AT0029427 (A)

AUTHOR: Dobryakova, G. V.; Panchonko, I. Ya.; Povalyayov, A. P.

SOURCE CODE: UR/0205/66/006/004/0625/0627

ORG: none

TITLE: Ratio of strontium to calcium upon passage from rations into dog skelotons

SOURCE: Radiobiologiya, v. 6, no. 4, 1966, 625-627

TOPIC TAGS: dog, isotope, calcium, strontium, biologic metabolism, food ration, bone

ABSTRACT: Tests were conductod for 180 days on 2 groups of dogs whose overall and mineral metabolism had been raised to a slightly positive calcium balance. The dogs were fed bone meal from animals who had received strontium-90 for a long time. Doses for groups 1 and 2 were 4.4×10^{-9} and 4.4×10^{-8} curie and 1 and 10 g calcium respectively. The animals were sacrificed after 30, 90 and 180 days and samples of rations, bone, blood, soft tissues, urine and feces were studied radiometrically and chemically. In group 2, the absolute strontium-90 accumulation in bone was only 2 fold that of group 1 although its content in the ration was 10 fold. Calcium and strontium absorption in group 2 was 1.5-2 fold that of group 1. No statistically valid difference was found for the calcium content of bones from the animals of groups 1 and 2. The same applied to soft tissues and blood. Results show that the uptake of calcium and strontium from the gastrointestinal tract and their accumulation in the

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ANISIMOV, A.A.; FUZINA, Ye.K.; DOBRYAKOVA, L.A.; LIKHOVIDOVA, Ye.V.

Diurnal periodicity of the translocation of assimilates. Dokl. AN SSSR 146 no.6:1441-1444 O '62. (MIRA 15:10)

1. Gor'kovskiy gosudarstvennyy universitet im. N.I. Lobachevskogo. Predstavleno akademikom A.L. Kursanovym.
(Plants—Assimilation)

ANISIMOV, A.A.; DUBOVSKAYA, I.S.; DOBRYAKOVA, L.A.

Effect of nitrogen and phosphorus nutrition of wheat on the incorporation of C^{14} into assimilates and their translocation. Fiziol. rast. 11 no.5:793-799 S-O '64. (MIRA 17:10)

1. Gorky State University.

DOBRYAKOVA, L.I.

VELIKOVSKAYA, Ye.N.; VELIKOVSKIY, D.S.; PEGANOV, A.A.; DOBRYAKOVA, L.I.; KUROCHKINA, Z.V.; LISOVSKIY, I.I.

Synthetic drying oils. Patent U.S.S.R. 77,050, Dec.31, 1949.
(CA 47 no.19:10244 '53)

DOBRYAKOVA, L. I., Cand Tech Sci -- (diss) "Study of the Properties of Limestone Treated with Silicofluorides and Certain Silico-Organic Compounds ~~for~~ to Increase ~~of~~ Its Durability." Mos, 1957. 21 pp (Acad of Construction and Architecture USSR, Sci Res Inst of New Construction Materials, Finishing and Outfitting of Buildings), 150 copies (KL, 49-57, 113)

KRESTOV, M.A.; DOBRYAKOVA, L.I.; KOSHKIN, V.G.; YEVDOKIMOV, A.A.; IVANOVA, V.V.; KHMELEVSKIY, V.A.; KOSTOCHKINA, T.V.; PFLAUMER, O.E., kand.tekhn.nauk, nauchnyy red.; SKVORTSOVA, I.P., red. izd-va; TEMKINA, Ye.L., tekhn.red.

[Finishing large panels and blocks using colored concretes] Otdelka krupnykh panelei i blokov s primeneniem tsvetnykh betonov. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit. materialam, 1959. 87 p. (MIRA 13:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut novykh stroitel'nykh materialov. 2. Institut novykh stroitel'nykh materialov (for Krestov, Dobryakova, Koshkin, Yevdokimov, Ivanova, Khmelevskiy). 3. Institut betona i zhelezobetona (for Kostochkina).
(Building blocks)

KRESTOV, M.A., kand. arkh.; MAKOTINSKIY, M.P., kand. arkh.; TSILLI, L.B., kand. arkh.; Prinimali uchastiye: BOGUSLAVSKIY, A.I., inzh.; DOBRYAKOVA, L.I., kand. tekhn. nauk; LIVSHITS, A.M., inzh.; MUNTS, V.O., kand. arkh.; L'VOV, G.N., inzh., retzenzent; POPOV, A.N., retsenzent; GURVICH, E.A., red.izd-va; TEMKINA, Ye.L., tekhn. red.

[Catalog of finishing materials and elements] Katalog otdelochnykh materialov i izdelii. Moskva, Gosstroiizdat. Pt.6.[Concrete and mortars] Betony i rastvory. 1962. 46 p. (MIRA 16:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut novykh stroitel'nykh materialov. 2. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR (for Popov).
(Finishes and finishing)

DOBRYAKOVA, Lyudmila Ivanovna, kand. tekhn. nauk; YEVDOKIMOV, Aleksey Aleksandrovich, inzh.; LOPOVOK, Lev Isayevich, kand. arkhitektury; MILOVZOROV, Aleksey Konstantinovich, arkh.; ORLOV, Aleksandr Mikhaylovich, kand. tekhn. nauk; KHMELEVSKIY, Vladimir Aleksandrovich, arkh.; GLEZAROVA, I.L., red.; BOROVNEV, N.K., tekhn. red.

[Industrial finishing of buildings] Industrial'naia otdelka zdanii. Moskva, Gosstroiizdat, 1963. 106 p. (MIRA 16:11)

(Buildings—Finishing)

DOBRYAKOVA, N. S.

Chemical Abstracts
Vol. 48 No. 5
Mar. 10, 1954
Biological Chemistry

Action of antimony trioxide on the organism. I. D. Gadaskina, N. S. Dobryakova, I. F. Kreps, E. I. Lyublina, and Z. K. Pavlova (Sci. Research Inst. Ind. and Professional Hyg., Leningrad), *Gigiena i Sanit.* 1953, No. 10, 24-7.—Expts. with rabbits and observations on human cases show that Sb_2O_3 is a toxic substance whose concn. in the atm. cannot exceed thousandths of mg. per/l. or less. Toxic effects are evident after prolonged inhalation of air contg. hundredths of mg./l. Skin deformations are among the symptoms of intoxication. G. M. Kosolapoff

DOBRYAKOVA, N.S

LAZAREV, N.V.; ALEKSANDROV, I.S.; LYUBLINA, Ye.I.; AKKERBERG, I.I.; ZAKA-
BUNINA, M.S.; GADASKINA, I.D.; DOBRYAKOVA, N.S.; KREPS, I.F.; KARASIK,
V.M.; LEVINA, E.N.; DANISHEVSKIY, S.L.; YEGOROV, N.M.; RYLOVA, M.L.,
starshiy nauchnyy sotrudnik; KAMPOV, B.D.; ANDREYEV, V.V.; LYKHINA,
Ye.T.; ZAMESHAYEVA, G.I.; ANISIMOV, A.N.; FRIDLYAND, I.G.; DANETSKAYA,
O.L.; BOGOVSKIY, P.A.; TIUNOV, L.A.; MIKHEL'SON, M.Ya.; ABRAMOVA, Zh.I.,
GRIGOR'YEVA, L.M.; KLINSKAYA, K.S.

Third Leningrad conference on the problems of industrial toxicology.
Farm.i toks. 16 no.2:59-62 Mr-Ap '53. (MLRA 6:6)
(Poisons)

DOBRYAKOVA, N.S.

Effective illumination of working areas of relay adjusters. Gig. i san. 24 no.3:37-41 Mr '59. (MIRA 12:5)

1. Iz sanitarno-epidemiologicheskoy stantsii Oktyabr'skoy zheleznoy dorogi.

(ILLUMINATION,
of indust. relay-control areas (Rus))
(INDUSTRY AND OCCUPATIONS,
illumination of relay-control areas (Rus))

DOBRYAKOVA, N.YE.

STARIKOVA, Ye.V.; DOBRYAKOVA, N.Ye.; KOROBKO, V.A.; AL'TMAN, A.A.; ROMANOVA, N.V., vedushchiy redaktor; POLOSINA, A.S., tekhnicheskiy redaktor

[Methods of testing petroleum products] Metody ispytaniia nefteproduktov. Moskva, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, 1953. 389 p. [Microfilm] (MLRA 7:9)
(Petroleum products--Testing)

S/065/61/000/002/008/008
E194/E284

AUTHOR: Dobryakova, N. Ye.

TITLE: A Conference on the Design of Lubricating Grease Plants of Increased Output Using Improved Methods of Manufacture

PERIODICAL: Khimiya i tekhnologiya topliv i masel, 1961, No. 2, pp. 71-72

TEXT: A conference of the above title was held from September 26 to October 1, 1960 in Lvov, it was organised by the GNTK of the Council of Ministers of the RSFSR and the GNTK of the Council of Ministers of the UkrSSR. The conference was attended by representatives of GOSPLAN USSR and UkrSSR, the GNTK of the USSR, the Lvov Council of National Economy, GLAVNEFTESNAB, the Council of Ministers of the RSFSR, TsP NTO UkrSSR, the Experimental-Industrial Production Trust 'Neftemaslozavody', Scientific Research and Design Institutes, the Academy of Sciences of the UkrSSR, Grease Plants and others. More than 100 persons attended the conference and 12 reports were read of which the main ones were as follows: Recent investigations and trends in development and manufacture of greases in the USSR and abroad. The design

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S/065/61/000/002/008/008
E194/E284

A Conference on the Design of Lubricating Grease Plants of Increased Output Using Improved Methods of Manufacture

of high output grease plants and the reconstruction of existing plants. Scientific research and experimental work on new methods of grease manufacture. The design of equipment for new methods of grease manufacture. Automation and mechanization of laborious processes in grease manufacture. Methods of handling and packing greases produced in large and small quantities. Experience of a number of works in grease manufacture including the Berdyansk and Moscow Neftegaz Plants. It was noted that a great deal of work had been done on the development and supply of greases but reconstruction of grease plant was being hindered by the absence of the necessary equipment and instruments. Raw materials for grease manufacture was not yet standardized which impairs the quality and gives rise to production troubles. Not enough research is being done on new methods of manufacture, apparatus and equipment. In the ВНИИ НП(All-Union Scientific Research Institute of the Petroleum Industry) the development of continuous methods of manufacture of lithium greases with the use of homogenisers is only

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S/065/61/000/002/008/008
E194/E284

A Conference on the Design of Lubricating Grease Plants of Increased Output Using Improved Methods of Manufacture

in the laboratory stage and so no data is available for the design of full-scale plants. Mechanization and automation of packing and handling is inadequate, particularly in the case of packages up to 1 kg. The following measures were recommended. In the current 7-year plan to get out designs for grease plants ranging from 5 to 50 000 tons per year output using batch and continuous processes. Recommend GOSPLAN RSFSR to obtain modern imported equipment both for grease manufacture and laboratory testing. New methods of manufacturing lithium based greases should be developed and introduced including the application of ultrasonics. In Ukrniiproyekte in 1960-1961 Scientific Research Laboratory with a staff of 20-25 should be instituted to develop methods of manufacturing large tonnages of grease. The All-Union Research Institute of the Petroleum Industry should, in 1961, intensify research work on new greases and in the first place waterless calcium greases, and sodium greases containing sodium nitrite. Antioxidant, anti-wear and anti-corrosion additives should be developed for greases. Raw materials for greases should be standardized.
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MALOLETKOV, Ye.K., inzh.; KRASAVIN, I.A., inzh.; DOBRYAKOVA, Ye.M., tekhnik

[Method of estimating the operational qualities of single-bucket construction excavators while designing them] Metodika otsenki ekspluatatsionnykh kachestv odnokovshovykh stroitel'nykh ekskavatorov pri proektirovanii. Moskva, Gosstroiizdat, 1964. 36 p. (MIRA 17:7)

1. Moscow. Nauchno-issledovatel'skiy institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu.

DOBRYANSKAYA, Ye.M.; SOTNIK, A.

Driving through an incline by using deep blast holes. Mast.ugl.2 no.11:17-18 N '53. (MLRA 6:11)

1. Nauchnyy sotrudnik DonUGI (for both). (Coal mines and mining) (Blasting

Conductor
Coworker
СОТРУДНИК

DOBRYANSKAYA, Ye.M., inzhener.

Experience with multiple shift work in combine-equipped mines. Mekh.trud. rab. 7 no.8:28-32 Ag '53. (MLRA 6:8)
(Coal-mining machinery)

USSR/Mining

Card 1/1

Authors : Dobryanskaya, E. M.

Title : Leading Shaft Sinking Cadres of Donets Coal Fields

Periodical : Mekh. Trud. Rab. Ed 3, 13 - 16, Apr - May 1954

Abstract : Studies conducted by Donets Coal scientific-investigational institute on problems involving the productivity and efficiency of individual working cadres employed in the coal shaft sinking operations. The compiled graphs and tables indicate the productivity of each individual cadre, time consumed during the specific operation, type of operation, and the methods and machinery used during shaft sinking. Tables; graphs.

Institution : ....

Submitted : ....

RUBINSKIY, Yu.M., kand.ekon.nauk; DOBRYANSKAYA, Ye.M., kand.tekhn.nauk

Tasks in revising technical work norms in coal mines. Ugol' Ukr. 3 no.4:39-41 Ap '59. (MIRA 12:7)

1. Dnepropetrovskiy gornyy institut (for Rubinskiy). 2. Donetskiy ugol'nyy institut (for Dobryanskaya).
(Coal mines and mining)

DOBRYANSKAYA, Ye.M., kand.tekhn.nauk; BIRENBERG, B.M.; SERDYUK, A.I.

Causes of actual labor productivity being less than that predicted in mines of the Donetskugol' Combine. Sbor. DonUGI no.28:50-79 '62. (MIRA 16:8)

(Donets Basin--Coal mines and mining--Labor productivity)

DOBRYANSKAYA, Ye.M., kand.tekhn.nauk; BIRENBERG, B.M., gornyy inzh.; SERDYUK, A.I., gornyy inzh.

Effect of individual factors on the labor productivity and coal production costs in coal mines; "collection of articles. Reviewed by E.M. Dobrianskaia, B.M. Birenberg, A.I. Serdiuk. Ugol' 37 no.9:62-63 S '62. (MIRA 15:9)
(Coal mines and mining--Costs)
(Coal mines and mining--Labor productivity)

DOBRYANSKAYA, Ye.M., kand. tekhn. nauk

Reasons for the decline of actual labor productivity from the level specified by the plans for mine reorganization. Sbor. DonUGI no.32:39-56 '63. (MIRA 17:10)

BRAUN, M.P., prof.; KOSTYRKO, O.S.; DOBRYANSKAYA, Ye.P.; KONDRASHEV, A.I.

Efficient heat treatment process for hot rolling mill rolls.
Izv.vys.ucheb.zav.; chern.met. 2 no.8:105-112 Ag '59.
(MIRA 13:4)

1. Ukrainskaya Akademiya sel'skokhozyaystvennykh nauk.
(Rolls(Iron mills)) (Steel--Heat treatment)

18.7100

77596
SOV/129-60-2-9/13

AUTHORS: Braun, M. P. (Professor, Doctor of Technical Sciences), Kostyrko, O. S., Dobryanskaya, Ye. P., Kondrashev, A. I. (Engineers)

TITLE: Rational Heat Treatment Rates for Hot Rolling Rolls

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1960, Nr 2, pp 48-52 (USSR)

ABSTRACT: At Novo-Kramatorskiy Plant (Novo-Kramatorskiy zavod) in Kramatorsk protracted heat treatment of hot rolling rolls failed to remove flakes. In order to study the effect of cooling rates on flake formation after forging 55Kh-steel specimens, the authors tested four different heat treatment methods (see Fig. 2).

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Rational Heat Treatment Rates for Hot Rolling Rolls

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SOV/129-60-2-9/13

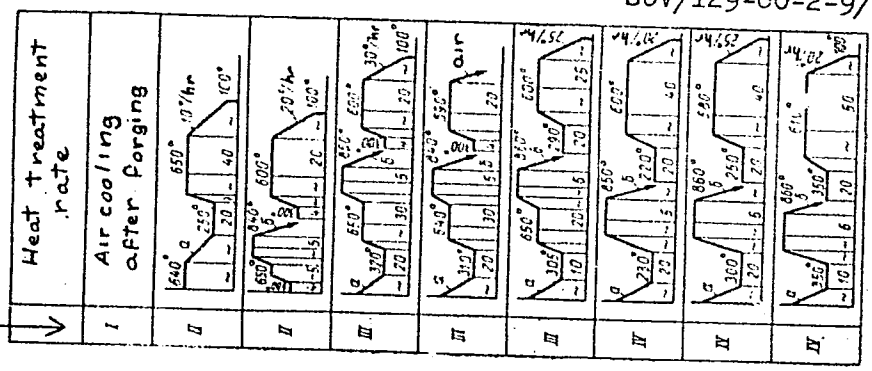

Fig. 2. Experimental rates. Cooling (a) with furnace and (b) in air.

Specimens of different weight were taken from ingots used for the production of rolls. Specimens as well

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as rolls were forged with the same degree of reduction. Tensile tests allowed the observations of hardness changes along the cross section of specimens. Flakes were detected by means of magnetic defectoscope. Table 1 shows data relating to weight and chemical composition of specimens.

Key to Table 1: (A) Heat treatment group; (B) ingot weight in tons; (C) specimen weight in tons; (D) contents of elements in %.

(A)	(B)	(C)	(D)		
			C	Mn	Cr
I	42	6,2	0,56	0,54	1,20
II	42	6,4	0,57	0,37	1,12
II	42	6,4	0,57	0,37	1,12
III	32	7,5	0,52	0,54	1,17
III	32	7,3	0,52	0,54	1,17
III	36	36	0,56	0,54	1,20
IV	42	6,4	0,57	0,37	1,12
IV	42	7,8	0,56	0,54	1,20
IV	32	8,2	0,56	0,55	1,33

Note: Si--0.26 to 0.32%; S--0.020 to 0.33%; P--0.016 to 0.025%.

Rational Heat Treatment Rates for Hot Rolling Rolls

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For a complete analysis of test results, the authors calculated the amount of H escaping from a forging with 1,000 mm diam at various temperatures of isothermal holding. The period during which H escaped was calculated according to a formula by N. M. Chuyko (see Ref 1 Stal', 1951, Nr 3). The authors estimated that 100 g 55Kh-steel contains 8 cm^3 H and maximum 4 cm^3 H after heat treatment. Calculations showed that H is liberated slowly from large forgings during austempering. Most flakes were identified in air-cooled forgings and a minimum number or none in specimens heat-treated according to method IV with the following characteristics:

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Rational Heat Treatment Rates for Hot Rolling Rolls

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Key to Table 2. (a) Heat treatment group; (b) specimens taken from; (c) tensile strength, kg/mm^2; (d) yield point, kg/mm^2; (e) elongation; (f) reduction of area; (g) impact strength, kgm/cm^2; (h) mean, kg/mm^2; (i) number of flakes; (j) surface; (k) 1/3 radius; (l) 2/3 radius; (m) center part.

(a)	(b)	(c)	(d)	(e) %	(f) %	(g)	(h)	(i)
IV	(j)	84,4	41,1	18	26,7	2,6	228—241	75
	(k)	82,1	42,3	16,2	23,4	1,9		
	(l)	83,4	39,7	13,4	24,8	2,1		
	(m)	81,8	39,1	14,2	21	1,9		
	(j)	90,1	42,9	13,5	21,4	2,1	228—252	3
	(k)	84,1	36,8	12,8	21,6	2,3		
	(l)	75,6	39,4	12,3	19,3	2,8		
	(m)	74,8	36,5	10,3	19,8	3,1		

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Rational Heat Treatment Rates for Hot Rolling Rolls

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It was found that isothermal holding immediately after forging failed to prevent flake formation. By heating steel after the initial overcooling, flakes have no time to develop. Subsequent overcooling promotes considerable H liberation. The minor amounts of H which remain in the steel do not enhance flake formation. The authors recommend the application of the above heat treatment rates which combine annealing and normalization and reduce the time of heat treatment of large-size forgings by 40%. Hundreds of rolls have already been heat-treated by the above method, and considerable saving was achieved at the plant. There are 4 figures; 2 tables; and 4 Soviet references.

ASSOCIATION: Novo-Kramatorskiy Machine Building Plant (Novo-Kramatorskiy mashinostroitel'nyy zavod)

Card 6/6

DOBRYANSKAYA, Ye.P.

PHASE I BOOK EXPLOITATION SOV/5511

Nauchno-tekhnicheskoye obshchestvo mashinostroitel'noy promyshlennosti. Kiyevskoye oblastnoye pravleniye.

Metallovedeniye i termicheskaya obrabotka (Physical Metallurgy and Heat Treatment of Metals) Moscow, Mashgiz, 1961. 339 p. Errata slip inserted. 5,000 copies printed.

Sponsoring Agency: Gosudarstvennyy nauchno-tekhnicheskiy komitet Soveta Ministrov UkrSSR. Nauchno-tekhnicheskoye obshchestvo mashinostroitel'noy promyshlennosti. Kiyevskoye oblastnoye pravleniye.

Editorial Board: M. P. Braun, Doctor of Technical Sciences, I. Ya. Dekhtyar, Doctor of Technical Sciences, D. A. Draygor, Doctor of Technical Sciences, I. S. Kamenichnyye, Engineer, Ye. A. Markovskiy, Candidate of Technical Sciences, V. G. Permyakov, Doctor of Technical Sciences, and A. V. Chernovol, Candidate of Technical Sciences; Ed.: M. S. Soroka; Tech. Ed.: M. S. Gornostaypol'skaya; Chief Ed., Mashgiz (Southern Dept.): V. K. Serdyuk, Engineer.

