"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

BELYAVSKIY, A.B.; FREYDLINA, R.Kh.

Reactions of ethylene with trichloroethylene and tetrachloroethylene. Izv.AN SSSR.Otd.khim.nauk no.5:838-842 My '61. (MIRA 14:5)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Ethylene)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

KOST, V.N.; FREYDLINA, R.Kh.

Telomerization of ethylene with polychloroalkanes containing a CCl_2Br group. Izv. AN SSSR. Otd.khim.nauk no.7:1252-1256 Jl '61. (MIRA 14:7)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Ethylene) (Paraffins) (Polymerization)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

FREYDLINA, R.Kh.; YEGOROV, Yu.P.; CHUKOVSKAYA, Ye.TS.; TSAO I [TS'ao I]; LUBUZH, Ye.D.

Rearrangement occurring in the process of the thermal telomerization of ethylene with silicon hydrides. Izv. AN SSSR. Otd. khim.nauk no.7:1256-1261 Jl '61. (MIRA 14:7)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Ethylene) (Silicon hydrides) (Polymerization)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

27488
S/062/61/000/009/003/014
B117/B101

5.3700

AUTHORS: Braynina, E. M., and Freydlina, R. Kh.

TITLE: Some disproportionation reactions of organic zirconium-, titanium- and iron compounds

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 9, 1961, 1595-1599

TEXT: The preparation of pure crystalline tetraacetoxy-tetraethoxy trititanoxane $(CH_3CO_2)_4(C_2H_5O)_4Ti_3O_2$ by reaction of acetic anhydride with tetraethoxy titanium in molar ratio 2 : 1 is described. The reaction takes place in the absence of atmospheric moisture. The authors studied the reaction of water with tetrabutoxy zirconium at various molar ratios (1 : 2, 2 : 3, 3 : 4, 9 : 10) corresponding to the equation

$$n(C_4H_9O)_4Zr + (n - 1)H_2O \rightarrow (C_4H_9O)_{2n+2}Zr_nO_{n-1} + 2(n - 1)C_4H_9OH \quad (1)$$

since they assumed that the hydrolysis of zirconium alkoxides might yield organic zirconoxane compounds. The products obtained were semi-solid, well soluble in organic solvents and decomposed on high-vacuum distillation.

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27488
S/062/61/000/009/003/014
B117/B101

Some disproportionation reactions ...

The hydrolysis products were purified from butyl alcohol traces by drying under vacuum and then analyzed for C, H, and Zr. The analytical data and the molecular weight determined cryoscopically in benzene yielded the compounds $(C_4H_9O)_6Zr_2O$; $(C_4H_9O)_8Zr_3O_2$; $(C_4H_9O)_{10}Zr_4O_3$, and $(C_4H_9O)_{32}Zr_{10}O_9$. The reproducibility of the molecular weight determination is insufficient, however, since the benzenic solutions of all the hydrolysis products becomes turbid after a few hours. Treatment of the Zr_2 or Zr_3 compound with acetylacetone or benzoyl acetone led to zirconium tetraacetylacetonate or, respectively, zirconium tetrabenzoylacetonate and not, as had been expected, to chelate-type compounds with Zr-O-Zr groups. The following reactions was suggested:

A) $(C_4H_9O)_6Zr_2O + 6C_5H_8O_2 \rightarrow (C_5H_7O_2)_6Zr_2O + 6C_4H_9OH$

B) $(C_5H_7O_2)_6Zr_2O \rightarrow (C_5H_7O_2)_4Zr + (C_5H_7O_2)_2ZrO$

C) $(C_5H_7O_2)_2ZrO + 2C_5H_8O_2 \rightarrow (C_5H_7O_2)_4Zr + H_2O$

The hydrolysis of crystalline zirconium isopropoxy-triacetylacetonate does not yield the Zr_2 compound either, but gives zirconium tetraacetylacetonate.

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27488

Some disproportionation reactions ... S/062/61/000/009/003/014
B117/B101

This reaction probably involves a disproportionation, similar to that in scheme B). Zirconium triacetylacetonate chloride, zirconium tribenzoylacetonate nitrate, iron diacetylacetonate chloride and iron dibenzoylacetonate chloride undergo similar disproportionation reactions under the influence of water. O. V. Nogina observed a similar phenomenon in the reaction of acetylacetone with octaethoxy trititanoxane. Zirconium isopropoxy-triacetylacetonate and zirconium tri-n-propoxy-acetylacetonate were obtained by reaction of zirconium tetraacetylacetonate with isopropyl alcohol or n-propyl alcohol respectively. There are 1 table and 12 references: 8 Soviet and 4 non-Soviet. The reference to the English-language publication reads as follows: R. N. Kapoor, R. C. Mehrotra, J. Chem. Soc. 1959, 422.

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

SUBMITTED: February 21, 1961

Card 3/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

BRAYNINA, E.M.; MINACHEVA, M.Kh.; FREYDLINA, R.Kh.

Sulfenation of cyclopentadienyl zirconium compounds. Izv. AN SSSR. Otd.khim.nauk no.9:1716 S '61. (MIRA 14:9)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Zirconium compounds)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

FREYDLINA, R.Kh.; KOPYLOVA, B.V.; NESMEYANOV, A.N.

Synthesis of α-chloro ω-thiocarboxylic acids. Izv.AN SSSR.Otd.-khim.nauk no.11:1985-1989 N '61. (MIRA 14:11)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Acids, Organic)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

KOST. V.N.; VASIL'YEVA, T.T.; ZAKHARKIN, L.I.; FREYDLINA, R.Kh.

Introduction of the radical $CCl_2 \Rightarrow CHCH$ - into unsaturated molecules containing an α,α -vinyl dichloride group. Izv. AN SSSR. Ser. khim. no.11:1992-1995 N '63. (MIRA 17:1)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

NESMEYANOV, A.N.; FREYDLINA, R.Kh.

Synthesis of 3,3,3-trichloro-1-propene. Izv.AN SSSR.Otd.khim.nauk no.11:2102 N '61. (MIRA 14:11)

1. Institut elementarnoorganicheskikh soyedineniy AN SSSR.
(Propene)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

FREYDLINA, R.Kh.; KOST, V.N.; KHOMLINA, M.Ya.; NESMEYANOV, A.N., akademik

Rearrangements in the homolytic addition of hydrogen bromide to poly(halo alkenes). Dokl. AN SSSR 137 no.2:341-344 Mr '61. (MIRA 14:2)

1. Institut elementoorganicheskikh soyedineniy AN SSSR. Chlen-korrespondent AN SSSR (for Freydlina).
(Hydrogen bromide) (Unsaturated compounds)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

21499

15 8114 2209, 1372, 1407

S/020/61/137/004/024/031
B103/B208

AUTHORS: Freydlina, R.Kh., Corresponding Member AS USSR, Chukovskaya, Ye.Ts., Tsao-I, and Nesmeyanov, A.N., Academician

TITLE: Telomerization and polymerization of ethylene with silicon hydrides in the presence of titanium tetrachloride

PERIODICAL: Doklady Akademii nauk SSSR, v. 137, no. 4, 1961, 885 - 888

TEXT: The authors studied the telomerization of ethylene with: I) silico-chloroform, II) methyl dichloro-silane, and III) triethyl silane in the presence of $TiCl_4$ which catalyzes (initiates) these reactions according to the formula $CH_3SiCl_2H + nCH_2{=}CHR \rightarrow CH_3SiCl_2(CH_2CHR)_nH$. They used a steel autoclave in which the reaction was carried out under pressure and by heating. Ethylene was found to be telomerized smoothly and with a good degree of conversion in cases I and II. In case I, some telomer homologs with the structure $SiCl_3\ C_nH_{2n+1}$, where n = 2, 4, 6, 8, were isolated from

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21499

Telomerization and polymerization of ... S/020/61/137/004/024/031
B103/B208

the mixture of telomerization products. The constants of these substances (Table 2) and of their methylation products (Table 3) are in good agreement with those previously obtained by the authors (Ref.2, DAN, 113, 120, 1957). The normal structure of their alkyl groups was confirmed by infrared spectra. Ad II. A mixture of telomer homologs with a structure $CH_3SiCl_2C_nH_{2n+1}$ was formed at 180 - 200°C and at a maximum pressure of 280 atm. This reaction is complicated by the formation of liquid hydrocarbons due to ethylene polymerization. Table 4 gives the constants of some methyl-alkyl dichloro-silanes with n = 2, 4, 6, 8. Ad III. At 130°C, ethylene is polymerized to polyethylene with no telomers being formed. This difference in the course of the reaction is said to be due to a different reducing power of the individual silicon hydrides studied. Triethyl silane, e.g., contains electron-donor groups bound to silicon, and is therefore a more powerful reducing agent than trichloro-silane and methyl-dichloro-silane. This might be the reason why these silicon hydrides with $TiCl_4$ yield products that are reduced to a different extent. X-ray structure analysis (performed at laboratoriya rentgenostrukturnogo analiza (Laboratory of X-Ray Structural Analysis) and laboratoriya fiziki polimerov

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21499

Telomerization and polymerization of ... S/020/61/137/004/024/031
B103/B208

(Laboratory of Polymer Physics) of the Institut elementoorganicheskikh soyedineniy (Institute of Elemental-organic Compounds)) disclosed that the polyethylene obtained by the authors is identical with low-pressure polyethylene and the product obtained by diazomethane decomposition (X-ray pictures of the two latter polymers were made available by V.A. Sergeyev). Thermomechanical analysis showed a melting point of 135°C for the authors' polyethylene, which also corresponds to low-pressure polyethylene. Its molecular weight was 26670, determined from the viscosity in tetrahydronaphthalene at 135°C. This indicates that the authors' polyethylene is practically identical with the two polyethylenes mentioned (analogous data in Ref. 4, S. Nitsshe, Khimiya i tekhnologiya polimerov, 1960, p. 54). There are 2 figures, 4 tables and 6 references: 5 Soviet-bloc and 1 non-Soviet-bloc.

