"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIENKO, S. R.

Chemical nature of high molecular weight hydrocarbons of petroleum. S. R. Sergienko and A. A. Mikhnovskaya. *Doklady Akad. Nauk S.S.S.R.* 91, 103-6(1953).—Examn. of petroleum fractions, b. over 200°, derived from the Devonian deposits was made by chromatographic adsorption on silica gel with pet ether, benzene, and benzene-EtOH solvents. The material, b. 200-370°, contained 49% of paraffin and naphthene hydrocarbons, 13.8% monocyclic aromatic hydrocarbons, 17.1% bicyclic and 17.4% polycyclic aromatic hydrocarbons, and 2.6% tars and losses. The kerosine cuts contain 75% of paraffin and naphthene hydrocarbons and 11% monocyclic and 10.5% bicyclic aromatic hydrocarbons. The light oil contained 46% of paraffin and naphthene hydrocarbons, 19% monocyclic, and 27.7% bicyclic aromatic hydrocarbons. G. M. Kosolapoff

C. A. V-48 Jan 10, 1954 Petroleum, Lubricants, and asphalt

Evaluation: B-76836, 19 Jul 54

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIENKO, S.R.; ZHDANOVA, N.V.; TOPCHIYEV, A.V., akademik.

Conversions of methyl-2-butadiene-1,3 over an aluminosilicate catalyst. Dokl.AN SSSR 91 no.5:1147-1150 Ag '53. (MLRA 6:8)

1. Akademiya nauk SSSR (for Topchiyev). 2. Institut nefti akademii nauk SSSR (for Sergienko and Zhdanova). (Butadiene)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

Sergiyenko, S.R.

VOL'FKOVICH, S.I., akademik; SERGIYENKO, S.R., doktor khimicheskikh nauk professor; KAUFMAN, I.M., redaktor; KHOVANSKIY, I.P., tekhnicheskiy redaktor

[Russian chemists; annotated reading list] Russkie khimiki; annotirovannyi ukazatel' literatury. Vvodnaia stat'ia i biograficheskie ocherki S.R.Sergienko. Pod red. S.I.Vol'fkovicha. Moskva, 1954. 145 p. (Chto chitat' o vydaiushchikhsia deiateliakh otechestvennoi nauki i tekhniki. no.5)

(Chemists)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R., professor, otvetstvennyy redaktor; LOKTEV, S.M., redaktor; NEVRAYEVA, N.A., tekhnicheskiy redaktor.

[Problems of hydrocarbon oxidation] Problemy okisleniia uglevodorodov. Moskva, Izd-vo Akademii nauk SSSR, 1954. 221 p. (MLRA 8:2)

1. Akademiya nauk SSSR. Institut nefti.
(Hydrocarbons) (Oxidation)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO S.R.

ARBUZOV, A. Ye., otvetstvennyy redaktor; SERGIYENKO, S.R., professor, otvetstvennyy redaktor; LOKTEV, S.M., redaktor; SIMKINA, Ye.N., tekhnicheskiy redaktor.

[Academician Sergei Vasil'evich Lebedev; for his eightieth birthday] Akademik Sergei Vasil'evich Lebedev; k vos'midesiatiletiiu so dnia rozhdeniia. Moskva, Izd-vo Akademii nauk SSSR, 1954. 263 p.(MLRA 7:11)

1. Akademiya nauk SSSR.
(Lebedev, Sergei Vasil'evich, 1874-1934)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S. R.

Development of organic synthesis based on the oxidation of hydrocarbons from petroleum. S. R. Sergienko. *Problemy Okisleniya Uglevodorodov, Akad. Nauk S.S.S.R. Inst. Nefti* 1954, 4–10.—In the introductory remarks made at the Moscow All-Union meeting on 14–18 May 1951, an increase in the use of petroleum in chemical industry was advocated. A brief summary was given of the achievements in this field in U.S.S.R. during the last 10 years. **Development in the theory of chain oxidation of hydrocarbons.** N. N. Semenov. *Ibid.* 13–39.—A comprehensive review covering the following topics was given: direct reaction between two saturated hydrocarbons; chain length and activity of free radicals; effect of biradicals on the chain propagation; competition between the chain reaction and the direct reaction among the mols.; branching of chain reactions and limiting phenomena; decay of chain reactions; oxidation of simple paraffins; wall effects in chain reactions. 47 references. **Mechanism of negative catalysis in oxidation of hydrocarbons.** M. B. Neiman. *Ibid.* 40–50.—A review with 12 references. **Elementary reactions of simple hydrocarbons with atomic oxygen.** L. I. Avramenko and R. V. Kolesnikova. *Ibid.* 51–9.—Oxidation of methane, ethane, propane, and benzene is reviewed. 17 references. **Oxidation of hydrocarbons in the presence of hydrogen bromide.** Z. K. Maizus and N. M. Emanuel. *Ibid.* 60–77.—A review of kinetics. 4 references. **Investigation of oxidation of C^{14}-labeled propylene.** A. F. Lukovnikov. *Ibid.* 78–88.—Synthesis of C^{14}-propylene, its oxidation, chromatographic sepn., and detn. of radioactivity of the reaction products are reviewed. 11 references. **Mechanism of oxidation of propane.** V. Ya. Shtern. *Ibid.* 89–103.—A review with 12 references. **Unique features of oxidation of paraffinic hydrocarbons in liquid phase.** A. N. Bashkirov and Ya. B. Chertkov. *Ibid.* 104–8; cf. C.A. 46, 1878[6].—A review with 5 references. **The immediate effect of molecular oxygen on hydrocarbons of various structure in liquid phase.** K. I. Ivanov. *Ibid.* 111–23.—Preparations of the following peroxides are fully reviewed: heptane 2-hydroperoxide, $b_{0.08}$ 38°, n_D^{20} 1.4305, d_{20} 0.9072, $\delta = (n_F - n_C)/d\ 10^4 = 86.6$, MR_D 37.68; 2-methylhexane 2-hydroperoxide, $b_{0.07}$ 21°, n_D^{20} 1.4270, d_{20} 0.8954, MR_D 37.91; 2,2,4-trimethyl-3-pentanone 4-hydroperoxide, $b_{0.01}$ 31°, m. 73°; cyclohexane hydroperoxide, m. −20°, n_D^{20} 1.4638, d_{20} 1.018, MR_D 31.50; 1-ethylcyclohexane 1-hydroperoxide, $b_{0.01}$ 34°, n_D^{20} 1.4678, d_{20} 0.9907, δ 85.4, MR_D 40.45; 1-propylcyclopentane 1-hydroperoxide, $b_{0.005}$ 34.5°, n_D^{20} 1.4566, d_{20} 0.9581, δ 85.9, MR_D 40.96; indan 4-hydroperoxide, $b_{0.2}$ 75°; 1-methyl-1,2,3,4-tetrahydronaphthalene 1-hydroperoxide, $b_{0.1}$ 99–100°, n_D^{20} 1.55848, d_{20} 1.1114; fluorene 9-hydroperoxide, m. 93°; 1,4-dihydronaphthalene 1-hydroperoxide, $b_{0.2}$ 120–5°, n_D^{20} 1.5685, d_{20} 1.153; 1,1-diphenylethane 1-hydroperoxide, m. 82°; Ph_3COOH, m. 81°. 9 references. **Peroxides from autoxidation of some alkanes and cycloalkanes.** K. I. Ivanov, V. K. Savinova, and V. P. Zhakhovskaya. *Ibid.* 124–39.—Preparations and phys. properties are reviewed and discussed in detail. 15 references. **Oxidation products of Tetralin.** A. I. Kamneva and L. A. Salmin. *Ibid.* 140–4.—The mechanism of tar formation was studied by analyzing the autoxidation products of Tetralin. The fraction extd. with 5% aq. $NaHCO_3$ contained enols of 3,4-dihydro-1(2*H*)-naphthalenone and dihydronaphthoquinone. Among the oxidation products were: 1,2,3,4-tetrahydro-1-naphthyl hydroperoxide; 3,4-dihydro-1(2*H*)-naphthalenone; 3,4-dihydro-2(1*H*)-naphthalenone; dihydronaphthoquinone; *o*-$HO_2CC_6H_4CH_2CH_2CO_2H$; and polymerization products. **Synthesis of 1,1-diphenylethane 1-hydroperoxide and thermal decomposition of tertiary hydroperoxides.** T. I. Yurzhenko, D. K. Tolopko, and V. A. Puchin. *Ibid.* 145–51; cf. C.A.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

S.P. SERGIENKO

45, 2016a. Oxidation of petroleum jelly and kerosine with air and HNO_3. I. P. Losev and R. N. Smirnov. *Ibid.* 152-66.—A review. Oxidation of high-molecular weight hydrocarbons and petroleum oils in liquid phase. N. I. Chernozhukov. *Ibid.* 167-74.—A review with 10 references. Industrial methods of oxidation of petroleum hydrocarbons in liquid phase. V. K. Tsyskovskii. *Ibid.* 177-83.—A review with 17 references. Oxidation of paraffin wax. D. A. Chernyaev, N. S. Makyshinskaya, and G. P. Dobrovol'skii. *Ibid.* 184-90.—Prepn. of lubricating oils from paraffin wax on industrial scale is described in detail with diagrams of equipment. Conditions for the optimum yields are given and discussed at length. Fatty acids from paraffins. A. Yu. Rabinovich. *Ibid.* 200-7.—Discussion of technological processes. No references. Use of hydroxy acids from oxidation of petroleum hydrocarbons as film-forming materials. P. V. Serbin. *Ibid.* 208-21.—Compn., sepn., and properties of HO acids from oxidation of solid and liquid petroleum fractions are extensively discussed and the prepn. of varnishes on laboratory and plant scales is reviewed. A. P. K.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; DELONE, I.O.; DAVYDOV, B.E.; TETERINA, M.P.

