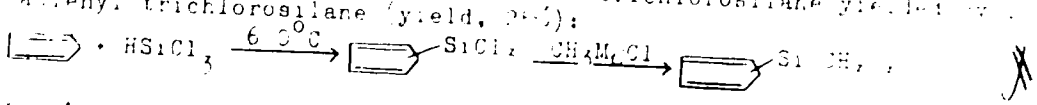
"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

2[illegible]275

Synthesis of alkenyl silanes... [illegible]

[illegible] to study the high-temperature condensation [illegible] with styrene, cyclopentadiene, and vinyl trichlorosilane. [illegible] styrene with trichlorosilane gives β-trichloro silyl styrene [illegible]; boiling point, 90-93°C ([illegible] mm Hg); n_D^{20} 1.5540; d_4^{20} [illegible]; [illegible] the structure of which was proved by methylation (perfect [illegible] properties and Raman spectra of the resulting substance with those [illegible] we [illegible] known β-trimethyl silyl styrene). $C_6H_5CH{=}CH_2 + HSiCl_3 \xrightarrow{[illegible]} C_6H_5CH{=}CHSiCl_3 \xrightarrow{CH_3MgCl} C_6H_5CH{=}CHSi(CH_3)_3$. The condensation [illegible] trichlorosilane with vinyl trichlorosilane yielded a mixture [illegible] substituted ethylenes (yield, 10%): $Cl_3SiCH{=}CH_2 + HSiCl_3 \xrightarrow{[illegible]} Cl_3SiCH{=}CHSiCl_3 + (Cl_3Si)_2C{=}CH_2$. The high-temperature condensation [illegible] cyclopentadiene (or of its dimer) with trichlorosilane yielded [illegible] pentadienyl trichlorosilane (yield, [illegible]%):



[illegible] 4

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

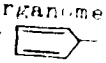
"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

2[illegible]275

Synthesis of alkenyl silanes...

S, [illegible]
B10[illegible], B[illegible]

The properties of the resulting cyclopentadienyl trimethyl silane [illegible] boiling point, 13[illegible]-140°C; n_D^{20} [illegible].461[illegible]; d_4^{20} [illegible]4; MR [illegible] with the properties of the compound obtained previously (Ref. [illegible]: A. D. Petrov, G. I. Nikishin, Izv. AN SSSR. [illegible] Ref. 7: see below) by organometallic synthesis.

$C_5H_5M + ClSi(CH_3)_3 \longrightarrow$  $Si(CH_3)_3$. (M = Li, MgBr)

Whereas the latter cyclopentadienyl trimethyl silane, to which the above structure was ascribed without proof, reacts vigorously with maleic anhydride in ethereal solution, forming an adduct with the melting point [illegible]°C, the cyclopentadienyl trimethyl silane synthetized by the authors does not react with maleic anhydride under these conditions. The [illegible] and infrared spectra of the two compounds also differ considerably. Hence, the following structures are suggested for the cyclopentadienyl trimethyl silane synthetized by the authors: $Si(CH_3)_3$ [illegible] .

Card [illegible]

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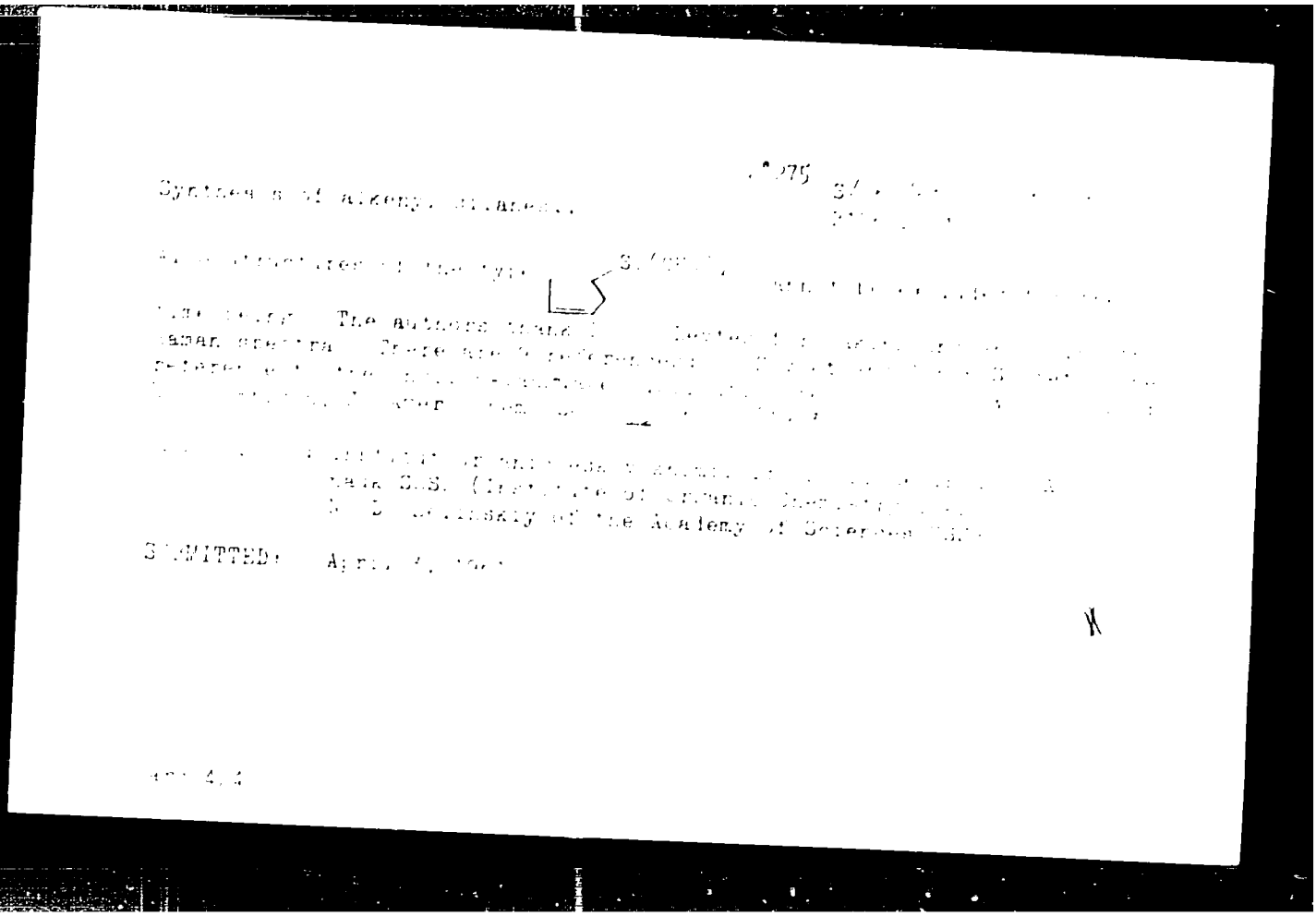
"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113



APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIRONOV, V.F.; DZHURINSKAYA, N.G.; PETROV, A.D.

Reaction of alkenyl- and alkyl germanium chlorides with hydrogen bromide. Izv.AN SSSR.Otd.khim.nauk no.11:2095-2098 N '61. (MIRA 14:11)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Germanium compounds) (Hydrobromic acid)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

25400

S 080/61/034/002/022/025
A057/A129

15 8100

AUTHORS: Chernyshev, Ye. A., Mir[illegible], V.F., Nep[illegible]na, V.V., Lizgunov, S.A.

TITLE: Reaction of silicon hydrides with ethyl- and isopropyl-benzene and preparation of trichlorsilyl substituted styrenes

PERIODICAL: Zhurnal Prikladnoy Khimii, 34, [illegible] 96, 458-46[illegible]

TEXT: Aryl [illegible] silane and methyl[illegible] silane with ethylphenyl- and isopropylphenyl-benzenes in liquid phase [illegible] H_2SO_4 as catalyst. Methyl-dichlorsilane was [illegible] stituted styrene and [illegible] ethylphen[illegible] and [illegible] pyrolysis [illegible] are frequently [illegible]

Card 1/5

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

25800

S/080/61/034/002/022/025
A057/A 29

Reaction of silicon hydrides ...

present investigation, i.e., the reaction between silicon hydride and benzene (or homologs) in liquid phase under pressure at 200-400°C with catalysts (BCl_3, H_3BO_3, $AlCl_3$, etc.). In the second method instead of benzene (or homologs) an aryl halide is used. Ref 7: A. Barry et al., Ind. Eng. Chem., 51, 91 (1959) and twice as much silicon hydride is necessary than in the first method. In the third variant silicon hydride and aryl-halide react in gaseous phase at atmospheric pressure in flowing systems at 500°-700°C. Ref 8: Ye.A. Chernyshev et al., DAN SSSR 127, 808 (1959). Ref 9: ibid. 132, 1099 (1960). Ref 10: A.D. Petrov et al., ibid. 126, 1009 (1959), Ref 11: V.A. Ponomarenko et al., ibid. 130, 333 (1960). The present experiments were carried out to compare the yields of the aryl-chlorosilanes and to the k results of other investigators. The reaction occurred in a rotating steel autoclave (1 l), ratio of components was 1 : 1 with 0.1 weight % of catalyst and contact time of 5 hrs at varying temperatures from 230°-350°C. The results (Fig.) indicate the higher activity of methyldichlorosilane in comparison to trichlorosilane. This is in agreement with observations in Ref 7, but differs from the statement

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

25400
S/080/61/034/002/022/025
A057/A129

Reaction of silicon hydrides ....

given by N. N. Tishina et al. (Ref. 5: "Khimiya i prakticheskoye primeneniye kremneorganicheskikh soyedineniy" ("Chemistry and practical use of siliconorganic compounds"), I., Izd. TsBTI, L. 91 (1958)) that H_3BO_3 has no catalytic activity for reactions between trichlorosilane and benzene. Spectral analysis demonstrated that the obtained arylchlorosilanes contained: 10 - 20 % ortho-, 40 - 60 % meta- and 30 - 40 % para-isomers. Characteristics of the obtained arylchlorosilane are presented in the Table. Chlorination and pyrolysis of the arylchlorosilanes to styrenes were carried out by methods developed by D. W. Lewis (Ref. 12: J. Org. Chem., 23, 1893 (1958)). At the present time the authors investigate the third method of arylchlorosilane synthesis to compare the yields of the three methods. There is 1 figure, 1 table and 12 references: 10 Soviet-bloc and 2 non--Soviet-bloc.

SUBMITTED: May 11, 1960

Card 3/5

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

S/020/61/138/005/015/025
B103/B215

5 3700

25315

AUTHORS: Dzhurinskaya, N. G., Mironov, V. F., and Petrov, A. D., Corresponding Member AS USSR

TITLE: Addition of germanium hydrides to unsaturated compounds

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 138, no. 5, 1961, 1107-1110

TEXT: The authors had already found (Ref. 1: DAN, 128, 502 (1959); Ref. 2: DAN, 131, 98 (1960)) that trichloro germane $HGeCl_3$ can be added to practically any unsaturated compound without activation and without catalysts:

$$Cl_3GeH + \overset{\diagdown}{C}=\overset{\diagdown}{C} \longrightarrow Cl_3Ge\overset{|}{C}-\overset{|}{C}H.$$

Hence, they conclude that $HGeCl_3$ in this reaction has a higher reactivity than $HSiCl_3$ which can only be added under harder conditions and in the presence of catalysts. In the present paper, the authors describe the addition of $HGeCl_3$ to a series of other unsaturated compounds (Table 1).