SUBMITTED: December 8, 1960

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APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

21976

5.3700 2209 1153 1164

S/020/61/137/005/020/026
B103/B208

AUTHORS: Freydlina, R.Kh, Corresponding Member AS USSR, Martirosyan, G.T. and Nesmeyanov, A.N., Academician

TITLE: Addition of trichlorobromomethane to compounds of the structure $R(C_6H_5)_2$ ECH = CH_2 (where R = C_6H_5, CH_3; E = Sn, Si, C)

PERIODICAL: Doklady Akademii nauk SSSR, v. 137, no. 5, 1961, 1129 - 1132

TEXT: The authors studied the capability of rearrangement of the radicals: $(C_6H_5)_3SnCHCH_2CCl_3$, $(C_6H_5)_3SiCHCH_2CCl_3$ and $(C_6H_5)_2C(CH_3)CHCH_2CCl_3$ in solution and in the presence of benzoyl peroxide, where the phenyl is subjected to a 1.2-migration from the metal atom to a carbon atom. For this purpose the authors investigated the addition of trichlorobromomethane to 1) vinyl triphenyl stannane, 2) vinyl triphenyl silane, and 3) 3,3-diphenylbutene-1. In the cases 1) and 2), the addition takes place very smoothly.

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Not rearranged addition products are formed in nearly quantitative yield according to the formulas

$$(C_6H_5)_3ECH{=}CH_2 + BrCCl_3 \xrightarrow{Bz_2O_2} (C_6H_5)_3ECHBrCH_2CCl_3.$$

The structure of the resultant compounds is confirmed by the missing E—Br bond (negative test with $AgNO_3$) and by the behavior of the resultant adducts with respect to alcoholic alkali. The organotin compound is not hydrolyzed, but dehydrobrominated according to the formula:

$$(C_6H_5)_3SnCHBrCH_2CCl_3 \xrightarrow{KOH} (C_6H_5)_3SnCH{=}CHCCl_3.$$

Ad 1). After distilling off the excess $BrCCl_3$ 14.3 g of a dense oil were left from which crystalline γ,γ,γ-trichloro-α-bromo-propyl triphenyl stannane was isolated by dissolution in absolute alcohol and cooling to -40°C. This was completely neutralized over night with KOH in ethanol at room temperature. Crystals of γ,γ,γ-trichloropropen-1-triphenyl-stannane precipitated. Ad 2). γ,γ,γ-trichloro-α-bromo-propyl triphenyl

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silane was obtained in an analogous manner, which did not react with $AgNO_3$ and remained unchanged when treated for 20 hr with alcoholic alkali. Ad 3). The addition is difficult. 66% of the initial diphenyl butene were recovered in unchanged state after boiling of the reaction mixture for 20 hr and repeated addition of benzoyl peroxide. As the principal product yielded an unsaturated compound with the empirical formula $C_{17}H_{15}Cl_3$ (5,5,5-trichloro-2,3-diphenyl pentene-1). The following resulted by ozonolysis: Formaldehyde and a ketone $C_{16}H_{13}Cl_3O$ from the crystals of which a 2,4-dinitrophenyl hydrazone $C_{22}H_{17}Cl_3N_4O_4$ was formed with 2,4-dinitrophenyl hydrazine. These data correspond to a compound: $CH_2{=}C(C_6H_5)\ CH\ (C_6H_5)\ CH_2CCl_3$ (III) which may be formed according to the formula:

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

21976

Addition of trichlorobromomethane S/020/61/137/005/020/026
B103/B208

$$CH_3C(C_6H_5)_2CH{=}CH_2 + \dot{C}Cl_3 \longrightarrow CH_3C(C_6H_5)_2\dot{C}HCH_2CCl_3$$

$$\dot{C}Cl_3 + HBr + CH_2{=}C(C_6H_5)CH(C_6H_5)CH_2CCl_3 \xleftarrow{BrCCl_3} CH_3\dot{C}(C_6H_5)CH(C_6H_5)CH_2CCl_3$$

rearrangement.

Simultaneously with III, a saturated adduct (bromide) was formed in low yield, whose structure has not been studied. The authors summarize that radicals $(C_6H_5)_3E\dot{C}HCH_2CCl_3$ (E = Sn,Si) are not rearranged under comparable conditions, whereas radicals $(C_6H_5)_2C(CH_3)\dot{C}HCH_2CCl_3$ were rearranged. The reasons for this different behavior may be a) a low stability of the first radical, as compared with the initial radicals $(C_6H_5)_3E\dot{C}HCH_2CCl_3$, or b) the Sn- and Si-atoms are less able to impart the effect caused by an odd electron at the adjacent carbon atom to the phenyl group. There are 9 references: 1 Soviet-bloc and 8 non-Soviet-bloc. The 3 most recent references to English language publications

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

21976

Addition of trichlorobromomethane ... S/020/61/137/005/020/026
B103/B208

read as follows: D. Seyferth (Ref. 2: J.Org.Chem.Soc., 22, 1252, 1957), R.A. Benkeser, E.W. Bennet, R.A. Huckner (Ref. 3: J.Am.Chem.Soc., 79, 6253, 1957), S.D. Rosenberg, A.I. Gibbons et.al. (Ref. 7: J.Am.Chem.Soc., 79, 2137, 1957).

SUBMITTED: December 24, 1960

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APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

FREYDLINA, R.Kh.; KOST, V.N.; VASIL'YEVA, T.T.; NESMEYANOV, A.N., akademik

Homolytic isomerization of 1-fluoro-1, 1-dichloro-2-bromopropene. Dokl.AN SSSR 137 no.6:1385-1388 Ap '61. (MIRA 14:4)

1. Institut elementoorganicheskikh soyedineniy AN SSSR. 2. Chlen-korrespondent AN SSSR (for Freydlina).
(Propene)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

53750
11.2205

25342
S/020/61/138/006/017/019
B103/B215

AUTHORS: Freydlina, R. Kh., Corresponding Member AS USSR, Braynina, E. M., and Nesmeyanov, A. N., Academician

TITLE: Synthesis of mixed chelate cyclopentadienyl compounds of zirconium

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 138, no. 6, 1961, 1369-1372

TEXT: The authors continued their studies on transformation reactions of chelate compounds of transition metals (Ref.5: Izv. AN SSSR, OKhN, 1957, 43; Ref.6: ibid. 1960, 59; Ref.7: ibid. 63), and studied the interaction of sodium cyclopentadienide with zirconium dichloride diacetyl acetyl acetonate. They obtained the mixed compound $C_5H_5(C_5H_7O_2)_2ZrCl$ which also forms in almost quantitative yields by interaction between dicyclopentadienyl zirconium dichloride and an excess of acetyl acetone. The authors assume that this type of reactions might be a way of synthesizing analogous mixed zirconium compounds containing other chelate groups. The substances synthesized by the authors are colorless, crystalline, and soluble in chloroform at room temperature, in benzene and tetrahydrofuran when heated,

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

25311

Synthesis of mixed ... S/020/61/133/006/017/019
B103/B215

and insoluble in petroleum ether. Their properties are similar to those of dihaloid dicyclopentadienyl compounds of zirconium. The authors assume that the zirconium compounds of the substances produced are of octahedral structure. Should this assumption be correct, they probably correspond to

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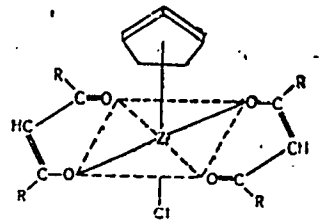
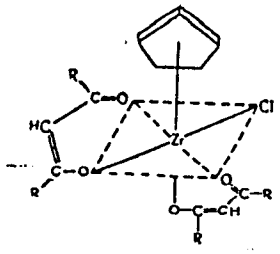
25341

Synthesis of mixed ...

