POKROVSKIY, Aleksey Alekseyevich, prof.; LYADOVA, V., red.

[Talks about nutrition] Besedy o pitanii. Moskva, Ekonomika, 1964. 286 p. (MIRA 18:6)

1. Chlen-korrespondent AMN SSSR (for Pokrovskiy).

LYADOVA, V.N., redaktor; MEDRISH, D.M., tekhnicheskiy redaktor

[Child nutrition; a book on the proper nourishment of children in order to insure their health and strength.] Detskoe pitanie; kniga o tom, kak pravil'no kormit' rebenka, chtoby vyrastit' ego zdorovym i krepkim. Moskva, Gos.izd-vo torgovoi lit-ry, 1957. 239 p. (MLRA 10:5)

1. Akademiya meditsinskikh nauk SSSR, Moscow. Institut pitaniya. (CHILDREN--NUTRITION)

KOROBKINA, G., kand. tekhn. nauk; MINSKIY, K.; LYADOVA, V.N., red.;
EL'KINA, E.M., tekhn. red.

[From wonderful earcorn]Iz chudesnogo pochatka. Moskva, Gostorgizdat, 1963. 98 p. (MIRA 16:10)
(Corn (Maize))

GORDIYENKO, M.G. [Hordiienko, M.H.]; LYADOVA, V.Ye.

Emulsification of viscose rayon on the winding machine. Leh.prom. no.1:65-66 Ja-Mr '63. (MIRA 16:4)

1. Ukrainskiy nauchno-issledovatel'skiy institut po pererabotke iskusstvennogo i sinteticheskogo volokna.

LYADOVA, YE. V.

Lyadova, Ye. V. -- "Labor Hygiene in the Production of Cord Fiber." Cand Med Sci, Acad Med Sci USSR, Moscow 1953. (Referativnyy Zhurnal--Khimiya, No 1, Jan 54)

SO: SUM 168, 22 July 1954

AUTHORS: ~~Lyadova, Yu. I.,~~ Vedeneyev, V. I., ~~Voyevodskiy, V.~~ V. 20-114-6-36/54

TITLE: Investigation of the Kinetics and the Mechanism of the Thermal Decomposition of Isobutylene (Issledovaniye kinetiki i mekhanizma termicheskogo raspada izobutilena).

PERIODICAL: Doklady AN SSSR, 1957, Vol. 114, Nr 6, pp. 1269-1271 (USSR)

ABSTRACT: The third author (references 1,2) suggested a chain-reaction of the thermal decomposition of olefines which is based upon the redistribution of the H-atom between a radical of the allyl-type and the olefine-molecule, where an alkyl radical and a diene develop. He succeeded in determining from this point of view the composition of the products of this composition of olefines of various structure. It was, however, not possible to extend these conceptions to the cracking of such simple olefines as C_3H_6 and i-C_4H_8 , as no H-atoms capable of redistribution reactions exist in the allyl-radicals developing of it . In another paper (reference 2) the third author advocated the opinion that in the case of the two above-mentioned olefines the formation of the reaction products is always preceded by an addition

Card 1/4

Investigation of the Kinetics and the Mechanism of the Thermal Decomposition of Isobutylene 20-114-6-36/54

as one of the primary products. This quantity increases with increasing pressure and with decreasing temperature. This shows that the addition reaction of the H-atom to the double bond of isobutylene takes place under the conditions given here. In order to further determine the problem of the transfer of the H-atom to the olefine double bond, the cracking of mixtures of i-C_4H_8 with C_2H_4 was studied. The results in table 1 permit the following conclusions:
1) They confirm the conception on the chain mechanism of the reaction. On the other hand the development of ethane in large quantities furnishes another proof that the transfer reaction of the H-atom to the olefine double bond is possible. The authors are of opinion that their tests confirm the assumed reaction in isobutylene-crackings:

$$\dot{R} + i\text{-}C_4H_8 \dashrightarrow M + \dot{C}_4H_9.$$

The same applies to the mixture of isobutylene-ethylene:

$$\dot{R} + C_2H_4 \dashrightarrow M + \dot{C}_2H_5.$$

Card 3/4 The comparison of the analysis results of the primary gas

as one of the primary products. This quantity increases with increasing pressure and with decreasing temperature. This shows that the addition reaction of the H-atom to the double bond of isobutylene takes place under the conditions given here. In order to further determine the problem of the transfer of the H-atom to the olefine double bond, the cracking of mixtures of i-C_4H_8 with C_2H_4 was studied. The results in table 1 permit the following conclusions:
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The same applies to the mixture of isobutylene-ethylene:

$$\dot{R} + C_2H_4 \dashrightarrow M + \dot{C}_2H_5.$$

The comparison of the analysis results of the primary gas

5(1,3)

SOV/20-123-2-23/50

AUTHORS: Moiseyev, V. D., Lyadova, Yu. I., Vedeneyev, V. I., Neyman, M. B., Voyevodskiy, V. V., Corresponding Member, AS USSR

TITLE: Ways of the Formation of Propylene and Ethylene in Isobutylene Cracking (Puti obrazovaniya propilena i etilena pri krekinge izobutilena)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 2, pp 292-294 (USSR)

ABSTRACT: As is known, up to 50% of the initial substance in thermal isobutylene decomposition are transformed into liquids (olefins, aromatic compounds). Apparently the polymerization of the initial olefin forms the first stage of the liquid formation, with dimeric and trimeric olefin being formed. The latter themselves are capable of being transformed in various ways with the final result being liquid cracking products. The ratio between carbon and hydrogen in these products is about 1 (Ref 2), whereas it is 2 in isobutylene. From this may be supposed that hydrogen and methane are separated in the formation of the liquids; in principle, also heavier cracking gases with 2 and 3 carbon atoms each in the molecule can be formed. The problem

Card 1/4

Ways of the Formation of Propylene and Ethylene in Isobutylene Cracking SOV/20-123-2-23/50

concerning the type and amount of the gases escaping from the liquids or in their formation is not investigated at all. Propylene is one of the main products of isobutylene cracking. If it were formed from isobutylene only, its formation velocity would decrease with the exhaustion of the isobutylene. If propylene is, however, formed from the liquid or from any other intermediate product of low stability (not from radicals), its formation velocity in the beginning of the reaction must be equal to zero, and then increase according to the law of successive reactions. If both ways of the formation of propylene are correct the two pictures must agree. This was the case in the present experiments. The change of the formation velocity of propylene was investigated by the isotopic kinetic method (Ref 3). Ye. D. Fedorov took part in the synthesis of the marked propylene (with C^{14} on the hydroxyl group). This propylene (15 torr) was subjected together with isobutylene (285 torr) to a cracking in vacuum at 542°. The course of the specific activity α and of the C_3H_6 concentrations are given in figure 1. Figure 2 gives the formation velocity of propylene w_1. In the

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Ways of the Formation of Propylene and Ethylene in Isobutylene Cracking

beginning of the reactions this value w_1 is not equal to zero; it increases during the first 10-12 minutes, i.e. to about 20% isobutylene transformation. This w_1 increase tends to show that a considerable propylene amount in isobutylene cracking is not formed from isobutylene but from any intermediate products of the cracking, obviously from liquids. As may be seen from figure 2, the formation velocity of propylene passes a maximum within the range of 10-14 minutes and then decreases. The authors consider it to be premature to draw any conclusions. The ethylene activity determined in some experiments besides the specific activity of propylene is given in figure 3. As this activity is much lower than that of propylene, this tends to show that only part of the ethylene is formed from propylene. Also ethylene can be formed either from isobutylene directly or from liquids. Based on the experimental results obtained it is not possible to make a decision as to the way of formation prevailing. The fact that propylene is formed from liquids tends to show the possibility of the ethylene formation from the latter. There are 3 figures and 4 references, 2 of which are

Card 3/4

Ways of the Formation of Propylene and Ethylene in Isobutylene Cracking SOV/20-123-2-23/50

Soviet.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics, AS USSR)

SUBMITTED: July 28, 1958

Card 4/4

L 39716-66 EWP(j)/EWT(m)/T IJP(c) RM/WW/GD-2

ACC NR: AP6007965 (N) SOURCE CODE: UR/0191/66/000/003/0020/0021

AUTHOR: Dobrokhotova, M. K.; Vlasova, K. N.; Lyadysheva, Ye. K.; Kutuzova, S. L.

ORG: none

TITLE: Polyamide prepared from decanedicarboxylic acid and hexamethylenediamine

SOURCE: Plasticheskiye massy, no. 3, 1966, 20-21

TOPIC TAGS: polyamide, organic synthetic process, impact strength, absorption coefficient, dielectric permeability, tensile strength, bending strength, specific density

ABSTRACT: The authors studied the synthesis and properties of the polyamide PDG obtained by a reaction of decanedicarboxylic acid with hexamethylenediamide. Polymerization was performed at 260C. By the common industrial method the reagents formed a salt that melted at 182-184C. Synthesized PDG melted at 218-221C, contained $< 1.5\%$ of monomer or low-molecular-weight products, and a 0.5% solution of PDG in "tricresol" had a specific viscosity of 0.7-0.8. The thermomechanical curve of PDG is a typical curve of crystalline compounds (Fig. 1). The physicomechanical properties of PDG, determined on samples molded at 250C and then at 35-40C and conditioned for 3 days in a 65% relative humidity atmosphere at 20-22C, are tabulated below:

Card 1/2 UDC: 678.675'4'4

L 39716-66

ACC NR: AP6007965

3

Properties	PDG	Resin no. 68
Density, g/cm^3	1.09	1.10
Impact strength, $kg \cdot cm/cm^2$	110-120	110-120
Strength, kg/cm^2		
bending	860-920	800-900
tensile	450-500	450-500
Water absorption, %		
1 hour boiling	0.45-0.6	1.0
maximal	~2	~3
ρ_s, ohm	$6.3 \cdot 10^{15}$	$4.6 \cdot 10^{14}$
ρ_s, ohm · cm	$2.5 \cdot 10^{15}$	$7.1 \cdot 10^{14}$
$tg\delta$ at 10^6 cps	0.016	0.03
Dielectric permeability	3.9	4.2

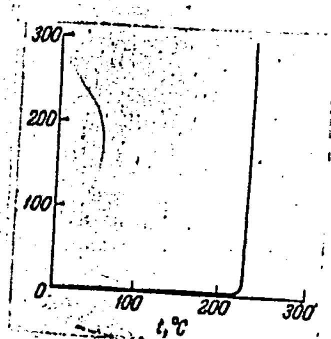

Fig. 1

Decanedicarboxylic acid was prepared by L.I. Zakharkin and V.V. Korneva. Orig. art. has: 1 fig. and 1 table.