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APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

They found that the production of propyl trichloro germane $n\text{-}C_3H_7GeCl_3$ by this method is much easier than the "direct" or organomagnesium synthesis. The addition of $HGeCl_3$ to cyclopentadiene is vigorous whereas $HSiCl_3$ could not be added even by boiling in the presence of H_2PtCl_6. To determine the relative reactivity of hydrides other than Cl_3MH, the authors produced $(C_2H_5)_3MH$ (with M = Si, Ge, and Sn) by reducing the corresponding $(C_2H_5)_3MHal$ with $LiAlH_4$. The synthesis of $(C_2H_5)_3GeH$ by the action of C_2H_5MgBr on $HGeCl_3$ was not successful; mainly $(C_2H_5)_4Ge$ formed whereas high yields of $(C_2H_5)_3SiH$ were obtained by a similar method. The treatment of $(C_2H_5)_3MH$ with 1 N alcoholic KOH solution caused the quantitative escape of hydrogen at 20°C in a Tserevitinov device [Abstracter's note: Device not stated.] only with silicon and tin hydrides. The liberation of H_2 from triethyl germane was impossible, even at 80°C. All three hydrides $(C_2H_5)_3MH$ are added to propargyl alcohol and acrolein. Since this reaction

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

25315

Addition of germanium hydrides to ... S/020/61/138/005/015/025
B103/B215

is very vigorous with triethyl stannane, the authors could not isolate any monomers; they only produced polymers. Triethyl germane, like $(C_2H_5)_3SiH$, added to propargyl alcohol only with a catalyst (H_2PtCl_6), thus yielding γ-(triethyl-germyl)-allyl alcohol: $(C_2H_5)_3GeH + HC \equiv CH_2OH \rightarrow (C_2H_5)_3GeCH = CHCH_2OH$. The only difference found between $(C_2H_5)_3GeH$ and $(C_2H_5)_3SiH$ lay in their interaction with allyl alcohol. Triethyl silane only forms allyl hydroxy-triethyl silane, whereas triethyl germane already adds to the double bond thus forming γ-(triethyl-germyl)-propanol: $CH_2 = CHCH_2OH + (C_2H_5)_3GeH \rightarrow (C_2H_5)_3GeCH_2CH_2OH$. These two hydrides are also added to two different reaction centers of acrolein. Triethyl silane adds in positions 1-4. The authors repeated the experiment of M. Lesbre and I. Satge (Ref. 10: C. R., 247, No. 4, 471 (1958)) and convinced themselves that triethyl germane is not easily added to acrolein and probably forms the corresponding aldehyde. The authors synthesized organogermanium carbosubstituted alcohols. Finally, they obtained the first organogermanium mercaptan:

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

Addition of germanium hydrides to... 25335

S/020/61/138/[illegible]5/015/025
B103/B215

β-(γ-(trimethyl-germyl)-propyl-mercapto)-propionitrile. The Raman spectra were taken by L. A. Leytes. Among the compounds obtained, the authors also mention β-(trichloro-germyl)-ethyl acetate, β-(trimethyl-germyl)-ethanol, γ-(triethyl-germyl)-propargyl alcohol, γ-(trimethyl-germyl)-propyl thioacetate, and γ-thiol-propyl trimethyl germane. There are 2 tables and 10 references: [illegible] Soviet-bloc and 5 non-Soviet-bloc. The three references to English-language publications read as follows: E. G. Rochow, R. Didchenko, R. C. West (Ref. [illegible] J. Am. Chem. Soc., 73, 5486 (1951)); H. H. Anderson (Ref. 4: J. Am. Chem. Soc., 79, 326 (1957)); A. L. Allred, E. G. Rochow (Ref. 6: J. Inorg. and Nucl. Chem., 5, 269 (1958)).

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences USSR)

SUBMITTED: February 22, 1961

Card 4/7

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIRONOV, V.F., DZHURINSKII, H.N.G.

A new preparative method for the synthesis of germanium-containing monomers.

Report submitted for the 12th Conference on high molecular weight compounds. devoted to monomers, Baku, 3-7 April 62

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

S/062/62/000/007/[illegible]
B117/B144

AUTHORS: Mironov, V. F., Zakharinskaya, N. G., Gar, T. K., and Petrov, A. D.

TITLE: Reactions of alkyl halogenides and benzyl chloride with germanium hydrides

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 7, 1962, 460-465

TEXT: The recently discovered reaction (Izv. AN SSSR. Otd. khim. nauk, 1956) of trichlorogermaniumhydride with halogenides of the alkyl type, in which halogen is substituted by the trichlorogermyl group, was studied in detail. The reactions of allyl iodide and methallyl bromide with trichlorogermaniumhydride were found to proceed exclusively in the addition. Methallyl chloride, similar to allyl chloride, requires, of course, the presence of ether, since essentially without it an addition takes place. In the reactions investigated, high-boiling by-products were always formed which may also contain products of the addition of the second $HGeCl_3$ molecule at alkenylgermaniumhalogenides. Besides condensation,

Card 1/[illegible]

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

Reactions of allyl halogenides and... S/062/62/000/003/010/011
B117/B144

which only occurs in the presence of H_2PtCl_6, other reactions also take place during the reaction of triaklylgermaniumhydrides with allyl halogenides. An experiment to extend the condensation also to saturated and aromatic halogenides was without success so far. With benzyl chloride and tertiary butyl chloride, however, this reaction proceeded quite slowly, good yields in benzyl trichlorogermaniumhydride and tertiary butyl-trichlorogermaniumhydride being obtained. Raman spectra of the new substances whose properties are listed in Table 2 correspond to [illegible]. It was pointed out finally that no similar reactions exist in the chemistry of organic compounds of other elements of group IV. [illegible] is thanked for conducting the spectral analyses. There are [illegible] tables and 7 references: 6 Soviet and [illegible] non-Soviet. The reference to the English-language publication reads as follows: A. J. Vogel, W. T. Cresswell, J. Leicester, J. Phys. Chem. 58, 174 (1954).

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences USSR)

SUBMITTED: October 20, 1961

Card 2/4

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

S/062/62/000/007/009/013
B117/B180

AUTHORS: Mironov, V. F., and Maksimova, N. G.

TITLE: Reaction of trichlorosilane with hydrocarbon at high temperatures

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 7, 1962, 1303 - 1305

TEXT: The reaction of trichlorosilane with hydrocarbons in a continuous-flow system (high-temperature condensation) was studied at ~600°C. With isobutylene condensation occurred and with divinyl only addition. With cyclohexene and cyclohexane dehydrogenation and deep pyrolysis of the corresponding hydrocarbon yielded a mixture of organosilicon compounds. From the latter, methyl trichlorosilane (22 and 19%), vinyl trichlorosilane (10 and 20%), and phenyl trichloro-silane (16 and 15%) were separated, and, with cyclohexane, 6% allyl trichlorosilane. When hexane and nonane were used, the yields of organosilicon $RSiCl_3$-type compounds were more than 60% the theoretical. The yields obtained with methane, propane, butane, and isooctane were somewhat lower. It was shown that

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

hydrocarbon mixtures such as petroleum ether, gasoline, etc. can also be used for high-temperature condensation. The resulting products always contain up to 30% CH_3SiCl_3 and $CH_2{=}CHSiCl_3$ whatever the hydrocarbon used. The experiments show that the new reaction of $HSiCl_3$ with hydrocarbons of the paraffin and cycloparaffin series is a simple method of producing organosilicon compounds. There is 1 table.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences USSR)

SUBMITTED: January 3, 1962

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

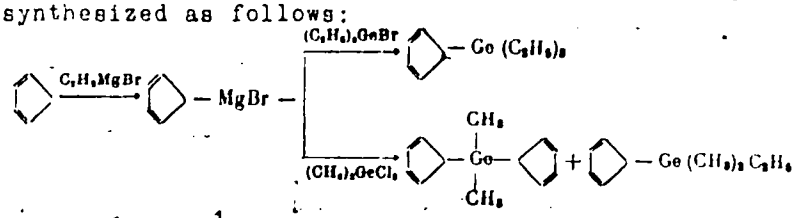
S/062/62/000/008/006/016
B117/B180

AUTHORS: Mironov, V. F., Gar, T. K., and Leytes, L. A.

TITLE: Synthesis and spectra of organogermanium compounds containing cyclopentadienyl, cyclopentenyl and cyclopentyl radicals

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 8, 1962, 1387-1392

TEXT: The above compounds have been synthesized for the first time and their IR spectra studied. Compounds containing cyclopentadienyl radicals were synthesized as follows:



(1)

between 500-600 cm^{-1} the spectra of these three compounds show lines

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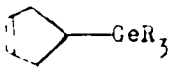
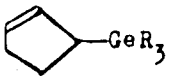
"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

appropriate for the valence fluctuations of the Ge-C bond. Besides this, they all showed a series of lines obviously corresponding to vibrations of the cyclopentadienyl ring bound with the germanium atom. Analysis of the spectra, which resemble those of cyclopentadienyl silane, shows that cyclopentadienyl germanes have covalent structures and are therefore not sandwich compounds. Compounds containing cyclopentenyl or cyclopentyl radicals were synthesized by addition of trichloro germane to cyclopentadiene or cyclopentene. Intense lines in the 370-430 cm^{-1} range, corresponding to the vibrations of the Ge-Cl bonds, were detected in the spectrum of cyclopentenyl trichloro germane. In the cyclopentyl trichloro germane spectrum, the valence vibrations of the Ge-C bonds appeared as bright lines in the 550-610 cm^{-1} band. Above 900 cm^{-1} the two spectra are similar. Lines typical of the cyclopentane ring were found in the following bands: 890-910 cm^{-1}, 1030 cm^{-1} (Raman spectrum), 1450-1460 cm^{-1}, 2860-2870 cm^{-1}. It was not possible from the spectra to decide whether the compounds were



or


. There are 7 figures and 1 table.

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

S/062/62/000/008/006/016
B117/B180

Synthesis and spectra of ...

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences USSR)

SUBMITTED: February 19, 1962

Card 3/3

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

YEGOROV, Yu.P.; KIREY, G.G.; LEYTES, L.A.; MIRONOV, V.F.; PETROV, A.D.

Polar effects in infrared spectra of the organic compounds of some elements of the group IV. Izv. AN SSSR.Otd.khim.nauk no.10:1880-1882 O '62. (MIRA 15:10)

1. Institut khimii polimerov i monomerov AN UkrSSR i Institut organicheskoy khimii im. D.N.Zelinskogo AN SSSR.
(Organometallic compounds—Spectra)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIRONOV, V.F.

Alkenylflourosilanes. Izv. AN SSSR.Otd.khim.nauk no.10:1884-1886 O '62. (MIRA 15:10)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Silane)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

S/020/62/146/005/009/011
B107/B186

AUTHORS: Mironov, V. F., Chumayevskiy, N. A.