S/020/61/138/006/017/019
B103/3215





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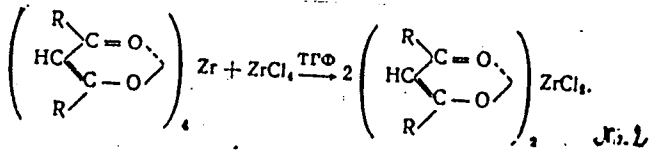
"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

25941

Synthesis of mixed ... S/020/61/138/006/017/019
B103/B215

given for cis- and trans-isomers. The authors thank L. A. Kazitsina (spektral'naya laboratoriya Moskovskogo universiteta (Spectral Laboratory of Moscow University)) for taking the infrared absorption spectra which are not in disagreement with the assumed structure of the above-mentioned mixed compound. The authors developed a simple method of synthesizing hitherto hardly obtainable chelate zirconium compounds which serve as initial substances for mixed compounds. It is based upon the interaction of zirconium tetrachloride with complete chelate zirconium compounds:



(ТГФ = tetrahydrofuran). The experimental part describes the production of the following compounds: (1) Dicyclopentadienyl zirconium dichloride whose isolation (G. Wilkinson, P. L. Pauson et al. (Ref. 1: J. Am. Chem.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

2534R

Synthesis of mixed ... S/020/61/138/006/017/019
B103/B215

Soc., 75, 1011 (1953)); G. Wilkinson, J. M. Birmingham (Ref.2: ib. 76, 4281 (1954)) was simplified by the authors and whose yield was increased. (2) Diacetyl acetonate cyclopentadienyl zirconium monochloride forms: (A) by heating substance (1) together with acetyl acetone for 2 hr at 70-80°C and reduced pressure; (B) from zirconium dichloride diacetyl acetonate (synthesis of the latter see below, item (4)) in nitrogen atmosphere by 2 hr stirring at room temperature with equimolar amounts of sodium cyclopentadienide. (3) Dibenzoyl acetonate cyclopentadienyl zirconium monochloride. A benzene solution of (1) with benzoyl acetone was heated for 15 hr at 95-100°C and reduced pressure. (4) Zirconium dichloride diacetyl acetone from zirconium tetraacetyl acetonate and zirconium tetrachloride by 2 hr stirring at 40°C. (5) Zirconium dichloride dibenzoyl acetonate produced from zirconium tetrabenzoyl acetonate in analogy to (4). Syntheses (1) and (3)-(5) were carried out in tetrahydrofuran. There are 10 references: 4 Soviet-bloc and 6 non-Soviet-bloc. Two references to English-language publications see above: the third one reads as follows: L. T. Reynolds, G. Wilkinson, J. Inorg. and Nucl. Chem. 9, 86 (1959).

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

Synthesis of mixed ...

25311
S/020/61/138/006/017/019
B103/B215

ASSOCIATION: Institut elementoorganicheskikh soyedineniy (Institute of Elemental Organic Compounds)

SUBMITTED: February 4, 1961

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

33266

5.3620

S/062/62/000/001/005/015
B106/B101

AUTHORS: Petrova, R. G., and Freydlina, R. Kh.

TITLE: Synthesis of asymmetric sulfides containing functional groups

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 1, 1962, 59 - 64

TEXT: The reaction of the ethyl ester of δ-mercapto valeric acid with unsaturated compounds containing functional groups ($COOCH_3$, CN) was studied. Benzoyl peroxide, iron pentacarbonyl, and colloidal iron were used as initiators (catalysts). It was found that the two latter compounds catalyzed the addition of mercaptans to unsaturated compounds of the acryl type. This reaction takes place at 130 - 150°C with good yields and follows the pattern $C_2H_5OCO(CH_2)_4SH + CH_2 = CHR \longrightarrow C_2H_5OCO(CH_2)_4SCH_2CH_2R$; (R = CN, $COOCH_3$). When no catalysts are added, the reaction takes place only at higher temperatures and with much lower yields (Table). The ethyl ester of δ-mercapto valeric acid reacted

Card 1/4

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

33266

Synthesis of asymmetric sulfides... S/062/62/000/001/005/015
B106/B101

hardly with ethylene in the presence of benzoyl peroxide (3.5 hrs at 85°C and 100 atm). The yield of the adduct was 13%. In the absence of catalysts, the yield of this reaction at higher temperatures (5 hrs at 180 - 200°C and 250 atm) was only 9%. The reaction of the investigated mercaptan with a high excess of methyl acrylate or acrylonitrile in the presence of iron pentacarbonyl gives only the simple addition products of the structure $C_2H_5OCO(CH_2)_4SCH_2CH_2R$ ($R = COOCH_3$, CN). When saponifying the ester or nitrile group with alkali, 2-carboxy ethyl-4'-carboxy butyl sulfide is produced from these compounds. In the presence of benzoyl peroxide, ethyl ester of δ-mercapto valeric acid reacts with methyl acrylate to a mixture of telomer homologs of the structure $C_2H_5OCO(CH_2)_4S(CH_2CHCOOCH_3)_nH$; the compounds with n = 1, 2, 3 were isolated from this mixture (Table). With acrylonitrile, only the simple addition product is also obtained in the presence of benzoyl peroxide. The reaction of diethyl disulfide and diethyl ester of δ, δ'-dithio divaleric acid with ethylene and n-decene-1 was also examined. The latter of these two disulfides reacts with ethylene at 170 - 220°C (160 - 118 atm, 3.5 hrs) according to the pattern

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33266

Synthesis of asymmetric sulfides... S/062/62/000/001/005/015
B106/B101

$$[C_2H_5OCO(CH_2)_4S-]_2 + CH_2 = CH_2 - \begin{cases} \rightarrow CH_3CH_2S(CH_2)_4CO_2C_2H_5 & (I) \\ \rightarrow [C_2H_5OCO(CH_2)_4SCH_2]_2 & (II). \end{cases}$$

The correctness of the structural formula proposed for compound (I) is supported by the fact that no mercapto group could be found in the titration with iodine. In the oxidation of hydrogen peroxide in glacial acetic acid, the relevant sulfone is produced as a thick oil. When reacting diethyl disulfide with ethylene at 200 - 215°C and 160 atm (5.5 hrs), diethyl sulfide is produced as the main product both in the presence and in the absence of iodine. When reacting in the presence of iodine, δ-ethyl thio-diethyl sulfide could also be isolated. Reaction of diethyl disulfide with n-decene-1 yields ethyl decyl sulfide. The formation of alkyl ethyl sulfides in the reactions mentioned is obviously caused by the reaction of intermediate radicals ($C_2H_5SCH_2\dot{C}HR$) with molecules of the reaction mixture. There are 1 table and 10 references: 4 Soviet and 6 non-Soviet. The three most recent references to English-language publications read as follows: M. S. Kharasch, C. Fuchs, J. Organ.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

33266

Synthesis of asymmetric sulfides... S/062/62/000/001/005/015
B106/B101

Chem. 13, 97 (1948); H. Sumitomo, G. Hachihama, J. Chem. Soc. Japan Ind. Chem. Soc. 60, 1556 (1957); A. N. Nesmeyanov, R. Kh. Freydlina, E. S. Chukovskaya, R. G. Petrova, Tetrahedron, 1961.

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

SUBMITTED: July 29, 1961

Legend to the Table: (a) number of experiment; (b) unsaturated compounds (I); (c) mercaptans (II); (d) molar ratio (I):(II); (e) catalyst; (f) temperature, °C; (g) duration, hrs; (h) reaction products (yield, %); (i) without initiator; (k) colloidal iron; * products of experiments 2 - 8 were saponified. The identity of the thio-dicarboxylic acid samples was proved by mixed melting points; ** no higher-boiling organosulfur compounds were formed; *** experiment was made in glass ampoules; **** the nitrates from experiments 4 - 8 were identical (b.p. 160 - 162°C (3 mm);

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

FREYDLINA, R.Kh.; TERENT'YEV, A.B.; PETROVA, E.G.

Reaction of 1,1-dichloro-2-propene and crotonaldehyde with alkyl(aryl)thiols. Izv. AN SSSR Otd.khim.nauk no.2:282-286 F '62. (MIRA 15:2)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Propene)
(Crotonaldehyde)
(Thiols)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

KOST, V.N.; VASIL'YEVA, T.T.; FREYDLINA, R.Kh.

Rerrangement of radicals in the process of dimerization of 3,3,3-trichloroprene. Izv.AN SSSR.Otd.khim.nauk no.7:1254-1258 Jl '62. (MIRA 15:7)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Butadiene) (Radicals (Chemistry))

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

FREYDLINA, R.Kh.; CHUKOVSKAYA, Ye.TS.

Using oxidation-reduction systems for the initiation of the reaction of 1-octene with carbon tetrachloride. Izv. AN SSSR.Otd.khim.nauk no.10:1783-1788 O '62. (MIRA 15:10)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Octene) (Carbon tetrachloride) (Oxidation-reduction reaction)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

FREYDLINA, R.KH., TSCHUKOVSKAYA, L.YE.

"Telomerisation, einbau und ersatz von olefinan durch silane in gegenwart verschiedener initiatoren."

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

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

KARAPETYAN, Sh.A.; KRUGLOVA, N.V.; FREYDLINA, R.Kh.

Hydrolysis of 1,1,1-trihaloalkanes and 1,1-dihalo-1-alkene by water at 250-330°C. Izv.AN SSSR.Otd.khim.nauk no.2:307-311 F '63. (MIRA 16:4)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Paraffins) (Olefins) (Hydrolysis)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

FREYDLINA, R.Kh.; KOPYLOVA, B.V.

