Synthesis and Properties [illegible]
Alkanes of the Com[illegible]

There are 4 figures, [illegible] table, and 11 references, [illegible] are Soviet.

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR (Petroleum Institute [illegible] Academy of Sciences, USSR)

SUBMITTED: [illegible]

Card 4/4

5(3), 5(4) SOV/62-59-8-13/42

AUTHORS: Petrov, Al. A., Sergiyenko, S. R., Tsedilina, A. L., Nechitaylo, N. A., Sanin, P. I., Nikitskaya, Ye. A.

TITLE: Synthesis and Properties of the Dimethyl-substituted Alkanes Having the Composition C_{12}-C_{16}

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 8, pp 1421-1424 (USSR)

ABSTRACT: The present paper discusses the synthesis and properties of some of the compounds mentioned in the title. The properties of the synthesized materials are given in table 1. Nearly all substances crystallize at low temperatures; only 2,4-dimethyldecane and 3,5-dimethyldodecane vitrify at much lower temperatures than do their isomers or adjacent homologs. Besides reference 3 investigations aiming at an explanation of these phenomena have also been carried out by Petrov (Ref 4). It was assumed that the characteristic feature of vitrification of the two compounds mentioned is due to their structure. Various investigations were carried out to prove this assumption (determination of viscosity as a function of temperature (Table 2) and determination of molecular weight). From the results it is seen that the influence of the structure on the vitrification effect cannot be limited.

Card 1/2

SOV/62-59-5-13/42

Synthesis and Properties of the Dimethyl-substituted Alkanes Having the Composition C_{12}-C_{16}

It was only possible to establish a certain dependence on the branching degree of the compounds. There are 2 tables and 9 Soviet references.

ASSOCIATION: Institut nefti Akademii nauk SSSR
(Petroleum Institute of the Academy of Sciences, USSR)

SUBMITTED: December 10, 1957

Card 2/2

SERGIYENKO, S.R.; LEBEDEV, Ye.V.; PETROV, A.A.

Selective catalytic dehydrogenation of saturated high molecular weight hydrocarbons in the liquid phase. Trudy Inst.nefti 13:145-160 '59. (MIRA 13:12)

(Hydrocarbons) (Dehydrogenation)

PETROV, A.A.; KUSAKOV, M.M.

Investigation of the rheological properties of surface layers at the petroleum - water interface. Trudy Inst.nefti 13:287-303 '59. (MIRA 13:12)

(Petroleum) (Water) (Rheology)

PETROV, A.A.; BORISOVA, N.P.

Studying the demulsifying action of oxiethylated alkyl phenols. Khim.i tekh.topl.i masel 4 no.2:56-61 F '59. (MIRA 12:2)

1. Giprovostokneft'.
(Phenols) (Emulsions)

SOV/48- [illegible]

AUTHOR: Milinskiy, A. S., Petrov, A. A.

TITLE: The Raman Spectra of Some C_{24}-Hydrocarbons

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1[illegible], V[illegible], Nr 10, pp 1179-1181 (USSR)

ABSTRACT: Following a previous paper (ref 1) the authors investigated the Raman spectra of nine C_{24}-hydrocarbons with phenyl- and cyclohexyl rings. M. S. Lentovskaya took part in the experimental spectroscopic analysis. The spectra were obtained by means of a three-prism spectrograph of the type ISP-51; line identification was carried out by using the comparator of the type IZA-2, intensity evaluation was carried out visually on the basis of a ten-degree scale. In order to keep the background intensity low, the spectrograph of heated samples (to 160-170°) was in all cases made. Table 1 shows several parameters of the nine hydrocarbons investigated, and table 2 shows the formulas for their structures and some of the characteristic lines found. The conclusions to be drawn from these investigations are given. In the case of a phenyl ring the characteristic lines 6[illegible], 1[illegible], 1031, 115[illegible], 11[illegible], 1205 and 1065 cm^{-1} were found, [illegible]

Card 1/2

lines of antisymmetric valence oscillations of the benzene ring ~ 1580 and ~ 1603 cm^{-1}. A cyclohexyl ring was characterized by the following lines: 1029, 1158, 1267 and 1348 cm^{-1}. In this connection further details are discussed. Also with respect to the conclusions as to the number of phenyl- and cyclohexyl rings (of Table 2), which follow from the evaluation of line intensities, several details are discussed. The lines of tertiary C-atoms already found in the paraffins by Sushchinskiy (Refs 1, 5) as well as the lines of the oscillations of carbon chains were not found in all cases, and if so, only in very low intensities. There are 2 tables and 5 Soviet references.

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR (Institute for Petroleum-chemical Synthesis of the Academy of Sciences, USSR)

[illegible]

AUTHORS: Serpiyenko, [illegible] R., Zvitkovsk[illegible] L. [illegible], [illegible]

TITLE: Viscosity-temperature properties of [illegible] of a Mixed Structure (Vyazkostno-temperaturn[illegible] svoystva vysokomolekulyarnykh [illegible] dov [illegible] [illegible] [illegible]

PERIODICAL: Doklady Akademii nauk SSSR, [illegible], [illegible] 12, [illegible] (USSR)

ABSTRACT: The viscosity of hydrocarbons is one of their fundamental properties, directly connected with their chemical structure. One of the most important characteristic features of the working properties of lubricating oils, is the change of their viscosity together with their temperature. The hydrocarbons of the oil fraction of petroleum have a mixed type structure. Therefore it is of essential importance to study the dependence of the viscosity upon the molecular structure of the hydrocarbon of such a mixed type, and especially the character of the changing viscosity-temperature properties. The most complicated hydrocarbons of a mixed structure containing condensed nuclei of the type of naphthalene, tetralin and decalin, besides structural links of paraffin [illegible]

Card 1/4

Viscosity-temperature [illegible]
Mixed Structure

paraffin [illegible] molecular [illegible] petroleum [illegible] these structures. The present article [illegible] this way. The first task was to [illegible] amount of the [illegible] position in the molecule, [illegible] hydrocarbon [illegible] naphthalene, tetralin and [illegible] with 12 carbon atoms in the molecule (Table 1, Ref 1). [illegible] measuring results of their viscosity are shown in [illegible]. The replacement of 10 carbon atoms of the paraffin chain by a ring of naphthalene, tetralin or decalin, makes the viscosity twice or three times as high; a further replacement of the next 10 atoms by one of the mentioned rings causes a rapid increase of viscosity, about 8-10 times [illegible] first ring added, changes the temperature curve [illegible] little [illegible] increasing its curvature, while the second ring added [illegible] ly increases its curvature. Such an increase of [illegible]

Card 2/4

SOV/20-12-4-[illegible]

Viscosity-temperature properties of High-molecular Hydrocarbons [illegible] a Mixed Structure

is characteristic of hydrocarbons containing 2 naphthalene rings in a molecule (Table 2, Fig. 2), especially in the sphere of low temperatures. The position of the ring is also important for the value of viscosity as well as for the shape of the viscosity curve. The structures with 2 rings of naphthalene or decalin in one carbon atom show the highest values of viscosity. The viscosity decreases with a greater distance between these rings, and the curve of the temperature viscosity becomes less steep (Table 3). The complicated hybrid structures with rings of naphthalene or decalin or of cyclohexane- or benzene rings at the same time, have been studied least and are of special interest. If a cyclohexyl ring is brought into the molecule containing already a ring of naphthalene or decalin, the viscosity increases much more than if a benzene ring is added (Table 4). The shape of the curve mentioned is also increased. There are 2 figures, 4 tables, and 3 references, 1 of which is Soviet.

Card 3/4

SOV/20-12[illegible]

Viscosity-temperature Properties of High-molecular Hydrocarbons of a Mixed Structure

ASSOCIATION: Institut geologii i razrabotki goryuchikh iskopayemykh Akademii nauk SSSR (Institute of Geology and Mineral Fuels of the Academy of Sciences, USSR)

PRESENTED: January 1[illegible], 1[illegible], by A. A. Baladin, Academician

SUBMITTED: January 9, [illegible]

Card 4/4

5(4),5(3)

AUTHORS: Sergiyenko, [illegible], Fvitkovskiy, [illegible], [illegible]
Gordienko, [illegible], Petrov, Al. A.

