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Chemical nature of light fractions of primary tar of Hudagovsk sapropelites. N. I. Shulkin and R. A. Timofeeva. *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1951, 120) 8. The light fractions, b. 100-300°, are composed primarily of hydrocarbons; the N bases form but 0.1-2.2, acids 0.1-2.3, S compds. 0.49-0.53%. Neutral O derivs. are present only in small amts. The products contain 54-60% unsatd. hydrocarbons which basically are not tar-forming, 21-31% alkanes, 9-16% aromatic compds., and 4-7% cyclanes. On this basis the sapropelites can be utilized as a source of artificial liquid fuel. G. M. Kosolapoff

1951

Reductive catalytic amination of ketones. M. A. Popov and N. I. Shuikin. *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* **1951**, 140-4. Passage of Me_2CO or cyclohexanone vapors with NH_3 and H_2 over platinized silica gel (C. A. **43**, 1001e) at 62-240° results in considerable formation of amines; even at 62° primary amines comprise 18% of the total 1.3% amine-N; the best results with Me_2CO are obtained at about 210° when as much as 9% amino-N is found in the catalyzate. A higher temp. (300°) drops the yield. Cyclohexanone is aminated at somewhat higher temps., but even at 160° an 8.3% yield of amino-N is formed; the best yield of amino-N is 12.7% at about 200° operating temp. *Iso-PrNH₂* and *cyclohexylamine* were identified directly, the former being best isolated through its HCl salt.

G. M. Kosolapoff

26

B Пр

9299* **The Influence of Ultra High Pressures on the Catalytic Properties of Aluminum Oxide.** (In Russian.) L. F. Vereshchagin, L. Kh. Freidlin, A. M. Rubinshtein, and I. U. Nũmanov. *Izvestiia Akademii Nauk SSSR.* Section of Chemical Sciences, Nov.-Dec. 1951, p. 809-818.

The behavior of Al_2O_3 catalysts under a pressure of 20,000 atm. was studied. Apparatus and method of study are described. Structural changes of the Al_2O_3 were also investigated. Data are charted.

SHUYKIN, N.I.; NARYSHKINA, T.I.

Dehydrogenation of five-membered cyclenes in the presence of activated carbon. Dokl. AN SSSR 135 no.1:105-108 N'60. (MIRA 13:11)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
2. Chlen-korrespondent AN SSSR(for Shuykin).

(Dedhydrogenation) (Cycloalkanes)

FEDYNSKIY, V.V., doktor fiziko-matem. nauk, red.; LEVINSON, V.G., kand. geol.-mineral. nauk, red.; TOPCHIYEV, A.V., akad. NAGIYEV, M.F., akad., red.; SHUYKIN, N.I., red.; MIRCHINK, M.F., red.; TREBIN, F.A., doktor tekhn. nauk, red.; SANIN, P.I., doktor khim. nauk; SUKHANOV, V.P., inzh., red.; PANOV, V.V., kand. tekhn. nauk, red.; IONEL', A.G., vedushchiy red.; ZARETSKAYA, A.I., vedushchiy red.; FEDOTOVA, I.G., tekhn. red.

[Reports of the International Petroleum Congress. 5th New York, 1959] Doklady V Mezhdunarodnogo neftianogo kongressa, New York, 1959. Moskva, Gos. nauchno-tekhn. izd-vo neft. i gorno-toplivnoi lit-ry. Vol.1. [Geology and geophysics] Geologiia i geofizika. Pod red. V.V. Fedynskogo i V.G.Levinsona. 1961. 382 p. (MIRA 14:9)

1. International Petroleum Congress. 5th, New York, 1959. 2. AN Azerbaydzhanskoy SSR (for Nagiyev). 3. Chleny-korrespondenty AN SSSR (for Shuykin, Mirchink).
(Petroleum geology) (Gas, Natural—Geology)
(Prospecting—Geophysical methods)

S/081/62/000/003/006/090
B151/B144

AUTHORS: Salimov, M. A., Viktorova, Ye. A., Shuykin, N. I.

TITLE: Infrared spectra of alkyl phenols and their simple esters. Communication 2. Infrared spectra of amyl cresols

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 3, 1962, 24, abstract 3B140 (Azerb. khim. zh., no. 2, 1961, 87 - 94)

TEXT: The IR spectra (400 - 4000 cm^{-1}) of a series of alkyl phenols are studied (b.p. n^{20}_D and d^{20}_4 are given): 3-methyl-6-tert-amyl 250 - 252°/739 mm, 1.5192, 0.9632; 3-methyl-4-sec-amyl 268 - 270°C/739 mm, 1.5160, 0.9614; 3-methyl-6-sec-amyl 92 - 93°C/2 mm, 1.5130, 0.9593; 4-methyl-2-tert-amyl 123 - 123.5°C/3 mm, -, -, m.p. 26.5 - 27°C; 4-methyl-2-sec-amyl 129 - 129.5°C/7 mm, -, -, m.p. 56.5 - 57°C; 4-methyl-2-sec-($2^1 2^2$-dimetapropyl) 117 - 118°C/6 mm, -, -, m.p. 41.5 - 42.5°C; o-cyclopentyl phenols 118.5 - 119.5°C/3 mm, -, -, m.p. 37 - 38°C. The spectra in the solid state (liquid petrolatum) and in solution in $CHCl_3$ differ in that there is apparently some association in the solid state. The frequency behavior is discussed. [Abstracter's note: Complete translation.]

Card 1/1

BEKAURI, N.G.; SHUYKIN, N.I.

Contact-catalytic conversions of C_{11}-C_{18} n-alkanes under hydrogen pressure in a flow system. Izv. AN SSSR. Otd. khim. nauk no.2: 311-318 F '61. (MIRA 14:2)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR i Institut khimii im.P.G.Melikishvili AN GruzSSR.
(Paraffins) (Catalysts)

BEKAURI, N.G.; SHUYKIN, N.I.; SHAKARASHVILI, T.S.

Conversions of n-nonadecane and eiosane over metal oxide catalysts in a flow system under hydrogen pressure. Izv. AN SSSR. Otd. khim. nauk no.2:318-325 F '61. (MIRA 14:2)

1. Institut khimii im.P.G.Melikishvili AN GruzSSR i Institut organicheskoy khimii im.N.D.Zelinskogo AN SSSR.
(Nonadecane) (Eicosane) (Catalysts)

SHUYKIN, N.I.; POZDNYAK, N.A.

Catalytic alkylation of tetralin. Report No.3: Alkylation of tetralin by 1-nonene and n-nonyl alcohol. Izv. AN SSSR. Otd. khim. nauk no.2:326-329 F '61. (MIRA 14:2)

1. Institut organicheskoy khimii im.N.D.Zelinskogo AN SSSR.
(Napthalene) (Nonene) (Nonyl alcohol)

SHUYKIN, N.I.; BEL'SKIY, I.F.; VASILEVSKAYA, G.K.

Catalytic synthesis of 1,5-diketones. Izv. AN SSSR. Otd. khim. nauk no.2:363-364 F '61. (MIRA 14:2)

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

SALIMOV, M.A.; ERIVANSKAYA, L.A.; SHUYKIN, N.I.

Infrared spectra of alkylphenols and their ethers. Report No.3: Infrared spectra of ethylphenols and their ethers. Azerb. khim.zhur. no.3:123-129 '61. (MIRA 14:11)
(Phenols--Spectra)

SHUYKIN, N.I.; SHLYAPOCHNIKOV, V.A.; POZDNYAK, N.A.; LEBEDEV, B.L.

