Rea[illegible] of Chl[illegible] [illegible] [illegible]/005/076
Diene H[illegible] V. [illegible]
Al[illegible] of the Se[illegible]

[illegible] German, and [illegible] French.

ASSOCIATION: Lenin[illegible] [illegible] [illegible]veta
(Leningrad Te[illegible] [illegible])

SUBMITTED: January [illegible], [illegible]

Card [illegible]

86511

5 3700 2209, 1273 [illegible]

[illegible]

AUTHORS: Petrov, A. A., Kormer, [illegible] A., [illegible]

TITLE: On the Mechanism [illegible] Alkenynes

PERIODICAL: Zhurnal obshchey khimii, [illegible], Vol. [illegible], No. [illegible], pp. 3845-3846

TEXT: By treating the reaction product obtained from addition of lithium alkyls to alkenynes with water, one obtains allenes (Ref. 1). In order to explain the reaction mechanism, the authors studied the IR spectra of solutions of lithium butyl and vinyl-ethyl acetylene in undecane and a mixture of undecane and ether ([illegible] : [illegible]). The reaction was slow in the former solvent, and after the reaction mixture was kept at 20°C for [illegible] h, the deformation frequency of vinyl-ethyl acetylene was still visible in the spectrum. In the presence of ether, however, the reaction is complete in a few minutes, with occurrence of spontaneous heating. Immediately after mixing the components, the spectrum, besides containing the frequencies of butyl lithium (Refs. [illegible] and 4) and vinyl acetylene, shows a gradually intensifying marked frequency at [illegible] cm^{-1}, which probably corresponds to the

Card 1/3

86511

On the Mechanism of Lithium-alkyl Addition to Alkenynes

S/079/60/[illegible]
B001/B055

associated molecule C_2H_5-CLi=C=CH-CH_2-C_4H_9 (I). After leaving the mixture to stand for 12 h, a high frequency at 1780 cm^{-1} appears in the spectrum. On treating the reaction mixture with water, these frequencies disappear from all the spectra taken at the various stages of the reaction, accompanied by the appearance of the allene-group frequency and the deformation frequency at 1865 cm^{-1} (Ref. 5). That this frequency pertains to the vibrations of the associated allene - lithium complex (I) is confirmed by the fact that this frequency at 1865 cm^{-1} and also the frequency at 1780 cm^{-1} gradually appear in the spectrum of the undecane solution of butyl lithium and ethyl-butyl allene. On treatment of these solutions with water, ethyl-butyl allene was regenerated, and treatment with CO_2 gave propallene carboxylic acid, indicating a metallation reaction. On the other hand, enynes which do not form allenes by reaction with lithium alkyls, form complexes which apparently absorb at 2050 cm^{-1} and not at 1865 cm^{-1}. It is concluded from the data given in this paper, that the addition of lithium alkyls to vinyl-alkyl acetylenes proceeds via lithium allenes as inter-

Card 2/3

[illegible] 11

On the Mechanism of [illegible] Addition [illegible]
to Alkenynes

mediates. The allene [illegible]
adds to the conjugated system, [illegible] alkyl
ed with water. There are [illegible]

ASSOCIATION: Leningradskiy [illegible]
Leningrad In[illegible]

SUBMITTED: July [illegible]

Card 3/[illegible]

S/079/60/030/012/006/027
B001/B064

AUTHORS: Kormer, V. A. and Petrov, A. A.

TITLE: Studies in the Field of the Conjugate Systems. CXXVI. Addition of Lithium Alkyls to Vinyl Acetylene Alcohols

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 12, pp. 3890-3894

TEXT: In continuation of previous papers (Refs. 1, 2) the authors investigated the order of addition of lithium alkyls to the vinyl-alkyl acetylene derivatives, especially to vinyl acetylene alcohols. The secondary and tertiary vinyl acetylene alcohols, methyl- and dimethyl-vinyl acetylene carbinol were studied. The reaction proceeded under cooling in ether the demethylation with water. Thus, allene alcohols formed almost exclusively, according to the scheme:

$$R\text{-}CHOH\text{-}C\equiv C\text{-}CH{=}CH_2 \xrightarrow{R'Li} R\text{-}CHOH\text{-}CLi{=}C{=}CH\text{-}CH_2\text{-}R' \xrightarrow{H_2O} R\text{-}CHOH\text{-}CH{=}C{=}CH$$

$-CH_2-R'$. The structure of carbon skeleton in these alcohols was proven by hydrogenation into the respective saturated compounds. Hydrogenation of the

Card 1/2

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21919
S/081/61/000/[illegible]
B1[illegible]/B2[illegible]

AUTHORS: Kupin, B. S., Petrov, A. A., Yakovleva, T. V., Maslennikova, A. G.

TITLE: [illegible]

PERIODICAL: Referativnyy zhurnal. Khimiya, [illegible] abstract [illegible] (Tr. Leningr. tekhnol. in-ta im. Lensoveta, [illegible])

TEXT: The authors studied the addition of water under the conditions of Kucherov's reaction to $RCH_2C \equiv CR$ (I), where (a) R = CH_3; R = C_2H_5; R = $(CH_3)_2CH$; R = $(CH_3)_3C$. [illegible] observed in case [illegible] %[illegible] ketone and [illegible] % [illegible] ketone. The [illegible] mixtures [illegible] ketones [illegible]. The ketone mixtures were [illegible] [illegible] composition. The maximum error [illegible] 1.5 [illegible] %. It was found that the order of addition of water [illegible] substituted acetylenes is determined by

Card 1/3

24819
S/[illegible]
[illegible]

[illegible] of hydration of [illegible]

[illegible] was [illegible] of NaNH [illegible] and afterwards [illegible] $CH_2=CH$ [illegible] NH_2 A mixture [illegible] $FeSO_4$ and [illegible] % H_2SO_4 was stirred [illegible] saturated with NH_3 SO_2 and [illegible] mixture was heated [illegible] $_4$ [illegible] by means of [illegible] C_2H_5 [illegible] and CH_3Br [illegible] NH_2 [illegible] mixture were heated [illegible] The hydration [illegible] (synthesized from CH_3I and CH_2 [illegible] $C \equiv CH$, the latter obtained from CH_2 $CHCH_2Cl$ [illegible] HCl with subsequent separation of HCl by means [illegible] alkali [illegible] yields [illegible] of ketone mixture [illegible] point [illegible]

Card [illegible]

[illegible]

KUPIN, B.S.; PETROV, A.A.; YAKOVLEVA, T.V.; MASLENNIKOV, A.G.

Direction of the hydration of asymmetric disubstituted acetylenes. Trudy LTI no.60:63-69 '60. (MIRA 14:6)

1. Kafedra organicheskoy khimii Leningradskogo tekhnologicheskogo instituta imeni Lensoveta.
(Acetylene) (Hydration)

26183
S/[illegible]
[illegible]

53302

AUTHORS: [illegible]

TITLE: Study [illegible] systems [illegible]
[illegible]

PERIODICAL: Referativnyy zhurnal. Khimiya, [illegible]
[illegible]
[illegible]

TEXT: [illegible]

Card 1/

26183

S[illegible] [illegible]

[illegible] NH$_3$, [illegible] NH$_3$ [illegible]

and [illegible] with HCl [illegible]

n$_D$ = [illegible] was [illegible] The [illegible] S [illegible]

saturated with NH$_3$ S [illegible]

n$_D$ = [illegible] was [illegible] was

[illegible] in NH$_3$ [illegible] III [illegible]

[illegible] n$_D$ = [illegible] was [illegible]

spectra [illegible] I - III are given [illegible]

[illegible] [Abstracter's note: [illegible]]

Card [illegible]

PETROV, A.A.; MINGALEVA, K.S.; MARETINA, I.A.

Investigation in the field of conjugate systems. Report 125: Dipole moments of some α-alkyl-β-halobutadienes. Trudy LTI no.60: 75-77 '60. (MIRA 14:6)

1. Kafedra organicheskoy khimii Leningradskogo tekhnologicheskogo instituta imeni Lensoveta.

(Butadiene--Dipole moments)

SHVARTS, Ye.Yu.; PETROV, A.A.; BAL'YAN, Kh.V.

Some characteristics of the bromination of citric acid. Trudy LTI no.60:78-84 '60. (MIRA 14:6)

1. Kafedra organicheskoy khimii Leningradskogo tekhnologicheskogo instituta imeni Lensoveta.

(Citric acid) (Bromination)

PETROV, A.A.; PAVLOVA, L.A.

Professor El'frida Davydovna Venus-Danilova; on the seventieth anniversary of her birth. Trudy LTI no.60:227-235 '60.

(MIRA 14:6)

(Venus-Danilova, El'frida Davydovna, 1890-)

81-94
S/020/60/132/05/34/069
B011/B126

53630(A)

AUTHORS: Petrov, A. A., Kormer, V. A.

TITLE: The Addition of Lithium-alkyl Phosphides to Vinyl acetylene Hydrocarbons

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 5, pp. 1095 - 1098

TEXT: The authors have previously (Ref. 1) established that lithium-dialkyl-amides are added to vinyl-acetylene-hydrocarbons, and that allene- or acetylene-amines are formed after the adduct has been treated with water. The authors wanted to study the behavior of other compounds of the type R_2E - Li under the same conditions (E - an element of the V. group of the periodic system). To do this they analyzed the reaction of vinyl-acetylene and two of its homologs: vinylmethyl and vinyl ethylacetylene, with lithiumdiethyl- and lithiumdibutylphosphides. As expected, the addition of lithiumphosphides took place in all three possible ways (I), (II), and (III). On the other hand in the case of

Card 1/3

81704

The Addition of Lithium-alkyl Phosphides to Vinyl-acetylene Hydrocarbons

S/020/60/132/05/34/069
B011/B126

vinylmethyl- and vinylethyl-acetylene, tertiary allene phosphines (II) formed almost without exception. Tertiary phosphine which formed by treatment of the adduct of lithiumdibutylphosphide on vinylacetylene undoubtedly contained 1-dibutylphosphinobutine-3 according to the spectral data. Some 40% acetylene was found in it by the usual method. Vinylmethyl- and vinylethylacetylene behave in the same way in the reaction with lithium phosphides, while vinylethylacetylene gives allene products, and vinylmethylacetylene gives mainly the dimer and polymers on the reaction with lithiumalkylamides. Considerable quantities of high-boiling phosphorus-containing products are also formed in all cases, as well as tertiary phosphines. The authors suppose that they are higher telomers of the phosphines isolated from them. Lithiumdialkylphosphides react easily with halogen derivatives, producing saturated tertiary phosphines. The authors obtained diethylbutylphosphine from the action of lithiumdiethylphosphide on butylchloride Tributylphosphine formed in a similar way from lithiumdibutylphosphide and butylchloride. No alkylchloride remained from the reaction on the production of lithiumalkyls The phosphines with an allene group are described here for the first time The tertiary allene phosphines

X

Card 2/3

81704

The Addition of Lithium-alkyl Phosphides to Vinyl-acetylene Hydrocarbons

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B011/B126

obtained by the authors are quite mobile colorless liquids, with a smell characteristic of phosphines. They show an exaltation of molecular refraction. These phosphines are quickly oxidized and resinified in air, becoming brown. An attempt to hydrogenate the phosphines on palladium failed. There are 1 figure and 16 references: 7 Soviet, 5 German, and 4 American.