TITLE: Adsorption Properties of Highly Molecular Hydrocarbons of a Mixed Structure

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol. 129, Nr 4, pp 769-772 (USSR)

ABSTRACT: (Abstracter's Note. Under "adsorption property" the authors mean in this case the "ability of being adsorbed"). In the introduction, the authors refer to the manifold use of adsorption to surfaces of solids in industry and research work, particularly to selective adsorption in chromatography. The adsorbability of various hydrocarbons is best characterized by their adsorption isothermal. The adsorption capacity of hydrocarbons of the benzene-kerosene fraction of petroleum rises in the order: saturated hydrocarbons < olefines < diolefines < monocyclic aromatic hydrocarbons < polycyclic aromatic hydrocarbons. The order mentioned is, however, not applicable to the chromatographic investigation of highly molecular petroleum fractions having complicated molecules with a mixed structure, and containing, at the same time,

Card 1/

Adsorption properties of Tierly Y [illegible] [illegible]
their carbons of a Vixel structure

phenyl-polymethylene- and other rings. Therefore, this paper is concerned with the study of the influence of individual structural constituents of such molecules which, in part, were specially synthesized. The adsorption isothermals (Figs 1,2) were statically determined by the contact of the hydrocarbons dissolved in n-dodecane with silica gel (brand ASK) or aluminum oxide (quality "for chromatography" of the Stalinskiy Zavod = Stalin Works) by the method of K. I. Shcherbakova and A. V. Kiselev (Ref 2). Table 1 indicates the experimental data. Adsorption increases with the rising fraction of aromatic and other cyclic carbon atoms in the total content of carbon atoms. Adsorbability depends on the ratio between carbon atoms in aromatic rings and carbon atoms in paraffin chains. The position of aromatic rings within the molecule and their type are of inferior influence. The introduction of decaline- or cyclohexane structures into the molecule, which already contains aromatic rings, raises the adsorbability. Silica gel adsorbs, a little more selectively than aluminum oxide, the hydrocarbons containing two aromatic

Card 2/3

Adsorption Properties of Highly Molecular Hydrocarbons of a Mixed Structure SOV 2-[illegible]

rings. The results suggest that a chromatographic separation of hydrocarbons, with the same molecular weight but different content of aromatic rings, is well possible. There are [illegible] figures, 1 table, and 4 Soviet references.

ASSOCIATION: Institut geologii i razrabotki goryuchikh iskopayemykh Akademii nauk SSSR (Institute of Geology and Mining of Mineral Fuels of the Academy of Sciences, USSR)

PRESENTED: May 25, 1959, by V. M. Latinin, Academician

SUBMITTED: May 23, 1959

Card 3/3

PHASE I BOOK EXPLOITATION SOV/5141

Petrov, Aleksandr Aleksandrovich

Kataliticheskaya izomerizatsiya uglevodorodov (Catalytic Isomerization of Hydrocarbons) Moscow, Izd-vo AN SSSR, 1960. 213 p. Errata slip inserted. 3,200 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut neftekhimicheskogo sinteza.

Resp. Ed.: P. I. Sanin, Doctor of Chemical Sciences; Ed. of Publishing House: I. P. Loskutova; Tech. Ed.: S. G. Markovich.

PURPOSE: This book is intended for chemists and petroleum technologists interested in the refining and the conversion of petroleum products.

COVERAGE: The monograph was written to supply data on the chemistry of reactions involved in modern heterogeneous catalytic petroleum-refining processes, i.e., reactions which take place over

Card 1/4

alumina-silica and polyfunctional catalysts. Isomerization reactions of hydrocarbons catalyzed by heterogeneous catalysts are given basic attention. Theoretical problems such as the reaction mechanism, and the kinetic and thermodynamic parameters of the reaction capacity of hydrocarbons are included. The book is based on the author's experimental work on transformations of individual hydrocarbons done at the Institut nefti AN SSSR (Petroleum Institute of the Academy of Sciences USSR). No personalities are mentioned. References, mostly English, accompany individual articles.

TABLE OF CONTENTS:

84858

53300 2209, 1153 only

S/062/60/000/0[illegible]/0[illegible]/0[illegible]8
B015/B064

AUTHORS. Petrov, Al. A., Sergiyenko, S. R., Tsedilina, A. L., Sanin, P. I., Nikitskaya, Ye. A., and Nechitaylo, N. A.

TITLE. Synthesis and Properties of High molecular Hydrocarbons of Mixed Structures. Information 1. Synthesis of Hydrocarbons of the Composition C_{24}

PERIODICAL. Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1960, No. 10, pp. 1846-1852

TEXT. The authors synthesized several hydrocarbons that up to a certain extent, may serve as models for the hydrocarbons contained in high boiling petroleum fractions. The present paper reports on the synthesis and properties of 23 hydrocarbons with mixed structures containing 24 hydrocarbon atoms per molecule. Compared to a similar investigation carried out by R. Schiessler et al. (Ref.2) the present studies were made on a larger scale. The influence of the degree of cyclization of the hydrocarbon molecules, the effect of the relative position of some cycles in the paraffin chain of the molecules, and the effect of the

Card 1/3

AL858

Synthesis and Properties of High molecular Hydrocarbons of Mixed Structures Information 1. Synthesis of Hydrocarbons of the Composition C_{24}

S/062/62/000/[illegible]/[illegible]/[illegible]
B015/B064

degree of substitution of the aromatic or cycloparaffin rings in the molecule upon the properties of the whole molecule were investigated (cf. Scheme of the structural changes). The hydrocarbons were synthesized by the Grignard reaction. The alcohols were dehydrated in the vapor phase by means of an aluminum catalyst used (method of the American Petroleum Institute); this was however done in vacuum (3 [illegible] mm.). Purification was carried out by distillation and absorption. The conditions of synthesis are described in detail for [illegible] diphenyl dodecane, while only a short information is given on the preparation of the remaining 22 hydrocarbons. Since a peculiar behavior of 2,4,6 trimethyl chloro benzyl was observed under the preparation conditions of the Grignard reagent, the characteristics of the reaction between methylated benzyl halides and magnesium are discussed (Table [illegible] data on diaryl ethanes obtained by reacting some substituted benzyl chlorides with magnesium). Table 2 gives the structural formulas and the most important properties of the 23 hydrocarbons obtained. The anomalies of viscosity as a function of the temperature of the polymethyl substituted benzene derivatives are remarkable [illegible] the aromatic hydrocarbons having

Card 2/3

ALBP

Synthesis and Properties of High-molecular Hydrocarbons of Mixed Structures Information 1. Synthesis of Hydrocarbons of the Composition C_{24}

S/062/60/000/010/012/018
B015/B064

several methyl groups on the ring have a much higher viscosity than the monosubstituted isomers. In the near future, the authors will publish a paper on the physico-chemical properties of the hydrocarbons described here (data on various spectra). There are 2 tables and 10 references: 5 Soviet, 3 US, 1 German, and 1 British.

ASSOCIATION Institut geologii i razrabotki goryuchikh iskopayemykh Akademii nauk SSSR (Institute of Geology and Prospecting of Mineral Fuels of the Academy of Sciences USSR)

SUBMITTED: May 6, 1959

Card 3/3

SHISHKINA, M.V.; PROKOF'YEVA, Ye.A.; PETROV, Al.A.

Electron absorption spectra of some high molecular weight aromatic hydrocarbons. Trudy Inst. nefti 14:187-197 '60. (MIRA 14:5)

(Hydrocarbons—Spectra)

S/080/60/033/04/29/045

AUTHORS Sanin, P.I., Petrov, Al.A., Sergiyenko, S.R., Nikitskaya, Ye.A.