Synthesis of d, l-cysteic and β-sulfoacrylic acids starting from 1,1,1,3-tetrachloropropane. Izv.AN SSSR.Otd.khim.nauk no.2:298-301 F '63. (MIRA 16:4)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Cycteic acid) (Acrylic acid) (Propane)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

L 17067-63 EWP(j)/EPF(c)/EWP(q)/EWT(m)/BDS S/062/63/000/004/018/022
AFFTC/ASD Pc-4/Pr-4/Pad RM/WW/JD/HW/MAY

AUTHOR: Chukovskaya, Ye. Ts. and Freydlina, R. Kh.

TITLE: Addition of silicon hydrides to unsaturated compounds in the presence of nickel carbonyl

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 4, 1963, 761-763

TEXT: Nickel tetracarbonyl catalyzes the cyanoethylation of methyldichlorosilane and triethylsilane, as well as the addition of triethylsilane to acrolein at 110-120° with a yield of 60-70%. The addition leads to the formation of products containing the silyl group in the alpha-position to the functional group of the unsaturated compound. A definite congruence is noted between the capability of the unsaturated compound to form pi-complex with nickel tetracarbonyl and its capability to add silicon hydrides in the presence of nickel tetracarbonyl. The most important English-language reference reads as follows: G. N. Schrauzer, J. Amer. Chem. Soc., 81, 531 (1959); Ber., 94, 642 (1961).

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APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

L 17067-63 S/062/63/000/004/018/022

Addition of silicon hydrides to .....

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institue of Organo-Elemental Compounds, Academy of Sciences USSR)

SUBMITTED: November 21, 1962

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APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

ACCESSION NR: AP3000125 S/0062/63/000/005/0835/0838

AUTHOR: Braynina, E. M.; Freydlina, R. Kh.

TITLE: Cyclopentadiene compounds of zirconium containing acyloxy groups

SOURCE: AN SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 5, 1963, 835-838

TOPIC TAGS: cyclopentadiene compounds of zirconium, acyloxy groups, cyclopentadienyl zirconium triacetate, cyclopentadienyl zirconium trivalerate

ABSTRACT: A method was developed for preparing acyloxylated cyclopentadienyl zirconium compounds by action of carboxylic acids on cyclopentadienyl zirconium compounds. Thus dicyclopentadienyl zirconium dichloride reacted with acetic, valeric, or enanthic acid to form cyclopentadienyl zirconium triacetate, -trivalerate, or -trienanthate. The triacetate of cyclopentadienyl zirconium reacted with benzoic acid or with acetyl acetone to form the tribenzoate of cyclopentadienyl zirconium, or the acetate of cyclopentadienyl zirconium-diacetylacetonate, respectively. Dicyclopentadienyl zirconium dichloride reacted with trifluoracetic acid to form the bis-trifluoracetate of cicyclopentadienyl zirconium, which yields the starting products if treated with HCl. Orig. art. has: 4 equations.

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APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

ACCESSION NR: AP3000125

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Organoelemental Compounds, Academy of Sciences SSSR)

SUBMITTED: 20Jun62 DATE ACQ: 12Jun63 ENCL: 00

SUB CODE: CH NO REF SOV: 004 OTHER: 000

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APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

KARAPETYAN, Sh.A.; ENGLIN, B.A.; FREYDLINA, R.Kh.

Constants of chain transfer in the reaction of ethylene telomerization with carbon tetrachloride. Izv. AN SSSR. Ser.khim. no.7:1346-1348 Jl '63. (MIRA 16:9)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Ethylene)
(Carbon tetrachloride)
(Polymerization)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

FREYDLINA, R.Kh.; KOST, T.A.

Synthesis of symmetrical acetylenic hydrocarbons and their α,ω-di-derivatives starting from α,α,α-trichloro- and $\alpha,\alpha,\alpha',\omega$-tetrachloroalkanes. Izv. AN SSSR. Ser.khim. no.9: 1583-1587 S '63. (MIRA 16:9)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Hydrocarbons) (Acetylene compounds) (Paraffins)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

KOST. V.N.; VASIL'YEVA, T.T.; FREYDLINA, R.Kh.

Rearrangement of radicals in the process of dimerization of 3-fluoro-3,3-dichloropropene and 3-fluoro-2,3,3-trichloropropene. Dokl. AN BSSR. 7 no.8:538-542 Ag '63. (MIRA 16:10)

1. Institut eksperimental'noy optiki i spektroskopii AN SSSR.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

KOST, V.N.; VASIL'YEVA, T.T.; FREYDLINA, R.Kh.

Homolytic transformations of polyhalopropenes containing the CF_2Cl group. Dokl. AN BSSR 7 no.9:614-618 S '63. (MIRA 17:1)

1. Institut elementno-organicheskikh soyedineniy AN SSSR, Moskva.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

FREYDLINA, R.Kh.; TERENT'YEV, A.B.; PETROVA, R.G.

Free-radical isomerization of acetone diphenylmercaptole. Dokl. AN SSSR 149 no.4:860-861 Ap '63. (MIRA 16:3)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
2. Chlen-korrespondent AN SSSR (for Freydlina).
(Acetophenone) (Radicals (Chemistry)) (Isomerization)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

ACCESSION NR: AP3002875 S/0020/63/150/005/1055/1058

AUTHOR: Freydlina, R. Kh. (Corr. member, AN SSSR; Chukovskaya, Ye. Ts.

TITLE: Telomerization of allyl compounds by silicon hydrides in the presence of dicyclohexyl peroxydicarbonate

SOURCE: AN SSSR. Doklady, v. 150, no. 5, 1963, 1055-1058

TOPIC TAGS: telomerization, silicon hydrides, dichloromethylsilane, 3-chloropropene, allyl acetate, 1-decene, dicyclohexyl peroxydicarbonate, initiator, dichloro-(3-chloropyl)methylsilane, dichloro-[2, 4-bis(chloromethyl)butyl] methylsilane, dichloro-[2, 4, 6-tris(chloromethyl)hexyl] methylsilane, (3-acetoxypropyl)-dichloromethylsilane, [5-acetoxy-2-(acetoxymethyl)pentyl] dichloromethylsilane, dichlorodecylmethylsilane

ABSTRACT: The reactions of dichloromethylsilane (I) with 3-chloropropene, allyl acetate, or 1-decene in the presence of dicyclohexyl peroxydicarbonate initiator have been studied. The use of peroxydicarbonates for reactions between silanes and unsaturated compounds is claimed to be new. It was found that with

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ACCESSION NR: AP3002875

this initiator reactions between allyl compounds and (I) can be made to proceed under mild conditions (55—60°C) to form a mixture of telomers, according to the following formula:

$$CH_3SiCl_2H + nCH_2 = CHCH_2R \rightarrow CH_3SiCl_2(CH_2CHCH_2R)_nH,$$

For example, in the telomerization of 3-chloropropene, conducted for the first time, even at a 3/1 molar ratio of (I) to 3-chloropropene, the concentration in the reaction products of telomer with n greater than 1 was 56%; at a 1/3 ratio, the concentration of telomer with n greater than 3 was 72%. The degree of conversion of 3-chloropropene was 50 to 70%. In the case of allyl acetate, although an excess of (I) was used, telomers with n = 1 or 2 were prepared in high yield. The degree of conversion of allyl acetate was about 70%. In the case of 1-decene, n was 1 or greater, and the degree of conversion about 40%. Some physical properties of the products are given in Table 1 of the Enclosure. The authors conclude that the use of dicyclohexyl peroxydicarbonate initiator rather than such catalysts

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ACCESSION NR: AP3002875

as Pt on carbon or tert-butyl benzoate makes it possible to lower the reaction temperature and to react silanes with 1-olefins and unsaturated compounds containing functional substituents; on this basis the synthesis of silicon compounds with multifunctional radicals can be developed.

ASSOCIATION: none

SUBMITTED: 05Mar63 DATE ACQ: 15Jul63 ENCL: 01

SUB CODE: 00 NO REF SOV: 010 OTHER: 012

Card 3/4

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

ACCESSION NR: AP3002875

ENCLOSURE: 01

Table 1. Certain physical properties of telomerization products of dichloromethylsilane and 3-chloropropene, allyl acetate, or 1-decene

Compound	bp, °C	n_D^{20}	d_4^{20}
dichloro(3-chloropropyl)methylsilane	91—94 at 40 mm	1.4610	1.2046
dichloro-[2,4-bis(chloromethyl)butyl]-methylsilane	69—70 at 1 mm	1.4790	1.1950
dichloro-[2,4,6-tris(chloromethyl)hexyl]methylsilane	100 at 0.25 mm	1.4840	1.2378
(3-acetoxypropyl)dichloromethylsilane	79—80 at 4 mm	1.4455	1.1618
[5-acetoxy-2-(acetoxymethyl)pentyl]-dichloromethylsilane	115—118 at 0.08 mm	1.4623	1.1656
dichlorodecylmethylsilane	90 at 1 mm	1.4488	0.9620

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

FREYDLINA, R.Kh.; TERENT'YEV, A.B.

Homolytic isomerization of acetone di-n-butylmercaptole. Dokl. AN SSSR 152 no.3:637-639 S '63. (MIRA 16:12)

1. Institut elementoorganicheskikh soyedineniy AN SSSR. 2. Chlen-korrespondent AN SSSR (for Freydlina).

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

FREYDLINA, R.Kh.; KOPYLOVA, B.V.

