, Yu.K., G.O. Zivert, and T.A. Gagva. A Rectification Column for Obtaining 273. Enriched With 127 A method is described for enriching natural mixtures of B10 containing ~18.6 percent B10 concentration to ~80 percent B10 concentration by low temperature (~100 degrees Celsius) adiabatic rectification. Separation capability: stated B10 of 95-96 percent purity after 480 hours processing, but, as the desired purity after 480 hours percent, separation yield was 4 liters per 24 hours. Block diagrams of installations are given.

Zavoronkov, M.N., O.V. Umrov, and S.I. Babkov. Research on the Separation of Stable Isotopes of Light Elements 131 Funitakiy, M.N., G.G. Kazhalkh, M.V. Tikhomirov, A.D. Zorin, and M.K. Nikolayev. Separation of Carbon Isotopes 143

Card 6/12

27
 4F-4j-6
 Determination of solubility of carbon dioxide in aqueous solutions of sulphuric acid by the method of isopiestic dilution. M. K. Snehennikova, G. G. Deryuzh, and I. A. Korshunov (State Univ., Gorki). *Zhur. Priklad. Khim.* 30, 833-9 (1957).—The soly. of CO₂, obtained from mixts. of NaHCO₃ + BaCO₃ with 10% H₂SO₄ in aq. H₂SO₄ was detd. The plots of the soly. N₂ (mole fractions) vs. the concn. C of H₂SO₄ passed through a sharp min. the depth of which decreased as the temp. rose from 20 to 60°. The initial decrease in N₂ up to C = 30%, was ascribed to the electrolytic properties of dil. H₂SO₄. The max. at about 55% H₂SO₄ and the 2nd min. at about 85% H₂SO₄ were attributed to the effect of the hydrates H₂SO₄·4H₂O and H₂SO₄·H₂O, resp. The temp. coeff. of N₂ in all solns, was neg. The heat of diln., calcd. from the log N₂ vs. 1/T curves decreased as C increased. I. Benconitz

for
 0006

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E3

Determination of solubility of carbon dioxide in aqueous solutions of sodium sulfates and mixtures of sodium sulfate with sulfuric acid by means of isotopic dilution. M. K. Shechemenkova, G. G. Devyatikh, and A. Kerzhunov (N. I. Lobachevskii State Univ., Kazan, U.S.S.R.). *Dokl. Akad. Nauk SSSR*, 1968, 180, 1050-1052; in *Chem. Abstr.*, 1968, 68, 12088g.

The solubility of CO_2 in 0.4-3.36 N (2.84-20%) Na_2SO_4 , 0.4-2.6N Na_2SO_4 in 0.25% H_2SO_4 , 0.4-1.34N H_2SO_4 , 0.2% H_2SO_4 , and in 0.4N H_2SO_4 in 30, 4.5, and 2.3% H_2SO_4 at 25-65° was determined by the method of isotopic dilution. N_0 (mol. fraction) of Na_2SO_4 increased. The plots $\log(N_0/N_1)$ vs. C were linear functions, $\log(N_0/N_1)$ increased with C and with the temp. $N_0 = N_1 - kC$, where N_0 is the solubility of CO_2 in H_2O , and k at 25, 30, 40, 50, and 75° was 0.65, 0.70, 0.80, and 1.63, respectively.

MT

Devyatykh

DEVYATYKH, G.G.

Calculating the isotopic effect in the vapor tension of water
and methane (with summary in English). Zhur.fiz.khim.31
no.7:1445-1447 J1 '57. (MIRA 10:12)

1. Gor'kovskiy gosudarstvennyy universitet, Institut khimii.
(Vapor pressure) (Water) (Methane)

SOV/81-59-13-45045

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 13, p 46 (USSR)

AUTHOR: Devyatykh, G.G.

TITLE: The Application of the Statistical Method for Calculating the Isotope Effect in the Vapor Pressure

PERIODICAL: Tr. po khimii i khim. tekhnol., 1958, Nr 2, pp 239 - 249

ABSTRACT: The method of calculating the ratio of the pressure of isotope vapors developed by Lindemann (F.A. Lindemann, Philos. Mag., 1919, Vol 38, p 173) has been generalized to multiatomic molecules and biatomic molecules with a polar bond. Using the formulae of the statistical thermodynamics the author has obtained equations which he employs for calculating the ratio of the vapor pressure of $C^{12}H_4$ and $C^{13}H_4$; CH_4 and CD_4 ; H_2O^{16} and H_2O^{18} ; H_2O and D_2O ; $C^{12}O$ and $C^{13}O$; CO^{16} and CO^{18} at the temperature of the ternary point of these substances. The results agree with the experimental data of other authors. Some quantitative regularities have been shown.