TITLE The Viscosity Properties of Some Cyclic Hydrocarbons of the Composition C_{24}

PERIODICAL Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 4, pp 919 - 930

TEXT The viscosity properties of 22 hydrocarbons of the composition C_{24} were studied within the temperature range from 150 to -40°C. The results are shown in 2 tables. The study of viscosity properties of bicyclic and tricyclic hydrocarbons of the composition C_{24} containing isolated hexamethylene and benzene rings showed that the transition from an aliphatic hydrocarbon not containing cycles to mono-, di- and tri-cyclic hydrocarbons (by substitution of the hexyl group by a hexamethylene or benzene ring) is accompanied by an increase in the viscosity and a deterioration of the temperature dependence of the viscosity. Bicyclic aromatic hydrocarbons containing methylated benzene rings are distinguished by a considerably higher viscosity than the corresponding hydrocarbons with non-methylated benzene rings. Naphthene hydrocarbons formed during hydrogenation of aromatic hydrocarbons, which do not contain alkyl groups in the benzene ring, have a higher viscosity and a correspondingly weaker temperature dependence than the

Card 1/2

S/080/60/033/04/29/145

The Viscosity Properties of Some Cyclic Hydrocarbons of the Composition C_{24}

initial aromatic hydrocarbons. The opposite is observed in the case of hydrogenation of aromatic hydrocarbons containing methylated benzene rings. In this case hydrogenation leads to a decrease of viscosity, which is especially considerable for hydrocarbons with disubstituted rings; the temperature dependence of viscosity improves correspondingly. The phenomenon observed, which was noted earlier for condensed polycyclic aromatic hydrocarbons, should be allowed for in the investigation of higher aromatic petroleum fractions by the hydrogenation method.
There are: 3 graphs, 3 tables and 20 references, 9 of which are Soviet, 5 English, 3 American and 3 German

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR i Institut geologii i razrabotki goryuchikh iskopayemykh AN SSSR (Institute of Petrochemical Synthesis of the AS USSR and Institute of Geology and Development of Mineral Fuels of the AS USSR)

SUBMITTED: October 3, 1959

Card 2/2

AUTHORS:

TITLE:

PERIODICAL:

ABSTRACT:

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Viscosity Properties of [illegible] Their Hydrogenated [illegible]

The data obtained by the authors make it possible to assert that the viscosity of [illegible] hydrogenation of the higher [illegible] petroleum fractions may also be reduced by the presence of polycyclic aromatic hydrocarbons with [illegible] containing [illegible] of the viscosity [illegible] of some types of aromatic hydrocarbons on hydrogenation [illegible] There are [illegible]

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR (Institute of Petrochemical Synthesis of the Academy of Sciences USSR) [illegible] Institut khimii [illegible] Akademii nauk SSSR (Institute of Chemistry [illegible] the Academy of Sciences USSR)

SUBMITTED: September [illegible]

Card 2/2

Z/011/62/019/001/006/017
E073/E136

AUTHOR Petrov, A A

TITLE Kinetics of dehydrogenation of hexanes on alumina-chromia catalyst

PERIODICAL Chemie a chemická technologie Přehled technické a hospodářské literatury, v 19 no 1 1962 31 abstract Ch 62-437 (Neftekhimiya v 1 no 1 1961 33-38)

TEXT The kinetics of dehydrogenation in th temperature range 450-510 °C was studied The reaction is strongly retarded by degradation products and is satisfactorily expressed by the Frost reaction. The structure of the original hexane has little influence on the dehydrogenation speed.
1 figure 3 tables 10 literature references

[Abstractor's note Complete translation]

Card 1/1

KVITKOVSKIY, L.N.; PETROV, Al.A.

Some methodical processes in the study of high molecular weight hydrocarbons. Zhur.prikl.khim. 34 no.3:613-621 Mr '61. (MIRA 14:5)

(Hydrocarbons)

PETROV, Al.A.

Kinetics of dehydrogenation of C_6 - C_8 alkanes on an alumino-chromium catalyst. Neftekhimiia 1 no.5:604-609 S-O '61.(MIRA 15:2)

1. Institut geologii i razrabotki goryuchikh iskopayemykh AN SSSR.
(Paraffins)(Dehydrogenation)

L 34136-65 EWT(m)/EPF(c) Pr-4 GS/RM

ACCESSION NR: AT5006092 S/0000/64/000/000/0229/0235

24
23
B+1

AUTHOR: Polyakova, A. A.; Khmel'nitskiy, R. A.; Petrov, A. A.

TITLE: Mass spectra and structure of hydrocarbon molecules with multiple bonds

SOURCE: Soveshchaniye po fizicheskim metodam issledovaniya organicheskikh soyedineniy i khimicheskikh protsessov. Frunze, 1962. Trudy. Frunze, Izd-vo Ilim, 1964, 229-235

TOPIC TAGS: hydrocarbon, mass spectrum, hydrocarbon structure, molecular rearrangement, ionizing electron, unsaturated hydrocarbon

ABSTRACT: The work is devoted to a study of rearrangements occurring in the mass spectrometer during the interaction between ionizing electrons and hydrocarbon molecules of various types undergoing dissociative ionization. The investigated hydrocarbons were unsaturated and ranged from C_nH_{2n-2} to C_nH_{2n-6} with an open chain and different numbers of multiple bonds in the molecule. As the degree of unsaturation increased, a tendency toward stabilization of the large ionic fragments resulting from the electron bombardment was observed. Analysis of the mass spectra of the hydrocarbons showed that the intensity of the ions formed by re-

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L 34136-65

ACCESSION NR: AT5006092

arrangement increased with the number of multiple bonds. Such ions in the mass spectra of unsaturated hydrocarbons are specific indicators of the degree of unsaturation and may be used for the qualitative and quantitative analysis of hydrocarbons. Orig. art. has: 4 figures and [illegible] formulas.

ASSOCIATION: VNIIP po pererabotke nefti i gaza i polucheniyu iskusstvennogo zhidkogo topliva (All-union scientific research institute for petroleum and gas processing and the preparation of synthetic liquid fuel)

SUBMITTED: 19Jun64 ENCL: 00 SUB CODE: OC

NO REF SOV: 000 OTHER: 000

Card 2/2

L 34135-65 EWT(m)/EPF(c)/EPR/EWP(j) Pc-4/Pz-4/Ps-4 WW/GS/RM

ACCESSION NR: AT5006093 S/0000/64/000/000/0236/0241

39
38
B+1

AUTHOR: Khmel'nitskiy, R. A.; Polyakova, A. A.; Petrov, A. A.

TITLE: Some regularities in the mass spectra of silicon derivatives of hydrocarbons

SOURCE: Soveshchaniye po fizicheskim metodam issledovaniya organicheskikh soyedineniy i khimicheskikh protsessov, Frunze, 1962. Trudy. Frunze, Izd-vo Ilim, 1964, 236-241

TOPIC TAGS: silicoorganic compound, hydrocarbon, mass spectrum, dissociative ionization, trimethylsilane, triethylsilane, paraffin hydrocarbon, unsaturated hydrocarbon

ABSTRACT: The article discusses the mass spectra of silicon derivatives of some paraffins and monoolefinic, alkylvinylacetylenic, and aromatic hydrocarbons containing trimethylsilyl or triethylsilyl radicals and undergoing dissociative ionization. A modified MS-1 mass spectrometer was employed. The decomposition mechanisms of Si-derivatives of monoolefinic and vinylacetylenic hydrocarbons, based on the mass spectra obtained, are illustrated. The analysis showed that the introduction of Si into the molecule, without causing a fundamental change in the mass

Card 1/2

L 34135-65
ACCESSION NR: AT5006093

spectrum, brings about an appreciable change in the probability of formation of individual ions. This was particularly apparent in the case of ions produced by rearrangement, which, in the case of hydrocarbons, are apparently formed via intermediate structures. Orig. art. has: 4 figures.

