"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

ACCESSION NR: AT4025306

formation, a method is proposed wherein more detailed microscopic characteristics can be obtained with the aid of through-passage mass spectrometer. This mass spectrometer was used to investigate the mass and energy spectra of plasmoids from a Bostick gun (W. H. Bostick, Phys. Rev. v. 104, 2, 292, 1956). The operation of all the units of the instrument is described in detail in a separate article (Pribory* i tekhnika eksperimenta, in press). The conditions for optimal mass separation are described. In view of the short transit time employed, there is no need for additional modulation. The apparatus yields mass spectra of ions of given energy, from which the energy spectra of particles having different masses can be plotted. The angular distributions of the ions of different masses and energies were also investigated and it was found that ions with larger velocities form a narrower velocity cone than the slower ions. It is therefore concluded that measurement of the true energy distribution must be accompanied by measurement of the angular distribution of the particles and the number of particles of given energy must be

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ACCESSION NR: AT4025306

integrated over all the angles in order to ensure accuracy. The duration of the discharge exerts little influence on the energy spectra. The length of the plasmoid changes as it moves from the source because of the spread in particle velocity, and since the particle velocity decreases with increasing mass, the light ions are concentrated in the frontal part of the plasmoid and the heavy ones in the tail part. This spatial separation of the ions increases with increasing transit length. In the absence of the magnetic field the slow ions are rapidly lost because of the broad velocity cone. There are grounds for assuming that the plasmoids produced by other plasma guns, particularly coaxial, show a similar behavior. Orig. art. has: 9 figures.

ASSOCIATION: None

SUBMITTED: 19Oct63 DATE ACQ: 16Apr64 ENCL: 00

SUB CODE: NP, ME NR REF SOV: 003 OTHER: 003

Card 3/3

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

L 43799-66 EWT(1)/T IJP(c) AT/JGS/GD
ACC NR: AT6020415 (N) SOURCE CODE: UR/0000/65/000/000/0172/0181

AUTHOR: Kalmykov, A. A.; Pankrat'yev, Yu. I.; Nozdrachev, M. G.; Shevchuk, B. A.

ORG: none

78
17
B+1

TITLE: Investigation of a discharge in a pulsed plasma source

SOURCE: AN UkrSSR. Issledovaniye plazmennykh sgustkov (Study of plasma clusters). Kiev, Naukovo dumka, 1965, 172-181

TOPIC TAGS: plasma source, plasma gun, pulsed magnetic field, ion acceleration, mass spectroscopy, high speed photography

ABSTRACT: The performance and characteristics of a plasma gun with a hot cathode are studied. The gun structure and operational parameters are described. The gun was operated with a pulsed magnetic field (20 μsec) during which a much shorter high voltage pulse was applied to the cathode which was found to eject both ions and electrons. The collector received about one ampere of ion current during such pulsed operations. As in other guns, the ion acceleration occurred only during the first few tenths of a microsecond and the energy reached often exceeded the applied accelerating voltage. It was noted that when artificial transmission lines were used for the energy storage, plasma ejection occurred at each reflection of the wave thus forming a long train of plasmoids. The plasma properties were studied with a mass spectrometer, x-ray detec-

Card 1/2

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

L 43799-66

ACC NR: AT6020415

tors and high speed photography. The results for various pressure and current conditions are shown and analyzed in terms of the electric circuit interaction with a simple plasma model. Orig. art. has: 4 formulas, 7 figures.

SUB CODE: 20/ SUBM DATE: 11Nov65/ ORIG REF: 006/ OTH REF: 005

Card 2/2 PB

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDRACHEV, N.; GOLUBOVICH, O.

Remarkable work of young builders. Prof.-tekh.obr. 11 no.8:31 N '54. (MLRA 8:1)

(Technical education)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDRACHEV, N.D.; GOLUBOVICH, O.F.

Laying slag bricks in housing construction. Sbor.nat. o nov.tekh. v stroi. 17 no.2:17-24 '55. (MLRA 8:2)
(Bricklaying)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDRACHEV, N.D., inzhener; GOLUBOVICH, O.F.