ASSOCIATION: Leningradskiy tekhnologicheskiy institut im. Lensoveta (Leningrad Institute of Technology imeni Lensovet)

PRESENTED: February 8, 1960, by B. A. Arbuzov, Academician

SUBMITTED: February 4, 1960

Card 3/3

84688

53700 2209, 1290, 1273 only

S/020/60/134/004/014/025
B016/B060

AUTHORS: Polyakova, A A, Zimina, K I, Petrov, A A and Khmel'nitskiy, R A

TITLE: Mass Spectra and Structure of Silicon-containing Vinyl Acetylenes

PERIODICAL: Doklady Akademii nauk SSSR 1960 Vol 134 No 4 pp 833 - 835

TEXT: The authors have previously proved (Ref 1) by studying mass spectra of vinyl acetylene and its analogs, the interdependence between the intensities of the molecular ion and some split-off ions, on the one hand, and the structure of the hydrocarbons on the other. The present work was conducted to examine the mass spectra of four enin-silicon hydrocarbons: 1-trimethyl-silyl-buten-3-ine-1 (I), 1-trimethyl-silyl 3-methyl-buten 3-ine-1 (II), 1-trimethyl-silyl-penten-3-ine-1 (III), and 1 triethyl-silyl-buten-3-ine 1 (IV). In contrast with vinyl acetylene hydrocarbons, the process of dissociative ionization of their silicon-containing derivatives is exclusively selective (Table 1). Under the action of an electronic impact the molecule

Card 1/3

Mass Spectra and Structure of Silicon-containing Vinyl Acetylenes

S/020/60/134/004/013/024
B016/B060

of (I) mainly undergoes the dissociation of a single methyl radical. While the molecular ion with mass 124 has the highest intensity, 47% of the total ion current falls to the ion with mass 109. The further dissociation gives rise to silicon-containing ions with masses 93, 83, 81, 79, 69, 55 and intensities from 3 to 15%. This dissociation takes place by the successive splitting off of CH·, CH_2· or CH_3 groups. There can be no doubt about the presence of silicon in these ions. The dissociation of the two closest-related homologs of (I), namely, (II) and (III), proceeds along a similar pattern. In both these homologs, the most resistant ions were found to be those with mass 123 which result from the splitting of the methyl radical from the molecular ion. In the case of (II) and (III) the further dissociation is even less distinctly marked than in the case of (I). 68 - 71% of the total intensity of ions falls to ions with mass 123. $(CH_3)_3Si^+$ ions with mass 73 are the most intensive in the spectrum of the saturated analog of (I), viz., trimethyl butyl silane. The splitting-off of methyl groups takes place to a much lower extent. The ions representing this direction of dissociation in the spectrum are $(CH_3)_2SiH$ ions with mass 59. The remaining ions in the spectrum of trimethyl butyl silane have a very low

Card 2/3

Mass Spectra and Structure of [illegible]
-containing Vinyl Acetylenes

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B0[illegible]/B0[illegible]

intensity. The mass spectrum of (IV) is characterized by a more [illegible] dissociation process of the molecular [illegible] seen from the [illegible] the initial stage of dissociation of all silicon-containing vinyl acetylenes is the same in that the alkyl radical is split off from the silicon atom. Moreover, in the case of (IV) ethylene molecules are split off in succession. A comparison between mass spectra of each hydrocarbon and those of their silicon-containing analogs produces analogies and differences which are closely related to the substitution of carbon by silicon. The authors thank M. D. Stadnichuk for having prepared the compounds (I) to (IV). The investigation was conducted with the aid of the apparatus MC-1 (MS-1) improved according to earlier descriptions. There are 1 table and 6 references: 5 Soviet and 1 US.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefti i gaza i polucheniyu iskusstvennogo zhidkogo topliva (All-Union Scientific Research Institute for the Processing of Petroleum and Gas and for the Production of Synthetic Liquid Fuels)

PRESENTED: June 6, 1960, by B. A. Arbuzov, Academician

SUBMITTED: May 20, 1960

Card 3/3

S [illegible]

AUTHORS: Ch[illegible] K[illegible] [illegible] A. [illegible] and [illegible] A. A.

TITLE: Intera[illegible] Vi[illegible] A[illegible] and [illegible] N[illegible]

PERIODICAL: Doklady Akadem[illegible] SSSR [illegible]

TEXT: The auth[illegible]s [illegible] addi[illegible] [illegible] This was [illegible] arions. The [illegible] showed that [illegible] only added [illegible] the [illegible] and [illegible] is formed [illegible] II [illegible] as [illegible] and [illegible] as [illegible]

Card 1/[illegible]

Interaction of Vinyl A[illegible] and [illegible] S/[illegible]/[illegible]/[illegible]
H[illegible] with [illegible] [illegible]/[illegible]

[illegible]

where R = H [illegible] III [illegible] The structure of the resulting substances I [illegible] III was [illegible] on the basis of infrared spectra, [illegible] method, [illegible] in the case of substance I. The same [illegible] was [illegible] from all three substances [illegible] with [illegible] permanganate solution. The [illegible] as [illegible] A [illegible] substances [illegible] The [illegible] was [illegible] S [illegible] S [illegible]

Card 1/[illegible]

[illegible]

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

ASSOCIATION [illegible] Inst [illegible]
Leningrad Institute [illegible]

PRESENTED [illegible] A [illegible] A [illegible]

SUBMITTED [illegible]

Card [illegible]

33101
S/638/61/001/000/026/056
B104/B138

54600

AUTHORS: Molin, Yu. N., Chkheidze, I. I., Petrov, A. A., Buben, N. Ya., Voyevodskiy, V. V.

TITLE: Investigation of energy transfer processes during the radiolysis of congealed hydrocarbons, by the paramagnetic electron resonance method

SOURCE: Tashkentskaya konferentsiya po mirnomu ispol'zovaniyu atomnoy energii. Tashkent, 1959. Trudy, v. 1. Tashkent, 1961, 178 - 181

TEXT: The following compounds were investigated: (I) 1,1-dicyclohexyl dodecane; (II) 1,1-diphenyl dodecane; (III) 1-phenyl 1-cyclohexyl dodecane. The energy transfer during radiolysis was determined by means of paramagnetic electron resonance, and from the total radiation yield. Paramagnetic electron resonance spectra were taken of compounds I - III, and of benzene and cyclohexane. The substances were irradiated with 1.6-Mev electrons at -120°C. The spectra were taken during irradiation with electrons. The cyclohexyl radical, $\cdot C_6H_{10}$, was primarily formed when

Card 1/3

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Investigation of energy transfer...

irradiating compound I. Radicals are also formed by breaking C-H bonds. The spectra of the irradiated compounds II and III are equal, [illegible] to that of benzene. Two radicals are formed: the first by the removal of an H atom from the benzene ring, the second by addition of an H atom to a benzene ring. When irradiating a mixture of compounds I and II, radicals are mainly formed from molecules of compound II. In molecules of compounds II and III, it is mainly the bonds in the benzene rings which are broken. In compound I, the first rupture of C-H bonds may be accompanied by a reaction of the H atom, which then permits the formation of radicals. The production of radicals is linearly dependant on irradiation. The yield of radicals in compounds II and III is one order of magnitude smaller than that of compound I. The nearly equal yields of radicals of compounds II and III prove that the energy is transferred to the benzene ring. The yield of radicals in compounds II and III is almost three times that in benzene. This decrease in stability is explained by rapture of the symmetry of the benzene ring. There are 4 figures, 1 table, and 9 references: 4 Soviet and 5 non-Soviet. The four most recent references to English-language publications read as follows: Smaller B., Matheson M. S., J. Chem. Phys., 28, 116[illegible], 1[illegible]; Al[illegible]r R. [illegible]

Card 2/3

33101

Investigation of energy transfer

S/638/61/001/000/026/056
B104/B138

Anderson T. H., Webb L. A. J. Chem. Phys., 30, 695, 1959; Rad. Res. 1, 1959; Andrew E. R., Eades R. G. Proc. Roy. Soc., 216A, 398, 1953

ASSOCIATION: Institut khimicheskoy kinetiki i goreniya Sibirskogo otdeleniya AN SSSR (Institute of Chemical Kinetics and Burning of the Siberian Department AS USSR)

Card 3/3

89126

1.9600 ([illegible])

S/065/61/000/003/001/004
E194/E284

AUTHORS: Vinogradov, G. V., Arkharova, V. V. and Petrov, A. A.

TITLE: The Anti-Wear and Anti-Frictional Properties of Hydrocarbons

PERIODICAL: Khimiya i tekhnologiya topliv i masel, 1961, No 3, pp. 48-54

TEXT: Four-ball machine friction and wear tests were made on the following hydrocarbons and mixtures of them: Tetracosane, 7-hexyloctadecane; 1.5-dicyclohexyl-3-heptylpentane; 1.5-diphenyl-3-heptylpentane; 1.1-diphenyldodecene-1; 1.1-diphenyldodecane; cyclohexyltetralin and dicyclohexyldecalin. The balls were 0.5" diameter of ball-bearing chrome-steel hardened to 62 Rc. Atmospheres of argon, air and oxygen were used in the tests. All the tests were carried out for one minute at a sliding speed of 23 cm/sec, in the tests with argon and oxygen the gas was blown through at a rate of 1[illegible] litres per hour at a temperature of 100 ± 1°C. After each test the load was increased and the balls were rotated to present a fresh wear-surface but the lubricant was not changed. Tests were made below, at and well-above the

Card 1/4

89126

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The Anti-Wear and Anti-Frictional Properties of Hydrocarbons

seizure load. The results are presented in the form of log/log graphs of wear against load, wear being assessed by diameter of wear-scar. The tests in argon atmosphere display considerable variation in seizure load and shape of wear curve. In general, however, in argon the seizure loads are low and the wear is small at loads below the seizure loads. The seizure is easily broken down. The test results of hydrocarbons in argon are similar to those observed for low-sulphur lubricating oils. The behaviour observed is attributed to the presence of traces of oxygen or oxygen compounds in the hydrocarbon that are capable of replacing the oxide films on freshly worn metal surfaces provided that these are not produced too rapidly. When argon is replaced by air the seizure load rises because both metal and hydrocarbons are more easily oxidized. In an oxygen atmosphere the seizure loads are still higher and the wear curves rise smoothly. These smoothly rising wear curves are most typical of the easily oxidized and relatively low viscous hydrocarbons such as cyclohexyltetralin The more viscous and less readily oxidized hydrocarbons often have