Catalytic alkylation of tetralin. Report No.4: Determination of the structure of alkyltetralins by infrared spectroscopy. Izv.AN SSSR Otd.khim.nauk no.3:466-468 Mr '61. (MIRA 14:4)

1. Institut organicheskoy khimii imeni N.D.Zelinskogo AN SSSR.
(Naphthalene--Spectra)

SALIMOV, M. A.; ERIVANSKAYA, L. A.; SHUYKIN, N. I.

Infrared spectra of alkylphenols and their ethers. Report No.4: Infrared spectra of some ethers of phenols. Azerb.khim. zhur. no.4:93-100 '61. (MIRA 14:11)
(Phenols) (Ethers--Spectra)

POPOV, M.A.; SHUYKIN, N.I.

Catalytic synthesis of nitriles. Report No. 4: Cyanation of allyl alcohol by ammonia. Izv.AN SSSR Otd.khim.nauk no.4:645-648 Ap '61. (MIRA 14:4)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Allyl alcohol) (Propionitrile)

BEL'CHEV, F.V.; SHUYKIN, N.I.; NOVIKOV, S.S.

Catalytic amination of alcohols. Izv.AN SSSR Otd.khim.nauk no.4:
649-652 Ap '61. (MIRA 14:4)

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

SHUYKIN, N.I.; TIMOFEYEVA, Ye.A.; KLEYMENOVA, V.M.

Dehydrogenation of n-alkanes on the catalyst K-5. Izv.AN SSSR Otd. khim.nauk no.4:653-657 Ap '61. (MIRA 14:4)

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

S/030/61/000/005/009/012
B105/B202

AUTHORS: Shuykin, N. I., Corresponding Member AS USSR

TITLE: Annual meeting of the East German Chemical Society

PERIODICAL: Akademiya nauk SSSR. Vestnik, no. 5, 1961, 95-96

TEXT: The annual meeting took place from November 23 to 26, 1960 at Leipzig. It was mainly devoted to the chemistry of aliphatic compounds which serve as the basis of the production of new materials. The meeting was attended by scientists from the German Federal Republic, Poland, Hungary, Czechoslovakia, Bulgaria, Rumania, and West Berlin. Upon invitation of the President of the Society, K. Mayer as well as of E. Leibniz, Director of the Institute for the Technology of Organic Chemistry of the German Academy of Sciences in Berlin the Soviet scientists V. S. Gutyrya, K. P. Lavrovskiy, G. Kh. Khodzhayev, and N. I. Shuykin (leader of the delegation) attended the meeting. In all lectures the importance of theoretical and applied chemistry to the development of economy, culture, and especially to the industry of Eastern Germany was underlined. Furthermore, a series of reports were read, among others by the Polish scientist St.

Card 1/2

Annual meeting of the ... S/030/61/000/005/009/012
B105/B202

Malinovski who reported on new materials related to the problem of aldol condensation in the gas phase. N. I. Shuykin and T. I. Naryshkina spoke about the possibility of the reaction of dehydrogenation of hydrocarbons on activated coal without platinum. As may be seen from the reports, the main attention is paid to the development of new methods for the production of hydrocarbons as well as of methods of their polymerization and polycondensation under formation of various high-molecular compounds. After the end of the meeting the Soviet delegation paid a visit to the Institute for the Technology of Organic Chemistry at Leipzig, where K. P. Lavrovskiy reported on his studies into thermal cracking for the production of lower olefins. The Soviet delegation also paid a visit to the Department of Technical Chemistry at the Technical University in West Berlin.

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Card 2/2

SHUYKIN, N.I.; TYAN' SIN-KHUA [T'ien Hsing-hua]

Hydrodealkylation of cyclohexane homologs on a nickel alumina catalyst under hydrogen pressure. Izv.AN SSSR.Otd.khim.nauk no.5:854-857 My '61. (MIRA 14:5)

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

5.3700 2209, 1164, 1282

23590
S/062/61/000/005/005/009
B118/B208

AUTHORS: Shuykin, N. I., Tulupova, Ye. D., Polyakova, Z. P., and Kondrat'yev, D. A.

TITLE: Catalytic dehydrochlorination of methyl chloro cyclohexanes to methyl cyclohexenes

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 5, 1961, 858 - 863

TEXT: The purpose of the present study was: 1) To find the optimum conditions for the photochemical chlorination of methyl cyclohexane. 2) To study the conditions necessary for a smooth dehydrochlorination of a mixture of methyl chloro cyclohexanes obtained by chlorination of methyl cyclohexane, as well as of methyl chloro cyclohexanes synthesized from the corresponding individual methyl cyclohexanols. 3) To determine the structure of methyl cyclohexenes obtained by catalytic dehydrochlorination. The following four isomeric methyl chloro cyclohexanes (I-IV) and chloromethyl cyclohexane (V) may be theoretically expected in the photochemical chlorination of methyl cyclohexane:

Card 1/4

23590

Catalytic dehydrochlorination...

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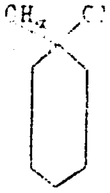
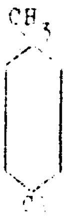
B118/B208



(I)

(II)

(III)



(IV)

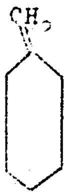
(V)

Three isomeric methyl cyclohexenes (VI - VIII) and the methylene cyclohexane (IX) thus would be bound to result in the dehydrochlorination of this mixture.

(VI)

(VII)

(VIII)



(IX)

Card 3/4

23599
S/062/61/000/005/005/009
B118/B208

Catalytic dehydrochlorination...

The chlorination products were found to contain 79 - 81 % methyl chloro cyclohexane, 9.7 - 12.7 % methyl dichloro cyclohexane, and 2.2 - 3.3 % methyl trichloro cyclohexane (calculated for the reacted methyl cyclohexane) in the chlorination of methyl cyclohexane in the liquid phase, in diffuse day light, and at room temperature. After two hours of reaction the amount of the methyl cyclohexene reacted was 29.5 - 30 % of the initial amount. Dehydrochlorination took place at 220°C under normal pressure, at a volume rate of 1 h^{-1} and in the presence of activated birch charcoal or of coal mixed with 5 % $BaCl_2$. Hydrogen chloride was easily separated to give a mixture of methyl cyclohexenes (63 - 77.6 %). As determined chromatographically, the main products were 1-methyl cyclohexene-1 (24.5 - 42 %) and 1-methyl cyclohexene-3 (58 - 75.5 %). It may be concluded from the analytical data of the resultant methyl cyclohexene mixture that the monochloro derivatives obtained in the photochemical chlorination of methyl cyclohexane consist of a mixture of the four isomeric methyl chloro cyclohexanes (I) - (IV). An exact fractionation is not possible because of the melting points of these chlorides which are very close to each other. It was found by the same method that all three isomeric methyl cyclohexenes are formed in the dehydrochlorination of the reaction product obtained in

Card 3/ 4

23590

S/062/61/000/005/005/009
B118/B208

Catalytic dehydrochlorination...

the reaction of 1-methyl cyclohexanol-2 with concentrated HCl: 1-methyl cyclohexene-1 (17.1 %), 1-methyl cyclohexene-2 (8.5 %), and 1-methyl cyclohexene-3 (71.3 %). The presence of the latter in the mixture indicates that in the above reaction not only one chloride is formed, but a mixture of methyl chloro cyclohexanes which give the mixture of the three isomeric methyl cyclohexenes when HCl is split off. There are 2 figures, 3 tables, and 16 references: 8 Soviet-bloc and 8 non-Soviet-bloc.

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

SUBMITTED: March 16, 1960

Card 4/4

TIMOFEYEVA, Ye.A.; SHUYKIN, N.I.; DOBRYNINA, T.P.

