"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

RADCHENKO, S.I.; PETROV, A.A.

Alkylthioenynes and their analogs. Part 7: Synthesis and properties of alkylthioisopropenylacetylenes and their analogs. Zhur. org. khim. 1 no. 12:2115-2118 D '65 (MIRA 19:1)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta. Submitted November 21, 1964.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

[illegible]PELKIN, [illegible]; [illegible], [illegible], [illegible]

[illegible]

[illegible]

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

PETROV, A.A.; RALL', K.B.; VIL'DAVSKAYA, A.I.

Synthesis and properties of 1,3-nitroalkadienes. Zhur.org.khim. 1 no.2:240-243 F '65. (MIRA 18:4)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

[illegible]

[illegible] of [illegible] a [illegible]
[illegible] hydrocarbons. [illegible] inorganic. [illegible] 21244-[illegible]

[illegible] Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

CHISTOKLETOV, V.N.; VAGINA, L.K.; PETROV, A.A.

Bipolar addition to unsaturated compounds. Part 10: Addition of α,N-diphenylnitrone to vinylacetylene compounds. Zhur.org. khim. 1 no.2:369-375 F '65. (MIRA 18:4)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

ABAZOV, [illegible], A.A.

[illegible] and [illegible]-dimethyl-[illegible]-butadienes. Zhur. [illegible] 28 No 1 [illegible].

[illegible] laboratory techniques [illegible] methods [illegible].

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

PETROV, A.A.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

L 16648-65 EWT(d)/EWT(m)/EWP(w)/EWP(v)/EWP(k)/EWA(h) Pf-4/Peb
AEDC(a)/ASD(a)-5 EM

ACCESSION NR: AP4045712 S/0208/64/004/005/0880/0895

AUTHOR: Petrov, A. A. (Moscow); Popov, Yu. P. (Moscow); Pukhnachev, Yu. V. (Moscow)

TITLE: Calculation of natural oscillations of liquid in fixed containers by the variational method

SOURCE: Zhurnal vy*chislitel'noy matematiki i matematicheskoy fiziki, v. 4, no. 5, 1964, 880-895

TOPIC TAGS: natural oscillations, Ritz method, eigenvalue problem, boundary value problem, Laplace equation, liquid oscillation, coordinate function

ABSTRACT: A method is presented for calculating the natural oscillations of an ideal fluid in fixed containers for a wide class of domains $\tau$. ($\tau$ is the volume of the liquid in equilibrium.) The solution of this problem is reduced to the solution of the variational problem which consists in determining the function $\phi$ minimising a certain functional $F(\phi)$. The use of Ritz method to

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L 16648-65

ACCESSION NR: AP4045712

solve this variational problem makes it possible to determine the minimizing function $\phi$ in the form

$$\varphi = \sum_{m=1}^{N} a_m f_m,$$

where the coefficients $a_m$ are determined from a certain homogeneous system of equations providing that the system of coordinate functions $\{f_n\}$ in the domain $\tau$ is known. The method of constructing $\{f_n\}$ is presented based on simple domains (parallelepiped, right cylinder, and others) enveloping the domain $\tau$ for which solutions of the problem are known. After the simple enveloping domain with a form closest to the form of the domain $\tau$ is chosen, the problem of determining the natural oscillations of the liquid is reduced to the evaluation of certain integrals and the solution of the system of homogeneous equations. The evaluations of the integrals and the solution of the system were carried out on electronic computers. The numerical solution of the problem on natural oscillations of liquids in containers is presented in detail for containers in the shape of a cylinder with a horizontal generatrix, of a right cylinder with a spherical bottom and a spherical upper end cover, and of a torus. Orig. art. has: 19 formulas and 15 figures.

Card 2/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

L 16648-65
ACCESSION NR: AP4045712

ASSOCIATION: none

SUBMITTED: 15Oct63 ENCL: 00

SUB CODE: MA NO REF SOV: 005 OTHER: 001

Fuel tanks

Card 3/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

CHERKASOVA, L.A.; BAT'YAR, [illegible]

[illegible]
Telomerization of olefins with piperylene synthetic rubber. Zhur. ob. khim. 34 no.9:2912-2915 [illegible]

Reactions of unsaturated compounds [illegible] Part 3: Addition of piperylene synthetic rubber and styrene-styrene. Izv.[illegible]

[illegible] Leningradskiy tekhnologicheskiy institut imeni [illegible]

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

[illegible]

[illegible]

Action of lithium dialkylamides on **vinylacetylene** ethers and [illegible]
rides. [illegible]

[illegible]

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

POLYAKOVA, A.A.; [illegible] [illegible]; [illegible], A.A.

Mass [illegible] structure of organic compounds. [illegible] spectra [illegible] [illegible]ated ,[illegible]-diyne hydrocarbons. Zhur. [illegible] khim. 34 no.10:3[illegible]-33[illegible] [illegible]'64. (MIRA [illegible])

1. Vsesoyuznyy nauchno-issledovatel'skiy institut [illegible] nefti i gaza i [illegible] [illegible] [illegible]nsoveta.

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

KAZ'MOVA, N.A.; PETROV, A.A.

Phosphorus-containing [illegible]. Part [illegible]. [illegible] ar. catechol; phosphorous acid [illegible]oride with [illegible] [illegible]. Zh. obshch. khim. 33 no. 12: 3852-3860 D '63.

1. Leningradskiy [illegible] institut [illegible].

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

VALYAYEV, B.G.; PETROV, A.A.

Testing the desalting process of Radayevskaya heavy crude. Trudy Giprovostokneftl no.4:111-130 '61. (MIRA 15:8)
(Kuybyshev Province--Petroleum desalting)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

PETROV, A.A.; VERETENNIKOVA, I.V.

Reagents-demulsifiers for preparing petroleums for yield of Kashpir shale tar. Trudy Giprovostoknefti no.4:137-166 '61. (MIRA 16:8)

(Sodium sulfates)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

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

Theory and laboratory investigations of petroleum desalting processes involving the use of rotary-disc contactors. Trudy Giprovostoknefti no.4:7[illegible]-9[illegible] 1961. (MIRA 1[illegible]:8)
(Volga-Ural region--Petroleum desalting)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

PETROV, A.A. (Moskva)

Approximate [illegible]

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

PETROV, A.A.; PORFIR'EVA, Yu.I.; [illegible], L.H.

Course of the reactions in which electrophilic and nucleophilic reagents are added to asymmetrical homologs of diacetylene. [illegible]. AN SSSR 151 n.4:[illegible] Ap '63. (MIRA 16:[illegible])

1. Leningradskiy tekhnologicheskiy institut im. Lensoveta. Predstavlen akademikom B.A.Arbuzovym.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

PETROV, A.A.; [illegible], [illegible] (Moscow)

"An analysis of free oscillations [illegible] in [illegible] fluid in [illegible] potentials by the variational method"

Report presented at the 2nd All-Union Congress on Theoretical [illegible], Moscow [illegible] Jan - [illegible] Feb 44.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

MOISEYEV, N.N. (Moscow); [illegible], A.[illegible] (Khar'kov); P[illegible], L.A. (Moscow)

"On some new problems of the theory of motion of a body with liquid inside".

report presented at the 2nd All-Union Congress [illegible] Theoretical and Applied Mechanics, Moscow, 29 Jan - 5 Feb 64.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

SAHO, L.V.; PETROV, A.A.; KATEYEV, V.M.