TITLE: Some laws for the vibrational spectra of organosilicon compounds

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 146, no. 5, 1962, 1117-1120

TEXT: The infrared and Raman spectra of the following compounds were studied: $Cl_n(CH_3)_{3-n}SiCH{=}CH_2$; $Cl_n(CH_3)_{3-n}SiCH_2{-}CH{=}CH_2$; $(CH_3)_3Si(CH_2)_n{-}CH{=}CH_2$ (n=0-3); $(CH_3)_3ECH_2{-}CH{=}CH_2$ (E = C, Si, Ge, Sn). Results: (1) In the series $Cl_n(CH_3)_{3-n}SiCH{=}CH_2$, the intensity of the C=C absorption band increases up to the threefold ($\nu_{C=C}$ = 1600 cm^{-1}) as n increases; for $Cl_n(CH_3)_{3-n}SiCH_2{-}CH{=}CH_2$ ($\nu_{C=C}$ = 1635 cm^{-1}) the reverse effect is true. In the Raman spectra, this effect is not so strong and does not exceed the limit of error. (2) In the series $(CH_3)_3Si(CH_2)_nCH{=}CH_2$ (n = 0-3), the allyl configuration has the strongest, and the vinyl configuration the

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APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

S/020/62/146/005/009/011
B107/B186

Some laws for the vibrational...

weakest C=C absorption band. Further data are given in Fig. 4. The frequencies of the absorption bands and Raman lines increase with n, approaching the values for olefins with an isolated C=C bond. (3) In the series $(CH_3)_3ECH_2-CH=CH_2$ (E = C, Si, Ge, Sn), the intensity of the C=C absorption band increases in the stated sequence, and the frequencies change from 1650 cm^{-1} to 1628 cm^{-1}. Fig. 4 shows a distinct difference between on the one hand C, and Si, Ge, and Sn, on the other. As to the known difference between C and Si regarding the presence of empty 3d-orbits, the authors assume the same for Ge and Sn. There are 4 figures and 1 table. The two most important English-language references are: L. Pauling, J. Phys. Chem., 56, 361 (1952); F. G. A. Stone, D. Seyferth, J. Inorg. and Nucl. Chem., v. 4, 112 (1955).

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental Organic Compounds of the Academy of Sciences USSR)

PRESENTED: February 10, 1962, by I. V. Obreimov, Academician

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APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIRONOV, V.F., NEPOMNINA, V.V.

"Neue umlagerungen in der organo-si-chemie."

"New reactions in orgainc silicon chemistry".

Report submitted to the 2nd Dresden Symp. on Organic and Non-Silicate Silicon Chemistry
Dresden, East Germany 26-30 March 1963

Institute for organic chemistry of the Academy of Science of the USSR, Moscow.

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

S/062/63/000/001/0[illegible]/025
B101/B186

AUTHORS: Mironov, V. F., and Ozhurinskaya, N. G.

TITLE: Conjugation effect in organogermanium compounds

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 1, 1963, 75 - 82

TEXT: The reactions of -chloro-vinyl-trichloro germane (I) and of the homologous series $Cl_3Ge(CH_2)_nCl$, n = 1, 2, 3, were studied to clarify the analogous behavior of organosilicon and -germanium -chloro derivatives. It was found that I with CH_3MgBr formed -chloro-vinyl-trimethyl germane (II), b.p. 134°C/756 mm Hg, n_D^{20} 1.4600, d_4^{20} 1.1844, yield 65%; like the corresponding silicon compound, it suffered no -degradation as it occurs with the corresponding ethyl compounds. 1-trimethyl-silyl-2-trimethyl-germyl ethylene, b.p. 158-160°C/748 mm Hg, n_D^{20} 1.4460, d_4^{20} 0.9558, was synthesized from II with $ClSi(CH_3)_3$. The compounds of the series $Cl_3Ge(CH_2)_nCl$ also

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Conjugation effect in ... S/062/63/000/001/010/025
B101/B186

reacted in analogy to comparable silicon compounds. With n = 1, chloro-methyl-trimethyl silane was formed with CH_3MgBr; the compound n = 2 underwent β-degradation, ethylene was liberated, and tetramethyl germane was formed. The compound n = 3 formed γ-chloro-propyl-trimethyl germane, yield 80%, b.p. 161°C/7[illegible] mm Hg, n_D^{20} 1.4[illegible], d_4^{20} 1.1172. The tendency of β-halogen alkyl trichloro germanes towards β-degradation made it possible to determine precisely the type of addition of $HGeCl_3$ to 1-chloro-1-propene (III), 2-chloro-1-propene (IV), and 1,1-dichloro ethylene (V). III reacted with $HGeCl_3$ to form β-chloro-isopropyl-trichloro germane, yield 39%, b.p. 68-69°C/7 mm Hg, n_D^{20} 1.5[illegible], d_4^{20} 1.6442; IV formed β-chloro-propyl-trichloro germane, yield 76%, b.p. 98°C/32 mm Hg, n_D^{20} 1.5[illegible], d_4^{20} 1.6418; and V formed β-dichloro-ethyl-trichloro germane. By contrast with α- and γ-chloro-substituted homologs, all three compounds gave off all four chlorine atoms in titration with NaOH in 50% alcohol. Success attended also the synthesis of α- and γ-chloro-propyl-trichloro germane by chlorinating propyl-trichloro germane with SO_2Cl_2 in the presence of

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

conjugation effect in ... S/062/63/000/001/010/012
B101/B186

benzoyl peroxide. $Cl_3GeCH_2CH_2Cl$ undergoes β-degradation by reaction with $AlCl_3$ or quinoline. With piperidine or dimethyl aniline, however, dehydrochlorination occurs giving vinyl-trichloro germane, yield 49%, and 25% $GeCl_4$. γ-chloro-propyl-trichloro germane is also dehydrochlorinated by piperidine. γ-propylene-trichloro germane and propyl-trichloro germane are formed besides 33% $GeCl_4$. α-degradation occurred with 1-trichloro-germyl-2-trichloro-silyl-α-chloro ethane, 1-trichloro-silyl-2-trichloro-germyl-α-chloro ethane, α-dichloro-ethyl-trichloro germane, and 1-trichloro-germyl-2-trichloro-silyl-1,2-dichloro ethane. Conclusion: The tendency to α-degradation of compounds of the types $Cl_3MCH_2CH_2Cl$ and $Cl_3MCH=CHCl$, M = Si, Ge, Sn, Pb, increases in the order Si < Ge < Sn < Pb. The σ,π-conjugation increases likewise. The principal causes of this conjugation are the intramolecular approach of the Si or Ge atom to the functional group in α-position, the presence of unoccupied 3d orbits in Si and Ge, and that of undivided electron pairs of the chlorine atom. There are 3 figures. The most important English-language reference is: L. H. Sommer, G. M. Goldber,

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

S/062/63/000/00[illegible]/025
Conjugation effect in ... B101/B186

A. Dorfman, F. C. Whitmore, J. Amer. Chem. Soc., 68, 1084 (1946).

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinsky of the Academy of Sciences USSR)

SUBMITTED: April 24, 1962

Card 4/4

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

S/062/63/000/002/020/020
B144/B186

AUTHORS: Mironov, V. F., and Maksimova, N. G.

TITLE: Interaction between phenyl acetylene and trichlorosilane

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 2, 1963, 387 - 388

TEXT: Between silicon hydrides and acetylene or its derivatives not only does the known addition reaction take place, but an additional substitution reaction was observed at 500 - 600°C: $RC{\equiv}CH + HSi \longrightarrow RC{\equiv}CSi- + H_2$. When a stoichiometric mixture of phenyl acetylene and trichlorosilane was passed through a quartz tube heated to 500°C, the yields were 16% trichloro-silyl styrene and 18 % trichloro-silyl-phenyl acetylene. Formation of trichloro-silyl-phenyl acetylene by dehydrogenation of β-trichloro-silyl styrene could be excluded. The silylation of acetylene compounds by substitution represents a new way of forming Si-C bonds.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences USSR)

Card 1/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

S/062/63/000/002/020/020
B144/B186

Interaction between phenyl...

SUBMITTED: December 25, 1962

Card 2/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIRONOV, V.F.; GAR, T.K.

Reaction of trichlorogermane with butadiene. Izv.AN SSSR.Otd. khim.nauk no.3:578 Mr '63. (MIRA 16:4)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Germanium hydrides) (Butadiene)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIRONOV, V. F.

Dissertation defended for the degree of Doctor of Chemical Sciences at the Institute of Hetrochemical Synthesis in 1962:

"Carbofunctional Organic Compounds of Silicon and Germanium."

Vest. Akad. Nauk SSSR. No. 4, Moscow, 1963, pages 119-145

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIRONOV, V.F.; NEPOMNINA, V.V.; LEYTES, L.A.

Dehydrochlorination of 1-phenyl-2-chlorosilyl-1,2-dichloroethane and 1-phenyl-1-trichlorosilyl-1,2-dichloroethane. Izv. AN SSSR. Otd.khim. nauk no.4:756-759 Ap '63. (MIRA 1 :3)

1. Institut organicheskiy khimii im. N.D.Zelinskogo AN SSSR.
(Silicon organic compounds)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

YEGOROV, Yu.P.; LEYTES, L.A.; KRAVTSOVA, I.D.; MIRONOV, V.F.

Effect of the nature of silyl and germyl groups on the Raman spectra of allyl silanes and allyl germanes. Izv. AN SSSR. Otd.khim.nauk no.6:1114-1117 Je '63. (MIRA 16:7)

1. Institut organicheskoy khimii imeni Zelinskogo AN SSSR.
(Silane--Spectra) (Germane--Spectra) (Silyl group)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIRONOV, V.F.; KRAVCHENKO, A.L.

Relative electronegativity of germanium and silicon in organic compounds. Izv. AN SSSR. Ser.khim. no.9:1563-1570 S '63. (MIRA 16:9)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Silicon organic compounds--Electric properties)
(Germanium organic compounds--Electric properties)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIRONOV, V.F.; NEPOMNINA, V.V.

Dehydrochlorination of β, γ -dichloropropyltrichlorosilane.
Izv. AN SSSR. Ser. khim. no.12:2142-2146 D '63.
(MIRA 17:1)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 13155-63 EPF(c)/EWT(1)/BDS/EPF(n)-2 AFFTC/ASD/SSD Pu-4/Pr-4 63 62

S/170/63/000/004/010/017

AUTHOR: Mironov, V. F.

TITLE: Thermodydynamic equations for heat- and mass-transfer in capillary-porous bodies being washed by a pulsating air flow

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 6, no. 4, 1963, 78-82

TEXT: The author derives differential equations for the heat- and mass-transfer process between a capillary-porous wall and a pulsating air flow. He develops dimensionless complexes for the increase of mass transfer with pulsation. The presence of a source with the mass I sub m is incorporated in the equation exemplifying the law of preservation of mass in the case of pulsation of an air flow. In the equations, the values are adopted: rho equals density of flow of mass; w equals rate of flow of mass; c_p equals isobaric heat capacity; lambda equals heat conductivity factor; expressed in kilocalories per meter per hour times degrees Centigrade; t equals temperature in degrees Centigrade; u equals specific mass content; a equals heat conductivity factor; delta equals thermogradient factor; c (with vinculum) equals the reduced heat capacity; p equals barometric

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APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 13155-63

S/170/63/000/004/010/107

pressure; p_1 equals partial vapor pressure; p_2 equals partial air pressure; D equals diffusion factor; R equals gas constant; T equals temperature in degrees K; h equals amount of air displacement relative to the porous wall as a result of pulsation (amplitude of oscillations); c equals velocity of sound in air; script l equals linear dimension of wall exposed to air; n equals the frequency of oscillations; and eta_1 and eta_2 equal the first and second viscosity factors respectively . The author concludes that the value of the source I_m, conditioned by the air flow pulsation, depends on h and on the square of frequency (omega); with an increase in these values, mass exchange is intensified, as was confirmed experimentally by the author in Issue No. 10 (1962) of the present journal.