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The Anti-Wear and Anti-Frictional Properties of Hydrocarbons

a step in the wear curve, presumably because as the viscosity increases access of oxygen is hindered. However, in an oxygen atmosphere the graphs of wear-scar diameter against load lie within a very narrow band for a wide range of hydrocarbons including not only those tested but many others besides. At loads below the seizure load the wear is often heavier in oxygen than in air or in argon and this is attributed to oxidation of the steel during friction. Combined oxidation of steel and hydrocarbon under heavy friction conditions occurs during the exposure of fresh metal surfaces in the presence of frictional heat. The conditions are quite different from those in normal oxidation tests. The results show that molecular oxygen and organic sulphur compounds which react with steel act as anti-seizure additives and as substances which increase the chemical wear of the steel, thus behaving like extreme pressure additives. The separate and combined influences of dibenzyldisulphide and oxygen as extreme pressure additives are described. The main conclusions of the article are that the anti-friction and anti-wear properties of a

V

Card 3/4

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E194/E284

The Anti-Wear and Anti-Frictional Properties of Hydrocarbons

large number of hydrocarbons are very similar in an oxygen atmosphere. Friction and wear tests with steel balls and hydrocarbon lubricants take place in the presence of oxidizing substances which can have an important anti-seizure effect comparable with that of sulphur-containing extreme-pressure additives. It is claimed that individual high molecular weight hydrocarbons can be used as model substances for the study of anti-wear and anti-friction properties of low sulphur lubricating oils. There are 7 figures, 1 table and 6 Soviet references.

Card 4/4

BUCHANCHENKOV, A.L.; KAGANSKAYA, K.Ya.; NEYMAN, M.B.; PETROV, A.A.

Study of the mechanism underlying the oxidation of 2,4,6-trimethylheptane with the use of the intermittent illumination method. Kin. i kat. 2 no.1:44-49 Ja-F '61. (MIRA 14:3)

1. Institut khimicheskoy fiziki AN SSSR.
(Heptane)

15 8000 2209 1581.

11 2210

22565

S/190/61/003/005/008/014
B110/B230

AUTHORS: Okhrimenko, I. S., Petrov, A. A., Verkholantsev, V. V.

TITLE: Mechanism of the formation and reversibility of trimers containing pyridine rings. I Mechanism of trimer conversion

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 5, 1961, 724-728

TEXT: Trimerization yields insoluble and non-melting products of high strength. The present authors intended to examine the trimerization mechanism of copolymers containing pyridine ring, as well as the possibility of their reversible conversion to form linear polymers. A reversibility has already been observed in the acid treatment of trimers containing azomethine group in the side chain, obtained by polymerization of Schiff's bases with vinyl group, as well as in KOH vulcanization $<70^{\circ}$C of carboxylate rubber. The authors examined the conversion of linear polymers into the trimer with the help of the latex copolymer СКМВП-40 (SKMVP-40) of 2-methyl-5-vinyl pyridine with 60% by weight of divinyl and 72% conversion. After treatment with strong acids it was not soluble either in polar (chloroform) or in non-polar (benzene) solvents. Its

Card 1/7

Fig. 4 shows the swelling of specimens in benzene, which were exposed to 1 M acid for 2 hr and rinsed with water. Supposing the swelling degree to be inversely proportional to the density of cross links, the strongest acid, HCl, binds best. The rate of gel formation was very high and, within a certain range, almost independent of the thickness of the film. From this, a high rate of diffusion of the cross-linking agent (proton) could be deduced. The polymer film absorbed more protons than anions from the acid. The protons could be removed again only by boiling in the presence of nucleophile reactants. The following equilibrium is possibly present:

With a rise of temperature also the oscillating energy of the chains increased, which could not be compensated any more by the strength of intermolecular cross links. Therefore, the trimer content decreased and the

Mechanism of the formation...

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B110/B230

absorption of acid increased. The following intermolecular binding mechanism is assumed herefrom: First, the acid formed salts with the pyridine ring, then a stable hydrogen bond by means of protons bound in a similar way to two nitrogen atoms. Stable ions resembling HF_2^- are formed thereby. In addition, dibasic acids may also yield salt bonds. To eliminate the influence of diffusion, reactions of the copolymer СКМВП-40 (SKMVP-40) were examined on films of ≥200μ thickness. The trimer content was determined by extraction in benzene in the Soxhlet device. The infrared spectra were taken by means of the spectrophotometer ИКС-14 (IKS-14). The acid absorption was determined by titration of the acid bath before and after the treatment and by weighing the dry sample. The authors thank E. K. Dazaryants and V. L. Tsaylingol'd for the latex. There are 5 figures, 1 table, and 2 references: 1 Soviet-bloc and 1 non-Soviet-bloc.

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

SUBMITTED: July 22, 1960

Card 4/7

POLYAKOVA, A.A.; ZIMINA, K.I.; PETROV, A.A.; KHMEL'NITSKIY, R.A.

Mass-spectra and structure of organic compounds. Part 5: Mass-spectra of enyne hydrocarbons with a tertiary butyl radical at multiple bonds. Izv. vys. ucheb. zav.; khim. i khim. tekh. 4 no. 2:321-324 '61. (MIRA 14:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po pereabotke nefti i gaza i Leningradskiy tekhnologicheskiy institut im. Lensoveta. Kafedra organicheskoy khimii.
(Hydrocarbons—Spectra)

[illegible]
[illegible]/E491

AUTHOR: Yakovleva, I.V., [illegible] and [redacted]

TITLE: The Effect of the Nature of the Solvent on the Profile of the Carbonyl-group Band in the Infrared Spectra of Carbonyl Compounds

PERIODICAL: Optika i spektroskopiya, 1961, Vol. 10, No. 1, pp. 171-173

TEXT: The band representing the valence vibrations of the carbonyl group in the infrared and Raman spectra is known to consist of at least two components (Ref. 1 to 6). The splitting of the band is most likely due to association. It was found that solvents can be divided into three groups depending on the nature of their effect on the carbonyl-group band profile. Solvents of the first type (polar compounds, nitromethane, chloroform, alcohols, toluene) produce only one carbonyl-band component (the one with the lower frequency) in dilute solutions. In solvents of the second type (carbon tetrachloride, carbon disulphide, benzene) both components of the carbonyl band can be seen. In solvents of the third type (non-polar compounds such as hexane, octane, cyclohexane) only one component with the higher

Card 1/2

[illegible]
F201/F441

The Effect of the Nature of the Solvent on the Profile of the Carbonyl-Group Band in the Infrared Spectra of Carbonyl Compounds

frequency appears in the spectra. This is illustrated in Table 1 and in a figure on p.131 for acetone, methyl ethyl ketone, methyl propyl ketone, diethyl ketone, pinacolin, cyclohexanone, acetophenone and benzophenone dissolved in various solvents. The change in the solution concentration with simultaneous proportional change of the layer thickness (so that the same number of molecules remained in the ray path) did not affect the carbonyl band profile (Table 2). There are 1 figure, 2 tables, and 14 references: 2 Soviet and 12 non-Soviet.

SUBMITTED April 12, 1960

Card 2/2

ZAYDEL', A.N.; OSTROVSKAYA, G.V.; PETROV, A.A.

Spectroscopic method for determining the isotopic composition of nitrogen. Opt.i spektr. 10 no.5:673-676 My '61. (MIRA 14:8)
(Spectrum analysis) (Nitrogen—Isotopes)

YAKOVLEVA, T.B.; PETROV, A.A.; STANDNICHUK, M.D.

Vibration spectra and structure of enin silicon hydrocarbons.
Opt. i spektr. 11 no.5:588-593 N '61. (MIRA 14:10)
(Silicon organic compounds)

5531

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E202/E192

AUTHORS Yakovleva, T. V., Petrov, A. A. and Stadnichuk, M. D.

TITLE Vibrational spectra and structure of the enyne type silicon hydrocarbons

PERIODICAL Optika i spektroskopiya, v. 11, no. 3, 1961, 388-391

TEXT Vibrational spectra of the following were studied: 1-trimethylsilylbutene-3-yne-1 (I), 1-trimethylsilyl-3-methylbutene-3-yne-1, 1-trimethylsilyl-pentene-3-yne-1 and 1-trimethylsilyl-(cyclohexene-1-yl)-ethyne. These were contrasted with the available data on the corresponding enyne type hydrocarbons. Full data of the Raman and IR vibrational spectra are given for all the above compounds. It is concluded that the substitution of C with Si at the triple bond causes a sharp lowering of the frequency in both spectra at ca. 75 cm^{-1} and increases the corresponding intensity of the band in the IR spectrum. The frequency of the double bond remains substantially unchanged. Two additional bands identified as the cis and trans isomers were found in the first compound. The degree of depolarisation of the lines of valency vibrations C = C, C ≡ C and Si - C with

Card 1/2

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Vibrational spectra and structure S/051/61/011/005/007/016
E202/E192

reference to the ellipsoid of polarisation was also investigated. It was shown that with the elongation of the C chain of the silicon hydrocarbon, the ellipsoid is stretched while when the branching occurs it shrinks. Cyclisation on the other hand has similar effect as the elongation of the straight chain. Finally, the authors conclude that the above mentioned frequency fall in the triple bond spectrum is due not only to the change of the mass of the nearest atom but also due to the increased coefficient of elasticity.
There are 1 figure, 3 tables and 7 references: all Soviet.

SUBMITTED: December 26, 1960

Card 2/2

[illegible]VIEVA [illegible].V.; [illegible]

Depolarization [illegible] Raman spectrum [illegible]
vinyl-acetylene [illegible] spektr. 11 [illegible]
[illegible] '61. ([illegible]:10)
([illegible] ns--[illegible])

KOLYASKINA, Z.N.; PETROV, A.A.

Reactions of chlorine-containing telomers of diene hydrocarbons. Part 4: Reactionsof 1-chloro-5, 5-dimethyl-2-hexene and 1, 3-dichloro-5, 5-dimethyl-2-hexene with sodium acetoacetate and sodium malonate. Zhur.ob.khim. 30 no.10:3243-3247 0 '61. (MIRA 14:4)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Hexene) (Acetoacetic acid) (Malonic acid)

BAL'YAN, Kh.V.; PETROV, A.A.; BOROVIKOVA, N.A.; KORMER, V.A.; YAKOVLEVA, T.V.