Testing the experimental petroleum desalting pilot plant combined with the rotary-disc contactor in the Novokuybyshev Petroleum Refinery. Trudy Giprovostoknefti no.4:100-110 [illegible] (MIRA 1[illegible]:8)
(Volga-Ural region--Petroleum desalting)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

BAKAYEV, M.T.; PETROV, A.A.

Seismic effect of underground blasting in Dzhezkazgan mines. Trudy Inst. gor. dela AN Kazakh. SSSR 10:137-142 '63. (MIRA 16:8)

(Dzhezkazgan District--Blasting) (Seismometry)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

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

2,3,5-Trimethyl-1-hexen-3-yne. Zhur. ob. khim. 33 no.5:1701-1702 My '63. (MIRA 16:6)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Hexenyne)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

BOGOLYUBOV, G.M.; RAZUMOVA, N.A., PETROV, A.A.

Synthesis of phospholine and phospholidine, phosphorus-containing heterocycles. Zhur.ob.khim. 33 no.7:2414-2420 Jl '63. (MIRA 16:8)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Phospholine)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

PETROV, A.A.

Hydraulic transmission system of a 4,000 hp. diesel locomotive.
Elek. i tepl. tiaga 6 no.11:46-48 N '62. (MIRA 15:11)
(Diesel locomotives--Transmission devices)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

PETROV, A.A.

S/079/63/033/003/002/005
A066/A126

AUTHORS: Razumova, N.A., Petrov, A.A.

TITLE: Investigations in the field of conjugate systems. CLXIX. Addition of dialkyl phosphorous acid and chlorides to diene hydrocarbons

PERIODICAL: Zhurnal obshchey khimii, v. 33, no. 3, 1963, 783 - 789

TEXT: The authors investigated the addition of chlorides of ethylene glycol phosphorous acid and propylene glycol phosphorous acid to divinyl, isoprene, piperylene, and chloroprene. The reactions were carried out by heating in sealed tubes. The resultant addition compounds could be sublimated at 1 - 2°C. A new kind of regrouping was obtained by the formation of five-membered phosphorous-containing heterocycles with a structure similar to that of the heterocycles formed by the reaction of diene hydrocarbons with alkyl dichlorophosphines. A number of derivatives of 3-phospholine-1 oxide is described for the first time. There are 2 figures and 2 tables.

Card 1/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

Investigations in the field of conjugate... S/079/63/033/003/002/005
A066/A126

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

SUBMITTED: February 26, 1962

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

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

Conjugated systems. Part 168: Course of the addition of hydrogen halides to dienyne hydrocarbons - vinylallylacetylene and its homologs. Zhur.ob.khim. 33 no.2:419-427 F '63. (MIRA 16:2)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta. (Hydrogen halides) (Butenye) (Conjugation (Chemistry))

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

S/054/63/004/001/007/022
B102/B186

AUTHORS: Zaydel', A. N., Lazeyeva, G. S., Petrov, A. A.

TITLE: On the possibility of spectral-isotopic determination of oxygen in metals

PERIODICAL: Leningrad. Universitet. Vestnik. Seriya fiziki i khimii, no. 1, 1963, 55-58

TEXT: The method of isotope spectral analysis for determining oxygen in metals is based on the spectroscopic determination of the isotope concentration ratio by a comparison of the band edges of the molecules $C^{12}O^{16}$ and $C^{12}O^{18}$. The 4123.6 Å band of the CO molecule with an isotopic shift of +8.5Å is chosen as analytical band. The spectral width of the instrument slit was 1.7 Å so that the band was not resolved. The relation $I^{18}/I^{16} = f(C^{18}/C^{16})$ is represented by a linear 45° calibration curve which does not intersect with the origin but is somewhat shifted to lower intensity ratios. The curve was plotted for the $O^{18}$ concentration range 5 - 63%. The accuracy in oxygen determination was 2-3% in the case

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3



of standard analytical conditions. The applicability of the method was demonstrated on the analysis of specially prepared powders of Armco iron and cobalt. The reproducibility of the results was 5%. The sensitivity of the method is limited by the correction of idle experiment which has to be reduced by a factor of 5-10 for an accuracy of $10^{-4}$%. There are 3 figures and 2 tables.

SUBMITTED: July 23, 1962



APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

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

Interaction of bivinyl and isoprene hydrochlorides with sodium acetoacetic ester. Zhur.ob.khim. 33 no.2:427-432 F '63. (MIRA 16:2)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Butadiene) (Isoprene) (Acetoacetic acid)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

PETROV, A.A.; LEBEDEV, V.B.; PORFIR'YEVA, Yu.I.

Conjugated systems. Part 167: Nuclear magnetic resonance spectra and structure of dienyne hydrocarbons. Zhur.ob.khim. 33 no.2:416-418 F '63. (MIRA 16:2)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Hydrocarbons—Spectra)
(Nuclear magnetic resonance and relaxation)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

BALAYEV, G.A.; PETROV, A.A.

Chemistry of organic oxides. Part 22: Addition of hydroxylamine to α-oxides. Izv.vys.uch.zav.; khim.i khim.tekh. 5 no.4:608-611 '62. (MIRA 15:12)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta, kafedra organicheskoy khimii.

(Hydroxylamine)
(Oxides)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

IONIN, B.I.; PETROV, A.A.

Prototropic isomerization of esters of alkenylphosphinic acids. Zhur.ob.khim. 33 no.2:432-437 F '63. (MIRA 16:2)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta. (Phosphinic acid) (Isomerization)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

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

Conjugated systems. Part 169: Addition of dialkyl phosphoryl chlorides to diene hydrocarbons. Zhur.ob.khim. 33 no.3:783-789 Mr '63. (MIRA 16:3)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Phosphoryl chloride)
(Hydrocarbons)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

CHISTOKLETOV, V.N.; TROSHCHENKO, A.T.; PETROV, A.A.

Addition of benzonitrile oxide to unsaturated compounds. Part 3: Interaction of benzonitrile oxide with vinylacetylenes substituted in a vinyl group in $\beta$-position. Zhur.ob.khim. 33 no.3:789-793 Mr '63. (MIRA 16:3)

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

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

PETROV, A. A.; YELSAKOV, N. V.

Effect of solvents on the nuclear magnetic resonance spectra of diacetylene and vinylacetylene. Zhur. ob. khim. 33 no. 1: 319-320 '63. (MIRA 16:1)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

(Butadiyne--Spectra) (Butenyne--Spectra)
(Solvents)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

L 11060-63 EWP(j)/EPF(c)/EWT(m)/BDS--Pc-4/Pr-4--RM/WW/JFW

ACCESSION NR: AP3000482 S/0153/63/006/001/0170/0171

65

AUTHOR: Kheruze, Yu. I.; Petrov, A. A.