ASSOCIATION: Institutu teplo- i massobmena AN BSSR (Minsk), (Institute of Heat- and Mass Exchange, Academy of Sciences BSSR)

SUBMITTED: Nov 29, 62

Card 2/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MI[illegible]N[illegible]V, V.F.; GAR, T.K.

Interaction of trichlorogermane with conjugated dienes. Dokl. AN SSSR 152 no.5:1111-1114 O '63. (MIRA 16:12)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIRONOV, V.F.

Course of addition of silicon hydrides to propargyl chloride. Dokl. AN SSSR 153 no.4:848-851 D '63. (MIRA 17:1)

1. Predstavleno akademikom B.A. Kazanskim.

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

STANKEYEV, Arseniy Aleksandrovich, prepod.; STANKEYEVA, Irina Nikitichna, prepod.; MIRONOV, V.F., red.

[New methods for marking parts] Novye metody markirovki detalei. Tula, Priokskoe knizhnoe izd-vo, 1964. 34 p. (MIRA 18:7)

1. Tul'skiy politekhnicheskiy institut (for Stankeyev, Stankeyeva).

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 22667-65 EPF(c)/EWP(j)/EWT(m)/EWP(b)/EWP(t) Pc-4/Pr-4 IJP(c) RM/JD/MLK
ACCESSION NR: AT5002128 S/0000/64/000/000/0164/0167

AUTHOR: Mironov, V. F.; Nepomnina, V. V.

B+1

TITLE: New rearrangement reaction in the organic chemistry of silicon

27

SOURCE: AN SSSR. Institut neftekhimicheskogo sinteza. Sintez i svoystva monomerov (The synthesis and properties of monomers). Moscow, Izd-vo Nauka, 1964, 164-167

TOPIC TAGS: silicoorganic compound, rearrangement reaction, dehydrochlorination, chlorosilane rearrangement

ABSTRACT: A general mechanism for 2 rearrangement reactions of organosilicons is proposed and the published experimental studies of Mironov et. al. are interpreted as proving the suggested reaction mechanism. Dehydrochlorination of α, β-dichloroethyltrichlorosilane with piperidine gave α-chloroethynyltrichlorosilane as expected, but the β-isomer was obtained with $AlCl_3$, and dehydrochlorination with $AlCl_3$ of α, β-dichloropropyltrichlorosilane gave a mixture of α-chloropropenyl and β-chloroisopropenyl trichlorosilanes. The results are explained by detachment of the β-Cl as well in the presence of $AlCl_3$ and by the subsequent isomerization of the β-carbene ion by the shift of Cl_3Si groups from the α- to the β-carbon atom, as shown by the following equation:

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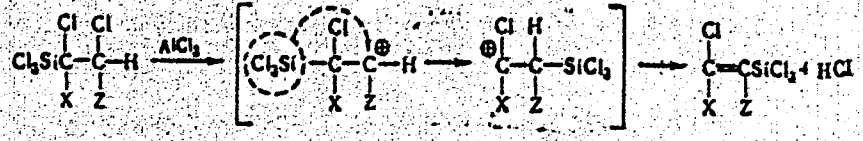
APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 22667-65
ACCESSION NR: AT5002128



(1)

The proposed mechanism was also proven by the reactions of α, β-dichloroisopropyltrichlorosilane, 1, 1- and 1, 2-bis-(trichlorosilyl) dichloroethane, and of the new compounds $Cl_3SiCHClCHCl_2C_6H_5$ and $Cl_3SiCCl(C_6H_5)CH_2Cl$, and it permitted development of a preparative method for β-halogenovinyltrichlorosilanes. A second rearrangement reaction was discovered during dehydrohalogenation of 1, 2-bis-(trichlorosilyl)chloroethane. It proceeds by a similar mechanism, as shown below:

$$Cl_3SiCH_2\overset{Cl}{C}HSiCl_3 \xrightarrow{AlCl_3} [Cl_3SiCH_2\overset{+}{C}HSiCl_3 \rightleftharpoons (Cl_3Si)_2CH\overset{+}{C}H_2] \rightarrow \quad (2)$$

$$\rightarrow Cl_3SiCH{=}CHSiCl_3 + Cl_3SiC(CH_3){=}SiCl_3 + HCl.$$

Orig. art. has: 11 formulas.

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APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 22667-65

ACCESSION NR: AT5002128

ASSOCIATION: None

SUBMITTED: 30Jul64 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 008 OTHER: 000

Card 3/3

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

ACCESSION NR: AP4019022 S/0062/64/000/002/0394/0395

AUTHOR: Mironov, V. F.; Maksimova, N. G.

TITLE: A new method of synthesizing vinyl substituted silanes

SOURCE: AN SSSR. Izv. Seriya khimicheskaya, no. 2, 1964, 394-395

TOPIC TAGS: vinyl substituted silane, trichlorosilane, acetaldehyde, silane, synthesis

ABSTRACT: In the search for a new method which is different from that of Nesmeyanov et al. (Dokl. AN SSSR, 128, 551, 1959) for producing vinyl substituted silanes, the authors found that passing a mixture of trichlorosilane with acetaldehyde (1:2) at a rate of 20 g/hr through an empty quartz tube (length 1000 mm, diam. 20 mm) heated to 650C, vinyloxytrichlorosilane is formed with a yield of 46%.

$$CH_3CHO + HSiCl_3 \xrightarrow{650^0} Cl_3SiOCH{=}CH_2 + H_2 .$$

Other silicon hydrides also enter in similar reactions with acetaldehyde.

Card 1/2

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

ACCESSION NR: AP4019022

Orig. art. has: no figures, 4 formulas, no tables.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinski Akademii nauk SSSR (Institute of Organic Chemistry, Academy of Sciences, SSSR)

SUBMITTED: 23Dec63 DATE ACQ: 27Mar64 ENCL: 00

SUB CODE: OC NO REF SOV: 002 OTHER: 000

Card 2/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

KARTSEV, G.N.; SYRKIN, Ya.K.; KRAVCHENKO, A.I.; MIRONOV, V.F.

Dipole moments of some germanium organic compounds. Zhur. strukt. khim. 5 no.3:490-493 My-Je '64. (MIRA 18:7)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni M.V. Lomonosova.

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIRONOV, V. F.; KRAVCHENKO, A. L.

Cleavage of silicon-containing organoaluminum compounds by aluminum bromide. Izv AN SSSR Ser Khim no. 4:768-770 Ap '64. (MIRA 17:5)

1. Institut organicheskoy khimii im. N. D. Zelinskogo AN SSSR.

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 19613-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 RM

ACCESSION NR: AP5003218 S/0062/64/000/007/1209/1215

AUTHOR: Mironov, V. F.; Kravchenko, A. L.; Petrov, A. D. (Deceased)

TITLE: Synthesis of carbofunctional germanium compounds from chloromethyltrimethyl germanium

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 7, 1964, 1209-1215

TOPIC TAGS: germanium compound, chlorinated organic compound, chemical reaction, ether, ester

ABSTRACT: Chloromethyltrimethyl germanium was used in the first synthesis of trimethylgermylmethyl alcohol, its methyl ether and several esters with acetic, acrylic, and methacrylic acids. The dimethyl ester of trimethylgermylmethylmalonic acid was also obtained. Chloromethyltrimethyl-germanium readily forms a Grignard reagent, from which were obtained trimethylgermylacetic acid, γ-butenyltrimethyl-germanium, and other compounds. When concentrated sulfuric acid was added to chloromethyltrimethyl-germanium, methane was quantitatively released and on further treatment with water, bis(chloromethyl)

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APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 19613-65
ACCESSION NR: AP5003218

3

tetramethylidgermanoxane was formed. Treatment with aluminum chloride led to the regrouping of chloromethyltrimethyl-germanium to ethyldimethylchlorogermanium. Reactions based on chloromethyltrimethyl-germanium show no fundamental differences from similar reactions with chloromethyltrimethyl-silane. The authors extend their gratitude to L. A. Leytes and A. A. Bugorkova for their assistance. Orig. art. has:3 formulas and 12 graphs.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry, Academy of Sciences, SSSR)

SUBMITTED: 17Dec62 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 006 OTHER: 009 JPRS

Card 2/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 19615-65 EWT(m)/EPF(c)/EWP(j)/T/EWP(b)/EWP(t) Po-4/Pr-4 IJP(c)/SSD/AEDC(b)/AFWL/RAEM(c)/ASD(a)-5/SSD(c)/RAEM(j)/RAEM(1)/ESD(gs)/ESD(t) RM/JD

ACCESSION NR: AP5003220 S/0062/64/000/007/1312/1313

AUTHOR: Yegorochkin, A. N.; Khidekel', M. L.; Razuvayev, G. A.; Mironov, V. F.; Kravchenko, A. L.

TITLE: Proton magnetic resonance spectra of certain elemento-organic compounds of silicon and germanium

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 7, 1964, 1312-1313

TOPIC TAGS: proton, organosilicon compound, germanium compound, spectroscopy, magnetic resonance

ABSTRACT: Comparison of proton magnetic resonance spectra of several saturated and unsaturated organic compounds of silicon and germanium revealed that for unsaturated compounds, the effects of d_{π} - p_{π} - conjugation play an appreciable role. The spectra were recorded on the JMN-3 spectrometer using cyclohexane as the internal standard. To determine chemical shifts in saturated compounds, cyclohexane was combined with the sample in 1:1 volume ratio. Chemical shifts of proton signals in unsaturated compounds were determined by subsequent dilution with cyclohexane and extrapolation of the data to infinite dilution. It was found that chemical shifts of the CH_3- and CH_2-protons in compounds not containing multiple bonds correspond to

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APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 19615-65

ACCESSION NR: AP5003220

3

greater electroconductivity of germanium compared with silicon and the qualitative notions of the inductive effect of substituents. Thus, in view of the greater electron-donor capacity of the $-CH_2-M(CH_3)_3$ group, where M = Si, Ge, compared with that of the methyl, resonance frequencies of methylprotons in the compounds $(CH_3)_3M-(CH_2)_n-M(CH_3)_3$ are shifted toward larger values of τ with respect to the same frequencies in the $(CH_3)_4M$ compounds. Orig. art. has: 1 graph and 1 table.

ASSOCIATION: Nauchno-issledovatel'skiy institut khimii pri Gor'kovskom gosudarstvennon universitete (Scientific Research Institute of Chemistry at Gor'kiy State University); Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics, Academy of Sciences, SSSR); Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry, Academy of Sciences, SSSR)

SUBMITTED: 25Nov63 ENCL: 00 SUB CODE: OC, OP

NO REF SOV: 001 OTHER: 005 JPRS

Card 2/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 14462-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 RM

ACCESSION NR: AP4044706 S/0062/64/000/008/1515/1518

AUTHOR: Mironov, V. F.; Gar, T. K.