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PURPOSE: This collection of articles is intended for scientific workers and technical personnel of research institutes, plants, and schools of higher technical education.

COVERAGE: The collection contains papers presented at a convention held in Kiyev on problems of physical metallurgy and methods of the heat treatment of metals applied in the machine industry. Phase transformations in metals and alloys are discussed, and results of investigations conducted to ascertain the effect of heat treatment on the quality of metal are analyzed. The possibility of obtaining metals with given mechanical properties is discussed, as are problems of steel brittleness. The collection includes papers dealing with kinetics of transformation, heat treatment, and properties of cast iron. No personalities are mentioned. Articles are accompanied by references, mostly Soviet.

TABLE OF CONTENTS:

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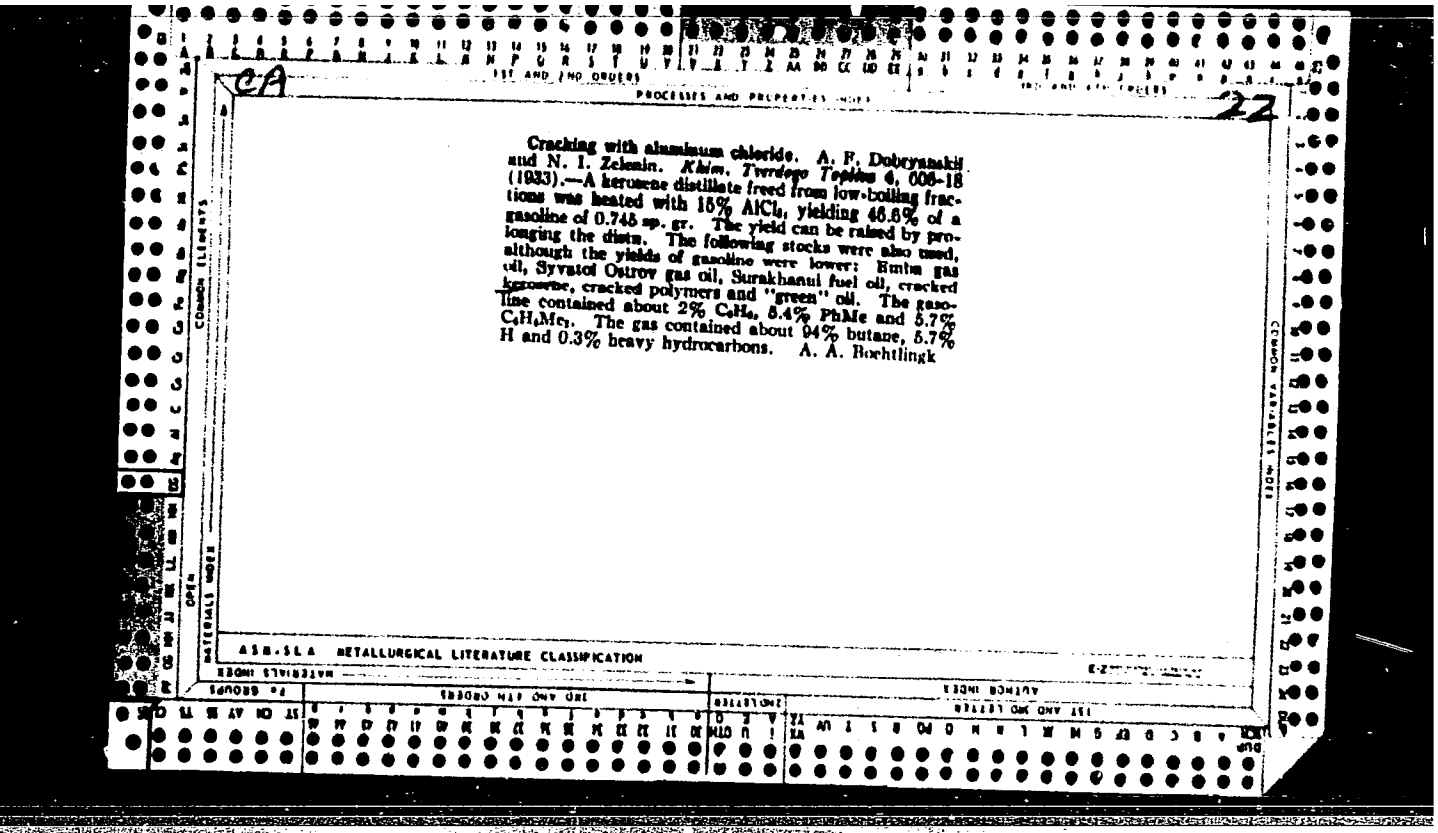
DOBRYANSKIY, A. F.

Dobryanskiy, A. F. "Clearing the Russian technical langunge of foreign terminology," Vestnik vyssh. shkoly, 1948, No. 12, p. 19-22

SO: U-3264, 10 April 1953, (Letopis 'Zhurnal 'nykh Statey, No.3, 1949)

DOBRYANSKIY, A.F., prof., red.; TISHCHENKO, V.V., dots., red.; GAVRILOV, B.G., dots., red.; PIASTRO, V.D., red.; ZHUKOVA, Ye.G., tekhn. red.

[Proper storage of machinery]Kak pravil'no khranit' mashiny. Moskva, Mosk. rabochii, 1962. 35 p. (MIRA 15:10)
(Agricultural machinery—Storage)



CA

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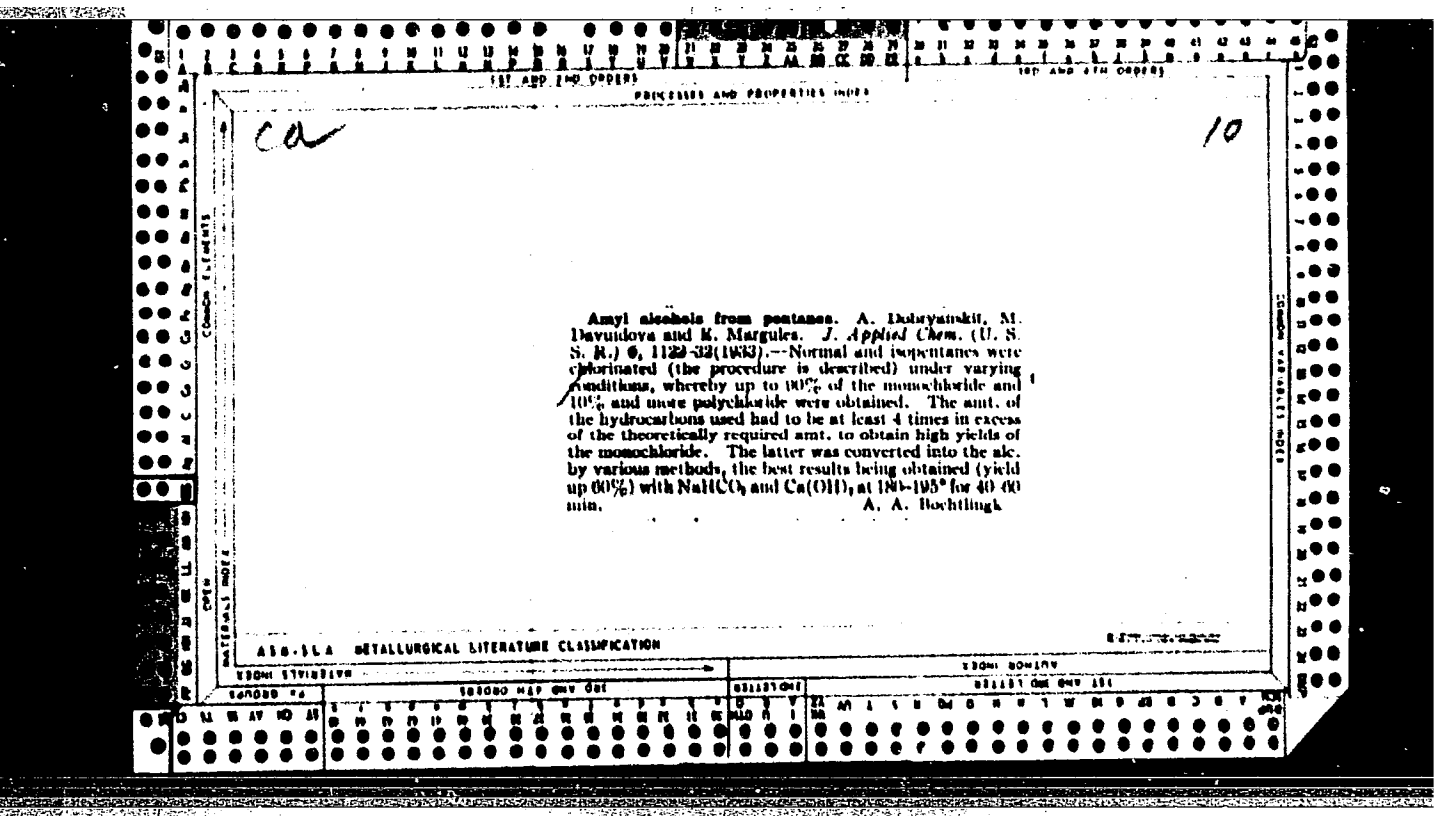
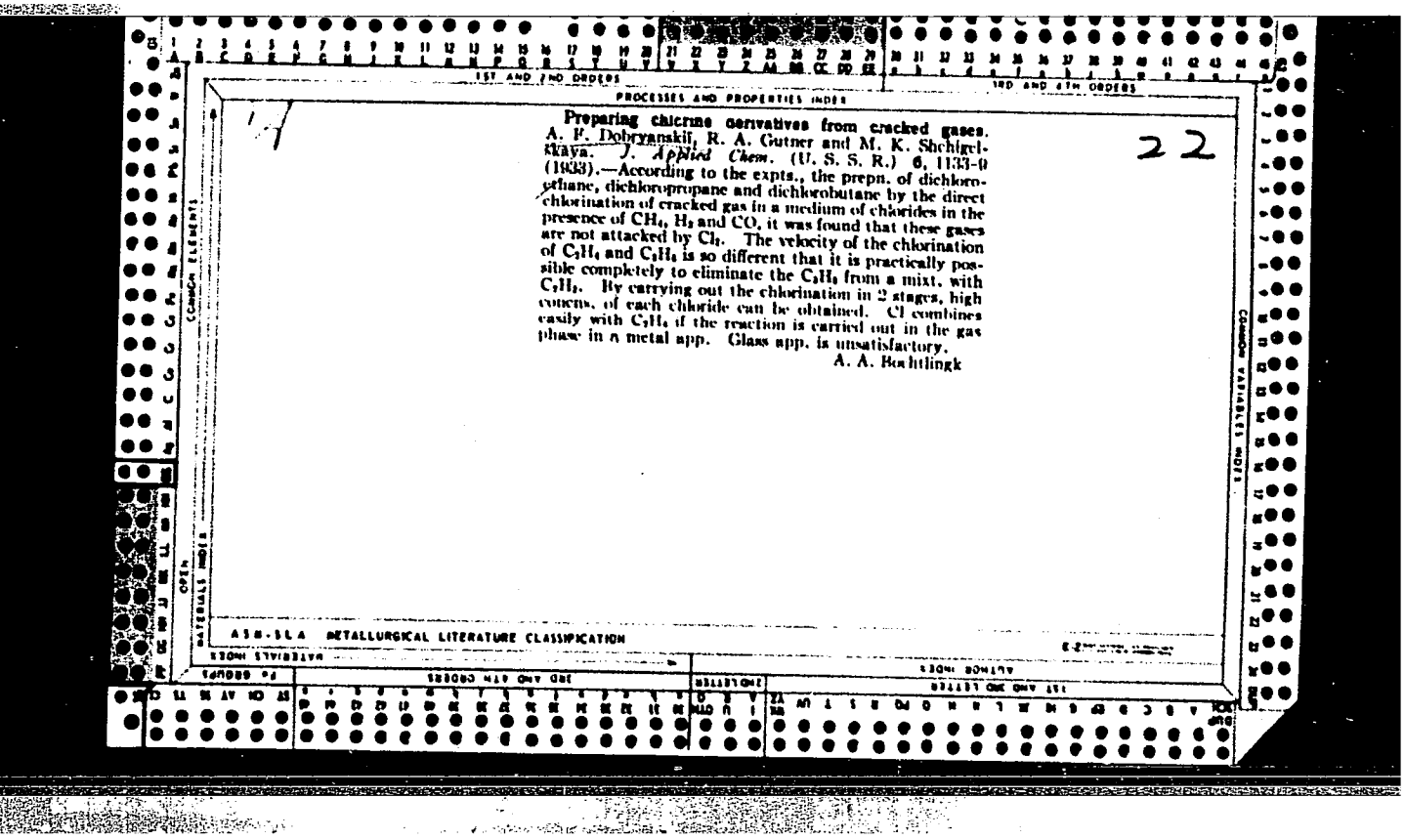
Cracking with aluminum chloride. A. F. Dobryanskii and N. I. Zelenin. *Khim. Tverdogo Topliva* 4, 606-18 (1933).—A kerosene distillate freed from low-boiling fractions was heated with 15% $AlCl_3$, yielding 46.6% of a gasoline of 0.745 sp. gr. The yield can be raised by prolonging the distn. The following stocks were also used, although the yields of gasoline were lower: Emba gas oil, Syvatoi Ostrov gas oil, Surakhanui fuel oil, cracked kerosene, cracked polymers and "green" oil. The gasoline contained about 2% C_6H_6, 5.4% PhMe and 5.7% $C_6H_4Me_2$. The gas contained about 94% butane, 5.7% H and 0.3% heavy hydrocarbons. A. A. Berhtlingk

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Amyl alcohols from pentanes. A. Dobryanskii, M. Davuidova and E. Margules. *J. Applied Chem.* (U. S. S. R.) **9**, 1123-32(1936).—Normal and isopentanes were chlorinated (the procedure is described) under varying conditions, whereby up to 90% of the monochloride and 10% and more polychloride were obtained. The amt. of the hydrocarbons used had to be at least 4 times in excess of the theoretically required amt. to obtain high yields of the monochloride. The latter was converted into the alc. by various methods, the best results being obtained (yield up 60%) with $NaHCO_3$ and $Ca(OH)_2$ at 180-195° for 40-60 min.

A. A. Boehtlingk



PROCESSES AND PROPERTIES INDEX

Preparing chlorine derivatives from cracked gases. A. F. Dobryanskii, R. A. Gutner and M. K. Shchigel-skaya. *J. Applied Chem.* (U. S. S. R.) 6, 1133-9 (1933).—According to the expts., the prepn. of dichloro-ethane, dichloropropane and dichlorobutane by the direct chlorination of cracked gas in a medium of chlorides in the presence of CH_4, H_2 and CO, it was found that these gases are not attacked by Cl_2. The velocity of the chlorination of C_2H_4 and C_3H_6 is so different that it is practically possible completely to eliminate the C_3H_6 from a mixt. with C_2H_4. By carrying out the chlorination in 2 stages, high concns. of each chloride can be obtained. Cl combines easily with C_3H_6 if the reaction is carried out in the gas phase in a metal app. Glass app. is unsatisfactory.

A. A. Bochtlingk

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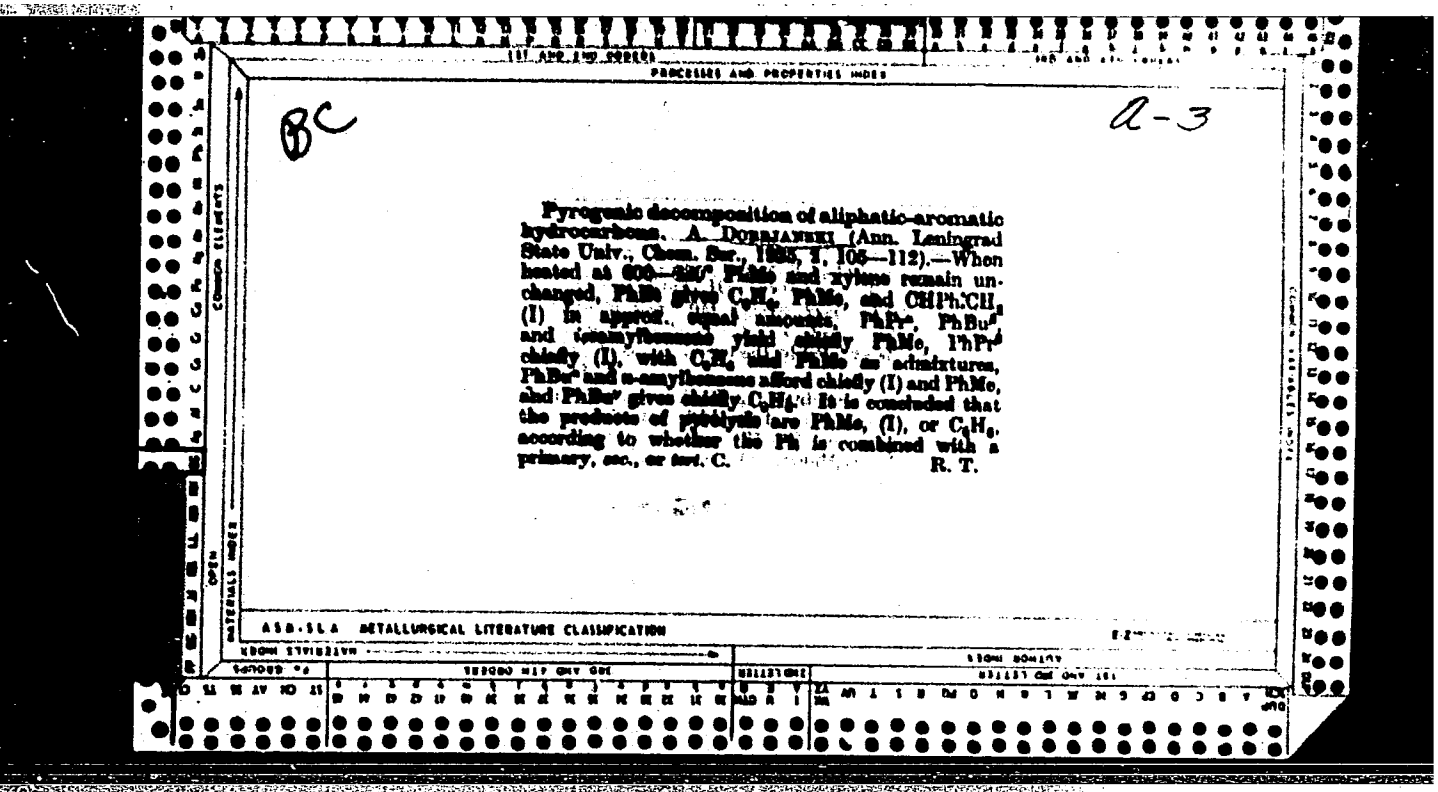
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