TITLE: Addition of triphenylmethyl radicals to divinylacetylene and its homologs

SOURCE: Izv. VUZ: Khimiya i khim. tekhnologiya, v. 6, no. 1, 1963, 170-171

TOPIC TAGS: triphenylmethyl radicals, divinylacetylene, vinylpropenylacetylene, vinylisopropenylacetylene, addition reactions

ABSTRACT: Crystalline adducts were formed between the triphenylmethyl radical and divinylacetylene (1), vinylpropenylacetylene (2), and vinylisopropenylacetylene (3) in benzene solution. Addition occurred chiefly in the 1,4-positions to form 7, 7, 7-triphenyl-3-triphenyl-methyl-heptatriene, 8, 8, 8-triphenyl-3-triphenylmethyl-heptatriene-1,3,4. Adducts were characterized by their IR spectra. Weak absorption occurs. Adducts were recrystallized from propylacetate and formed molecular compounds with acetone. Orig. art. has: 1 table.

ASSOCIATION: Kafedra organicheskoy khimii, Leningradskiy tekhnologicheskiy institut im. Lensoveta (Department of Organic Chemistry, Leningrad Technological Institute)

Card 1/1

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

Petrov, A.A.

10

S/169/63/000/003/006/042
D263/D307

AUTHORS: Alekseyev, P.P., Besyadovskiy, Ye.A., Biryukova, L.A., Golyshev, G.I., Ivanovskiy, A.I., Izakov, L.A., Kokin, G.A., Kurilova, Yu.V., Livshits, L.S., Petrov, A.A., Rozhdestvenskiy, B.G., Solov'yev, N.V., Speranskiy, K.Ye., Khvostikov, I.A., Shvidkovskiy, Ye.G. and Shcherba, I.A.

TITLE: Study of the upper layers of the atmosphere with the aid of meteorological rockets

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 3, 1963, 28, abstract 3A166 (Tr. Vses. nauchn. Meteorol. soveshchaniya. T.I.L., Gidrometeoizdat, 1962, 91-103)

TEXT: In the present review-type article the authors give the results of studies carried out at Tsentralnaya aerologicheskaya observatoriya (Central Aerological Observatory) on atmospheric sounding with meteorological rockets. Measuring methods are described and the main points are given for obtaining such atmospheric character-

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

S/169/63/000/003/006/042
D263/D307

Study of the upper layers ...

istics as pressure, temperature, and wind. Certain results are given: data of seasonal temperature variations at heights up to 50 km in the middle latitudes of the USSR and in polar regions, cases of sudden warming up, characterization of temperature distribution curves, a table characterizing the temperature inversion below the stratopause under the conditions of polar night, and data regarding the circulation in the upper atmospheric layers. Information is given on the constructed meridional sections of temperature fields and on the zonal component of the gradient wind. (25 references). [Abstracter's note: Complete translation]

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

ORLOVA, N.M., [illegible], A.A.

Hydro[illegible] balanc[illegible]. [illegible] (MIRA [illegible])

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

YELSAKOV, [illegible]; [illegible], [illegible]

Studying H-bonds, formed by acetylene hydrocarbons, with the aid of nuclear magnetic resonance spectroscopy. Opt. i spektr. 16 no. [illegible] 147-151 [illegible] '64. MIRA 17:[illegible]

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

PETROV, A. A.

"Catal[illegible]

Dissertation [illegible]

[illegible]

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

197T10

USSR/Chemistry - Petroleum, Isomerization Nov/Dec 51

"Isomerizations of Olefinic Hydrocarbons Over Aluminosilicates," A. A. Petrov, A. V. Frost, M. I. Batuyev, Petroleum Inst, Acad Sci USSR

"Iz Ak Nauk SSSR, Otdel Khim Nauk" No 6, pp 745-752

Investigated catalytic isomerization on aluminosilicate catalyst of a number of olefinic hydrocarbons under conditions excluding cracking. Proposes mechanism of isomerization involving splitting off of olefin from catalyst under formation

197T10

USSR/Chemistry - Petroleum, Isomerization (Contd) Nov/Dec 51

of intermediate alkyl cyclopropane product. These cyclopropane derivs then undergo ring opening through fission of the most highly assym bond. In the unsatd products, the double bond is usually next to the side alkyl group.

197T10

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

USSR/Chemistry - Liquid Fuels 11 Jun 51

"Conversion of 1-Methylcyclopentane-1 Over an Active Aluminum Silicate Catalyst," A. A. Petrov, V. V. Shchekin, Inst Petroleum, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXVIII, No [illegible], pp [illegible]-915

Monomer fractions of product obtained by conversion at 250° do not contain 6-membered naphthenes. Polymer product resulting from conversion of 1-methylcyclopentane-1 is cyclohexylmethylcyclopentane, substance identical with that formed from cyclohexane under the same conditions. Apparently ring expansion of simple pentamethylenes proceeds only

184T15

USSR/Chemistry - Liquid Fuels (Contd) 11 Jun 51

simultaneously with polymerization. Dehydrogenation over this catalyst of 6-membered rings into aromatics also seems to occur together with polymerization only.

184T15

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

PETROV, A. A.

USSR.

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Catalytic transformation of olefins over aluminum silicates. A. A. Petrov. *Trudy Vsesoyuz. Soveshchaniya po Khim. i Perera[illegible] Nefti* (Sept. 18-24, 1951) (Izdatel. Akad. Nauk Azerbaidzhan. S.S.R., Baku) 1953, 141-50; *Referat. Zhur., Khim.* 1954, No. 20650.—A discussion of catalytic transformations of olefins which practically precludes cracking. M. Hosein

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

Chemical Abst.
Vol. 48 No. 8
Apr. 25, 1954
Organic Chemistry

2

Redistribution of hydrogen in olefinic hydrocarbons on an aluminosilicate catalyst. A. A. Petrov and S. V. Frost. Zhur. Obshch. Khim. U.S.S.R. 22, 1813-18(1952); Engl. translation: See C. A. 47, [illegible]. H. I. H.

10-5-54

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

PETROV, A. A.

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Dependence between the amount of liberated hydrogen bromide and structure of olefins undergoing bromination. Al. A. Petrov (Petroleum Inst., Acad. Sci. U.S.S.R., Moscow). *Zhur. Obshchei Khim.* 23, 1896-9(1953).—Tests with 49 olefins with different structures are reported in the reaction of these with 1% Br soln. in MeOH satd. with NaBr. The hydrocarbons were treated with excess reagent and the excess Br was back-titrated with $Na_2S_2O_3$ after addn. of KI. Usually 1 min. contact was sufficient for the reaction. The colorless soln. was treated with 5% NaOI and the liberated iodine was again titrated as usual. It was shown that the amount of liberated HBr depends on the structure of the olefin. Linear olefins and these with a side chain that is not proximate to the double bond eliminate some 14-16 mole-% HBr. Olefins with branching at the double bond give 27-9% HBr, while those with branching at the double bond and in addn. having bulky groups at the double bond (iso-Pr, $Me_3C$) give large amts. of HBr (41-75%). The course of the reaction may be represented by the following scheme: the MeOH-$Br_2$ complex yields MeOH and the olefin dibromide (straight chain olefins), or a carbonium ion after addn. of pos. Br ion, which is then attacked by $MeOHBr^-$, yielding HBr and a methoxybromoalkane (for branched olefins). Both courses are affected by steric factors. The reaction of 2,5-dimethyl-2-hexene gave a colored product, $n_D^{20}$ 1.4860, $d_4^{20}$ 1.3300, which contained 6% MeO and 46.6% Br, thus confirming the above hypothesis.