Composition andproperties of the bituminous portion of Nori petroleum. Report 1. Trudy Inst.nefti 4:18-30 '54. (MLRA 8:1)
(Nori--Bitumen)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.

5

The conversions of butyl chloride with oxide catalysts. S. R. Sergiyenko and E. V. Nozdrina. *Trudy Inst. Nefti, Akad. Nauk S.S.S.R.* 4, 66-80(1954); cf. *C.A.* 47, 12208g. —Me_3CCl (I) is totally converted into dimer and trimer of isobutylene over CaO during 20 hrs. at 100° and 51 atm. N pressure. Under the same conditions with a mixt. of I with isobutylene, I is converted into isobutylene only; with isopropyl chloride, I is hydrolyzed, forming Me_3COH. Increasing the pressure provokes an increase of dimer formation, while the amt. of Me_3COH decreases. I with CaO or ZnO is converted into dimer and trimer; isobutyl chloride formed the same products over ZnO only. The velocity of conversions of I with ZnO at 100° is almost twice that of isobutyl chloride. M. Charmandarian

1

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S. R.

The conversion of 2-hexene and isopropyl chloride on the complex catalysts. A. A. Mikhnovskaya, S. R. Sergienko, and V. A. Shakhral. *Trudy Inst. Neft. Akad. Nauk S.S.S.R.* 4, 81-92(1954).—To 4 g. of ice-cooled anhyd. $AlCl_3$ in a round-bottom flask, with reflux condenser, is added dropwise while stirring 2.67 g. of a mixt. of 35% nitroethane, 10% 1-nitropropane, and 55% 2-nitropropane. After stirring 1 hr., the mixt. forms a viscous liquid (I). The mixt. of isopropyl chloride and 2-hexene (mol. ratio 1:1) at 0° and normal pressure form in the presence of I 15-17% hexyl chlorides, and 32-36% dimers and alkylpolymers of hexene during 3-4 hrs. The major part of the hexyl chlorides, b. 123.4°, is 2-chlorohexane. At 0° and normal pressure alkylation of hexene with isopropyl chloride does not take place. Under the same conditions isoprene in the mixt. with isopropyl chloride spontaneously polymerizes. M. Charmandarian

CH

2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.

The mechanism of conversion of isopropyl chloride on zinc oxide. S. R. Sergiyenko, A. A. Miklinovskaya, and R. V. Nozdrina. *Trudy Inst. Neft. Akad. Nauk S.S.S.R.* 4, 93–100(1954).—Isopropyl chloride (I) is almost completely converted into propylene in the presence of ZnO, at 250–327° and atm. pressure. Under 40 atm., the polymerization of I occurs and the 5–7% dimer 34% trimer and 20% high polymer are formed. Under the same conditions (1 atm.), 2,3-dimethyl-1-butene or 2-butene did not polymerize but reacted with isopropyl chloride. At the higher pressure, 2,3-dimethyl-2-butene partly (5%) isomerized to 2,3-dimethyl-1-butene. It was concluded that intermediate formation of dimethylbutene from isopropyl chloride did not take place. It is found that a method of analysis, based on the adsorption of butylenes and propylene by H_2SO_4 of concn. 68 and 85%, resp., is not accurate for gas rich in propylene, because it is highly adsorbed by 68% H_2SO_4.

M. Charmandarian

(2)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.

USSR/Chemistry Analysis methods

Card : 1/1 Pub. 40 - 21/27

Authors : Sergienko, S. R., Bedov, Yu. A., and Teterina, M. P.

Title : Investigation of high-molecular petroleum compounds. Part 1.- Use of color photography for the characteristics of the luminescence chart

Periodical : Izv. AN SSSR. Otd. khim. nauk 4, 716 - 721, July - August 1954

Abstract : The advantages derived by fixing the luminescence chart for various components of high-molecular tarry-petroleum compounds, with the aid of color photography, are listed. Lead glass was found to be the most satisfactory and convenient filter capable of intercepting ultraviolet rays and thus eliminating their effect on the photo-film. A luminescence analysis completed with color photography becomes an objective method for qualitative evaluation of chemical changes in the components of high-molecular tarry-petroleum substances. Eight USSR references (1925 - 1953). Graphs; drawings; illustrations.

Institution : Acad. of Sc. USSR, Petroleum Institute

Submitted : September 20, 1953

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

STEPANOV, B.I., SERGIYENKO, V.A.

Analysis of indophenols by titration with ascorbid acid. Trudy Kom.anal.khim. 5:274-278 '54. (MLRA 8:6)
(Indophenol) (Volumetric analysis) (Ascorbic acid)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.

USSR/Chemistry - Industrial products

Card 1/1 : Pub. 86 - 10/38

Authors : Sergiyenko, S. R., Prof.

Title : Chemistry and the chemical industry in the People's Poland

Periodical : Priroda 43/12, 71-74, Dec 1954

Abstract : The claim is made that the industrial production of Poland in 1954 was four times as great as in the prewar period, the advance being noted particularly in the field of chemistry, as is shown by the fact that in 1951, 62 new chemical-products were manufactured; 109 in 1952; and 206 in 1953. An account is given of expanding research work in chemistry and names of institutes and outstanding research workers are given.

Institution : .....

Submitted : .....

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S. R.

USSR/Chemistry - Hydrocarbons

Card 1/1 : Pub. 22 - 13/41

Authors : Bedov, Yu. A., and Sergienko, S. R.

Title : Parachors of six-membered cyclic compounds with two hetero-atoms in the ring

Periodical : Dok. AN SSSR 98/2, 219-222, Sep 11, 1954

Abstract : The structure of six-membered heterocyclic compounds with two hetero-atoms in 1,4-position and some of their derivatives, was investigated. The basic physical constants and the parachor values of the investigated heterocyclic compounds, are listed in tables. The surface tension of the compounds was determined by the P. A. Rebinder method of maximum blister pressure. Thirteen references: 6-USSR; 5-USA and 2-German (1890-1950). Tables.

Institution : Academy of Sciences, USSR, Petroleum Institute

Presented by : Academician A. A. Balandin, March 1, 1954

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; DAVYDOV, B.E.; DELONE, I.O.; TETERINA, M.P.

[Composition and properties of high molecular petroleum compounds] Sostav i svoistva vysokomolekuliarnykh soedinenii nefti; doklady na IV Mezhdunarodnom neftianom kongresse v Rime. Moskva, Izd-vo Akad.nauk SSSR, 1955. 57 p. (MLRA 8:9)
(Petroleum)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; TOPCHIYEV, A.V., akademik, redaktor; TIKHONRAVOV, N.V., redaktor; ASTAF'YEVA, G.A., tekhnicheskiy redaktor.

[Outline of the development of the chemistry and processing of petroleum] Ocherk razvitiia khimii i pererabotki nefti. Moskva, Izd-vo Akad.nauk SSSR, 1955. 309 p. (MIRA 8:4)
(Petroleum)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.

Liquid-phase oxidation of n-undecene, n-heptylbenzene, n-heptylcyclohexane, and 1-methyldecahydronaphthalene by air oxygen. S. R. Sergienko and P. N. Galich. *Kataliticheskoe Gidrirovanie i Okislenie, Akad. Nauk Kazakh. S.S.R., Trudy Konf.* 1955, 255-64.—In liquid phase air oxidation of hydrocarbons at 150° for 10-100 hrs., the 1st stage is the formation of peroxides which reaches a max. in 10 hrs. and declines to nearly 0 by 100 hrs. The kinetic curves of time vs. acid no., bromine no., sapon. no., peroxide content and O content are shown for n-undecene, n-heptylbenzene, n-heptylcyclohexane, and 1-methyldecahydronaphthalene. The tendency to form tars during oxidation declines in order: undecene, 1-methyldecahydronaphthalene, heptylcyclohexane, heptylbenzene. Tar formation begins to be noticeable after some 50 hrs. The gradual decline of the rate of oxidation and its practical cessation in the presence of as yet unreacted materials is ascribed to the neg. catalytic activity of the tars which act as antioxidants.

G. M. Kosolapoff

2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S. R.

"Again About More Thorough Petroleum Refining," Neft. Khoz., No.2., pp 71-78, 1955.

Translation D 306428, 10 Aug 55

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.

Dehydrogenation of ethylbenzene on zinc chromate. S. R. Sergienko and L. S. Povarov. *Trudy Inst. Nefti, Akad. Nauk S.S.S.R.* 6, 40-52(1955).—$ZnCrO_4$ on ZnO can be used to dehydrogenate EtPh. Dehydrogenation at low space velocity leads to greatly increased secondary reaction of styrene, the rate of which increases faster with rising temp., than dehydrogenation resulting in much coke (about 10% in 3 hrs.) deposition on the catalyst. However, the catalyst retains activity for more than 20 hrs. above 600° and can be reactivated by a stream of air at 500° for 2-3 hrs. The catalyst withstands heating to 700° without loss of activity. Energy of activation for catalytic dehydrogenation of EtPh was calcd. as 26,530 cal./mole; energy of activation for pyrolysis of EtPh as 48,100 cal./mole.