Synthesis of S-substituted isothiuronium derivatives by the action of thiourea on simple ethers. Dokl. AN SSSR 153 no.3: 626-627 N '63. (MIRA 17:1)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
2. Chlen-korrespondent AN SSSR (for Freydlina).

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

L 41150-65 EWG(j)/EPA(s)-2/EWT(m)/EPF(c)/EPR/EWP(j)/T/EWA(h)/EWA(1) Pc-4/
Pr-4/Ps-4/Pt-10/Peb RPL WW/GS/BM
ACCESSION NR: AT5002110 S/0000/64/000/000/0042/0045 56 49

AUTHOR: Freydlina, R.Kh.; Kolesnikov, G.S.; Slonimskiy, G.L.; Suprun, A.P.; Soboleva, T.A.; Belyavskiy, A.B.; Yershova, V.A. B+1

TITLE: New chlorinated monomers for the synthesis of noncombustible polymers

SOURCE: AN SSSR. Institut neftekhimicheskogo sinteza. Sintez i svoystva monomerov (The synthesis and properties of monomers). Moscow, Izd-vo Nauka, 1964, 42-45

TOPIC TAGS: fire resistant polymer, polymer mechanical property, chlorinated polymer, chloroalkene polymerization, telomerization, dehydrahalogenation, radiation polymerization

ABSTRACT: 3,3,3-Trichloropropene and 1,1,2-trichloro-1,3-butadiene, which have been described in previously published studies, were prepared by a two-step reaction and their homo- and copolymerization was studied in an effort to obtain noncombustible polymers. 3,3,3-Trichloropropene was synthesized via 1,1,1,3-tetrachloropropane by telomerization of ethylene with carbon tetrachloride (J. Am. Chem. Soc. 70, 2521 (1948)) and dehydrohalogenation of 1,1,1,3-tetrachloropropane with KOH in ethylcellosolve solution to give a 53% yield of 3,3,3-trichloropropene and 1,1,3-trichloropropene as a by-product. The latter

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L 42192-65
ACCESSION NR: AT5002113

was also formed by isomerization during the block polymerization of 3,3,3-trichloropropene with benzoyl peroxide, and isomerization decreased the yield of solid polymer from 6.1% at 70C to 0.2% at 100C. A viscous, low-molecular, liquid polymer was also formed. Solid polymer was also formed in 37.3% yield in 160 hours under irradiation, and fractionated into soluble polymer and a fraction which was soluble only in tetrahydrofuran or hot benzene. Copolymers, which are not described, were formed with methyl methacrylate, styrene, vinyl acetate, and acrylonitrile. By a similar technique, 1,1,2-trichloro-1,3-butadiene was prepared via 1,1,2,4-tetrachloro-1-butene, formed in 20% yield with byproducts by telomerization of ethylene with tetrachloroethylene, and by dehydrohalogenation. The copolymerization of 1,1,2-trichloro-1,3-butadine has been described in published papers, and its homopolymerization under undefined optimal conditions yielded 99.9% block polymer (110,000 molecular weight), or 85.2% yields in emulsion polymerization with polymers of 3,500,000 molecular weight. The monomer was shown to have markedly higher activity than styrene, and the polymers showed good solubility, resistance to cold inorganic acids, high tensile strength, and adhesion to various materials. "The authors thank R.L. Tastin for carrying out the irradiation-polymerization tests." Orig. art. has: 1 table and 4 formulas.

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APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

L 41150-65

ACCESSION NR: AT5008110

ASSOCIATION: None

SUBMITTED: 30Jul64

ENCL: 00

SUB CODE: OC, GC

NO REF SOV: 007

OTHER: 003

Card 1/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

VASIL'YEVA, Ye.I.; FREYDLINA, R.Kh.

Amination of 1-cyano-6-chlorohexane, a product of telomerization of ethylene by cyanogen chloride. Izv. AN SSSR Ser. khim no.7: 1233-1236 Jl '64. (MIRA 17:8)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

L 17852-65 EWT(m)/EPF(c)/EWP(j) Pc-4/Pr-4 RM
ACCESSION NR: AP4044701 S/0062/64/000/008/1417/1421

AUTHORS: Freydlina, R.Kh.; Braynina, E.M; Minacheva, M.Kh.; Nesmeyanov, A.N.

TITLE: Electrophilically substituted cyclopentadienylzirconium compounds

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 8, 1964, 1417-1421

TOPIC TAGS: cyclopentadienylzirconium compound, organozirconium compound, monocyclopentadienylzirconium compound, dicyclopentadienylzirconium compound, sulfonation, cyclopentadienylzirconium tribisulfate

ABSTRACT: Mono- and dicyclopentadienylzirconium compounds were sulfonated; structures of the products were determined. Monocyclopentadienylzirconium triacetate and H_2SO_4 in the presence of acetic anhydride formed the binary compound $[C_5H_5Zr(OSO_3H)_3] \cdot (CH_3CO)_2O$, in which the acetic anhydride molecule could be exchanged by dimethylformamide. This binary compound, the monocyclopentadienylzirconium

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

L 17852-65
ACCESSION NR: AP4044701

2

tribisulfate with acetic anhydride was sulfonated with SO_3 in dichlorethane to form the hydroscopic sulfocyclopentadienylzirconium ditribisulfate. Dicyclopentadienylzirconium dichloride was sulfonated with H_2SO_4 in acetic anhydride to the binary cyclopentadienyl(sulfocyclopentadienyl)zirconium dibisulfate with 1 or 2 molecules of acetic anhydride: $[(C_5H_5)(C_5H_4SO_3H)Zr.(OSO_3H)_2].n(CH_3CO)_2O$, n = 1 or 2. In the compound where n = 1, the acetic anhydride was exchanged for ethanol or dimethylformamide: $[(C_5H_5)(C_5H_4SO_3H).Zr(OSO_3H)_2].C_2H_5OH$ or $[(C_5H_5)(C_5H_4SO_3H)Zr(OSO_3H)_2].(CH_3)_2CHNO$. Reaction of these dibisulfates with acetylacetone resulted in the exchange of the unsubstituted cyclopentadienyl group and one of the HSO_4 groups for acetylacetonate to form the binary diacetonylacetonate(sulfocyclopentadienyl)zirconium bisulfate with acetylacetonate: $[(C_5H_4SO_3H)(C_5H_7O_2)_2Zr(OSO_3H)].C_5H_8O_2$. It was found that the sulfo derivatives of cyclopentadienylzirconium compounds do not exchange the bisulfate group for chloride in excess HCl, although in the analgous acyloxy derivatives the anion exchanged readily. This is similar to the behavior of inorganic zirconium sulfates (as opposed to zirconium nitrate) where sulfate anion exchange was difficult. "We sincerely thank Ye.A. Terent'yev and M.V. Bernatsk for

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

L 17852-65
ACCESSION NR: AP4044701

polarographic determination of zirconium and sulfur in the compounds we synthesized." Orig. art. has: 1 equation

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Organometallic Compounds Academy of Sciences SSSR)

SUBMITTED: 21Dec62 ENCL: 00

SUB CODE: GC, OC NR REF SOV: 007 OTHER: 011

Card 3/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

L 17853-65 EWT(m)/EPF(c)/EWP(j) Pc-4/Pr-4 RM
ACCESSION NR: AP4044702 S/0062/64/000/008/1421/1425

AUTHORS: Braynina, E.M; Freydlina, R.Kh.

TITLE: Reverse disproportionation reactions for zirconium compounds containing cyclopentadienyl and chelate forming groups

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 8, 1964, 1421-1425

TOPIC TAGS: organo zirconium compound, disproportionation reaction, reverse disproportionation reaction, cyclopentadienylzirconium compound, zirconium chelate compound, polyacetylacetonate zirconium derivative, chelated zirconium chloride, chelated zirconium dichloride

ABSTRACT: The disproportionation reaction was used in synthesizing a new class of zirconium chelate compounds: depending on the ratios of the reactant $ZrCl_4$ and of the 8-coordinate chelate-forming compound of zirconium, it was possible to obtain the mono-, di-, or trichlorides of the zirconium chelate-forming compounds. Reaction of zirconium tetraacetylacetonate or of zirconium tetra-3-n-butylacetylacetonate with $ZrCl_4$ (1:3 molar ratio) in tetrahydrofuran resulted in the binary compounds, the trichlorides of zirconium acetylacetonate

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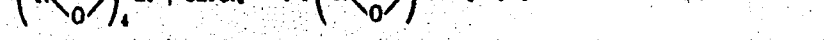
L 17853-65
ACCESSION NR: AP4044702

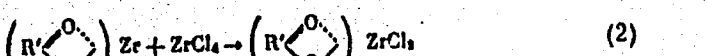
(or zirconium 3-n-butylacetylacetonate) with tetrahydrofuran:



(1)

where is acetylacetonate or 3-n-butylacetylacetonate.