TITLE: Reaction of trichlorogermane with acetylene and its derivatives

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 8, 1964, 1515-1518

TOPIC TAGS: trichlorogermane, acetylene, bis(trichlorogermyl)ethane, 1,2 bis(trichlorogermyl)ethylene

ABSTRACT: A study of the reaction of trichlorogermane with acetylene showed that different products are obtained, depending on reaction conditions: 1) the bubbling of acetylene through trichlorogermane yields the addition product 1,2-bis(trichlorogermyl)ethane; 2) the addition of trichlorogermane to acetylene-saturated hexane yields trichlorovinylgermane in addition to 1,2-bis(trichlorogermyl)ethane; 3) the addition of trichlorogermane to acetylene-saturated ethyl ether yields the polymer

$$\left[- \overset{Cl}{\underset{Cl}{Ge}}CH = CH - \right]_x;$$

Card 1/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 14462-65

ACCESSION NR: AP4044706

2

4) the bubbling of acetylene through trichlogermane etherate yields, in addition to this polymer, 1,2-bis(trichlorogermyl)ethylene. The reaction of 1,2-bis(trichlorogermyl)ethylene with methylmagnesium chloride yields 1,2-bis(trimethylgermyl)ethylene and the polymer

$$\left[- \overset{CH_3}{\underset{CH_3}{Ge}} CH = CH - \right]_x$$

The structure of the synthesized compounds was studied by recording Raman, IR, UV, and NMR spectra and measuring dipole moments. Orig. art. has: 4 figures.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry, AN SSSR)

SUBMITTED: 03Jan64

ENCL: 00

SUB CODE: GC

NO REF SOV: 010

OTHER: 000

Card 2/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 24840-65 EWT(m)/EPF(c)/EWP(j) Pc-4/Pr-4 RM

ACCESSION NR: AP4047402 S/0062/64/000/010/1887/1889

AUTHOR: Mironov, V. F.; Gar, T. K.

TITLE: Reaction of dichloromethane with germanium

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 10, 1964, 1887-1889

TOPIC TAGS: organogermanium compound, synthesis, dichloromethane germanium reaction, methyltrichlorogermane, cyclic organogermanium compound

ABSTRACT: Dichloromethane was reacted with metallic germanium (in a glass tube filled with a mixture of 35 gm germanium and 12 gm copper, heated to 370-390C, 230 gm dichlormethane fed at the rate of 38 gm/hr) to form 27% methyltrichlorogermane, 23% bis(trichlorogermyl)methane and 19% Ge-hexachloro-1,3,5-germancyclohexane. The latter two compounds were converted with methylmagnesium chloride to bis(trimethylgermyl)methane and Ge-hexamethyl-1,3,5-germancyclohexane. The IR, Raman and NMR spectra of the cyclic compounds were obtained. "We thank L. A. Leytes for taking the IR and Raman spectra and

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 24840-65
ACCESSION NR: AP4047402

A. M. Yegorochkin for the NMR spectrum." Orig. art. has: 3 figures and 1 equation.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry, Academy of Sciences SSSR)

SUBMITTED: 24Feb64 ENCL: 00

SUB CODE: GC, OC NO REF SOV: 004 OTHER: 001

Card 2/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

PETUKHOV, V.A.; MIRONOV, V.F.; SHORYGIN, P.P.

Ultraviolet spectra and structure of unsaturated compounds of the elements of group IV. Izv. AN SSSR Ser. khim. no.12:2203-2206 D '64 (MIRA 18:1)

1. Institut organicheskoy khimii imeni N.D. Zelinskogo AN SSSR.

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 51863-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 GS/RM

ACCESSION NR: AT5002125 S/0000/64/000/000/0150/0152

AUTHOR: Mironov, V. F.; Dzhurinskaya, N. G.; Gar, T. K.

22
B+1

TITLE: A new reaction for synthesizing organogermanium compounds

SOURCE: AN SSSR, Institut neftekhimicheskogo sinteza. Sintez i svoystva mouomerov (The synthesis and properties of monomers). Moscow, Izd-vo Nauka, 1964, 150-152

TOPIC TAGS: organogermanium bromide, alkyltrichlorogermanium, alkenyltrichlorogermanium, trichlorogermanium addition

ABSTRACT: Following an extensive review of previously published research, the authors report a new condensation reaction of $HGeCl_3$ with the halo-derivatives of hydrocarbons, with good yields of alkenyl- or alkyltrichlorogermaniums. This pattern of Ge-C bond formation is entirely unique, since the hydrides of Si, Sn and other metals form hydrocarbons (i.e., reduction) under similar conditions. $HGeCl_3$ can be added to any unsaturated compound at room temperature and without benefit of catalysts. Treatment of organogermanium chlorides with gaseous hydrogen bromide provided high yields of the corresponding organogermanium bromides. Orig. art. has: 11 formulas.

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APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 51863-65

ACCESSION NR: AT5002125

ASSOCIATION: None

SUBMITTED: 30Jul64 ENCL: 00 SUB CODE: OC ,OC

NO REF SOV: 008 OTHER: 003

Card 2/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 53712-65 EWT(m)/EPF(c)/EPR/EWP(j)/EWA(c) Pc-4/Pr-4/Ps-4 RPL WW/RM

ACCESSION NR: AP5017167 UR/0192/64/005/004/0639/0639

AUTHOR: Kartsev, G. N.; Syrkin, Ya. K.; Kravchenko, A. L.; Mironov, V. F.

36
35
B

TITLE: Dipole moments of trimethylhalogermane

SOURCE: Zhurnal strukturnoy khimii, v. 5, no. 4, 1964, 639

TOPIC TAGS: dipole moment, germanium compound, halogenated organic compound

Abstract: The dipole moments of four monosubstituted trimethylgermanes $(CH_3)_3GeX$, where X = F, Cl, Br, and I, were measured at 25° in benzene by the heterodyne method. The dipole moments found were 2.51, 2.78, 2.84, and 2.81, respectively. The investigated compounds were compared with analogous compounds of carbon and silicon, indicating that the variation of the dipole moment from fluoro-substituted to iodo-substituted compounds is of the same character as for the carbon compounds, but differs from the change in the moment in this series for silicon compounds. The ratio $u(R_3GeX)$: $u(R_3CX)$ was an average of 1.30 for all the compounds; this was not observed for the corresponding silicon compounds. The moment of the Ge-F bond is estimated at 2.80 D. and that of the Ge-I bond at 3.10 D. Orig. art. has 2 tables.

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APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 53712-65

ACCESSION NR: AP5017167

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute of Fine Chemical Technology)

SUBMITTED: 17Apr64 ENCL: 00 SUB CODE: OC, EM

NO REF SOV: 000 OTHER: 002 JPRS

DR

Card 2/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

ACCESSION NR: AP4034571 S/0079/64/034/004/1356/1357

AUTHOR: Mironov, V. F.; Kravchenko, A. L.

TITLE: New method for synthesizing alkyldichlorogermanes

SOURCE: Zhurnal obshchey khimii, v. 34, no. 4, 1964, 1356-1357

TOPIC TAGS: alkyldichlorogermane, synthesis, trichlorogermane, tetramethyl tin, ethyldichlorogermane, tetraethyl lead, methyldichlorogermane, methylethyldichlorogermane, trimethylethylgermane

ABSTRACT: The proposed method for synthesizing alkyldichlorogermanes comprises reacting trichlorogermane with tetramethyl tin in ether:

$$(CH_3)_4Sn + HGeCl_3 \xrightarrow{ether} HGeCl_2CH_3 + (CH_3)_3SnCl$$

The product yields were 80 and 70%, respectively. Ethyldichlorogermane (boiling, 129.5C at 743 mm, n_D^{20} = 1.4750) was obtained similarly with a 45% yield. Its yield was increased by using tetraethyl lead instead of the tetraethyl tin. Ethylene bubbled through methyldichlorogermane gave methyl(ethyl)dichloro-

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APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

ACCESSION NR: AP4034571

germane (boiling 149C at 750 mm, n_D^{20} = 1.4660) with a 90% yield. The latter was methylated with CH_3MgCl to form trimethyl(ethyl)germane. Orig. art. has: 2 equations.

ASSOCIATION: Institut organicheskoy khimii, Akademii nauk SSSR (Institute of Organic Chemistry, Academy of Sciences SSSR)

SUBMITTED: 18Nov63 DATE ACQ: 11May64 ENCL: 00

SUB CODE: OC NO REF SOV: 000 OTHER: 003

Card 2/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 19367-66 EWT(m)/EWP(j) RM

ACCESSION NR: AP5016195 UR/0079/64/034/012/4122/4122

AUTHOR: Mironov, V. F.; Fedotov, N. S.

TITLE: New method of producing phenyltrichloro- and phenyltribromogermane

SOURCE: Zhurnal obshchey khimii, v. 34, no. 12, 1964, 4122

TOPIC TAGS: organogermanium compound, chlorinated organic compound, brominated organic compound

Abstract: Boiling of $GeCl_4$ or $GeBr_4$ with iodobenzene in the presence of copper powder was found to lead to a high yield (approximately 80%) of the corresponding phenyltrihalogermane. Replacement of copper by other metals (Zn, Fe, Na) or replacement of iodobenzene by bromobenzene, as well as replacement of $GeCl_4$ by CH_3GeCl_3 did not succeed. The authors claim that the new way of synthesizing $C_6H_5GeCl_3$ and $C_6H_5GeBr_3$ is the best of those now known. Orig. art. has 4 formulas.

ASSOCIATION: Institut organicheskoy khimii Akademii nauk SSSR (Institute of Organic Chemistry, Academy of Sciences, SSSR)

SUBMITTED: 20Jul64 ENCL: 00 SUB CODE: OS, GC

NO REF SOV: 001 OTHER: 011 JPRS

Card 1/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIRONOV, V.F.; KRAVCHENKO, A.L.; PETROV, A.D. [deceased]

Synthesis of 1,1- and 1,2-bis-(trimethylgermyl)-ethylene
Dokl. AN SSSR 155 no. 4:843-845 Ap '64. (MIRA 17:5

1. Institut organicheskoy khimii AN SSSR. .. len-korrespondent AN SSSR (for Petrov).

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 19604-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 AS(mp)-2/AFWL/RAEM(a)/ESD(gs)/ESD(t) RM

ACCESSION NR: AP5003148 S/0020/64/158/002/0400/0403

AUTHOR: Leytes, L. A.; Gar, T. K.; Mironov, V. F.

TITLE: Appearance of sigma, pi-conjugation in the spectra of beta-alkenylgermanes as a function of steric factors

SOURCE: AN SSSR. Doklady, v. 158, no. 2, 1964, 400-403

TOPIC TAGS: Raman spectrum, germanium compound, pi bonded organometallic compound, conjugage bond system, beta spectroscopy

Abstract: The line intensity in the Raman spectrum of various alkenyl-germanes with the Ge atom in the beta-position with respect to the C=C bond was studied. Of five such compounds synthesized, three were by a new condensation reaction discovered by the authors: RCl + $HGeCl_3$ ether R-$GeCl_3$ + HCl. It was also demonstrated that the addition of $HGeCl_3$ to cyclopentadiene results in the formation of a compound with germanium in the beta-position to the double bond. The frequencies and line intensities corresponding to C=C vibration in the Raman spectra of alkenyl-germanes indicated that the "beta effect" is not specific for compounds of Si, Ge, Sn, but is a particular case of the special properties of allyl and benzyl systems, i.e., the very high reactivity of these systems in ionic addition reactions, their stability in radical reactions, and the ability of allyl

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APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 19604-65

ACCESSION NR: AP5003148

hydrogen to be exchanged readily for deuterium, explained by sigma-pi conjugation of the 1-2 and 3-4 bonds in the system C=C-C-M. An analysis of the Raman spectra of the planar rings of two of the compounds synthesized indicated tha the "beta effect" is a particular case of sigma-pi conjugation according to Nesmeyanov. It was also found that the induction effect (replacement of the electropositive group $(CH_3)_2Ge<$ by the electronegative $Cl_2Ge<$) exerts essentially no influence on $I_{C=C}$. Orig. art. 5 formulas, 2 graphs, and 1 table.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry, Academy of Sciences, SSSR)

SUBMITTED: 08Apr64 ENCL: 00 SUB CODE: OC, OP

NO REF SOV: 016 OTHER: 000 JPRS

Card 2/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 16400-65 EWT(m)/EPF(c)/EWP(j) Pc-4/Pr-4 RM
ACCESSION NR: AP4046378 S/0020/64/158/003/0656/0659

AUTHOR: Mironov, V. F.; Kravchenko, A. L.