Hydrogenation of unsaturated compounds in the presence of colloidal palladium. Part 14: Some characteristics of the hydrogenation of disubstituted allene hydrocarbons. Zhur.ob.khim. 30 no.10:3247-3253 O '61. (MIRA 14:4)

1. Leningradskiy tekhnologicheskiy institut im. Lensoveta.
(Hydrogenation) (Olefins)

POLYAKOVA, A.A.; PETROV, A.A.

Characteristics of the mass spectra of enyne hydrocarbons containing a tert-butyl radical. Zhur.ob.khim. 31 no.10 3499-3506 O '61.
(MIRA 14:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefti i gaza i Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Unsaturated compounds--Spectra)

89510

S/079/61/031/002/003/019
B118/B208

5 3700

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

TITLE: Studies in the field of conjugated systems. CXXVIII. Mode of bromine addition to silicon-containing enine compounds

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 2, 1961, 411-418

TEXT: Following Ref. 1 concerning the mode of bromine addition to enines, the authors studied the effect of the substitution of a trialkyl or triaryl silyl group for one of the hydrogen atoms on the reactivity of the enine system with respect to bromine. A. D. Petrov and S. I. Sadykh-zade et al. (Refs. 2, 3) found that 1-triethyl silyl buten-3-ine-1 adds the first bromine molecule to the triple bond. The authors studied this problem thoroughly, and brominated silicon-containing enines with different substituents in the enine system and at the silicon atom. The following silicon-containing enine systems were first selected as initial products: 1-trimethyl silyl buten-3-ine-1 (I), 1-trimethyl silyl penten-3-ine-1 (II), 1-trimethyl silyl-3-methyl buten-3-ine-1 (III), and 1-trimethyl silyl ethinyl cyclohexene-1 (IV). In the second group, the following compounds were studied:

Card 1/4

X

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Studies in the field ...

S/079/61/031/002/003/019
B116/B206

1-triethyl silyl and 1-triphenyl silyl buten-3-ines-1 (V) and (VI). The results obtained were compared with those of compound (I). (II) and (IV) have so far not been described. The following three types could be expected when adding bromine to these enines:
$R_2Si - C \equiv C - CR'Br - CHR''Br$(A), $R_3Si - CBr = CBr - CR' = CHR''$(B),
$R_3Si - CBr = C = CR' - CHR''Br$(C) (Ref. 1). This bromination was carried out in chloroform at -10-15°C. In most cases, the dibromides could be easily separated by vacuum distillation from excess initial products, and from tetrabromides and other high-boiling products formed in low quantities. The structure of the dibromides was confirmed by their infrared spectra (Diagram), and by chemical means. In all cases, bromine added to the 1, 4-position and to the ethylene bond. The highest yield in allene-1, 4-adduct is obtained from 1-trimethyl silyl buten-3-ine-1, the lowest one from 1-trimethyl silyl-3-methyl buten-3-ine-1. Dibromides of 1-trimethyl silyl buten-3-ine-1 were shown to be capable of: 1) isomerization on heating, giving 1, 3-diene dibromide, 2) splitting off vinyl bromo acetylene under the action of alcoholic alkali:

Card 2/4

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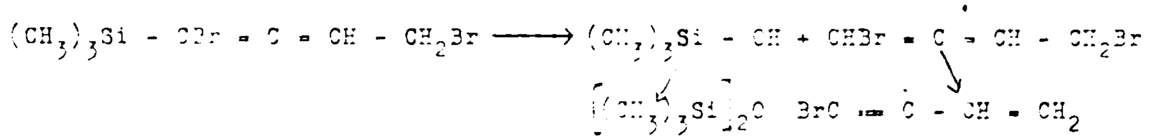
B118/B208

Studies in the field ...



$$(CH_3)_3Si - CBr = C = CH - CH_2Br \longrightarrow (CH_3)_3Si - CH + CHBr = C = CH - CH_2Br$$

$$[(CH_3)_3Si]_2O \quad BrC \equiv C - CH = CH_2$$

The changes in the addition direction of bromine, according to the position of methyl groups in the enine chain, are explained by electron displacements. There are 1 figure, 12 tables, and 12 references: 10 Soviet-bloc and 2 non-Soviet-bloc.

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

SUBMITTED: February 27, 1960

Legend to the figure: Infrared absorption spectra of dibromides (layer thickness about 30μ) 1: 1-trimethyl silyl buten-3-ine-1; 2: 1-trimethyl silyl buten-3-ine-1 (Experiment b); 3: 1-trimethyl silyl penten-3-ine-1; 4: 1-trimethyl silyl-3-methyl buten-3-ine-1; 5: 1-trimethyl silyl ethinyl

Card 3/4

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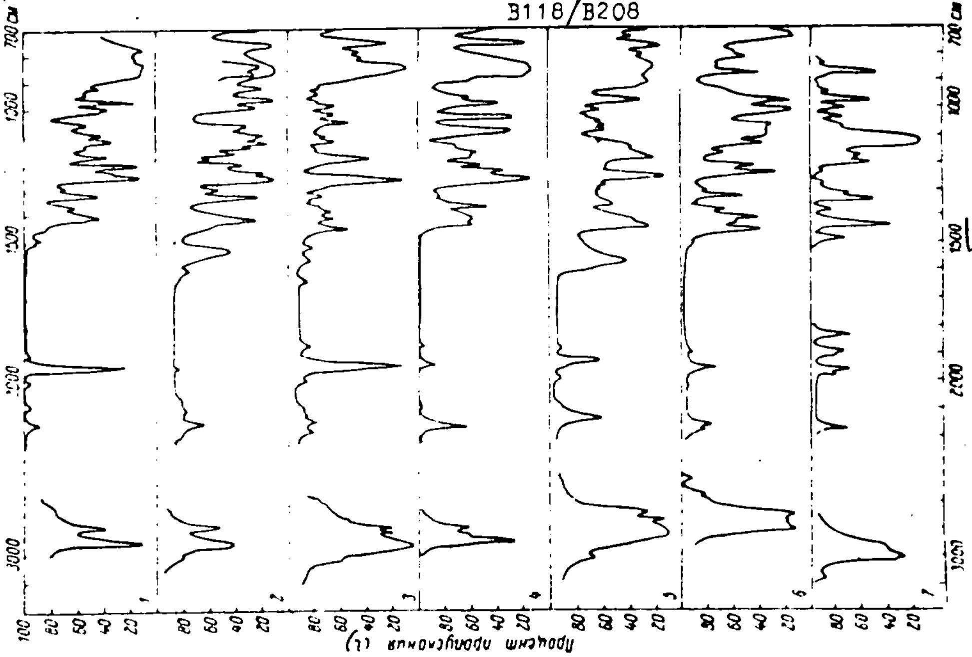
B118/B208

Studies in

cyclohexene-1; 6: 1-triethyl silyl buten-3-ine-1; 7: 1-triphenyl silyl buten-3-ine-1; a: percent of transmissivity



Card 4/4

S/079/61/031/002/004/019
B118/B208

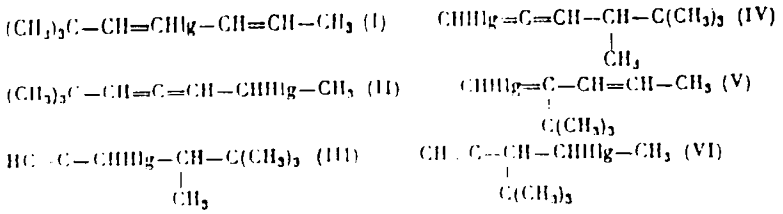
53600

AUTHORS: Maretina, I. A. and Petrov, A. A.

TITLE: Studies in the field of conjugated systems. CXXIX. Mode of addition of tertiary halogen alkyls to propenyl-, isopropenyl-, and vinyl methyl acetylene

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 2, 1961, 419-428

TEXT: To clarify the effect of alkyl radicals on the mode of addition of tertiary halogen alkyls to enine systems, the authors studied the addition reactions of tertiary butyl chloride and butyl bromide to propenyl-, isopropenyl-, and vinyl methyl acetylene in the presence of zinc halides. In the case of propenyl acetylene, six adducts of Scheme 1 (I-VI) are possible:



$(CH_3)_3C-CH=CHHg-CH=CH-CH_3$ (I)

$(CH_3)_3C-CH=C=CH-CHHlg-CH_3$ (II)

$HC\equiv C-CHHlg-CH(CH_3)-C(CH_3)_3$ (III)

$CHHlg=C=CH-CH(CH_3)-C(CH_3)_3$ (IV)

$CHHlg=C(C(CH_3)_3)-CH=CH-CH_3$ (V)

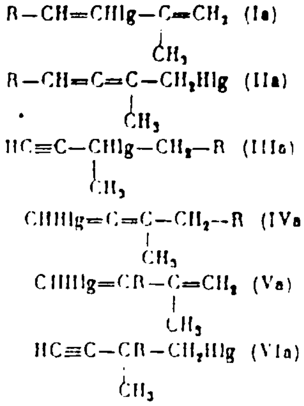
$CH\equiv C-CH(C(CH_3)_3)-CHHlg-CH_3$ (VI)

(1)

X

Card 1/4

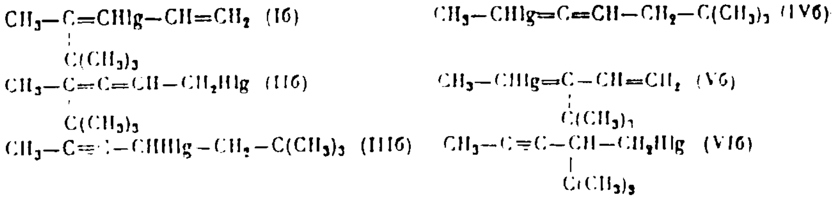
with isopropenyl acetylene, six adducts of Scheme 2 (Ia-VIa)



$R-CH=CHlg-\underset{\underset{CH_3}{|}}{C}=CH_2$ (Ia)
$R-CH=C=\underset{\underset{CH_3}{|}}{C}-CH_2Hlg$ (IIa)
$HC\equiv C-\underset{\underset{CH_3}{|}}{C}Hlg-CH_2-R$ (IIIa)
$CHHlg=C=\underset{\underset{CH_3}{|}}{C}-CH_2-R$ (IVa)
$CHHlg=CR-\underset{\underset{CH_3}{|}}{C}=CH_2$ (Va)
$HC\equiv C-\underset{\underset{CH_3}{|}}{C}R-CH_2Hlg$ (VIa)

(2)

and with vinyl methyl acetylene, six adducts of Scheme 3 (Iб-VIб)



$CH_3-\underset{\underset{C(CH_3)_3}{|}}{C}=CHlg-CH=CH_2$ (Iб)
$CH_3-\underset{\underset{C(CH_3)_3}{|}}{C}=C=CH-CH_2Hlg$ (IIб)
$CH_3-C\equiv C-CHHlg-CH_2-C(CH_3)_3$ (IIIб)
$CH_3-CHlg=C=CH-CH_2-C(CH_3)_3$ (IVб)
$CH_3-CHlg=\underset{\underset{C(CH_3)_3}{|}}{C}-CH=CH_2$ (Vб)
$CH_3-C\equiv C-\underset{\underset{C(CH_3)_3}{|}}{C}H-CH_2Hlg$ (VIб)

(3)

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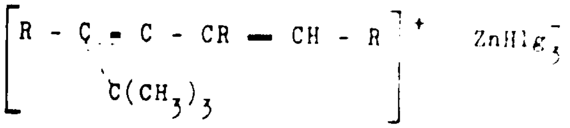
Studies in the field ...



$$\left[R - \underset{C(CH_3)_3}{C} = C - CR = CH - R \right]^{+} \quad ZnHlg_3^{-}$$

Two new enines, allyl tert-butyl acetylene and isopropenyl tert-butyl acetylene, were obtained. There are 2 figures, 2 tables, and 19 references: 16 Soviet-bloc and 3 non-Soviet-bloc

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

SUBMITTED: February 29, 1960

Card 4/4

89512

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S/079/61/031/002/005/019
B118/B208

AUTHORS: Kheruze, Yu. I. and Petrov, A. A.