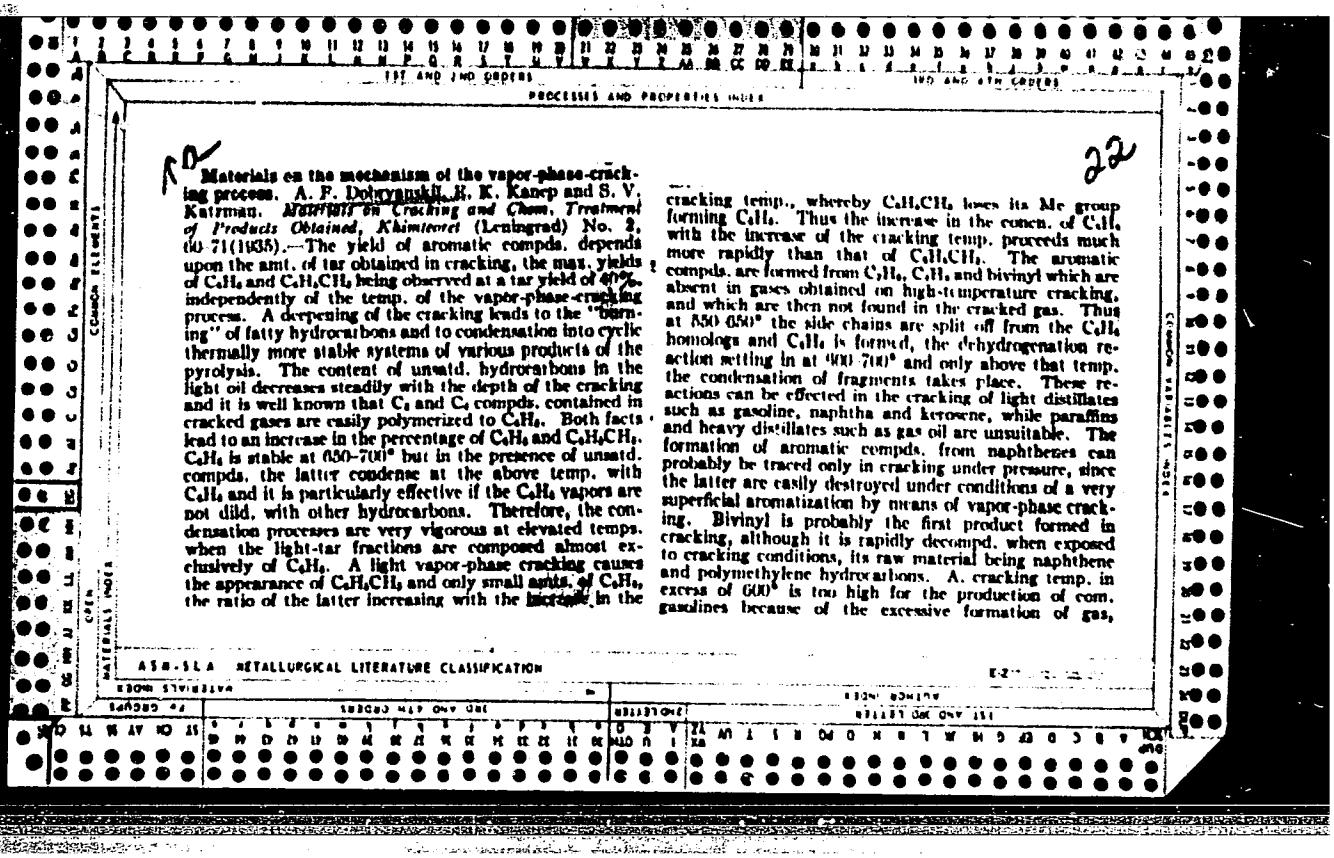


BC

a-3

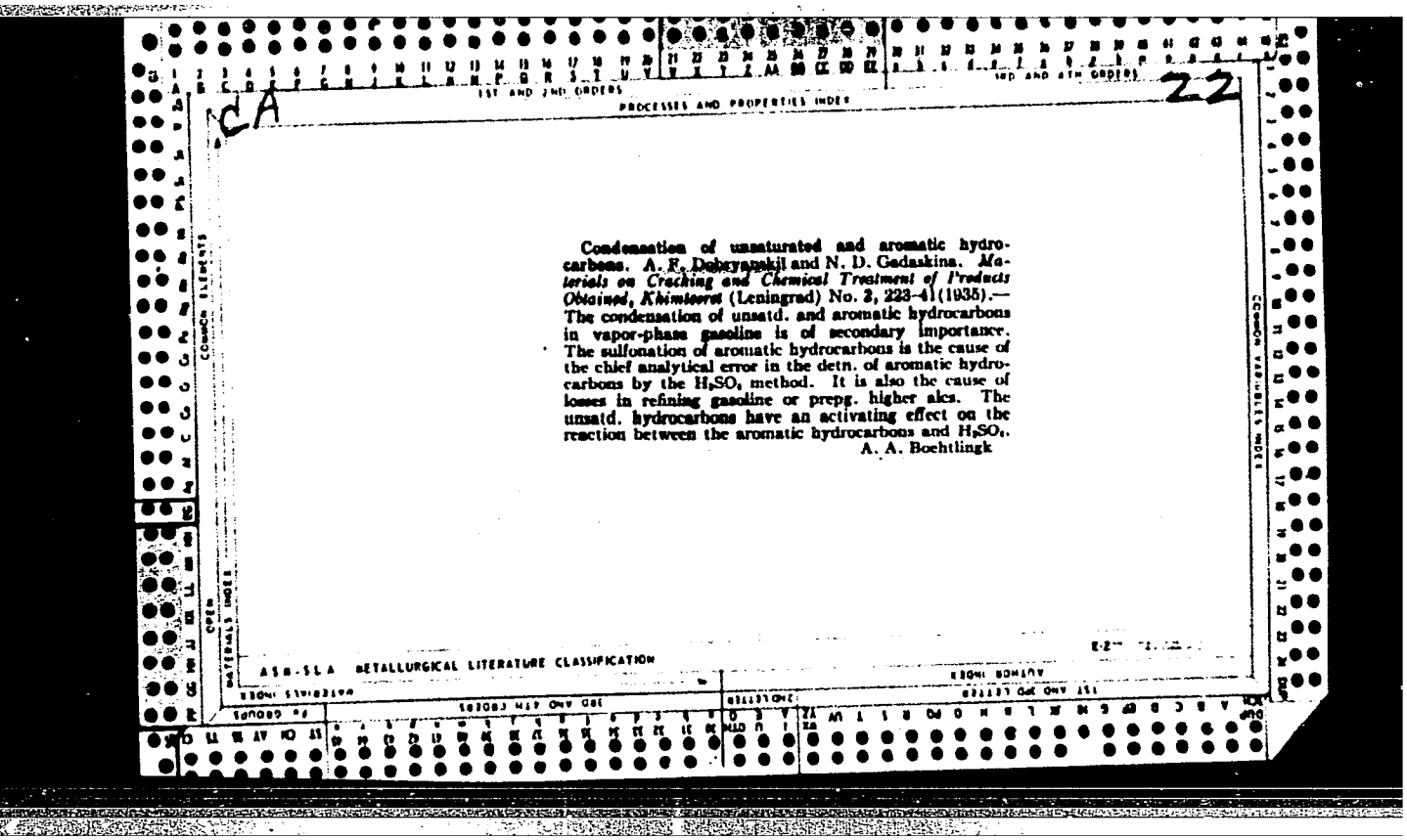
Pyrogenic decomposition of aliphatic-aromatic hydrocarbons. A. Dobrjanskii (Ann. Leningrad State Univ., Chem. Sur., 1935, 1, 105—112).—When heated at 600—630° PhMe and xylene remain unchanged, PhEt gives C_6H_6, PhMe, and $CHPh:CH_2$ (I) in approx. equal amounts, $PhPr^n$, $PhBu^n$ and (α-amyl)benzene yield chiefly PhMe, $PhPr^i$ chiefly (I), with C_6H_6 and PhMe as admixtures, $PhBu^i$ and (α-amyl)benzene afford chiefly (I) and PhMe, and $PhBu^t$ gives chiefly C_6H_6. It is concluded that the products of pyrolysis are PhMe, (I), or C_6H_6, according to whether the Ph is combined with a primary, sec., or tert. C.

R. T.



Materials on the mechanism of the vapor-phase-cracking process. A. F. Dobryanskii, E. K. Kanep and S. V. Kaitman. *Materials on Cracking and Chem. Treatment of Products Obtained, Khimizdat* (Leningrad) No. 2, 60-71(1935).—The yield of aromatic compds. depends upon the amt. of tar obtained in cracking, the max. yields of C_6H_6 and $C_6H_5CH_3$ being observed at a tar yield of 40%, independently of the temp. of the vapor-phase-cracking process. A deepening of the cracking leads to the "burning" of fatty hydrocarbons and to condensation into cyclic thermally more stable systems of various products of the pyrolysis. The content of unsatd. hydrocarbons in the light oil decreases steadily with the depth of the cracking and it is well known that C_4 and C_5 compds. contained in cracked gases are easily polymerized to C_6H_6. Both facts lead to an increase in the percentage of C_6H_6 and $C_6H_5CH_3$. C_6H_6 is stable at 650–700° but in the presence of unsatd. compds. the latter condense at the above temp. with C_6H_6 and it is particularly effective if the C_6H_6 vapors are not dild. with other hydrocarbons. Therefore, the condensation processes are very vigorous at elevated temps. when the light-tar fractions are composed almost exclusively of C_6H_6. A light vapor-phase cracking causes the appearance of $C_6H_5CH_3$ and only small amts. of C_6H_6, the ratio of the latter increasing with the increase in the cracking temp., whereby $C_6H_5CH_3$ loses its Me group forming C_6H_6. Thus the increase in the concn. of C_6H_6 with the increase of the cracking temp. proceeds much more rapidly than that of $C_6H_5CH_3$. The aromatic compds. are formed from C_5H_8, C_5H_6 and divinyl which are absent in gases obtained on high-temperature cracking, and which are then not found in the cracked gas. Thus at 550-650° the side chains are split off from the C_6H_6 homologs and C_6H_6 is formed, the dehydrogenation reaction setting in at 600-700° and only above that temp. the condensation of fragments takes place. These reactions can be effected in the cracking of light distillates such as gasoline, naphtha and kerosene, while paraffins and heavy distillates such as gas oil are unsuitable. The formation of aromatic compds. from naphthenes can probably be traced only in cracking under pressure, since the latter are easily destroyed under conditions of a very superficial aromatization by means of vapor-phase cracking. Divinyl is probably the first product formed in cracking, although it is rapidly decompd. when exposed to cracking conditions, its raw material being naphthene and polymethylene hydrocarbons. A. cracking temp. in excess of 600° is too high for the production of com. gasolines because of the excessive formation of gas,

which should not exceed a total of 15–20%. These conclusions were made on the basis of a series of expts. (by various authors) to be reported in the succeeding papers. The app. used in the pyrolysis had one iron or porcelain tube (100 cm. long) with an inner diam. of 34 mm., 2 upright Liebig condensers arranged in series (each 100 cm. long) and 2 flushing towers of the same length. The condensate was collected in the usual manner and the reflux was not recycled but analyzed immediately after the withdrawal from the system. The gases were collected and analyzed. A. A. Boehtlingk



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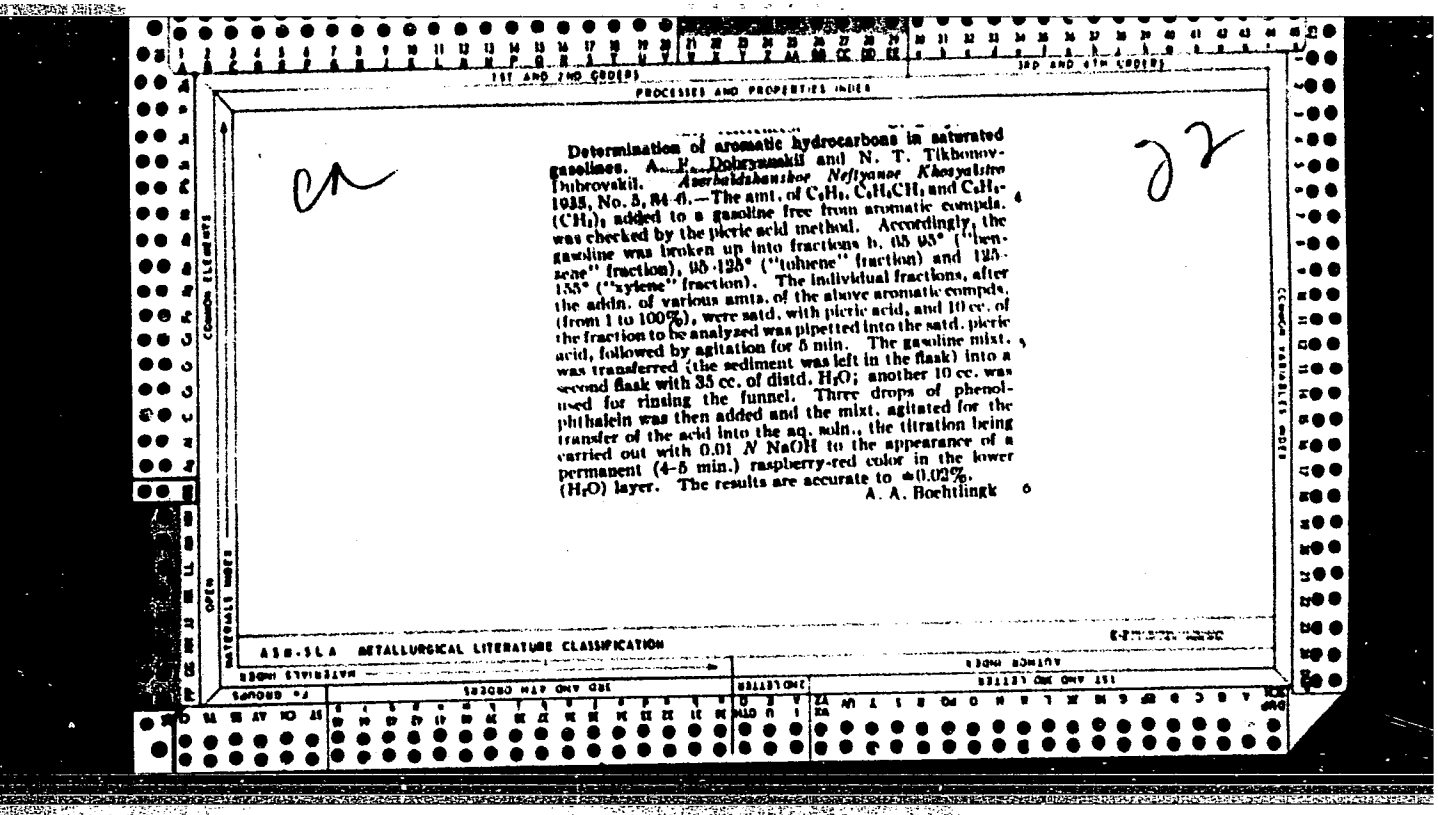
PROCESSES AND PROPERTIES INDEX

Condensation of unsaturated and aromatic hydrocarbons. A. F. Dubryanskii and N. D. Gadaskina. *Materials on Cracking and Chemical Treatment of Products Obtained*, *Khimtoorf* (Leningrad) No. 2, 223–41 (1935).—The condensation of unsatd. and aromatic hydrocarbons in vapor-phase gasoline is of secondary importance. The sulfonation of aromatic hydrocarbons is the cause of the chief analytical error in the detn. of aromatic hydrocarbons by the H_2SO_4 method. It is also the cause of losses in refining gasoline or prepg. higher alcs. The unsatd. hydrocarbons have an activating effect on the reaction between the aromatic hydrocarbons and H_2SO_4.
A. A. Boehtlingk

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

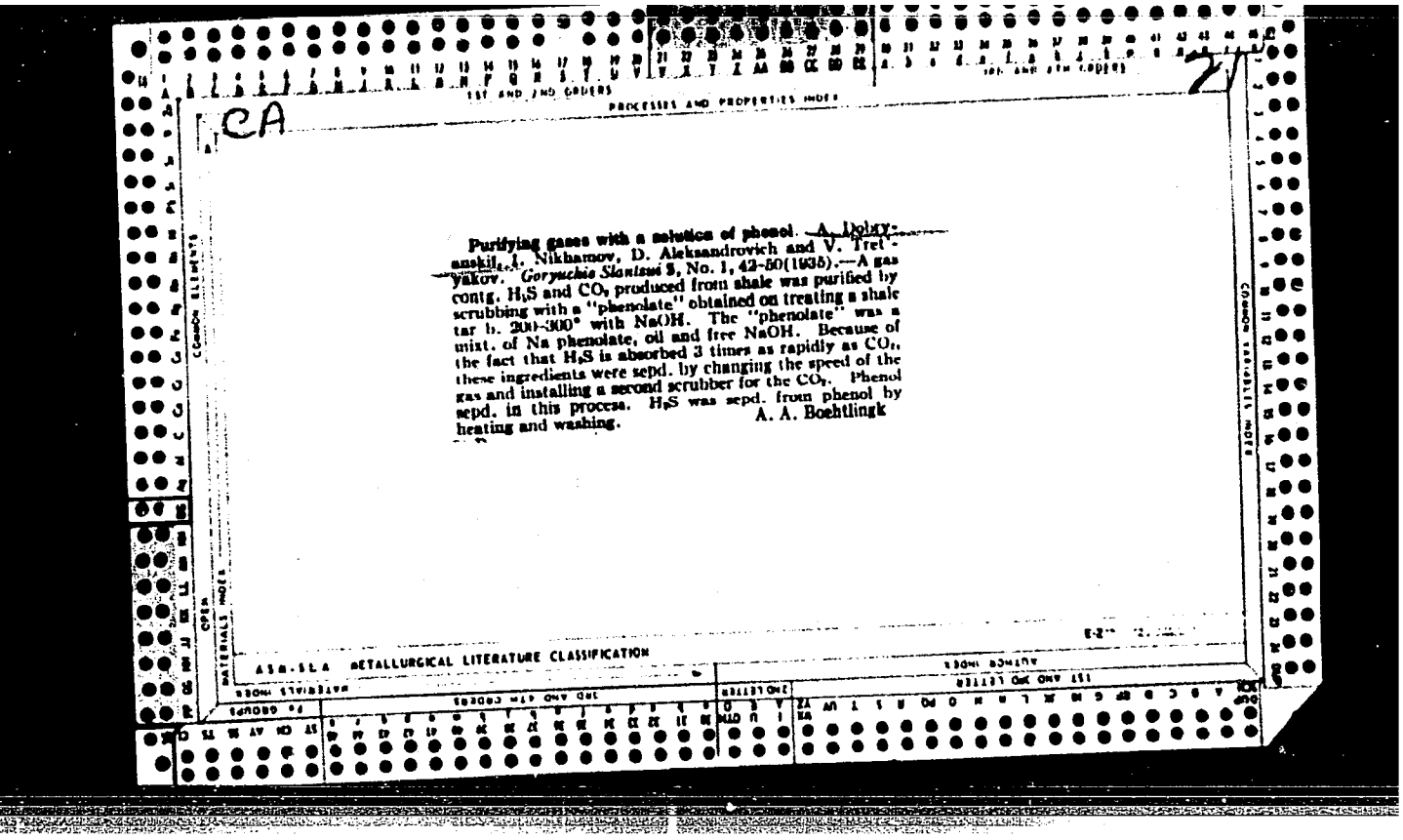
Determination of aromatic hydrocarbons in saturated gasolines. A. P. Dobryanskii and N. T. Tikhonov-Dubrovskii. *Azerbaidzhanskoe Neftyanoe Khozyaistvo* 1935, No. 5, 84–6.—The amt. of C_6H_6, $C_6H_5CH_3$ and $C_6H_4(CH_3)_2$ added to a gasoline free from aromatic compds. was checked by the picric acid method. Accordingly, the gasoline was broken up into fractions b. 65–85° ("benzene" fraction), 85–125° ("toluene" fraction) and 125–155° ("xylene" fraction). The individual fractions, after the addn. of various amts. of the above aromatic compds. (from 1 to 100%), were satd. with picric acid, and 10 cc. of the fraction to be analyzed was pipetted into the satd. picric acid, followed by agitation for 5 min. The gasoline mixt. was transferred (the sediment was left in the flask) into a second flask with 35 cc. of distd. H_2O; another 10 cc. was used for rinsing the funnel. Three drops of phenolphthalein was then added and the mixt. agitated for the transfer of the acid into the aq. soln., the titration being carried out with 0.01 *N* NaOH to the appearance of a permanent (4–5 min.) raspberry-red color in the lower (H_2O) layer. The results are accurate to ±0.02%.

A. A. Boehtlingk

A58-51A METALLURGICAL LITERATURE CLASSIFICATION

DOBRIANSKII, A. F.

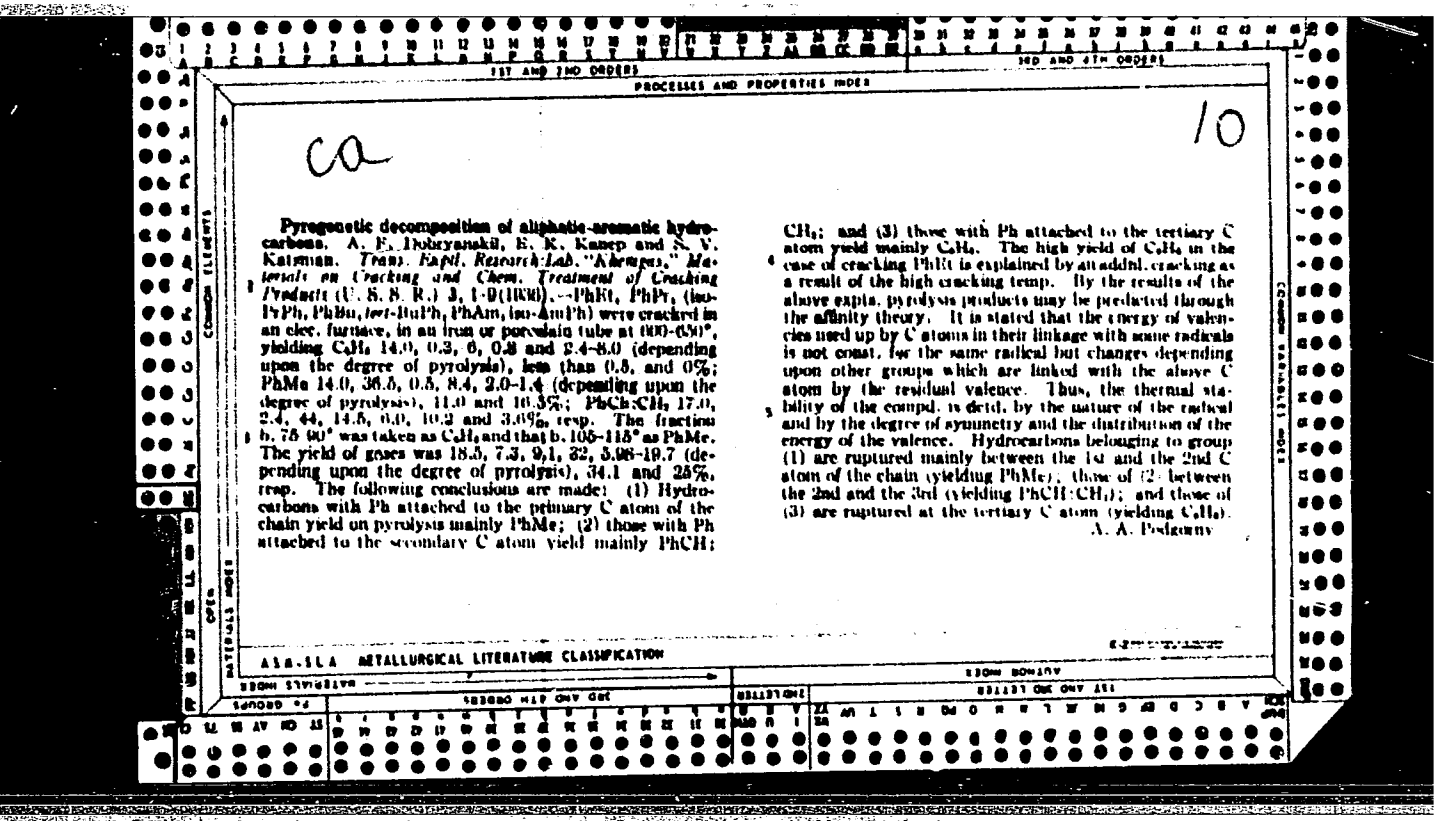
RT-1632 (Production of dichloroethane from chlorine and ethylene (in semi-commercial plant)) Poluchenie dikhloroetana iz khlora i etilena (na poluzavodskoi ustanovke). TRUDY GOSUDARSTVENNOGO IN TITUTA PRIKLADNOI KHIMII 24: 32-47, 1935



CA

Purifying gases with a solution of phenol. A. Dolgov-anskii, I. Nikhamov, D. Aleksandrovich and V. Tret-yakov. *Goryuchie Slantsi* 5, No. 1, 42-50(1938).—A gas contg. H_2S and CO_2 produced from shale was purified by scrubbing with a "phenolate" obtained on treating a shale tar b. 200-300° with NaOH. The "phenolate" was a mixt. of Na phenolate, oil and free NaOH. Because of the fact that H_2S is absorbed 3 times as rapidly as CO_2, these ingredients were sepd. by changing the speed of the gas and installing a second scrubber for the CO_2. Phenol sepd. in this process. H_2S was sepd. from phenol by heating and washing.