ASSOCIATION: VNII po pererabotke nefti i gaza i polucheniyu iskusstvennogo zhidkogo topliva (All-union scientific research institute for petroleum and gas processing and the preparation of synthetic liquid fuel)

SUBMITTED: 19Jun64 ENCL: 00 SUB CODE: OC

NO REF SOV: 006 OTHER: 001

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410016-2"

RALL', K.B.; PETROV, A.A.

Reaction of diene hydrocarbons with nitrogen tetraoxide and iodine. Zhur. ob. khim. 34 no.11:3621-3624 N '64 (MIRA 18:1)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

L 41584-65 EWT(m)/EPF(c)/EPR/EWP(j)/EWA(c) Pc-4/Pr-4/Ps-4 RPL WW/JW/RM

ACCESSION NR: AP5008720 S/0366/65/001/003/0610/0611

35
B

AUTHORS: Sokolov, L. B.; Porfir'yeva, Yu. I.; Petrov, A. A.

TITLE: Direction of addition of diazomethane to diacetylene homolog

SOURCE: Zhurnal organicheskoy khimii, v. 1, no. 3, 1965, 610-611

TOPIC TAGS: methane, acetylene, alcohol, carbonic acid

ABSTRACT: It is shown that the homolog of diacetylene attaches to diazomethane in a reaction in which acetylene and groupings take a primary part. From methyldiacetylene and diazomethane in alcohol, 5-propynylpyrazole was obtained with a boiling temperature of 112-114C and a melting point at 71-72C. Ethyldiacetylene and diazomethane produced 5-butynylpyrazole with a boiling point at 120-122C and a melting point at 38-39C. By oxidizing both alkynylpyrazoles, 5-pyrazolecarbonic acid is obtained with a 212 to 213.5C melting point.

ASSOCIATION: Leningradskiy tekhnologicheskiy institut imeni Lensoveta (Leningrad Technological Institute)

SUBMITTED: 20Nov64 ENCL: 00 SUB CODE: OC

NO REF SOV: 000 OTHER: 003

Card 1/1 mc

L 42420-65 EWT(m)/EPF(c)/EWP(j)/EWP(b)/EWP(t) Pc-4/Pr-4 LIP(c) JD/RM

ACCESSION NR: AP5008836 S/0079/65/035/003/0451/0456

AUTHOR: Stadnichuk, M. D.; Petrov, A. A.

TITLE: Synthesis and some physical and chemical properties of enyne type germanium-containing hydrocarbons

SOURCE: Zhurnal obshchey khimii, v. 35, no. 3, 1965, 451-456

TOPIC TAGS: germanium organic compound, spectrum, nuclear magnetic resonance, hydrogenation

ABSTRACT: Only a few representatives of germanium organic compounds are known which have a triple bond in the α-, β- and γ-positions with respect to germanium. This article presents data on the synthesis, physical properties and some chemical transformations of three enyne germanium-containing hydrocarbons: 1-triethylgermanium-3-butene-1-yne (I), 1-triethylgermanium-3-methyl-3-butene-1-yne (II) and 1-triethylgermanium-3-pentene-1-yne (III). The purity of these compounds was determined by liquid-gas phase chromatography. Their structure was verified by infrared and nuclear magnetic resonance spectra. In the IR spectra of the obtained compounds the 2147 cm^{-1} band corresponding to the triple bond in the α-position with respect to germanium does not differ from silicon analogs. Dipole moments were measured

Card 1/2

L 42420-65

ACCESSION NR: AP5008836

for the above compounds. Electronegativity of germanium on Pauling's scale is somewhat lower than that of silicon and carbon, thus one would expect the effect of the trialkylgermanium radical on the electron density redistribution to be analogous to the effect of the trialkylsilyl radical. Measurements of the dipole moments indicated that the behavior is much more complex and requires additional data for the determination of the effect of the germanium organic radical on electron density redistribution. It was established that germanium compounds I-III are hydrogenated much more slowly than the corresponding silicon analogs. It was shown that the first hydrogen molecule is joined to germanium enynes chiefly along the double bond and in the 1,4 position. Orig. art. has: 3 tables and 3 figures.

ASSOCIATION: Leningradskiy tekhnologicheskiy institut im. Lensoveta (Leningrad Technological Institute)

SUBMITTED: 10Jan64 ENCL: 00 SUB CODE: OC

NO REF SOV: 010 OTHER: 007

Card 2/2

L 25687-66 EWT(m)/EWP(j) RM

ACC NR: AP6016710 SOURCE CODE: UR/0079/65/035/012/2255/2255

AUTHOR: Ionin, B. I.; Petrov, A. A.

ORG: Leningrad Technological Institute im. Lensovet (Leningradskiy tekhnologicheskiy institut)

TITLE: Ester of acetylenephosphinic acid with the diethylamino group at the triple bond

SOURCE: Zhurnal obshchey khimii, v. 35, no. 12, 1965, 2255

TOPIC TAGS: ester, phosphinic acid, chlorinated organic compound, amine, organic phosphorus compound, carboxylic acid

ABSTRACT: To synthesize compounds with the dialkylamino group at a triple bond, monochloroacetylenes containing electron-acceptor groups can be used. Thus, when triethylamine is treated with the diethyl ester of chloracetylenephosphinic acid (I) the unstable quarternary salt (II) is immediately formed, which after boiling 10 minutes in benzene decomposes to form the diethyl ester of diethylaminoacetylenephosphinic acid (III). When compound (III) is heated with a slight excess of water on a water bath, hydration occurs to form the previously undescribed diethylamide of diethylphosphonacetic acid (IV).

Card 1/2 UDC: 547.333.3+547.314.2+547.341

L 25687-66

ACC NR: AP6016710

$$Cl\text{-}C\equiv C\text{-}PO(OC_2H_5)_2 + (C_2H_5)_3N \longrightarrow /(C_2H_5)_3N\text{-}C\equiv C\text{-}PO(OC_2H_5)_2/^{+}Cl^{-}$$

(I) (II)

$$\longrightarrow (C_2H_5)_2N\text{-}C\equiv C\text{-}PO(OC_2H_5)_2 \xrightarrow{H_2O} (C_2H_5)_2N\text{-}\underset{\underset{O}{\|}}{C}\text{-}CH_2\text{-}PO(OC_2H_5)_2$$

(III) (IV)

Attempts to conduct the analogous reaction with trimethylamine failed. [JPRS]

SUB CODE: 07 / SUBM DATE: 05Jun65 / ORIG REF: 002 / OTH REF: 001

Card 2/2

ACC NR: AP6031385 SOURCE CODE: UR/0079/66/036/009/1649/1655

AUTHOR: Novitskiy, K. I.; Razumova, N. A.; Petrov, A. A.

ORG: Leningrad Technological Institute imeni Lensovet (Leningradskiy tekhnologicheskiy institut)

TITLE: Phosphorus-containing heterocycles. Part 8: Condensations of glycolphosphorous acid chlorides with α,β-unsaturated acids

SOURCE: Zhurnal obshchey khimii, v. 36, no. 9, 1966, 1649-1655

TOPIC TAGS: chloride, condensation reaction, organic phosphorus compound, phosphorous acid

ABSTRACT: The condensation of chlorides of ethylene glycol-, propylene glycol- and 1,3-butylene glycolphosphorous acids with acrylic, methacrylic and crotonic acids was studied in order to apply this reaction to the preparation of chlorides of various α-chlorophosphonocarboxylic acids. It was found that the chlorides of glycolphosphorous acids reacting with α,β-unsaturated acids yield primarily oligomers of the structure

UDC: 547.26'118

Card 1/3

ACC NR: AP6031385

Chlorides (IX), (X) and (XI) of dichlorophosphonocarboxylic acids were obtained by treating the oligomers with PCl_5. Dichlorophosphono-α-methylpropionyl chloride (X) and dichlorophosphono-α-methylpropionyl chloride (XI) were obtained for the first time. Orig. art. has: 2 figures and 2 tables.