G. M. Kosolapoff

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

The order of addition of bromine to homologs of vinylacetylene. A. A. Petrov and Yu. I. Porfir'eva. *Doklady Akad. Nauk S.S.S.R.* 89, 873-6(1953); cf. *C.A.* 44, 7751c.—To 4.4 g. MeC:CCH:$CH_2$ in 200 ml. $CHCl_3$ at −8° was added 53 g. Br in 100 ml. $CHCl_3$, distn. gave a no. of fractions up to 145°/10 mm., of which the most abundant were these: $b_{10}$ 79.5-90.5° (17.5 g.) and $b_{10}$ 132-6° (13 g.). The former, $d_{20}$ [illegible], $n_D^{20}$ 1.5588, was identified as MeC:CCHBr$CH_2$Br (I) on the basis of the following reactions, and [illegible] the Raman spectrum of the frequency 2240 cm.$^{-1}$ which is that of a triple link. I (7.2 g.) at room temp. with 2.7 g. KOH in 25 ml. EtOH gave in 4 hrs. 50% bromide ion, while the soln. yielded 60% bromopentenyne. Heating I with concd. HBr-$Cu_2Br_2$ in $Et_2O$ 4 hrs. gave some 80% stable dibromide, *MeCBr:CBr-CH:$CH_2$*, $b_{10}$ 57-7.5°, $d_{20}$ 1.8305, $n_D^{20}$ 1.5768, which in alc. KOH lost but 5% of its Br. under the above conditions. Ozonolysis of I and treatment with $H_2O_2$ gave AcOH and *BrCH$_2$CHBrCO$_2$H*, m. 64-6°. With $KMnO_4$ I gave the same products. The high-boiling fraction ($b_{10}$ 132-6°) was impure *tetrabromide*, $d_{20}$ 2.3496, $n_D^{20}$ 1.6160. Similar reaction of 40 g. EtC:CCH:$CH_2$ with Br in $CHCl_3$ gave 52 g. mixed di- and polybromides which distd. up to 160°/10 mm. From these was isolated 24 g. material, $b_{10}$ 86-91°, which after redistn. gave pure *EtC:CCHBrCH$_2$Br*, $b_{10}$ 87-7.5°, $d_{20}$ 1.6920, $n_D^{20}$ 1.5170, whose chem. properties were identical with those of the Me analog. Along with this dibromide was obtained 10 g. crude *tetrabromide*, $b_{10}$ 140-50°, $d_{20}$ 2.2035, $n_D^{20}$ 1.6020. Similar bromination of 65 g. HC:CCMe:$CH_2$ in $CHCl_3$ over 9 hrs. gave a range of fractions of which the principal one (40 g.), $b_{10}$ 48-53°, was redistd., yielding pure *HC:CCMeBrCH$_2$Br* (II), $b_{10}$ 50-1.5°, $d_{20}$ 1.7581, $n_D^{20}$ 1.5320, Raman frequency 2118 cm.$^{-1}$. II with ammoniacal $AgNO_3$ gave a white ppt. of the Ag salt, but this could not be reversed by addn. of HCl. With alc. KOH II gave 60% *4-bromo-3-methyl-3-buten-1-yne*, $b_{20}$ 36-8°, $d_{20}$ 1.3690, $n_D^{20}$ 1.5070. II heated with HBr-$Cu_2Br_2$ gave *CHBr:CBrCMe:CH$_2$*, $b_{10}$ 48.5-9.0°, $d_{20}$ 1.7740, $n_D^{20}$ 1.5430, which was quite stable to alc. KOH, losing but 4% of its Br after 4 hrs. at room temp. In addn. to II, dibromide the original reaction mixt. gave 2.3 g. product, $b_{10}$ 70-80°, probably *CHBr:C:CMeCH$_2$Br*, which, heated with HBr-$Cu_2Br_2$, gave the above dienic dibromide, $b_{10}$ 48-9°. An unstated amt. of impure *tetrabromide*, $b_{10}$ 1[illegible]-45°, was also obtained, but this decomp. during dis[illegible]. *MeC:CCBr:CH$_2$*, $b_{10}$ 52-3°, $d_{20}$ 1.4010, $n_D^{20}$ 1.5255. *EtC:CCBr:CH$_2$*, $b_{10}$ 1.3531, $n_D^{20}$ 1.5156. G. M. Kosolapoff

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

PETROV, A. A.

Chemical Abst.
Vol. 48 No. 8
Apr. 25, 1954
Organic Chemistry

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

PETROV, A.A.; ARBUZOV, A.E., akademik.; PORFIR'YEVA, Yu.I.

Order of addition of alkylhypohalogenides to vinylacetylene homologs. Dokl.AN SSSR 90 no.4:561-564 Je '53. (MLRA 6:5)

1. Akademiya Nauk SSSR (for Arbuzov). (Halogenides) (Vinylacetylene)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

PETROV, A. A.

USSR/Chemistry - Fuels

11 Sep 53

"Isomerization of Unsaturated Hydrocarbons Having the Composition $C_{12}$-$C_{16}$," A. A. Petrov, Inst of Petroleum, Acad Sci USSR

DAN SSSR, Vol 92, No 2, pp 329-33.

Studied the isomerization of dodecene-1, tridecene-1, and hexadecene-1 using $Al_2O_3$ and HCl as catalyst. Aluminosilicate catalyst was used for the isomerization of hexadecene-1. Did not detm the structure of the isomers. Presented by Acad A. V. Topchiyev 14 Jul 53.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

PETROV, AL A.

USSR.