Using equimolar proportions of the $ZrCl_4$ and of the beta-diketone zirconium derivatives resulted in the formation of the dichlorides of zirconium di-3-n-butylacetylacetonate or of zirconium bisdibenzoylmethanate:



(2)

where is dibenzoylmethanate or 3-n-butylacetylacetonate. A

1:3 molar ratio of $ZrCl_4$:zirconium tetraacetylacetonate gave the monochloride of zirconium triacetylacetonate:

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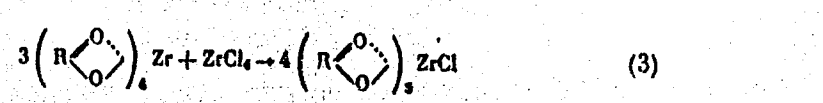
L 17853-65
ACCESSION NR: AP4044702



(3)

The reverse disproportionation reaction was also used with complex zirconium compounds containing cyclopentadienyl, chelate-forming groups and halides: reaction of zirconium tetraacetylacetonate with dicyclopentadienylzirconium dichloride (dibromide) gave the monochloride (monobromide) of zirconium cyclopentadienyldiacetylacetonate:

$$(C_5H_7O_2)_4Zr + (C_5H_5)_2ZrX_2 \longrightarrow C_5H_5(C_5H_7O_2)_2ZrX \qquad X = Cl, Br.$$

Orig. art. has: 4 equations

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Organometallic Compounds Academy of Sciences SSSR)

SUBMITTED: 21Dec62 ENCL: 00

SUB CODE: GC NR REF SOV: 003 OTHER: 002

Card 3/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

FREYDLINA, R.Kh.; KOPYLOVA, B.V.

Synthesis of cysteic acid homologs and related compounds. Izv.AN SSSR. Ser.khim. no.9:1615-1618 S '64. (MIRA 17:10)

Reaction of thiourea with ethers. Ibid.:1618-1622

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

FREYDLINA, R. Kh.; VELICHKO, F.K.; ENGLIN, B.A.

Homolytic diproportionation of atoms in polybromomethanes. Izv. AN SSSR Ser. khim. no.11:2069-2071 N '64 (MIRA 18:1)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

VASIL'YEVA, Ye.I.; KEDA, B.I.; FREYDLINA, R.Kh.

Interaction of cyanogen chloride with vinyl ethyl ether in the presence of the initiators of radical processes. Dokl. AN SSSR 154 no.1:129-131 Ja'64. (MIRA 17:2)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
2. Chlen-korrespondent AN SSSR (for Freydlina).

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

ACCESSION NR: AP4016507 S/0020/64/154/005/1113/1115

AUTHOR: Braynina, E. M.; Freydlina, R. Kh. (Corresponding member); Nesmeyanov, A. N. (Academician)

TITLE: Cyclopentadienyl compounds of zirconium containing the Zr-O-Zr group

SOURCE: AN SSSR. Doklady*, v. 154, no. 5, 1964, 1113-1115

TOPIC TAGS: cyclopentadienyl zirconium compound, Zr-O-Zr group, zirconoxane compound, tetracyclopentadienyldizirconoxane dichloride, dicyclopentadienylzirconium dichloride hydrolysis, IR spectrum

ABSTRACT: Tetracyclopentadienyldizirconoxane dichloride (I) was prepared by hydrolysis of ethoxydicyclopentadienylzirconium chloride (II):

$$2(C_5H_5O)(C_5H_5)_2ZrCl + H_2O \rightarrow [(C_5H_5)_2ZrCl]_2O\ (I) + 2C_2H_5OH.$$

Compound (I) may also be prepared by hydrolysis of dicyclopentadienylzirconium dichloride (III) in water in the presence of alcohol and an amine. Compounds of the (II) type are prepared by reaction of compound (III) with an alcohol in the

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ACCESSION NR: AP4016507

presence of triethylamine:

$$(C_5H_5)_2ZrCl_2 + ROH \xrightarrow{(C_2H_5)_3N} (C_5H_5)_2(RO)ZrCl\ (II) + (C_2H_5)_3NHCl.$$

Compound (I) reacts with acetylacetone to form cyclopentadienyldiacetonylacetonate of zirconium chloride:

$$[(C_5H_5)_2ZrCl]_2O + 2C_5H_8O_2 \rightarrow 2(C_5H_5)Zr(C_5H_7O_2)_2Cl + 2C_5H_6 + H_2O.$$

and compound (I) reacts with HCl to form compound (III):

$$[(C_5H_5)_2ZrCl]_2O + 2HCl \rightarrow 2(C_5H_5)_2ZrCl_2 + H_2O.$$

Compound (I) is a crystalline compound, readily decomposed, soluble in benzene and chloroform, and insoluble in hexane and ether. It was identified by its elemental analysis, molecular weight and IR spectrum. It is suggested that the compound identified as $C_{10}H_9ZrCl$ (E. Samuel and R. Setton, C. R. , 256, no. 2, 443 (1963)) is actually the above compound (I). "IR spectra were obtained in the Spectroscopic Laboratory of the Institute of Natural Compounds AN SSSR by G. G. Dvoryantsev, for which we express deep appreciation." Orig. art. has: 5-equations.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

ACCESSION NR: AP4016507

(Institute of Organometallic Compounds, Academy of Sciences SSSR)

SUBMITTED: 22Oct63 DATE ACQ: 12Mar64 ENCL: 00

SUB CODE: CH NO REF SOV: 002 OTHER: 002

3/3
Card

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

VASIL'YEVA, Ye.I.; KEDA, B.I.; FREYDLINA, R.Kh.

Telomerization of vinyl acetate by chlorocyanogen. Dokl. AN SSSR 156 no. 3:601-603 '64. (MIRA 17:5)

1. Institut elementoorganicheskikh soyedineniy AN SSSR. 2. Chlen-korrespondent AN SSSR (for Freydlina).

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

FREYDLINA, R.Kh.; AMINOV, S.N.; TERENT'YEV, A.B.

Rearrangement of radicals in the telomerization of ethylene by acetic acid. Dokl. AN SSSR 156 no. 5:1133-1136 Je '64. (MIRA 17:6)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
2. Chlen-korrespondent AN SSSR (for Freydlina).

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

ACCESSION NR: AP4041402 S/0020/64/156/006/1375/1378

AUTHOR: Braynina, E. M.; Dvoryantseva, G. G.; Freydlina, R. Kh. (Corresponding member AN SSSR)

TITLE: Cyclopentadienyl dizirconoxirane compounds containing aryl or chelate-forming groups

SOURCE: AN SSSR. Doklady*, v. 156, no. 6, 1964, 1375-1378

TOPIC TAGS: cyclopentadienyldizirconoxirane derivative, arylcyclopentadienyldizirconoxirane compound, synthesis, diphenyltetracyclopentadienyldizirconoxirane, di p tolyltetracyclopentadienyldizirconoxirane, tetracyclopentadienyldizirconoxirane dichloride, dicyclopentadienyldizirconoxirane tetraacetylacetonate, tetracyclopentadienyldizirconoxirane, structure, IR spectra

ABSTRACT: New cyclopentadienyldizirconoxirane compounds containing phenyl, p-tolyl and acetylacetonate groups were synthesized. Dicyclopentadienylzirconium dichloride was reacted with phenyllithium to produce diphenyltetracyclopentadienyldizirconoxirane (I): $(C_5H_5)_2ZrCl_2 + C_6H_5Li \xrightarrow{H_2O} (C_6H_5)(C_5H_5)_2ZrOZr(C_5H_5)_2(C_6H_5)H_2O$.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

ACCESSION NR: AP4041402

Di-p-tolyltetracyclopentadienyldizirconoxirane was prepared similarly from p-tolyllithium. I reacted with Cl_2 to form tetracyclopentadienyldizirconoxirane dichloride (II). II reacted with phenyllithium to form I. The diacetylacetonate of cyclopentadienylzirconium chloride was hydrolyzed to the tetraacetylacetonate of dicyclopentadienyldizirconoxirane: $(C_5H_5)(C_5H_7O_2)_2ZrCl + H_2O \rightarrow (C_5H_5)(C_5H_7O_2)ZrOZr(C_5H_5)(C_5H_7O_2)_2$. Dicyclopentadienylzirconium dibromide was hydrolyzed to the dibromide of tetracyclopentadienyldizirconoxirane. The structures of these compounds were proven by chemical and IR spectral analysis. Characterizing frequencies of the IR spectra are tabulated. Orig. art. has: 1 table and 4 equations.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Organometallic Compounds, Academy of Sciences, SSSR) Institut khimii prirodny*kh soyedineniy Akademii nauk, SSSR (Institute of the Chemistry of Natural Compounds, Academy of Sciences SSSR)

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APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

ACCESSION NR: AP4041402

SUBMITTED: 20Mar64 ENCL: 00

SUB CODE: OC NR REF SOV: 003 OTHER: 000

Card 3/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

KOLYAKOV, B.A., FREYDLINA, R.Kh.

Reaction of thiourea with organic sulfides, disulfides, and sulfene chlorides in an acid medium. Dokl. AN SSSR 159 no.1:138-141 N '64. (MIRA 17:12)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
2. Chlen-korrespondent AN SSSR (for Freydlina).