B. Z. Kanich

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S. R.

7002

Transformations of diene hydrocarbons with a conjugated system of double bonds on alumina-silicate and alumina-chromate catalysts. I. Transformation of 2,3-dimethyl-1,3-butadiene. S. R. Sergienko and N. B. Zhdanova. *Trudy Inst. Nefti, Akad. Nauk S.S.S.R.* 6, 53-70(1955).—Expts. were conducted at 200-250° with alumina-silicate and at 250-300° with alumina-chromate catalysts. Reaction proceeds essentially in same direction on both catalysts; action of alumina-silicate catalyst is more aggressive and destructive. Primary reactions proceed in the following directions: (*a*) dimerization with the formation of cyclic compds. having a 6-membered ring as a basis and subsequent redistribution of H, accompanied by the dehydrogenation of one portion of the hexamethylene rings to benzene rings and hydrogenation of another portion of unsatd. 6-membered rings to satd. hexamethylene rings; (*b*) hydrogenation of the original diene system into a monoölefinic or completely satd. system; and (*c*) dehydropolymerization with the formation of a solid polycyclic(penta-hexamer) hydrocarbon which is deposited on the catalyst. All the above transformations are conjugated among themselves, since the H which is liberated in the reactions serves as a source of satn. of the unsatd. hydrocarbons. The basic reactions are complicated by secondary reactions which should include, above all, dealkylation. After 2-3 hrs., there is a sharp loss in activity of catalysts due to deposition of condensation products of original diene. The product on alumina-silicate catalyst had a mol. wt. of 442 and corresponded to a penta-hexamer of the original diene. Formation of catalyst poisons can be considerably retarded or completely suppressed by reducing contact time, feeding H or inert gas into reaction zone, or conducting the reaction in vacuum. A diagram of the general course of primary reactions is given.

B. Z. Kamich

M. A. YOUTZ
scopies

RM

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO,S.R.; DELONE,I.O.; DAVYDOV,B.E.; TETERINA,M.P.

Analysis of the composition and properties of the part of petroleum having a high molecular weight. Trudy Inst.nefti no.6:71-78 '55. (Petroleum--Analysis) (MLRA 8:12)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S. R.

USSR/Chemical Technology - Chemical Products and Their Application. Treatment of Natural Gases and Petroleum. Motor Fuels. Lubricants, I-13

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 62577

Author: Sergiyenko, S. R., Mikhnovskaya, A. A.

Institution: None

Title: Investigation of Group Composition of High Molecular Petroleum Hydrocarbons by Adsorption Chromatography

Original Periodical: Tr. komis. po analit. khimii AN SSSR, 1955, 6, 162-170

Abstract: By means of adsorption chromatography on ASK silicagel was investigated group composition of the hydrocarbons of dekerosenized Romashkin petroleum of Devonian deposits distilling over above 325° and also of catalyzates distilling over above 200°, obtained by cracking over alumosilicate catalyst of paraffino-naphthene (PNP) and aromatic portions (AP) of petroleum residue distilling over at >325°. Separation of residue into PNP and AP was effected on silicagel.

Card 1/2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.

USSR/Chemical Technology - Chemical Products and Their Application. Treatment of Natural Gases and Petroleum. Motor Fuels. Lubricants, I-13

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 62576

Author: ~~Sergiyenko, S. R.~~, Bedov, Yu. A., Teterina, M. P., Delone, I. O., Davydov, B. E.

Institution: None

Title: Use of the Adsorption Chromatography Method for the Separation and Investigation of Tarry Substances of Petroleum

Original Periodical: Tr. Komis. po analit. khimii AN SSSR, 1955, 6, 171-181

Abstract: A separation and investigation of the tarry substances of Georgian, Nebit dag, Tuymazin and Romashkin petroleum have been carried out. First by dilution with a 40-fold volume of pentane were separated the asphaltenes and the solution of tars and hydrocarbons was passed through the adsorbent. The best adsorbent was found to be ASK silica-gel of particle size 0.37-0.20 mm. Adsorbed tars were displaced

Card 1/2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; IZMAYLOV, N.A.; SPIVAK, L.L.; GALICH, P.N.

Potentiometric methods of investigation of high-molecular weight compounds in petroleum. Zhur.anal.khim.10 no.5:315-322 S-O '55. (MLRA 9:1)

1.Institut nefti AN SSSR, Moskva i Khar'kovskiy gosudarstvennyy universitet imeni Gor'kogo.
(Potentiometric analysis) (Acidity) (Petroleum)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

AID P - 3572

Subject : USSR/Chemistry

Card 1/1 Pub. 152 - 9/20

Authors : Sergiyenko, S. R. and N. P. Galich

Title : Tar formation during the oxidation of hydrocarbons

Periodical : Zhur. prikl. khim., 28, 7, 735-744, 1955

Abstract : The mechanism of oxidation of C_{11}-C_{13} hydrocarbons at 150°C has been studied. The oxidation products of n-heptyl benzene contained 13% tar and 27% asphaltenes, and those of n-undecene-1, 85% tar and no asphaltenes. Four tables, one diagram, 8 references, 4 Russian (1937-1955).

Institution : None

Submitted : D 25, 1954

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.

USSR/Minerals - Petroleum

Card 1/1 Pub. 86 - 5/37

Authors : Sergienko, S. R., Prof.

Title : Petroleum and its utilization

Periodical : Priroda 44/4, 41 - 50, Apr 1955

Abstract : A short history of the extraction of petroleum is presented. The composition of petroleum is discussed, as well as the methods of working it. Under the heading of modern petroleum refining such points are taken up as the removal of salt, atmospheric distillation, vacuum distillation, atmospheric-vacuum distillation, thermal cracking, catalytic cracking, removal of asphalt, separation of gases, catalytic alkalization and others. An analysis is also made of the uses to which petroleum products are put. Two references: 1 Soviet and 1 USA (1941 - 1953). Diagrams.

Institution : .....

Submitted : .....

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.

USSR/Chemistry - Organic chemistry

Card 1/1 Pub. 22 - 25/49

Authors : Sergienko, S. R.; Bedov, Yu. A.; and Ratnikova, L. V.

Title : Relation between the tendency of vitrification at low temperatures and the structure of molecules of certain morpholine derivatives

Periodical : Dok. AN SSSR 102/1, 101-104, May 1, 1955

Abstract : Experiments were conducted to determine the freezing point of morpholine derivatives and to establish its relation to the molecular structure of the compound. The effect of individual structural elements on the properties of the molecules is explained. It is evident that all compounds capable of conversion into vitreous (freezing) state have general structural elements like the NCH_2CH_2OR group where R is the hydrocarbon radical. The presence or absence of a double bond in the hydrocarbon radial was found to be of no importance just as unimportant as the structure of nitrogen bound radicals. Ten references: 3 USSR, 5 USA and 2 English (1938-1954). Table; graphs; drawing.

Institution : .....

Presented by : Academician A. V. Topchiev, December 7, 1954

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S. R.

"914" Investigation of Properties of Macro-Molecular Compounds From Petroleum. **Issledovanie svoistv vysokomolekuliarnykh soedinenii nefti.** (Russian.) S. R. Sergienko and B. E. Davydov. *Doklady akademii nauk SSSR*, v. 104, no. 4, Oct. 1, 1955, p. 555-558. 62

Study of mol.-surface properties and dielectric permeability of petroleum tars and their component parts in solutions of n-heptane, cyclohexane, and benzene. Tables, graphs. 9 ref.

1

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; ZHDANOVA, N.V.

Conversion of 1,3 butadiene over an aluminosilicate catalyst. Dokl.AN SSSR 104 no.5:737-740 O '55. (MIRA 9:2)

1.Institut nefti Akademii nauk SSSR. Predstavleno akademikom A.A.Balandinym.

(Butadiene)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

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

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

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.

USSR/Chemical Technology - Chemical Products and Their Application. Treatment of natural gases and petroleum. Motor fuels. Lubricants. I-13

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 12924

Author : Sergiyenko S.R.
Inst : Academy of Sciences Kazakh SSR
Title : New Problems in the Field of Chemistry and Chemical Processing of Petroleum.

Orig Pub : Vestn. AN KazSSR, 1956, No 8, 25-43

Abstract : Review of the trends of research on petroleum and chemization of petroleum industry during the Sixth five-year period.

Card 1/1

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; DELONE, I.O.; DAVYDOV, B.E.; TETERINA, M.P.

Composition and properties of petroleum high molecular weight compounds. Article 4: Study of the composition and properties of the tarry portion of Romashkinskiy (Devonian) petroleum. Trudy Inst.neft. 8:42-46 '56. (MLRA 9:10)

(Romashkinskiy--Petroleum--Analysis)
(High molecular weight compounds)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; DELONE, I.O.; DAVYDOV, B.E.; TETERINA, M.P.

Composition and properties of petroleum high molecular weight compounds. Article 5: Study of the composition and properties of the tarry portion of Bavly (Devonian) petroleum. Trudy Inst. neft. 8:47-51 '56. (MLRA 9:10)

(Bavly--Petroleum--Analysis)
(High molecular weight compounds)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; CHAYKO, V.P.; RUMYANTSEVA, Z.A.

Study of the petroleum high molecular weight compounds. Article 6: Composition and properties of the tarry portion of Kzyl-Tumshukskiy petroleum. Trudy Inst.neft. 8:52-59 '56.