TITLE: New preparative method for alkyldichlorogermanes and alkyltrichlorogermanes

SOURCE: AN SSSR. Doklady*, v. 158, no. 3, 1964, 656-659

TOPIC TAGS: germane, alkyldichlorogermane, alkyltrichlorogermane, methyldichlorogermane, ethyldichlorogermane, ethyltrichlorogermane

ABSTRACT: A new preparative method has been developed for alkyldichlorogermanes and alkyltrichlorogermanes. It is noted that heretofore alkyldichlorogermanes have been practically unobtainable. Methyldichlorogermane (b.p., 101.5C at 750 mm Hg) was prepared in 80% yield (on trichlorogermane) by treating tetramethyltin with trichlorogermane etherate. Ethyldichlorosilane (b.p., 130C at 747 mm Hg) was prepared in 80.5% yield by the reaction of tetraethyllead with trichlorogermane etherate. Finally, ethyltrichlorogermane (b.p., 140C at 750 mm Hg) was

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 16400-65
ACCESSION NR: AP4046378

obtained in 90% yield from tetraethyllead and tetrachlorogermane; this last method is recommended. Structures were confirmed by elemental analysis, IR spectroscopy, and, in some cases, by derivatization. Orig. art. has: 4 figures and 8 formulas.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry, Academy of Sciences SSSR)

SUBMITTED: 13Apr64 ENCL: 00 SUB CODE: GC, IC

NO REF SOV: 007 OTHER: 005

Card 2/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 38623-65 EWT(m)/EPF(c)/EWP(j) Pc-4/Pr-4 RM
ACCESSION NR: AP5008107 S/0062/65/000/002/0291/0300

23
21
B

AUTHOR: Mironov, V. F.; Gar, T. K.

TITLE: Reactions of trichlorogermane with alkyl, alkenyl, and alkynyl halides

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 2, 1965, 291-300

TOPIC TAGS: heteroorganic compound, organogermanium compound, trichlorogermane, alkyl halide, alkenyl halide, alkynyl halide, alkylgermane synthesis, infrared spectrum

ABSTRACT: The condensation of trichlorogermane ($HGeCl_3$) with allyl halides, consisting of the substitution of the trichlorogermyl group for the halogen, may be extended to saturated tertiary halides. Secondary and normal alkyl halides do not enter into this reaction, as was shown by experiments using n- and sec-butyl chloride. Propargyl chloride and bromide also condense with trichlorogermane, but this reaction is associated with an addition reaction. The preparation of the following compounds is described: t-butyltrichlorogermane, t-butyltrimethylgermane, triphenylmethylchlorogermane, β-butenyltrichlorogermane, β-butenyltrimethylgermane, γ-chlorobutylchlorogermane, and γ-chlorobutyltrimethylgermane, and

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APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 38623-65
ACCESSION NR: AP5008107

2

some others. The infrared spectra of these compounds are illustrated. The possibility of the condensation reaction is apparently determined both by an easy ionization of the C-Cl bond in the organic halides and mainly by the possibility of protonation of the Ge-H bond in trichlorogermane, which, in contrast to $HSiCl_3$, is an equilibrium mixture of compounds of tetra- and divalent germanium. "We express our sincere thanks to L. A. Leytes, who carried out the spectroscopic analysis of the products." Orig. art. has: 9 figures, 1 table and 15 formulas.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry, Academy of Sciences, SSSR)

SUBMITTED: 28Mar63 ENCL: 00 SUB CODE: OC

NO REF SOV: 009 OTHER: 008

Card 2/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 57075-65 EWT(m)/EPF(c)/EWP(j)/EWP(t)/EWP(b)/EWA(c) Pc-4/Pr-4 LJP(c)
JD/RM

ACCESSION NR: AP5012458

UR/0062/65/000/004/0755/0758
661.718.6

31
28
B

AUTHORS: Mironov, V. F.; Gar, T. K.

TITLE: Synthesis and conversion of germanium tribromide

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 4, 1965, 755-758

TOPIC TAGS: germanium, bromide, organic synthesis, unsaturated hydrocarbon, organo metallic compound

ABSTRACT: When HBr is passed over metallic Ge, both tetrabromide and tribromide form, but only little of the latter. It has been demonstrated that the addition of powdered Cu to Ge somewhat improves the yield of the tribromide, but still the yield is no more than 30%. With ether the tribromide ($HGeBr_3$) forms butyrous etherate, which is insoluble in excess ether. This permits the $HGeBr_3$ to be separated from $GeBr_4$, since the latter is readily soluble in ether and only partially in the etherate. It is somewhat more convenient to produce $HGeBr_3$ by dissolving $Ge(OH)_2$ in HBr. The hydroxide may be prepared (free of GeO_2) by hydrolysis of the trichloride

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APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 57075-65

ACCESSION NR: AP5012458

3

etherate. This procedure requires great quantities of ether. If HI is used instead of HBr, GrI_2 is produced, and this appears to be one of the better methods of obtaining this compound. The best method of producing either $HGeBr_3$ or GeI_2, however, is by an exchange reaction, replacement of Cl by Br or I, during passage of HBr or HI through the trichloride or its etherate. Distillation of an etheral solution of $HGeBr_3$ containing HBr, and even more of $HGeBr_3$ dissolved in EBr acid, yields yellow crystals of $GeBr_2$ crystals, which react energetically with allyl bromide and butadiene to form allyl germanium bromoform and Ge-1,1-dibromo germanium cyclopentane-3. $GeBr_2$ is not obtained by distillation of anhydrous $HGeBr_3$. Like $HGeCl_3$, $HGeBr_3$ combines with unsaturated compounds in an exothermic reaction without catalyst. With acetylene it forms unsaturated compounds chiefly; with ether it forms only unsaturated compounds. Orig. art. has: 8 formulas.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo, Akademii nauk SSSR (Institute of Organic Chemistry, Academy of Sciences, SSSR)

SUBMITTED: 17Jul64 ENCL: 00 SUB CODE: GC, OC

NO REF SOV: 004 OTHER: 002

Card 2/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 57783-65 EPF(c)/EWP(j)/EWT(m) Pc-4/Pr-4 RM

ACCESSION NR: AP5015589 UR/0062/65/000/005/0855/0862

24
21
B

AUTHOR: Gar, T.K.; Mironov, V.F.

TITLE: Synthesis and transformations of tribromogermane

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 5, 1965, 855-862

TOPIC TAGS: germanium compound, organogermanium compound, germaniumhalide

ABSTRACT: The following reactions were carries out: tribromogermane with allyl bromide, to produce $CH_2{=}CHCH_2GeBr_3$; germanium dibromide with allyl bromide, to produce $CH_2{=}CHCH_2GeBr_3$; tribromogermane with cyclohexene, to give cyclohexyltribromogermane $C_6H_{11}GeBr_3$; tribromogermane with allyl chloride, to give $ClCH_2CH_2CH_2GeBr_3$; tribromogermane with butadiene, to yield $CH_3CH{=}CHCH_2Ge(CH_3)_3$ and $\begin{matrix}CH\text{-}CH_2\\ \|\\ CH\text{-}CH_2\end{matrix}\!\!>Ge(CH_3)_2$; dibromide with butadiene, to yield $\begin{matrix}CH\text{-}CH_2\\ \|\\ CH\text{-}CH_2\end{matrix}\!\!>GeBr_2$, and after methylation, $\begin{matrix}CH\text{-}CH_2\\ \|\\ CH\text{-}CH_2\end{matrix}\!\!>Ge(CH_3)_2$; tribromogermane with acetylene, to form $Br_3GeCH{=}CHGeBr_3$, and after

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APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 57783-65

3

ACCESSION NR: AP5015589

methylation, $(CH_3)_3GeCH{=}CHGe(CH_3)_3$ and $(CH_3)_3GeCH_2CH_2Ge(CH_3)_3$; and tribromogermane with ethylene, to from $Br_3GeCh_2Ch_2GeBr_3$. All the procedures employed are described in detail. "We express our appreciation to P.V. Petrovskiy and L. A. Leytes for recording and interpreting the NMR, Raman, and IR spectra." Orig. art. has: 4 figures and 22 formulas.

ASSOCIATION: Institut organicheskoy khimii im. N.D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry, Academy of Sciences, SSSR)

SUBMITTED: 03Sep64 ENCL: 00 SUB CODE: OC, IC

NO REF SOV: 008 OTHER: 009

Card 2/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 63639-65 EWT(m) JAJ/RM

ACCESSION NR: AP5017961 UR/0062/65/000/006/1026/1035

661.718.6

13

B

AUTHOR: Mironov, V. F.; Kravchenko, A. L.

TITLE: Synthesis of organogermanium compounds from tetramethylgermane

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 6, 1965, 1026-1035

TOPIC TAGS: organogermanium compound, germane

ABSTRACT: The authors developed methods for the synthesis of trimethylgermane halides, determined their basic properties, and carried out a series of syntheses starting from these halides. Tetramethylgermane, which is required for this purpose, was prepared as follows:

A

$$Cl_4Ge + 4CH_3MgBr \rightarrow (CH_3)_4Ge\ (80\%)$$

The following reactions were carried out:

B

$$(CH_3)_4Ge \xrightarrow{Br} (CH_3)_3GeBr\ (98\%) \xrightarrow[AlCl_3]{Br} (CH_3)_2GeBr_2\ (80\%)$$

Card 1/4

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 63639-65

ACCESSION NR: AP5017961

$(CH_3)_4Ge + i\text{-}C_3H_7Br \xrightarrow{AlBr_3} (CH_3)_3GeBr$ (92%) C

$(CH_3)_4Sn + n\text{-}C_3H_7Br \xrightarrow{AlBr_3} (CH_3)_3SnBr$ (80%)

$(CH_3)_4Ge + i\text{-}C_3H_7Cl \xrightarrow{AlCl_3} (CH_3)_3GeCl$ (95%) D

$(CH_3)_3GeC_6H_5 + i\text{-}C_4H_9Cl \xrightarrow{AlCl_3} (CH_3)_3GeCl$ (85%) E

$(CH_3)_3GeC_6H_5 + C_6H_5J \xrightarrow{AlCl_3} (CH_3)_3GeJ$ (80%) F

$(CH_3)_3GeBr + HF \rightarrow (CH_3)_3GeF$ (40%) G

$(CH_3)_3GeBr + KSCN \xrightarrow{H_2O} (CH_3)_3GeNCS$ (81%) H

$(C_2H_5)_3GeBr + KSCN \xrightarrow{H_2O} (C_2H_5)_3GeNCS$ (84%)