Isomeric transformations of olefin hydrocarbons over aluminosilicate. II. Al. A. Petrov. *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1954, 124-32; *Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci.* 1954, 101-7(English translation); cf. *C.A.* 46, 4776c.—Olefins and cycloolefins undergo considerable changes over aluminosilicate catalyst at about 260°. The most characteristic changes are: (1) isomerization of n-alkenes to monoalkylalkenes with an alkyl side chain at the site of the double bond; (2) formation from the latter of dialkylalkenes; (3) destruction of tertiary C atom groupings, except for cases in which this is proximate to a tertiary C atom at a double bond; (4) isomerization of cycloolefins of the $C_7$ type and higher (a mixt. of 66% 6-membered and 33% 5-membered cycles in naphthenes); (5) shift of the double bond to form unsym. ethylene deriva.; (6) decrease of the no. of C atoms in side alkyl chains. Thus, the following changes were observed: $Me_2CHCH_2CH:CH_2$ gave $Me_2CHPr$ and $(CHMe_2)_2$; 5-methyl-1-hexene gave $Me_2CHBu$, $CH_2(CHMe_2)_2$, a small amt. of $BuCHMeCHMe_2$; 6-methyl-1-heptene gave $Am_2CHMe$, $(Me_2CHCH_2)_2$, and small amts. of 2,4- and 2,2-dimethylhexanes; 1-heptene gave $BuCHMe_2$, $PrCHMeEt$, and a small amt. of $CH_2(CHMe_2)_2$; $Me_2CCH_2CH:CH_2$ gave

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AL. A. PETROV

EtCHMeCHMe$_2$, and BuCHMe$_2$; Me$_2$CHCMe:CH$_2$ gave Me$_2$CHCMe$_3$ and a small amt. of CH$_2$(CHMe$_2$)$_2$; (CH$_2$:CH:CH$_2$)$_2$ gave PrCHMe$_2$ and (CHMe$_2$)$_2$; Et$_2$C:CHMe gave Me$_2$CHBu, EtCHMePr, and CH$_2$(CHMe$_2$)$_2$; PrCH:CMe$_2$ gave BuCHMe$_3$, PrCHMeEt and CH$_2$(CHMe$_2$)$_2$. In this work the attention was largely directed to the satd. products; the unsatd. products were shown to have the same configuration as the satd. analogs listed above. At 260° the following products formed: from 1-ethylcyclopentene, 45% 5-membered cyclanes and 55% methylcyclohexane; from 1-ethylcyclohexene, 35% 5-membered cyclanes and 65% 1,4-dimethylcyclohexane; from 1-propylcyclohexene, 72% 6-membered and 28% 5-membered cyclanes; from allylcyclohexane, 64% 6- and 36% 5-membered cyclanes; from allylbenzene, alkylbenzene. At 400° 1-ethylcyclopentene gave 27% methylcyclohexane, 8% MePh, 65% 5-membered cyclanes (largely 1,3-dimethylcyclopentane); 1-ethylcyclohexene similarly gave 42% 5-membered cyclanes, 20% aromatics (xylenes), and 38% 6-membered cyclanes (1,4- and a little 1,3-dimethylcyclohexanes). The schemes of formation of the products are discussed.

G. M. Kosolapoff

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

PETROV, A.A.

Effect of sulfuric compounds on catalytic functions of aluminosilicates
Trudy Inst. nefti no. 6:8[illegible]-88 [illegible]. (MIRA 8:12)
(Catalysis) (Aluminum silicates) (Sulfur compounds)

Translation D-411569

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

PETROV, AL. A.

Catalytic properties of activated aluminum oxide. K. G. Micseron, O. B. Moroznova, and Al. A. Petrov. J. Gen. Chem. U.S.S.R. 25, 2105-8(1955)(Engl. translation). See C.A. 50, 4611i. B. M. R.

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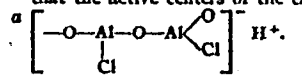
"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

PETROV, AL. A.

1

V Catalytic properties of activated aluminum oxide. K. G. Miesserov, O. E. Morozova, and Al. A. Petrov. Zhur. Obshchei Khim. 25, 2204-8(1955).--The catalytic properties of $Al_2O_3$, activated with mineral acids in the isomerization of olefins were studied. The activating actions of the acids increase in the following order: $H_3BO_3$, HBr, $H_3PO_4$, HCl, HF, $H_2SO_4$. $HNO_3$ has no effect. The activity of $Al_2O_3$ activated with HCl is directly related to the extent to which the surface OH groups are replaced by $Cl^-$. It is proposed that the active centers of the catalyst have the structure

CH



J. Rovtar Leach

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Petrov, A.A.

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4E2c
2 May

923. BROMINATION OF UNSATURATED HYDROCARBONS. Petrov, A.A. (Khim. Tekhnol. Topliva (Chem. Technol. Fuel, Moscow), July 1956, No. 12). The determination of unsaturated hydrocarbons with a solution of bromine in methanol is examined in the light of results with 120 compounds. A large group of compounds, containing some olefins and five-member cyclenes, gave a higher bromine number than the calculated one. This phenomenon is explained. Bromination is accompanied by separation of hydrogen bromide. A method is proposed for determining the number of branches in alkenes and cyclenes from the results of bromination. (L).

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

PETROV, Al.A.; SERGIYENKO, S.R.; TSEDILINA, A.L.; YEGOROV, Yu.P.

Izomerization of unsaturated $C_{12}$-$C_{16}$ hydrocarbons. Khim. i tekh. topl. no.1:26-32 Ja '56. (MLRA 9:7)
(Hydrocarbons)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

Petrov, A.A.

Bromination of unsaturated hydrocarbons. A. A. Petrov. *Khim. i Tekhnol. Topliv* No. 7, 24-32(1956). ~~based on an~~ analysis of the data from the quant. detn. of unsatn. by bromination (0.1*N* Br in methanol satd. with NaBr), the compds. were subdivided into the following groups: I: ethylene, propylene, 1-butene, 1-hexene, 1-heptene, 1-octene, 1-nonene, 1-dodecene, 1-tridecene, 1-tetradecene, 1-pentadecene, 1-hexadecene, 3-heptene, 4-nonene, 6-tridecene, 6-hexadecene, 3-methyl-1-butene, 4-methyl-1-pentene, 5-methyl-1-hexene, 6-methyl-1-heptene, 2-methyl-1-pentadecene, 3,3-dimethyl-1-butene, 4,4-dimethyl-1-pentene, 4,4-dimethyl-1-hexene, cyclohexene, 3-methyl-1-cyclohexene, allylcyclohexane, cyclopentene, allylbenzene, 4-phenyl-1-butene, 1,3-diphenylpropene, 1,5-diphenyl-1-pentene, styrene, 1,2-phenylmethylethylene. II: isobutylene, 2-methyl-2-butene, 2-methyl-1-pentene, 2-methyl-2-pentene, 3-methyl-2-pentene, 2,3-dimethyl-1-butene, 2,3-dimethyl-2-butene, 2-methyl-2-hexene, 3-methyl-2-hexene, 3-ethyl-2-pentene, 2,3-dimethyl-3-pentene, 2,4-dimethyl-2-pentene, 2,3,3-trimethyl-1-butene, 2-methyl-2-heptene, 3-methyl-2-heptene, 4-methyl-3-heptene, 2-ethyl-2-hexene, 3-ethyl-2-hexene-2, 2,5-dimethyl-2-hexene, 3,4-dimethyl-1-hexene-4, 5-methylnonene, 4-propyl-3-heptene, 2-methyl-2-undecene, 3-methyl-2-undecene, 4-methyl-3-undecene, 4-methyl-4-undecene, 6-methyl-5-undecene, 2,3-dimethyl-5-decene, 2,5-dimethyl-4-decene, 2,5,5-trimethyl-4-nonene, 5-propyl-4-nonene, 5-isopropyl-4-nonene, 2-methyl-2-dodecene, 3-methyl-2-dodecene, 4-methyl-3-dodecene, 5-methyl-4-dodecene, 6-methyl-5-dodecene, 2-methyl-2-tridecene, 3-methyl-2-tridecene, 4-methyl-3-tridecene, 5-methyl-4-tridecene, 6-methyl-5-tridecene, 7-methyl-6-tridecene, 2,3-dimethyl-3-dodecene, 4-methyl-3-tetradecene, 5-methyl-4-tetradecene, 6-methyl-5-tetradecene, 7-methyl-

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PETROV, A. A.