Card 1/1

N. Pestunovich

AUTHORS: Devyatykh, G. G., Zorin, A. D., Yezheleva, A. Ye. SOV/156-58-4-28/49

TITLE: The Analysis of the Mixture of Divinyl, the Isomers of Butane and Butylene by the Method of Gas-Liquid Distribution Chromatography (Analiz smesi divinila, izomerov butana i butilena metodom gazo-zhidkostnoy raspredelitel'noy khromatografii)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 4, pp 724-726 (USSR)

ABSTRACT: In the present paper a new method of analyzing the mixtures of divinyl, the isomers of butane and butylene by means of the gas-liquid distribution chromatography was described. The apparatus is described and the method is given in detail. Nitrogen was used as elution gas and kieselguhr with the grain size 0.1-0.25 mm was used as adsorbing agent. The following solvents were used: dimethyl formamide, saturated solution of $AgNO_3$ in ethylene glycol, furfurole and nitrobenzene. The chromatographs of the mixtures are given in table 3 and 2. The maximum length of the column is 5m. A complete separation of the component is obtained in the following way: The first part of the column,

Card 1/2

The Analysis of the Mixture of Divinyl, the Isomers of Butane and Butylene
by the Method of Gas-Liquid Distribution Chromatography

SOV/156-58-4-28/49

1.5m in length, contains saturated silver nitrate in ethylene glycol as solvent. The second part of the column, 3m in length, contains furfurole as solvent. The accuracy of the method was checked by means of the synthetic mixtures and it was ascertained that the relative error in the determination is 2-3% and that the preparation of the chromatographs takes 25 min. There are 3 figures, 1 table, and 1 reference.

ASSOCIATION: Kafedra neorganicheskoy khimii Gor'kovskogo gosudarstvennogo universiteta im. N. I. Lobachevskogo (Chair of Inorganic Chemistry at the Gorkiy State University imeni N. I. Lobachevskiy)

SUBMITTED: April 25, 1958

Card 2/2

A Laboratory Rectification Column for the
Separation of Higher-Boiling Admixtures

32-24-4-56/67

relays. A schematical plan of the current supply for the column is given. The headpiece of the column is also filled with rimlets made from Ni/Cr-wire. Heat insulation is brought about by a silver-plated evacuated tube as well as by an asbestos insulation on the outer casing. In the upper part of the column there is a container with a holding capacity of two liters into which the liquid is filled through the cooler, whereas a heater is fitted to the lower part of the container, which warrants a convective mixture of the liquid. At the side of the container a feedpipe leading to and from the column is fitted: above for the condensate flowing in, and below for the feeding of the column. In order to determine the number of "ideal plates" the differential method with a benzene-dichloroethane mixture was carried out. A.S.Yemelin and N.Kh.Agzilov assisted in these investigations. There are 3 figures and 4 references, 3 of which are Soviet.

ASSOCIATION: Institut khimii pri Gor'kovskom gosudarstvennom universitete
(Institute for Chemistry of Gor'kiy State University)

Card 2/2

1. Towers (Chemistry)--Design
2. Towers (Chemistry)--Equipment
3. Towers (Chemistry)--Applications

AUTHORS: Tunitskiy, N. N., ~~Devyatikh, G. G.,~~ 57-28-4-32/39
Petrov, P. S., ~~Torlin, B. Z.~~

TITLE: The Separation of Carbon Isotopes by the Thermodiffusion of Carbon Monoxide (Razdeleniye izotopov ugleroda termodiffuziyey okisi ugleroda)

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1958, Vol. 28, Nr 4, pp. 881-885 (USSR)

ABSTRACT: The investigations described here had already been terminated in 1953, when reference 9 was published. - The separation of carbon isotopes by means of the thermal diffusion of carbon monoxide in glass towers with a diameter of 9 and 14,5 mm, a length of 1 and 2 m with a platinum wire of 0,4 - 0,6 mm diameter as a heating-element were investigated here. The experimental results are in agreement with the theory by Dzhons (Jones ?) - Ferri - Onsager. - It is shown that in a number of cases the use of carbon monoxide as working gas has certain advantages as compared to the use of methane. The ratio of the separating factor of carbon to that of oxygen differs from the theoretical value. The latter is equal to 2.

Card 1/2 The magnitude of the deviation depends on the steam-content

The Separation of Carbon Isotopes by the Thermodiffusion of Carbon Monoxide 57-28-4-32/39

in the gas.

There are 5 figures, 3 tables, and 12 references, 3 of which are Soviet.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova, Moskva
(Moscow, Physical-Chemical Institute imeni L. Ya. Karpov)

SUBMITTED: April 17, 1956

Card 2/2

DEVYATYKH, G.G.; ZORIN, A.D.; NIKOLAYEV, N.I.

Study of carbon and oxygen isotope distribution by the fractional
distillation of the oxides of carbon, methane and molecular oxygen.
Zhur.prikl. khim. 31 no.3:368-375 Mr '58. (MIRA 11:4)
(Carbon--Isotopes) (Oxygen--Isotopes) (Distillation, Fractional)

28(4)

AUTHORS:

Devyatykh, G. G., Zorin, A. D.,
Danov, S. M.