SUB CODE: 07,20/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 001

Card 2/2

YERSHOV, V.A.; LYADSKIY, N.K.; PAGNUYEVA, I.A.

Permissible content of phosphorus compounds in acetylene. Khim. prom. no.1:25-29 Ja '61. (MIRA 14:1)
(Acetylene) (Phosphorus compounds)

LYADSKIY, V. B.

Iznosoustoichivost' austenitnogo chuguna. (Vestn. Mash., 1951, no. 3, p. 17-19)

Resistance to wear of austenitic cast iron.

DLC: TN4.V4

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

LYADSKIY, V. B.

USSR/Metals - Cast Iron, Properties Feb 52

"Wear-Resistant High-Silicon Cast Iron," V.B. Lyadskiy, Cand Tech Sci, Tadzhik Agr Inst

"Litey Proizvod" No 2, p 23

Presents results of wear tests of perlitic cast irons. Highest wear-resistance was shown by cast iron alloyed with 0.6% Cr and 2.94% Ni; next highest wear-resistance was obtained in cast iron with high Si content (4.59%) and decreased amt of total carbon (2.33%). Phosphide eutectic increases wear-resistance of perlitic cast irons. Briefly describes method of testing and types of test specimens.

207T90

LYADSKIY, V. B.

3000

Metal

Resistance to Wear of Phosphorus-Bearing Pearlitic Cast Irons. V. B. Lyadskii. ~~[illegible], 1953, (8), [illegible]~~. [In Russian]. The results are presented of laboratory comparative tests on the resistance to wear under various frictional conditions of three phosphoric and one low-phosphorus cast irons, and a carbon steel. Tests were carried out with and without lubrication. The resistance to wear of the pearlitic phosphoric iron was considerably greater than that of the pearlitic alloyed (2·15% Ni, 0·03% Cr) cast iron. Highest resistance was shown by a pearlitic phosphoric iron with lamellar pearlite and dendritic phosphide eutectic, and the resistance without lubrication of such irons was greater than that of carbon steel.—s. k.

DJ VMB LFH

LYADSKIY, V.B.; POPEREKA, M.Ya.

Effect of grinding factors on the roughness of finished surfaces. Izv.Otd.est.nauk AN Tadzh.SSR no.9:63-67 '55. (MLRA 9:10)

1. Tadzhikskiy sel'skokhozyaystvennyy institut, Kafedra tekhnologii metallov.

(Metal cutting)

LYADSKIY, V.B.

Dimensions of abrasion products as an index of wear. V. B. Lyadskii. *Liteinoe Proizvodstvo* 1955, No. 10, 10-16. —Cylindrical specimens 10 mm. in diam. of five graphitic cast irons and of S.A.E. 1060 steel were rotated in a drill press at 600 r.p.m. for 10 min., pressing their ends against a 25-mm. cylinder of the same compn. Abrasion products were collected and their dimensions estd. under a microscope. Pressure increasing from 10 to 60 kg./sq. cm. leads to a greater wear and a larger size of the abraded products, but the latter grows faster than the wear, which was detd. by weighing. Specimens with the least wear had the smallest size of abrasion products under the same pressure, but no definite relation was found between structure and wear. Wear with lubricant studied on samples of a single iron showed that under 30 kg./sq. cm. the working-in time reaches 10 hrs., during which abrasion rapidly decreases and then becomes stationary, both in regard to the amt. of abrasion and the size of particles produced. J. D. Gat

LYADSKIY, V. B.

2

Device for Mounting Test-Pieces on a Type MI Friction Testing Machine. Sh. Z. Zakirov and V. B. Lyadskii. (*Zavodskaya Laboratoriya*, 1955, 21, (10), 1245–1246). [In Russian]. A device which has greatly improved the reproducibility of dry-friction tests of ferrous materials is described. It enables the test-pieces to be fixed reliably in the testing machine.

Tadzhik Agric. Mach. Inst.

LYADSKIY, V.B.

Determining wear and tear by the temperature of bodies working under friction. Dokl. AN Tadsh. SSR no.19:57-70 '56. (MIRA 10:4)

1. Kafedra tekhnologii metallov Tadzhikskogo gosudarstvennogo sel'sko-khozyaystvennogo instituta. Predstavleno Otdelom khlopkovodstva AN Tadzhikskoy SSR.

(Case iron--Testing) (Mechanical wear) (Temperature)

LYADSKIY, V.B.

Wear resistance of cast iron subjected to rolling friction. Dokl. AN Tadzh. SSR no. 22:43-47 '57. (MIRA 11:7)

1. Tadzhikskiy sel'skokhozyaystvennyy institut.
(Cast iron--Testing)

SOV/128-59-8-24/29

18(2)

AUTHOR: Lyadskiy, V.B., Candidate of Technical Sciences

TITLE: On the Influence of Phosphorus on the Depreciation of Cast Iron

PERIODICAL: Liteynoye proizvodstvo, 1959, Nr 8, p 44 (USSR)

ABSTRACT: In this short article the author agrees with A.V. Portugeys (Liteynoye proizvodstvo, 1959, Nr 2) on the positive influence of phosphorus on the wear of cast iron. But he states that the castings must have a small quantity of ferrite in their structure. There are 3 Soviet references.

Card 1/1

S/128/60/000/009/002/003
A161/A133

AUTHOR: Lyadskiy, V. B.

TITLE: Investigation of the wear resistance of austenitic manganese cast irons

PERIODICAL: Liteynoye proizvodstvo, no. 9, 1960, 36-38

TEXT: Austenitic cast iron containing nickel, chrome and copper possesses a high wear resistance and other valuable properties, but their cost is high, and nickel is being replaced by cheaper and less scarce manganese, copper, and aluminum. It had been discovered in laboratory tests (Lyadskiy, V. B. - Ref. 24: Vestnik mashinostroyeniya, no. 3, 1951) that austenitic manganese irons have a higher wear resistance than others and practice confirmed that such cast iron with laminar graphite is several times more durable than the usual pearlite cast iron. This article presents information on the results of laboratory tests of six differe..t cast iron grades and ОЦС 6-6-3 (OTsS 6-6-3) bronze. The cast iron was melted in an acid electric furnace and a small cupola. The chemical composition of the cast iron is given in table 2; The A_1, A_2 and A_3 grades were austenite cast irons, and the B_1 and

Card 1/6

B_2 grades high-strength irons with globular graphite; C was grey cupola iron. The A_1, A_2, B_1 and B_2 grades were treated by addition of magnesium and ferro-silicon at 1,370 - 1,420°C; globular graphite formed in the A_1, B_1 and B_2 grades. The A_1 and A_2 irons were heat-treated, i.e. the 60 mm diameter castings were heated to 1,000°C, soaked for 5 hours at this temperature, and quenched in water. The purpose of the heat treatment was to dissolve the carbides in austenite, reduce brittleness and hardness, raise the toughness and improve the machinability. The specimens were tested for friction wear on a МИ (MI) machine, by sliding friction of a hardened steel roller on a bushing of the cast iron being tested without lubricant. The article includes a set of photomicrographs and wear diagrams. In general, the test results have proven a considerable difference in the wear resistance, specific friction and friction factor of the different cast irons. Austenitic A_2 and A_3 iron with laminar graphite had a lower wear resistance than the A_1 grade, but considerably higher than the B_1 and B_2 grades. Gray cast iron C had the lowest wear resistance of all. The austenitic A_1 iron with globular graphite had the highest resistance to wear. Apparantly, the wear of austenitic cast irons is lower due to the compact crystal lattice of austenite, its higher

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031010019-5"

plasticity and the formation of wear products, corrosion resistance and tendency to cold working that is connected with the transformation of austenite into martensite. Grey cast iron has no such properties and is more brittle. Apart from this, it appears that the breaking off of metal particles by friction and wear is considerably easier on iron with laminated graphite than on iron with globular graphite. The author concludes that austenitic manganese iron is a highly valuable material in mechanical engineering in view of its high wear resistance, moderate cost and good work properties. There are 6 figures, 4 tables, 20 Soviet-bloc and 7 non-Soviet-bloc references. The references to the English-language publications read as follows: Hancock, P. F., "Foundry Trade Journal", vol. 86, no. 1692, 1949; Braidwood, W. W., "Foundry Trade Journal", vol. 94, no. 1904, 1953; Everhart, I. L., "Materials and Methods", vol 42, no. 4, 1955.