Dehydrogenation of 2, 2, 4-trimethylpentane on an alumina-chromium oxide-potassium oxide catalyst. Izv.AN SSSR.Otd.khim.nauk no.5: 863-867 My '61. (MIRA 14:5)

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

SHUYKIN, N.I.; VIKTOROVA, Ye.A.; POKROVSKAYA, I.Ye.

Alkylation of phenols by compounds with mixed functions. Report 1: Alkenylation of m-cresol with allyl alcohol. Izv.AN SSSR, Otd.khim.nauk no.6:1094-1098 Je '61. (MIRA 14:6)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Cresol) (Allyl alcohol)

SHUYKIN, N.I.; POZDNYAK, N.A.; LUBUZH, Ye.D.

Catalytic alkylation of tetralin. Report 5: Alkylation of tetralin with primary alcohols of composition C_7 and higher. Izv.AN SSSR, Otd.khim.nauk no.6:1098-1102 Je '61. (MIRA 14:6)

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

SHUYKIN, N.I.; POZDNYAK, N.A.

Catalytic alkylation of tetralin by 1-nonene in the presence of aluminum. Izv.AN SSSR.Otd.khim.nauk no.6:1156-1158 Je '61. (MIRA 14:6)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Naphthalene) (Nonene) (Alkylation)

SHUYKIN, N.I.; MINACHEV, Kh.M.; RYASHENTSEVA, M.A.; AFANAS'YEVA, Yu.A.

Transformations of cyclohexand on a palladium humbrin catalyst under hydrogen pressure. Izv. AN SSSR. Otd.khim.nauk no.7: 1315-1319 Jl '61. (MIRA 14:7)

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

AKIMOV, V.M.; SLINKIN, A.A.; RUBINSHTEYN, A.M.; SHUYKIN, N.I.;
KONONOV, N.F.; KASHKOVSKAYA, L.K.

Effect of spinel formation on the regenerative capacity of the Ni - A_2O_3 catalyst. Izv. AN SSSR. Otd.khim.nauk no.8:1516-1518 Ag '61. (MIRA 14:8)

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

VIKTOROVA, Ye.A.; SHUYKIN, N.I.; KOROSTELEVA, G.S.; BARANOVA, N.G.

Alkylation of anisole and phenetole with isoamylenes. Izv. AN SSSR. Otd.khim.nauk no.8:1518-1519 Ag '61. (MIRA 14:8)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
(Anisole) (Phenetole) (Butene)

VIKTOROVA, Ye.A.; SHUYKIN, N.I.; BUBNOVA, B.G.

Alkenylation of p- and o-cresols with piperylene. Izv. AN SSSR. Otd.khim.nauk no.9:1657-1660 S '61. (MIRA 14:9)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Cresol) (Piperylene)

SHUYKIN, N.I.; VIKTOROVA, Ye.A.; POKROVSKAYA, I.Ye.; MALYSHEVA, T.G.

Alkylation of phenols by the compounds having mixed functions.
Report No.2: Alkenylation of o- and p-cresols with allyl alcohol.
Izv. AN SSSR. Otd.khim.nauk no.9:1660-1665 S '61. (MIRA 14:9)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Cresol) (Allyl alcohol)

SHUYKIN, N.I.; VIKTOROVA, Ye.A.; POKROVSKAYA, I.Ye.; MALYSHEVA, T.G.

Alkylation of phenols by compounds with mixed functions.
Report No.3: Alkenylation of m- and p- cresols by 1-butene-4-ol.
Izv.AN SSSR.Otd.khim.nauk no.10:1847-1851 O '61. (MIRA 14:10)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Cresol) (Butenol)

SHUYKIN, N.I.; VIKTOROVA, Ye.A.; POKROVSKAYA, I.Ye.; MALYSHEVA, T.G.

Alkylation of phenols by compounds with mixed functions.
Report No.4: Alkenylation of m- and p-cresols by 1-pentene-5-ol.
Izv.AN SSSR.Otd.khim.nauk no.10:1851-1855 O '61. (MIRA 14:10)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Cresol) (Pentenol)

POPOV, M.A.; SHUYKIN, N.I.

Catalytic synthesis of nitriles. Report No.5: Cyanation of isostructural alcohols by ammonia. Izv.AN SSSR.Otd.khim.nauk no.10:1855-1858 O '61. (MIRA 14:10)

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

SHUYKIN, N.I.; VIKTOROVA, Ye.A.; LI SHI [Li Shih]; KARAKHANOV, E.A.

Conversions of n.butylphenols on dehydrocyclization catalysts.
Izv.AN SSSR.Otd.khim.nauk no.11:2054-2058 N '61. (MIRA 14:11)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Phenol) (Catalysis)

SHUYKIN, N.I.; TULUPOVA, Ye.D.; LEBEDEV, B.L.

Catalytic conversions of 1-methyl-1-cyclohexene. Izv.AN SSSR.-Otd.khim.nauk no.11:2058-2063 N '61. (MIRA 14:11)

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

SHUYKIN, N.I.; AN, V.V.

Reaction of tetrahydrosylvan and sylvan with sulfur. Izv.AN SSSR.Otd.khim.nauk no.11:2086-2088 N '61. (MIRA 14:11)

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

SHUYKIN, N.I.; VIKTOROVA, Ye.A.; POKROVSKAYA, I.Ye.

Alkylation of phenols by compounds having two functions. Report No.5: Catalytic alkylation of m- and p-cresols by 1,3-butanediol. Izv. AN SSSR Otd.khim.nauk no.12:2192-2195 D '61. (MIRA 14:11)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Cresol) (Butanediol)

SHUYKIN, N.I.; LEBEDEV, B.L.

Thermal alkylation of tetrahydrosylvan by ethylene. Izv. AN SSSR Otd.khim.nauk no.12:2195-2198 D '61. (MIRA 14:11)

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

40195
S/081/62/000/013/038/054
B156/B101

11.0121

AUTHORS: Bekauri, N. G., Shuykin, N. I., Shakarashvili, T. S.

TITLE: Motor fuel properties of high-molecular alkanes of normal structure improved by catalytic cyclization

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 13, 1962, 530, abstract 13M169 (Tr. In-ta khimii. AN GruzSSR, v. 15, 1961, 141-157)

TEXT: The catalytic transformations occurring in normal C_{11}-C_{18} alkanes in the presence of catalysts have been investigated. The catalysts were 0.5 % Pt/Al_2O_3, 0.5 % Pd/Al_2O_3, 0.5 % Pt/gumbrin, and 0.5 % Pd/gumbrin. The experiments were carried out in a flow of H_2 at 450°C and 30 atm. It was found that under these conditions cyclization and isomerization occur, resulting in the formation of products with higher calorific values (+30-990 kcal/kg) and lower solidification points (16-48.5°C lower). Starting with C_{16}-C_{17}, in the presence of 0.5 % Pt/gumbrin or 0.5 % Pd/gumbrin, normal alkanes undergo partial hydro-cracking, as well as polycyclization

Card 1/2

SHUYKIN, N.I.; LEBEDEV, B.L.; POZDNYAK, N.A.; LUBUZH, Ye.D.

Catalytic alkylation of tetralin in the presence of metallic aluminum.
Neftekhimiia 1 no.1:39-45 Ja-F '61. (MIRA 15:2)

1. Institut organicheskoy khimii AN SSSR imeni Zelinskogo.
(Naphthalene) (Alkylation)

VIKTOROVA, Ye.A.; SHUYKIN, N.I.; POKROVSKAYA, I.Ye.; ALEKSANDROVA, S.L.