(MLRA 9:10)

(Kzyl-Tumshukskiy--Petroleum--Analysis)
(High molecular weight compounds)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIENKO, S. R.

USSR/Chemical Technology. Chemical Products and Their Application--Treatment of natural gases and petroleum. Motor fuels. Lubricants. I-14

Abs Jour: Ref Zhur-Khimiya, No 3, 1957, 9273

Author : Sergienko, S. R. and Shlyar, V. T.
Inst : Petroleum Institute of the Academy of Sciences USSR
Title : Hydrocarbon Constitution of Bitkovo and Radchenkovo Petroleum

Orig Pub: Tr. In-ta nefti AN SSSR, 1956, Vol 8, 191-198

Abstract: Bitkovo and Radchenkovo oils belong to the low-sulfur mixed-base oils with a predomination of naphthenic-paraffinic hydrocarbons in the fractions boiling below 350°. Radchenkovo crude is light, low in resins, and paraffinic; Bitkovo crude is heavy, high in resins, and paraffinic. The solid hydrocarbons in Bitkovo crude have been observed to crystallize easily and to be easily separable

Card 1/2

Abstract: from the oil. The cause of this phenomenon appears to be the absence of noticeable amounts of branched paraffinic hydrocarbons and the high content of asphaltic material. The application of carbamide extraction and double rectification to the Bitkovo crude fraction boiling between 150 and 200° has given quantitative yields of C_9H_{20}, $C_{10}H_{22}$, $C_{11}H_{24}$ [TN: presumably paraffins, C_nH_{2n+2}]. It is shown that the use of dichloroethane is preferable to that of petroleum ether or isooctane in the carbamide separation of the paraffin hydrocarbons. Microphotographs of the paraffine hydrocarbons separated from the various crude fractions investigated are presented.

Card 2/2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R., doktor khimicheskikh nauk.

New problems in the chemistry and chemical processing of petroleum. Vest.AN Kazakh.SSR 12 no.8:25-43 Ag '56. (MLRA 9:12)

(Petroleum--Refining)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.

3604. TAR FORMATION DURING OXIDATION OF HYDROCARBONS. II. EFFECT OF (HYDROCARBON) GROUP COMPOSITION OF DIESEL FUELS ON THE DIRECTION OF OXIDATION Sergienko, S.R. and Galich, P.N. (Zh. prikl. Khim. (J. appl. Chem., Moscow), 1956, vol. 29, 1568-1580; abstr. in Chem. Abstr., 1957, vol. 51, 6986). Tar was removed from a 200-365° fraction of diesel fuel (BZ) by chromatography on silica gel and was separated, respectively, into fractions of aromatic hydrocarbons (I), 20.7% and paraffins-cycloparaffins. The latter fraction was treated with urea and separated into n-paraffins (II), 12.4% and isoparaffins-cycloparaffins (III), 62.1% leaving a residue (IV), 4.8%. Each fraction was oxidized by air at 150° in 2 parallel furnaces. The properties of the products were plotted as functions of the oxidation time. The properties of I did not change appreciably; a slight darkening indicated a slow condensation. Those of IV changed a little more. The plots of II and III gave similar functions. The proportion of peroxides rose abruptly to a maximum within 2 hours for III and 9 hours for II. Beyond this maximum the acid number, the saponification number, and the proportion of oxygen-containing substances increased continuously. Tar formation became noticeable in 50 hours with III and in 75 hours with II. Oxidation of diesel fuel is retarded not so much by I as by the products of cleavage of the peroxides formed.

C.A.

MT

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.

Tar formation in the oxidation of hydrocarbons. III. Effect of aromatic hydrocarbons on the course of the oxidation of hydrocarbon mixtures. S. R. Sergienko, P. N. Galich, and V. I. Ievlev. *Zhur. Priklad. Khim.* 29, 1716–26 (1950); cf. *C.A.* 50, 7436e.—In air oxidation of the hydrocarbons from the isoalkane-cycloparaffin fraction of Diesel fuel, the initial stage involves the formation of peroxides which reaches a max. in about 2 hrs. after which the peroxide content decreases steadily. Peroxide formation precedes the formation of acidic, hydrolyzable, and OH compds. Addn. of 10% or less of diisopropylbenzene to the charge does not affect the oxidation kinetics, but 25% or more almost completely stops oxidation. The retarding effect is not produced by diisopropylbenzene itself, but by the products of decompn. of its peroxides. Max. retardation is caused by addn. of 20–5% aromatic compds. G. M. K.

pm mk

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

TERPIGOREV, A.M., akademik, redaktor; SERGIIENKO, S.R., doktor khimicheskikh nauk, otvetstvennyy redaktor; POLESITSKAYA, S.M., tekhnicheskiy redaktor

[Fuel terminology for internal combustion engines] Terminologiia topliva dlia dvigatelei vnutrennego sgoraniia. Moskva, 1957. 28 p. (Sborniki rekomenduemykh terminov, no.44) (MLRA 10:6)

1. Akademiya nauk SSSR. Komitet tekhnicheskoy terminologii.
(Gas and oil engines--Terminology)
(Liquid fuels--Terminology)
(Rockets--Fuel)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

KUSAKOV, M.M., prof., otvetstvennyy redaktor; PLATE, A.F., prof., otvetstvennyy redaktor; NIKOLAYEVA, V.G., kand.tekhn.nauk, otvetstvennyy redaktor; TOPCHIYEV, A.V., akademik, redaktor; KAZANSKIY, B.A., akademik, redaktor; SERGIYENKO, S.R., prof., redaktor; NEKRASOV, A.S., redaktor izdatel'stva; LOKTEV, S.M., redaktor izdatel'stva; NOVICHKOVA, N.D., tekhnicheskiy redaktor.

[Composition and properties of petroleums and gasoline-kerosene fractions; a collection of papers on the study of the composition of petroleums and petroleum products] Sostav i svoistva neftei i benzino-kerosinovykh fraktsii; sbornik rabot po izucheniiu sostava i svoistv neftei i nefteproduktov. Moskva, Izd-vo Akad.nauk SSSR, 1957. 518 p. (MIRA 10:11)

1. Akademiya nauk SSSR. Institut nefti.
(Petroleum)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; DAVYDOV, B.E.; GALICH, P.N.

Molecular and surface properties of petroleum tars. Part 7. Article No.7. Trudy [illegible] 1957 (MIRA 11:4)
(Petroleum) (Surface chemistry)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R., prof.

Studies of Academician S.S. Nametkin in the field of chemistry and petrolem refining (on his 80th birthday). Trudy inst. nefti. 10:5-15 '57. (MIRA 11:4)
(Nametkin, Sergei Semenovich 1876-1950)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; TETERINA, M.P.; BEDOV, Yu.A.

Infrared spectrum technique for determining the composition of α-and β-methylnaphthalene mixtures. Trudy inst. nefti. 10: 92-95 '57. (MIRA 11:4)

(Naphthalene--Spectra)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; SKLYAR, V.T.; TETERINA, M.P.

Analysis of macromolecular fractions of Bytkov petroleum. Article No.8. Trudy inst. nefti. 10:117-138 '57. (MIRA 11:4)
(Bytkov region--Petroleum--Cracking)
(Macromolecular compounds)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.

Analysis of macromolecular compounds of Sagaydak petroleum. Article no.9. Trudy inst. nefti. 10:139-152 '57. (MIRA 11:4)
(Sagaydak region--Petroleum--Cracking)
(Macromolecular compounds)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; TETERINA, M.P.; MIKHNOVSKAYA, A.A.

Infrared spectrum analysis of macromolecular hydrocarbons and resins. article No.10. Part 10. Trudy inst. nefti. 10:153-160 '57. (MIRA 11:4)

(Macromolecular compounds) (Hydrocarbons--Spectra)
(Petroleum--Spectra)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; TETERINA, M.P.; ROZENBERG, L.M.

Infrared spectrum analysis of macromolecular paraffins from petroleum. Trudy inst. nefti. 10:161-169 '57. (MIRA 11:4)
(Macromolecular compounds)
(Paraffins--Spectra)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; GORDASH, Yu.T.

Chemical nature and compostiion of condensed bicyclic compounds from macromolecular fraction of Radchenkovo petroleum. Article No.12. Trudy inst. nefti. 10:170-180 '57. (MIRA 11:4)
(Petroleum) (Condensation product (Chemistry))

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; MIKHNOVSKAYA, A.A.

Comparative study of chemical nature of macromolecular petroleum hydrocarbons. Article No.13. Trudy inst. nefti. 10:181-187 '57. (MIRA 11:4)

(Petroleum) (Macromolecular compounds)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; KRASAVCHENKO, M.I.; PUSTIL'NIKOVA, S.D.

Influence of the temperature on the prolongness of heating and the depth of conversion of the residual products of Romashkino petroleum. Report No.1. Trudy inst. nefti. 10:188-210 '57. (MIRA 11:4)

(Romashkino region--Petroleum--Analysis)
(Distillation, Fractional)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; KRASAVCHENKO, M.I.

Effect of the chemical nature of petroleum and the concentration of resinous asphalt substances in the products on the character of their chemical conversions. Report No.2. Trudy inst. nefti 10:211-233 '57. (MIRA 11:4)

(Petroleum) (Distillation, Fractional)
(Asphalt)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S. R.