05764

SOV/32-25-10-53/63

TITLE:

Automatic Laboratory Rectification Column for Low Temperatures

PERIODICAL:

Zavodskaya laboratoriya, 1959, Vol 25, Nr 10, pp 1271-1272
(USSR)

ABSTRACT:

An automatic low-temperature rectification column was produced for laboratory purposes from molybdenum glass (Fig). The middle rectification tube (inner diameter 11 mm, length 2 m) is spiral-shaped at its lower end (length 120 mm, inner diameter 5 mm) for the purpose of compensating the extension of heat of the glass. The entire rectification tube is located in a silver-plated envelope which is evacuated to $2 \cdot 10^{-6}$ torr (at 200°). The rectification tube is filled with bodies in form of tetrahedral spirals (2×2 mm) made from constantan wire (diameter 0.2 mm). The condenser at the upper end of the rectification tube is of brass and contains ethanol, which is cooled down to the desired temperature by means of liquid nitrogen in an ultrathermostat of the type Vobser. The evaporation piston of the column is cylindrical (200 mm) and is electrically heated. The evaporation rate of the investigated

Card 1/2

Automatic Laboratory Rectification Column for Low
Temperatures

05764
SOV/32-25-10-53/63

gas is regulated by means of a contact manometer. The rectification column has an automatic sampling device which is controlled by means of an electromagnetic cock by way of an electronic time relay, which was constructed by L. P. V'yukhin and E. M. Yashin. The gas sample taken is frozen in liquid nitrogen in a collecting vessel. The column has a system for stabilizing pressure in the column. The temperature of the vapors in the column cupola is recorded by means of a thermocouple (copper-constantan) on a self-recording device of the type EPP-09-1. The efficiency of the column corresponds to 35 theoretical plates and was determined in a α -butylene-isobutylene mixture, the separation coefficient (at -7.01°) amounting to 1.042. There are 1 figure and 2 Soviet references.

ASSOCIATION: Gor'kovskiy gosudarstvennyy universitet im. N. I. Lobachevskogo (Gor'kiy State University imeni N. I. Lobachevskiy)

Card 2/2

5(4), 10(4)

AUTHORS:

Devyatykh, G. G., Agliulov, N. Kh.,
Trolov, I. A.

807/76-33-1-27/45

TITLE:

The Influence of the Velocity of the Distillate Withdrawal on the Separating Efficiency of Rectification Columns (Vliyaniye skorosti othora destillyata na razdelitel'nuyu sposobnost' rektifikatsionnykh kolonn)

PERIODICAL:

Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 1, pp 161-164 (USSR)

ABSTRACT:

In this investigation Cohen's theory (Koen)(Ref 1) is tested experimentally. The function between the withdrawal quantity and the concentration of the component under consideration in the withdrawal was investigated, starting from the assumption that the velocity of the substance exchange of the phases depends on the difference of the equilibrium concentration and the current concentration of the component under consideration. The conditions of a rectification column without withdrawal (Fig 1) were explained by using Cohen's material balance equation; likewise, the conditions of a column with withdrawal were explained. The equations deduced were verified at a distillation with various withdrawals of a

Card 1/2

The Influence of the Velocity of the Distillate
Withdrawal on the Separating Efficiency of Rectification Columns

SOV/76-55-1-27/45

benzene-diethane chloride mixture on two rectification columns with the effect of 35 theoretic plates. A description of the column and dimension data are given. The analyses were carried out by means of an Abbé-refractometer. Six series of tests were carried out (Figs 2, 3). The experimental data obtained correspond to those obtained from the equation deduced. Cohen's equation, however, shows lower values of the allowed withdrawal velocity. There are 3 figures and 2 references.

ASSOCIATION: Gor'kovskiy gosudarstvennyy universitet
(Gor'kiy State University)

SUBMITTED: July 4, 1957

Card 2/2

DEVYATYKH, G.G.; AGIULOV, N.Kh.

Effect of the take-off rate on the efficiency of film rectifying
columns. Zhur. fiz. khim. 34 no. 11:2509-2512 N '60.
(MIRA 14:1)

1. Nauchno-issledovatel'skiy institut khimii pri Gor'kovskom
gosudarstvennom universitete.
(Distillation)

AGLIULOV, N. Kh.; DEVYATYKH, G.G.

Laboratory wetted-wall rectification column for separating low- and high-boiling impurities. Zav.lab. 27 no.3:350-352 '61. (MIRA 1413)

1. Gor'kovskiy gosudarstvennyy universitet im. N.I. Lobachevskogo.
(Distillation apparatus)

S. 2400

S/080/61/034/008/003/018
D204/0305

AUTHORS:

Devyatykh, G.G., Odnosevtsev, A.I. and Umilin, V.A.

TITLE:

Fine purification of sulphur by the heat method

PERIODICAL:

zhurnal prikladnoy khimii, v. 34, no. 8, 1961, 1696-1699

ABSTRACT: In the present work a method of purifying sulphur for use in semiconductor production is described. The process is based on boiling sulphur under pressure of nitrogen or on heating its vapor to 900 - 1000°C, followed by vacuum distillation. The apparatus for the purpose is represented in fig. 1, and consists basically of a tempered glass reactor of 300 ml capacity which fits into an electric furnace. The process is started by introducing about 400 g of pure sulphur into the reactor and slowly melting it. When the evolution of gases ceases nitrogen pressure of 5 - 6 mm is applied and the furnace temperature increased to 630 - 650°C until the sulphur boils. The pressure in the reactor is chosen such that a given temperature the sulphur condensation ring remains within the reactor.