Обозначение чугунов	Химический состав в %								Механические свойства			Микроструктура (фиг. 1)
	$C_{общ}$	$C_{св}$	Si	Mn	S	P	Cu	Mo	HB*	$\sigma_{изг}$ кг/мм²	f в мм	
A_1	3,76	0,80	2,38	10,26	0,017	0,16	—	—	302 (174)*	47,56	2,3	а
A_2	3,17	0,69	1,65	7,50	0,019	0,193	0,42	—	223 (185)	41,7	5,0	б
A_3	3,84	0,80	2,85	12,99	0,023	0,172	1,27	—	212 (169)	26,0	2,9	в
B_1	3,40	0,64	3,25	0,59	0,020	0,179	0,25	—	241 (241)	61,8	2,93	г
B_2	3,51	0,42	2,71	0,67	0,039	0,17	—	0,062	212 (229)	79,0	3,6	д
C	3,57	0,62	2,62	0,63	0,093	0,139	—	—	166 (156)	24,85	3,5	е

* В скобках приведена твердость заготовок диаметром 60 мм.

Table 2

Table 2: Columns 2 - 9 the chemical composition, where $C_{общ}$ = C_{total}, and $C_{св}$ = C_{bound}; columns 10 - 12 the mechanical properties of castings (Brinell hardness; bending limit, in kg/mm^2, and friction factor). The last column indicates microstructure in Figure 1.

Figure 1

Investigation of the wear resistance of...

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A161/A133

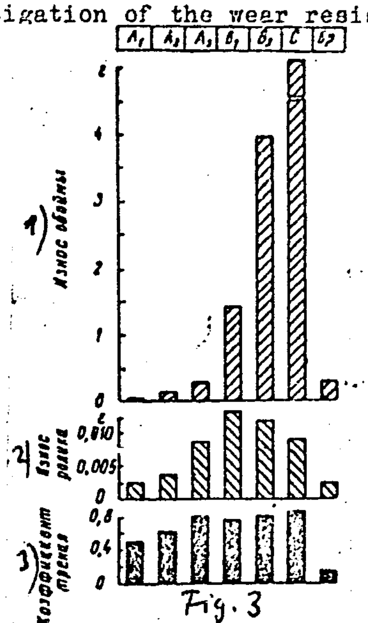

Fig. 3

Figure 3:

(1) Wear of the tested metal bushing;

(2) Wear of the steel roller;

(3) Friction factor.

Card 6/6

LI BON-GIR; LYADSKIY, V.B.; PULATOV, A.

Device for cutting holes in test samples designed for the MI-type friction machine. Zav.lab. 26 no.6:768-769 '60. (MIRA 13:7)

1.Tadzhikskiy sel'skokhozyaystvennyy institut.
(Testing machines)

LYADSKIY, V.B.

Wear resistance of manganous cast irons under the effect of sliding friction of cast iron against cast iron without lubrication. Metalloved. i term. obr. met. no.11:36-39 N '63. (MIRA 16:11)

1. Tadzhikskiy sel'skokhozyaystvennyy institut.

LYADSKIY, V.B.

Effect of aluminum on the hardness, friction coefficient and wear resistance of austenitic manganese cast iron. Metalloved. i term. obr. met. no.7:45-46 Jl '64. (MIRA 17:11)

1. Tadzhikskiy sel'skokhozyaystvennyy institut.

LYADSKIY, V.B.; SHABALOV, V.I.

Wear resistance of austenitic cast iron during sliding friction with lubrication. Lit. proizv. no.12:30-31 D '64. (MIRA 18:3)

LYADSKIY, V.B., kand.tekhn.nauk; BEREZOVSKIY, M.M., inzh.; STANCHEV, D.I., inzh.

Replacing sliding bearings of bronze with austenite manganese cast iron. Stroi. i dor.mash. 9 no.10:29-30 O '64.

(MIRA 18:1)

VOLKOV, A.N., inzh.; LYADSKIY, V.B., kand. tekhn. nauk; TESHAYEV, S.T., inzh.

Austenitic manganous cast iron. Lit. proizv. no.1:8-9 Ja '66.
(MIRA 19:1)

DANTSIS, Ya.B., kand.tekhn.nauk; ZHILOV, G.M., inzh.; LYADSKIY, N.K., inzh.;
YUDOVICH, Ye.Ye., inzh.

Electrical engineering problems in the manufacture of calcium carbide.
Elektrotekhnika 34 no.12:6-9 D '63. (MIRA 17:1)

LYADUKHIN, I.A., inzh.

The new EP1 excavator for underground mining. Stroi. i dor. mash. 7 no.7:4-5 Jl '62. (MIRA 15:7)
(Excavating machinery) (Mining machinery)

LYADUKHIN, I.A.; NIKOLAYEV, A.F.; TARASOV, S.M.; DEVYATKOV, A.N.; VARKHOTOV, K.P.; ZLOTNIK, M.I.; YEVDOKIMOV, V.I.; LYSYAKOV, A.G.; GERSHTEYN, A.K.; KISS, N.L.; MEL'NIK, V.I.; BEYZERMAN, R.M.; SMIRNOV, I.M.; NIKUL'SHIN, K.Ye.

From the pages of Soviet magazines. Mekh. stroi. 19 no.9:31 S '62. (MIRA 15:9)

(Bibliography--Construction equipment)

L 20805-66 EWP(j)/EWT(m)/T IJP(c) RM/WW

ACC NR: AP6005944 (A) SOURCE CODE: UR/0191/66/000/002/0008/0009

AUTHORS: Vlasova, K. N.; Antropova, N. I.; Dobrokhotova, M. K.; Pavlova, G. I.; Lyadysheva, Ye. K.

ORG: none

TITLE: Copolymers of ε-caprolactam and mixture of isomers of C-methylcaprolactam

SOURCE: Plasticheskiye massy, no. 2, 1966, 8-9

TOPIC TAGS: copolymerization, elasticity, lactam, isomer, copolymer, solid mechanical property, elasticity

ABSTRACT: A mixture of isomers of C-methylcaprolactam (I), b.p. 124-126C/5--6 mm, was copolymerized with ε-caprolactam in the presence of alkaline (metallic sodium) or acid (orthophosphoric acid) catalysts. Physical and mechanical properties were investigated. Melting point and specific viscosity of the copolymer are lowered with increased proportion of I, as illustrated in Fig. 1. Copolymers containing more than 40% of I are soluble in alcohol and can be used for preparation of films. The product is more highly elastic than polycaprolactam. It can be manufactured from the melt by a continuous method on machines used for manufacturing film PK-4, making its production even more attractive.

UDC: 678.675

Card 1/2

L 20805-66

ACC NR: AP6005944

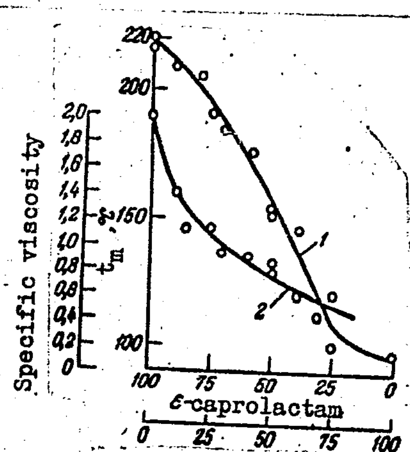

Fig. 1. Melting point t_m and specific viscosity of copolymers as functions of the ratio of ε-caprolactam and mixture of C-methylcaprolactam (weight %); 1 - melting point; 2 - specific viscosity.

Orig. art. has: 1 table and 2 figures.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 001/ OTH REF: 002

Card 2/2

LYAFISHEV, M.B.; MUSHENKO, S.P.

Studying the capillarity of grained rocks. Izv. vys. ucheb. zav.; neft' i gaz 6 no.2:34-39 '63. (MIRA 16:5)

1. Vsesoyuznyy zaochnyy politekhnicheskiy institut.
(Capillarity) (Oil sands--Permeability)

LYAGALOVA, A.M.

4

Chem

Relation between the structure of an emulsifier of the type of alkylarene sulfonic acid and the polymerization of unsaturated compounds. II. Effect of univalent cations on the polymerization process. N. P. Anukhtina and A. M. Lyagalova. *Colloid J.* (U.S.S.R.) 17, 399-403(1955) (Engl. translation).—See *C.A.* 50, 4553i. B. M. R.

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Lyagalova, A.M.

Relation between the structure of the emulsifier of the type of alkyl aromatic sulfonic acids and the polymerization process of unsaturated compounds. I. Sodium salts of [illegible]-butylbenzene- and [illegible]-butylnaphthalenesulfonic acids. N. P. Arnolitina and A. M. Lyagalova (S. V. Lebedev Sci. Research Inst. Synthetic Rubber, Leningrad). *Kolloid. Zhur.* 17, [illegible] [illegible] the Na sulfonates of mono-(I), of [illegible]-di-(II), of [illegible]-tri-(III) of 1,2,3,5-tetra-(IV), and of penta-[illegible]-butylbenzene (V) and of 2-mono-(VI), of di-(VII), and of tri-[illegible]-butylnaphthalene (VIII). The solv. of PhCMe:CH$_2$ (IX) was greater, the greater was the no. of alkyl groups in the emulsifier, e.g., when the concn. of the emulsifier was 0.075*M*, II and III dissolved 0.06–0.1 and 0.4–0.5 vol. % IX, resp. Naphthalene derivs. were better emulsifiers than were C_6H_6 derivs., e.g., in 0.073*M* soln., VI, VII, and VIII dissolved 0.06–0.1, 0.5–0.6, and 1.8–2.2% IX, resp. The yield of a copolymer of I and bivinyl increased as the no. of alkyl groups increased from one to five, as long as the concn. of the emulsifier was small (e.g. 0.05*M*); when emulsifier concn. increased, the yield often reached a max. and decreased again; and the concn. corresponding to this max. was smaller the more complex was the emulsifier mol. Both the solubilization of IX and the yield of the copolymer depended little on pH between 4 and 10 but markedly increased with pH between 10 and 12. Copolymerization in mixts. of II with I was less, and in mixts. of II with III more, advantageous than in II alone. Also the solubilization of styrene, isoprene, and piperylene increased from VI to VIII. J. J. Bikerman

1

LYBGALOVA, A. M.