A. A. Boehtlingk



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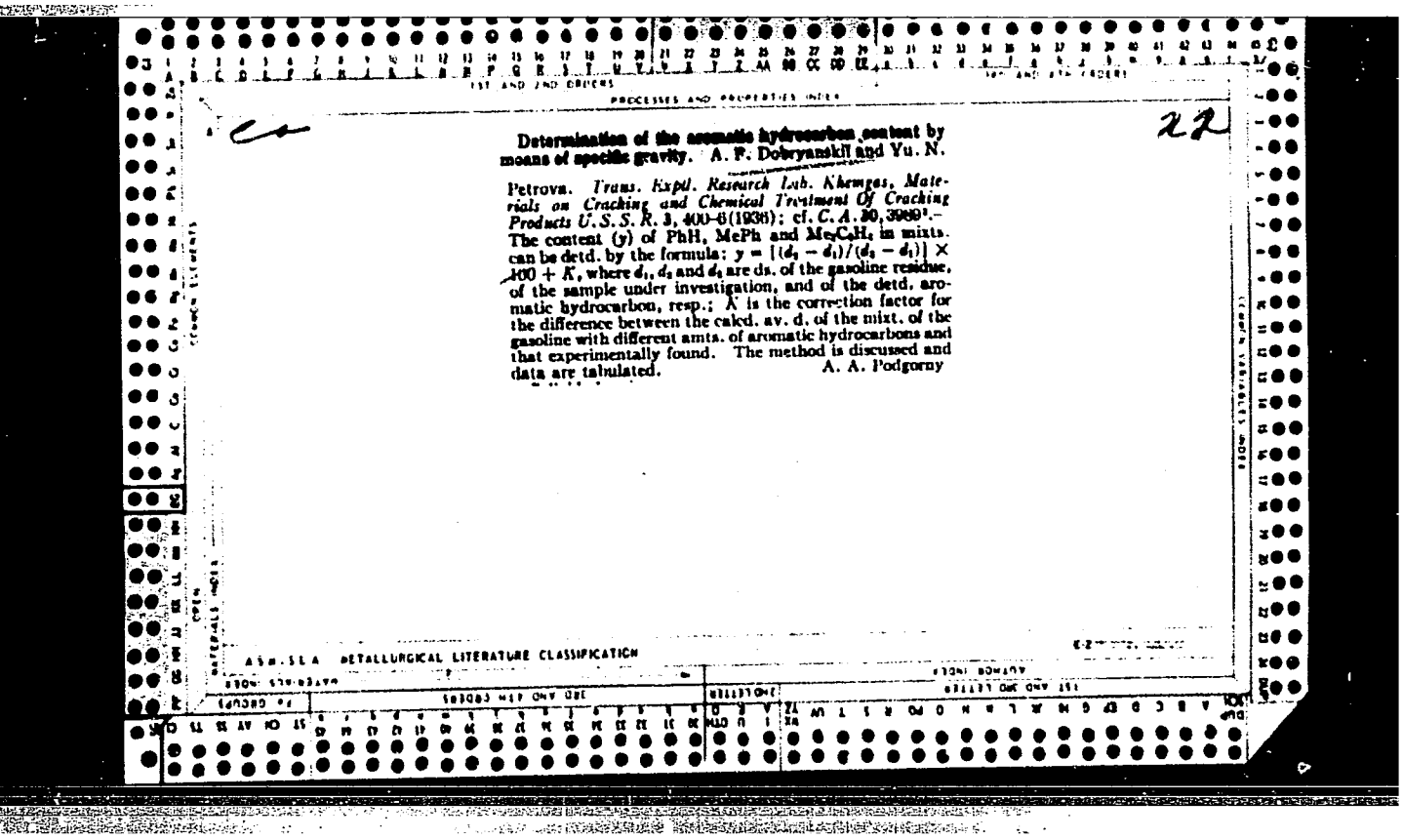
Pyrogenetic decomposition of aliphatic-aromatic hydrocarbons. A. E. Dobryanskii, E. K. Kaneр and S. V. Katsman. *Trans. Kapil. Research Lab. "Khimgas," Materials on Cracking and Chem. Treatment of Cracking Products* (U. S. S. R.) 3, 1-9(1936).—PhEt, PhPr, (iso-PrPh, PhBu, *tert*-BuPh, PhAm, iso-AmPh) were cracked in an elec. furnace, in an iron or porcelain tube at 600-650°, yielding C_2H_4 14.0, 0.3, 6, 0.8 and 2.4–8.0 (depending upon the degree of pyrolysis), less than 0.5, and 0%; PhMe 14.0, 36.5, 0.5, 8.4, 2.0–1.4 (depending upon the degree of pyrolysis), 11.0 and 10.3%; $PhCH:CH_2$ 17.0, 2.4, 44, 14.5, 0.0, 10.2 and 3.0%, resp. The fraction b. 78-80° was taken as C_6H_6 and that b. 105–115° as PhMe. The yield of gases was 18.5, 7.3, 9.1, 32, 5.96–19.7 (depending upon the degree of pyrolysis), 34.1 and 28%, resp. The following conclusions are made: (1) Hydrocarbons with Ph attached to the primary C atom of the chain yield on pyrolysis mainly PhMe; (2) those with Ph attached to the secondary C atom yield mainly $PhCH:CH_2$; and (3) those with Ph attached to the tertiary C atom yield mainly C_6H_6. The high yield of C_6H_6 in the case of cracking PhEt is explained by an additl. cracking as a result of the high cracking temp. By the results of the above expts. pyrolysis products may be predicted through the affinity theory. It is stated that the energy of valencies used up by C atoms in their linkage with same radicals is not const. for the same radical but changes depending upon other groups which are linked with the above C atom by the residual valence. Thus, the thermal stability of the compd. is detd. by the nature of the radical and by the degree of symmetry and the distribution of the energy of the valence. Hydrocarbons belonging to group (1) are ruptured mainly between the 1st and the 2nd C atom of the chain (yielding PhMe), those of (2) between the 2nd and the 3rd (yielding $PhCH:CH_2$); and those of (3) are ruptured at the tertiary C atom (yielding C_6H_6).

A. A. Podgorny

A1A.1LA METALLURGICAL LITERATURE CLASSIFICATION



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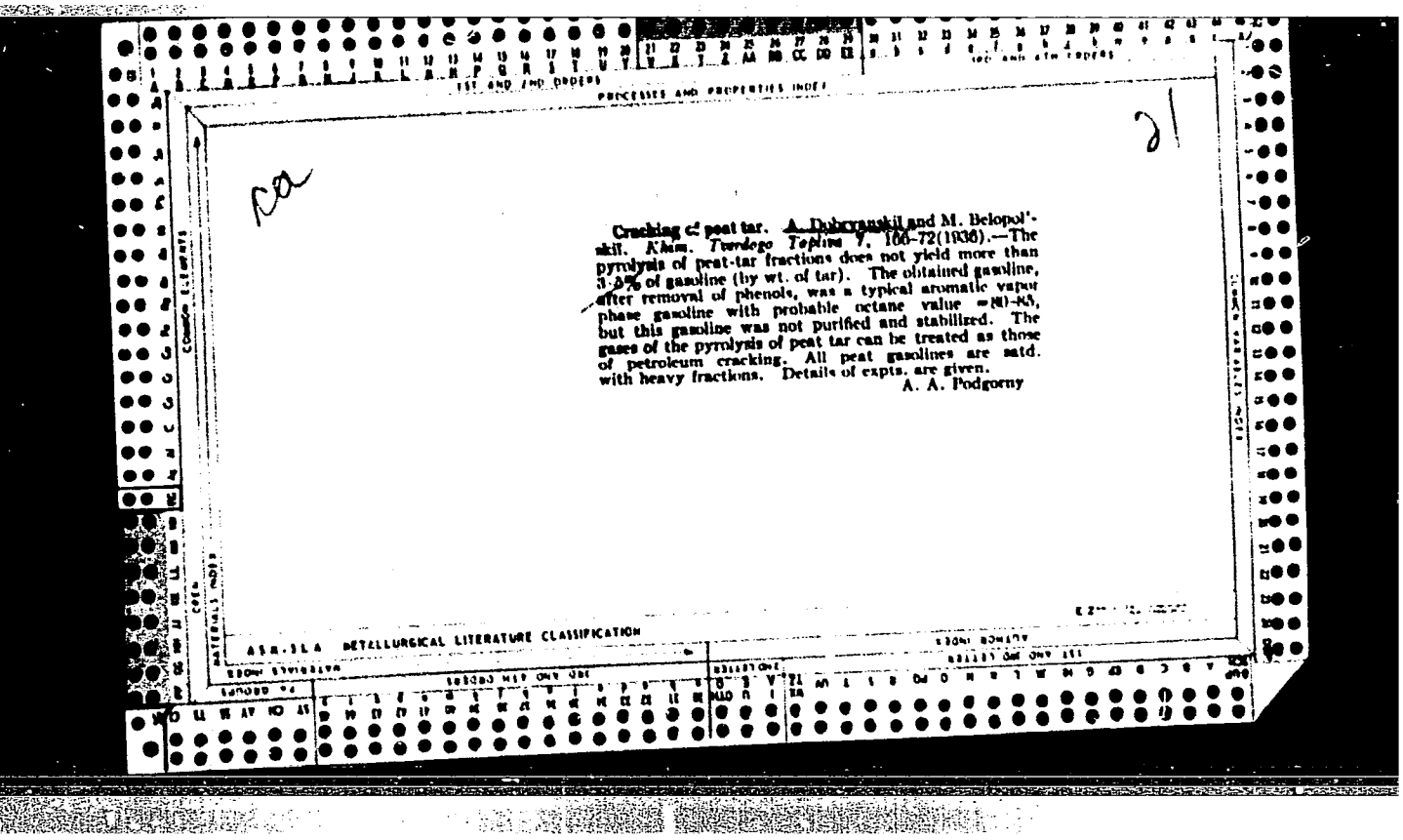
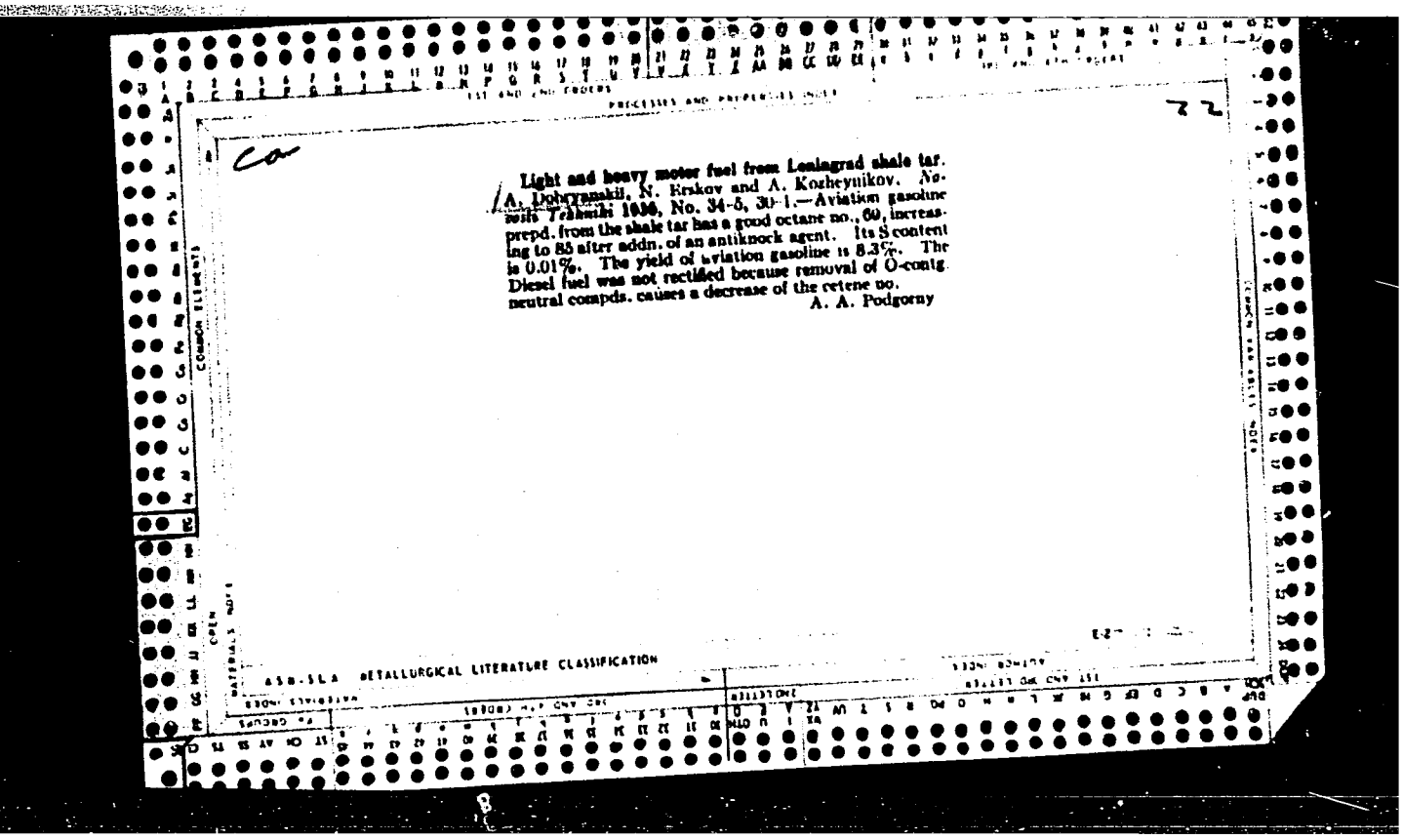
Determination of the aromatic hydrocarbon content by means of specific gravity. A. F. Dobryanskii and Yu. N. Petrova. *Trans. Exptl. Research Lab. Khimgas, Materials on Cracking and Chemical Treatment Of Cracking Products U.S.S.R.* 3, 400–6(1938); cf. *C. A.* 30, 3989[1].— The content (*y*) of PhH, MePh and $Me_2C_6H_4$ in mixts. can be detd. by the formula: $y = [(d_2 - d_1)/(d_3 - d_1)] \times 100 + K$, where d_1, d_2 and d_3 are ds. of the gasoline residue, of the sample under investigation, and of the detd. aromatic hydrocarbon, resp.; K is the correction factor for the difference between the calcd. av. d. of the mixt. of the gasoline with different amts. of aromatic hydrocarbons and that experimentally found. The method is discussed and data are tabulated. A. A. Podgorny

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



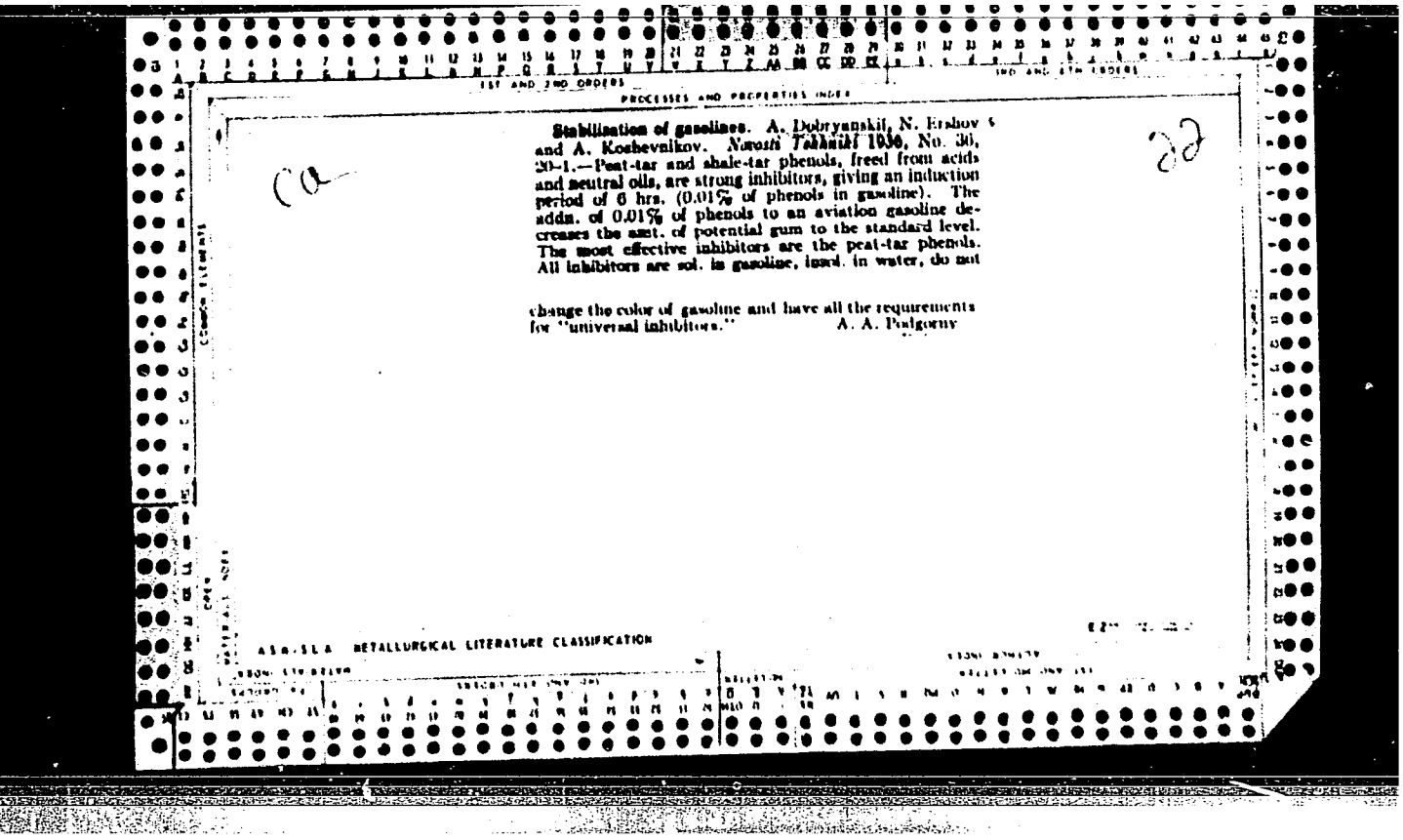
Cracking of peat tar. A. Dubovanskii and M. Belopol'skii. *Khim. Tverdogo Topliva* 7, 166–72(1936).—The pyrolysis of peat-tar fractions does not yield more than 3–5% of gasoline (by wt. of tar). The obtained gasoline, after removal of phenols, was a typical aromatic vapor phase gasoline with probable octane value =80–85, but this gasoline was not purified and stabilized. The gases of the pyrolysis of peat tar can be treated as those of petroleum cracking. All peat gasolines are satd. with heavy fractions. Details of expts. are given.

A. A. Podgorny



Light and heavy motor fuel from Leningrad shale tar. A. Dobryanskii, N. Erskov and A. Kozheynikov. Neftyanoe Tekhnika 1936, No. 34-5, 30-1.—Aviation gasoline prepd. from the shale tar has a good octane no., 60, increasing to 85 after addn. of an antiknock agent. Its S content is 0.01%. The yield of aviation gasoline is 8.3%. The Diesel fuel was not rectified because removal of O-contg. neutral compds. causes a decrease of the cetene no.