TITLE: Studies in the field of conjugated systems. CXXX. Halogen arylation of vinyl acetylene with phenyl-, p-tolyl-, m- and p-chloro-phenyl-, and p-anisyl diazonium salts

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 2, 1961, 428-432

TEXT: The chloro-arylation of vinyl acetylene with diazonium salts described by A. V. Dombrovskiy in Ref. 1, which gives 1-aryl-2-chloro-butines-3, takes place at least in two directions yielding chloro-phenyl butine (I), and, apparently, 1-chloro-4-phenyl butadiene-1, 2 (II) (Ref. 2):

$C_6H_5 - CH_2 - CHCl - C \equiv CH$ (I), $C_6H_5 - CH_2 - CH = C = CHCl$ (II).

This reaction was studied to confirm the structure of allene chloride (II) by ozonization and oxidation (with potassium permanganate) of the chloride mixtures (I) and (II). Instead of the expected phenyl acetic acid, however, benzoic acid was obtained in both cases which may result from an intenser

Card 1/3

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Studies in the field ...

oxidation of two chlorides, or of other isomeric chlorides which are present in low quantities in the chloro-phenylation products of vinyl acetylene (e.g., (III) and (IV)):

$C_6H_5 - CH = C = CH - CH_2Cl$ (III); $C_6H_5 - CH = CCl - CH - CH_2$ (IV).

The first assumption is more likely, as neither chloro acetic acid nor oxalic acid were separated in the ozonization and oxidation, and the chlorine was found to be of high stability. It had further to be clarified whether chloro and bromo arylation of vinyl acetylene with diazonium salts proceed in the same direction. For this purpose, vinyl acetylene was allowed to react with phenyl diazonium bromide. The infrared spectrum of the resultant bromide mixture disclosed plainly that this mixture does not essentially differ from mixtures (I) and (II) usually obtained by chloro-arylation. The allene adduct is thus formed in addition to the acetylene adduct in the bromo-arylation of vinyl acetylene. In order to establish the relationship between the distribution of electron density in the benzene ring of aryl diazonium, and the direction of halogen arylation, vinyl acetylene was allowed to react with phenyl-, p-tolyl-, m-and p-chloro-phenyl-, and p-anisyl X

Card 2/3

89512

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B118/B208

Studies in the field ...

diazonium, according to A. V. Dombrovskiy. The infrared spectra of the reaction products obtained showed the frequencies of acetylene and allene grouping in end position, which indicates the simultaneous formation of acetylene and allene adducts. Yields and quantitative ratio of acetylene to allene adducts depend on nature and position of the substituents in the benzene ring. There are 1 figure, 1 table, and 4 Soviet-bloc references.

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

X

SUBMITTED: March 28, 1960

Card 3/3

S/079/61/031/002/006/019
B118/B208

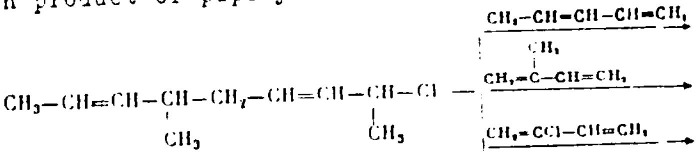
159200 2209, 1372, 1474

AUTHORS: Shvarts, Ye. Yu. and Petrov, A. A.

TITLE: Studies in the field of conjugated systems. CXXXI. Synthesis of "sesquiterpene chlorides" by telomerization of piperylene, isoprene, and chloroprene with dipiperylene hydrochloride (2-chloro-6-methyl-nonadiene-3, 7), and their conversion to "sesquiterpene alcohols"

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 2, 1961, 433-440

TEXT: There are few data available on separation and conversion of sesquiterpene chlorides (Ref. 6). In the present paper, tripiperylene hydrochloride (I), dipiperylene isoprene hydrochloride (II), and dipiperylene chloroprene hydrochloride (III) were studied which result on telomerization of piperylene, isoprene, and chloroprene with dipiperylene hydrochloride (the primary telomerization product of piperylene with its hydrochloride) (Scheme 1)



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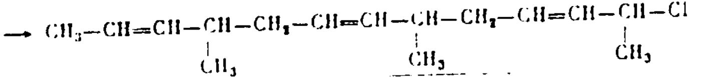
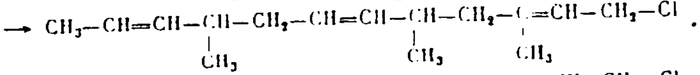
(1)



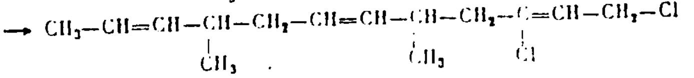
$$\rightarrow CH_3-CH=CH-\underset{CH_3}{\underset{|}{CH}}-CH_2-CH=CH-\underset{CH_3}{\underset{|}{CH}}-CH_2-CH=CH-\underset{CH_3}{\underset{|}{CH}}-Cl$$

(I)



$$\rightarrow CH_3-CH=CH-\underset{CH_3}{\underset{|}{CH}}-CH_2-CH=CH-\underset{CH_3}{\underset{|}{CH}}-CH_2-\underset{CH_3}{\underset{|}{C}}=CH-CH_2-Cl$$

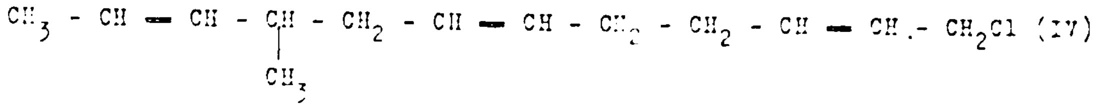
(II)



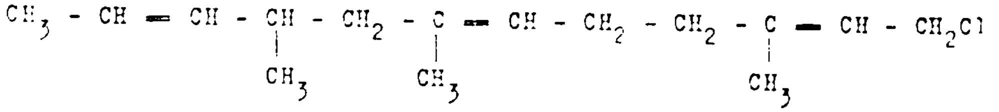
$$\rightarrow CH_3-CH=CH-\underset{CH_3}{\underset{|}{CH}}-CH_2-CH=CH-\underset{CH_3}{\underset{|}{CH}}-CH_2-\underset{Cl}{\underset{|}{C}}=CH-CH_2-Cl$$

(III)

The separation of these chlorides from telomerization products of dienes with their hydrochlorides is not accomplished by direct vacuum distillation of the residue (due to decomposition) after distilling off the monomers and the "terpene fraction", but only by passing its solution in petroleum ether over a slightly absorbing silica gel; this residue is thus freed from unstable products, so that it may be distilled in vacuo to separate the "sesquiterpene fraction" without appreciable decomposition. An active silica gel leads to resinification of the telomers. The following "sesquiterpene chlorides" were separated in this way from the telomer mixture of divinyl, isoprene, and piperylene with piperylene hydrochloride: piperylene-di-divinyl hydrochloride (IV), piperylene diisoprene hydrochloride (V), and tripiperylene hydrochloride (I)


(IV) and

$CH_3-CH=CH-CH(CH_3)-CH_2-CH=CH-CH_2-CH_2-CH=CH-CH_2Cl$


(V).

$CH_3-CH=CH-CH(CH_3)-CH_2-C(CH_3)=CH-CH_2-CH_2-C(CH_3)=CH-CH_2Cl$

The structure assumed for the major part of the chlorides (I) - (V) was confirmed by their infrared spectra which show the same peculiarities as the spectra of the corresponding terpene chlorides whose structure was confirmed chemically. The quantity of primary chlorides was determined in all chlorides by the usual method (Ref. 13). The yield of product (I) was only 3-5%, of products (II) and (III) 70-80%, of (IV) and (V) 50-60%. The corresponding "sesquiterpene alcohols" were obtained from tripiperylene and dipiperylene isoprene hydrochlorides (Scheme 2).

Card 3/4

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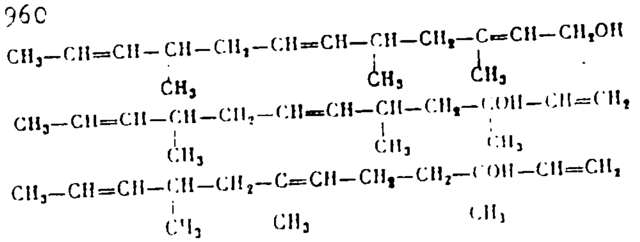
Studies in the field ...

By hydrogenation of the "sesquiterpene alcohol" from piperylene, 6, 10-dimethyl tridecanol-2 resulted, and by oxidation of the latter, 6, 10-dimethyl tridecanone-2. There are 2 figures, 1 table, and 16 references: 15 Soviet-bloc and 1 non-Soviet-bloc.

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

SUBMITTED: March 28, 1960

(2)



$$CH_3-CH=CH-\underset{CH_3}{CH}-CH_2-CH=CH-\underset{CH_3}{CH}-CH_2-\underset{CH_3}{C}=CH-CH_2OH \quad (IX)$$

$$CH_3-CH=CH-\underset{CH_3}{CH}-CH_2-CH=CH-\underset{CH_3}{CH}-CH_2-\underset{CH_3}{COH}-CH=CH_2 \quad (X)$$

$$CH_3-CH=CH-\underset{CH_3}{CH}-CH_2-\underset{CH_3}{C}=CH-CH_2-CH_2-\underset{CH_3}{COH}-CH=CH_2 \quad (XI)$$

Card 4/4

BUNINA-KRIVORUKOVA, L.I.; PETROV, A.A.