SUB CODE: 07/ SUBM DATE: 10Jun65/ ORIG REF: 001/ OTH REF: 003

Card 3/3

DANILOV, S.N., glav. red.; ZAKHAROVA, A.I., red.; ARBUZOV, A.Ye., red.; VVEDENSKIY, A.A., red.; VENUS-DANILOVA, E.D., red.; IOFFE, I.S., red.; KAZNEZNEVA, Ye.D., red.; LUTSENKO, I.F., red.; MILLIONSHCHIKOV, K.F., red.; NEMTSEV, I.S., red.; PETROV, A.A., red.; FREYDLINA, ...Kh., red.; SHEMYAKIN, M.M., red.; SHCHUKAREV, S.A., red.; YUR'YEV, Yu.K., red.

[Problems of organic synthesis] Problemy organicheskogo sinteza. [Moskva] Nauka, 19[illegible]. [illegible] p. (MIRA 18:8)

SOMOV, G.P., [illegible], M.I., PETROV, A.A.

Demodectic mites in murine rodents on the islands of the southern part of the Maritime Territory. Trudy Vlad.IEMG no.2 [illegible] '62. (MIRA 18:3)

ZAKORINA, N.A.; LAZEYEVA, G.S.; PETROV, A.A.; SKVORTSOVA, G.V.; FAVORSKAYA, M.P.

Various setups for the spectral-isotopic determination of gases in metals. Vest. LGU 20 no.10:152 '65. (MIRA 18:7)

SOMOV, G.P.; SHAPIRO, M.I.; PETROV, A.A.; ALEKSANDROV, Yu.V.

Etiology and epidemiology of tick-borne typhus fever on the islands and coast of the Martitime Territory. Trudy Vladivmed (MIRA 18:7) no.2:45-50 '62.

KHMELNITSKIY, R.A. [illegible] YAKOVLEVA, N.A. [illegible] PETROV, A.A., MERZLYAKOV, [illegible], STADNICHUK, M.[illegible].

Mass spectra and structure of organic compounds. Part 1. Mass spectra of [illegible] normal paraffin hydrocarbons. Trudy t. krim. 35 no.5:[illegible] My '65. (MIRA 18:6)

1. Vsesoyuznyy [illegible] nauchno-issledovatel'skiy institut po pererabotke nefti i gaza i [illegible] nauchno-issledovatel'skiy institut imeni Lensoveta.

ZAVGORODNIY, V. [illegible], [illegible]

Reaction of sodium trialkylzinc with bromoacetylene. [illegible]. khim. 35 no.5:931-932 My '65. [illegible]

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

[illegible]

[illegible] between [illegible] and [illegible] responsible [illegible]
[illegible] MIPS [illegible]

. [illegible] imeni Lenoveta.

SHAKHOVSKOY, B.G.; TUNNICHUK, M.I.; [illegible]

"Unsaturated organosilicon compounds. Art. 16. Addition of alkyllithium to 1-trimethylsilyl-1,3-hexadiyne. [illegible] Khim. 35 no.6:1031-1036 Je '65. (MIRA 18:6)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

L 44159-65 EPF(c)/EWP(j)/EWA(c)/EWT(m)/T Pc-4/Pr-4 RM

S/0366/65/001/002/0240/0243

ACCESSION NR: AP5009018

22
21
B

AUTHORS: Petrov, A. A.; Rall', K. B.; Vil'davskaya, A. I.

TITLE: Synthesis and properties of nitroalkadienes-1,3

SOURCE: Zhurnal organicheskoy khimii, v. 1, no. 2, 1965, 240-243

TOPIC TAGS: nitroalkadiene, hydrocarbon, nitrogen dioxide, iodine

ABSTRACT: Various nitroalkadienes were produced by dehydrohalogenating the product of combining diene hydrocarbons with nitrogen dioxide and iodine, as described by K. B. Rall' and A. A. Petrov (ZhOKh, 34, 3621 1964). The yield of nitroalkadienes was 10-35%, with the major part of the matter suffering resination. All the nitroalkadienes represented yellow lacrimator liquids distillable in vacuum. Their structures and purity were determined from infrared nuclear magnetic resonance spectra. An attempt to produce 1-nitro-2-chlorbutadiene by separating hydrogen iodide from the product of combining NO_2 and iodine with chloroprene proved unsuccessful. The experimental part of the work is presented in detail, and the nitroalkadienes obtained are listed and described. Orig. art. has: 1 formula, 2 graphs, and 1 table.

Card 1/2

L 44159-65

ACCESSION NR: AP5009018

ASSOCIATION: Leningradskiy tekhnologicheskiy institut imeni Lensovata (Leningrad Technological Institute)

SUBMITTED: 22Jan64 ENCL: 00 SUB CODE: OC

NO REF SOV: 004 OTHER: 002

Card 2/2 mb

9.2585 (also 1154, 1161)

SOV/55-58-6-11/15 [illegible]
E032/E135

AUTHOR: Petrov, A. A., Engineer

TITLE: A Method of Calculating Capacitances for Frequency Control Elements in an Automatic Generator Circuit

PERIODICAL: Moskva, Gosudarstvennyy komitet Trudy No. [illegible], Moskow, Gosudarstvennyy komitet po delam izobreteniy i otkrytiy pri Gosplane SSSR, Radiotekhnicheskiy institut [illegible] [illegible]

TEXT: The author reports work in the controlling generator frequencies using the voltage variable capacitance of p-n junctions. Directly [illegible] curves of several tests with fairly [illegible] are plotted. Practical [illegible] are briefly discussed. Two transistor junctions were found to have the best [illegible]. The frequency of the generator is a function of voltage on the varactors is plotted for transistor and diode junctions. The transistor junctions may be used separately or they can be connected together either in series or in parallel. The total variation of capacitance with voltage is

Card 1/3

SOV/[illegible]/[illegible]/[illegible]/[illegible]/006
E070/E135

A Method of Connecting a Semi-[illegible] Frequency Control Element in an Autogenerator Circuit

assumed for a Schottky type barrier [illegible] $C = C_0 V^{1/2}$ where C_0 is the zero bias capacitance. The generator frequency range is 100 - 500 Mc/s, that is the highest frequency range in which the variable capacitances now [illegible] frequently be used. The author compares the performance of the system when the "Varicap" is connected in parallel and in series with the inductance of the oscillator circuit of the generator. The series connection is best, the frequency range being twice that of the parallel connection in some cases. It is noted that above 100 Mc/s it is necessary to take account of the lead inductance of the "Varicap". Generators with two oscillator circuits are also considered, the varicap being connected in the anode of the generator. In the parallel connection there is a sharp change in the frequency - varicap voltage curve at about 120 - 135 Mc/s, the frequency dropping some 20 Mc/s as the voltage increases. Evidently this could be used for frequency switching. This change is not anticipated from the simple expression quoted. For series

Card 2/3

KHMEL'NITSKIY, R.A.; POLYAKOVA, A.A.; [illegible], A.A.

Mass spectrometric analysis of silicon-containing vinylacetylenes. Trudy Kom.anal.khim. 13:[illegible] 1963. (MIRA 16:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefti i gaza i polucheniyu iskusstvennogo zhidkogo topliva.
(Silicon organic compounds — Analysis) (Mass spectrometry)

L 12977-63 EWP(j)/EPF(c)/EWT(m)/BDS ASD Pc-4/Pr-4 RM/WW

ACCESSION NR: AT3002350 S/2513/63/013/000/0482/0490 65

AUTHOR: Khmel'nitskiy, R. A.; Polyakova, A. A.; Petrov, A. A. 64

TITLE: Mass-spectrometric analysis of silica-containing vinylacetylenes

SOURCE: AN SSSR. Komissiya po analiticheskoy khimii. Trudy*, v. 13, 1963. Organicheskiy analiz, 482-490

TOPIC TAGS: spectrometry, silica, vinylacetylene, alkyl radical, vinyl radical

ABSTRACT: The study of mass-spectra of silica-containing vinylacetylenes showed that the process of their ionic dissociation is very selective. This results in the formation of a small group of characteristic ions which may be utilized in the identification and quantitative analysis of the alkylsilybutenenes. The investigated mass-spectra covered the following compounds: trimethylisopropenylacetylenylsilane, trimethylpropenylacetylenylsilane, triethylvinylacetylenylsilane, dimethylvinylacetylenylsilane and methylvinyldivinylacetylenylsilane. In all the investigated materials, the maximum peak was found at the silica atom after alkyl and vinyl radicals had separated from the silica atom. This fact allows the qualitative identification and the qualitative determination of the silica-containing vinylacetylynes in mixtures. Orig. art. has: 3 tables and 1 figure.