Relation between the structure of an emulsifier of the type of alkylarene sulfonic acid and the polymerization process of unsaturated compounds. II. Effect of univalent cations on the polymerization process. N. F. Apukhtina and A. M. Lyubgalova (S. V. Lebedev All-Union Sci. Research Inst. Synthetic Rubber, Leningrad). Zhur. Priklad. Khim. 27, 411-20(1954); cf. C.A. 50, 4806.—The yield Y of a copolymer of divinyl and $PhCMe{:}CH_2$ was raised by small, and depressed by large, addns. of Na_2SO_4, and the concn. of Na_2SO_4 corresponding to the optimum Y was smaller the greater the mol. wt. of the emulsifier in each series ($C_6H_4R.SO_3Na$, $C_{10}H_6R.SO_3Na$, $C_{14}H_8R.SO_3Na$; and $C_6H_3R_2SO_3Na$, $C_{10}H_5R_2SO_3Na$ (I), $C_{14}H_7R_2SO_3Na$; R = iso-Bu). At a const. concn. (0.016N) of $C_{10}H_6RSO_3Na$ or $C_{10}H_5R_2SO_3Na$, Y was slightly raised by small, and markedly lowered by large, addns. of LiCl, NaCl, KCl, or RbCl; usually, the effects increased from Li to Rb. Substitution of $C_{10}H_5R_2SO_3Li$ (II) for I (in 0.016N soln.) lowered, and substitution of $C_{10}H_5R_2SO_3K$ (III) for I raised, Y. Addn. of LiCl to II, of NaCl to I, and of KCl to III had effects similar to the addn. of LiCl, NaCl, or KCl to I. Solubilization of $PhCMe{:}CH_2$ in 0.044N $C_{10}H_5R_2SO_3Na$ was raised by small addns. of LiCl, NaCl, KCl, and RbCl to a max. (of 3 vol. %) equal for all salts, but the salt concn. at which this max. was reached was least for RbCl (0.05N) and greatest for LiCl (0.12N). Higher salt concns. again lowered the solv. The effect of NH_4Cl on Y sometimes was similar to that of KCl but showed many peculiarities. J. J. Bikerman

LYAGALOVA, A.M

Distr: 4E4j/4E2c(j)

Effect of the nature of emulsifiers and electrolytes on colloid solubility and polymerization of hydrocarbons. N. P. Anokhina and A. M. Lyagalova. Trudy 3 Vsesoyuz. Konf. Kolloid. Khim., Akad. Nauk S.S.S.R., Otdel. Khim. Nauk 1956, 420-30.—Colloid soly. and polymerization of unsatd. compds. in aq. solns. of Na salts of *sec*-butylbenzene- and *sec*-butylnaphthalenesulfonic acids were studied in relation to the no. of alkyl groups of the emulsifier and the nature of the electrolytes. Monomers tested were butadiene, piperylene, α-methylstyrene, and styrene. Electrolytes were NH_4, Na, Li, K, and Rb chlorides and NH_4, Na, and K sulfates. Individual Na salts of mono-, di-, and tri-*sec*-butyl derivs. of benzene- and naphthalenesulfonic acids were synthesized in their pure form. Compared with the corresponding compds. of the benzene series, the derivs. of the naphthalene series were more effective emulsifiers in respect to their effect on the colloid soly. and the polymerization. Increase in no. of *sec*-butyl groups in these derivs. increases the colloid soly. and the velocity of the polymerization. The graphs representing the colloid soly. of α-methylstyrene and of the yields of butadiene and α-methylstyrene copolymer as related to the pH of the medium had similar characteristics. At pH 11-12 a sharp increase in polymer yields and in the colloid soly. of hydrocarbons was observed. Few conclusive results were obtained from the study of the effect of electrolytes, since they depended greatly on the nature and concn. of electrolytes and the structure of the emulsifier, but it was established that the optimum concn. of electrolytes decreases with increase in the no. of alkyl groups of the emulsifier used. The effect of univalent ions on the polymerization may be connected with the dimensions of the ion: $Rb^+ > K^+ > Na^+ > Li^+$.

A. Gashkovski

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LYAGALOVA, A.M.

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The relation between the structure of the emulsifying agents of the type of alkylaromatic sulfonic acids and the polymerization process of unsaturated compounds. III. The effect of anions on the polymerization process. N. P. Apukhtina and A. M. Lyagalova (Sci. Research Inst. Synthetic Rubber, Leningrad). [illegible] Zhur. 18, 3-6(1956); cf. C.A. 50, 4553f.—The yield Y of a copolymer of divinyl and $PhCMe:CH_2$ (I) and the adj. S of I in solns. of $C_6H_5R_2SO_3Na$, $C_6H_4R_2SO_3Na$, and $C_6H_3R_3SO_3Na$ ($R = Me_3C$) were in the presence of KCl greater when the concn. c (g.-equiv./l.) of KCl was small, and smaller when c was large, than in the presence of K_2SO_4, but the differences were slight. The Y at almost all c values was much greater in the presence of NaCl than in the presence of NaF or NaBr, while in the presence of NaI it was the smallest; but NaI may have reacted with the initiator ($K_2S_2O_8$). The enhancement of Y by Cl^- and its depression by I^- agree with the effect of these anions on the S of PhEt in K myristate (cf. Stearns, et al., C.A. 41, 6106g). J. J. Bikerman

2

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[illegible]

LYAGALOVA, A.M.

4

Relation between the structure of the emulsifiers of the type of alkylaromatic sulfonic acids and the polymerization process of unsaturated compounds. IV. Salts of di-*sec*-butylnaphthalenesulfonic acid with univalent cations. N. P. Apukhtina and A. M. Lyagalova. *Kolloid. Zhur.* 19, 154-8(1957); cf. *C.A.* 50, [illegible].—The soly. in H_2O at 20° of the K, NH_4, Na, and Li salts was approx. 8, 12.5, 21, and 25%, resp. The surface tension γ of H_2O was lowered to about 32 dynes/cm. by 0.005*N* solns. of these salts and remained almost const. at higher concns.; at all concns., the γ increased from K to NH_4 < Na < Li. The solubilization of divinyl was almost const. at 0.2 mol. C_4H_6 for 1 mol. emulsifier at different concns. of K, Na, and Li salts, but the solubilization decreased as the concn. of the NH_4 salt increased. The yield of polymer C_4H_6 was greatest in the presence of Na salt and least in the presence of NH_4 salt; it increased with pH for K, Na, and Li salts and had a max. at pH 10 for the NH_4 salt. J. J. Bikerman

4E4j

Sci-Res. Inst. Synthetic Rubber im. S.V. Lebedev

KHARITON, M.I., inzh.; LYAGALOVA, V.M., inzh.

Desilication of water from the Neva River by filtrating it through a magnesium sorbent. Teploenergetika 8 no.4:10-11 Ap '61. (MIRA 14:8)

1. Lenenergo.

(Feed-water purification)

LYAGIN, I.

New regulator for the AD-221 electric motor of the distance mechanism of the LG-25 log. Mor. flot 18 no.4:15 Ap '58.
(MIRA 12:12)

1. Deviator Rizhskoy radionavigatsionnoy kamery.
(Logs (Nautical instruments))

LYAGIN, I.

Experience in radio bearing finder control. Mor.flot 20 no.1: 29-30 Ja '60. (MIRA 13:5)

1. Radiodeviator Latviyskogo parokhodstva.
(Radio in navigation)

24(3)

AUTHORS: Lyagin, I. V., Geyvashovich, Ya. I. SOV/48-22-12-2/33

TITLE: On the Question of the Dependence of the Dielectric Constant of Piezoelectrics on the Electric Field (K voprosu o zavisimosti dielektricheskoy postoyannoy segnetoelektrikov ot elektricheskogo polya)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1958, Vol 22, Nr 12, pp 1424 - 1426 (USSR)

ABSTRACT: Within the system of the thermodynamic theory of one-domain monocrystals the work in question deals with the question of the dependence of tensor components of dielectric susceptibility on the voltage of the external field in the range of small fields. When calculating the components of the dielectric tensor of susceptibility

$$K_{ni} = \frac{\partial P_n}{\partial E_i} \qquad (1)$$

attention is generally restricted to the linear dependence of the sector of polarization upon the voltage of the electric field. (Refs 1,5,6,9). These components, hereby, will of

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course be constant. In order to obtain the dependence of the susceptibility upon the field, the non-linear dependence of the polarization on the field must be taken into consideration. When restricting oneself to the square terms

$$P_n(E_x, E_y, E_z) = P_{on} + \kappa^o_{ni}E_i + g_{nik}E_iE_k \qquad (2)$$

one obtains from (1) and (2)

$$\kappa_{ni}(E_x, E_y, E_z) = \kappa^o_{ni} + (g_{nik} + g_{nki})E_k \qquad (3)$$

Summation is carried out over recurring indices, at the indices i and k passing through the figures x,y,z and n= = x,y,z independently. The relation (3) can be interpreted in the following way: the components of the dielectric tensor of susceptibility appear in the supposed approximation in form of two terms. The first summand is initial susceptibility; the second can be called induced susceptibility. It depends linearly on the field. The coefficients g_{nik} form the tensor of the third degree, which is symmetrical after all three indices. They are calculated in the usual way from the conditions

On the Question of the Dependence of the Dielectric Constant of Piezoelectrics on the Electric Field

SOV/48-22-12-2/33

of the limiting value of the thermodynamic potential. Without dealing in detail with calculation, the results are given as follows: the effect of induction is lacking in the paraelectric phase; this effect occurs in piezoelectric phases (tetragonal, orthorhombic, rhombohedral). It manifests itself by the fact that induced addends are added to the initial components of susceptibility as soon as new non-diagonally running components are formed. The latter were missing in the calculation in linear approximation. Their occurrence is connected with the distortion of the symmetry of the crystal under the influence of the field. There are 15 references, 14 of which are Soviet.