Card 1/3

Line purification of sulphur

5/080/61/034/008/003/012
0204/5305

As the preliminary heating is completed the reactor is cooled to 180 - 150° and the sulphur transferred into a receiver, from which it is subsequently distilled at 5 - 10 mm Hg pressure. The distillation residues contain mainly bitumens of organic origin and their quantity depends on the temperature of preheating. To establish the nature of those bitumens, the gases and the residue were examined. By absorbing H₂, the main component of the gases, it was possible to determine hydrogen content of the bitumen. While ignition of the residues permitted the determination of the carbon content. For obtaining sulphur with low bitumen content sulphur vapors were subjected to heating in an apparatus, in which droplets of boiling sulphur were passed into a 15 mm diameter tube heated to 900 - 1000° at a rate of 10 g/min. In the tube sulphur was vaporized and the vapors heated to decompose the bitumen. The condensed sulphur was blown with air to remove carbon collected in the tube followed by distillation in vacuum to remove solid carbon particles and dissolved gases. The procedure may be repeated several times, depending on the desired standard of purity of the

Card 2/3

25221

S/080/61/034/008/003/018
D204/D305

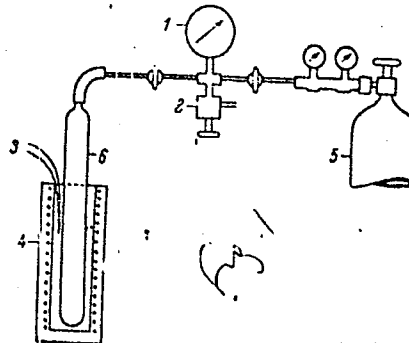
Fine purification of sulphur...

final sulphur. Heat treatment of sulphur permits also the removal of other impurities such as Cr, Ni, Ag, Cu, Al, As and the halogens. It was possible to obtain sulphur samples containing not more than $1 \times 10^{-4}\%$ of impurities. There are 4 figures, 2 tables and 11 references: 7 Soviet-bloc and 4 non-Soviet-bloc.

ASSOCIATION: Gor'kovskiy gosudarstvennyy universitet im. N.I. Lobachevskogo (Gor'kiy State University im. N.I. Lobachevskiy)

SUBMITTED: July 16, 1960

Fig. 1 Legend: Apparatus for the heat treatment of sulphur. 1 - monometer; 2 - valve; 3 - thermocouple; 4 - electric furnace; 5 - nitrogen cylinder; 6 - glass reactor.



Card 3/3

DEVYATYKH, G.G.; BORISOV, G.K.; PAVLOV, A.M.

Separation of silicon isotopes by monosilane rectification. Dokl.
AN SSSR 138 no.2:402-404 My '61. (MIRA 14:5)

1. Nauchno-issledovatel'skiy institut khimii pri Gor'kovskom
gosudarstvennom universitete im. N.I.Lobachevskogo. Predstavleno
akademikom A.N.Frumkinym.

(Isotope separation) (Silicon--Isotopes)

DEVYATYKH, G.G.; ODNOSEVTSEV, A.I.; UMILIN, V.A.

Liquid - vapor equilibrium in the sulfur - selenium system.
Zhur. neorg. khim. 7 no.8:1928-1932 Ag '62. (MIRA 16:6)

1. Gor'kovskiy gosudarstvennyy universitet imeni N.I. Lobachevskogo
kafedra neorganicheskoy khimii.
(Sulfur) (Selenium)
(Phase rule and equilibrium)

FRGLOV, I.A.; AGLEULOV, N.Kh.; DEVYATYKH, G.G.

Laboratory wetted-glass wall rectification column. Zav.lab.
28 no.6:750 '62. (MIRA 15:5)

1. Gzri'kovskiy gosudarstvennyy universitet imeni N.I.
Lobachevskogo.

(Distillation apparatus)

DEVYATYKH, G.G.; ZORIN, A.D.; DUDOROV, V.Ya.; YEZHELEVA, A.Ye.; SMOLYAN, Z.S.

Separation of bivinyl from the butane-butylene fraction by
extractive rectification. Zhur.prikl.khim. 35 no.7:1597-1601
JI '62. (MIRA 15:8)

(Butadiene) (Butane) (Extraction (Chemistry))

S/080/62/035/009/004/014
D204/D307

AUTHORS: Devyatykh, G.G., Odnosevtsev, A.I., Umilin, V.A., and
Balabanov, V.V.