Alkylation of o-, m- , and p-cresols by 1,4-dichlorobutane. (MIRA 15:2)
Neftekhimiia 1 no.5:648-452 S-O '61.

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova, kafedra khimii nefti.

(Cresol)(Butane)

PLOTNIKOV, Yu. N.; SMIRNOV, V.S.; TIMOFEYEVA, Ye. A.; KLEYMENOVA, V.M.;
SHUYKIN, N.I.

Dehydrogenation of n-alkanes in a fluidized bed of oxide catalysts.
Kin. i kat. 2 no.2:267-272 Mr-Ap '61. (MIRA 14:6)

1. Institut organicheskoy khimii imeni N. D. Zelinskogo AN SSSR.
(Paraffins)
(Dehydrogenations)

TIMOFEYEVA, Ye.A.; SHUYKIN, N.I.; DOBRYNINA, T.P.

Poisoning of chromium-alumina catalyst with cyclopentadiene and furfurole. Kin.i kat. 2 no.4:574-580 Jl-Ag '61. (MIRA 14:10)

1. Institut organicheskoy khimii AN SSSR.
(Catalysts)

SHUYKIN, N.I.; LOPATIN, B.V.; LEBEDEV, B.L.

Determination of compounds of the furan and tetrahydroxyfuran series by infrared spectroscopy. Zhur.anal.khim. 16 no.5:639-642 S-O '61. (MIRA 14:9)

1. Zelinsky Institute of Organic Chemistry, Academy of Sciences U.S.S.R., Moscow.

(Furan--Spectra)

S/032/61/027/008/004/020
B107/B206

AUTHORS: Shuykin, N. I., An, V. V., and Lebedev, V. L.

TITLE: Analysis of mixtures of furan homologs and tetrahydrofuran homologs by gas-liquid chromatography

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 8, 1961, 976-977

TEXT: The following mixtures were investigated: 1) α-methyl furan, α-ethyl furan, α-n-propyl furan, α-n-butyl furan, α-n-amyl furan; 2) tetrahydrofuran, α-methyl tetrahydrofuran, α-ethyl tetrahydrofuran, α-n-propyl tetrahydrofuran, α-isobutyl tetrahydrofuran; 3) α-methyl furan, α-methyl tetrahydrofuran. The chromatographic device used was previously described in detail (Ref. 1: B. A. Rudenko, S. S. Yufit, L. N. Ivanov, and V. F. Kucherov. Izvestiya AN SSSR, 1147 (1960)). The 2 m long column was filled with diatomite of from 0.25 to 0.5 mesh, soaked with 30 % tricresyl phosphate. The mobile phase was hydrogen, passed through at an excess pressure of 0.2 kg/cm^2 and at a rate of 40 ml/min. The maximum temperature was 95°C. The mixtures may be well separated under these conditions; by means of standard mixtures, the absolute contents may be

Card 1/2

S/032/61/027/008/004/020
B107/B206

Analysis of mixtures...

determined to within ± 2.5 %. The determination takes about two hr. Tetrahydrofuran with α-methyl tetrahydrofuran, which are not separated **under the conditions** mentioned, are an exception. The logarithm of the volume maintained constant is a linear function of the number of carbon atoms; this was already previously ascertained for other series of homologs (Ref. 2, 3; see below). The relation is temperature-dependent: The logarithm of the volume maintained constant is directly proportional to the reciprocal value of the absolute temperature. This relation holds up to 100°C and more (Ref. 4; see below). The authors checked it for α_1, α'-methyl-ethyl furan and α_1, α'-methyl-ethyl tetrahydrofuran between 70 and 95°C. There are 4 figures, 2 tables, and 4 references: 1 Soviet and 3 non-Soviet. The three references to English-language publications read as follows: Ref. 2: A. T. James, A. J. P. Martin, Biochem. J. 50, 679 (1952); Ref. 3: N. H. Ray. J. Appl. chem., 4, 21 (1954); Ref. 4: A. B. Littlwood, C. S. G. Phillips, D. T. Price. J. Chem. Soc., 1480 (1955).

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

Card 2/2

NARYSHKINA, T.I.; SHUYKIN, N.I.

Synthesis of new homologs of cyclopentadiene. Zhur.ob.khim. 30 no.10:3205-3207 0 '61. (MIRA 14:4)

1. Institut organicheskoy khimii AN SSSR.
(Cyclopentadiene)

SHUYKIN, N.I.

In memory of Nikolai Dmitrievich Zelinskii; on the 100th anniversary of his birth. Zhur. ob. khim. 31 no.1:I-VIII Ja '61.
(MIRA 14:1)

(Zelinskii, Nikolai Dmitrievich, 1861-1953)

S/079/61/031/003/005/013
B118/B207

AUTHORS: Shuykin, N. I., Bel'skiy, I. F., and Grushko, I. Ye.

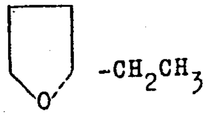
TITLE: Reaction of α-alkyl tetrahydrofuranes with silicon tetrachloride

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 3, 1961, 815-819

TEXT: The authors studied the reaction of α-ethyl and α-propyl tetrahydrofurane with $SiCl_4$, and showed that the ethyl and propyl groups exert the same effect upon the opening direction of the tetrahydrofurane cycle as the methyl radical in tetrahydrosylvane. The main reason for studying the hydrolysis and thermal splitting of δ-chloro alkoxy chloro silanes thus obtained was to determine the structure of the resulting chloro hydrins and chloro alkenes. The above furane derivatives react with $SiCl_4$ more difficultly than the latter with tetrahydrosylvane. This is obviously due to the steric "screening effect" of the alkyl side group upon the adjacent C-O bond. α-ethyl tetrahydrofurane splits quantitatively (at a molar ratio of 2:2 to $SiCl_4$) after heating for 17 hr, in the presence of 2 g of anhydrous

Card 1/4

zinc chloride and under the formation of chloro alkyl esters of orthosilicic acid, while, under the same conditions, 35% of the α-propyl tetrahydrofurane remains unchanged. These two compounds are split by $SiCl_4$ only at the C-O bond which is adjacent to the alkyl group. This was confirmed by hydrolysis of the chloro alkyl esters of orthosilicic acid, (δ-chloro alkoxy chloro silane) with water, which gives rise to the formation of δ-chlorine-substituted hexyl or heptyl alcohol, from which acetates were obtained. Subsequently, these acetates were reduced to n-hexyl and n-heptyl acetates on Pt-C at 300°C in the vapor phase:



$$-CH_2CH_3 \xrightarrow[(ZnCl_2)]{SiCl_4} SiCl_n-(OCH_2CH_2CH_2CHClCH_2CH_3)_{4-n} \xrightarrow{H_2O}$$

$$\longrightarrow HOCH_2CH_2CH_2CHClCH_2CH_3 \xrightarrow{(CH_3CO)_2O} CH_3COOCH_2CH_2CH_2CHClCH_2CH_3 \longrightarrow$$

$$\xrightarrow[Pt/C\ 300^{\circ}C]{H_2} CH_3COOCH_2CH_2CH_2CH_2CH_3.$$ Owing to these results, it is assumed

that in the reaction of α-alkyl tetrahydrofuranes with $SiCl_4$ in the presence of ZnO_2, the former open their cycles only at the C-O bond which is adjacent to the alkyl radical. The δ-chloro alkoxy chloro silanes obtained in the above reaction are thermally extremely unstable and decompose when distilled. Chloro alkenes (40-50% yield) are one of the decomposition products. The chloro pentenes obtained by thermal decomposition of δ-chloro pentoxy chloro silanes were subjected to structural analysis; the latter result from the reaction of $SiCl_4$ with tetrahydrosylvane. The position of the chlorine atom and the double bond was studied: a Grignard compound was obtained from the chloro pentenes, which, after oxidation and treatment with dilute hydrochloric acid, yielded a mixture of unsaturated primary amyl alcohols when cooled. These were converted into primary amyl alcohols when hydrogenated. The position of the double bond was determined by studying the hydrolysis products of the organo-magnesium compound resulting from the mixture of chloro pentenes; analysis showed that the pentenes thus obtained consisted of 85% pentene-2 and 15% pentene-1. Thus, the chloro pentenes obtained from tetrahydrosylvane and $SiCl_4$ contain an initially bound chlorine atom in