ASSOCIATION: Smolenskiy gos. pedagogicheskiy institut im.K. Marksa (Smolensk State Pedagogical Institute imeni K. Marks)

Card 3/3

LYAGIN, I.V.; GINZBURG, E.Kh.

$\Sigma^+ \to p + e^+ + e^-$ and $\Sigma^- \to p + \mu^+ + \mu^-$ decays. Zhur.eksp.i teor.fiz. 41 no.3:915-918 S '61. (MIRA 14:10)

1. Smolenskiy gosudarstvennyy pedagogicheskiy institut.
(Particles (Nuclear physics))

38066

S/056/62/042/006/031/047
B104/B108

24 6610

AUTHORS: Lyagin, I. V., Tsukerman, I. S.

TITLE: Photoproduction of pairs of charged vector mesons in the Coulomb field of a nucleus

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 6, 1962, 1618 - 1621

TEXT: The matrix element of the reaction $\gamma + \gamma' \rightarrow B^{+} + B^{-}$ has the form

$$\Sigma = \frac{e^2 (2\pi)^4 \delta^4 (k + k' + p - q)}{4\sqrt{k_0 k'_0 p_0 q_0}} e_\beta e'_\gamma \varepsilon_\alpha \varepsilon'_\delta [T^{(1)}_{\alpha\beta\gamma\delta} + T^{(2)}_{\alpha\beta\gamma\delta} + T^{(3)}_{\alpha\beta\gamma\delta}],$$

where e_β, e'_γ, ε_α, ε'_δ are the four-vectors of polarization of photons with the momenta k and k', and of B^+ and B^- mesons with the momenta p and q. The Feynman graphs (Fig. 1) give:

$$T^{(1)}_{\alpha\beta\gamma\delta} = {}_\alpha(\Gamma_\beta)_\mu (t^2 - \mu^2)^{-1} (\delta_{\mu\nu} - t_\mu t_\nu/\mu^2)\, {}_\nu(\Gamma_\gamma)_\delta,$$

$$T^{(2)}_{\alpha\beta\gamma\delta}(k, k') = T^{(1)}_{\alpha\gamma\beta\delta}(k', k), \quad T^{(3)}_{\alpha\beta\gamma\delta} = {}_\alpha(\Gamma_{\beta\gamma})_\delta,$$

Card 1/3

where the Γ's describe the electromagnetic interaction of B mesons:

$$_{\alpha}(\Gamma_{\beta})_{\mu} = -(q_{\beta} + t_{\beta})\,\delta_{\alpha\mu} + t_{\mu}\delta_{\alpha\beta} + q_{\alpha}\delta_{\beta\mu} + g\,(k_{\mu}\delta_{\alpha\beta} - k_{\alpha}\delta_{\beta\mu}),$$

$$_{\nu}(\Gamma_{\gamma})_{\delta} = -(p_{\gamma} + t_{\gamma})\,\delta_{\delta\nu} + p_{\delta}\delta_{\gamma\nu} + t_{\nu}\delta_{\gamma\delta} + g\,(k'_{\delta}\delta_{\gamma\nu} - k'_{\nu}\delta_{\gamma\delta}),$$

$$_{\alpha}(\Gamma_{\beta\gamma})_{\delta} = -2\delta_{\alpha\delta}\delta_{\beta\gamma} + \delta_{\alpha\beta}\delta_{\gamma\delta} + \delta_{\alpha\gamma}\delta_{\beta\delta}.$$

The reaction cross section summed up over the polarizations of the B mesons and averaged over the polarizations of the photons is for high energies $(k_0^2 \gg \mu^2)$: $\sigma_{\gamma} = \frac{\alpha^2\pi k_0^2}{2\mu^4}\left\{\left[\frac{5}{12}(g-2)^4\right] + \left[8 - 8g + 10g^2 - 6g^3 + \frac{5}{4}g^4\right]\right\}$.

where $e^2/4\pi = \alpha = 1/137$). This reaction cross section is used in calculating the total cross section of the reaction $\gamma + {}_Z M^A \to B^+ + B^- + {}_Z M^A$ on a nonspinning nucleus ${}_Z M^A$, with consideration of the anomalous magnetic moment of the vector bosons, with the aid of a covariant formulation of the Weizsäcker-Williams method: $\sigma = \sigma_0\,(1 - \frac{1}{8})\,f(g)$, $\sigma_0 = 17\alpha^3 Z^2 EK/6\mu^4$,

$$f(g) = 1 - \tfrac{1}{17}(g-1)\,[5 - (g-2)\,(5g^2 - 13g + 11)].$$

S/056/62/042/006/031/047
B104/B108

Photoproduction of pairs of ...

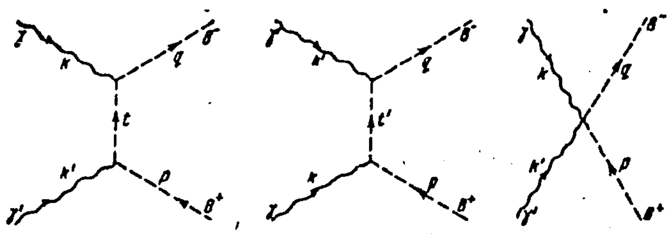
There are 2 figures.

ASSOCIATION: Institut nauchnoy informatsii Akademii nauk SSSR (Institute of Scientific Information of the Academy of Sciences USSR)

SUBMITTED: January 15, 1962 (initially)
February 22, 1962 (after revision)

Fig. 1. Feynman graphs of the reaction $\gamma + \gamma \longrightarrow B^{+} + B^{-}$; $t = q - k = p - k'$; $t' = q - k' = p - k$.

Fig. 1.



Card 3/3

S/058/63/000/002/040/070
A062/A101

AUTHORS: Lyagin, I. V., Geyvashovich, Ya. I.

TITLE: Potential pattern of ferroelectric substances of the $BaTiO_3$ type

PERIODICAL: Referativnyy zhurnal, Fizika, no. 2, 1963, 63, abstract 2E412 ("Uch. zap. Smolenskogo gos. ped. in-ta", 1962, no. 10, 89 - 93)

TEXT: Assuming that the potential ion energy U is the sum of the energies of the Coulomb and Van-der-Waals terms and also of the term corresponding to the repulsion forces (the ion polarization is not taken into account), a direct summation of the ion coordiantes (up to 36 terms) allows to calculate for $BaTi)_3$ the coefficients of expansion of U by the powers of ion displacements up to the terms proportional to the 6-th power of displacements. In the computation use was made of the ion charge values, corresponding to the assumption on a purely ionic bond in $BaTiO_3$, and also of the Born values of the force constants that determine the repulsion and the Van-der-Waals interaction.

S. Solov'yev

[Abstracter's note: Complete translation]

Card 1/1

L 10378-63 EWT(1)/BDS/EEC(b)-2/ES(s)-2--AFFTC/ASD/ESD-3/SSD--
Pi-4/Pt-4--GG/IJP(C)
ACCESSION NR: AR3000361 S/0058/63/000/004/E053/E053

SOURCE: RZh. Fizika, Abs. 4E362 71

AUTHOR: Lyagin, I. V.; Geyvashovich, Ya. I.

TITLE: Some nonlinear effects in ferroelectrics

CITED SOURCE: Uch. zap. Smolenskogo gos. ped. in-ta, vyp. 10, 1962, 94-102

TOPIC TAGS: ferroelectrics, dielectric susceptibility, polarization, nonlinear effects

TRANSLATION: Within the framework of the thermodynamic theory of the single-domain single crystal, the question is considered of the dependence of the components of the dielectric susceptibility tensor Kappa on the intensity of the external electric field E in the region of small fields. Taking into account the nonlinear dependence of the polarization P on E and retaining quadratic terms only, the authors write the components of the tensor Kappa in the form of Equation 1, Enclosure 1. Where Kappa sub n sub i sup 0 is the initial susceptibility, and

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ACCESSION NR: AR3000361

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the second term is an induced addition (IA) to the susceptibility, with the components of the third-rank tensor g sub n sub i sub k determined from the relation of Equation 2, Enclosure 1. As a result of a calculation of Kappa sub n sub i from the conditions of the minimum thermodynamic potential for different modifications of ferroelectrics of the Ba Ti O sub 3 type, it is shown that in the tetragonal phase, if E sub z coincides with the direction of the spontaneous polarization P sub S, then Kappa sub z sub z decreases under the influence of E in accordance with the experimental data. The behavior of the crystal near the phase transition points (T sub c) is considered. It is shown that on going over the cubic phase, Kappa sub x sub x sup 0 and Kappa sub y sub y sup 0 remain constant, while the IA for them increases like 1/(T sub c - T) sup 1/2, Kappa sub z sub z sup 0 increases as 1/(T sub c - T) sup 1/2, and IA increases as 1/(T sub c - T) sup 3/2. On going over from the tetragonal to the rhombic phase, Kappa sub z sub z sup 0 increases as 1/(T sub c - T) and the IA remains finite. The values of Kappa sub x sub x sup 0 and Kappa sub y sub y sup 0 also remain finite, and the IA to them obey the Curie-Weiss law. The components of the tensor Kappa are calculated for all phases of Ba Ti O sub 3, and in the cubic phase the IA is proprotional to the second power of E and increases rapidly near T sub c.