Reactions of chlorine-containing telomers of diene hydrocarbons. Part 6: Reactions of 1-chloro-5-methyl-, 1-chloro-3,5-dimethyl-, and 1,3-dichloro-5-methyl-2,6-octadienes with sodium malonate. (MIRA 14:3)
Zhur.ob.khim. 31 no.3:767-771 Mr '61

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Octadiene) (Malonic acid)

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

Conjugated systems. Part 132: Chloroacylation of close homologues of vinylacetylene (1-penten-3-yne, 3-penten-1-yne, and 2-methyl-1-buten-3-yne). Zhur. ob. khim. 31 no.3:772-780 Mr '61.
(MIRA 14:3)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Pentenyne) (Butenyne)

[illegible]9.7

5 3100 [illegible] S/[illegible]
B1[illegible]/B[illegible]

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

TITLE: Studies in the field of conjugate systems. CXXXIII. Addition of lithium dialkyl amides to trialkyl silyl buten-3-ynes (Enyne compounds. LII)

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 4, 1961, [illegible]

TEXT: As was previously shown, lithium dialkyl amides readily add [illegible] vinyl acetylene hydrocarbons to form acetylene or allene amines, depending on the structure of vinyl acetylene hydrocarbons. Considering the considerable dependency of the reaction direction on the structure it was of interest to study more thoroughly the reactions of lithium dialkyl amides with enyne compounds. The present paper describes the reactions of lithium diethyl amide and lithium piperidide with 1-trimethyl-silyl-buten-3-yne [illegible]. The latter adds lithium dialkyl amides even in the cold, but the adduct is more or less cleft when treated with water, forming the amine and hexa methyl siloxane owing to the weak hydrolytic stability of the C — Si — bond in α-position to the multiple bond. Reaction of 1-trimethyl-silyl-

Card 1/4

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S/079/61/0[illegible]
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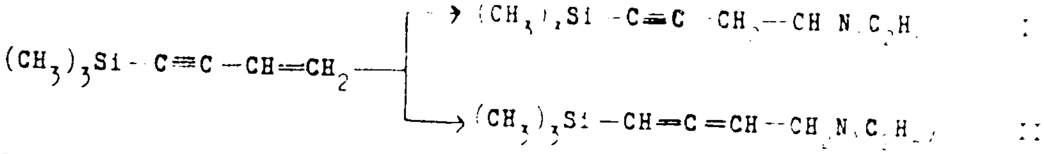
Studies in the field of ...

-buten-3-yne-1 with lithium diethyl amide gives a mixture of [illegible] taining acetylene amine (I) and silicon-containing allene amine (II)



$(CH_3)_3Si-C\equiv C-CH=CH_2 \rightarrow (CH_3)_3Si-C\equiv C-CH_2-CH_2N(C_2H_5)_2$ (I)

$(CH_3)_3Si-C\equiv C-CH=CH_2 \rightarrow (CH_3)_3Si-CH=C=CH-CH_2N(C_2H_5)_2$ (II)

The infrared spectrum of this mixture shows a very intense frequency of stretching vibrations of the acetylene bond ([illegible] cm^{-1}) and an intense band of stretching vibrations of the allene grouping ([illegible] cm^{-1}). In the range 1600 cm^{-1} no absorption was observed which indicates the absence of an isomer with a conjugate system of double bonds. The presence of silicon [illegible] confirmed by the characteristic frequencies [illegible] and [illegible] cm^{-1}, [illegible] (CH$_3$)$_3$Si grouping by the frequencies 843 and 762 cm^{-1}. Heating with [illegible] % KOH solution in methanol results in a cleavage of the mixture [illegible]

Card 2/4

methyl siloxane and a mixture of acetylene and allene amines. The structure of the amines present in the mixture was confirmed spectroscopically and chemically. Reaction of trimethyl silyl-butenyne with lithium piperidide gave a mixture of silicon-free amines with silicon-containing amines. The former product consisted of nearly pure 1-piperidino-butyne-3. Analysis gave 90% of a compound with an acetylene group in end position whose infrared spectrum rather corresponded to that of 1-piperidino-butyne-3. The second product is an adduct of piperidine to trimethyl-silyl-buten-3-yne-1 and, with respect to structure, also an acetylene compound. It was thus confirmed that, contrary to vinyl acetylenes, the 1-trimethyl-silyl-buten-3-yne-1 tends to form acetylene compounds in reactions with lithium dialkyl amides. The mode of addition depends on the nature of the amine. The formation of silicon-free compounds seems to be due to the instability of the C — Si — bond to bases. The two resultant silicon-containing amines are colorless oils completely soluble in dilute hydrochloric acid. If they are separated from this solution, they are, however partially split at the C — Si — bond. There are 1 figure and 6 references: 5 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English language publication reads as follows: E.L. Warrisk, J.Am.Chem.Soc., 68, 2455, (1946).

20947

S/079/61/0[illegible]/[illegible]/[illegible]/0[illegible]
B[illegible]/B[illegible]

Studies in the field of ...

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

SUBMITTED: April 29, 1960

Card 4/4

S/079/61/031/004/ [illegible]
B119/B208

158102 2209 1372, 1407

AUTHORS: Petrov, A.A., Sopov, N.P., and Savich, I.G.

TITLE: Studies in the field of conjugate systems.
CXXXIV. "Co-dimerization" of divinyl with diisopropenyl
(Diene compounds. LXXIX)

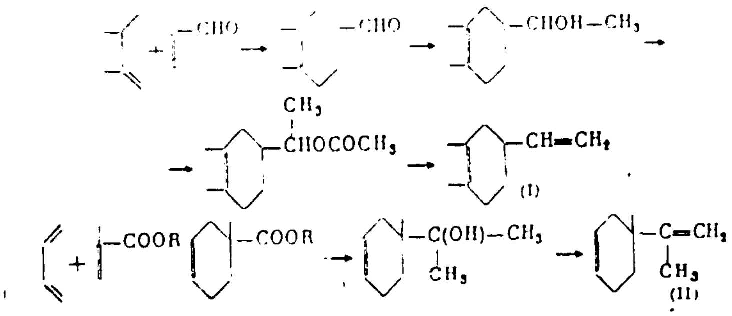
PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 4, 1961, 1140 - 1143

TEXT: Taking into account the paper by A.F. Plate and co-workers on the "co-dimerization of divinyl with cyclopentadiene (Ref. 5: Izv. AN SSSR, OKhN, 1958, 1279) which indicated a dependence of the reaction direction on the structure of dienes and on temperature, the authors of this paper studied the "co-dimerization" of divinyl with diisopropenyl. The reasons were the following: The structure of the "co-dimers" of divinyl with its homologs was determined by dehydrogenation to benzal homologs, and by oxidation of the latter with permanganate to corresponding aromatic acids. In this connection, errors were possible in the determination of the composition of the initial hydrocarbon mixture because of incomplete dehydrogenation of the individual components of the mixture, and because o-, m-,

Card 1/6

20948

and p-dialkyl benzenes give aromatic acids with different yields (especially in the presence of an o-isomer). Dienes were selected on the following aspects: According to the scheme



the formation of only two dimers (I) and (II) is to be expected owing to the symmetry of dienes, which considerably facilitates the analysis of the mixture. The method previously used to confirm the structure of the re-

Studies in the field [illegible] ... [illegible]

sultant substances in this reaction cann[illegible] dimers cannot be hydrogenated without isomer[illegible] possible "co-dimers" were earlier obtained [illegible] dition according to the equat[illegible] given. In [illegible] any other isomers in which the [illegible] have an [illegible] hexene ring is impossible in a[illegible] reaction stages. The [illegible] between the tw[illegible] isomers in the "dimerizati[illegible] diisopropenyl was [illegible]nfirmed [illegible] infrared spectra F[illegible] of "dimer(I)(Curve [illegible]) shows inten[illegible] group 910 and [illegible] cm⁻, [illegible] II [illegible] intense band of the isopropenyl grouping [illegible]. These [illegible] found to determine rather exactly the perce[illegible] both isomers in the mixtures mentioned. Rea[illegible] 170°C. The ratio of yields [illegible] I [illegible] II [illegible] of temperature. The activity [illegible] The relative yield of mixed "dimer" was [illegible] The reaction rate is also greatly temperature dependent. A[illegible] hardly any rubber-like polymer [illegible] formed [illegible]

Card 3/6

[illegible]

S, [illegible]
B. [illegible]

Studies in the [illegible]

high [illegible]
The reaction [illegible] mech[illegible]
The previous assumptions on the prevailing direction [illegible]
of divinyl with diisopropenyl were thus confirmed and [illegible]
1 figure and [illegible] Soviet [illegible] references.

ASSOCIATION: Leningradskiy [illegible]
(Leningrad [illegible])

SUBMITTED: Ap[illegible]

Card [illegible]

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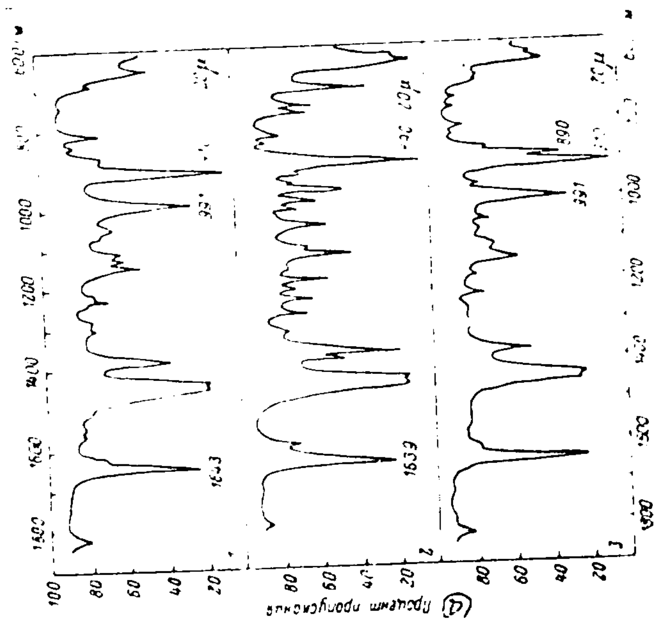
S/079/61/031/004/002/006
B118/B208

Studies in the field of conjugate ...



Card 5/6

20948
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B118/B208

Studies in the field of conjugate ...

Legend to the Fig.:
(1) 1-Vinyl-3,4-dimethyl-cyclohexene-2; (2) 1-isopropenyl-1-methyl-cyclohexene-3; (3) copolymer from divinyl and diisopropenyl;
(a) percents of translucence.

Card 6/6

PETROV, A.A.; MARETINA, I.A.