A. A. Podgorny



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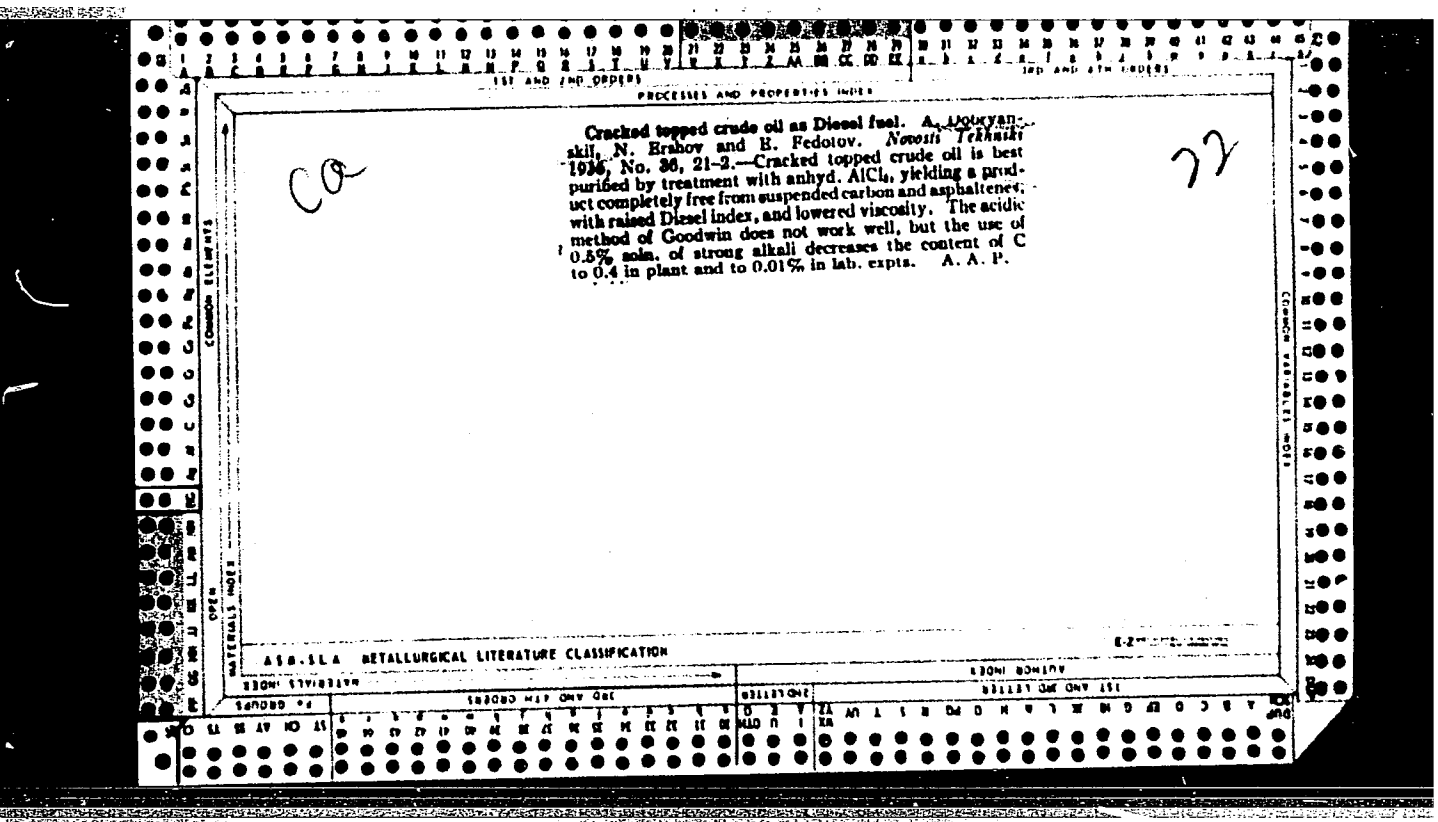
Stabilization of gasolines. A. Dobryanskii, N. Ershov and A. Koshevnikov. *Novosti Tekhniki* 1936, No. 30, 20–1.—Peat-tar and shale-tar phenols, freed from acids and neutral oils, are strong inhibitors, giving an induction period of 6 hrs. (0.01% of phenols in gasoline). The addn. of 0.01% of phenols to an aviation gasoline decreases the amt. of potential gum to the standard level. The most effective inhibitors are the peat-tar phenols. All inhibitors are sol. in gasoline, insol. in water, do not change the color of gasoline and have all the requirements for "universal inhibitors." A. A. Polgorny

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



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Co

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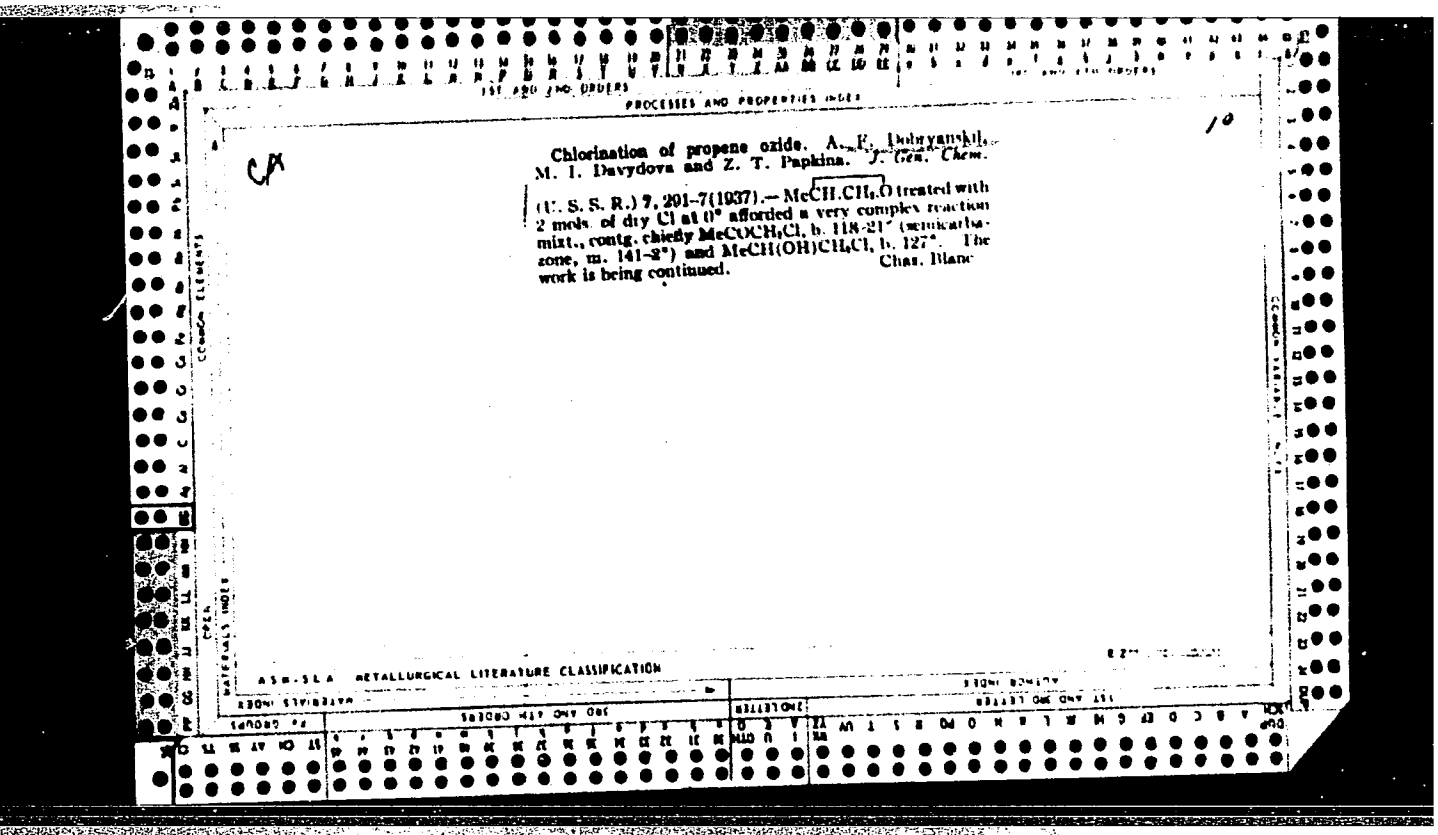
Cracked topped crude oil as Diesel fuel. A. Lookyan-skii, N. Brahov and B. Fedotov. *Novosti Tekhniki* 1936, No. 36, 21–2.—Cracked topped crude oil is best purified by treatment with anhyd. $AlCl_3$, yielding a product completely free from suspended carbon and asphaltenes, with raised Diesel index, and lowered viscosity. The acidic method of Goodwin does not work well, but the use of 0.5% soln. of strong alkali decreases the content of C to 0.4 in plant and to 0.01% in lab. expts. A. A. P.

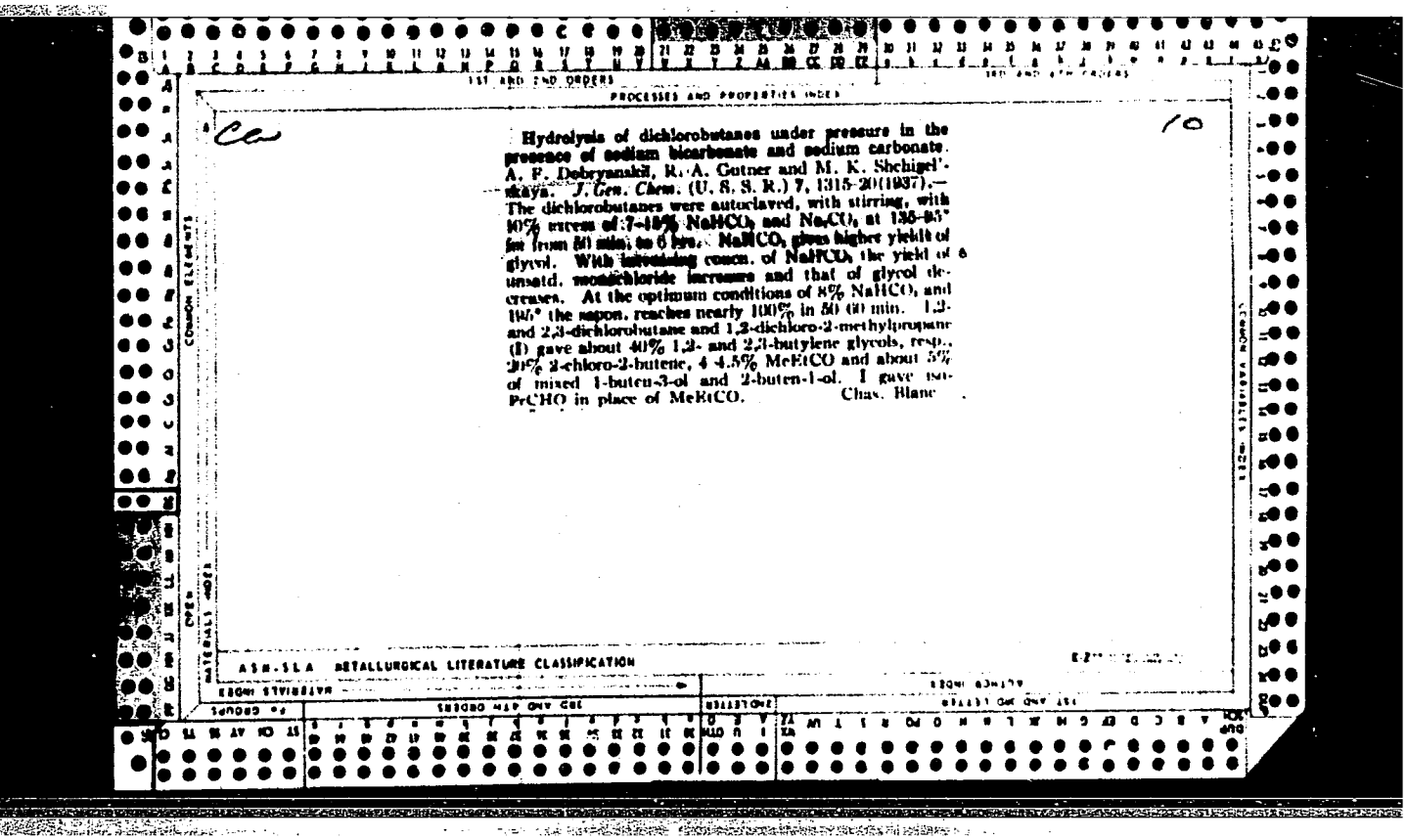
A58.SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

Chlorination of propene oxide. A. F. Dobryanskii, M. I. Davydova and Z. T. Papkina. *J. Gen. Chem.* (U. S. S. R.) 7, 201–7(1937).—MeCH.CH_2O treated with 2 mols. of dry Cl at 0° afforded a very complex reaction mixt., contg. chiefly MeCOCH_2Cl, b. 118-21° (semicarbazone, m. 141–2°) and MeCH(OH)CH_2Cl, b. 127°. The work is being continued. Chas. Blanc

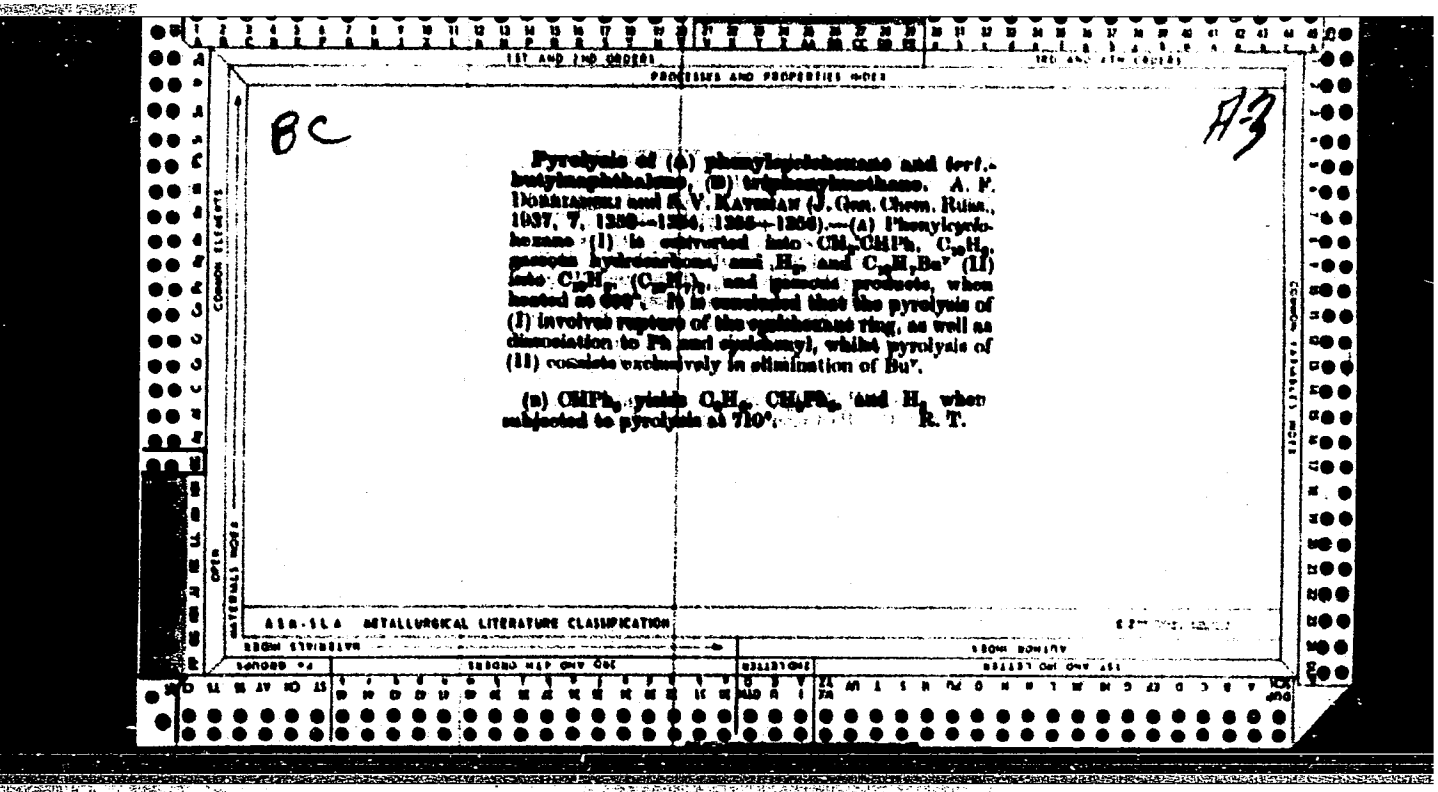
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Ca

10

Hydrolysis of dichlorobutanes under pressure in the presence of sodium bicarbonate and sodium carbonate. A. F. Dobryanskiĭ, R. A. Gutner and M. K. Shchigel'skaya. *J. Gen. Chem.* (U. S. S. R.) 7, 1315-20(1937).—The dichlorobutanes were autoclaved, with stirring, with 10% excess of 7–15% $NaHCO_3$ and Na_2CO_3 at 135–95° for from 50 min. to 6 hrs. $NaHCO_3$ gives higher yields of glycol. With increasing concn. of $NaHCO_3$ the yield of unsatd. monochloride increases and that of glycol decreases. At the optimum conditions of 8% $NaHCO_3$ and 180° the sapon. reaches nearly 100% in 50 (0 min. 1,2- and 2,3-dichlorobutane and 1,2-dichloro-2-methylpropane (I) gave about 40% 1,2- and 2,3-butylene glycols, resp., 20% 2-chloro-2-butene, 4–4.5% MeEtCO and about 5% of mixed 1-buten-3-ol and 2-buten-1-ol. I gave iso-PrCHO in place of MeEtCO. Chas. Blanc



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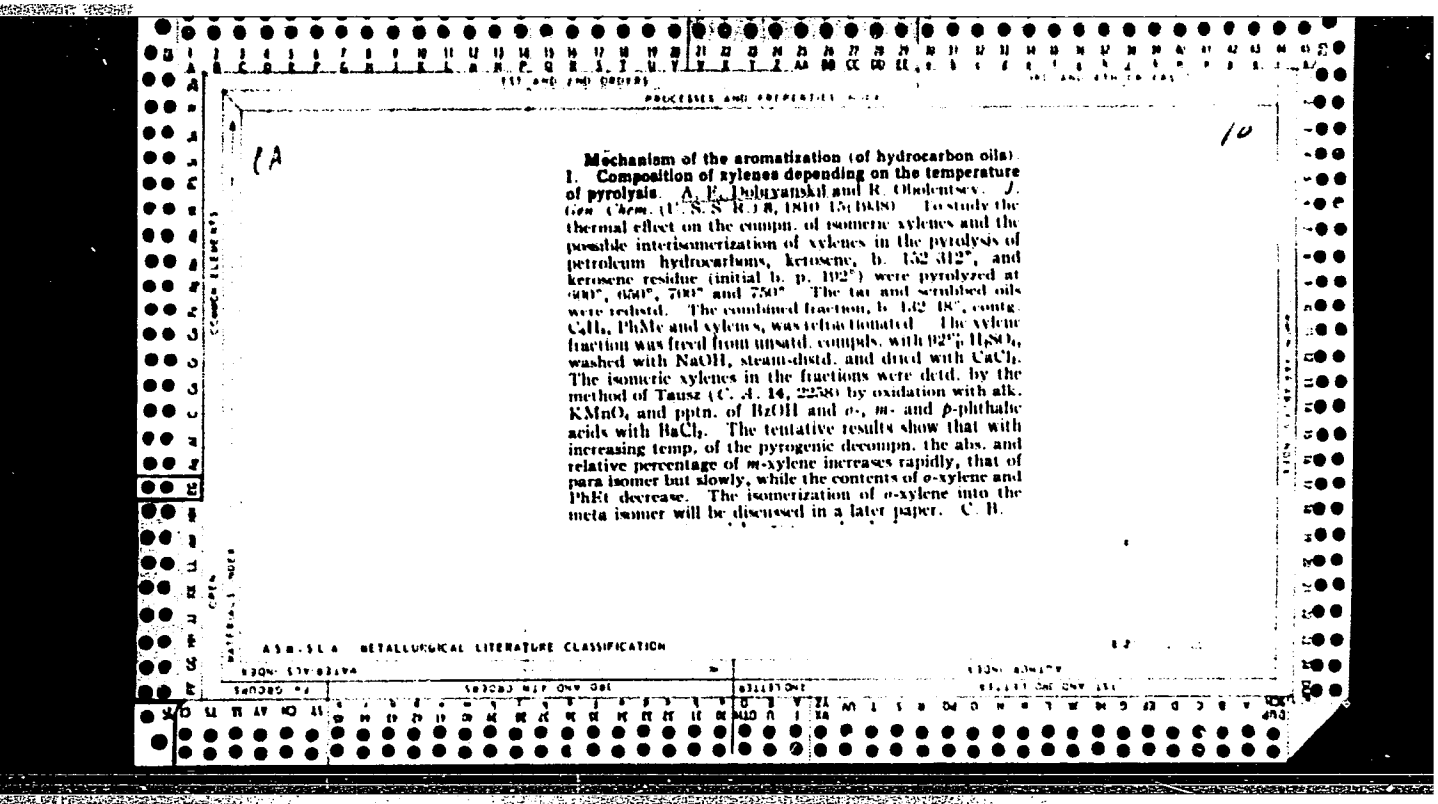
A3

Pyrolysis of (A) phenylcyclohexane and *tert.*-butylnaphthalene, (B) triphenylmethane. A. F. NIKIFOROVA and S. V. KAVERIAN (J. Gen. Chem. Russ., 1937, 7, 1250—1254, 1255—1256).—(A) Phenylcyclohexane (I) is converted into CH_4, CH_3Ph, $C_{12}H_{10}$, gaseous hydrocarbons, and H_2, and $C_4H_9Bu^{\gamma}$ (II) into $C_{12}H_{22}$ ($C_{16}H_{34}$), and gaseous products, when heated at 600°. It is concluded that the pyrolysis of (I) involves rupture of the cyclohexane ring, as well as dissociation to Ph and cyclohexyl, whilst pyrolysis of (II) consists exclusively in elimination of Bu^{γ}.