6-tetradecene, 4-methyl-3-pentadecene, 5-methyl-4-pentadecene, 6-methyl-5-pentadecene, 7-methyl-6-pentadecene, 8-methyl-7-pentadecene, 1-methyl-1-cyclopentene, 1-ethyl-1-cyclopentene, 1,3-dimethyl-1-cyclopentene, 1-propyl-1-cyclopentene, 1-butyl-1-cyclopentene, 1-heptyl-1-cyclopentene, 1-methyl-1-cyclohexene, 1-ethyl-1-cyclohexene, 1,2-dimethyl-1-cyclohexene, 1,3-dimethyl-1-cyclohexene, 1,4-dimethyl-1-cyclohexene, 1-propyl-1-cyclohexene, 1-butyl-1-cyclohexene, 1-hexyl-1-cyclohexene, 1,1-methyl-phenylethylene, 1,1-diphenylethylene. III: 2,4-dimethyl-3-hexene, 2,4,4-trimethyl-1-pentene, 2,2,3-trimethyl-3-pentene, 2,3,4-trimethyl-2-pentene, 2,2,4-trimethyl-3-hexene, 2,4-dimethyl-3-decene, triisobutylene (mixt.), 2,4-dimethyl-3-undecene, 5-isobutyl-4-nonene, 2,4-dimethyl-3-tridecene, 3,5-dimethyl-4-dodecene, 2,4-dimethyl-3-tridecene, 2,4-dimethyl-3-tetradecene, 1,2-dimethyl-1-cyclopentene, 1-isopropyl-1-cyclopentene, 1-isobutyl-cyclopentene, 1-isopropyl-1-cyclohexene, 1-isobutyl-1-cyclohexene, 1-phenyl-1-cyclopentene. The bromination coefficient of the compds. of group I varied on the average 12-14%, that of group II, 24-27%, and of group III, 50-89%. A branching in the side-chain of cycloölefins had a stronger effect on the increase of the coefficient, than the presence of the 2nd group in the ring. In the instance of aliphatic hydrocarbons the branching of the side-chain had approximately the same effect on the value of the coefficient as the presence of two substitutions in the chain. The amt. of HBr liberated was found to be directly related to the structure of a compd. This was utilized for developing a method for the detn. of the degree of branching of unsatd. hydrocarbons from the bromination data.

A. P. Kotloby

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USSR/Physical Chemistry - Molecule. Chemical Bond. B-4

AbsJour : Referat Zhur - Khimiya, No 6, 25 March 1957, 18159

Author : Ygorov, Yu.P. and Petrov, Al.A.

Title : Determination of the Degree of Ramification of Paraffin Hydrocarbons of $C_{12}$ - $C_{16}$ Conposition by the Method of Infrared Spectroscopy.

Orig Pub : Zh. analit. chemistry, 1956, 11, No 4, 483-488

Abstract : Infrared spectra of 28 alkanes (A) of normal structure and iso structure of $C_{12}$ - $C_{16}$ composition are examined in the region of valence C-H 3.35 - 3.5 $\mu$ in a solution of $CCl_4$. The character of change in intensity of peaks observed allows us to show the groups where they belong: $CH_3$ 3.38 $\mu$, $CH_2$ 3.50 and 3.42 $\mu$ and CH 3.48 $\mu$. As the number of groups $CH_3$ increases with the ramification of an alkane (while the number of groups $CH_2$ decreases), the measurement of the ratio of intensities of peaks 3.50 and 3.42 to 3.38 $\mu$ proves to be a measure of

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Petrov, A. A.

Distr: 4E33/4E43/4E2e(j)

Determination of the degree of branching of $C_6$-$C_8$ paraffin hydrocarbons by infrared spectroscopy. Yu. P. Yampolskii and A. A. Petrov.—J. Anal. Chem. U.S.S.R. 11, 811-18(1960)(English translation).—See C.A. 51, 18391i.

R. M. K.

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2 mg
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KM

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Petrov, A.A.

2

Equilibrium mixtures of five- and six-membered cyclenes. A. A. Petrov. *Doklady Akad. Nauk S.S.S.R.* 109, 549-51 (1956).—The equil. concns. of cyclenes resulting at 250-400° over $Al_2O_3$ (activated with HCl) and synthetic aluminosilicate catalysts were detd. The concns. in vol. % of hexamethylene hydrocarbons in the catalyzates from the indicated materials are shown (on aluminosilicate at 250°, 300°, 400°, on $Al_2O_3$ at 300° and 400°, given in order): cyclohexene, under 5%, —, —, under 5%, —; 1-methylcyclopentene, under 5%, —, —, under 5%, —; 1-methylcyclohexene, 61, 39, 21, 18, 13; 1-ethylcyclopentene 55, 34, 27, 20, —; 1,2-dimethylcyclopentene, 20, —, —, —, —; 1,3-dimethylcyclopentene, 15, —, —, —, —; 1-ethylcyclohexene, 65, 39, 38, 20, —; 1,3-dimethylcyclohexene, 64, —, —, 21, —; 1-propylcyclohexene, 72, —, —, 24, —; allylcyclohexane, 64, —, —, —, —; 1-butylcyclopentene, 55, —, —, —, —; 1-hexylcyclohexene, —, —, —, 25, —; 1-heptylcyclopentene, —, —, —, 20, —. The $\Delta Z^\circ$ for isomerization of cyclohexene to methylcyclopentene is estd. at 3800-4000 cal./mole which dets. the equiv. concn. of cyclohexene as 3-4%. The probable mechanism of 5-6 ring isomerization is discussed. G. M. Kosolapoff

Chem

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

PETROV, A. A. Doc Chem Sci -- (diss) "Study in the field of isomerization of hydrocarbons." Mos, 1[illegible] 1[illegible] (Acad Sci USSR. Inst of Petroleum), 1[illegible] copies (KL, 4[illegible]-[illegible]7, 91)

-5-

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

Petrova, A.A

USSR/Chemical Technology - Chemical Products and Their Application. Treatment of Natural Gases and Petroleum. Motor and Jet Fuels. Lubricants. I-8

Abs Jour : Ref Zhur - Khimiya, No [illegible], 1955, 2438

Author : Basharat'yan, Ya.G., Petrova, A.A.

Inst : -

Title : Electric Dehydration Unit at the Kalinovskiy Fields.