Vinyl- and phenylacetylenyltropilidenes. Zhur. ob. khim. 31 no.4:1403 Ap '61. (MIRA 14:4)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta. (Cycloheptatriene)

PETROV, A.A.; PORFIR'YEVA, Yu.I.; KORMER, V.A.

Conjugated systems. Part 135: Course of the addition of alkylhypobromites and lithium-alkyls to vinylpropenylacetylene. Zhur.ob. khim. 31 no.5:1518-1524 My '61. (MIRA 14:5)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Hypobromites) (Lithium organic compounds) (Heptadienyne)

BALAYEV, G.A.; AL'BITSKAYA, V.M.; PETROV, A.A.

Chemistry of organic oxides. Part 19: Reaction of chloroprene
α-oxide with ammonia and amines. Zhur.ob.khim. 31 no.5:1524-1528
My '61. (MIRA14:5)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Chloroprene) (Ammonia) (Amines)

MARETINA, I.A.; PETROV, A.A.

Conjugated systems. Part 138: Addition of alkyl hypobromites
and alkyl hypoiodates to α -tert-butylbromoprene. Zhur.ob.khim.
31 no.6:1851-1855 Je '61. (MIRA 14:6)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Hypobromites) (Hypoiodates) (Butadiene)

22203

5.37[illegible] [illegible]/61/031/[illegible]
B123/B305

AUTHORS: Stadnichuk, [illegible] [illegible], [illegible]

TITLE: Hydrogeneration of enin silicon-hydrocarbons

PERIODICAL: Zhurnal obshchey khimii, v.31, no.6, 1961, [illegible]

TEXT: In the present work the hydrogeneration of silicon-containing enins at ordinary temperatures in the solution of methanol and presence of Pd/$CaCO_3$ was carried out. The hydrogeneration of compounds was carried out with differently placed methyl groups in an enin system (1-trimethylsiliconebutene-3-in-1, 1-trimethylsiliconepeutene-1-in-1, 1-trimethylsilicone-3-methylbutene-[illegible]-in-[illegible] and also 1-trimethysiliconetriethylene-cyclohexone-1, and with differently positioned silicon atom (1-triethylsilicone-and 1-tripheny-nylsiliconebutene-3-in-1). The reaction either interupted after addition of 1 mole of hydrogen per 1 mole of initial material, or [illegible] terminated. The plot of exhaustion rates of hydrogeneration in all investigated cases show clearly two maxima,(Figure 1), corresponding to the binding of 0.8 and 1.4 moles of hydrogen. The binding of [illegible]

Card 1/7

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D223/D305

Hydrogeneration of enin silicon-hydrocarbons

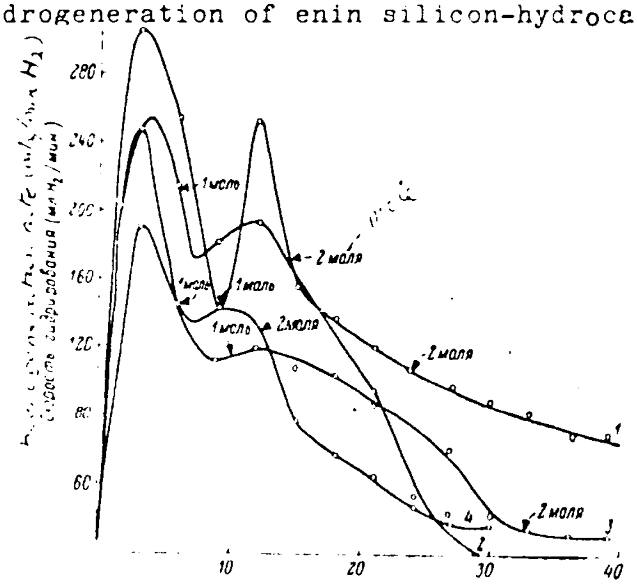


Fig. 1 hydrogeneration rate curves. 1) 1-trimethylsiliconebutene-3-in-1 2) 1-trimethylsiliconepeutene-3-in-1 3) 1-trimethylsilicone-3-methylbutene-3-in-1. 4) 1-trimethylsiliconeethylene cyclohexene-1.

Рис. 1. Кривые скорости гидрирования

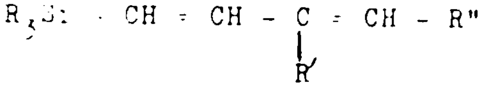
1-триметилсилилбутен-3-ин-1, 2 — 1-триметилсилилпентен-3-ин-1 [illegible]
[illegible] тилсилил-3-метилбутен-3-ин-1, 4 — 1-триметилсилилэтинилциклогексен-1

Card 2/7

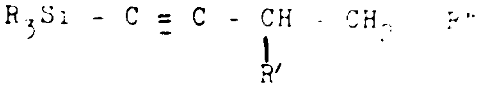
S 79/61/031/006/[illegible]
D223/D305

Hydrogeneration of enin silicon-hydrocarbons

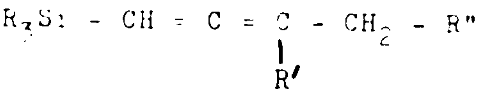
third mole of hydrogen proceeds very slowly. The initial hydrogeneration rate is slightly decreased by substitution into the enin system. The pronounced character of the curves of hydrogeneration rates point out the preferential ways of the hydrogeneration process while on the other hand the experiments on hydrogeneration using reacting components ratio 1 : 1 showed no signs of preferentiations. Based on the results of experiments of additions of 1 mole of hydrogen to enins, the formation of the following three types of siliconhydrocarbons could be deduced:



$$R_3Si-CH=CH-\underset{R'}{\underset{|}{C}}=CH-R''$$



$$R_3Si-C\equiv C-\underset{R'}{\underset{|}{CH}}-CH_2-R''$$



$$R_3Si-CH=C=\underset{R'}{\underset{|}{C}}-CH_2-R''$$

The structure of the products of hydrogeneration were found by

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22203

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D223/D305

Hydrogeneration of enin silicon-hydrocarbons

infra-red spectrum and by chemical methods. The comparison of the infra-red spectrums of the hydrogeneration products and initial siliconehydrocarbons showed that in all results of hydrogeneration new double substituted acetyelenes wer formed. The acetylene bond in silicon containing enins is revealed by the characteristic [illegible] intensity at about 2150 cm^{-1}. The acetylene siliconehydrocarbons formed by hydrogeneration showed absorption at about [illegible] cm^{-1}. These acetylene bond absorption bonds appear intensive which indicates the appreciable acetyelene content of the hydrogeneration products. The infra-red spectrums of hydrogeneration products showed the appearance of a new bond in the region 1940 cm^{-1} of medium and weak intensity. The absorption in this region indicates the formation of small quantities of allenes, i.e. of partial addition of hydrogen into 1.4-position, but this was not detected in the case of siliconehydrocarbons not containing vinyl group (1-trimethylsiliconepeutene-3-in-1 and 1-trimethylsiliconeethylenecyclohexene-1). The chemical methods of establishing the structure of the hydrogeneration products were based on ability to add hydrogen

Card 4

22203

S/079/031/006/004/[illegible]
D223/D305

Hydrogeneration of enin silicon-hydrocarbons

across the double bond. The gaseous hydrocarbons obtained by the hydrolytic separation [illegible] products of 1-trimeth-ylsilicon [illegible]ene-3-in[illegible] [illegible] which were removed, contained a[illegible] 95% of acetylene and about 2% of dienes. Unreacted part of in[illegible] material judged by the infra-red spectrum does not differ in composition from the latter. The ozonation of hydrogeneration products gave propionic, acetic and oxalic acids. Formation of acetic acid confirms the partial binding of hydrogen to the 1.4 position while the formation of propionic acid (main product of oxidation) confirms the acetylene structure of the main hydrogeneration product. Comparison of the constants of hydrogeneration products and some trialyylsiliconealkyldienes-1.3 also indicates the formation of acetylene bonds and not diene bonding of hydrogeneration. These later ones possess a high refractive index as for instance 1-trimethylsiliconbutadiene-1.3 , $n_d^{20} = 1.4478$ (Ref 9 A. D. Petrov, S. I. Sadykhzade, Izv. AN SSSR, OKhN, 1958, 513 and Ref [illegible] S. I. Sadykhzade, I.V. Avgushevich and A. D. Petrov, DAN

Card 5/[illegible]

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D223/D305

Hydrogeneration of enin silicon-hydrocarbons

SSR 112, 662, (1957)), and a product of hydrogeneration of ...
methylsiliconbutene-3-in-1 which could have contained diene had
refractive index n_D^{20} = 1.4310. It was, thus, established that
enin siliconhydrocarbons would hydrogenerate on the palladium in
all three directions but preferably across the double bond. Th
postulate is exampled in the case of 3-ethylsilicone and 3-pheny
iconebutene-3-in-1 which possess bulky substitutes in position
Following this the catalytic hydrogeneration of silicon hydrocarb
ns is similar to the enin hydrocarbons, the difference between t
two groups is probably connected with the influence of space fa
which bring about absorption across the triple bond and then ab
ption and hence hydrogeneration follow the course of double bon
Since ethylene bond hydrogenerates easier than acetylene (Ref
G.C. Bond, Quart. Rev. 8, 279, 1954) then correspondingly the ad
dition rate of the first and second mole of hydrogen in the case
of enin siliconhydrocarbons is the same as in similarly structure
hydrocarbons. The increase in space difficulties brings about a

Card 6/

[illegible]/61/031/006/[illegible]
D2[illegible]/D305

Hydrogenation of enin[illegible] -hydrocarb[illegible]

appreciable decrease in the hydrogenation rate of 1-trimethyl-[illegible]methylenecyclohexene when compared with 1-trimethylsiliconbutene-3-in-1 and others. Especially the slow hydrogenation rate of 1-triphenylsiliconbutene-3-in-1 could be a result of polarization which decreases the electron density of the double bond resulting in absorption on palladium and consequently slower hydrogenation. There are three tables, 2 figures and 16 references: 14 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: G.C. Bor[illegible], Chem. Rev. [illegible] F.C. Whitmore, L.H. Sommer et al., J. Am. Chem. Soc., 6[illegible] 4[illegible]

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

SUBMITTED: June 29, 1960

Card [illegible]

BALAYEV, G.A.; AL'BITSKAYA, V.M.; PETROV, A.A.

Chemistry of organic oxides. Part 20: Addition of ethyleneimine and ethanolamine to some alka-1, 3-diene oxides. Zhur.ob.khim. 31 no.6:1861-1869 Je '61.
(MIRA 14:6)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Ethanol) (Ethylene oxide)

24423

S/079/61/031/007/003/0[illegible]
D223/D305

11.1210 also 2209

AUTHORS: Miklashevskaya, V.S., and Petrov, A.A.