S/079/61/031/003/005/013
B118/B207

Reaction of ...

position 5, and two double bonds in positions 1 and 2. There are 6 references: 2 Soviet-bloc and 4 non-Soviet-bloc. The 2 references to English-language publications read as follows: Faraday's Encyclopedia of Hydrocarbon compounds. C_7. Manchester (1953); US Patent 2, 424, 184 (1947).

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

SUBMITTED: April 23, 1960

Card 4/4

SHUYKIN, N.I.

Annual meeting of the Chemical Society of the German Democratic Republic. Vest.AN SSSR 31 no.5:95-96 My '61. (MIRA 14:6)

1. Chlen-korrespondent AN SSSR.
(Germany, East—Chemical societies)

SHUYKIN, N.I.; MINACHEV, Kh.M.; ALIYEV, V.S.; SIDORCHUK, I.I.; RYASHENTSEVA, M.A.

Reforming of the 60-140° gasoline fraction and of standard gasoline B-70 from Baku crudes on a platinum catalyst. Zhur. prikl. khim. 34 no.2:461-464 F '61. (MIRA 14:2)

(Gasoline)

BEL'SKIY, I.F.; SHUYKIN, N.I.; [illegible], G.K.

Hydrogenation of carbonyl-containing furan derivatives. Conversion of 2-alkyl-5-acylfurans into 2,6-dialkyltetrahydropyrans. Dokl. AN SSSR 136 no. 3:591-594 Ja '61. (MIRA 14:2)

1. Institut organicheskoy khimii imeni N.D. Zelinskogo AN SSSR.
2. Chlen-korrespondent AN SSSR (for Shuykin).

(Furan) (Pyran)

S/020/61/136/004/017/026
B016/B075

AUTHORS: Shuykin, N. I., Corresponding Member AS USSR and Naryshkina, T. I.

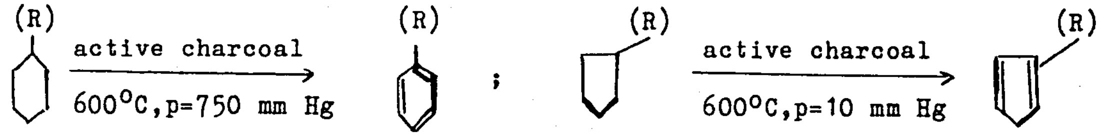
TITLE: Dehydrogenation of 5- and 6-Membered Cyclanes in the Presence of Active Charcoal

PERIODICAL: Doklady Akademii nauk SSSR, 1961, Vol. 136, No. 4, pp. 849-851

TEXT: The authors report on their study of the catalytic properties of active charcoal (of the Perm' Works) in dehydrogenating cyclopentane (I), methyl cyclopentane (II), cyclohexane (III), and methyl cyclohexane (IV). A parallel investigation was performed concerning the influence exerted by temperatures between 550° and 600°C upon cyclanes without the use of charcoal. Results are summarized in Table 1. From these data, the authors concluded that, under the action of charcoal, the cyclanes are subjected to a strong dehydrogenation into corresponding products. Thus, 97% benzene are produced from (III) at 600°C, and 100% toluene from (IV) at

Card 1/

atmospheric pressure. At a pressure of 10-15 mm Hg, (I) and (II) are converted into the corresponding pentadienes with a yield of 18 or 29%, respectively.



where R=H or CH_3. Neither (I) nor (II) could be dehydrogenated at 600°C without charcoal. At 550°C, (III) remained unchanged, (IV), however, yielded 2% toluene (at 600°C, 6%). At 600°C, (III) yielded 6% benzene. There are 1 table and 10 Soviet references.

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

SUBMITTED: September 30, 1960

S/020/61/136/005/020/032
B103/B208

AUTHORS: Shuykin, N. I., Corresponding Member AS USSR, Kovach, E., Bel'skiy, I. F., and Bartok, M.

TITLE: Catalytic hydrogenation of organic oxides in the flow system at increased hydrogen pressure

PERIODICAL: Doklady Akademii nauk SSSR, v. 136, no. 5, 1961, 1120-1122

TEXT: The authors wanted to obtain systematic experimental data on the hydrogenation of organic oxides, in order to elucidate the following problems: 1) Determination of the relative stability of various oxide rings to rupture by catalyzed hydrogen; 2) determination of the direction in which the oxide ring is ruptured in the hydrogenation of asymmetric organic oxides. The data available are not sufficient to solve these problems. For this purpose, the authors extended their studies of the hydrogenation of γ-oxides (homologs of tetrahydrofuran, Ref. 3) to other oxides. They hydrogenated the simplest representatives of asymmetric α-, β-, and γ-oxides, i.e., A) propylene oxide, B) α-methyl-trimethylene oxide, and C) α-methyl tetrahydrofuran oxide at

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S/020/61/136/005/020/032
B103/B208

Catalytic hydrogenation of organic ...

50 atm hydrogen pressure on skeleton catalysts such as Cu - Al, and Ni - Al catalysts. Furthermore, B) was hydrogenated on Ni - Zn catalyst, and D) α-n-propyl tetrahydrofuran oxide on Ni - Al. I) Hydrogenation on Cu - Al. ad A): About 80% of A) was converted to primary propyl alcohol at 190-200°C. The rest of the catalyzate were high-boiling substances. ad B): 90-95% of primary butyl alcohol was formed at 230-250°C. ad C): The stability of the tetrahydrofuran ring was found to be much higher on the Cu - Al catalyst, since the conversion did not exceed 10% even at 300°C. The following products of hydrogenation were obtained: n-pentane (30% calculated for the converted quantity of C)), pentanol-1 (35%), and pentanol-2 (35%). II) Hydrogenation on Ni - Al catalyst: C) was converted to pentanol-2 only (about 15%) at 250°C. D) was hydrogenated to heptanol-4 (60%) at 250°C. The authors conclude from the latter reaction that the stability of the tetrahydrofuran ring to hydrogenolysis is determined by the length of the alkyl radical in the α-position. Summing up: A) and B) behave in an analogous manner in the hydrogenation of asymmetric α- and β-oxides both on Cu - Al, and on Ni - Al catalysts with respect to the rupture of the oxide ring.

S/020/61/136/005/020/032
B103/B208

Catalytic hydrogenation of organic ...

On Cu - Al, they are ruptured with sufficient selectivity on the C-O bond adjacent to the alkyl substituent. A) and B), on the other hand, undergo hydrogenolysis in both directions on Ni - Al, i.e., also on the C-O bond not adjacent to the alkyl substituent, with about equal intensity. The asymmetric γ-oxides are selectively hydrogenated on Ni - Al in that their ring is ruptured only on the C-O bond not adjacent to the alkyl radical. Hydrogenolysis of γ-oxides occurs in both directions on the Cu - Al catalyst. At atmospheric pressure, D) is also ruptured on Ni - Al on the C-O bond adjacent to the alkyl side group (Ref. 3). The same rupture occurs in B) on Ni - Zn catalyst. There are 4 references: 2 Soviet-bloc and 2 non-Soviet-bloc.