Orig Pub : Neftyanik, 1954, No [illegible]

Abstract : The unit at the Kalinovskiy fields of Kinel'neft' is used to dehydrate all of the petroleum production of the fields which has an average water content of 65-70%. To ensure the necessary output of the dehydrators the crude petroleum is subjected to a preliminary thermo-chemical treatment which decreases the water content, on the average, to 40-50%. The consumption of NCHK reagent amounts to [illegible] kg per ton of [illegible]. Heating temperature of crude petroleum is 45-50°. The electric treatment substitutes the [illegible]

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

AUTHORS: Kusakov, M. M., Petrov, A. A. 20-4-30/51

TITLE: Note on the Rheologic Properties of Surface Layers at the Oil-Water Interface and Their Role in the Stability of Oil Emulsions (Reologicheskiye svoystva poverkhnostnykh sloyev na granitse razdela neft'-voda i ikh rol' v ustoychivosti neftyanykh emul'siy)

PERIODICAL: Doklady AN SSSR, 1957, Vol. 114, Nr. 4, pp. 837-840 (USSR)

ABSTRACT: The authors employed an apparatus of the type of a torsion pendulum for the purpose of studying these rheologic properties. According to the composition of the hydrocarbon phase and of the water phase, of the time of formation of the layer and its temperature three types of motion of the torsion pendulum can be distinguished: a) Damped oscillations, b) Aperiodic motion, c) An elastic-viscous motion. The most exhaustive data on the character of the rheologic properties of the surface layers can be obtained from the observation of the elastic-viscous motion of the torsion pendulum. A diagram illustrates the typical curves of the temporal development of the deformation of the surface layers at the interface between

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Note on the Rheologic Properties of Surface Layers at the Oil-Water Interface and Their Role in the Stability of Oil Emulsions

20-4-30/51

petroleum and water at a varying temperature. The deformation of these surface layers develops in a way analogous to the deformation in the interfacial layers of saponine. Such types of curves of deformation over time can be caused by three types of deformations, instantaneous elastic deformations, deformation caused by elastic after-effects and an irreversible deformation of flow. Then the quantities characterizing the rheologic constants are enumerated. For the purpose of investigating the influence of the nature of the petroleum on the properties of the surface layers, the rheologic properties of the surface layers on the interface were examined with a 1 % solution of NaCl (pH [illegible]) with different kinds of petroleum from Eastern [illegible] oil. The results obtained from these investigations are compiled in a table. The surface layers of the various oil types at the interface between oil and water possess both elastic and viscous properties. The surface viscosity reaches values of the order of magnitude of $10^4$ surface Poise. The occurrence of a maximum strength

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20-4-30/51

Note on the Rheologic Properties of Surface Layers at the Oil-Water Interface and Their Role in the Stability of Oil Emulsions

In the surface layers at the boundary of the water in the range of diluted oil solutions is apparently connected with a more intensive formation of [illegible] by the substances of an asphalteous and resinous type in the surface layers. The investigation of the influence of the composition of the oil phase and the water phase, of temperature, of the time of formation of the layer and of other factors on the rheologic properties of the surface layers makes it possible to select suitable methods for the dehydration and desaltification of the petroleum and the characterization of the parameters of the petroleum and an evaluation of the efficiency of the emulsifiers.

There are 7 figures, 1 table and 10 Slavic references

ASSOCIATION: **Petroleum Institute** AN USSR Institut nefti Akademii nauk SSSR

PRESENTED: April 1, [illegible], by A. V. Topchiyev, Academician

SUBMITTED: February [illegible]

AVAILABLE: Library of Congress

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

PETROV, A.A.

Specific conductivity of oil emulsions. Trudy Giprovostoknefti no.1:352-372 '58. (MIRA 13:9)
(Emulsions--Electric properties)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

Isomerization of Saturated Hydrocarbons. Conversions of Alkanes With $C_6$ - $C_8$ Structure

number of new data were determined which offer new ideas as to the binding connection, the structure and the reactivity of hydrocarbons. There are 4 tables, and 11 references, 11 of which are Soviet.

ASSOCIATION: Institut neftekhimicheskikh sintezov (Petroleum Institute, AS USSR)

SUBMITTED: November 19, 1958

AVAILABLE: Library of Congress

1. Hydrocarbons—Saturated—Isomerization 2. Alkanes
$C_6$ - $C_8$ —Isomeric conversions

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

AUTHORS: [illegible]
Tsel'ina, A. L., Petr[illegible]

TITLE: Isomerization of saturated hydrocarbons. Isomerization of nasyshchennykh uglevodorodov. Soobshch. 2. Isomerizations of the Alkanes of the [illegible]-structure [illegible]. 2. Izomernyye prevrashcheniya alkanov sostava $C_{[illegible]}$-$C_{[illegible]}$

PERIODICAL: Izvestiya Akademii Nauk SSSR. Otdeleniye khimicheskikh nauk, 1958, Nr 5, pp. 575-[illegible] (USSR)

ABSTRACT: The use of polyfunctional catalysts [illegible] the su[illegible] investigation of the isomerization of saturated hydrocarbons with a boiling-point up to 150°C possible. Nevertheless, it is very difficult to achieve the isomerization of paraffins (with a boiling-point above 200°C) in the presence of not [illegible] catalysts. The purpose of this work was the investigation of the structure and of the properties of the isomerizate [illegible]. Above all, the isomerization of a series of [illegible] (structure $C_{[illegible]}$-$C_{16}$) was investigated in the presence of [illegible] catalysts. It was found that ramified hydrocarbons, [illegible] methyl-secondary-groups are formed due to [illegible]

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

Isomerization of Saturated Hydrocarbons [illegible]
2. Isomeric Conversions of the Alkanes [illegible] the $C_{12}$ - $C_{1}$[illegible]

the alkanes. Moreover, a catalyst with [illegible] was found in the isomerization of [illegible]
A thermodynamic calculation of the real equilibrium [illegible] of the alkanes of the $C_{12}$ - $C_{1}$[illegible] was carried [illegible] tables and 12 references, 8 of which are [illegible]

ASSOCIATION: Institut neftekhimicheskikh [illegible] AS USSR)

SUBMITTED: November 1[illegible], 1[illegible]

[illegible]

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

AUTHORS: Petrov, Al. A., Ser[illegible], S. R., [illegible] SOV[illegible]
Tsedilina, A. L., Kiselevskiy, A. N., [illegible]

TITLE: The Isomerization of Saturated Hydrocarbons (Izomerizatsiya nasyshchennykh uglevodorodov) Communication 2. The Isomerical Transformation of Cyclanes (Sovmestnaya izomerizatsiya tsiklanov)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye khimicheskikh nauk, 1956, Nr [illegible], pp. 73[illegible] - 7[illegible] (USSR)

ABSTRACT: In various earlier papers the isomeric transformations of alkanes are discussed, which develop in the presence of [illegible] functional catalysts under hydrogen pressure (Ref. [illegible]). The main purpose of this paper is the investigation of the [illegible] governing the isomerization of hydrocarbons and of the [illegible] between structure of the one and kinetic and thermodynamic parameters on the other. The catalytic isomerization of the cycloparaffin hydrocarbons $C_6$ - $C_8$ in the presence of [illegible] functional catalyst under hydrogen pressure [illegible]. Furthermore, it was found that the isomerization [illegible] of the cycloparaffins $C_7$ and $C_8$ corresponds with [illegible] composition to the thermodynamic equilibrium [illegible]

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

The Isomerization of [illegible]
Communication 1. The Isomerization [illegible]
A mechanism for the isomerization [illegible] is suggested, and it is shown that the formation [illegible] hydrocarbons [illegible] formation of [illegible] the influence exerted by the reaction temperature [illegible] direction of the isomerization of cyclo[illegible] a polyfunctional catalyst was [illegible] References, [illegible] of which are Russian.