$(CH_3)_3SiCl + KSCN \xrightarrow{H_2O} (CH_3)_3SiNCS$ I

$(CH_3)_3GeCl + KO_2CCH_3 \xrightarrow{H_2O} (CH_3)_3GeO_2CCH_3$ J

$(CH_3)_3SiCl + KO_2CCH_3 \xrightarrow{H_2O} (CH_3)_3SiOSi(CH_3)_3$

$(CH_3)_3GeBr + CH_2\text{—}CH_2 \rightarrow (CH_3)_3GeOCH_2CH_2Br$ (82%) K

O

Card 2/4

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 63639-65

ACCESSION NR: AP5017961

$$(CH_3)_3GeBr + (CH_3)_3SiBr + K \rightarrow Me_3GeGeMe_3\ (70\%) + Me_3GeSiMe_3\ (20\%) + Me_3SiSiMe_3\ (8\%)$$

L

$$(CH_3)_3SiC_6H_4MgBr + BrGe(CH_3)_3 \rightarrow (CH_3)_3GeC_6H_4Si(CH_3)_3\ (89\%)$$

$$CH \equiv CMgBr + ClGe(CH_3)_3 \rightarrow (CH_3)_3GeC \equiv CH\ (76\%)$$

$$(CH_3)_3SiCH_2MgCl + BrGe(CH_3)_3 \rightarrow (CH_3)_3GeCH_2Si(CH_3)_3\ (90,5\%)$$

$$(CH_3)_3SiC \equiv CMgBr + ClGe(CH_3)_3 \rightarrow (CH_3)_3GeC \equiv CSi(CH_3)_3\ (87,5\%)$$

$$CH_2 = CHC \equiv CMgBr + ClGe(CH_3)_3 \rightarrow (CH_3)_3GeC \equiv C - CH = CH_2\ (50\%)$$

M

$$(CH_3)_3SiCH = CHCl + ClGe(CH_3)_3 \xrightarrow{Na} (CH_3)_3SiCH = CHGe(CH_3)_3\ (56\%)$$

$$(CH_3)_3SiC(CH_3) = CCl + ClGe(CH_3)_3 \xrightarrow{Na} (CH_3)_3SiC(CH_3) = CGe(CH_3)_3\ (62\%)$$

N

Card 3/4

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 63639-65

ACCESSION NR: AP5017961

2

The synthetic procedures employed are described, and infrared spectra of the products are given. "The authors express their appreciation to L. A. Leytes for performing the spectroscopic analysis." Orig. art. has: 14 figures and 22 formulas.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry, Academy of Sciences, SSSR)

SUBMITTED: 07Jun63 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 008 OTHER: 007

Card 4/4

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 14221-66 EWT(m)/EWP(j) RM

ACC NR: AP6002701 (A) SOURCE CODE: UR/0062/65/000/012/2193/2196

29
28
B

AUTHOR: Mironov, V. F.; Maksimova, N. G.

ORG: Institute of Organic Chemistry im. N. D. Zelinskiy, Academy of Sciences SSSR (Institut organicheskoy khimii Akademii nauk SSSR)

TITLE: High-temperature condensation of trichlorosilane and chloroform with certain organic compounds

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 12, 1965, 2193-2196

TOPIC TAGS: silane

ABSTRACT: It was shown earlier (1958-1962) that the "high-temperature condensation method" is not only a general preparative method for organosilicon compounds but also a new route for the formation of the C-Si bond. The method involved the reaction of hydrocarbons or of chloro derivatives of unsaturated or aromatic hydrocarbons with silicon hydrides on passing of the stoichiometric mixture through a quartz tube heated to 500—650C:

$$RH + HSi\!\!\!\!\!\!\diagup\!\!\!\!\!\!\diagdown \rightarrow RSi\!\!\!\!\!\!\diagup\!\!\!\!\!\!\diagdown H_2$$

Card 1/2 UDC: 546.28

2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 14221-66

ACC NR: AP6002701

1

$$RCl + HSi\equiv \rightarrow RSi\equiv + HCl$$

Now, the method has been found suitable for reacting other compounds, e.g., acetaldehyde, with silicon hydrides and chlorosilanes. Thus, the method proved to be a new route for preparing vinyloxy-substituted silanes, such as (vinyloxy)trichlorosilane:

$$CH_3CHO \xrightarrow[600C]{HSiCl_3} CH_2{=}CHOSiCl_3.$$

As expected, (vinyloxy)trichlorosilane undergoes addition of bromine to form (1,2-dibromoethoxy)trichlorosilane. It was also shown that acetaldehyde reacts with chloroform at 500C to form 1,1-dichloroacetone. Orig. art. has: 3 figures. [SM]

SUB CODE: 11/ 07/ SUBM DATE: 02Apr65/ ORIG REF: 012/ OTH REF: 002

ATD PRESS: 4193

TS

Card 2/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

KARTSEV, G.N.; KOKOREVA, I.Yu.; SYRKIN, Ya.K.; MIRONOV, V.F.; CHERNYSHEV, Ye.A.

Dipole moments of organic compounds with a Si-Si bond. Zhur. strukt. khim. 6 no.2:309-310 Mr-Ap '65. (MIRA 18:7)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni Lomonosova.

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 36200-66 EWP(j)/EWT(m) [illegible]
ACC NR AP6008508 SOURCE CODE: UR/0062/66/[illegible]/58

AUTHOR: Petukhov, V. A., Mir[illegible]; Kra[illegible]

ORG: Institute of Organic Chemistry im. N. D. Zelinskiy, Academy of Sciences, SSSR (Institut organicheskoy khimi[illegible])

TITLE: Vacuum ultraviolet abs[illegible] elements of group IV

SOURCE: AN SSSR. Izvestiya. [illegible]

TOPIC TAGS: UV spectrum, UV absorption, [illegible]

ABSTRACT: The authors examine the [illegible] spectra [illegible] the type $CH_2=CH-MR_3$, M being an element of group IV and [illegible] or halogen, the MR_3 group being situated in the immediate [illegible] bond. The investigation is performed to check the assumptions [illegible] of the inductive effect of this group should be [illegible] compounds and therefore the indications of [illegible] of the [illegible] atom of M with the π-electrons of the multiple bond should [illegible] time the authors acknowledge the possibility of weakening [illegible] electrons of the multiple bond with the valence electrons of the MR_3 group by virtue of the M atom being situated in the nodal plane of the [illegible]

UDC: 543.422

Card 1/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 36990-66
ACC NR: AP6008508

π-electrons of the multiple bonds. These characteristics [illegible] compounds determine the complex dependence of their spectra [illegible] MR_3 substitute. The investigation revealed that substituents [illegible] and $R_3M-C \equiv C-MR_3$ compounds cause a bathochromic effect [illegible] absorption spectra. The effect of the substituents does not alter [illegible] linkage mechanism and for its explanation it is necessary to take [illegible] primarily the σ - π-linkage and to a lesser [illegible] art. has: 2 figures.

SUB CODE: 07/ SUBM DATE: 12May65/ ORIG REF: 001/ [illegible]

Card 2/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 31882-66 EWT(m)/EWT(j)/T IJP(c) RM

ACC NR: AP6012531 SOURCE CODE: UR/0062/66/000/003/0482/0489

AUTHOR: Mironov, V. F.; Gar, T. K.

ORG: Institute of Organic Chemistry im. N. D. Zelinskogo, Academy of Sciences SSSR (Institut organicheskoy khimii Akademii nauk SSSR)

TITLE: Reaction of trichlorogermane with conjugated dienes

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 3, 1966, 482-489

TOPIC TAGS: organic synthesis, germanium compound, cyclic compound, diene synthesis

ABSTRACT: While $HGeCl_3$ is added exothermally to practically any unsaturated compounds along unsaturated bonds in the absence of any catalysts or activators, $HSiCl_3$ adds to these compounds only in the presence of catalysts (Pt, H_2PtCl_6) or radical activators, frequently also requires elevated temperatures and pressures. It was unexpectedly found that the reaction of butadiene with trichlorogermane leads to formation of a narrow fraction which, on the basis of elemental, chromatographic and spectral analysis, consisted of a mixture of two compounds, one of which present in a predominant amount contained two atoms of chlorine. After methylation of this mixture gas-liquid chromatography still showed the presence of two compounds. The compounds are unsaturated five-membered rings with $GeCl_2$ group in the ring. The formation of the compounds results from 1-4 addition of germanium dichloride to diene. On the basis of spectral

UDC: 542.91+661.718.6

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APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 31882-66

ACC NR: AP6012531

data, structure of the two compounds has been elucidated. Isoprene also reacts with $GeCl_3$ producing a heterocyclic compound. Under the same conditions propylene produces only linear addition products. The following equilibrium is proposed for trichlorogermane:

$$HGeCl_3 \rightleftharpoons H^+[GeCl_3]^- \rightleftharpoons HCl + GeCl_2$$

The addition of $GeCl_2$ leads to a stable compound only in the case of butadiene, since for other unsaturated compounds the unstable three member rings are either polymerized as soon as they are formed or they are split by HCl which is always present in excess. On the theoretical basis, formation of stable three member rings was predicted only for acetylene compounds, but they were not found experimentally when $HGeCl_3$ was reacted with acetylene. Orig. art. has: 6 figures.

SUB CODE: 07/ SUBM DATE: 01Nov63/ ORIG REF: 019/ OTH REF: 002

Card 2/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 26359-66 EWT(m)/EPF(n)-2/EWP(j)/EWA(h)/EWA(1) WW/JW/GG/RM

ACC NR: AP6013381 SOURCE CODE: UR/0195/66/007/002/0230/0236

AUTHOR: Chkheidze, I. I.; Molin, Yu. N.; Mironov, V. F.; Chernyshev, Ye. A.; Buben, N. Ya.; Voyevodskiy, V. V.

ORG: Institute of Chemical Physics AN SSSR (Institut khimicheskoy fiziki AN SSSR); Institute of Kinetics and Combustion, SO AN SSSR (Institut kinetiki i goreniya SO AN SSSR); Institute of Organic Chemistry im. N. D. Zelinskiy, AN SSSR (Institut organicheskoy khimii AN SSSR)

TITLE: Formation of radicals during the radiolysis of organic solids. Part 3: EPR spectra and radiation yields of radicals in certain organosilicon compounds

SOURCE: Kinetika i kataliz, v. 7, no. 2, 1966, 230-236

TOPIC TAGS: free radical, organosilicon compound, irradiation effect, EPR spectrum

ABSTRACT: The EPR method was used to investigate the radical processes involved in the low-temperature radiolysis of certain organosilicon compounds with a view to determining the effect of the silicon atom entering into the aliphatic chain on the effectiveness and direction of primary radiochemical processes. The radiation yields of the radicals (G_R) formed by irradiating the compounds with fast electrons at temperatures from -130 to -180°C were determined by the EPR method. It was found that G_R for saturated and aromatic substituted derivatives of tetramethylsilane did not

UDC: 541.15-16

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APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 26359-66

ACC NR: AP6013381

differ from G_R for hydrocarbons of similar structure and amounted to 4-5 1/100 ev and 0.2-0.6 1/100 ev, respectively. For compounds of the general formula $(CH_3)_3Si(CH_2)_n CH{=}CH_2$ (n = 0, 1, 2), the radiation yield is G_R = 1 1/100 ev, which is approximately 4 times less than for hydrocarbons with double bond. Analysis of the EPR spectra showed that the introduction of a silicon atom in the aliphatic chain does not produce any appreciable changes in the radiolysis mechanism. Orig. art. has: 7 figures, 2 tables, 5 formulas.