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

SUBMITTED: October 21, 1960

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Card 3/3

BEL'SKIY, I.F.; SHUYKIN, N.I.

Conversion of amines of the furan series to pyrrolidine homologues. (MIRA 14:2)
Dokl. AN SSSR 137 no.2:331-332 Mr '61.

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
2. Chlen-korrespondent AN SSSR (for Shuykin).
(Amines) (Pyrrolidine)

SHUYKIN, N.I.; BEL'SKIY, I.F.

Catalytic synthesis of 2-n-propyl-4-alkyltetrahydrofurans. Dokl. AN SSSR 137 no.3:622-623 Mr '61. (MIRA 14:2)

1. Institut organicheskoy khimii im. N.D.Zelinskogo. 2.Chlen-korrespondent AN SSSR (for Shuykin).
(Furan)

BEL'SKIY, I.F.; SHUYKIN, N.I.; KARAKHANOV, R.A.

Isomerization and dehydrogenation reactions of the tetrahydrofuran cycle. Dokl.AN SSSR 138 no.4:829-830 Je '61. (MIRA 14:5)

1. Institut organicheskoy khimii imeni N.D.Zelinskogo AN SSSR.
2. Chlen-korrespondent AN SSSR (for Shuykin).

(Furan)

SHUYKIN, N.I.; BEL'SKIY, I.F.; KARAKHANOV, R.A.

Catalytic dehydrogenation of dihydrofurans. Dokl.AN SSSR 138 no.5:1136-1138 Je '61. (MIRA 14:6)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
2. Chlen-korrespondent AN SSSR (for Shuykin).

(Furan) (Dehydrogenation)

SHUYKIN, N.I.; LEBEDEV, B.L.

Alkylation of tetrahydrofuran by ethylene. Dokl. AN SSSR 139 no.1:131-133 Jl '61. (MIRA 14:7)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.
2. Chlen-korrespondent AN SSSR (for Shuykin).

(Furan) (Ethylene)

SHUYKIN, N.I.; BEL'SKIY, I.F.; SHOSTAKOVSKIY, V.M.

Catalytic hydrogenation of esters. Dokl. AN SSSR 139 no.3:634-636 Jl '61. (MIRA 14-7)

1. Institut organicheskoy khimii im. N.D. Zelinskogo Akademii nauk SSSR. 2. Chlen-korrespondent AN SSSR (for Shuykin).
(Esters) (Hydrogenation)

37

S/020/61/141/003/010/021
B103/B101

5 3700 1209

AUTHORS: Shuykin, N. I., Corresponding Member AS USSR, Grushko, I. Ye., and Bel'skiy, I. F.

TITLE: Interaction of α-methyl trimethylene oxide with chloro silane derivatives, aluminum chloride and titanium tetrachloride

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 141, no. 3, 1961, 649-651

TEXT: The present work studies the interaction of α-methyl-trimethylene oxide (MTMO) with (1) $SiCl_4$, (2) CH_3SiCl_3, (3) $C_6H_5SiCl_3$, (4) $AlCl_3$, (5) $TiCl_4$, and (6) HCl. The position of the cleavage of the β-oxide ring containing an alkyl group in α-position was to be established. (1), (2), and (3) react vigorously with MTMO at room temperature without a catalyst. Distillation under reduced pressure yielded chlorine-substituted esters of ortho-silicic acid. The reaction therefore proceeds according to the following processes:

X

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30722
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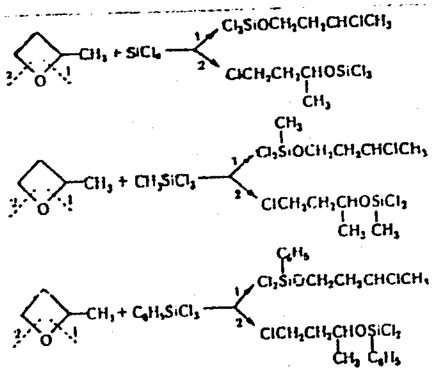
B103/B101

Interaction of α-methyl ...



These esters, $Cl_2SiOC_4H_8Cl$ (b.p. 56°C/5 mm Hg), $CH_3SiCl_2OC_4H_8Cl$ (b.p. 39°-42°C/5 mm Hg), and $C_6H_5SiCl_2OC_4H_8Cl$ (b.p. 132°-136°C/8 mm Hg), yielded the chlorohydrins on hydrolysis. To (6): Dry HCl was passed thru a layer of pure MTMO at the boiling point of the latter. By the heat of reaction, the temperature of reaction mixture finally rose to 105°-110°C. To (4) and (5): The reaction with MTMO is so vigorous, that it can only be carried out satisfactorily at -50° and -60°C. Hydrolysis of the reaction products by water in etheric medium yields alcohols containing primary or secondary chlorine atoms. All the Raman spectra of these chlorohydrins exhibited an extremely intense band at 660 cm^{-1} characteristic for primary chlorine atoms. The band indicating secondary Cl atoms was weaker. From this it is assumed that the chlorohydrin mixture contains mainly 4-chloro 2-butanol. It is concluded that the treatment of α-MTMO with (1)-(6) primarily leads to cleavage at the ether bond not adjoining a methyl group. In this connection it is pointed out that unsymmetric γ-oxides, e.g. tetrahydrosilvan, are cleaved at the C-O bond next to a methyl group under the influence of chloro silanes. The authors thank G. K. Gayvoronskaya for taking the spectra. There are 1 table and 6 references: 1 Soviet and 5 non-Soviet. The four references to English-language publications read as follows: C. G. Derrick, D. W. Bissel, J. Am. Chem. Soc., 38, 2483 (1916); S. Searles et al. J. Am. Chem. Soc., 79, 952 (1957); R. J. Meltzer, J. A. King, J. Am. Chem. Soc., 75, 1356 (1953); F. Sondheimer, R. B. Woodward, J. Am. Chem. Soc., 75, X

30722

S/020/61/141/003/010/021
B103/B101

Interaction of α-methyl ...

X

5438 (1953).

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

SUBMITTED: July 13, 1961

Card 4/4

SHUYKIN, V.

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PHASE I BOOK EXPLOITATION SOV/6195

Nauchnaya konferentsiya institutov khimii Akademiy nauk Azerbaydshanskoy, Armyanskoy i Gruzinskoy SSR. Yerevan, 1957.

Materialy nauchnoy konferentsii institutov khimii Akademiy nauk Azerbaydzhanskoy, Armyanskoy i Gruzinskoy SSR (Materials of the Scientific Conference of the Chemical Institutes of the Academies of Sciences of the Azerbaydzhan, Armenian, and Georgian SSR) Yerevan, Izd-vo AN Armyanskoy SSR, 1962. 396 p. 1100 copies printed.

Sponsoring Agency: Akademiya nauk Armyanskoy SSR. Institut organicheskoy khimii.

Resp. Ed.: L. Ye. Ter-Minasyan; Ed. of Publishing House: A. G. Sikuni; Tech. Ed.: G. S. Sarkisyan.

PURPOSE: This book is intended for chemists and chemical engineers, and may be useful to graduate students engaged in chemical research.