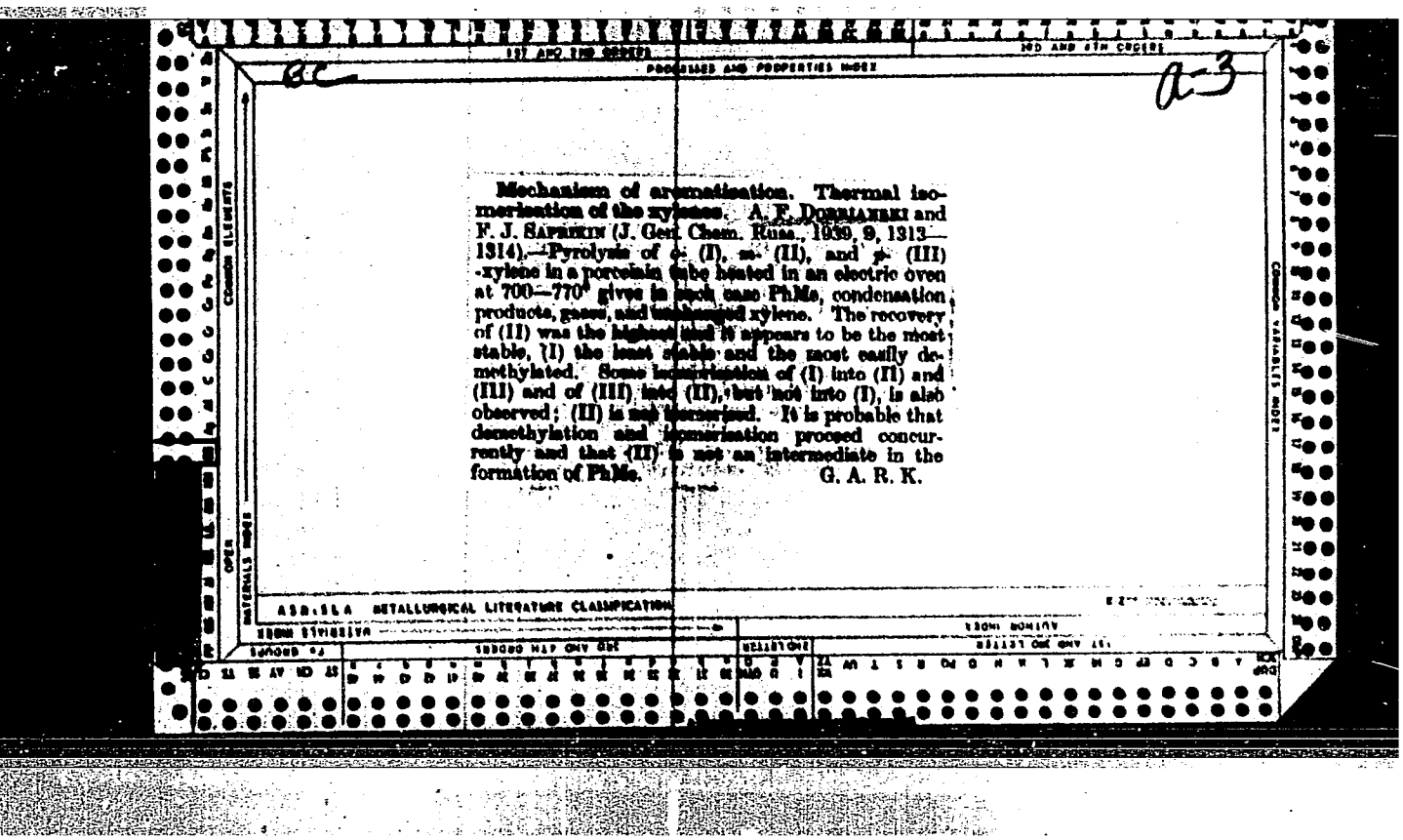
(B) $CHPh_3$ yields C_2H_2, CH_3Ph_3, and H_2 when subjected to pyrolysis at 710°. R. T.



1A

10

Mechanism of the aromatization (of hydrocarbon oils). I. Composition of xylenes depending on the temperature of pyrolysis. A. P. Dobryanskii and R. Obodentsev. *J. Gen. Chem.* (U.S.S.R.) 8, 1810-15(1938). To study the thermal effect on the compn. of isomeric xylenes and the possible interisomerization of xylenes in the pyrolysis of petroleum hydrocarbons, kerosene, b. 152-312°, and kerosene residue (initial b. p. 192°) were pyrolyzed at 600°, 650°, 700° and 750°. The tar and scrubbed oils were redistd. The combined fraction, b. 132-48°, contg. C_8H_8, PhMe and xylenes, was refractionated. The xylene fraction was freed from unsatd. compds. with 92% H_2SO_4, washed with NaOH, steam-distd. and dried with $CaCl_2$. The isomeric xylenes in the fractions were detd. by the method of Tausz (*C. A.* **14**, 2258) by oxidation with alk. $KMnO_4$ and pptn. of BzOH and *o*-, *m*- and *p*-phthalic acids with $BaCl_2$. The tentative results show that with increasing temp. of the pyrogenic decompn. the abs. and relative percentage of *m*-xylene increases rapidly, that of para isomer but slowly, while the contents of *o*-xylene and PhEt decrease. The isomerization of *o*-xylene into the meta isomer will be discussed in a later paper. C. B.

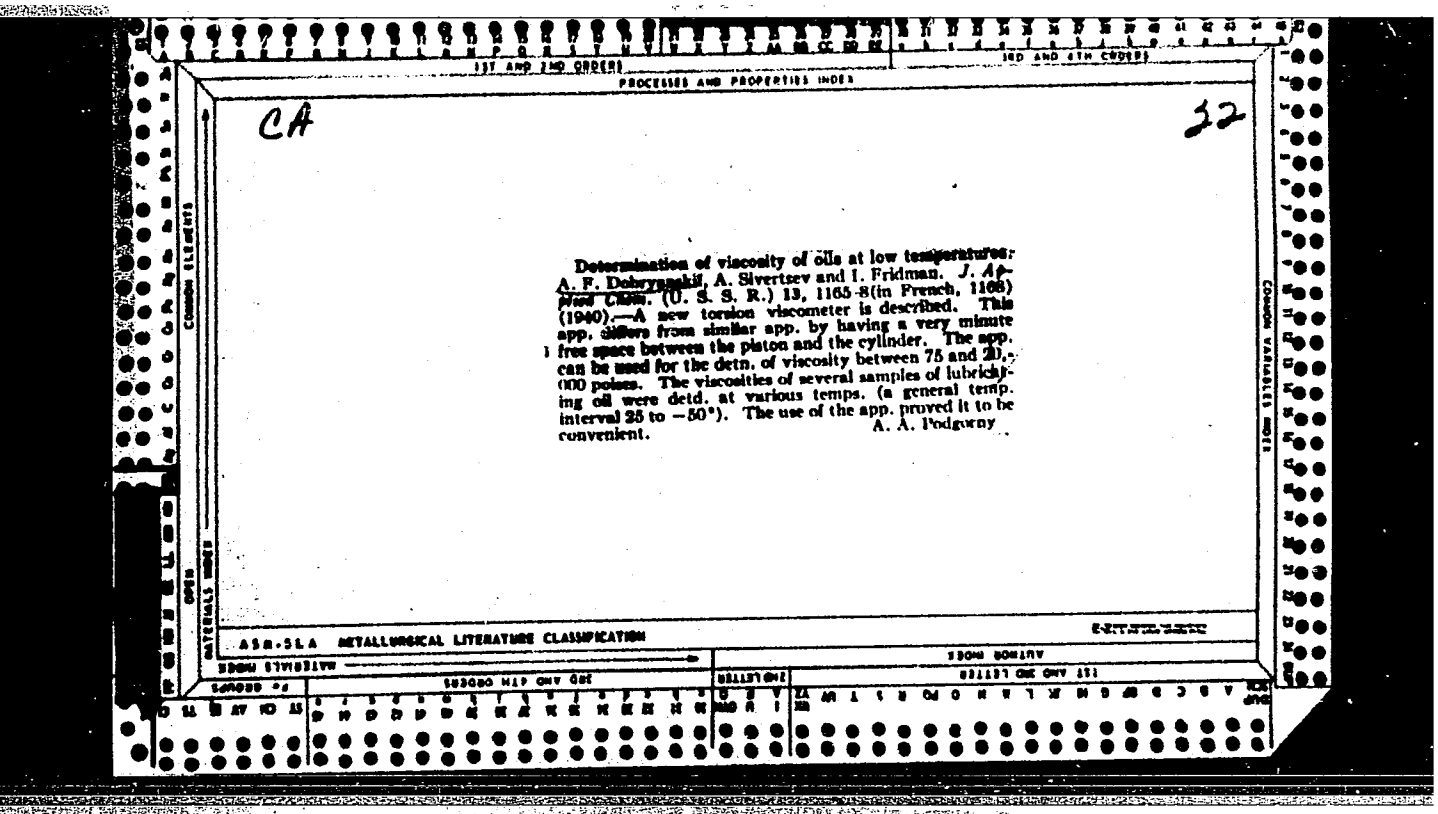


Mechanism of aromatisation. Thermal isomerisation of the xylenes. A. F. Dobrianski and F. J. Saperkin (J. Gen. Chem. Russ., 1939, 9, 1313—1314).—Pyrolysis of *o*- (I), *m*- (II), and *p*- (III) -xylene in a porcelain tube heated in an electric oven at 700—770° gives in each case PhMe, condensation products, gases, and unchanged xylene. The recovery of (II) was the highest and it appears to be the most stable, (I) the least stable and the most easily demethylated. Some isomerisation of (I) into (II) and (III) and of (III) into (II), but not into (I), is also observed; (II) is not isomerised. It is probable that demethylation and isomerisation proceed concurrently and that (II) is not an intermediate in the formation of PhMe. G. A. R. K.

Bv. Abs

A I 11. Geochemistry

Genetic classification of coals and bitumens. A. F. Dobrjanski. *J. Appl. Chem. Russ.*, 1940, **13**, 443—446).—If the analyses of the org. part of wood and fossil fuels are represented in a triangular diagram with C, H, and (O + S + N) in the summits, it is seen that they form two distinct branches which touch each other at the beginning (at small C contents). To one branch belong wood, peat, lignite, coal, and anthracite; the other includes sapropel, oil shale, sapropelite, asphalt, petroleum, and asphaltites. These facts serve to solve the problem of the origin of petroleum and asphaltites. Petroleum is a derivative of sapropel, and asphaltites are formed by oxidation and evaporation of asphalts and petroleum. J. J. B.



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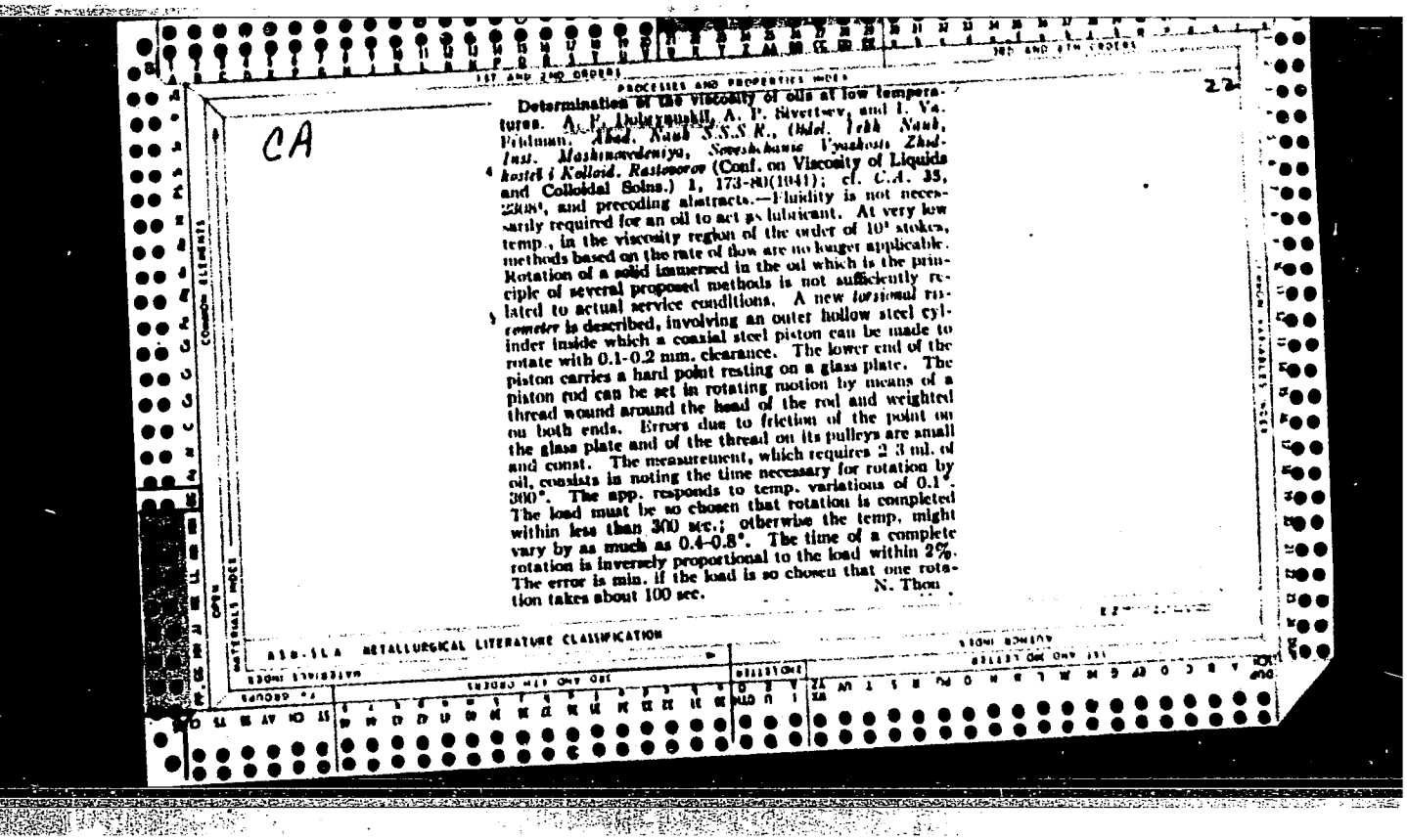
Determination of viscosity of oils at low temperatures. A. F. Dobryanskii, A. Sivertsev and I. Fridman. *J. Applied Chem.* (U. S. S. R.) 13, 1165-8(in French, 1168) (1940).—A new torsion viscometer is described. This app. differs from similar app. by having a very minute free space between the piston and the cylinder. The app. can be used for the detn. of viscosity between 75 and 20,000 poises. The viscosities of several samples of lubricating oil were detd. at various temps. (a general temp. interval 25 to −50°). The use of the app. proved it to be convenient.

A. A. Podgorny



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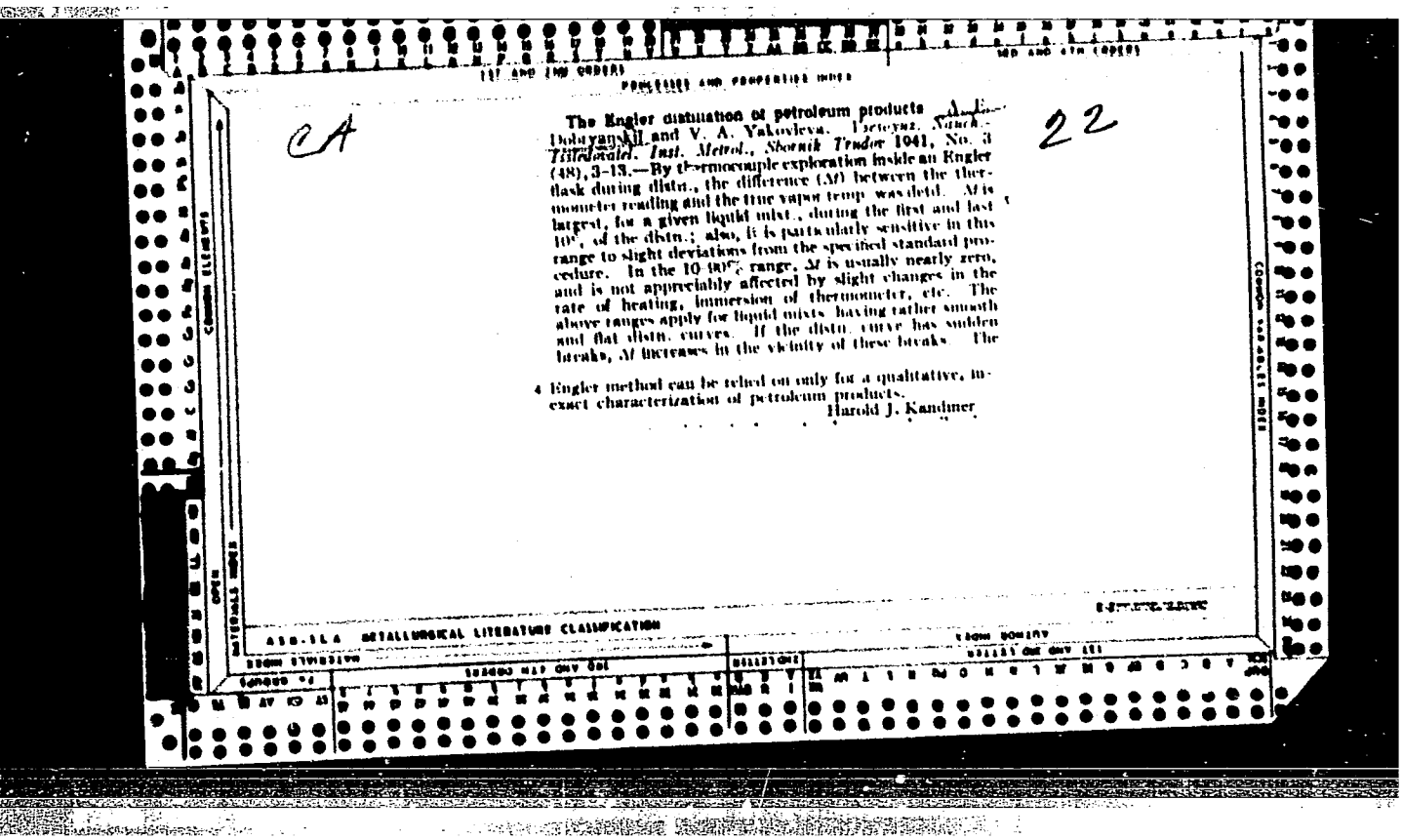
Determination of the viscosity of oils at low temperatures. A. F. Lubyanshii, A. P. Sivertsev, and I. Va. Pridmun. *Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk, Inst. Mashinovedeniya, Soveshchanie Issledovan. Zhidkostei i Kolloid. Rastvorov* (Conf. on Viscosity of Liquids and Colloidal Solns.) 1, 173-80(1941); cf. *C.A.* 35, 2808⁸, and preceding abstracts.—Fluidity is not necessarily required for an oil to act as lubricant. At very low temp., in the viscosity region of the order of 10^5 stokes, methods based on the rate of flow are no longer applicable. Rotation of a solid immersed in the oil which is the principle of several proposed methods is not sufficiently related to actual service conditions. A new *torsional rheometer* is described, involving an outer hollow steel cylinder inside which a coaxial steel piston can be made to rotate with 0.1-0.2 mm. clearance. The lower end of the piston carries a hard point resting on a glass plate. The piston rod can be set in rotating motion by means of a thread wound around the head of the rod and weighted on both ends. Errors due to friction of the point on the glass plate and of the thread on its pulleys are small and const. The measurement, which requires 2-3 ml. of oil, consists in noting the time necessary for rotation by 360°. The app. responds to temp. variations of 0.1°. The load must be so chosen that rotation is completed within less than 300 sec.; otherwise the temp. might vary by as much as 0.4-0.8°. The time of a complete rotation is inversely proportional to the load within 2%. The error is min. if the load is so chosen that one rotation takes about 100 sec.