ASSN: All-Union Scientific-Research Inst. for Petroleum and Gas Refines and Synthesis of Liquid Fuel

Card 1/4

KHERUZE, Yu.I.; PETROV, A.A.

Conjugated systems. Part 170: Chloroarylation of divinylacetylene and its homologs. Zhur.ob.khim. 33 no.4:1111-1119 Ap '63. (MIRA 16:5)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Hexadienyne) (Arylation) (Chlorination)

30381

07000

AUTHOR: [illegible] Yu. I. and Petrov, A. A. [illegible]

TITLE: A compiler-type programming system ПСК-[illegible] PUK

SOURCE: Problemy kibernetiki, [illegible] M. [illegible] 1961

TEXT: The paper briefly describes a compiler system [illegible] the "Strela" computer by the authors L. P. Kovaleva, Yu. I. [illegible] and others. The system was completed in 1957 and has been in use since then. The basic components are a compiler program and a library of so-called "standard programs" which are stored in the form of punched cards. The system uses the operator method of programming, in which groups of instructions of a program are designated by [illegible]. The construction of an operator scheme, in which the [illegible] and the links between them, is the first step in using PUK. Information on this scheme is loaded into the computer by [illegible] the system the so-called symbolic numbers. Some of the [illegible] have their corresponding standard programs in the library.

Card 1/[illegible]

30381

[illegible] 1,000 00 [illegible]

[illegible] DFO

[illegible] mpiler-type programming [illegible]

[illegible] operators, while others will have to be [illegible] standard operators. The library [illegible] permitting [illegible] procedures. [illegible] the standard [illegible] the compiler. The final form [illegible] they are incorporated into the master [illegible] the symbolic and absolute parameter [illegible] PLK [illegible] routines for matrix [illegible] of equations [illegible] the compiler program [illegible] parameters [illegible] operator and other [illegible] operators [illegible] the [illegible]

SABO, L.V.; PETROV, A.A.

Use of rotor-disk contactors in petroleum prerefining. Khim. i tekh.topl.i masel 7 no. 14-16 My '62. (MIRA 15:11)

1. Gosudarstvennyy institut po proyektirovaniyu i issledovatel'skim rabotam neftedobyvayushchey promyshlennosti vostochnykh rayonov strany.

(Petroleum—Refining)

S/079/62/032/008/001/006
D204/D307

AUTHORS: Stadnichuk, M.D. and Petrov, A.A.

TITLE: Investigations of conjugated systems. CLVIII. The addition of Li alkyls to trimethylsilyl-iso-propenyl- (A) and to trimethylsilyl-propenyl-acetylene (B)

PERIODICAL: Zhurnal obshchey khimii, v. 32, no. 8, 1962, 2490 - 2494

TEXT: The reactions of LiBu and LiPr with A and B were studied to determine the structural influences of the enyne grouping on the direction of addition. The addition of A to LiBu gave a product, C, which after treatment with water and hydrolysis with alc. KOH gave a mixture of hydrocarbons containing ~ 24 % of compounds possessing a terminal triple bond. Infrared spectroscopy revealed that C was a mixture of allenic and acetylene compounds, the most important product being $(CH_3)_3SiCH = C = \underset{CH_3}{C} - CH_2 - C_4H_9$.

Card 1/2

Analogous results were found for the addition of LiPr and A. The addition of B to LiBu gave a product, D , which on hydrolysis yielded hydrocarbons containing ~41 % of substituted acetylenes. The allenic part of D was mainly $(CH_3)_3SiCH = C = \underset{CH_3}{CH} - C_4H_9$. These differences are explained by the different electron displacements in the case of A and B (resulting in unequal polarization of the 1,4 positions) and by the steric effect of $-CH_3$ in A. The differences between the addition products of Li alkyls and (a) vinyl alkyl acetylene, and (b) silicon containing enynes, (i.e. the formation of a greater proportion of acetylenes in the latter case), are ascribed to the steric effect of the $-Si(CH_3)_3$ group and to a partial transfer of the π electrons from the triple bond into the d-orbit of silicon. There are 3 figures.

ASSOCIATION: Leningradskiy tekhnologicheskiy institut imeni Lensoveta (Leningrad Technological Institute imeni Lensovet)

SUBMITTED: July 12, 1961

S/020/62/145/004/019/024
B110/B144

[illegible]: [illegible], M. D., and Petrov, A. A.

[illegible] silanes to alkene hydrocarbon [illegible]

[illegible] SSSR. Doklady, v. 145, no. 4, [illegible]

[illegible] alkenes [illegible] were [illegible] The [illegible] are [illegible]

[illegible]: [illegible] tekhnologicheskiy institut im. Lensoveta (Leningrad Technological Institute imeni Lensovet)

(1) Вещество (главный продукт)	(2) Температура °C	(3) [illegible]	d_4^{20}	n_D^{20}
$C_6H_5-CH=CH-CH_2Si(CH_3)_3$	60—61	20	0,7563	1,4541
$C_6H_5-CH=CH-CH_2Si(CH_3)_3$	56—57	8	0,7583	1,4530
$C_6H_5-CH-CHSi(CH_3)_3$	50—51	6	0,7808	1,4430
$C_6H_5-CH=CH-\underset{CH_3}{C}HSi(CH_3)_3$	81—82	6	0,7893	1,4450
$C_6H_5-CH=\underset{+HSi(CH_3)_3}{C}-\underset{CH_3}{C}H-C_6H_5$	60—61	6	0,7805	1,4440

S/[illegible]/62/[illegible]/[illegible]/[illegible]/[illegible]
[illegible]

[illegible] properties

[illegible]

[illegible] the [illegible] of stirring the [illegible] [illegible] and triphenylamine by concentrated sulfuric [illegible] at [illegible] per [illegible] atm. After heating to [illegible], [illegible] light, passing an electric current through [illegible], these [illegible] showed an increased [illegible] signal [illegible] months. The authors discuss the origin of [illegible] in these polymers taking account of published data concerning [illegible] anthraquinones or mixtures of quinone and aniline [illegible]. Transition of part of the unpaired electrons of nitrogen into the triplet state is assumed. The effects of heating and of electric current on the [illegible]

[illegible]

[illegible] After [illegible] that [illegible] delivered oil. [illegible] reference is: D. Bell, H. Painer, A. I. Rose- [illegible]

[illegible] Leningradskiy tekhnicheskiy institut im. Lensoveta
Leningrad Technological Institute imeni Lensovet,

[illegible] 6/[illegible], '60

[illegible]

S/063/62/007/003/003/003
A057/A126

AUTHOR: Petrov, A. A., Doctor of Chemical Sciences

TITLE: Structure and reactivity of 1,3-diene, enine, and diinine compounds

PERIODICAL: Zhurnal vsesoyuznogo khimicheskogo obshchestva imeni D. I. Men-deleyeva, v. 7, no. 3, 1962, 332 - 342