COVERAGE: The book contains the results of research in physical, inorganic, organic, and analytical chemistry, and in chemical engineering, presented at the Scientific Conference held in Yerevan, 20 through 23 November 1957. Three reports of particular interest are reviewed below. No personalities are mentioned. References accompany individual articles.

petroleum fraction contained 9.6 and 2.5% of normal paraffins and 17.5 and 26.8% of isoparaffins, respectively. The study showed the possibility of using urea to separate normal alkanes when their content is 2.5% in hydrocarbon mixtures. The method is important in dewaxing petroleum and in deteming the exact content of alkanes and isoalkanes in hydrocarbon mixtures since branched paraffins are extremely desirable components of gasoline and ligroin-kerosene fractions used in jet engines.

Bekauri, N. G., N. I. Shuykin, and T. S. Shakarashvili. The Problem of Enriching Motor Fuel By Catalytic-Contact Conversion of Normal Alkanes of The Kerosene-Gas Petroleum Fraction of Oil. (Institut khimii Akademiya nauk Gruzinskoy SSR) 306

Conditions for the isomerization of n-alkanes $C_{11}H_{24}$ - $C_{20}H_{42}$ in the kerosene-gas petroleum fraction of oil boiling at 190-350°C, and the properties of "gumbrin" (a local

Card 8/11

2/2

SHUYKIN, N.I.; VIKTOROVA, Ye.A.; POKROVSKAYA, I.Ye.; KARAKHANOV, E.A.

Alkylation of phenols by compounds having two functions. Report No.6: Catalytic alkylation of ρ-cresol by 1,4-butanediol and tetrahydrofuran. Izv. AN SSSR Otd.khim.nauk no.1:122-124 Ja '62. (MIRA 15:1)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Cresol) (Butanediol) (Furan)

KOVACH, E.; SHUYKIN, N.I.; BARTOK, M.; BEL'SKIY, I.F.

Thermal conversions of α-substituted β-oxides. Izv. AN SSSR Otd.-khim.nauk no.1:124-130 Ja '62. (MIRA 15:1)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR i Kafedra organicheskoy khimii Segedskogo universiteta, Seged, Vengriya.

(Oxides) (Substitution (Chemistry))

SHUYKIN, N.I.; BEL'SKIY, I.F.; KARAKHANOV, R.A.

Catalytic dehydrogenation of dihydrofurans. Izv. AN SSSR Otd.khim.-nauk no.1:138-142 Ja '62. (MIRA 15:1)

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

33982
S/062/62/000/002/007/013
B117/B138

5.3300

AUTHORS: Shuykin, N. I., and Pozdnyak, N. A.

TITLE: Catalytic alkylation of tetralin. 6. Alkylation of tetralin by secondary alcohols

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 2, 1962, 324-327

TEXT: The alkylation of tetralin by primary alcohols with 6-isoalkyl tetralins as the product had been described in previous papers (Ref. 1: Izv. AN SSSR. Otd. khim. n. 1961, 326; Ref. 2: Izv. AN SSSR. Otd. khim. n. 1961, 1098). The same result was now achieved using secondary alcohols. The following secondary alcohols were synthesized by Grignard's reaction: nonanol-2, $C_9H_{20}O$, boiling point 194-195°C (747 mm Hg), yield 65.5 %; nonanol-3, $C_9H_{20}O$, boiling point 96-98°C (8 mm Hg), yield 67.3 %; undecanol-5, $C_{11}H_{24}O$, boiling point 139-140°C (17 mm Hg), yield 40.5 %; tetradecanol-7 (for the first time) $C_{14}H_{30}O$, boiling point 138-140°C (6 mm Hg) (after recrystallization from hexane: melting point 42.0°C,

Card 1/3

33982
S/062/62/000/002/007/013
B117/B138

Catalytic alkylation of...

solidification point 41.6°C), yield 51.5 %. The tetralin alkylation, in a 1:1 ratio to alcohol, took place in the presence of zinc chloride at atmospheric pressure and lasted 5 hr. 155°C was found to be the optimum temperature in alkylation with nonanols. Experiments with other alcohols were conducted at the temperatures at which the reaction began. Secondary alcohols react with tetralin at lower temperatures than primary alcohols. Alkylation with the above mentioned alcohols yielded 6-isoalkyl tetralins in a 75 % yield from the reacting tetralin. Yields as referred to alcohol: 49.5 % of nonanol-2; 45.0 % of nonanol-3; 33.6 % of undecanol-5, and 17.6 % of tetradecanol-7. The following alkyl tetralins were synthesized: Nonyl tetralin, boiling point 168-175°C (6 mm Hg), n_D^{20} 1.5130, MR 84.33 (84.14); undecyl tetralin, boiling point 212-214°C (6 mm Hg), n_D^{20} 1.5113, MR 95.06 (94.38); tetradecyl tetralin, boiling point 223-224°C (6 mm Hg), MR 107.21 (103.23). Their structure was determined from the IR-spectra taken on an ИКС-12 (IKS-12) instrument. Here also as in previous experiments, the following were separated besides alkyl tetralins: nonconverted tetralin, alkenes corresponding to the used alcohols, and nonconverted alcohol in experiments with undecanol and tetradecanol.

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Catalytic alkylation of...

S/062/62/000/002/007/013
B117/B138

I. N. Lifanova is thanked for the IR-spectra. There are 4 tables and 5 references: 3 Soviet and 2 non-Soviet. The reference to the English-language publication reads as follows: R. H. Pickard, I. Kenyon, J. Amer. Chem Soc. 99, 55 (1911).

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

SUBMITTED: June 30, 1961

X

Card 3/3

SHUYKIN, N.I.; ERIVANSKAYA, L.A.; KOMISSAROVA, N.L.;
YAN AY-SI [Yang Ai-hsi]

Catalytic dehydrocyclization of 2-n.hexly- and 2-sec.hexylnaphthalenes. Izv. AN SSSR Otd.khim.nauk no.2:327-333 F '62.
(MIRA 15:2)

1. Moskvskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Naphthalene)
(Aromatization)

S/058/63/000/003/030/104
A062/A101

AUTHORS: Salimov, M. A., Erivanskaya, L. A., Shuykin, N. I.

TITLE: Infrared spectra of alkyl phenols and their simple ethers. Report 5. Infrared spectra of some simple ethers of alkyl substituted phenols

PERIODICAL: Referativnyy zhurnal, Fizika, no. 3, 1963, 31, abstract 3D212 ("Azerb. khim. zh.", 1962, no. 3, 67 - 73, summary in Azerb. language)

TEXT: Infrared spectra (4,000 -,400 cm^{-1}) of some simple ethers of cresols and 3,4-xylenol were obtained and examined. It was shown therein that the formation of ethers is accompanied by the disappearance of a number of bands, related to the oscillation of the hydroxyl group, and the appearance of intense bands 1,250 - 1,230 and 1,180 - 1,150 cm^{-1} in the region of valent oscillations of the C-O bond. In the spectra of methyl ethers of cresol a sharp decrease of the intensity of the bands of methyl groups is observed. The spectra of ethers in the long wave region are much richer than the spectrum of the initial cresols. The formation of an ether group brings about the activation of a series of os-

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S/058/63/000/003/030/104
A062/A101

Infrared spectra of alkyl phenols and...

cillations of the aromatic ring and the appearance of def. oscillations of the C-O bond ~500 - 480 cm^{-1}. For Report 4 see RZhFiz, 1962, 4V152.

[Abstracter's note: Complete translation]

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S/062/62/000/003/011/014
B117/B144

AUTHORS: Nekrasova, V. A., and Shuykin, N. I.