N. Thon

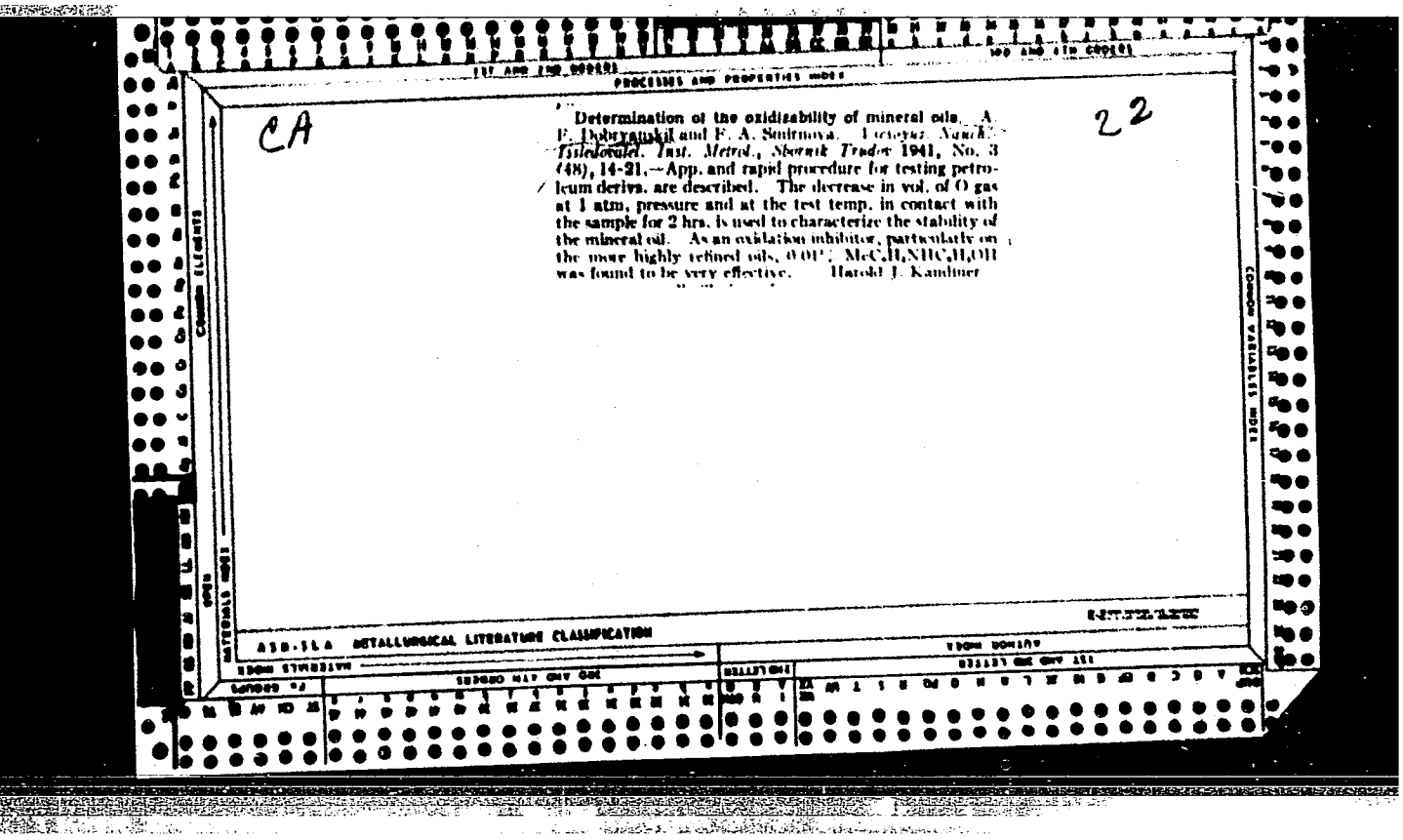


CA 22

The Engler distillation of petroleum products. Dobryanskii and V. A. Yakovleva. *Trudy Vsesoyuz. Nauch.-Issledovatel. Inst. Metrol., Sbornik Trudov* 1941, No. 3 (48), 3–13.—By thermocouple exploration inside an Engler flask during distn., the difference (Δt) between the thermometer reading and the true vapor temp was detd. Δt is largest, for a given liquid mixt., during the first and last 10%, of the distn.; also, it is particularly sensitive in this range to slight deviations from the specified standard procedure. In the 10–80% range, Δt is usually nearly zero, and is not appreciably affected by slight changes in the rate of heating, immersion of thermometer, etc. The above ranges apply for liquid mixts. having rather smooth and flat distn. curves. If the distn. curve has sudden breaks, Δt increases in the vicinity of these breaks. The Engler method can be relied on only for a qualitative, inexact characterization of petroleum products.

Harold J. Kandiner

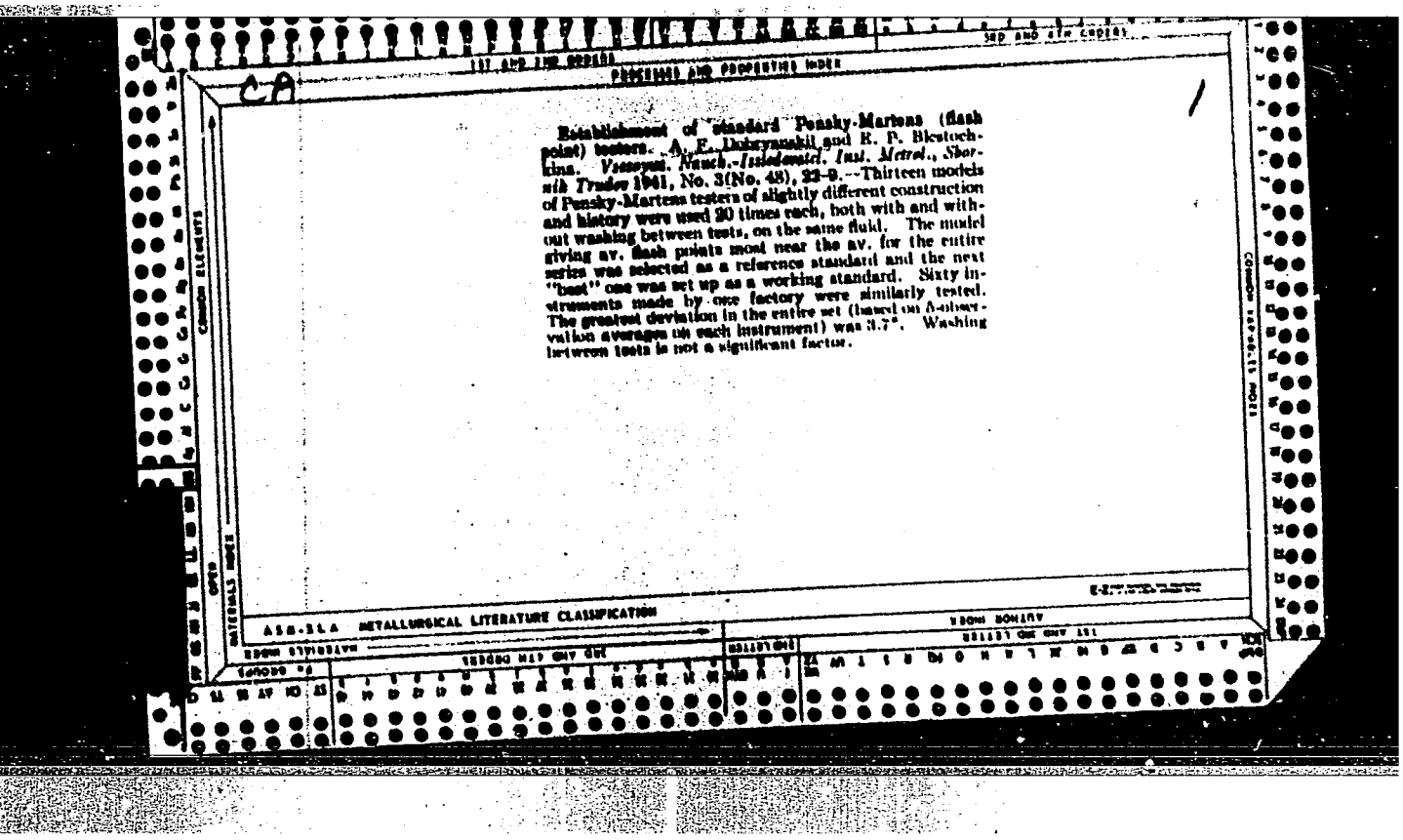
A50-51A METALLURGICAL LITERATURE CLASSIFICATION



CA

22

Determination of the oxidizability of mineral oils. A. F. Dobryanskiĭ and F. A. Smirnova. *Trudy Nauch.-Issledovatel. Inst. Metrol., Sbornik Trudov* 1941, No. 3 (48), 14-21.—App. and rapid procedure for testing petroleum derivs. are described. The decrease in vol. of O gas at 1 atm. pressure and at the test temp. in contact with the sample for 2 hrs. is used to characterize the stability of the mineral oil. As an oxidation inhibitor, particularly on the more highly refined oils, 0.01% $MeC_6H_3NHC_6H_4OH$ was found to be very effective. Harold J. Kandiner



CA

Establishment of standard Pensky-Martens (flash point) testers. A. E. Dukhyanskii and E. P. Blestochkina. *Vsesoyuz. Nauch.-Issledovatel. Inst. Metrol., Sbornik Trudov* 1941, No. 3(No. 43), 23–9.—Thirteen models of Pensky-Martens testers of slightly different construction and history were used 20 times each, both with and without washing between tests, on the same fluid. The model giving av. flash points most near the av. for the entire series was selected as a reference standard and the next "best" one was set up as a working standard. Sixty instruments made by one factory were similarly tested. The greatest deviation in the entire set (based on 4 observation averages on each instrument) was 3.7°. Washing between tests is not a significant factor.

DOBRYANSKIY, A.F.; BLOKH, L.S.; BLESTOCHKINA, Ye.P. [deceased]

Relationship between kinematic viscosity and viscosity according to Engler. Trudy VNIIM no.5:22-32 '47. (MIRA 12:1)
(Lubrication and lubricants) (Viscosity)

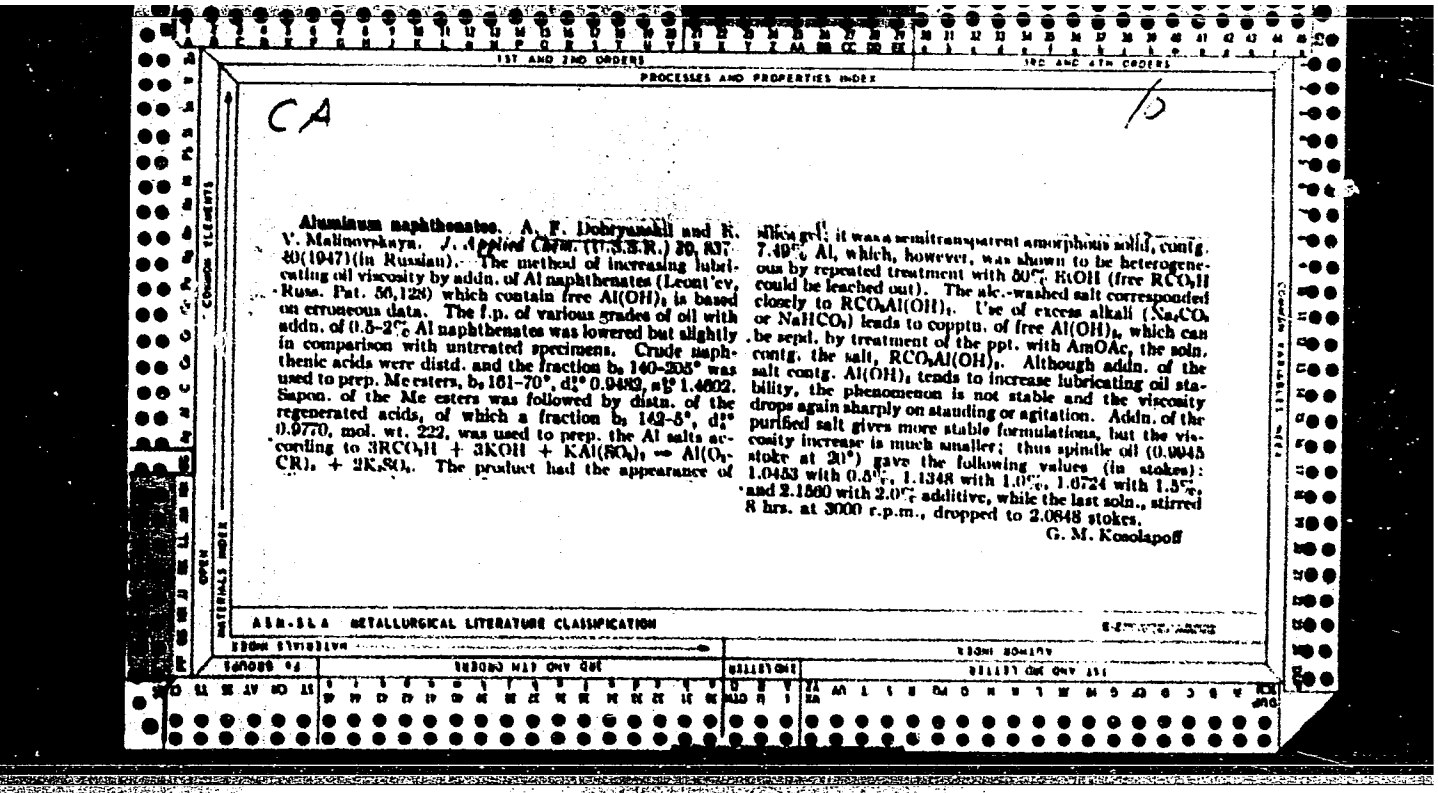
DOBRYANSKIY, A.F.; KUCHINSKIY, V.N.

Determining the kinematic viscosity of mixtures of oils. Trudy VNIIM no.5:46-51 '47. (MIRA 12:1)
(Lubrication and lubricants) (Viscosity)

DOBRIANSKY, A.

Dobriansky, A., and Sivertzev, A.-"Action of Aluminium Chloride upon the Esters" (p. 912)

SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii), 1947, Vol. 17, No. 5



PROCESSES AND PROPERTIES INDEX

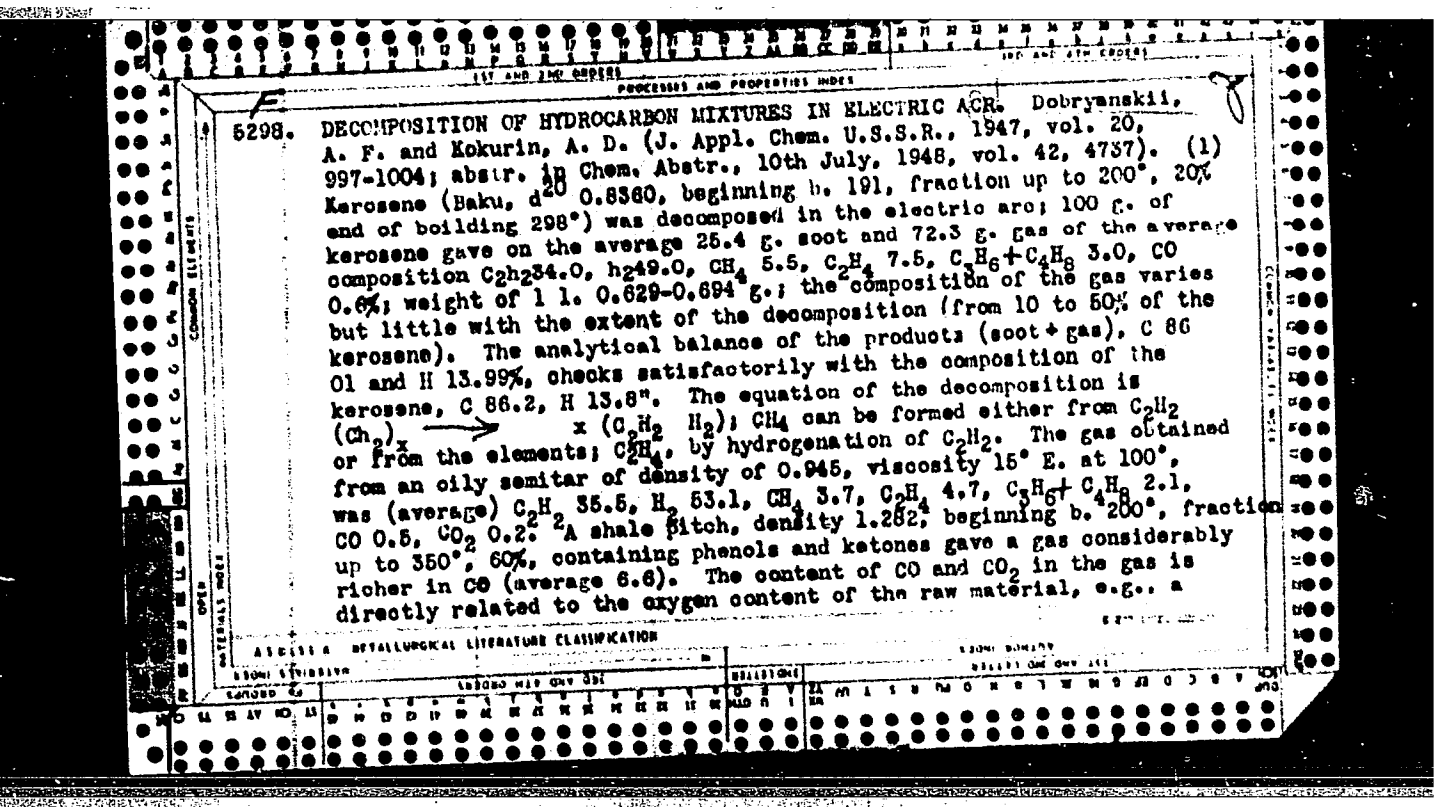
CA

15

Aluminum naphthenates. A. F. Dobryanskii and E. V. Malinovskaya. *J. Applied Chem. (U.S.S.R.)* 20, 837-80(1947)(in Russian). The method of increasing lubricating oil viscosity by addn. of Al naphthenates (Leont'ev, Russ. Pat. 56,128) which contain free $Al(OH)_3$ is based on erroneous data. The f.p. of various grades of oil with addn. of 0.5-2% Al naphthenates was lowered but slightly in comparison with untreated specimens. Crude naphthenic acids were distd. and the fraction b_5 140-205° was used to prep. Me esters, b_5 161-70°, d_4^{20} 0.9482, n_D^{20} 1.4602. Sapon. of the Me esters was followed by distn. of the regenerated acids, of which a fraction b_5 142-5°, d_4^{20} 0.9770, mol. wt. 222, was used to prep. the Al salts according to $3RCO_2H + 3KOH + KAl(SO_4)_2 \rightarrow Al(O_2CR)_3 + 2K_2SO_4$. The product had the appearance of silica gel; it was a semitransparent amorphous solid, contg. 7.49% Al, which, however, was shown to be heterogeneous by repeated treatment with 80% EtOH (free RCO_2H could be leached out). The alc.-washed salt corresponded closely to $RCO_2Al(OH)_2$. Use of excess alkali (Na_2CO_3 or $NaHCO_3$) leads to coppttn. of free $Al(OH)_3$, which can be sepd. by treatment of the ppt. with AmOAc, the soln. contg. the salt, $RCO_2Al(OH)_2$. Although addn. of the salt contg. $Al(OH)_3$ tends to increase lubricating oil stability, the phenomenon is not stable and the viscosity drops again sharply on standing or agitation. Addn. of the purified salt gives more stable formulations, but the viscosity increase is much smaller; thus spindle oil (0.0045 stoke at 20°) gave the following values (in stokes): 1.0453 with 0.5%, 1.1348 with 1.0%, 1.6724 with 1.5%, and 2.1560 with 2.0% additive, while the last soln., stirred 8 hrs. at 3000 r.p.m., dropped to 2.0848 stokes.

G. M. Kosolapoff

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



5298. DECOMPOSITION OF HYDROCARBON MIXTURES IN ELECTRIC ARC. Dobryanskii, A. F. and Kokurin, A. D. (J. Appl. Chem. U.S.S.R., 1947, vol. 20, 997-1004; abstr. in Chem. Abstr., 10th July, 1948, vol. 42, 4737). (1) Kerosene (Baku, d^{20} 0.8360, beginning b. 191, fraction up to 200°, 20% end of boilding 298°) was decomposed in the electric arc; 100 g. of kerosene gave on the average 25.4 g. soot and 72.3 g. gas of the average composition C_2h_2 34.0, h2 49.0, CH_4 5.5, C_2H_4 7.5, $C_3H_6 + C_4H_8$ 3.0, CO 0.6%; weight of 1 l. 0.629-0.694 g.; the composition of the gas varies but little with the extent of the decomposition (from 10 to 50% of the kerosene). The analytical balance of the products (soot + gas), C 86 01 and H 13.99%, checks satisfactorily with the composition of the kerosene, C 86.2, H 13.8%. The equation of the decomposition is $(CH_2)_x \rightarrow x(C_2H_2 + H_2)$; CH_4 can be formed either from C_2H_2 or from the elements; C_2H_4, by hydrogenation of C_2H_2. The gas obtained from an oily semitar of density of 0.945, viscosity 15° E. at 100°, was (average) C_2H_2 35.5, H_2 53.1, CH_4 3.7, C_2H_4 4.7, $C_3H_6 + C_4H_8$ 2.1, CO 0.5, CO_2 0.2. ^2A shale pitch, density 1.282, beginning b. 200°, fraction up to 350°, 60%, containing phenols and ketones gave a gas considerably richer in CO (average 6.6). The content of CO and CO_2 in the gas is directly related to the oxygen content of the raw material, e.g., a

Diesel fraction, a shale pitch, and a peat pitch with O 1.2, 5.2, and 12.6 %, respectively, gave CO 3.2, 6.6, and 8.6, CO_2 0.4, 0.6, and 1.1% respectively. In all experiments, up to 50% of the material remained undecomposed; the density of the residue is the higher, the deeper the decomposition; e.g., kerosene, decomposition 10, 15, 20, and 30%, density of residue 0.8366, 0.8383, 0.8382, and 0.8387; the temperature of beginning boiling of the residue is 4-5° higher than that of the initial kerosene, but the fractional composition remains unchanged; thus, the change of density is due solely to removal of the lightest fractions, without any cracking of the main mass taking place. (2) EtOH (96%) gave a gas C_2H_2 14.4, H_2 51.3, CH_4 6.2, C_2H_4 4.7, C_3H_6 C_4H_8 0, CO 22.7, CO_2 0.7%; no traces of MeCHO were found; the undecomposed alcohol is unchanged. It is noteworthy that dehydration to C_2H_4 is very low. No soot is formed. The reaction consists in the main in $2\ EtOH \longrightarrow 3CO + 6H_2 + C_2H_2 + CH_4$. (3) C_2H_2 is a primary product and its high yield is determined by its fast removal from the high temperature zone where it might suffer decomposition. Its formation is possibly the result of the recombination of free radicals.

DOBRYANSKIY, A. F.

"The Geochemistry of petroleum", (Geokhimiya nefti), Tostopizadt, 1948.

DOBRYANSKIY, A. F.