Card 2/4

ACCESSION NR: AP4009126 S/0056/63/045/006/2009/2014

AUTHORS: Kolkunov, V. A.; Lyagin, I. V.

TITLE: The K_{e5} decay

SOURCE: Zhurnal eksper. i teoret. fiziki, v. 45, no. 6, 1963, 2009-2014

TOPIC TAGS: K meson, kaon, K meson decay, leptonic K meson decay, Sakata model, K sub e5 decay, Eta meson, intermediate Eta meson, isotopic relation, isotopic spin selection rule, K meson decay probability

ABSTRACT: In view of the particular importance of leptonic decays of K mesons for a test of the Sakata model (R. Sakata, Progr. Theor. Phys. v. 16, 686, 1956) the authors calculate the K_{e5} decay rates for the cases of direct interaction and interaction via an intermediate η meson. The probability of the K_{e5} decay is found to be

ACCESSION NR: AP4009126

$\sim 2.5 \times 10^{-8}$ of the K_{e4} decay and is thus shown to be a very rare phenomenon. Furthermore, K-meson decay via η resonance cannot increase this value of the K_{e5} probability. The isotopic relations for various charge channels of the reaction are considered on the basis of the selection rule $\Delta T = 1/2$ and a ratio 3:2:1:4 is obtained for the different reaction probabilities. "In conclusion, we are grateful to L. B. Okun' and I. Yu. Kobzarev for suggesting the topic and for continuous interest in the work." Orig. art. has: 3 figures and 25 formulas.

ASSOCIATION: None

SUBMITTED: 11Jun63 DATE ACQ: 02Feb64 ENCL: 00

SUB CODE: PH NO REF SOV: 007 OTHER: 007

Card 2/2

LYAGIN, I.V.; GEYVASHOVICH, Ya.I.

Potential relief of barium titanate type ferroelectric substances. Uch. zap. Smol. gos. ped. inst. No.10:89-93 '62.

Some nonlinear effects in ferroelectric substances. Ibid.:94-102 (MIRA 17:1)

LYAGIN, I.V.

Spectra of K_{e5}-decay. IAd. fiz. 1 no.4:659-664 Ap '65. (MIRA 18:5)

1. Gomel'skiy pedagogicheskiy institut.

MATASOV, V. (g.Kazan'); MURTAZIN, R. (g.Kazan'); LYAGIN, V. (g.Kazan');
ZAYTSEV, S. (g.Kazan')

Do not yield the championship. Kryl.rod. 11 no.11:3 N '60.
(MIRA 13:10)

(Kazan--Helicopters)

LYAGINA, L. S. PA 187T58

USSR/Mathematics - Phase Plane Mar/Apr 51
Nonlinear Equation

"Integral Curves of the Equation $y' = (ax^2 + bxy + cy^2)/(dx^2 + exy + fy^2)$," L. S. Lyagina

"Uspekh Matemat Nauk" Vol VI, No 2, pp 171-183

Using the methods of G. Ye. Shilov ("Integral Curves of Homogeneous Differential Equations," "Uspekh Matemat Nauk" Vol V, No 5, 1950) for constructing the integral curves of the 1st-order homogeneous $y' = f(y/x)$, authoress considers subject sp equation's curves in the xy phase plane for all possible conditions on the constants abcdef. Topological figures drawn.

187T58

KUZNETSOV, V.D.; LYAGINA, N.M.

Producer of a candicidin-type antibiotic belonging to the actinomyces group. Trudy Inst. microbiol. no.8:188-192 '60. (MIRA 14:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov, Moskva. (ANTINOMYCETALES) (CANDICIDIN)

SOLOV'YEVA, N.K.; SEMENOVA, V.A.; IL'INSKAYA, S.A.; LYAGINA, N.M.; TAYG, M.M.

Outline of some antibiotics suitable for controlling diseases in plants. Trudy Vses. inst. sel'khoz. mikrobiol. 17:140-146 '60. (MIRA 15:3)

(Plants--Diseases) (Antibiotics)

KUZNETSOV, V.D.; LYAGINA, N.M.; SOROKINA, Ye.I.; [illegible]

Some problems of storing actinomycetic and fungus cultures under laboratory conditions. Mikrobiologiia 31 no.4:731-737 Jl-Ag '62. (MIRA 18:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.

LYAGINA, N.M.; PESTEREVA, G.D.

Some biological characteristics of the nystatin producer Actinomyces noursei. Mikrobiologiia 32 no.3:536-540 My-Je'63
(MIRA 17:3)

1. Vsesoyznyy nauchno-issledovatel'skiy institut antibiotikov, Moskva.

KUZNETSOV, V.D.; LYAGINA, N.M.

Preservation and variability of Actinomyces streptomycini strain IS-1 producing streptomycin. Antibiotiki 9 no.11:970-975 N '64. (MIRA 18:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov, Moskva.

BOGOSLOVSKIY, B.B.; GRIGORASH, V.A.; LYAGINA, T.N.; SPANOVSKAYA, V.D.

Hydrological pattern and the formation of the ichthyofauna of the Mozhaysk Reservoir according to 1960 data. Vest. Mosk. un. Ser. 5: Geog. 16 no. 3:38-45 My-Je '61. (MIRA 14:5)

1. Kafedry gidrologii sushi i ikhtiologii Moskovskogo gosudarstvennogo universiteta.
(Mozhaysk Reservoir—Hydrology) (Mozhaysk Reservoir—Fishes)

SPANOVSKAYA, V.D.; GRIGORASH, V.A.; LYAGINA, T.N.

Dynamics of the fecundity in fishes as exemplified by the roach Rutilus rutilus (L.). Vop.ikht. 3 no.1:67-83 '63. (MIRA 16:2)

1. Kafedra ikhtiologii Moskovskogo gosudarstvennogo universiteta.

(Roach (Fish)) (Fertility)

LYAGINA, Yu.

Library works in a new way. Prof.-tekh. obr. 18 no.9:28 S '61. (MIRA 14:11)

1. Zaveduyashchaya bibliotekoy remeslennogo uchilishcha No.32, Leningrad.

(Leningrad--School libraries)

LYAGINSKAYA, A.M. (Moskva)

Effect of strontium-90 on the development of bones in rat generations. Arkh. anat., gist. i embr. 49 no.8:81-84 Ag '65. (MIRA 18:9)

LYAGINSKAYA, A.M.

Effect of tritium oxide on the postnatal development of progeny.
Med. rad 10 no.1:33-39 Ja '65. (MIRA 18:7)

LYAGUNOV, D.S.; SIRAK, D.I.

Mounting the VR-1 draft gear on the base of the P-66-2 machine. Tekst.prom. 19 no.12:63-64 D '59. (MIRA 13:3)

1. Nachal'nik pryadil'nogo tsekha fabriki "Oktyabr'skaya" Leningradskogo sovnarkhoza (for Lyagunov). 2. Master trostil'no-kruitil'nogo tsekha fabriki "Oktyabr'skaya" Leningradskogo sovnarkhoza (for Sirak).
(Spinning machinery)

9.3150 (1049, 1140, 1532, 2205)
24.2120 (also 3617, 3817)

S/057/61/031/004/008/018
B125/B205

AUTHORS: Kagan, Yu. M. and Lyagushchenko, R. I.

TITLE: Electron energy distribution function in the positive column of a neon discharge

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 4, 1961, 445-449

TEXT: The authors propose a new method of approximation for the calculation of the electron energy distribution function in the positive column of a neon discharge, taking account of elastic and inelastic collisions. For the solution of problems related to the excitation of ionization in plasma, a knowledge of the distribution functions with regard to elastic and inelastic collisions between electrons and atoms, and also electron-electron interactions is required for solving problems related to the excitation of ionization in plasma. It is noted that none of the relevant previous papers has fulfilled this requirement. The present authors proceed from the experimental values for n_e and T_e. The kinetic equation for electrons in a constant, homogeneous electric field $\vec{E}$ oriented along

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the x-axis reads $\frac{eE}{m}\frac{\partial f}{\partial v_x} = \left(\frac{\delta f}{\delta t}\right)_{el} + \left(\frac{\delta f}{\delta t}\right)_{inel} + \left(\frac{\delta f}{\delta t}\right)_e$ (1), where $f(v_x, v_y, v_z)$ is the velocity distribution of the electrons, and $\left(\frac{\delta f}{\delta t}\right)_{el}$, $\left(\frac{\delta f}{\delta t}\right)_{inel}$, and $\left(\frac{\delta f}{\delta t}\right)_e$ are the parts of the impact term corresponding to the elastic and inelastic interactions between electrons and atoms, and to electron-electron interactions. When looking for an equation for the symmetric part of the distribution function $f_o(v)$, then

$$\left(\frac{\delta f_0}{\delta t}\right)_{\text{упр.}} = \frac{1}{v^2}\frac{m}{M}\frac{d}{dv}\left(\frac{v^4}{\lambda^*}f_0\right), \qquad (2)$$

$$\left(\frac{\delta f_0}{\delta t}\right)_{\text{неупр.}} = -\frac{v}{\lambda_н^*}f_0, \qquad (3)$$

will hold. Here, λ^* and λ^*_{inel} symbolize the mean free paths related to elastic and inelastic electron-atom collisions. The general expression for the interelectronic term $\left(\frac{\delta f}{\delta t}\right)_e$ reads

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$$\left(\frac{\partial f}{\partial t}\right)_e = \frac{1}{v^2}\frac{d}{dv}\left\{v^2 \nu_{ee}\left[A_1(f_0)\frac{df_0}{dv} + A_2(f_0)\,v f_0\right]\right\}, \tag{4}$$

$$\nu_{ee} = \frac{4\pi e^4 n_e}{m^2 v^3}\ln\left[\frac{k^{3/2} T_e T^{1/2}}{e^3 n_e^{1/2}}\right] \equiv \frac{\nu_0}{v^3}, \tag{5}$$

$$A_1 = \frac{4\pi}{3n_e}\left\{\int_0^v v_1^4 f_0(v_1)\,dv_1 + v^3\int_v^\infty v_1 f_0(v_1)\,dv_1\right\}, \tag{6}$$

$$A_2 = \frac{4\pi}{n_e}\int_0^v v_1^2 f_0(v_1)\,dv_1. \tag{7}$$

In the case where the interelectronic term predominates in the elastic range, which is important in practice, it is possible to simplify the interelectronic term suggested by A. G. Gurevich (ZhETF, 37, 304, 1959) and, thus, one obtains:

$$A_1^{(0)} = \frac{kT_e}{m}\,A_2^{(0)} = \frac{kT_e}{m}\,A\left(\sqrt{\frac{m}{2kT_e}}\,v\right),$$

$$A(x) = \Phi(x) - \frac{2}{\sqrt{\pi}}\,x e^{-x^2}, \quad \Phi(x) = \frac{2}{\sqrt{\pi}}\int_0^x e^{-y^2}dy.$$

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Electron energy distribution...