TITLE: Catalytic synthesis of hexachloro butadiene

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 3, 1962, 496-498

TEXT: The preparation of hexachloro butadiene by means of catalytic dehydrochlorination of polychloro butanes (1,1,2,3,4,4-hexachloro butane and 1,1,1,2,3,4,4,4-octachloro butane) was studied. The first series of experiments was conducted in a stream of chlorine (1.3 l/hr) passing through iron shavings at a temperature of 475°C (optimum 470-475°C) and volume rate of 0.17 hr^{-1}. Here, the yield in hexachloro butadiene was 37 %. Various catalysts were used in the second series of experiments: shell lime, kieselguhr and $Cr_2O_3+Al_2O_3+MgO$ (45:30:25 mole%). Best results were obtained in the presence of glowed Crimean shell lime: yield 57.2 %. The reaction in the presence of the mixed catalyst was accompanied by strong gas separation and produced a yield of only 35.3 %. The third

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SHUYKIN, N.I.; LEBEDEV, B.L.

Alkylation of tetrahydrofuran by ethylene in the presence of di-tert-butyl peroxide. Izv.AN SSSR.Otd.khim.nauk no.3: 533-535 Mr '62. (MIRA 15:3)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Furan) (Ethylene) (Butyl peroxide)

36639

S/062/62/000/004/009/013
B110/B101

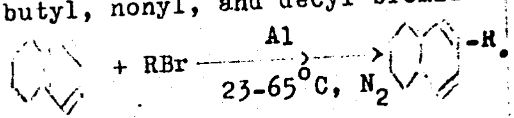
11.013V

AUTHORS: Shuykin, N. I., Pozdnyak, N. A., and Lifanova, I. N.

TITLE: Catalytic alkylation of tetralin. Communication 7. Alkylation of tetralin with alkyl halides in the presence of metallic aluminum

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 4, 1962, 695-697

TEXT: Tetralin was alkylated with propyl, butyl, nonyl, and decyl bromides in an N_2 atmosphere, in the presence of Al:



The yields at 65°C were 75.6, 92.5, 98.8, 77.3, and 53.5%, respectively. In air, no alkylation took place with butyl and heptyl bromides even after 6 hrs' stirring; only at 105°C, butyl tetralin formed in 34% yield. Partial isomerization of the primary alkyl radicals occurred at 65°C; alkyl tetralins

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S/062/62/000/001/009/013
B110/B101

Catalytic alkylation of ...

with an alkyl group of normal structure were formed at 23°C by alkylation with n-propyl and n-butyl bromides. Optimum conditions: 5 hrs' heating at 65°C in nonane medium and N_2 atmosphere. Under these conditions, the reaction occurred after stirring for 10 - 40 min. At 65°C, n-heptyl bromide reacts almost completely with tetralin. The yields depended on the chain length of the alkyl bromide: At 23°C, the reaction with n-propyl bromide in nonane solution started 10 min after mixing, with butyl bromide after 20 min, but with heptyl bromide it did not even after 4 hrs. Without a solvent, n-propyl and n-butyl bromide reacted immediately, heptyl bromide after 2 hrs, nonyl bromide after 4.5 hrs, and decyl bromide after 7 hrs. At 23°C, the reaction with n-propyl and n-butyl bromides was completed after 5 hrs, and with n-heptyl, n-nonyl, and n-decyl bromides after 125 hrs; this has been ascertained from the separation of hydrogen bromide. The yields of propyl, butyl, and heptyl tetralins were always higher than those of nonyl and decyl tetralins. The infrared spectra showed that normal and isomeric 6-mono- and 6,7-dialkyl tetralins were formed at 65 and 105°C, but only 6-alkyl tetralins with a normal alkyl

X

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group at 23°C with n-propyl and n-butyl bromides. There are 1 figure and 2 tables.

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

SUBMITTED: October 28, 1961

POPOV, M.A.; SHUYKIN, N.I.

Catalytic reduction amination of butanal. Izv.AN SSSR.Otd.khim.-nauk no.6:1082-1086 '62. (MIRA 15:8)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Butyraldehyde) (Reduction, Chemical)
(Amination)

SHUYKIN, N.I.; BEL'SKIY, I.F.; BARKOVSKAYA, L.Ya.; DRONOV, V.I.;
ALALYKINA, L.A.

Synthesis of 2,4- and 2,5- dialkylthiophanes. Izv.AN SSSR.-
Otd.khim.nauk no.6:1093-1098 '62. (MIRA 15:8)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR i
Institut organicheskoy khimii Bashkirskogo filiala AN SSSR.
(Thiophene)

SHUYKIN, N.I.; AN, V.V.

Catalytic conversions of five- and six-membered cyclic sulfides.
Izv.AN SSSR.Otd.khim.nauk no.8:1452-1454 Ag '62. (MIRA 15:8)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Sulfur organic compounds)

SHUYKIN, N.I.; POZDNYAK, N.A.

Catalytic alkylation of tetralin. Report No.8: Alkylation of tetralin by alkenes in the presence of aluminum. Izv.AN SSSR.Otd.khim.nauk no.8:1455-1457 Ag '62. (MIRA 15:8)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Naphthalene) (Olefins) (Alkylation)

SHUYKIN, N.I.; TIMOFEYEVA, Ye.A.; DOBRYNINA, T.P.; PLOTNIKOV, Yu.N.;
PETRYAYEVA, G.S.; GAYVORONSKAYA, G.K.

Catalytic dehydrogenation of isohexanes. Izv.AN SSSR Otd.khim.
nauk no.8:1457-1465 Ag '62. (MIRA 15:5)

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

SHUYKIN, N.I.; AN, V.V.

Isomerization of simple heterocyclic compounds. Izv.AN SSSR.Otd. khim.nauk no.8:1476-1478 Ag '62. (MIRA 15:8)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Heterocyclic compounds) (Isomerization)

SHUYKIN, N.I.; BEL'SKIY, I.F.; GRUSHKO, I.Ye.

Interaction of α-methyltetrahydropyran with some compounds containing an active chlorine atom. Izv.AN SSSR.Otd.khim.nauk no.8:1486-1488 Ag '62. (MIRA 15:8)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Pyran) (Chlorine compounds)

SHUYKIN, N.I.; BARTOK, M.; KOVACH, E.; BEL'SKIY, I.F.

Catalytic isomerization of β-oxides. Izv.AN SSSR.Otd.khim.nauk no.9: 1653-1656 S '62. (MIRA 15:10)

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

BEL'SKIY, I.F.; SHUYKIN, N.I.; VASILEVSKAYA, G.K.; GAYVORONSKAYA, G.K.

Catalyzed synthesis of 2,6-dialkyltetrahydropyrans. Izv.AN SSSR.Otd. khim.nauk 1650-1653 S '62. (MIRA 15:10)

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

BEL'SKIY , I.F.; SHUYKIN, N.I.

Catalytic synthesis of trialkyl tetrahydrofurans. Izv.AN SSSR.Otd. khim.nauk no.9:1656-1660 S '62. (MIRA 15:10)

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

BEL'SKIY, I.F.; SHUYKIN, N.I.; SHOSTAKOVSKIY, V.M.

Effect of carbonyl and carbalkoxy groups on the direction of hydrogenolysis of furan cycle under conditions of vapor phase hydrog[illegible]. Izv. AN SSSR.Otd.khim.nauk no.10:1821-1825 O '62. (MIRA 15:10)

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

SHUYKIN, N.I.; LEBEDEV, B.L.; AN,V.V.

Quantitative and qualitative analyses of mixtures of cyclic ethers by means of gas-liquid chromatography. Izv. AN SSSR.Otd.khim.nauk no.10:1868-1869 O '62. (MIRA 15:10)

1. Institut organicheskoy khimii im. N.S.Zelinskogo AN SSSR.
(Ethers) (Gas chromatography)