TITLE: The purification of sulfur from selenium by rectifica-
tion

PERIODICAL: Zhurnal prikladnoy khimii, v. 35, no. 9, 1962,
1946 - 1949

TEXT: The authors rectified S containing a few percent of Se on a column 16 mm in dia., packed with glass rings (5 mm dia.) to heights of 30 (I) and 146 cm (II), under N₂, at pressures of 400 - 760 (I) and 760 - 1460 mm Hg (II). The separation factor of the column, $F = \frac{N_R(1 - N_D)}{N_D(1 - N_R)}$ where N_R and N_D are the atom fractions of Se in the residue and distillate respectively) increased rapidly with pressure (for II, F was 113 and 1440 respectively at 760 and 1460 mm Hg) and rose slowly with diminishing rate of condensation. F was also considerably increased by increasing the height of packing in the column. Experiments with 146 cm of packing, at 760 and at 1350
Card 1/2

The purification of sulfur from ... S/080/62/035/009/004/014
D204/D307

mm Hg, on sulfur containing 2×10^{-3} to 3×10^{-3} % Se yielded a product containing $\leq 1 \times 10^{-4}$ % Se in the most favorable and 2.5×10^{-4} % Se in the least favorable case. The mean separation coefficient α ($\frac{\delta\alpha}{\alpha} = \frac{1}{n} \cdot \frac{\delta F}{F}$, where n is the number of theoretical plates of the column) was found to be 1.074 ± 0.005 for solutions containing 3×10^{-3} to 1×10^{-4} % Se. It is thought that S containing as little as 1×10^{-5} % Se may be obtained by this method. The authors acknowledge the assistance of L.M. Vinogradova and N.N. Proskurina with the experimental work. There are 2 figures and 2 tables. ✓

ASSOCIATION: Gor'kovskiy gosudarstvennyy universitet imeni N.I. Lobachevskogo (Gor'kovskiy State University, imeni N.I. Lobachevskiy)

SUBMITTED: June 22, 1961

Card 2/2

ACCESSION NR: AR4015644

S/0081/63/000/022/0380/0380

SOURCE: RZh. Khimiya, Abs. 22L58

AUTHOR: Devyaty*kh, G. G.; Umilin, V. A.; Odnosevtsev, A. I.

TITLE: Obtaining sulfur of special purity

CITED SOURCE: Tr. po khimii i khim. tekhnol (Gor'kiy), no. 2, 1962, 306-315

TOPIC TAGS: sulfur, sulfur production, sulfur purification, sulfur thermal purification, sulfur rectification

TRANSLATION: A thermal method was developed for the purification of sulfur from bitumen. Samples of sulfur containing 4.10-5% of bituminite were obtained. The thermal method helps to free the sulfur from admixtures of metals, arsenic, and halogens. A method was also developed for freeing sulfur from selenium by rectification of elemental sulfur. Samples of sulfur with a selenium content of 1.10-5% were obtained. 33 references. Authors' summary.

DATE ACQ: 07Jan64

SUB CODE: CH

ENCL: 00

Card 1/1

AGAFONOV, I.L.; DEVYATYKH, G.G.; FROLOV, I.A.; LARIN, N.V.

Mas spectrum of monogermene. Zhur. fiz. khim. 36 no.6:1367-
1368 Je'62 (MIRA 17:7)

1. Gor'kovskiy universitet imeni Lobachevskogo.

DOZOROV, V.A.; DEVYATYKH, G.G.; YELLIYEV, Yu.Ye.

Rectification Kinetics of binary mixtures. Zhur. fiz. khim.
36 no.11:2413-2418 N'62. (MIRA 17:5)

1. Nauchno-issledovatel'skiy institut khimii i Fiziko-
tekhnicheskoy institut pri Gor'kovskom gosudarstvennom
universitete imeni Lobachevskogo.

DEVYATYKH, G.G.; AGLIULOV, N.Kh.; ELLIYEV, Yu.Ye.

Determination of the liquid - vapor equilibrium in the binary systems
by the method of rectification column. Trudy po khim.i khim.tekh.
no.1:174-181 '63. (MIRA 17:12)

DEVYATYKH, G.G.; UMLIN, V.A.; RUNOVSKAYA, I.V.

Liquid-vapor equilibrium in the system sulfur - selenium
at elevated pressure. Zhur.neorg.khim. 8 no.1:149-152 Ja '63.
(MIRA 16:5)

1. Gor'kovskiy gosudarstvennyy universitet imeni N.I.Lobachevskogo.
(Sulfur) (Selenium) (Phase rule and equilibrium)

DEVYATYKH, G. G.

The Second All-Union Conference on the Preparation and Analysis of High-Purity Elements, held on 24-28 December 1963 at Gorky State University im. N. I. Lobachevskiy, was sponsored by the Institute of Chemistry of the Gorky State University, the Physicochemical and Technological Department for Inorganic Materials of the Academy of Sciences USSR, and the Gorky Section of the All-Union Chemical Society im. D. I. Mendeleev. The opening address was made by Academician N. M. Zhavoronkov. Some 90 papers were presented, among them the following:

N. V. Larin, G. G. Devyatykh, and I. L. Agafonov -- a spectrochemical -- and A. D. Zorin and A. M. Amel'chenko -- a chromatographic control method of Si purification by determination of extraneous volatile hydrides in monosilane.