TEXT: The author discusses the effect of structure on the reactivity of dienes, enines, and diines. He demonstrates that theoretical explanations presented in literature in the past 30 years, based on characteristics of polarization, or steric factors, are insufficient. The author presents several results of investigations which are in agreement with the modern theory of electron displacements, but discusses mainly those results which cannot be explained by this theory. During the past years the idea of "conjugation" was extended and A. N. Nesmeyanov and M. I. Kabachnik presented a detailed classification of the effects of conjugation. The first approximative calculation for σ,π-conjugations was extended by Mulliken for σ,π-conjugations. Discussing the two-stage mechanism of electrophylic additions to dienes developed by K. K. Ingold, the author demonstrates the

S/063/62/067/[illegible]
A057/A126

Structure and reactivity of...

incorrectness of this mechanism. In syntheses of divinyl homologues the relation between 1,2- and 1,4-products depends on the polarity of the hydrocarbons. The two-stage mechanism is not in contradiction with the stereospecificity, especially of trans-additions, but cannot explain it. Because of the stereospecificity of electrophylic addition and the absence of a polar effect of the solvent the author and Ye. A. Shilov suggested already the idea on the formation of a non-ionic cyclic intermediate complex in electrophylic trans-addition processes. The author assumes the formation of a complex, whose addition is directed by steric factors. The addition to the triple bond occurs, according to the author, by inner oxonium complexes. Data on addition reactions of enines are in good agreement with those of the reactivity of dienines. Investigations of the reactivity of diacetylenes and homologues showed an analogy in the reactions of alkylvinylacetylenes, i.e. the electrophylic and nucleophylic attack begins at the last carbon atom of the hydrocarbon. With the increasing number of acetylene bonds in the molecule increases the rate of nucleophylic, and decreases the rate of electrophylic, addition. There are 4 tables, and 2 figures.

Card 2/2

ZHIGLINSKIY, A.G.; ZAYDEL', A.N.; PETROV, A.A.

Spectral analysis of isotopic composition (survey). Zav.lab. 29 no.5:550-552 '63. (MIRA 16:5)

(Isotopes--Spectra)

DEMIN, V.S.; SAVINSKIY, G.B.; PETROV, A.A., redaktor; ANTONOVA, N.M., tekhnicheskiy redaktor

[Machines for mechanization of work in raising livestock] Mashiny dlia mekhanizatsii rabot v zhivotnovodstve. Moskva, Izd-vo Ministerstva sel'skogo khoziaistva SSSR, 1956. 31 p. (MLRA 9:11)
(Farm equipment)

DEMIN,V.S.; SAVINSKIY,G.B.; PETROV,A.A., redaktor; ANTONOVA,N.M., tekhnicheskiy redaktor

[Tractors, automobiles and engines in Soviet agriculture] Traktory, Avtomobili i dvigateli v sel'skom khoziaistve SSSR. Moskva, Izd-vo Ministerstva sel'skogo khoziaistva SSSR, 1956. 60 p. (MLRA 9:4)

(Tractors) (Motor trucks)

DEMIN, V.S.; SAVINSKIY, G.B.; PETROV, A.A., redaktor; ANTONOVA, N.M., tekhnicheskiy redaktor

[Machinery for tillage] Pochvoobrabatyvaiushchie mashiny. Moskva, Izd-vo Ministerstva sel'skogo khoziaistva SSSR, 1956. 63 p. (Agricultural machinery) (MLRA 9:9)

PUTRIN, A.

Experience of the machine-tractor station at the Krichim Raion Station in mechanizing the [illegible] (Minister [illegible])

Vol. 7, no. 8, Aug. 1956

SOURCE: East European Accessions List, (EEAL), Library of Congress, Vol. 5, no. 12, December 1956

[illegible] Y. Mark Yu[illegible]yev [redacted] redaktor, MAYBOROD[illegible]
tekhnicheskiy redaktor

[illegible]al'tsev [illegible] conditions] Obrabotka [illegible] sistema [illegible]eva [illegible] estve[illegible]rodnye usloviia. Moskva, [illegible] 30 plates.
(Village) (Mira 10:10)

L 25598-66 EWT(m)/EWP(j) RM

ACC NR: AP6016687 SOURCE CODE: UR/0079/65/035/009/1566/1570

AUTHOR: Bogolyubov, G. M.; Mingaleva, K. S.; Petrov, A. A.

ORG: Leningrad Technological Institute im. Lensovet (Leningradskiy tekhnologicheskiy institut)

TITLE: Dipole moments of certain acetylenic derivatives of phosphorus

SOURCE: Zhurnal obshchey khimii, v. 35, no. 9, 1965, 1566-1570

TOPIC TAGS: dipole moment, intramolecular mechanics, UV spectrum, sulfide, halide, organic phosphorus compound, phosphorus

ABSTRACT The intramolecular electronic interactions in the molecules of sulfides of tertiary alpha,beta-unsaturated phosphines were studied by determining their dipole moments and ultraviolet spectra. The dipole moments were obtained for the phosphine sulfides, thiophosphroyl halides, and halides of tricoordinated phosphorus and correlated with the Taft inductive constants. The increase in the dipole moments of sulfides of tertiary acetylenic phosphines with increasing sum of the inductive constants of the substituents on the phosphorus atom may be explained by a positive electronic effect, directed identically with the vector of the total moment of the molecule. The dipole moments of halides of tricoordinated phosphorus decrease with increasing electron-attracting ability of the substituents, analogously to the triphosphoryl

Card 1/2 UDC: 547.341+537.226.1

L 25598-65

ACC NR: AP6016687

halides. The patterns observed are explained by conjugation of the triple bonds with the phosphorus atom, the possibility of which is confirmed by the ultraviolet spectra of the sulfides of tertiary unsaturated phosphines. Orig. art. has: 1 figure, 2 formulas, and 5 tables. [JPRS]

SUB CODE: 07, 20 / SUBM DATE: 23Jun64 / ORIG REF: 003 / OTH REF: 002

Card 2/2

L 24763-66 EWP(e)/EWT(m)/EWP(t)/EWP(k) DIAAP/AFWL/SSD/RM/JG

ACC NR: AP6015533 SOURCE CODE: UR/0054/65/000/001/0141/0142

AUTHOR: Lazeyeva, G. S.; Petrov, A. A.; Yusupova, G. A.

ORG: none

TITLE: Use of isotopic equilibrium in determining oxygen in metals

SOURCE: Leningrad. Universitet. Vestnik. Seriya fiziki i khimii, no. 1, 1965, 141-142

TOPIC TAGS: iron, cobalt, power metal, carbon steel, tungsten, metal melting, spectroscopic analysis, oxygen, isotope

ABSTRACT: Effecting low temperature (~1150° C) isotopic equilibrium, which was done previously to determine oxygen in iron and cobalt powders, has given way to effecting equilibrium at temperatures of 1700-2000° C by high frequency heating of the metal sample in a graphite crucible. The method was tested on samples of iron, carbon steel, and tungsten at oxygen concentrations of 10^{-2} - 10^{-3} % by weight. Spectroscopic determinations of the isotopic composition of the oxygen in the gas in equilibrium are in good agreement with the data found by the vacuum melting method. Orig. art. has: 1 table. [JPRS]

SUB CODE: 11, 20 / SUBM DATE: 04Jul64 / ORIG REF: 001

Card 1/1 UDC

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410016-2"

L 47217-66 EWT(1)/EWP(m)/EPF(k)-2 TT/AW/GW

ACC NR: AR6021906 SOURCE CODE: UR/0313/66/000/003/0027/0027

AUTHOR: Moiseyev, N. N., Mysakis, A. D., Petrov, A. A.