586. Potentiometric methods of studying high-molecular petroleum compounds. III. Potentiometric determination of peroxide numbers. S. R. Sergienko, P. N. Galich and L. L. Spivak (Inst. of Petroleum, Acad. Sci., USSR, Moscow). *Zhur. Anal. Khim.*, 1957, 12 (1), 139–142.—The sample containing peroxide compounds is dissolved in 20 ml of absolute isopropyl alcohol and 2 ml of glacial acetic acid and then boiled for 5 min. with 10 ml of a saturated soln. of NaI in absolute isopropyl alcohol. The soln. is mixed with 5 ml of water in a cell containing a platinum indicator electrode, a connection to a S.C.E. and an inlet for N gas to stir the soln. Alternatively, a closed vessel with a stirrer may be used. Potentiometric titration is carried out with 0·1 *N* $Na_2S_2O_3$.

G. S. SMITH

5

1-4E3d

1/1

NS

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; CHAYKO, V.P.

Studying the high-molecular-weight fraction of petroleum. Dokl. AN Tadzh. SSR no.21:83-91 '57. (MIRA 11:7)

1.Predstavleno Institutom khimii AN Tadzhikskoy SSR.
(Petroleum products)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S. R.

Distr: 4E3d/4E4f

Causes of deposit formation in Diesel oil during storage. S. R. Sergienko and P. N. Galich. *Zhur. Priklad. Khim.* 30, 1853-60(1957).—Aromatic hydrocarbons and cyclo- and isoparaffin fractions obtained from Diesel oil by chromatographic methods (cf. *C.A.* 50, 8180f) as well as Diesel oil were kept 2-5 years in open glass vessels at room temp. The aromatic hydrocarbons were most susceptible to deposit formation; after 2 years 0.2% of asphaltenes had formed. The cyclo- and isoparaffins showed an extended induction period so that after 2 years deposits were absent but a high concn. of peroxides was found. Deposit formation was at first rapid, reached a max., and decreased subsequently, apparently retarded by oxidation products.

I. Bencowitz

5
2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

AUTHOR SERGIYENKO S.R., CHERMYAK N.Ya.

TITLE Kinetics And Mechanism of the Liquid Phase Oxidation of Dibenzyl And Dicyclohexylethane. 20-2-30/67
(Kinetika i mekhanizm zhidkofaznogo ikislenya dibenzila i ditsiklogeksletana -Russian)

PERIODICAL Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 2, pp 351-354 (U.S.S.R.)
Received 6/1957 Reviewed 7/1957

ABSTRACT The oxidation of the liquid hydrocarbons was carried out by means of oxygen being blown through them. The absorbed quantity of oxygen wasascertained from the pressure dicrease in the closed circulation plant and the measured quatities were periodically replenished. The residual quantity of the initial product as well as the quantities of superoxices, acids, ethers and alcohols were then determined. Dibenzyloxydation was carried out at 11o, 13o, 14o, and 15o°. The S-shape of the curve (ill.1) and the fact that the semi-logarithmic anamorphism of its initial parts are straight lines, give evidence of a reaction process according to a chain mechanism with degenerated branches. In the initial phase practically only superoxides (monohydro-) develop. Other oxydation products are produced by the decay of the hydrosuperoxide with later oxydation of the products developed. After a retardation of the oxygen absorption its consumption proceeds with a steady, very small velocity. The dibenzyl replenishment on the initial quantity in this phase did not accelerate the oxygen absorption. It follows from this that the oxidation delay does not origi-

Card 1/3

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S. R.

Composition and Properties of the High Molecular (Cont.) 647
Weight Fraction of Petroleum; collection of Papers, Moscow, Izd-vo AN SSSR, 1959, 370pp.

products which were determined to be hydrocarbons (high paraffin content and low resin content) and nonluminescent reddish-blue products (nitrogen containing compounds). Evidently, the high molecular weight compounds contain aromatic rings and other structures of low thermal stability, which fact can be regarded as confirmation of the low-temperature formation of petroleum. There are 2 tables and 19 references of which 14 are Soviet and 5 English.

PART V. RESINOUS-ASPHALTIC SUBSTANCES. COMPOSITION, PROPERTIES, AND RESEARCH METHODS.

Sergiyenko, S.R., Davydov, B.E. Physical Properties of Petroleum Resinous Substances 245

Resinous substances from the Romashkino crude and from the Gyurgyany crude were taken for this study. The increase of the amount of acid and neutral saponifiable substances is directly proportional to the increase of the amount of hetero-atoms they contain (O,S,N). All resinous substances are characterized by considerable surface activity. They can be separated into fractions of increasing surface activity

Card~~XXX/XXXX~~ 2nd Collection of Papers publ. by AU Conf. Jan 56, Moscow.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

11(4) PHASE I BOOK EXPLOITATION SOV/1785

Akademiya nauk SSSR. Institut nauchnoy informatsii

Khimiya nefti i gaza (Chemistry of Petroleum and Gas) Moscow, Izd-vo AN SSSR, 1958. 477 p. (Series: Itogi nauki; khimicheskiye nauki, 2) Errata slip inserted. 3,000 copies printed.

Ed.: G.D. Gal'pern, Doctor of Chemical Sciences; Ed. of Publishing House: I.P. Loskutova; Tech. Ed.: Ye. V. Makuni.

PURPOSE: This book is intended for the specialist working in the field of petroleum chemistry and for the organic chemist working in related fields.

COVERAGE: This is the first volume of the series devoted to the progress made in petroleum and gas chemistry. The first part of this collection contains survey articles compiled by the staff of the Petroleum Institute, AS USSR. The authors are specialists working on methods for the isolation, separation, and identification of sulfur organic compounds in petroleum. The articles give a survey

Card 1/6

of literature up to 1956 with some coverage of recent research up to 1958. The second part is concerned with the characteristics of high molecular weight compounds and methods for the study of their composition. There are 124 references.

TABLE OF CONTENTS:

Sergiyenko, S.R., and V.N. Perchenko. Study of the Chemical Structure of Sulfur Organic Compounds in Petroleum by Means of Catalytic Hydrogenation 113

The authors review papers on the methods for the hydrogenation of sulfur organic compounds. The method of catalytic hydrogenation promises to be very effective in the study of the structure of sulfur organic compounds. There are 9 tables and 29 references, 11 of which are Soviet, 3 English, 4 German, and 1 French.

PART II. HIGH MOLECULAR WEIGHT COMPOUNDS OF PETROLEUM

Sergiyenko, S.R. High Molecular Weight Compounds of Petroleum 199

This review covers the study of the composition of high-boiling petroleum fractions. It includes much of the author's own research. Several of the points are debatable and the classification of organic compounds into one large group of "hybrids" is regarded by the editor as improper. A problem which has not yet been solved, namely, the relationship between monomers and polymers in crudes is also treated. It is assumed that there are two basic types of polymers in crudes: the primary and the secondary polymers. N.D. Zelinskiy and K.P. Lavrovskiy indicated

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; CHAYKO, V.P.

Chemical nature of high molecular hydrocarbons in Khaudag petroleum. Izv. Otd. est. nauk AN Tadzh. SSR no.1:73-80 '58. (MIRA 12:1)

1. Institut khimii AN Tadzhikskoy SSR.
(Khaudag--Petroleum--Analysis)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; GORDASH, Yu.T.

Chemical nature and conversion of high-molecular homologs of petroleum naphthalene. Dokl. AN BSSR 2 no.7:294-298 Ag '58. (MIRA 11:10)

1. Predstavleno akademikom AN BSSR B.V.Yerfeyevym.
(Naphtalene)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

62-58-4-8/32

AUTHORS: Petrov, Al. A., Sergiyenko, S. R., Tsedilina, A. L., Teterina, M. P., Kislinskiy, A. N., Gal'pern, G. D.

TITLE: Izomerization of Saturated Hydrocarbons (Isomerizatsiya nasyshchennykh uglevodorodov). Communication 1: Isomeric Conversions of Alkanes With C_6 - C_8 Structure (Soobshcheniye 1: Izomernyye prevrashcheniya alkanov sostava C_6 - C_8)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Khimicheskikh Nauk, 1958, Nr 4, pp. 437 - 445 (USSR)

ABSTRACT: During the last years in a number of works it was pointed out that saturated hydrocarbons are subject to a remarkable isomerization (References 1-4) under hydrogen pressure in the presence of catalysts (alumosilicates). This heterogenous isomerization reaction of saturated hydrocarbons found already industrial use at largest extent. Though there is great attention paid to the preparation of catalysts there are, however, relatively few works dealing with the investigation of the reaction of individual hydrocarbons

Card 1/3

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

62-58-4-8/32

Izomerization of Saturated Hydrocarbons. Communication 1: Isomeric Conversions of Alkanes With C_6 - C_8 Structure

(on the same conditions). Only the works by Chiapetta and Khanter (Reference 4) are an exception here. As the investigation of isomeric conversions of the individual hydrocarbons of different structure is of greatest interest the authors decided to carry out a systematic investigation of the isomerization reaction of the alkanes with a C_6- C_8 structure. The experiment was carried out according to the flowing system on special conditions and all experiments of the isomerization of the individual hydrocarbons were performed at 1o atmospheres excess pressure.
The obtained experimental data were compared with the calculated thermodynamic values.
A new mechanism of isomeric conversions of saturated hydrocarbons in the presence of polyfunctional catalysts was suggested. According to this mechanism the first stage of reaction leads to the formation of olefines. Also a great

Card 2/3

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

62-58-4-8/32

Isomerization of Saturated Hydrocarbons. Communication 1: Isomeric 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 17 references, 11 of which are Soviet.