(Zhur ANAL. Khim, 19, No. 6, 1964 (p. 777-79))

DEVYATYKH, G.G.; FROLOV, I.A.

Vapor pressure of liquid germane. Zhur.neorg.khim. 8 no.2:265-268
F '63. (MIRA 16:5)

1. Nauchno-issledovatel'skiy inst'tut khimii pri Gor'kovskom
gosudarstvennom universitete imeni N.I.Lobachevskogo.
(Germanium hydrides) (Vapor pressure)

L 10659-63

EWI(m)/BDS--AB

ACCESSION NR: AP3001210

S/0078/63/008/006/1307/1313

AUTHOR: Devyatikh, G. G.; Ezheleva, A. Ye.; Zorin, A. D.; Zuyeva, M. V.

TITLE: Solubility of volatile hydrides of group III-VI elements in certain solvents

SOURCE: Zhurnal neorganicheskoy khimii, v. 8, no. 6, ^{1963.} ~~1863~~, 1307-1313

TOPIC TAGS: solubility, hydrides, group III-VI elements, gas-liquid partition chromatography, separating mixtures, extractive rectification, distribution coefficient, B; C, Si, Ge, Sn, P, As, Sb, S, Se

ABSTRACT: Gas-liquid partition chromatography was used to determine the solubility of B, C, Si, Ge, Sn, P, As, Sb, S and Se hydrides in a variety of solvents. Since some of the solvents are selective in regard to the series of hydrides, this affords a method for separating mixtures of these volatile hydrides by extractive rectification. Work was done to determine dependence of the distribution coefficient of the hydrides and their molecular weight, element-hydrogen bond length, boiling and critical temperatures. Orig. art. has: 1 figure, 9 tables, 4 equations.

Card 1/2

L 10659-63

ACCESSION NR: AP3001210

ASSOCIATION: none

SUBMITTED: 100ct62

DATE ACQD: 01Jul63

ENCL: 00

SUB CODE: 00

NO REF SOV: 005

OTHER: 030

0

kes/B
Card 2/2

L 13508-63

BDS

ACCESSION NR: AP3003468

8/0078/63/008/007/1555/1558

AUTHOR: Agafonov, I. L.; Devynty*kh, G. G.; Larin, N. V.

TITLE: Mass-spectra of silicon tetrachloride

SOURCE: Zhurnal neorganicheskoy khimii, v. 8, no. 7, 1963, 1555-1558

TOPIC TAGS: mass-spectrum, silicon tetrachloride, 1305 mass-spectrometer

ABSTRACT: The authors wanted to get more complete mass-spectra of silicon tetrachloride inasmuch as this data is only partially described in existent literature. The mass-spectra were taken on a MI-1305 mass-spectrometer. This apparatus is shown in a sketch. The mass-spectra which were obtained are given in a table. Data obtained by the authors differs greatly with data obtained by Sokolov, Andrianov and Akimov (Zh. obshch. khimii, 25, 1955, 675). Authors show that computed ratios among various isotopic variations of the ions are in close agreement with experimental data. The small deviations have a uniform character. In all of the experimental cases examined, the ratio of the values, corresponding to the odd mass numbers, is larger and the ratio of the values, corresponding to the even mass numbers, to the values for odd masses is smaller. Orig. art. has: 3 tables and 1 figure.

Card 1/21

Scientific Research Inst. for Chemistry

ZORIN, A.D.; YEZHELEVA, A.Ye.; DEVYATYKH, G.G.

Determination of the solubility of gases by the method of
gas-liquid partition chromatography. Zav. lab. 29 no. 6:659-662
'63. (MIRA 16:6)

1. Nauchno-issledovatel'skiy institut khimii pri Gor'kovskom
gosudarstvennom universitete.

(Gases) (Solubility)
(Gas chromatography)

DEVYATYRNH, G. G.

L 18871-63

EPF(c)/EWT(m)/BDS Pr-4 WW/JW

ACCESSION NR: AP3006616

S/0076/63/037/009/1985/1988

59
58

AUTHORS: Devyatykh, G. G.; Borisov, G. K.

TITLE: Separation of silicon isotopes by thermal diffusion of monosilane

SOURCE: Zh. fizicheskoy khimii, v. 37, no. 9, 1963, 1985-1988

TOPIC TAGS: monosilane, thermal diffusion, silicon, silicon isotope, silane, Onsager theory

ABSTRACT: Possibility of separation of silicon isotopes by thermal diffusion has been investigated. Monosilane was employed in this study because the relative difference in masses of isotope molecules is greater in monosilane than in any other silicon compound. Separation was carried out on a coaxial cylindrical column with 2 mm gap, 46 mm inside diameter and 102 cm long working surface. The experimental results are in agreement with the Johns-Ferry-Onsager Theory. Parameters of the ideal cascade for producing 1 gm of monosilane per 24 hours containing 20 atom-percent of Si-30 have been determined. "We wish to express our appreciation to E. I. Ovcharenko for his assistance in conducting the experiments." Orig. art. has: 3 figures and 2 tables.