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

L 24825-65 EWT(m)/EPF(c)/T/EWP(j) Pc-4/Pr-4 RM

ACCESSION NR: AP5001995 S/0020/64/159/006/1346/1349

AUTHOR: Freydlina, R. Kh. (Corresponding member AN SSSR); Chukovskaya, Ye. Ts.; Englin, B. A.

TITLE: A new type of chain transfer in the radical telomerization via a "mediator"

SOURCE: AN SSSR. Doklady, v. 159, no. 6, 1964, 1346-1349

TOPIC TAGS: telomerization, telomer, polychloromethane, carbon tetrachloride, chloroform, olefin, olefin telomerization, olefin telomerization mechanism

ABSTRACT: The study investigates the mechanism of iron pentacarbonyl-initiated telomerization of olefins by polychloromethanes (e.g., carbon tetrachloride, chloroform). The study is a continuation of previous studies on the use of metal carbonyls as telomerization initiators. It was shown by Freydlina and Belyavskiy (DAN, 127, 1027 (1959) and Izv. AN SSSR, OKhN, 1961, 177) that the reactions

$$CCl_4 + C_2H_4 \xrightarrow{Fe(CO)_5} Cl(CH_2CH_2)_n CCl_3 \quad (1)$$

and

$$CHCl_3 + C_2H_4 \xrightarrow{Fe(CO)_5} H(CH_2CH_2)_n CCl_3 \quad (2)$$

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L 24825-65

ACCESSION NR: AP5001995

when conducted in the presence of carbonyls of iron, chromium, molybdenum, or tungsten, produce the same telomers as when initiated by benzoyl peroxide. The authors assume that the reaction (3) consists of the following steps:

a) $Fe(CO)_5 + 2CCl_4 \rightarrow [Fe(CO)_4Cl_2] + CO + 2CCl_3^{\cdot}$ (initiation);

b) $CCl_3^{\cdot} + CH_2{=}CH_2 \rightarrow CCl_3CH_2CH_2^{\cdot}$ (chain formation);

c) $CCl_3CH_2CH_2^{\cdot} + CCl_4 \xrightarrow{K\ transfer} CCl_3CH_2CH_2Cl + CCl_3^{\cdot}$ (chain transfer); (3)

d) $CCl_3CH_2CH_2^{\cdot} + CH_2{=}CH_2 \xrightarrow{K\ growth} CCl_3(CH_2)_3CH_2^{\cdot}$ (radical growth).

The existence of these stages can be proved by the determination of the transfer constants $C = K_{transfer}/K_{growth}$. An experimental comparison of the constants thus obtained with the constants obtained with another iron compound, $FeCl_2 \cdot 4H_2O$, indicated that the process is based upon the transfer of a chlorine atom from the polychloromethane to the iron compound. Since telomers rather than adducts (chlorinated products) were mostly formed in the above experiment (contrary to the results published by other authors who used alcohol

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L 24825-65

ACCESSION NR: AP5001995

Here, Fe^{2+} can be either $Fe(CO)_5$ or $FeCl_2$, and $(C_3H_7O)Cl$ is the chlorinated product. In 4, the chain transfer is completed by means of a nucleophilic "mediator" between the electrophilic radical and the substratum (i.e., the iron compound). The authors assume that an opposite process is also possible, namely, the chain transfer by means of an electrophilic "mediator" between the nucleophilic agents. Orig. art. has: 6 formulas and 2 tables.

ASSOCIATION: Institut elementorganicheskikh soyedineniy AN SSSR (Institute of Heteroorganic Compounds, AN SSSR)

SUBMITTED: 13Aug64 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 004 OTHER: 006 ATD PRESS: 3167

Card 4/4

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

L 24825-65

ACCESSION NR: AP5001995

6

or acetonitrile solutions), a series of experiments with iron initiators in varying amounts of alcohol (methanol or isopropanol) were conducted. It was found that in experiments with small amounts of alcohol, the values of the transfer constants were close to those obtained without solvent, while with large amounts of alcohol, results differed sharply, and the formation of adducts was sharply increased. Similar results were obtained with chloroform. On the basis of the results obtained, the authors concluded that the reaction of olefins with CCl_4 or $HCCl_3$ initiated either by $Fe(CO)_5$ or $FeCl_2 \cdot 4H_2O$ in the absence of a solvent takes place according to 3, while in the presence of an alcohol or any other suitable solvent, a new type of chain transfer takes place, namely, via a "mediator," such as an alcohol. The following reaction steps (4) are assumed for this case:

$$\text{a) } Fe^{2+} + CCl_4 \rightarrow Fe^{2+}(Cl) + CCl_3^{\cdot} \text{ (initiation);}$$
$$\text{b) } CCl_3^{\cdot} + CH_2{=}CH_2 \rightarrow CCl_3CH_2CH_2^{\cdot} \text{ (chain formation);} \qquad (4)$$
$$\text{c) } CCl_3CH_2CH_2^{\cdot} + (C_4H_9O)Cl \rightarrow CCl_3CH_2CH_2Cl + (C_4H_9O)^{\cdot} \text{ (chain transfer);}$$
$$\text{d) } (C_4H_9O)^{\cdot} + Fe^{2+}(Cl) \rightarrow (C_4H_9O)Cl + Fe^{2+} \text{ (chain transfer).}$$

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

DANILOV, S.N., glav. red.: ARBUZOV, A.Ye., red.; VVEDENSKIY, A.A., red.; VENUS-DANILOVA, E.D., red.; ZAKHAROVA, A.I., red.; IOFFE, I.S., red.; KAVERZNEVA, Ye.D., red.; LUTSENKO, I.F., red.; MISHCHENKO, K.P., red.; NEMTSOV, M.S., red.; PETROV, A.A., red.; FREYDLINA, R.Kh., red.; SHEMYAKIN, M.M., red.; SHUKAREV, S.A., red.; YUR'YEV, Yu.K., red.

[Biologically active compounds] Biologicheski aktivnye soedineniia. Moskva, Nauka, 1965. 305 p.
(MIRA 18:7)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

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

[Problems of organic synthesis] Problemy organicheskogo sinteza. Moskva, Nauka, 1965. 323 p. (MIRA 18:8)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

KOST, V.N.; VASIL'YEVA, T.T.; FREYDLINA, R.Kh.

Rearrangement of polyhalo alkyl radicals containing fluorine in the trihalomethyl group. Izv. AN SSSR Ser. khim. no.2:300-307 '65. (MIRA 18:2)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

ENGLIN, B.A.; FREYDLINA, R.Kh.

Chain transfer constants in telomerization of ethylene by chloroform. Izv. AN SSSR. Ser. khim. no.3:425-431 '65. (MIRA 18:5)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

CHUKOVSKAYA, Ye.T.; KAMYSHOVA, A.A.; FEYDLINA, R.Kh.

Reactions of carbon tetrachloride with unsaturated compounds in the presence of dicyclohexyl peroxydicarbonate or oxidation-reduction systems. Izv. AN SSSR. Ser. khim. no.3:461-465 '65. (MIRA 18:5)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

FREYDLINA, R.Kh.; CHUKOVSKAYA, Ye.TS.; CHIZHOV, Yu.P.

Effect of ethylene oxide or amines on the chain transfer with a modifier in the telomerization of ethylene by carbon tetrachloride. Dokl. AN SSSR 162 no.2:359-361 My '65. (MIRA 18:5)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
2. Chlen-korrespondent AN SSSR (for Freydlina).

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

CHUKOVSKAYA, Ye.TS.; KAMYSHOVA, A.A.; FREYDLINA, R.Kh.

Reaction of chloroform with 1-heptene initiated by iron pentacarbonyl in conjunction with amines. Dokl. AN SSSR 164 no.3: 602-605 S '65. (MIRA 18:9)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
2. Chlen-korrespondent AN SSSR (for Freydlina).

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KHORLINA, M.Ya.; FREYDLINA, R.Kh.

Effect of reaction conditions on the rearrangement of radicals in solution. Izv. AN SSSR. Ser. khim. no.8:1483-1485 '65. (MIRA 18:9)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

L 8153-66 EWT(m)/EWP(j) RM

ACC NR: AP5027687 SOURCE CODE: UR/0062/65/000/010/1788/1792

AUTHOR: Freydlina, R. Kh.; Khorlina, M. Ya.; Kost, V. N. (Deceased)

ORG: Institute of Organometallic Compounds, Academy of Sciences SSSR (Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR)

TITLE: Homolytic reactions of the dichlorovinyl group

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 10, 1965, 1788-1792

TOPIC TAGS: chemical reaction, halogenated organic compound, mixed halogenated organic compound, organic sulfur compound

ABSTRACT: The radical addition of various reagents to compounds containing an unsymmetrical dichlorovinyl group was investigated. The addition of HBr to 1,1,3-trichloropropene-1 (A), to 1,1-dichloro-3-bromopropene-1 (B) and 1,1,5-trichloropentene-1, and of n-butylmercaptan or thiophenol to A was accomplished at low temperatures (-35 to 37 C) under ultraviolet illumination. Hydrobromination of B gave 1,1-dichloro-2,3-dibromopropane. Reaction of A with the mercaptan or thiophenol yielded the sulfides $CHCl_2$-CH(SR)CH_2Cl, where R is butyl or phenyl. Homolytic addition of HBr and mercaptans to the dichlorovinyl group resulted in the formation of compounds containing a terminal

Card 1/2 UDC: 547.024+541.14

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L 8153-66

ACC NR: AP5027687

dichloromethyl group. These radical addition reactions were hindered by introduction of substituents in the beta-position to the double bond. Orig. art. has: 3 tables and 5 equations.