ASSOCIATION: Institut nefti Akademii nauk SSSR (Petroleum Institute, AS USSR)

SUBMITTED: November 19, 1956

AVAILABLE: Library of Congress

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

Card 3/3

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

62-58-5-8/27

AUTHORS: Petrov, Al. A., ~~Sergiyenko, S. N.,~~ Tsedilina, A. L., Teterina, L. P.

TITLE: Isomerization of Saturated Hydrocarbons (Izomerizatsiya nasyshchennykh uglevodorodov) Communication 2. Isomeric Conversions of the Alkanes of the C_{12} - C_{16}-Structure (Soobshcheniye 2. Izomernyye prevrashcheniya alkanov sostava C_{12} - C_{16})

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Khimicheskikh Nauk, 1958, Nr 5, pp. 575-583 (USSR)

ABSTRACT: The use of polyfunctional catalysts makes the successful 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 heterogeneous catalysts. The purpose of this work was the investigation of the structure and of the properties of the isomerizates. Above all, the isomerization of a series of alkanes (structure C_{12}-C_{16}) was investigated in the presence of polyfunctional catalysts. It was found that ramified hydrocarbons, mainly with 2 methyl-secondary-groups are formed due to the isomerization of

Card 1/2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

Isomerization of Saturated Hydrocarbons. Communication 2. Isomeric Conversions of the Alkanes of the C_{12} - C_{16}-Structure 62-58-5-8/27

the alkanes. Moreover, a catalyst with lower fission-properties was found in the isomerization of high-boiling hydrocarbons. A thermodynamic calculation of the real equilibrium-compositions of the alkanes of the C_{12} - C_{16} was carried out. There are 5 tables and 12 references, 8 of which are Soviet.

ASSOCIATION: Institut nefti Akademii nauk SSSR (Petroleum Institute, AS USSR)

SUBMITTED: November 19, 1956

1. Hydrocarbons--Isomerism 2. Catalysts--Applications 3. Methanes --Applications 4. Hydrocarbons--Test methods

Card 2/2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

AUTHORS: Petrov, Al. A., Sergiyenko, S. R., Tsedilina, A. L., Kislinskiy, A. N., Gal'pern, G. D.

SOV/62-58-6-13/37

TITLE: The Isomerization of Saturated Hydrocarbons (Izomerizatsiya nasyshchennykh uglevodorodov) Communication 3. The Isomeric Transformation of Cyclanes (Soobshcheniye 3. Izomernyye prevrashcheniya tsiklanov)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye khimicheskikh nauk, 1958, Nr 6, pp. 730 - 738 (USSR)

ABSTRACT: In various earlier papers the isomeric transformations of alkanes are discussed, which develop in the presence of polyfunctional catalysts under hydrogen pressure (Refs 1,2). The main purpose of this paper is the investigation of the rules governing the isomerization of hydrocarbons and of the connection between structure on the one hand and kinetic and thermodynamic parameters on the other. The catalytic isomerization of the cycloparaffin hydrocarbons C_6 - C_9 in the presence of a polyfunctional catalyst under hydrogen pressure was carried out. Furthermore, it was found that the isomerization products of the cycloparaffins C_7 and C_8 correspond with respect to their composition to the thermodynamic values obtained by calculation.

Card 1/2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

The Isomerization of Saturated Hydrocarbons. SOV/62-58-6-13/37
Communication 3. The Isomeric Transformation of Cyclanes

A mechanism for the isomerization of cycloparaffins was suggested, according to which the formation of unsaturated hydrocarbons figures as the first stage of reaction. Furthermore the influence exercised by pressure and temperature upon the direction of the reactions of cycloparaffins in the presence of a polyfunctional catalyst was shown. There are 5 tables and 17 references, 8 of which are Soviet.

ASSOCIATION: Institut nefti Akademii nauk SSSR (Petroleum Institute AS USSR)
SUBMITTED: November 19, 1956

1. Hydrocarbons--Isomerism 2. Catalysts--Performance 3. Pressure --Chemical effects 4. Temperature--Chemical effects

Card 2/2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; SEMYACHKO, R.Ya.; DAVYDOV, B.E.

Studying the composition and properties of high-molecular-weight hydrocarbons and tars of Gyurgyanskiy petroleum. Article No.13. Trudy Inst.nefti 12:65-75 '58. (MIRA 12:3)
(Hydrocarbons--Analysis)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; DAVYDOV, B.E.; LITMANOVICH, A.D.; SHAKHRAY, V.A.

Some physicochemical properties of petroleum asphaltenes and tars in solution. Article No.14. Trudy Inst.nefti 12:76-82 '58. (MIRA 12:3)

(Tar) (Asphaltenes)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; GORDASH, Yu.T.

Composition and properties of the tar fraction of Radchenkovo petroleum. Article No. 15. Trudy Inst.nefti 12:83-87 '58. (MIRA 12:3)
(Tar)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; GORDASH, Ye.T.

Low-temperature conversions of high-molecular-weight aromatic hydrocarbons of Radchenkovo petroleum. Article No.16. Trudy Inst.nefti 12: 88-101 '58. (MIRA 12:3)

(Hydrocarbons)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; LEBEDEV, Ye.V.

Chemical nature of saturated high-molecular-weight hydrocarbons of Romashkino (Devonian) petroleum. Article No.17. Trudy Inst. nefti 12:102-116 '58. (MIRA 12:3)
(Hydrocarbons)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; LEBEDEV, Ye.V.

Chemical nature of saturated high-molecular-weight hydrocarbons of Romashkino (Devonian) petroleum. Article No.18. Trudy Inst.nefti 12:117-135 '58. (MIRA 12:3)

(Hydrocarbons)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; MIKHNOVSKAYA, A.A.

Chemical nature of high-molecular-weight monocyclic aromatic hydrocarbons of Romashkino (Devonian) petroleum. Article No.19. Trudy Inst. nefti 12:136-146 '58. (MIRA 12:3)
(Hydrocarbons)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; NOZHKINA, I.A.; NOZDRINA, Ye.V.

Study of the chemical nature of high-molecular-weight bicyclic aromatic condensation compounds of Romashkino petroleum by the method of catalytic hydrogenation in the presence of Raney nickel. Article No.20. Trudy Inst.nefti 12:147-155 '58. (MIRA 12:3)
(Aromatic compounds) (Hydrogenation) (Catalysis)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; NOZDRINA, Ye.V.; NOZHKINA, I.A.

Hydrogenation of high-molecular-weight bicyclic aromatic condensation compounds of Romashkino petroleum carried out under mild conditions in the presence of the catalyst WS_2-NiS-Al_2O_3. Article No.21. Trudy Inst.nefti 12:156-167 '58. (MIRA 12:3)
(Hydrogenation) (Catalysts) (Hydrocarbon)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; NOZHKINA, I.A.; NOZDRINA, Ye.V.

Hydrogenation of tars extracted from Romashkino petroleum. Article No. 22. Trudy Inst.nefti 12:168-174 '58. (MIRA 12:3)
(Hydrogenation) (Tar)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; KORCHAGINA, V.I.; GALICH,P.N.; RUTMAN, L.I.; DAVYDOV, B.E.; KRASAVCHENKO, M.I.

Effect of the depth of sampling on the composition and properties of heavy residual stock. Article No.23. Trudy Inst.nefti 12:175-186 '58. (MIRA 12:3)

(Petroleum products--Analysis)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.; KORCHAGINA, V.I.; GALICH, P.N.; RUTMAN, L.I.; DAVYDOV, B.E.; KRASAVCHENKO, M.I.

Effect of the nature of feed stock and the duration of oxidation on the composition and properties of oxidized bitumens. Article No.24. Trudy Inst.nefti 12:187-199 '58. (MIRA 12:3)
(Bitumen) (Petroleum--Refining)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

[illegible]

AUTHOR: [illegible], [illegible], [illegible]ikovskiy, L. N., [illegible], [illegible], [illegible], [illegible]

TITLE: The Synthesis of High-Molecular Hydrocarbons of [illegible] Structure ([illegible] vys[illegible]olekulyarnykh uglevodorodov ame-shannogo stroyeniya)

PERIODICAL: Doklady Akademii nauk [illegible], 1958, Vol. [illegible], Nr [illegible], pp. 541-543 (USSR)

ABSTRACT: Systematic investigations of the synthesis of individual hydrocarbons and of their properties and reactions are the basis of recently developed new and powerful methods of analysis of mixtures of water and hydrocarbons. Spectral methods, employing various kinds of radiation range predominantly among them. At present the examination of the composition, the structure, and the properties of the fraction of mineral oil with the highest molecular weight is of actual interest, this fraction representing more than half the amount of crude oil. In this case a physical and chemical analysis can be employed, that is to say, methods for the determination of the quantitative dependences of the basic physical properties

Card 1/3

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SOV/20-120-3-29/67

The Synthesis of High-Molecular Hydrocarbons of Mixed Structure

of the entire complicated system upon its chemical composition. For this purpose it is necessary to investigate the said dependence simultaneously with natural complicated systems as well as with artificial mixtures of individual compounds. The molecules of high-molecular mineral oil compounds (C_{20} and above) according to the investigations of recent years exhibit a mixed (hybrid) structure. With other words, structural members of different homolog series take part in the composition of the molecule. The ratio between structure elements of aliphatic and cyclic nature varies within wide limits according to the chemical nature of the mineral oil. It was decided in this connection to synthetize a number of hitherto not described hydrocarbons with a structure ranging from C_{24} to C_{32} with a different proportion of carbon atoms in the structural elements of the molecule. The produced hydrocarbons together with their properties are given in table 1. It contains 15 compounds. Finally some particulars concerning the synthesis are given. There is 1 table.