Card

1/2

Larkiy Univ in N.I. Lobachevskiy

YELLIYEV, Yu.Ye.; DEVYATYKH, G.G.; DOZOROV, V.A.

Rectification kinetics of binary mixtures in a column operating under conditions of the drawing off of products. Zhur.fiz.khim. 37 no.10: 2179-2183 0 '63. (MIRA 17:2)

1. Nauchno-issledovatel'skiy institut khimii i fiziko-tekhnicheskoy institut pri Gor'kovskom gosudarstvennom universitete imeni N.I. Lobachevskogo.

L 16968-63

EWT(m)/BLS AB

S/020/63/149/006/008/027

AUTHOR: Devyatikh, G. G., and Borisov, G. K.

TITLE: Separation of silicon isotopes in monosilane by the thermal diffusion method

PERIODICAL: Akademiya nauk SSSR. Doklady. v. 149, no. 6, 1963, 1293-1294

TEXT: The authors investigated the possibility of separating silicon isotopes by the thermal diffusion method. Monosilane was used as the working gas, because the relative difference in the masses of isotope molecules for this gas is greater than for any other silicon compound. The experiments were performed in a metal column of the coaxial cylinder type, the inner cylinder having a temperature of 250°C and the outer being water-cooled to ~ 15°C. A relationship was plotted between the pressure of monosilane in atmospheres and the separation factor. There is 1 figure. The most important English-language reference reads as follows: C. P. Keim, J. Appl. Phys., 24, 1255 (1953).

ASSOCIATION: Nauchno-issledovatel'skiy institut khimii pri Gor'kovskom gosudarstvennom universitete im. N. I. Lobachevskogo (Scientific Research Institute of Chemistry, Gor'kiy State University imeni N. I. Lobachevskiy)

SUBMITTED: June 28, 1962

Card 1/1

DEVYATYKH, Grigoriy Grigor'yevic , doktor khim. nauk, prof.;
PAVLOV, Aleksey Mironovich; ODNOSEVTSEV, Aleksandr
Ivanovich; MIRONOV, Nikolay Nikolayevich;
SHUSHUNOVA, Ada Fedorovna; ALAVERDOV, Ya.G., red.

[Manual of laboratory work in inorganic chemistry] Ru-
kovodstvo k prakticheskim zaniatiyam po neorganicheskoi
khimii. Izd.2., ispr. i dop. Moskva, Vysshaya shkola,
1964. 282 p. (MIRA 17:6)

LARIN, N.V.; DEVYATYKH, G.G.; AGAFONOV, I.L.

Mass spectra of phosphine and arsine. Zhur.neorg.khim. 9 no.1:205-207
Ja '64. (MIRA 17:2)

1. Gor'kovskiy gosudarstvennyy universitet imeni Lobachevskogo.

L 2h188-65 EWT(m) / EPT(c) / E.P(j) Pc-1 / Pr-1 EM

ACCESSION NR: AP4048303

S/0078/64/009/011/2526/2531

AUTHOR: Zorin, A. D.; Devyat'nikh, G. G.; Dudorov, V. Ya.; Amel'chenko, A. M. 8

TITLE: Analysis of mixtures of certain volatile inorganic hydrides by the gas-liquid partition chromatographic method

SOURCE: Zhurnal neorganicheskoy khimii, v. 9, no. 11, 1964, 2526-2531

TOPIC TAGS: gas liquid chromatography, volatile inorganic hydride, determination, quantitative analysis, silane, germane, phosphine, arsine, hydrogen sulfide, hydrogen, ethane, ethylene

ABSTRACT: Gas-liquid partition chromatographic analysis was used for the quantitative determination of mixtures of volatile inorganic hydrides of groups IV, V and VI elements of the periodic system. To obtain a suitable elutriating gas a system was worked out for cleaning nitrogen of moisture (to $7-8 \times 10^{-5}\%$) and oxygen (to $4.1 \times 10^{-3}\%$). Al_2O_3 and diatomaceous earth of 0.25-5 mm grain size were used as carriers. The Al_2O_3 was wetted with polyethylsiloxane liquid /5

Card 1/2

L 24188-65

ACCESSION NR: AP4048303

3

VKZh-94B. Didecylphthalate, ethyl cellosolve, silicon oil 702C, polymethylphenyl siloxane liquid PFMS-4F, VKZh-94B, and paraffin oil were tested as solvents for the hydrides on diatomaceous earth. The sensitivity, in mg/ml³, of the chromatographic analysis of a mixture of hydrides on a column of diatomaceous earth wetted with PFMS-4F silicone oil was: silane 2.9×10^{-6} , germane 9.0×10^{-5} , phosphine 2.0×10^{-4} , arsine 4.2×10^{-4} , hydrogen sulfide 9.4×10^{-4} and hydrogen 3.5×10^{-6} . The sensitivity of the analysis on an Al₂O₃ column treated with VKZh-94B silicone oil was: silane 4.4×10^{-6} , phosphine 9.4×10^{-4} , ethane 1.0×10^{-4} , ethylene 3.1×10^{-4} , arsine 1.6×10^{-3} , and germane 6.3×10^{-5} . Orig. art. has: 5 tables and 5 figures

ASSOCIATION: None

SUBMITTED: 11Jul68

ENCL: 00

SUB CODE: IC, GC

NR REF SOV: 006

OTHER: 024

Card 2/2

ACCESSION NR: AP4034582

S/0076/64/038/004/0957/0962

AUTHOR: Devyatykh, G. G.; Yushin, A. S.