TITLE: Hydrodynamic problems in astronautics

SOURCE: Ref. zh. Issl kosm prostr, Abs. 3.62.230

REF SOURCE: 15 Internat. Astronaut. Congr., Warsaw, Sept. 1964

TOPIC TAGS: hydrodynamics, fluid equilibrium, cosmic hydrodynamics, space hydrodynamics, space fluid mechanics

ABSTRACT: The authors discuss a series of new problems in hydrodynamics prompted by the tremendous expansion of cosmic studies. These problems are related to the study of the behavior of fluids in a state of weightlessness or under the effect of weak graviational or inertial fields, and to the study of the dynamic effects of fluids, under the above mentioned conditions, on the vessels in which

Card 1/2

L 47187-66

ACC NR: AR6021906

they are contained. The authors limit themselves to the discussion of problems of types of fluid equilibrium, viscosity, and dynamic interaction. [Translation of abstract] [SP]

SUB CODE: 22/

Card 2/2

PETROV, A.A., inzhener.

Technological aspects of the manufacture of SVK-150-1 turbines. Energomashinostroenie no.3:24-25 Mr '56. (MLRA 9:7)
(Steam turbines)

PETROV, A.

Dissemination of progressive production practice. Sov.profsoiuzy 4 no.11:49-51 N '56. (MIRA 10:1)

1.Predsedatel' komissii po proizvodstvenno-massovoy rabote komiteta profsoyuza Leningradskogo metallicheskogo zavoda.
(Leningrad--Turbines)
(Efficiency, Industrial)

PETROV, A.A., inzhener.

Working seamless forged rotors for SVK-150-1 steam turbines. Energomashinostroenie no.10:25-28 O '56. (MLRA 10:1)
(Steam turbines) (Metalwork)

PETROV, A.A., inzh.

Finish boring of steam-turbine bodies (cylinders). Energomashinostroenie no.2:39-42 F '59. (MIRA 12:3)
(Steam turbines) (Drilling and boring)

L 16498-65 EWP(k)/EWT(m)/EWP(b)/EWA(d)/EWP(w)/EWP(v)/EWP(t) Pf-4
AEDC(b)/ASD(p)-3 EM/JD
ACCESSION NR: AR4049367 S/0285/64/000/009/0009/0009

SOURCE: Ref. zh. Turbostroyeniye. Otdel'nyye vypusk, Abs. 9.49.44

B

AUTHOR: Petrov, A.A.

TITLE: Some problems in the field of turbine blade vibration related to current developments in turbine design

CITED SOURCE: Tr. Leningr. korablestroit. in-ta, vyp. 42, 1964, 157-162

TOPIC TAGS: turbine design, turbine blade, turbine blade vibration, blade aeroelasticity, turbine blade frequency, temperature stress effect, shear stress effect, blade rotational inertia

TRANSLATION: The article considers some problems in the vibration of turbine blades which cannot be solved on the basis of the differential flexure equation

$$EI\frac{d^2y}{dx^2}=-M. \quad (1)$$

Such problems include aeroelasticity, the effect of temperature stresses on blade frequencies, the internal resistance to frequency decrease due to shear stresses and the

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L 16498-65
ACCESSION NR: AR4049367

rotational inertia of blade elements. It is emphasized that an overall approach to the solution of all these problems is possible on the basis of the wave theory. Bibl. with 20 titles. G. Vitakhova

SUB CODE: PR ENCL: 00

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L 13750-65 EWT(m)/EWP(k)/EWP(w)/EWP(v) Pf-4 AEDC(b)/ASD(p)-3 EM

ACCESSION NR: AP4047603 S/0143/64/000/009/0091/0095

AUTHOR: Petrov, A. A. (Engineer)

B

TITLE: Stress waves in turbine blades 24

SOURCE: IVUZ. Energetika, no. 9, 1964, 91-95

TOPIC TAGS: turbine blade, turbine blade stress, turbine blade test, turbine blade vibration 24 26

ABSTRACT: Some laboratory tests of turbine blades (up to 50—70-mm long) for vibration resulted in the measured values of stresses being higher than the design values. This discrepancy is explained by the wave theory when the condition $x \ll \Lambda$ is not fulfilled (x is the original length of the tensometer wire, Λ is the wavelength). By setting up an elastic-line equation, differentiating it twice and transforming, Timoshenko equations for the shearing force and bending moment are developed. Their solution by the operational-calculus method yields two

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L 13750-65
ACCESSION NR: AP4047603

inequalities which show that a disturbance propagates along the blade in two waves having velocities c_t and c_s. On the strength of the above theory, some recommendations for laboratory testing methods are formulated. Orig. art. has: 1 figure and 25 formulas.

ASSOCIATION: Leningradskiy korablestroitel'nyy institut (Leningrad Ship-Building Institute)

SUBMITTED: 30Jul63 ENCL: 00

SUB CODE: PR NO REF SOV: 003 OTHER: 002

Card 2/2

L 19166-63 EWP(q)/BDS/EWT(m)/EWP(r) ASD/AFFTC JD
S/0285/63/000/007/0005/0005 57
56

ACCESSION NR: AR3005461

SOURCE: RZH. Turbostroyeniye, Abs. 7.49.27

AUTHOR: Petrov, A. A.

TITLE: On the wave character of turbine blade oscillations

CITED SOURCE: Tr. Leningr. korablestroit. in-ta, v. 40, 1962, 85-88

TOPIC TAGS: bending, stress, shear stress, turbine, turbine blade, turbine blade strength, crystallite slip

TRANSLATION: It is noted that two str sses act on the blade: the bending and the shear stress, with the latter characterized by shorter waves. A consideration of the shear, a phenomenon associated with the slip of metallic crystallites, can lead to an explanation of the effect of the logarithmic decrement of oscillation damping, whose physical nature has not yet been determined. The shears occur simultaneously over a large number of planes, while the associated energy produces

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L 19166-63
ACCESSION NR: AR3005461

damping. The velocity of an infinitely short wave (and period) arising originally as a result of a sudden stress, varies depending on the ratio of the length of the transverse cross-section to its height, i.e., the ratio of the blade chord to its thickness. With high stresses between the crystals there is cracking and destruction occurs. The fracture of short blades is explained by the predominance of shear in them (this process is assisted by the high temperature). The effect of shear in turbine blade oscillations cannot be neglected. One illustration. Bibliography with 3 titles.

DATE ACQ: 2 Aug 63 SUB CODE: ML, MD ENCL: 00

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COVERAGE: The experience of the LMZ (Leningradskiy metallicheskiy zavod - Leningrad Metalworking Plant) in the manufacture of modern large-capacity turbines is presented. Methods for the rationalization of basic manufacturing processes and for the mechanization and automation of manual operations are given. Descriptions of attachments and tools designed by LMZ for improving labor productivity and product quality are provided, and advanced inspection methods discussed. References accompany some articles. No personalities are mentioned. There are 26 references: 25 Soviet and 1 English.

TABLE OF CONTENTS:

L 20230-65 EWT(d)/EWT(m)/EWP(w)/EWP(v)/EWP(k) Pf-4 AEDC(b)/AFWL/
ACCESSION NR: AP4049884 SSD/ASD(p)-3 EM S/0229/64/000/011/0033/0034

AUTHORS: Moiseyev, A. A. (Doctor of technical sciences); Petrov, A. A. (Engineer); Mikhaylov, O. I. (Engineer)

TITLE: Wave method for calculating impulse loading of turbine blades

SOURCE: Sudostroyeniye, no. 11, 1964, 33-34

TOPIC TAGS: turbine blade vibration, turbine blade stress, impulsive loading

ABSTRACT: The wave method for calculating impulse loading of turbine blades is discussed. During impulse loading, when such factors as shear and section inertia have to be considered, the normal differential equation of bending of the elastic line is insufficient, and the wave equation derived by Timoshenko and applied by A. A. Petrov (Deformatsii tsilindricheskikh lopatok turbomashin pri impul'sny*kh nagruzkakh, Trudy* LKI, vy*p. XIII, 1964) has to be used. The effects of temperature, partial admission, damping, stiffness, time of loading and unloading, et cetera on the characteristics of the wave are thus considered. The solution can be obtained in terms of a definite integral, a series of free vibration shapes (for finding the bending moment), or as a finite sum of primary and reflected waves (for finding shear forces). A solution of the nondimensional wave equation

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