Card 2/3

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SOV/20-120-3-29/67

The Synthesis of High-Molecular Hydrocarbons of Mixed Structure

ASSOCIATION: Institut nefti Akademii nauk SSSR
(Petroleum Institute, AS USSR)

PRESENTED: January 4, 1958, by B. A. Arbuzov, Member, Academy of Sciences, USSR

SUBMITTED: December 17, 1957

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

Card 3/3

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

5(3)

AUTHORS: Serpiyenko, S. R., Lebedev, Ye. V., Petrov, A. A. SOV/20-123-4-36/53

TITLE: Selective Catalytic Dehydrogenation of Saturated High-Molecular Hydrocarbons in Liquid Phase (Izbiratel'naya kataliticheskaya degidrogenizatsiya predel'nykh vysokomolekulyarnykh uglevodorodov v zhidkoy faze)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 4, pp 704 - 706 (USSR)

ABSTRACT: The reaction discovered by Zelinskiy (Ref 1) has not yet been used for the purpose mentioned in the title, as far as it can be judged from references. Its usefulness in studying the structure of high-molecular petroleum hydrocarbons had to be checked by the authors. Synthetic hydrocarbons C_{20}-C_{32} were used which contain 1-3 cyclohexane-, 2-Dekalin-, 1-cyclopentane nuclei and 1 paraffin hydrocarbon of normal structure. First, the optimum conditions of the dehydrogenation mentioned in the title were determined and the apparatus required was constructed (Fig 1). Pt on charcoal was used as catalyst

Card 1/3

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

(according to Ref 2). To explain the behaviour of the hydrocarbons of various structure the following individual compounds were synthesized: n-tetracosane, n-octadecyl cyclopentane, 7-cyclohexyl octadecane, 1,5-dicyclohexyl-3-heptyl pentane, 1,5-dicyclohexyl-3-hexahydro benzyl pentane, 1,2-di-(1,3,5-trimethyl cyclohexyl)ethane, 2,11-didecahydro naphthyl dodecane, 1,1-dicyclohexyl dodecane. In the investigation the author found that the dehydrogenation of the individual hydrocarbons, which are the homologs of cyclohexane and Decalin, takes place already at 280°. In the liquid phase the optimum temperature is 315-320°. At that temperature the dehydrogenation of all investigated hydrocarbons which contain isolated as well as condensed hexamethylene structures, is as a whole finished within 5-6 hours, with practically no cracking taking place. Figure 2 shows the change of the hydrogen separation and of its total amount in the course of time. The reaction temperature amounted in all cases to 315°. Table 1 shows the results of the catalytic dehydrogenation of the hydrocarbons and their mixtures. The increase of the number of hexamethylene nuclei and the occurrence of methyl groups in them has only little effect

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

Selective Catalytic Dehydrogenation of Saturated High-Molecular Hydrocarbons in Liquid Phase SOV/20-123-4-36/53

on the dehydrogenation. Two condensed hexamethylene groups render this process more difficult. By interrupting this experiment it was proved that the dehydrogenation of the cyclohexyl nuclei takes place in both directions at the same time: a) Of both nuclei. b) Of only one nucleus. The role of the cyclization by dehydrogenation is unimportant. The above investigation has shown that the method of investigating fractions of the mentioned petroleum hydrocarbons with cycloparaffin nuclei as mentioned in the title may be used successfully for the detailed characterization of their chemical structure. There are 2 figures, 1 table and 2 Soviet references.

ASSOCIATION: Institut nefti Akademii nauk SSSR (Petroleum Institute, Academy of Sciences, USSR)

PRESENTED: July 16, 1958, by A. A. Balandin, Academician

SUBMITTED: June 17, 1958

Card 3/3

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S. R.

НОВЫЕ ДАННЫЕ
О СТРУКТУРЕ ВЫСОКОМОЛЕКУЛЯРНЫХ
УГЛЕВОДОРОДОВ НЕФТИ

С. Р. Сергиенко, К. В. Лебедев, А. А. Михновская

VIII Mendeleyev Congress for General and Applied Chemistry in
Section of Chemistry and Chemical Technology of Fuels,
publ. by Acad. Sci. USSR, Moscow 1959

abstracts of reports scheduled to be presented at above mentioned congress,
Moscow, 15 March 1959.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

11(4) PHASE I BOOK EXPLOITATION SOV/2075

Akademiya nauk SSSR. Bashkirskiy filial, Ufa

Khimiya serneorganicheskikh soyedineniy, soderzhashchikhsya v neftyakh i nefteproduktakh; [materialy III nauchnoy sessii] (Chemistry of Sulphur Organic Compounds Contained in Petroleum and Petroleum Products; [Papers of the Third Scientific Session]) Moscow, Izd-vo AN SSSR, 1959. 376 p. 2,000 copies printed. Errata slip inserted.

Editorial Board: R.D. Obolentsev (Resp. Ed.) Doctor of Chemical Sciences; G.D. Gal'pern, Doctor of Chemical Sciences; Ya. B. Chertkov, Doctor of Technical Sciences; V.V. Panov, Candidate of Technical Sciences; and V.P. Rozhdestvenskiy, Candidate of Chemical Sciences; Ed. of Publishing House: I.I. Brusov; Tech. Ed.: T.P. Polenova.

PURPOSE: This book is intended for chemists, chemical engineers, and technicians specializing in the chemistry of petroleum.

COVERAGE: The book is a collection of papers presented at the Third Scientific Session on the Chemistry of Organic Sulfur- and Nitrogen Compounds Contained in Petroleum and Petroleum Products. The scientific session was held in Ufa, June 3-8, 1957. The book consists of six sections: 1) Synthesis, characterization, and analysis of organic sulfur compounds; 2) Separation and composition of organic sulfur compounds contained in petroleum and petroleum products; 3) Transformation of organic sulfur compounds by thermal catalysis; 4) Corrosive properties of and tar formation in sulfur-containing petroleum and petroleum products; 5) Uses of organic sulfur compounds and hydrogen sulfide; 6) Physiological properties of organic sulfur compounds. No personalities are mentioned. There are 315 references, of which 179 are Soviet, 118 English, 5 French, 12 German, and 1 Czech.

TABLE OF CONTENTS

From the Editorial Staff 3

Introduction 5

Card 2/10

Chemistry of Sulphur Organic Compounds (Cont.) SOV/2075

Sergiyenko, S.R., I.A. Noskkina, Ye. V. Nozdrina. Catalytic Hydrogenation as a Method for Investigating the Chemical Nature of High-Molecular Condensed Aromatic Sulfurous Petroleum Compounds 85

Obolentsev, R.D., B.V. Ayvazov. Distribution of the Total Sulfur by Straight-run Fuel Fractions Obtained from Sulfur-containing Petroleum 101

Obolentsev, R.D., B.V. Ayvazov. Separation of Mixtures of Hydrocarbons and Organic Sulfur Compound by the Chromathermography Method in Vapor Phase 110

Sanin, P.I., Ye. A. D'yachkova, N.I. Komissarova. Separation of Sulfur Compounds and Aromatic Hydrocarbons by the Adsorption Chromatography Method 125

Skrynnikova, Z.V., A. Ya. Kantor. Testing an Experimental Chromatographic Installation for the Production of a Concentrate of Organic Sulfur Compounds 139

Card 5/10

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

(4) PHASE I BOOK EXPLOITATION SOV/3336

Sergiyenko, Semen Romanovich

Vysokomolekulyarnyye soyedineniya nefti (High-Molecular Compounds of Petroleum) Moscow, Gostoptekhizdat, 1959. 412 p. 2,600 copies printed.

Exec. Ed.: L. A. L'vova; Tech. Ed.: A. V. Trofimov.

PURPOSE: This monograph is intended for scientific workers and aspirants specializing in chemistry, petroleum technology and petroleum chemical synthesis. It may also be useful to engineers and technicians of the petroleum-refining and petroleum chemical industry.

COVERAGE: An attempt is made to analyze theoretical studies of high-molecular components of petroleum and to summarize experience of the refining industry gained in dealing with resinous or sulfurous crudes and with heavy petroleum products. Composition, properties and structure of high-molecular hydrocarbons from

Card 1/9

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

High-Molecular Compounds (Cont.) SOV/3336

petroleum are reviewed along with characteristics of petroleum paraffin and ceresin wax. Chemical properties of high-molecular hydrocarbons of some American and Soviet crudes are analyzed, and the application of adsorption chromatography, infrared spectroscopy, catalytic hydrogenation and dehydrogenation in the study of the chemical structure of high-molecular petroleum components is discussed. Petroleum carboxylic and napthenic acids, their origin and cause of formation are studied, and petroleum sulfurous organic compounds, resins, asphaltenes and bitumens are analyzed. The author also considers condensed polycyclic hydrocarbons as a possible source of cancer and suggests measures to reduce risk to refiners. Structures of various types of hydrocarbons and the composition of high-molecular hydrocarbons contained in crudes from different regions of the Soviet Union are illustrated in numerous tables. The author thanks V. T. Sklyara, Yu. T. Gordash, I. S. Mayorov, N. V. Zhdanova, B. E. Davydov, Ye. V. Lebedev and M. P. Teterina for their participation in writing certain sections; he also thanks L. V. Ratnikova, S. E. Kreyn and V. A. Sokolov for their help. References, the majority of which are Soviet, appear at the end of chapters.