ASSOCIATION: Institut Neftekhimicheskikh Sintezov Akademii Nauk SSSR (Petroleum Institute [illegible] USSR)

SUBMITTED: November 1[illegible], 1956

1. Hydrocarbons [illegible]
--chemical effects [illegible]

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

[illegible]CV, [illegible].A.

days of synthesizing [illegible] higher olefins (discussion). Neftekhimiya 3 no.3:430-435 My-Je '63. [illegible] (MIRA 16:9)

1. Institut geologii i razrabotki goryuchikh iskopayemykh Gosudarstvennogo komiteta topliv'noy promyshlennosti pri Gosplane [illegible]. (Olefins)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

[illegible], M.F.; [illegible] V, A.[illegible].

Infrared absorption spectra of [illegible] alkanes [illegible] 14
Neftekhimiia [illegible] no. [illegible] My-Je [illegible]. (MIRA [illegible])

1. Institut neftekhimicheskogo sintteza AN [illegible] imeni A.V. Topchiyeva i Institut [illegible] razrabotki [illegible] [illegible]kopayemykh [illegible] k [illegible] toplivnoy promyshlennosti pri Gosplane SSSR.
(Paraffins — Absorption spectra)

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ABSTRACT:

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[illegible] **at** [illegible]

[illegible] x[illegible] [illegible]dual

[illegible] wo[illegible] ho[illegible] [illegible]e

[illegible] to the chemic[illegible] [illegible] oil. [illegible] connection [illegible] [illegible] hydrocarbons [illegible] from [illegible] different propert[illegible] [illegible] ment of the [illegible] [illegible] together [illegible] [illegible] concern [illegible] the synthesis are given. [illegible]

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

The [illegible] of Low-Molecular Hydrocarbons [illegible]

AS[illegible] USSR: [illegible] nauk [illegible]
(Petroleum Institute, AS USSR)

[illegible] NO. [illegible]: January 4, 1958, by [illegible] [illegible]rluzov, [illegible]ber, [illegible] [illegible]
ciences, USSR

SUBMITTED: [illegible]ember 17, 1[illegible]

1. Hydrocarbons--Synthesis 2. Hydrocarbons--Spectrographic analysis

Card 3/3

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AUTH

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

Selective Catalytic Dehydrogenation of Cyclohexane Derivatives
Molecular Hydrogenation

Card 2/3

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

Selective Catalytic [illegible]
Molecular H[illegible]

[illegible]

ASSOCIATION: [illegible]

PRESENTED: [illegible]
SUBMITTED: [illegible]

Card 3/3

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

PETROV, Aleksey Aleksandrovich, kand.khim.nauk; TAKOYEV, D.A., red.; PETROPOL'SKAYA, N.Ye., red.; YASHEN'KINA, Ye.A., tekhn.red.

[Desalting and dehydration of petroleums] Obessolivanie i obezvozhivanie neftei. Kuibyshev, Kuibyshevskoe knizhnoe izd-vo, 1959. 82 p. (MIRA 13:2)
(Petroleum--Refining)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

5 (3)

AUTHORS: Petrov, Al. A., Sergiyenko, S. R., Nechitaylo, N. A., Tsedilina, A. L. SOV/62-59-[illegible]

TITLE: Synthesis and Properties of the Monomethyl-substituted Alkanes of the Composition $C_{12}$-$C_{16}$ (Sintez i svoystva monometil-zameshchennykh alkanov sostava $C_{12}$-$C_{16}$)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk 1959, Nr 6, pp 1091 - 1097 (USSR)

ABSTRACT: Since the hydrocarbons of this structure are not yet sufficiently investigated, the synthesis of the monomethylated alkanes with a boiling temperature of more than 200° was investigated. With this monomethylated alkanes one may synthesize all theoretically possible isomers (there are only 29 compounds). They are furthermore of interest because they have thermodynamically stable structures and meet with all technical requirements of motorization. The hydrocarbons were synthesized according to Grignard's reaction (magnesiumbromoalkyls with methylketones). In this reaction the purity of the compounds obtained depends in a high degree on the purity of the initial substances (alkylbromides). This fact was especially considered

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

Synthesis and Properties of the [illegible]methyl-substituted Alkanes of the Composition $C_{12}$-$C_{16}$ SOV/[illegible]

in the present investigation. The methylketones were obtained by decomposition of the corresponding alkyl-acetoacetic acid. As intermediates tertary alcohols were at first obtained which were dehydrated at 280°, redistilled, and hydrated in the autoclave on nickel at a temperature of from 150-170°. The temperature at which the hydrocarbons obtained crystallize was determined by plotting the heating curve by means of the photo-recording Kurnakov pyrometer. The purity degree was determined by means of a special thermographic device. N. I. Lyashkevich to whom the authors express their gratitude, carried out the measurements in the laboratory for petroleum chemistry of the institute mentioned in the Association. The purity degree of the synthesized hydrocarbons was 97-98%. The thermogram was recorded by a special aluminum block which was designed in the Institut obshchey i neorganicheskoy khimii AN SSSR (Institute of General and Inorganic Chemistry of the AS USSR). By this automatic recording of the heating curves the melting process could be fixed exactly (Fig 1). With almost all compounds obtained two stages in the melting process (-46 and -45.4° melt-

Card 2/4

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240410015-3

Synthesis and Properties of the Monomethyl-substituted [illegible]
Alkanes of the Composition $C_{12}H_{26}$

ing and crystallisation temperature, were observed. The properties of the hydrocarbons are given in a table by which it is shown that the density and the refractive index scarcely depend on the position of the outer methyl groups in the main chain, what is well in line with data by Satevskij (Ref 9). The crystallisation temperature is, however, strongly influenced by these methyl groups. The change of the crystallisation temperature at the transition of one homologue to the other, and of one isomer into the other is not steady (Figs 1,3 with comparative data from Ref 10). This unsteadiness is caused by the presence of either an even or an odd number of hydrogen atoms in the main chain. The transition from an odd to an even number of hydrogen atoms exerts a parallel influence on the melting point, the reverse transition, that is an increase in the molecular weight, exerts an antiparallel influence. The laws holding for paraffins, olefins, and [illegible] well known, may thus also be applied to ramificated [illegible] the crystallisation process of the latter taken [illegible] crystals are exhibit [illegible] at [illegible]

Card 3/4

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