On account of the integral character of the terms A_1 and A_2 and due to the rapid decrease of the functions $f_0(v)$, the resulting coefficients are also valid in the inelastic range. In this manner, the following relation is obtained for the symmetric part of the distribution function $f_0(v)$:

$$\frac{1}{v^2}\frac{d}{dv}\left\{\frac{mv^4}{\lambda^* M}f_0+\frac{e^2E^2}{3m^2}\lambda^* v\frac{df_0}{dv}\right\}+\frac{1}{v^2}\frac{d}{dv}\left\{v^2\nu_{ee}(v)\left[\frac{kT_e}{m}A\left(\sqrt{\frac{m}{2kT_e}}v\right)\frac{df_0}{dv}+\right.\right.$$

$$\left.\left.+vA\left(\sqrt{\frac{m}{2kT_e}}v\right)f_0\right]\right\}-\frac{v}{\lambda^*_{11}}f_0=0. \qquad (8)$$

Solving the kinetic equation (8) requires a knowledge of the velocity dependence of the elastic and inelastic scattering cross sections which are taken from experimental data. The authors have studied only the case of neon, for which the inelastic scattering cross section can be assumed to be approximately independent of the velocity. The method proposed here does not depend on any concrete form of the velocity dependence of the cross sections. Solution of the kinetic equation: In the range where the electron energy is lower than the energy of the nearest excited states, Eq. (8) has the solution

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$$f_0(u)=\exp\left[-\int_0^u \frac{\nu_0 A(\sqrt{u})+\frac{4k^2T_e^2}{m\lambda^* M}u^2}{\nu_0 A(\sqrt{u})+\frac{2}{3}\frac{e^2E^2}{m^2}\lambda^* u}\,du\right]\times$$

$$\times\left\{B_1+B_2\int_0^u \exp\left[\int_0^z \frac{\nu_0 A(\sqrt{u})+\frac{4k^2T_e^2}{m\lambda^* M}u^2}{\nu_0 A(\sqrt{u})+\frac{2}{3}\frac{e^2E^2}{m^2}\lambda^* u}\,du\right]dz\right\}, \qquad (9)$$

$$u=\frac{mv^2}{2kT_e}.$$

Using the notations $a_E = \frac{e^2E^2\lambda^*\lambda_o}{12k^2T_e^2}$; $2a_e = \frac{\lambda_o\nu_o m^2}{4k^2T_e^2}$; $a_y = \frac{m\lambda_o}{\lambda^* M}$, the equation

$$f_0(u)=B_3(a_0+a_1u)^{-\frac{1}{2}\left(\frac{b_0}{a_1}+\frac{b_2a_0^2}{a_1^3}\right)}\sqrt{\frac{w}{q}}\,K_{1/3}(w')\,e^{-\frac{b_2}{4a_1}u^2+\frac{b_2a_0}{2a_1^2}u}. \qquad (18)$$

is obtained in the inelastic case. Formulas (9) and (18) yield a solution

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for $f_0(u)$ at all values of u. The constants B_1, B_2, and B_3 are determined from the conditions for the continuity of the function $f_0(u)$, from its derivative at the point $u = u_1$, and from the normalization condition for $f_0(u)$. Discussion of results: The approximation used by the authors in the range $u < u_1$ is the better the greater is the role of interelectronic interactions with respect to elastic interactions between electrons and atoms and with respect to the interaction between electrons and field. According to (9), the criterion for the applicability of this approximation consists in that $f_0(u)$ differs only slightly from the Maxwell function and only in that range where it yields a significant contribution in $A_1(f_0)$ and $A_2(f_0)$. This integral is reduced to the inequalities

$$\left.\begin{aligned} \frac{4k^2T_e^2}{m\lambda^* M\nu_0} &= \frac{a_y}{2a_e} \ll \frac{A\sqrt{u})}{u^2}, \\ \frac{2}{3}\frac{e^2E^2}{m^2\nu_0}\lambda^* &= \frac{a_E}{a_e} \ll \frac{A\sqrt{u}}{u}. \end{aligned}\right\} \quad (19)$$

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For $\sqrt{u} = 1.7$ the function $A(\sqrt{u})$ assumes the value 0.88. These inequalities (19) must be satisfied in the range from $\sqrt{u} = 0.3$ to $\sqrt{u} = 1.7$. The contribution made by the ranges neglected here to the integrals does not exceed 10%. With such a choice of the range it follows that $a_y/a_e \ll 0.6$ and $a_E/a_e \ll 0.5$ (20). If the interelectronic term is one order of magnitude higher than the remaining terms, the approximation applied here is still permissible. If the terms in (20) are very unequal, (9) can be replaced in the range $u < u_1$ by the distribution function $f_o(u) = e^{-u}\left[B_1 + B_2(e^u - 1)\right]$ (21). The second term in (9) and (21) is due to the effect of inelastic collisions. G. F. Drukarev and V. Ye. Golant are thanked for advice and discussions. There are 9 references: 5 Soviet-bloc and 4 non-Soviet-bloc. The two references to English language publications read as follows: T. Lewis. Proc.Roy.Soc.A,244,166, 1958; I. Cahn. Phys.Rev.,17,293,346,838,1949.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova (Leningrad State University imeni A. A. Zhdanov)

SUBMITTED: July 5, 1960

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S/057/62/032/002/009/022
B104/B102

24.6712

AUTHORS: Kagan, Yu. M., and Lyagushchenko, R. I.

TITLE: Velocity distribution of electrons, distribution of excitation and ionization in the positive column of a neon discharge

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 2, 1962, 192-196

TEXT: In a previous paper (ZhTF, 31, no. 4, 1961) the authors calculated the electron energy distribution in neon with allowance for elastic and inelastic collisions between electrons and atoms and electron interaction. The distribution functions are calculated for 5-20 mm Hg and amperages of 200 and 400 ma. The distribution function for $u < u_1$ is

$$f_0(u) = \exp[-\psi(u)]\left\{B_1 + B_2\int_0^u \exp[\psi(z)]\,dz\right\} \quad (1),$$

for $u > u_1$,

$$f_0(u) = \sqrt{\frac{w}{q}}\,B_3 K_{1/3}(w)\exp\left[-\frac{1}{2}\int\frac{b_0 + b_2u^2}{a_0 + a_1u}\,du\right] \quad (2)$$

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where

$$\psi(x)=\int_0^x \frac{\nu_0 A\sqrt{u}+\frac{4k^2T_e^2}{m\lambda^* M}u^2}{\nu_0 A\sqrt{u}+\frac{2}{3}\frac{e^2E^2}{m^2}\lambda^* u}\,du, \quad (3)$$

and

$$\nu_0=\frac{4\pi e^4 n_e}{m^2}\ln\frac{k^{3/2}T_e T^{1/2}}{e^3 n_e^{1/2}};\quad A(x)=\frac{2}{\sqrt{\pi}}\int_0^x e^{-y^2}dy-\frac{2}{\sqrt{\pi}}xe^{-x^2},$$

$$w=\int_{u_1}^{u} q\,du,\quad q^2=-Q(u);\quad Q(u)=-\left\{\frac{u(u-u_1)}{a_0+a_1 u}+\frac{1}{2}\frac{d}{du}\frac{b_0+b_2u^2}{a_0+a_1u}+\right.$$
$$\left.+\frac{1}{4}\left[\frac{b_0+b_2u^2}{a_0+a_1u}\right]^2\right\}, \quad (A).$$

$$a_0=\frac{\lambda_0\nu_0 m^2}{2k^2T_e^2}u_1;\quad a_1=\frac{e^2E^2\lambda^*\lambda_0}{3k^2T_e^2}u_1;\quad b_0=a_0+a_1;\quad b_2=\frac{2m\lambda_0}{\lambda^* M}u_1,$$

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$u = mv^2/2kT_e$, T_e is the temperature of the electron gas, $u_1 = eV_1/kT_e$, V_1 is the first excitation potential, T is the gas temperature, n_e is the electron concentration, λ^* is the mean free path, $K_{1/3}$ is the MacDonald function. The number Z of direct ionization and the number Z^* of step-by-step ionizations was calculated with the aid of

$$Z = \frac{2k^2T_e^2}{m^2} N \int_{u_i}^{\infty} Q_i(u)\, u f_0(u)\, du, \quad (4)$$ and

$$Z^* = \frac{2k^2T_e^2}{m^2} \sum_s N_s \int_{u_{si}}^{\infty} Q_{si}(u)\, u f_0(u)\, du, \quad (5).$$

$Q(u)$ is approximated with $N_0 Q(V) = 0.055(V-20.6)$, where $N_0 = 3.52 \cdot 10^{16}$ cm^{-3} and V is the potential in volts. It can be seen that under the conditions chosen direct ionization can be neglected. This agrees with the known data. Under the conditions chosen, dissipative recombination need not be considered when calculating the electron concentrations (Table 2). The annihilation probability of a metastable atom by diffusion to the wall, by

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second-order collisions with electrons and by step-by-step excitation is studied. The last mechanism is the most important of the three types of annihilations. There are 2 figures, 4 tables, and 9 references: 6 Soviet and 3 non-Soviet. The two references to English-language publications read as follows: K. Compton and C. van Voorhes. Phys. Rev., 27, 724, 1926; L. Leob. Basis processes of gaseous electronics, 1955.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova (Leningrad State University imeni A. A. Zhdanov)

SUBMITTED: March 15, 1961

Table 1. Ionization numbers.
Legend: (1) mm Hg; (2) ma.