Card 2/9

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

High-Molecular Compounds (Cont.) SOV/3336

TABLE OF CONTENTS:

Foreword 3

Introduction 5

PART I. PROPERTIES COMMON TO DIFFERENT HIGH-MOLECULAR PETROLEUM COMPOUNDS AND METHODS USED TO STUDY THEM

Ch. I. Distinctive Features of Properties and Composition of High-Molecular Petroleum Compounds 13
Basic features of high-molecular petroleum compounds 14
Causes of diversity of high-molecular petroleum compounds 17
Bibliography 23

Ch. II. Methods of Separating High-Molecular Petroleum Compounds 25
Adsorption chromatography 26
Molecular distillation 38
Bibliography 47

Card 3/9

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

PART II. COMPOSITION, PROPERTIES AND REACTIONS OF HIGH-MOLECULAR HYDROCARBONS OF PETROLEUM

Ch. III. Paraffinic Hydrocarbons 55
Basic properties of different types of paraffin wax and their dependence on wax structure 56
Chemical properties and reactions of different types of paraffin wax 78
Crystalline form of paraffin wax and its dependence upon the chemical structure of hydrocarbons and crystallization conditions 95
Characteristics of petroleum paraffin and ceresin wax 97
Content of paraffin wax in crudes from Soviet oil fields 115
Bibliography 118

Ch. IV. Hydrocarbons With Hybrid or Mixed Structure 122
Occurrence of compounds with hybrid (mixed) structure in petroleum

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

Dependence of properties of high-molecular hybrid hydrocarbons on their structure 125
Chemical nature of high-molecular hydrocarbons of some American crudes 145
Data on chemical structure of hydrocarbons of lube oil fractions in some Soviet crudes 151
Study of the chemical nature of high-molecular hydrocarbons of crudes 167
Application of methods of selective catalytic hydrogenation or dehydrogenation to the study of the chemical structure of high-molecular petroleum hydrocarbons 173
Application of infrared spectroscopy to the study of high-molecular petroleum hydrocarbons 191
Bibliography 201

Ch. V. High-Molecular Aromatic Hydrocarbons of Petroleum 204
Content of condensed aromatic hydrocarbons in crude oil 204

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

Dependence of properties of condensed aromatic hydrocarbons on their chemical structure 206
Effect of distillation on the carcinogenic activity of high-molecular petroleum products 213
Processes of thermocatalytic condensation of aromatic nuclei 216
Bibliography 221

PART III. COMPOSITION, PROPERTIES, AND REACTIONS OF HIGH-MOLECULAR HETERORGANIC COMPOUNDS OF PETROLEUM

Ch. VI. Carboxilic Acids from Petroleum 227
Early investigations 227
Distribution of carboxilic acids in petroleum 228
Chemical reactions and properties of petroleum carboxilic acids 231
Salts of napthenic acids, their properties and utilization 234

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

Data on the chemical features of petroleum acids of ultrahigh molecular weight 237
Origin and cause of petroleum acid formation 243
Bibliography 245

Ch. VII. Sulfurous Organic Compounds in Petroleum 247
Character of distribution of sulfur in crudes 247
Character of distribution of sulfur in petroleum fractions 249
Character of distribution of sulfur in high-molecular components of petroleum 251
Nature of high-molecular sulfurous compounds in petroleum 258
Properties and reactions of sulfurous organic compounds 261
Methods of separating and analyzing sulfurous organic compounds 267
Selective catalytic hydrogenation as a method of demonstrating the structure of sulfurous organic compounds in petroleum 279

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

Bibliography 291

Ch. VIII. Petroleum Resins 293
General characteristics of resinous-asphaltenic substances of petroleum 293
Principal trends in their utilization 294
General principles of analyzing and classifying bitumens and resins 295
Composition, properties and distribution of resins in petroleum 300
Methods of extraction and separation 302
Study of resins from Soviet crudes 307
Chemical nature of resins 313
Application of infrared spectra to the study of petroleum resins and bitumens 332
Application of luminescence analysis to the study of petroleum resins and bitumens 336
Bibliography 343

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

High-Molecular Compounds (Cont.) SOV/3336

Ch. IX. Petroleum Asphaltenes 346
Properties of asphaltenes 346
Molecular weight of asphaltenes 350
Chemical composition and structure of asphaltenes 362
Bibliography 376

Ch. X. Physical Properties of Resins and Asphaltenes 378
Molecular surface properties 378
Dependence of molecular surface properties of resins on their composition and structure 382
Polarization properties of high-molecular petroleum compounds 391
Bibliography 403

Conclusion 406

Bibliography 411

AVAILABLE: Library of Congress

Card 9/9

TM/mmh
4-25-60

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

Sergiyenko, S.R.

S/165/59/000/04/02/026

AUTHORS: Sergiyenko, S.R., Lebedev, Ye.V. and Mikhnovskaya, A.A.

TITLE: On the Structure of High Molecular Hydrocarbons in Petroleum

PERIODICAL: Izvestiya Akademii nauk Turkmenskoy SSR, 1959, No. 4, pp. 10 - 23

TEXT: The article reviews the chemical properties of high molecular hydrocarbons in petroleum as presented in the Section of Chemistry and Technology of Fuel at the 8th Mendeleyev Congress on March 17, 1959 in Moscow. Investigation of chemical and technical properties of these hydrocarbons is important in view of their proposed use as raw materials for synthetic products during the current Seven-Year Plan. Data contained herein have been obtained from 15 different types of Soviet petroleum. The Romashkin Tuymazin, Bavlin, Gyurgyan and other petroleums contain about 40% high molecular hydrocarbons, in heavier petroleum they frequently exceed 50%. To eliminate chemical changes, vacuum was used for distillation of fractions up to 325-350°C, at a maximum temperature of 250°C. Chromatographic fractionation was carried out with coarse-pored activated silica gel (ASK). The group composition of high molecular hydrocarbons and their paraffin-cycloparaffinic (PCP), monocycloaromatic (MCA) and bicycloaromatic (BCA) hydrocarbon contents in various types of petroleum is shown in Table 1. The main components of high

Card 1/3

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

S/165/59/000/04/02/026

On the Structure of High Molecular Hydrocarbons in Petroleum

molecular hydrocarbons are Paraffin-cycloparaffinic hydrocarbons with high hydrogen content (40-60%), bicycloaromatic hydrocarbons with low hydrogen content; and the medium group are definitely monocycloaromatic hydrocarbons. The differences in chemical properties of petroleum are particularly evident in composition and properties of paraffin-cycloparaffinic hydrocarbons, as far as the determination of their chemical properties remains limited to their reaction in forming a complex compound with carbamide. Distribution of carbon atoms of various chemical properties in similar groups of hydrocarbons extracted from Soviet petroleum is shown in Table 2. The question about chemical properties of cycloparaffinic rings and the relation of hexamethylene and pentamethylene rings in the molecules of paraffin-cycloparaffinic hybridic structures remained unsolved. Number of cycloparaffinic and benzene rings in paraffin cycloparaffinic, monocyclo-aromatic and bicyclo-aromatic hydrocarbons extracted from various types of petroleum is shown in Table 3. Groups and properties of paraffin-cycloparaffinic hydrocarbons, monocyclic aromatic petroleum and bicyclic condensed aromatic hydrocarbons are shown in Tables 4, 5 and 6. Results of a three-stage fractionated dehydrogenation are given in Table 7. It shows that the relation of hexamethylene and pentamethylene rings in the Romashkin (Devon) petroleum varies from 1-1.5. Properties and structure of paraffin-cycloparaffinic hydrocarbons extracted from 3 fractions

Card 2/3

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

S/165/59/000/04/02/026

On the Structure of High Molecular Hydrocarbons in Petroleum

of paraffin cycloparaffinic hydrocarbons are shown in Table 8. Oxidation of benzene homologues in 30 hours at 97-99°C is shown in Table 9 and oxidation of hybridic hydrocarbons C_{20}-C_{24} in 100 hours at 97-99°C is given in Table 10. The degree of oxidation of benzenecarbonic acids i.e. oxalic and carbonic acids in 30 hours at 97-99°C is shown in Table 11. The oxidation and infra-red spectroscopy method showed that among high molecular monocyclic hydrocarbons of the Romashkin (Devon) petroleum trisubstituted benzenes are predominant. Tests proved that sulphur contained in high molecular fractions is constitutionally connected with aromatic compounds accompanying bicycloaromatic hydrocarbons. There are 10 tables and 1 diagram.

ASSOCIATION: Institut geologii i razrobotki goryuchikh iskopayemykh Akademii nauk SSSR (Institute of Geology and Processing of Combustible Minerals at the AS USSR)

SUBMITTED: July 11, 1959

Card 3/3

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8

SERGIYENKO, S.R.

D.I. Mendeleev and problems in studying and utilizing petroleum.
Izv. AN Turk. SSR no.5:3-15 '59. (MIRA 13:3)
(Petroleum) (Mendeleev, Dmitrii Ivanovich, 1834-1907)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548120011-8"