SUB CODE: 00/ SUBM DATE: 17Jul63/ ORIG REF: 001/ OTH REF: 000

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

BRAYNINA, E.M.; MINACHEVA, M.Kh.; FREYDLINA, R.Kh.

Some properties of tetracyclopentadienylzirconium. Izv. AN SSSR. Ser.khim. no.10:1877-1879 '65. (MIRA 18:10)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

AMINOV, S.N.; TERENT'YEV, A.B.; FREYDLINA, R.KH.

Telomerization of ethylene by aliphatic acids and acetonitrile.
Izv. AN SSSR.Ser.khim. no.10:1855-1860 '65.
(MIRA 18:10)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

L 36988-66 EWP(j)/EWT(m) RM
ACC NR: AP6008512 SOURCE CODE: UR/0062/66/000/001/0176/0179

AUTHOR: Freydlina, R. Kh.; Kuz'mina, N. A.; Chukovskaya, Ye. Ts. 34

ORG: Institute of Heteroorganic Compounds, Academy of Sciences, SSSR (Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR) B

TITLE: Hydride transfer in reactions of silanes with vinyl-alkyl and simple ethers in the presence of iron pentacarbonyl

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 1, 1966, 176-179

TOPIC TAGS: chemical reaction, silane, vinyl compound, organosilicon compound, carbonyl iron, REACTION MECHANISM

ABSTRACT: When silanes react with nucleophilic unsaturated compounds (olefins, vinyl-alkyl ethers) in the presence of small quantities of iron pentacarbonyl, saturated and unsaturated organosilicon compounds are formed. The reaction does not occur under the same conditions with electrophilic unsaturated compounds (acrylonitrile). The purpose of this work was to determine whether this transformation has a homolytic or heterolytic mechanism. Data are given which permit the assumption that there is a heterolytic chain mechanism engaging hydride transfer. The experiments were carried out in sealed glass ampules in an argon atmosphere. An analysis of the reaction mixture was made by the gas-liquid

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

FREYDLINA, Ye., kand.vet.nauk; MALAKHOV, Yu., assistent

Preparation of culture media from the liver of cattle infected with contagious diseases. Mias.ind.SSSR 30 no.1:52-53 '59. (MIRA 12:4)

1. Moskovskiy tekhnologicheskiy institut myasnoy i molochnoy promyshlennosti.

(Bacteriology--Culture and culture media) (Liver)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

S/135/60/000/005/007/009
A115/A029

AUTHORS: Tret'yakov, F.Ye., Candidate of Technical Sciences; Freydlina, Ye. Yu., Technician

TITLE: Welding ЭИ 712 (12Х2НВФА) [EI 712 (12Kh2NVFA)] Steel

PERIODICAL: Svarochnoye proizvodstvo, 1960, No. 5, pp. 36 - 37

TEXT: The purpose of this work was to find out weldments of low-alloyed EI 712 (12Kh2NVFA) steel of such quality that no after-welding thermal treatment would be necessary. The presence of nickel, tungsten, vanadium, chromium and manganese ensures deep tempering, preserving simultaneously a high plasticity of the weldments. Chemical composition and mechanical properties are given in Tables 1 and 2. Welding tests of this steel of 1.5, 1.8, 2 and 3 mm thickness in annealed, normalized and tempered conditions before and after welding were performed. The heat treatment condition is shown in Table 3. In all cases the surface has been sandblasted. Standard equipment was used for welding. The quality of weldments was tested visually and by X-rays. The results of tests of mechanical properties of specimens without thermal after-welding treatment shown in Table 6 prove high firmness of weldments before and after thermal treat-

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

S/135/60/000/011/009/016
A006/A001

AUTHORS: Tret'yakov, F.Ye., Candidate of Technical Sciences, Freydlina, Ye.Yu., Technician

TITLE: Welding Cast 27ХГСНЛ (27KhGSNL) Steel With Low-Alloy Structural Steels

PERIODICAL: Svarochnoye proizvodstvo, 1960, No. 11, pp. 30-32

TEXT: An investigation was made to develop a technology for welding cast 27KhGSNL steel parts with sheet parts of 25ХГСА (25KhGSA) and 30ХГСА (30KhGSA) and ЭИ-712 (EI712) steels. The 27KhGSNL steel is composed as follows: 0.24 - 0.30% C; 0.5 - 0.8% Si; 0.9 - 1.2% Mn; 0.7 - 1.0% Ni; S and P ≤ 0.035%. Welded cast 27KhGSNL steel plates were subjected to annealing prior to welding and subsequent milling to 2.5 and 5 mm thickness. After welding with НИАТ-3М (NIAT-3M) electrodes they were heat treated. Mechanical properties on standard flat specimens made of heat-treated plates were determined (oil quenching at 890 C - 10°C; tempering at 200 - 240°C). Holding time for quenching of 1.5 - 2.5 mm thick specimens was 5 - 7 minutes and for 3.0 - 5.0 mm thick specimens it was 10 to 15 minutes. Tempering time was 2 hours. The specimens were tested at

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EI-712 steels

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A006/A001

Welding Cast 27ХГСНЛ (27KhGSNL) Steel With Low-Alloy Structural Steels

by automatic welding in carbon dioxide and under AN-348A flux; by manual electric-arc welding with NIAT-3M electrodes (Sv-08A rod); and by argon-arc welding process. For welding 1.5 to 4.0 mm thick specimens, it is recommended to use NIAT-3M electrodes which are more suitable from the technological point of view than VIAM-101 electrodes. Weld joints of 27KhGSNL steels with 25KhGSA and EI712 steels possess high strength at normal and elevated temperatures (350°C). There are 7 tables and 3 figures.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

KRUGLOVA, N.V.; FREYDLINA, R.Kh.

Interaction of aryl- and aralkylboran acids with [illegible] butyl peroxide. Izv. AN SSSR. Ser. khim. no.11:[illegible] '65.
([illegible])

1. Institut elementoorganicheskikh soyedinaniy AN SSSR.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

AMINOV, S.N.; TERENT'YEV, A.B.; FREYDLINA, R.Kh.

Telomerization of ethylene by fatty acids and their derivatives. Uzb. khim. zhur. 9 no.5:36-42 '65. (MIRA 18:12)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
Submitted April 10, 1965.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

ENGLIN, B.A.; FREYDLINA, R.Kh.

Kinetics of ethylene telomerization by carbon tetrachloride. Zhur. fiz. khim. 39 no.9:2208-2214 S '65. (MIRA 18:10)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513710003-1

ACC NR: AP6024393 SOURCE CODE: UR/0020/66/169/002/0335/0338

AUTHOR: Braynina, E. M.; Mortikova, Ye. I.; Petrashkevich, L. A.; Freydlina, R. Kh. (Corresponding member AN SSSR)

ORG: Institute of Organometallic Compounds, Academy of Sciences, SSSR (Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR)

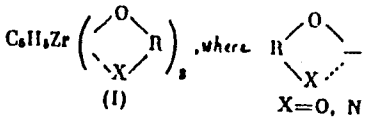
24
B

TITLE: New class of cyclopentadienyl zirconium compounds containing chelate groups

SOURCE: AN SSSR. Doklady, v. 169, no. 2, 335-338

TOPIC TAGS: organozirconium compound, chelate compound

ABSTRACT: The paper describes several variants for the synthesis of a series of representatives of a heretofore unknown class of organozirconium compounds containing one cyclopentadienyl (or methylcyclopentadienyl) and three chelate groups:



(I) is the chelate residue.

Apparently, the electron configuration of xenon has been successfully achieved for zirconium in these compounds for the first time. The most generally applicable method for synthesizing this class of compounds consists in reacting tetracyclopentadienyl-

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ACC NR: AP6024393

zirconium with chelate-forming compounds such as 8-hydroxyquinoline, acetylacetone, benzoylacetone and dibenzoylacetone. The reaction takes place rapidly under mild conditions and gives good yields:

$$(C_5H_5)_4Zr + 3RH \rightarrow C_5H_5ZrR_3 + 3C_5H_6,$$

where R = C_9H_6ON; $C_5H_7O_2$; $C_{10}H_9O_2$; $C_{15}H_{11}O_2$. Another synthesized compound was tris(8-hydroxyquinolate)methylcyclopentadienylzirconium:

$$CH_3C_5H_4Na + ZrCl_4 \rightarrow (CH_3C_5H_4)_3ZrCl,$$
$$(CH_3C_5H_4)_3ZrCl + C_9H_7ON \rightarrow CH_3C_5H_4Zr(ONC_9H_6)_3.$$

The compounds were monomeric, fusible, and stable toward hydrogen. Their IR spectra were analyzed.

SUB CODE: 07/ SUBM DATE: 11Dec65/ ORIG REF: 004/ OTH REF: 001

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