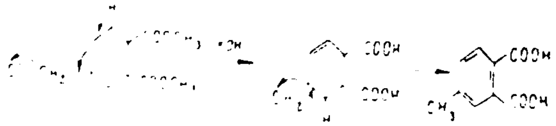
TITLE: Investigation of conjugated systems. CXII. Diene syntheses with 2-chloromethyl-butadiene-1,3

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 7, 1961, 2161 - [illegible]

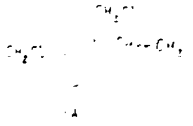
TEXT: The diene condensation of 2-chloromethyl-butadiene-1,3 with mono- and dibasic olefinic and acetylenic carboxylic acids and their derivatives was [illegible]. This was carried out in the absence of information on the behavior of allylic halogenodienes in diene condensation. This method appeared to give a new route to the synthesis of cyclohexenes and cyclic allenes. During condensation partial dehydr[illegible] occurred. On condensation with maleic anhydride, HCl was eliminated, forming a new conjugated system which in turn could condense with maleic anhydride giving a final product of tetra-carboxylic acid. These condensations gave 1 [illegible]

Card 1/5

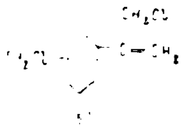
yields with sometimes very low chlorine content. Separation of the reaction products was complicated by dimerization of the diene. The chlorine in the addition products is very labile. Loss of HCl in addition products [illegible] brought about by alkali, giving in the case of [illegible] dienophiles, fully aromatic systems. A mechanism is suggested for this reaction:



The dimer of 2-chloromethyl butadiene was prepared. Dimerization can give two products, A., B.,



A



B

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Investigation of conjugated ... S/079/61/031/
D229/D305

Isoprene gives mainly B., whereas 2-chloromethyl butadiene-1,3 gives A. This is proved by the infra-red spectral bands, corresponding to vinyl absorption. (912, 991, 1630 CM-1). Introduction of chlorine into the methyl group makes the Δ-1 double bond more "nucleophilic" (Abstractor's note: More electrophilic, i.e. more dienophilic), giving product A. The position of the chloromethyl group in ring (3 or 4) was not determined. 2-chloromethyl butadiene-1,3 was prepared by chlorination of isoprene. Condensation with methyl acrylate is then fully described. Methyl-1-methyl-3 (or 4)-chloromethyl cyclohexene-3-carboxylate was prepared by heating methyl methacrylate with chloroisoprene in toluene (and hydroquinone) at 150-160°C for 14 hours. The product was fractionated and the fraction boiling 125-127°C/10 mm contained the desired compound, d_4^{20} 1.1090, n_D^{20} 1.4920. 3 (or 4)-chloromethylcyclohexadiene-1,4-carboxylic acid was prepared in 40 % yield from chloroisoprene and propiolic acid by heating at 130°C for 12 hours in toluene (with hydroquinone). The product, purified by chromatography over ...

Card 2/5

24423

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D229/D305

Investigation of conjugated ...

been distilled off. The product, 4-methyl phthalic acid was purified by recrystallization from benzene and acetone. Mp. 1[illegible]1-152°C There are 1 figure and 7 references: 6 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: E.H. Farmer, F.L. Warren, J. Chem. Soc., 19[illegible], [illegible]

ASSOCIATION: Leningradskiy institut aviatsionnogo priborostroyeniya (Leningrad Institute of Aviation Instrumentation)

SUBMITTED: July 1[illegible], 19[illegible]

CARD [illegible]

5 3600

[illegible]

AUTHORS: Al[illegible]skaya, V. M., Petrov, A. A., and [illegible]

TITLE: Investigations in the chemistry of organic oxides. XXI. Addition of phenol to butadiene, chloroprene and isoprene epoxides

PERIODICAL: Zhurnal obshchey khimii, v. [illegible], no. [illegible], 19[illegible], 2166-2171

TEXT: Base catalyzed addition to asymmetrical terminal epoxides takes place with orientation determined by A.K. Krasuskiy's rule (Abstractor's note: Rule not stated, reference not given). Addition of phenol in alkaline medium to butadiene, isoprene and chloroprene epoxides gives mainly primary ethers of the resultant glycols. The content of primary ethers in the products varies for phenol and its halogen derivative in the region of 65 - 9[illegible] %, as calculated. The greater amount of secondary ether in the addition of phenol and p-chlorophenol is due to the inductive effect of the [illegible]

Card 1/[illegible]

Investigation into the ... [illegible]

rine substituent, whereas the small amount of secondary ether arising from the addition of p-nitrophenol is due to steric hindrance. The composition of the mixture of isomeric phenyl ethers was determined by phthalylation, or reduction of double bond, and determination of primary alcohol content by phthalylation. The accuracy of this method was checked by a blank test on a known mixture of glycolic mono ethers. Finally, the independently prepared model compounds were compared with the addition products as regards their infra-red spectra. The model compounds prepared were 1-phenoxy-2-hydroxy butane and, 1-hydroxy-2-phenoxy butane, and 1-phenoxy-2-hydroxy-3-methyl butane. The unsaturated epoxides were prepared by distillation of alkaline halogenhydrins. The reaction of phenol with epoxides took place in the following manner: [illegible] mole of phenol and 0.01 mole of Na dissolved in dioxan and [illegible] mole of epoxide was added. The mixture was refluxed for a given time, the dioxan was evaporated and the residue [illegible] results are tabulated [illegible] the addition products [illegible] in methanol with [illegible] Pd [illegible]

Card [illegible]

ZAVGORODNIY, V.S.; PETROV, A.A.

Methyl- and vinylacetylenylboric esters. Zhur.ob.khim. 31 no.7: 2433-2434 Jl '61.
(MIRA 14:7)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Boron organic compounds) (Boric acid)

[illegible]ROVSKIY, V.D.; CHELPANOVA, L.F. PETROV, ~~A.A.~~

Conjugated systems. Part 141: Addition of hydrogen bromide to butynone and vinylacetylene ketones. Zhur.ob.khim. 31 no.8: 2552-2559 Ag '61. (MIRA 14:8)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Hydrobromic acid) (Ketones)

[illegible], Yu.I.; [illegible], A.A.

Conjugated systems. Part 142: Addition of triphenylmethyl radicals to vinylacetylene and its homologs. Zhur.ob.khim. 31 no. [illegible]–2563 Ag '61. (MIRA 14:8)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Butenyne) (Radicals (Chemistry))

KUPIN, P.S.; PETROV, A.A.

Conjugated systems. Part 1[illegible]3: Direction of the hydration of alkylphenylacetylenes. Zhur.ob.khim. 31 no.9:2958-2965 S '61.
(MIRA 14:9)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Acetylene) (Hydration)

27501

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S/079/61/031/009/008/012
D215/D306

AUTHORS: Bunina-Krivorukova, L.I., and Petrov, A.A.

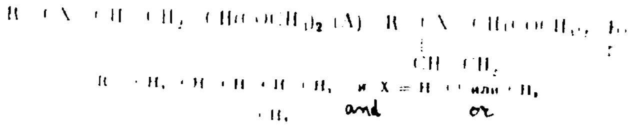
TITLE: Reactions of chlorine-containing telomers of diene hydrocarbons VII. Reactions of 1-chloro-[illegible]-methyl-, 1,3-dichloro-5-methyl-, and 1-chloro-3,5-dimethyl [illegible]-dienes-[illegible],6 with sodium acetylacetone

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 9, 1961, 2965 - 2968

TEXT: The present work is a continuation of earlier investigations [illegible] which the authors studied the reactions of the above [illegible] with sodium acetoacetate and sodium malonate. In this [illegible] the reaction between sodium acetoacetone and primary products of [illegible]merization of divinyl and chloroprene was studied, [illegible] that of isoprene with piperylene hydrochloride. The [illegible] have shown that the products of this reaction, carried [illegible] acetone, were [illegible]-diketones of the type [illegible] Alkyl is here [illegible]

Card 1/4

[illegible] expected [illegible] formed, were not discovered.



Infrared spectra of the diketones obtained showed [illegible] frequencies corresponding to the -CH=CH- group (about 968 cm⁻¹) and the vinyl group frequencies were absent. In the case of the telomer of divinyl with [illegible] hydrochloride, the authors [illegible] use of a mixture of allyl isomers; however, the telomer with terminal vinyl group under these conditions did not react. In the experiment with 1,3-dichloro-5-methyl-octadiene, in dry alcohol, instead of the expected diketone, its product of hydrolytic decomposition, 6-chloro-4-methylundecadien-2,6-one-10, was obtained which was identical with the earlier described product of hydrolysis corresponding to alkadienylacetoacetic ester. The diketones [illegible]-

Card 2/4

27501

Reactions of chlorine-containing ... S/079/61/031/009/002/01[illegible]
D215/D306

ned were colorless liquids with specific odors, insoluble in water. Infrared spectroscopy shows that all the diketones produce intense bands corresponding to the carbonyl group (1705-1725 cm-1), characteristic bands for methylketones (circa 1160 cm-1), and also characteristic bands for ketones (1360 cm^{-1}). The frequency for double bonds were 1607 cm-1 which was slightly lower than the usual values. The ketones produced gave the characteristic for β-diketones with $TiCl_3$, o-phenylenediamine and $Cu(OCOCH_3)_2$. Crystalline 2,4-dinitrophenylhydrazones were obtained only from II and III. Diketone II when heated with urea in the presence of HCl gave a crystalline condensation product, the structure of which has not been determined. The experimental procedure involved heating, on a steam bath, equivalent quantities of sodium acetylacetone and the telomer in dry acetone for 50-60 hours. The product was then extracted with ether, dried and distilled. The yield of diketones was 20-25 %. There are 1 table, 1 figure and 5 references: 4 Soviet-bloc and 1 non-Soviet-bloc.

Card 3/4

27561

Reactions of chlorine-containing ... S/079/61/031/006/[illegible]
D215/D306

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

SUBMITTED: September 10, 1960

Card 4/4

RAZUMOVA, N.A.; PETROV, A.A.

Addition of P-Cl bond-containing trivalent phosphorus compounds to diene hydrocarbons. Zhur.ob.khim. 31 no.9:3144- S '61.
(MIRA 14:9)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Phosphorus compounds) (Hydrocarbons)

FEDOROVA, A.V.; PETROV, A.A.

Chemistry of allene compounds. Part 4: Direction of the bromination and hydrobromination of asymmetric allene hydrocarbons. Zhur. ob. khim. 31 no. 11:3510-3515 N '61. (MIRA 14:11)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Propadiene) (Hydrocarbons) (Bromination)

POLYAKOVA, A.A.; PETROV, A.A.

Mass spectra and structure of organic compounds. Part 6. Mass spectra of alkenylvinylacetylenes. Zhur. ob. khim. 31 no. 11 3515-3521 N '61. (MIRA 14:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefti i gaza i Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

(Acetylene--Spectra)