TITLE: Equilibrium constants of the thermal dissociation reaction of simple volatile hydrides of the Group III-VI element hydrides.

SOURCE: Zhurnal fizicheskoy khimii, v. 38, no. 4, 1964, 957-962

TOPIC TAGS: Group III hydride, Group IV hydride, Group V hydride, Group VI hydride, B sub 2 H sub 6, CH sub 4, SiH sub 4, GeH sub 4, PH sub 3, AsH sub 3, SbH sub 3, H sub 2 S, H sub 2 Se, H sub 2 Te, H sub 2, P sub 4, As sub 2, Sb sub 2, S sub 2, Sc sub 2, Te sub 3, thermal dissociation, volatile hydride, equilibrium constant, isobaric isothermal potential, heat effect

ABSTRACT: The equilibrium constants for the thermal dissociation of the hydrides B_2H_6 , CH_4 , SiH_4 , GeH_4 , PH_3 , AsH_3 , SbH_3 , H_2S , H_2Se , and H_2Te as well as of the elements H_2 , P_4 , As_2 , Sb_2 , S_2 , Se_2 , Te_3 were calculated for the temperature interval of 300-1300K. Equilibrium constants of homogeneous gaseous reactions

$$\Delta H_{1,2} = \frac{1}{m} \Delta_m + nH_2$$

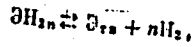
Card 1/3

ACCESSION NR: AP4034582

were calculated by the statistical method from spectral characteristics of the molecules by the equation:

$$K_{PI} = \frac{Q_m^{1/m} Q_{H_2}}{Q_{MH_n}} e^{-\Delta H_{PI}^{\circ}/RT}$$

where Q_m , Q_{H_2} , Q_{MH_n} are the statistical sum of elements as gas (Σ_m), hydrogen and hydride, T is in $^{\circ}K$, ΔH_{PI}° is the energy of dissociation of the hydride to the element and hydrogen. For reactions where the element separates as a solid:



equilibrium constants were calculated from:

$$R \ln K_{PI} = \Delta G^{\circ} - \frac{\Delta H_{PI}^{\circ}}{T}$$

where $\Delta G^{\circ} = \Phi_m^{\circ} + n\Phi_{H_2}^{\circ} - \Phi_{MH_n}^{\circ}$

ACCESSION NR: AP4034582

where $\phi^{\circ} = -(Z^{\circ} - H^{\circ}_O)/T$, corrected isobaric-isothermal potential of the element or compound, ΔH°_{II} is the heat effect at 0 K. All values are tabulated. The equilibrium constant values are graphically reviewed. All the hydrides except methane, phosphine and hydrogen sulfide are completely broken down to the element and hydrogen in the given temperature range. Orig. art. has: 7 tables, 2 figures and 8 equations.

ASSOCIATION: Gor'kovskiy gosudarstvennyy universitet im. N. I. Labachevskogo
(Gor'kov State University)

SUBMITTED: 25Feb63

ENCL: 00

SUB CODE: IC

NO REF SOV: 013

OTHER: 018

Card 3/3

DEVYATYKH, G.G.; ZORIN, A.D.; AMEL'CHENKO, A.M.; LYAKHMANOV, S.B.;
YEZHELEVA, A.Ye.

Chromatographic analysis of mixtures formed by some volatile
inorganic hydrides. Dokl. AN SSSR 156 no. 5:1105-1108 Je '64.
(MIRA 17:6)

1. Nauchno-issledovatel'skiy institut khimii pri Gor'kovskom
gosudarstvennom universitete im. N.I.Lobachevskogo. Predstavleno
akademikom N.M.Zhavoronkovym.

ZORIN, A.D.; DEVYATYKH, G.G.; KRUPNOVA, E.F.; KRASNOVA, S.G.

Vapor pressure of liquid monosilane and its mixtures with ethylene.
Zhur. neorg. khim. 9 no.10:2280-2283 O '64.

(MIRA 17:12)

1. Gor'kovskiy gosudarstvennyy universitet im. N.I. Lobachevskogo.

UMILIN, V.A.; AGAFONOV, I.L.; KORNEV, L.N.; DEVYATYKH, G.G.

Mass spectra of a selenium-sulfur mixture. Zhur. neorg. khim.
9 no.10:2492-2493 0 '64.

(MIRA 17:12)

ZORIN, A.D.; DEVY TYKH, G.G.; DUDOROV, V. Ya.; AMEL'CHENKO, A.M.

Analysis of mixtures of some volatile inorganic hydrides by
gas-liquid partition chromatography. Zhur. neorg. khim. 9 no.11:
2526- 2531 N '64 (MIRA 18:1)