Table 2. Electron concentration.
Legend: (1) mm Hg; (2) ma; (τ) mean time of stay of an ion in the discharge; (n_e) experimentally determined electron concentration; (n_e') calculated electron concentration (step-by-step ionization).

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S/057/62/032/006/014/022
B108/B102

AUTHORS: Kagan, Yu. M., and Lyagushchenko, R. I.

TITLE: The energy distribution of the electrons in the positive column of a discharge

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 6, 1962, 735 - 737

TEXT: On the basis of simple physical considerations the authors estimated the possible deviations of the velocity distribution of electrons from the Maxwellian. Numerical estimates are made of the times of energy recoil in elastic and inelastic as well as in electron-electron collisions, for the positive columns in discharges through various gases. Quantitative results on the deviation from the Maxwellian distribution can be obtained by solving the equation of motion. There are 3 tables.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova (Leningrad State University imeni A. A. Zhdanov)

SUBMITTED: June 21, 1961

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44100

AUTHORS: Kagan, Yu. M., and Lyagushchenko, R. I.

TITLE: Theory of photoelectric currents in gases

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 7, 1962, 891-896

TEXT: An attempt is made to improve the Thomson-Loeb formula for photoelectric currents in gases. If electrons are ejected from a metal cathode by light, the equation for particle equilibrium allowing for back diffusion of electrons to the cathode reads:

$$D\frac{dn}{dx} - bEn = j_0\left(1 - e^{-\int_0^x \frac{dx}{\lambda(\varepsilon)}}\right) + C,$$

where C is an integration constant. This gives

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$$j = j_0 + j_e = j_0 \frac{\int\limits_0^\infty \frac{1}{D} e^{-\int\limits_0^x \left(\frac{1}{\lambda} + \frac{b}{D} K\right) dy} dx}{\int\limits_0^\infty \frac{1}{D} e^{-\int\limits_0^x \frac{b}{D} E dy} dx} = j_0 \frac{I_1}{I_2} \qquad (8)$$

for the current density towards the anode, which shows that the observable photoelectric currents are far from saturation. (8) is integrated for hydrogen and argon:

$$\frac{j}{j_0} = \frac{\dfrac{1}{b_0 E + \frac{1}{3} v_0}}{\dfrac{1}{bE}\left(\dfrac{\varepsilon_0}{\varepsilon}\right)^{\frac{eK\lambda}{\varepsilon-\varepsilon_0}} \sqrt{\dfrac{1}{\delta}} + \dfrac{\frac{3}{2} m v_0}{eE\lambda - \frac{1}{2}\dfrac{\varepsilon-\varepsilon_0}{\sqrt{\frac{1}{\delta}}}} \left(1 - \left(\dfrac{\varepsilon_0}{\varepsilon}\right)^{\frac{eK\lambda}{\varepsilon-\varepsilon_0}\sqrt{\frac{1}{\delta}-\frac{1}{2}}}\right)}.$$

and

$$\frac{j}{j_0}=\frac{\frac{E}{p}\left\{1-\frac{3}{2}\int_1^{\infty} z^{-5/2}\exp\left[-\frac{p}{E}\left(\left[13.4\varepsilon_0^2+4.35-8.9\varepsilon_0^{3/2}\right](z-1)-13.4\varepsilon_0^2(z-1)^2\right)\right]\right\}}{\varepsilon_0^{3/2}\left\{26.8\left(\sqrt{\varepsilon}-\sqrt{\varepsilon_0}\right)+8.7\left(\frac{1}{\sqrt{\varepsilon_0}}-\frac{1}{\sqrt{\varepsilon}}\right)-13.4\ln\frac{\varepsilon}{\varepsilon_0}+\frac{13.4\left(\sqrt{\varepsilon}-0.5\right)^2+1}{\sqrt{\varepsilon}}\right\}}.$$

Results calculated from these formulas show good agreement with experiment. Designations in formulas: D = diffusion coefficient, b = mobility, E = electric field strength between the electrodes ($E\|\alpha$), ε = mean electron energy. There are 3 figures.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova (Leningrad State University imeni A. A. Zhdanov)

SUBMITTED: May 6, 1961

L 9846-63 EWT(1)/BDS/EEC(b)-2--AFFTC/ASD/ESD-3--IJP(C)

ACCESSION NR: AP3000576 S/0051/63/014/005/0598/0606

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AUTHOR: Kagan, Yu. M.; Lyagushchenko, R. I.; Khatsev, A.D.

TITLE: Excitation of inert gases in the positive column of a discharge 21 at medium pressures. 1. Neon

SOURCE: Optika i spektroskopiya, v. 14, no. 5, 1963, 598-606

TOPIC TAGS: electric discharges in gases, Ne

ABSTRACT: The investigation was undertaken in view of the paucity of data on excitation of inert gases in the positive column of a discharge. The discharges were realized in a special discharge tube at pressures from 1 to 30 mm Hg and currents from 10 to 400 mA. The spectra were recorded by means of an ISP-51 spectrograph with a photoelectric attachment. Intensities were determined with reference to a tungsten ribbon lamp. The changes in electron concentration and temperature and the field strength were gaged by the method of two probes. The absolute intensity of some transitions and the numbers of photons emitted in de-excitation from upper to all 2p sup 5 3s levels are tabulated as a function of

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the gas pressure. Excitation cross sections for some pressures and current values are given. The report includes a diagram of the low-lying levels and transitions in neon. "The author thanks S. E. Frish for discussion of the results and valuable suggestions." Orig. art. has: 5 equations, 4 figures and 8 tables.

ASSOCIATION: none

SUBMITTED: 28Sep63 DATE ACQ: 12Jun63 ENCL: 00

SUB CODE: PH NR REF SOV: 010 OTHER: 002

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Card 2/2

KAGAN, Yu.M.; LYAGUSHCHENKO, R.I.; KHAKHAYEV, A.D.

Excitation of inert gases in a positive discharge column at medium pressures. Part 1: Neon. Opt. i spektr. 14 no.5:598-606 My '63. (MIRA 16:6)

(Electric discharges through gases)

L 13090-63 BDS/EWT(1)/ES(w)-2 AFFTC/ASD/ESD-3/SSD Pab-4 IJP(C)
ACCESSION NR: AP3003404 S/0051/63/015/001/0013/0020

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AUTHOR: Kagan, Yu.M; Lyagushchenko, R. I.; Khakhayev, A.D.

TITLE: On excitation of inert gases in the positive column of a discharge at medium pressures. 2. Argon

SOURCE: Optika i spektroskopiya, v.15, no.1, 1963, 13-20

TOPIC TAGS: positive column, level population, A

ABSTRACT: In the first part of the study (Optika i spektroskopiya, 14, 598, 1963) the authors investigated the excitation conditions obtaining in the positive column of a discharge in neon at pressures from 1 to 30 torr and with currents from 10 to 400 mA; in the present work the investigation was concerned with discharges in argon at pressures from 0.18 to 10 torr and I = 25 to 400 mA, using a similar 24 mm diameter tube, probe, etc. The data were obtained on an ISP-51 spectrograph (f = 1 meter) with a photoelectric attachment. A level and transition diagram for argon is given. The measurement results, including the populations of some levels, are tabulated. Energy balances for some 3p levels are analyzed, and equations for the energy balances adduced together with the corresponding constants. It is inferred that electron impact is the predominant excitation mechanism. "The authors thank S.E.Frish for discussion of the results and students S. Burkina and Yu. Golubovskiy for assistance in the measurements."

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KAGAN, Yu.M.; LUIZOVA, L.A.; LYAGUSHCHENKO, R.I.; KHAKHAYEV, A.D.

Excitation of inert gases in a positive d-c discharge column at medium pressures. Part 3: Upper levels of neon and argon. Opt. i spektr. 15 no.4:446-452 O '63. (MIRA 16:11)

VOROB'YEVA, N. A.; KAGAN, Yu. M.; LYAGUSHCHENKO, R. I.; MILENIN, V. M.

"The Energy Distribution of Electrons in the Discharge of the Positive Column."

report submitted to 11th Intl Spectroscopy Colloq, Belgrade, 30 Sep-4 Oct 63.

KAGAN, Yu. M.; LYAGUSHCHENKO, R. I.; KHAKHAYEV, A. D.

"The Positive Column Discharge in the Inert Gases under Medium Pressures."

report submitted to 11th Intl Spectroscopy Colloq, Belgrade, 30 Sep-4 Oct 63.