SUB CODE: 07/20/ SUBM DATE: 12Sep64/ ORIG REF: 008/ OTH REF: 005

Card 2/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 47382-66 EWT(m)/EWP(j) RM

ACC NR: AP6029021 (A) SOURCE CODE: UR/0413/66/000/014/0023/0023

INVENTOR: Maksimova, N. G.; Mironov, V. F.

ORG: none

TITLE: Method of obtaining m-fluorophenylsilanechlorides. Class 12, No. 183746

SOURCE: Izobret prom obraz tov zn, no. 14, 1966 23

TOPIC TAGS: fluorosilane, silicon hydride

ABSTRACT: An Author Certificate has been issued for a method of obtaining m-fluorophenylsilanechlorides. To simplify the process, the mixture of silicon hydrides and m-fluorochlorobenzene is passed through a heater quartz tube at a temperature of 580—620C. [Translation] [NT]

SUB CODE: 11/ SUBM DATE: 22Mar65/

Card 1/1 mjs UDC: 547.419.5.07

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 47529-66 EWT AAO/RM

ACC NR: AT6035006 SOURCE CODE: HU/2502/66/047/002/0189/0198

AUTHOR: Nagy, Jozef--Nad', Y. (Doctor) and Ferenczi-Gresz, Sarolta--Ferentsi-Gres, Sh., of the Chair for Inorganic Chemistry at the Polytechnical University in Budapest; and Mironov, V. F., of the Institute for Organosilicon Compounds, Moscow

"Bond Structure of Alkenyl Organosilicon Compounds"

Budapest, Acta Chimica Academiae Scientiarum Hungaricae, Vol 47, No 2, 1966, pp 189-198.

Abstract: [Russian article; authors' English summary, modified] Dielectric measurements were carried out with trimethyl vinyl, allyl, and butenyl silane. Vinyl trimethyl silane had a structure similar to that of phenyl trimethyl silane, except that in the former the two π-electrons are on a tricentric molecule level. Silicon possessed in both a + - inductive and a mesomeric effect. The authors thank Doctor Gabriella Garzo for carrying out the gas chromatographic analysis, and also Renata Farkash and Tomash Gabor for the synthesis of the research compounds. Orig. art. has: 3 figures, 5 formulas and 2 tables. [JPRS: 36,002]

TOPIC TAGS: organosilicon compound, silane

SUB CODE: 07 / SUBM DATE: 09 Feb 65 / ORIG REF: 001 / OTH REF: 006
SOV REF: 003

Card 1/1

0921 1519

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

ACC NR: AP7006026 SOURCE CODE: UR/0062/66/000/007/1177/1184

AUTHOR: Mironov, V. F.; Kravchenko, A. L.; Leytes, L. A.
ORG: Institute of Organic Chemistry imeni N. D. Zelinskiy, Academy of Science USSR (Institut organicheskoy khimii AN SSSR)

TITLE: Synthesis and spectra of silylgermyl- and digermyl- substituted ethylenes

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 7, 1966, 1177-1184
TOPIC TAGS: organic synthetic process, organogermanium compound, organosilicon compound, ethylene

ABSTRACT: Nonsymmetrical silyl-, germyl- and digermyl-substituted ethylenes of the types $R_3MCH=CHMR_3$ and $(R_3M)_2C=CH_2$, where M = Si and Ge, were synthesized. Substantial exaltation of molecular refraction was observed for 1, 2-substituted ethylenes, but not for 1, 1-substituted ethylenes, evidently as a result of the increased polarization of the molecules of the former, due to interaction of the pi-electrons of the double bonds with the vacant d-orbitals of the silicon or germanium atoms. The reactivity of disubstituted ethylenes in ionic addition reactions also increase together with the increasing exaltation of the molecular refraction. The infrared and Raman spectra of these compounds were studied, and it was established that 1, 2-digermylethylenes, just like 1,2-disilylethylenes, possessed a centrosymmetrical trans-configuration. In the silylgermyl-substituted ethylene molecule, there is no center of symmetry, a situation reflected in its spectra. Orig. art. has: 4 figures, 9 formulas and 3 tables. [JPRS: 38,967]

SUB CODE: 07 / SUBM DATE: 29Jan64 / ORIG REF: 014

Card 1/1 UDC: 542.91 + 543.422 + 546.287 + 661.718.6

09270811

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

PHASE I BOOK EXPLOITATION SOV/4[illegible]2

Mironov, Viktor Grigor'yevich

Kovochnyye manipulyatory (Forging Manipulators) Moscow, Mashgiz, 1960. 126 p. 4,000 copies printed.

Reviewer: A.B. Parnitskiy, Candidate of Technical Sciences; Ed.: V.S. Pletnikov, Engineer; Executive Ed.: G.A. Sarafannikova; Tech. Ed.: N.A. Dugina.

PURPOSE: This book is intended for technical personnel in forge shops and for designers of manipulators.

COVERAGE: The book presents basic information on forging manipulators and their characteristics, and includes descriptions of their mechanisms. Principles of design are discussed and are accompanied by sample calculations. Concise information on the operation and maintenance of forging manipulators is also given. In writing the book, the author has drawn upon the experiences of the following plants: the Uralmashzavod (Ural Heavy Machinery Plant), the Uralvagonzavod (Ural Railroad Car Plant), the Chelyabinskiy traktornyy zavod (Chelyabinsk Tractor Plant) and the Izhevskiy metallurgicheskiy zavod (Izhevsk Metallurgical Plant). No personalities are mentioned. There are 27 references:

Card ~~1/4~~

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

S/182/61/000/003/007/009
-151/A133

AUTHOR: Mironov, V. G.

TITLE: Determining the loads on the parts of the gripping mechanism of the forging manipulator

PERIODICAL: Kuznechno-shtampovochnoye proizvodstvo, no. 3, 1961, 30 - 3

TEXT: The operation of a 2-ton capacity forging manipulator of YSTM (UZTM) design at a forging hammer in the forging and pressing shop of the Uralkhimmash plant has been studied to determine loads acting on the grip mechanism. The manipulator handles billets from 150 to 500 mm in diameter and its hydraulic drive has no accumulator. The article includes a detailed description of special devices used for direct measurements of: 1) the hammer ram speed; 2) speed of the manipulator trunk frame displacement in the vertical plane at the front shock absorbers; 3) speed of the axial displacements of the trunk frame; 4) the opening width of the tongs during rocking movements of the trunk frame; 5) stresses in the tong levers caused by forces acting at right angles to the axis of the tong head shoes; 6) stresses in the trunk frame. The design of the manipulator is not described. Schematic drawings show the design of the "universal travel meter" that was used

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APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

S/[illegible]/61/[illegible]
A161/A133

Determining the loads on the parts of the...

for the measurement of the ram speed, and of the device that measured the opening of the tongs. The measuring principle of the speed meters is to measure the magnetic induction proportional to the speed. A diagram (Fig. 2) shows the recorded trunk frame displacement speed in the vertical plane (curve 1) during forging without any gap between the billet and the anvil, and the motion law of the suspension point in the vertical plane (curve 2). Stresses in parts were measured by wire strain gages the signals from which were amplified in a four-channel electronic amplifier and is oscillographed. An oscillogram is included showing the difference of stresses in forging with a gap between the billet and anvil and without. The presence of a gap (even a small one) caused the maximum stresses in the grip mechanism. The other cause of maximum stresses was stated to be the inertia of the manipulator trunk mechanism masses. The following measures are recommended to reduce the dynamic forces acting on the grip during forging process: 1) To increase the nominal tractive force on the rod not by increasing the diameter of the hydraulic cylinder, but by raising the work pressure developed by the hydraulic drive pump; 2) To use a transmission ratio of the tongs head not exceeding 1 = 1, and to use heads with normal levers instead of heads with long levers; 3) To reduce the velocity pressure losses in the pipelines of the hydraulic grip mechanism; 4) To reduce the

Card 2/3

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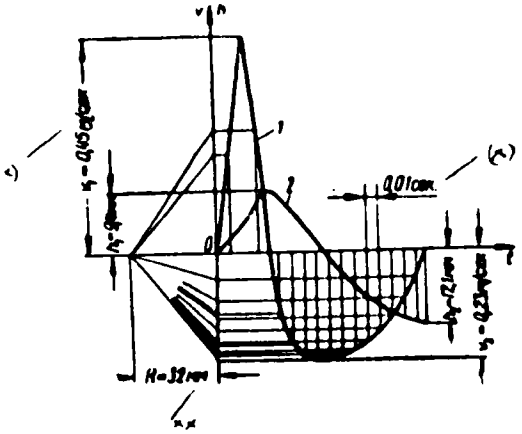
"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

mass of the rocking system by decreasing the high strength reserves, and to rearrange the system elements so as to get the center of inertia as close as possible to the swing axis; 5) To provide manipulators with a mechanism for lifting the trunk swing axis in case the forging cross section dimensions vary over a wide range. There are 4 figures.

Fig. 2. Curves of the trunk frame points motion in vertical plane.

Legend: x - speed in m/sec;
xx - height in mm;
(x) - 0.01 sec.



APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIRONOV, V.G.

Dynamic calculations of holder mechanisms on forging manipulators. Kuz.-shtam. proizv. 3 no.9:23-28 S '61. (MIRA 14:9)
(Forging machinery)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

ACC NR: AR0016459 (N) SOURCE CODE: UR/0124/65/000/012/B003/B003

AUTHOR: Mironov, V. G.

TITLE: Operation of the Laval nozzle in pneumatic high-pressure atomizers with fuel feed to various cross sections of the nozzle and exhaust pipe

SOURCE: Ref. zh. Mekhanika, Abs. 12B449

REF SOURCE: Sb. nauchn. tr. Vses. n.-i. in-t metallurg. teplotekhn., no. 11, 1965, 359-365

TOPIC TAGS: shock wave, Laval nozzle, engine fuel system, fuel atomizer

ABSTRACT: When water (fuel) is fed to various cross sections of a Laval nozzle with exhaust pipe in high-pressure pneumatic atomizers, the nozzle does not operate within the rated flow conditions. When water (fuel) is introduced in the subcritical flow region, the pressure rises along the entire Laval nozzle and exhaust pipe with respect to the pressure distribution under rated flow conditions. If water (fuel) is fed to the supercritical flow region or to the output section of the nozzle, a stepwise pressure increase is observed. The depth of penetration of the shock wave effect into the nozzle decreases with an increase in the distance between the input of water (fuel) and the critical cross section of the nozzle. Bibliography of 6 titles. V. Pryanikova. [Translation of abstract]

SUB CODE: 13

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

KHARLAMPOVICH, G.D.; RUS'YANOVA, N.D.; MEL'NIKOVA, V.I.; GORDEYEVA, Z.K.; Prinimali uchastiye: MIRONOV, V.I., laborant; MAKAROVA, Z.A., laborant; KUDRYASHOVA, R.I., student; TATARUOV, G.P., student; SELITSKIY, G.A., student; IL'CHENKO, P.P., student; MOSKOVSKIKH, V.V., student; YEVSEYEV, Ys.I., student

Studying the new method of ammonia receovery in an experimental industrial installation. Koks i khim. no.2:34-38 '62. (MIRA 15:3)

1. Ural'skiy politekhnicheskiy institut.
(Coke-Oven gas) (Ammonia)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134