PA 43/49T18

USSR/Chemistry - Petroleum Oct 48
Chemistry - Mixtures

"Volumetric Ratio of a Mixture of Petroleum Fractions," A. F. Dobryanskiy, N. V. Strigaleva, N. I. Georgiadi, Leningrad Tech Inst, All-Union Petroleum Sci Res Geol Res Inst, Leningrad, 6 pp

"Zhur Priklad Khim" Vol. XXI, No 10

Investigates expansion of a mixture when various quantities of petroleum fractions are mixed together, and when gasoline fractions are mixed with aromatic hydrocarbons. Expansion is proportional to increase of specific weight or index of refraction. Maximum expansion occurs for a 50% mixture. Shows that

43/49T18

USSR/Chemistry - Petroleum (Contd) Oct 48

Molin-Gurvich principle applies for all physical properties of hydrocarbon mixtures not conforming to the law of additivity. Shows that determination of aromatic hydrocarbons in a petroleum fraction mixture can be sufficiently accurate by application of investigated method. Submitted 22 Mar 48.

43/49T18

DOBRYANSKIY, ALEKSANDR FLAVIANOVICH.

...

...COMBUSTIBLE SHALES OF THE USSR...ABSTRACTED BY SIMON MILOSHY.
WASHINGTON, 1949

125, 61 L. MAPS, DIAGRS., TABLES. (US BUREAU OF MINES. INTRA-BUREAU REPORT)

BIBLIOGRAPHIES: P. 123-125; 60-61.
TYPEWRITTEN COPY.

DOBRYANSKIY, A. F.

32364 DOBRYANSKIY, A. F. i BOGOMOLOV, A. I. i SHKLYAR, I. V. Kataliticheskoye Vliyaniye Porod Na Izmeneniye sostava Nefti. Zhurnal Prikl. Khimii, 1949, No. 10, s. 1124-32 Bibliogr: 8 NAZV

SO: Letopis' Zhurnal'nykh Statey, Vol. 44

DOBRYANSKIY, A.F., professor; GAVRILOV, B.G., dotsent.

Catalytic conversions of petroleum hydrocarbons. Nauch.biul. Len. un. no.23:13-19 '49. (MLRA 10:4)

1. Kafedra tekhnicheskoy khimii.
(Petroleum) (Hydrocarbons)

BJ-2 Solid Gas Fuels

Brit. abs.

Petroleum-like liquid from the Tkvibuli coal deposits. A. F. Dobryansky and A. I. Bogomolov (*J. appl. Chem., U.S.S.R.*, 1949, **22**, 630—643).—Oil exuding from Tkvibuli (Georgian SSR) cannel coal resembles shale oil, and has d_4^{20} 0·8676, S 0·26, N 0·14, aromatic 8·0, naphthenic 9·2, and paraffinic hydrocarbons 47·4, and paraffin wax content 14·2% ; 65% of the oil distils from 134° to 350°.

R. TRUSCOE.

E. / abs

RZhKhim

Catalytic influence of kinds on the change of composition of petroleum. A. F. Dobryanskii, A. L. Bogomolov, and I. V. Skiyar (*J. appl. Chem., U.S.S.R.*, 1938, **11**, 1124—1132).—Polycyclic hydrocarbons are detcyclised by heating at 280° with an Al silicate (bentonite) catalyst. Compounds of lower b.p. and simpler molecular species are formed with redistribution of H, the proportion of naphthenes being increased. The metamorphism of petroleum in strata is believed to take place by a similar mechanism.

I. H. Burrow.

DOBRYANSKIY, A.F.

PHASE I BOOK EXPLOITATION SOV/4941

Mezhvuzovskoye soveshchaniye po khimii nefti, Moscow, 1956.

Sbornik trudov Mezhvuzovskogo soveshchaniya po khimii nefti (Collection of Transactions of the Inter-University Conference on Petroleum Chemistry) [Moscow] Izd-vo Mosk. univ., 1960. 313 p. Errata slip inserted. 1,600 copies printed.

Organizing Committee of the Conference: Chairman: B. A. Kazanskiy, Academician; Vice-Chairman: S. I. Khromov, Docent; G. M. Panchenkov, Professor; A. F. Plate, Professor; Secretary: Ye. S. Balenkova, Scientific Worker. Editorial Board: Resp. Ed.: A. F. Plate; I. V. Gostunskaya, I. N. Tits-Skvortsova, L. A. Erivanskaya.

PURPOSE: This collection of articles is intended for the teaching staff of universities and schools of higher education training specialists for the petroleum and petroleum-refining industries.

~~Card 1/7~~

COVERAGE: The collection includes articles dealing with the present state of the petroleum industry, the scientific research problems in petroleum chemistry, the chemistry of petroleum, the composition of petroleum and petroleum products, the scientific principles of refining petroleum into motor fuels and lubricants, and the manufacture of synthetic products from hydrocarbon gases and petroleum. One article discusses the effect of chemical composition and additives on fuel combustion in jet engines. The material was presented at the Inter-University Conference on Petroleum Chemistry, held at the Moscow State University imeni M. V. Lomonosov November 26-28, 1956. No personalities are mentioned. References accompany most of the articles.

TABLE OF CONTENTS: None given

The authors and the titles of articles are as follows:

DOBRYANSKIY, A. F.

24004 DOBRYANSKIY, A. F. Opyt analiza nekotorykh polozheniy Gipotezy prevrashcheniya neftey na materiale vtorogo Baku. Trudy Vsesoyuz. Neft. Naut.-Issled. Geol.-razved. IN-TA, Novaya seriya, VYP. 28, 1949, S. 5-27.

SO: Letopis, No. 32, 1949.

(A

22

Transformations of petroleum in nature as the cause of variation of its properties. A. F. Dobryanskii. *Vestnik Leningrad Univ.* 1950, No. 1, 31-8.—Variations of the properties of petroleum are explainable by the natural changes which occur during submergence in the ground. Since chem. changes can occur in petroleum in the feasible range of 150-300°, such reactions as H disproportionation, radical shifts in cyclic structures, and decompn. of larger mols. under the influence of catalytically active clays also become feasible. The formation of methane-type petroleum, naphthene types, and those contg. aromatic compds. are readily explainable on the above basis. The oldest geol. formations are low in petroleum and the Tertiary deposits appear to be the richest. The industrial refining of petroleum is seen as a parallel of similar natural processes of transformations along chemically similar lines.

G. M. Kosolapoff

CA

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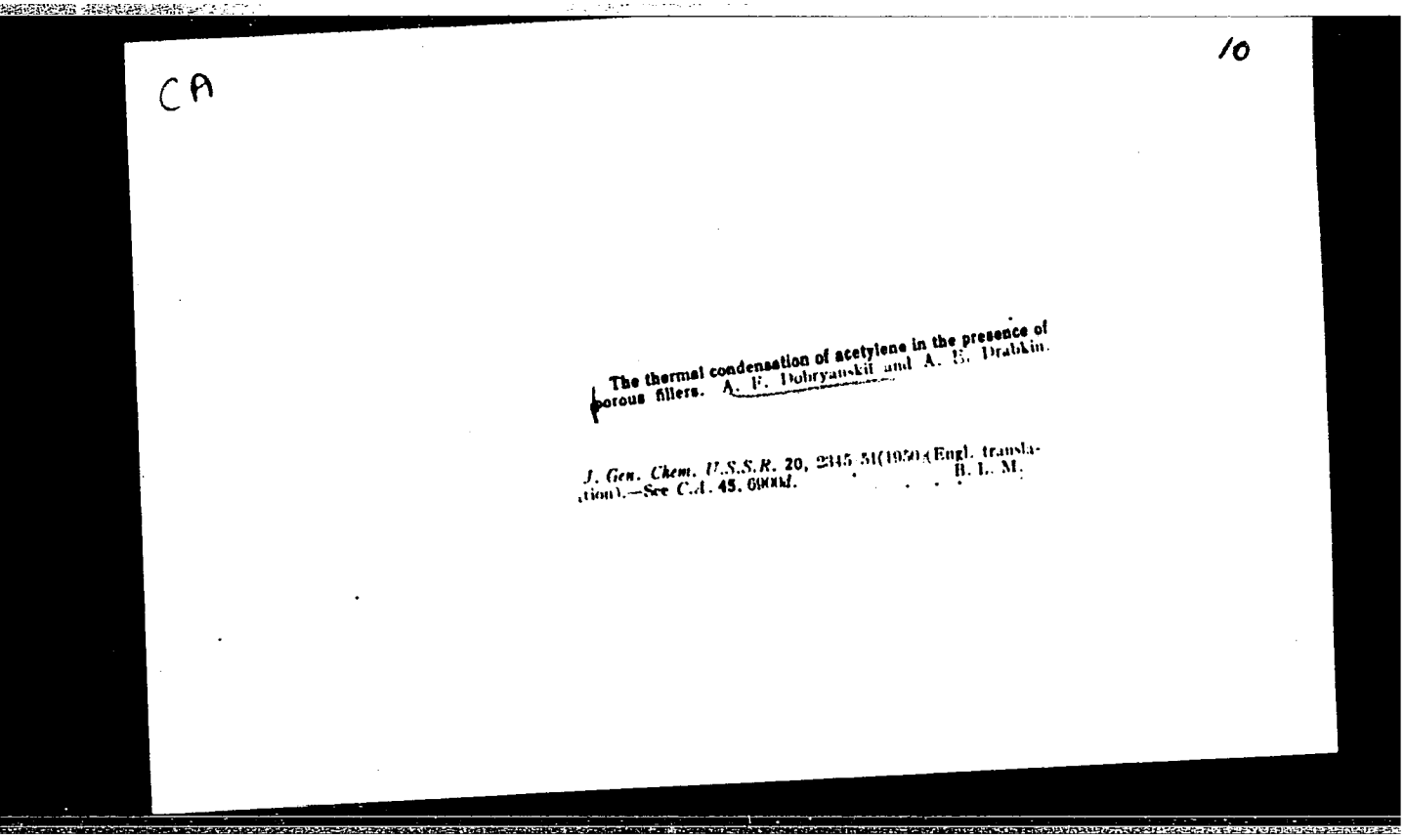
Thermal condensation of acetylene in the presence of porous fillers. A. P. Dobryanskii and A. E. Drabkin (Lensovet Technol. Inst., Leningrad). *Zhur. Obshchei Khim.* (*J. Gen. Chem.*) 20, 2255-60(1950).—Passage of C_2H_2 through a heated porcelain tube produces condensation of C_2H_2 already at 400° and reaches a max. (65.8%) at 700°, above which tar formation predominates. At 400° no aromatic hydrocarbons form, but at 500° or above, progressively greater amts. of C_6H_6 appear, while at 600° small amts. of PhMe and xylenes appear. The optimum contact time at 700° is 12 sec. If the tube is filled with porcelain rings (45 vol.-%) no significant differences arise. A filler of silica gel (75 vol.-%) causes a decline of the catalyzate; thus at 700° only 10.9% condensate forms, and neither contact time nor temp. variation causes a rise of yield. An activated charcoal filler gives a similar result and at 700° all C_2H_2 is decompd. (90% at 600°), giving 50.56% gaseous products and only 0.65% condensate, along with much C deposition (about 39%). Apparently the porous fillers cause rapid condensation, yielding high-boiling products that gradually fill the pores of the filler, after which the process resembles that obtained with an open tube. The C deposit is not catalytic. The pore-closing takes place after 10-20 hrs. of operation.

G. M. Kosolapoff

1951



CA

10

The thermal condensation of acetylene in the presence of porous fillers. A. F. Dobryanskii and A. S. Drabkin.

J. Gen. Chem. U.S.S.R. 20, 2145-51(1950)(Engl. translation).—See *C.A.* 45, 6000*d*. B. L. M.

DOBRYANSKIY, A.F.; GARVILOV, B.G.

Thermal conversion of alkyl benzenes. Uch.zap.Len.un. no.155:261-269 '52. (MLRA 9:1)
1.Kafedra teknicheskoy khimii.
(Benzene)

DOBRYANSKIY, A.F.

Catalytic cleavage of *sym*-diphenylethane under the influence of aluminum chloride. A. F. Dobryanskii and Yu. L. Fomilova (Lensovet Technol. Inst., Leningrad). *Sovet. Nauk. Obshchei Khim., Akad. Nauk S.S.S.R.* 1, 311–14 (1953).—Heating $(CH_2Ph)_2$ (I), with $AlCl_3$ to 230–50° or 240–50° results in 2 simultaneous processes: cleavage and condensation. I undergoes solely the unsym. cleavage, regardless of conditions, yielding C_6H_6 and condensation products of linear structure. The yields depend on conditions. If the low boiling material is not removed continuously, the yield of distillable material (mostly C_6H_6) declines. The yield of distillable material rises with increase of catalyst concn. from 1% to 10%. Oxidation of the condensation products gave BzOH and *p*-$C_6H_4(CO_2H)_2$.

G. M. Kosolapoff

DOBRYANSKIY, A.F.

Condensation of ethylene chloride with aromatic hydrocarbons in the presence of aluminum chloride. A. F. Dobryanskii and Yu. I. Kornilova (Lensovet Technol. Inst., Leningrad). *Sbornik Statei Obshchei Khim., Akad. Nauk S.S.S.R.* 1, 815–19(1953).—The reaction of $(CH_2Cl)_2$ with C_6H_6 in the presence of $AlCl_3$ yields $(PhCH_2)_2$ and resins, or condensation products. $(CH_2Cl)_2$ (99 g.) and 234 g. C_6H_6 with 10 g. $AlCl_3$ gave, after the usual aq. treatment, 55% $(PhCH_2)_2$, b_{10} 152–6°, and 40 g. product, b_{10} 155–300°. Some higher boiling residue was left. Repeated distn. gave *p*-$C_6H_4(CH_2CH_2Ph)_2$, b_5 212°, m. 47–8.5°, and (*p*-$PhCH_2CH_2C_6H_4CH_2)_2$, b_5 270–8°, m. 76–85° (possibly a mixt. of isomers). Oxidation gave terephthalic acid and BzOH. The same oxidation products were obtained from the tarry distn. residue. Similarly $MePh_2$ gave up to 65% ditolylethane, b_5 142°, d_{20} 0.9031, which oxidized with $KMnO_4$ to terephthalic and isophthalic acids, with traces of toluic acids, thus indicating the formation of *m*- and *p*-isomers in the condensation. The higher boiling products yielded *1,3-bis[2-(p-methylphenyl)ethyl]-5-methylbenzene*, b_5 229–8°, m. 63–5°. G. M. Kosolapoff

DOBRYANSKIY, A.F.

The action of aluminum chloride on esters of dibasic acids. A. F. Dobryanskiĭ and Yu. I. Kornilova. *Sbornik Statei Obshchel Khim., Akad. Nauk S.S.S.R.* 1, 320-1(1953).—$AlCl_3$ (5 g.) and 10 g. $CH_2(CO_2Et)_2$ heated on a steam bath 7–10 min. until the reaction commenced and the mixt. allowed to stand until gas (EtCl) evolution ceased gave a spongy yellow mass, which, extd. with Et_2O, yielded a residue of *Al malonate*, $C_3H_4O_4Al_2$, which was extremely hygroscopic. Similarly 4.7 g. $AlCl_3$ and 23 g. *o*-$C_6H_4(CO_2Bu)_2$ yielded after the above-described treatment an unstated amount of *Al phthalate*, $C_8H_{12}O_{12}Al_2$, a very hygroscopic solid, along with BuCl. G. M. Kosolapoff

DOBRYANSKIY, A.F.

Alkylation of aromat. hydrocarbons by esters of dicarboxylic acids. A. F. Dobryanskii and Yu. I. Kornilova. *Sbornik Statei Obshchei Khim., Akad. Nauk S.S.S.R.* 1, 829–44(1953).—Heating 36 g. $AlCl_3$, 40 g. C_6H_6, and 30 g. $(CO_2Et)_2$ until the reaction started (total duration about 0.5 hr.) followed by aq. treatment of the mixt. after cessation of gas evolution, gave 10 g. EtPh. Similarly 20 g. MePh gave 10 g. mixed *m*- and *p*-MeC_6H_4Et, with predominance of the former (as shown by oxidation to the dicarboxylic acids). Com. xylene similarly gave 5-ethyl-*m*-xylene, b. 194–7°, which on oxidation gave pure trimesic acid, m. 348–51°. A similar reaction with $CH_2(CO_2Et)_2$ and C_6H_6 gave very little EtPh. G. M. Kosolapoff

DOBRYANSKIY, A. F.

Catalytic decomposition of symmetric ditolylethane under the influence of aluminum chloride. A. F. Dobryanskii and Yu. I. Kornilova (Leningrad Technol. Inst., Leningrad). *Sbornik Statei Obshchei Khim., Akad. Nauk S.S.S.R.* 1, 325-9(1953).—Heating mixed 1,2-di(*m*-tolyl)ethane and 1,2-di(*p*-tolyl)ethane with $AlCl_3$ to 230–50° led to cleavage of the former in 2 directions. Predominant reaction was cleavage of MePh, a lesser reaction was the cleavage of xylene (*m*- and *p*-isomers as identified after oxidation to the acids). The extent of the reaction rises with temp. and with duration, as well as with increase of the proportion of $AlCl_3$ used. Attempts to oxidize the high boiling products failed to yield any conclusive results. G. M. Kosolapoff

DOBRYANSKIY, A.F.

Thermocatalytic conversions of hydrocarbons. Part 1. Conversions of phenylcyclohexane. Zhur.ob.khim. 23 no.7:1116-1119 Jl '53. (MLRA 6:7)

1. Kafedra tekhnicheskoy khimii Leningradskogo Gosudarstvennogo universiteta.
(Cyclohexane) (Catalysis)

DOBRYANSKIY, A.F.; GAVRILOVA, E.K.

Thermocatalytic conversions of hydrocarbons. Part 2. Conversions of tertiary-butyl benzene. Zhur.ob.khim. 23 no.7:1118-1119 Jl '53. (MLRA 6:7)

1. Kafedra tekhnicheskoy khimii Leningradskogo Gosudarstvennogo universiteta. (Butyl benzene) (Catalysis)

DOBRYANSKIY, A.F.

Thermocatalytic transformations of hydrocarbons. III. Transformations of diphenylmethane. A. F. Dobryanskii and P. N. Kolomiitsev. (Lensovet Technol. Inst., Leningrad). *Zhur. Obshchei Khim.* 23, 1469–70(1953); cf. *C.A.* 47, 12214c.—Ph_2CH_2 was heated, either with distn. of the volatiles or in closed autoclave at 200°, with activated gumbrin catalyst. The products were the same in both cases: the reaction yielded C_6H_6 and mainly *p*-$C_6H_4(CH_2Ph)_2$ (I), b_{12} 245–50°, m. 86°. C_6H_6 and I begin to form even at 120°. No MePh is formed. In a closed app., equil. is established; at 120° in 10 hrs. the mixt. contains 2.2% C_6H_6; at 150° 9%; at 170° 21%. When I is heated with C_6H_6 and the catalyst in a closed autoclave at 170° a similar equil. mixt. forms with indications that the catalyst can be readily recycled without loss of activity. G. M. Kosolapoff

(1)

DOBRYANSKIY, A.F.; PONOMAREV, L.A.; DYBKIN, L.D.

Thermocatalytic conversions of hydrocarbons. Part 4. Conversions of diphenylethane and ditolylethane. Zhur.ob.khim. 23 no.10:1632-1635 O '53. (MLRA 6:11)

1. Leningradskiy Gosudarstvennyy universitet. (Ethane)

DOBRYANSKIY, A.F.

V The work of D. I. Mendeleev in the chemistry of petroleum.
A. F. Dobryanskii. *Vestnik Leningrad. Univ.*, 9, No. 11, 1
CH *Ser. Mat., Fiz. i Khim.* No. 4, 107-73(1954).—A brief review and discussion of Mendeleev's work and hypotheses concerning the origin of petroleum. — I. A. K.

DOBRYANSKIY, A. F.

AID - P-103

Subject : USSR/Chemistry

Card : 1/1

Authors : Dobryanskiy, A. F., and Zvyagintsev, O. Ye.

Title : Bibliography

Periodical : Zhur. Prikl. Khim. 27, no. 4, 466-468, 1954

Abstract : A book Chemical Refining of Petroleum by P. Goldstein (translated into Russian by N. S. Dabagov) is reviewed. Some articles from Transactions of the Scientific Research Institute of Glass, no. 32, 1953. Transactions of the Moscow Institute of Fine Chemical Technology im. M. V. Lomonosov, no. 3, 1952, and Transactions of the Khar'kov Polytechnic Institute im. V. I. Lenin. Vol. 1, Chemical-technological Series, no. 1, 1952 are listed.

Institution : None

Submitted : No date

DOBRYANSKIY, A.F.

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Catalytic conversion of paraffin and ceresin over pumice. A. F. Dobryanskii and G. Ya. Yorob'eva. *J. Appl. Chem. U.S.S.R.* 27, 589-93(1954)(Engl. translation).—See *C.A.* 48, 1230b/f.
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CATALYTIC TRANSFORMATIONS ...

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...1952, vol. 25, 525-53... ...

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Andreyev, Pavel Fedorovich; Bogomolov, Aleksey Ivanovich; Dobryanskiy, Aleksandr Flavianovich; and Kartsev, Aleksey Aleksandrovich

Prevrashcheniya nefti v prirode (Conversion of Petroleum in Nature) Leningrad, Gostoptekhizdat, 1958. 416 p. 3,100 copies printed.

Ed.: Dobryanskiy, A.F.; Executive Ed.: Chizhov, A.A.; Tech. Ed.: Yashchurzhinskaya, A.B.

PURPOSE: This book is intended for specialists in geochemistry and petroleum geology.

COVERAGE: The book gives a systematic approach to problems related to the transformations of present-day petroleum deposits as systems of active substances. A.F. Kartsev wrote Chapters I, II and V (pt.1); P.F. Andreyev - Chapters III, IV and V (pt.2), A.I Bogomolov - Chapters VI and VII; A.F. Dobryanskiy - Chapters VIII and IX. References are given at the end of each Chapter.

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