Experience in building foundations for blast furnaces. Stroi. prom. 33 no.1:27-28 Ja'55. (MLRA 8:3)
(Foundations)(Blast furnaces)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

L 45232-66 ARG/EWT(d)/EPC/EWP(c)/EWP(h DE/JKT/WW/TCH/JT

ACC NR: AN6009268 SOURCE CODE: UR/9008/65/000/283/0002/0002

AUTHOR: Nozdran', F., (Lieutenant General, Chief of the Rear Services of the Air Defense Forces of the Country)

ORG: none

21
B

TITLE: Tactical and technical training of the rear service personnel of the air-defense forces of the country

SOURCE: Krasnaya zvezda, 02 Dec 65, p. 2, col. 1-6

TOPIC TAGS: ordnance training, military training, tactical training

ABSTRACT: The author supplies some information on combat and technical training of military personnel of the rare services of the air-defense forces of the country under conditions of modern warfare. The tasks of the rear services and the delivery of supplies and combat material to the troops are analyzed. Maneuvering

Card 1/2

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

L 45238-66

ACC NR: AN6009268

of the rear services and methods of delivering the combat material in the course of combat operations are carried out during tactical training exercises. Shortcomings in technical and combat training of the rear service units and subunits are discussed. [NT]

SUB CODE: 15/ SUBM DATE: none/

Card 2/2

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

S/[illegible]/[illegible]/[illegible]/[illegible]/[illegible]/[illegible]/XX
BO[illegible]/BO[illegible]

AUTHORS: Stepanov, B. I., Nedran, N. S., [illegible], L. N.

TITLE. Production of [illegible] arbazole [illegible] metanilic A[illegible]

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, [illegible], [illegible], pp. 480 [illegible]

TEXT: The authors report on the synthesis of [illegible] arbazole (VII) from the easily producible [illegible] metanilic acid (I). The synthesis of these initial substances important for dyes was thus greatly simplified. The authors proceeded according to the scheme attached. The [illegible] dye (II) was obtained in the usual way from (I) with [illegible] naphthol with a yield of 98%. (II) was converted into the symmetric diazo dye (III) according to Del'fs (Ref.1), with a yield of 98%. (III) underwent a reducing cleavage with tin in HCl, the tin being subsequently regenerated by electrolysis and 2,2' diamino biphenyl 4,4' disulfo acid (IV) was thus obtained with a yield of 97%. The heterocycle (carbazolization) was closed on the basis of the reaction by H. Leditschke (Ref.2). In this connection

Card 1/4

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

Production of 2-Oxycarbazole From o-Chlorometanilic Acid

S/[illegible]/[illegible]/[illegible]/[illegible]/[illegible]/XX
B016/B0[illegible]

the authors established that [illegible] results may [illegible] be obtained at a maximum of 150° C. Pure [illegible] these conditions with a 95% [illegible] Among different tested variants of the alkaline melting of (VI) the authors found out the [illegible] 2-oxycarbazole 7-sulfo acid (VI) [illegible] at [illegible] with a yield of 88% if alkaline melting [illegible] mole alkali [illegible] (VII) is performed in the solution under pressure (according to N. N. Vorozhtsov, Ref.3). (VI) was subsequently hydrolyzed by heating with 10% H_2SO_4 under pressure (Ref.4). Best results were obtained at [illegible] within [illegible] hrs. The total yield of 2-oxycarbazole (VII) [illegible] 72% of the theoretical one. The sulfo acids (III) [illegible] (VI) as well as (I) were identified as benzyl thiuronium [illegible] (Table p. [illegible] I VI). Ref. [illegible]. The authors proved that (VI) [illegible] with benzyl thiuronium in the same way as a dibasic acid [illegible] its oxy group [illegible] in the salt formation with the cation of benzyl thiuronium [illegible] There are 1 table and 8 references, 4 Soviet, [illegible] German and [illegible] US.

Card 2/4

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

Production of 2-Oxycarbazole From o-Chlorometanilic Acid

S/153/60/003/003/023/036/XX
B016/B058

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva; Kafedra tekhnologii organicheskikh krasiteley i promezhutochnykh produktov (Moscow Institute of Chemical Technology imeni D. I. Mendeleyev; Chair of Technology of Organic Dyes and Intermediate Products)

SUBMITTED: September 11, 1958

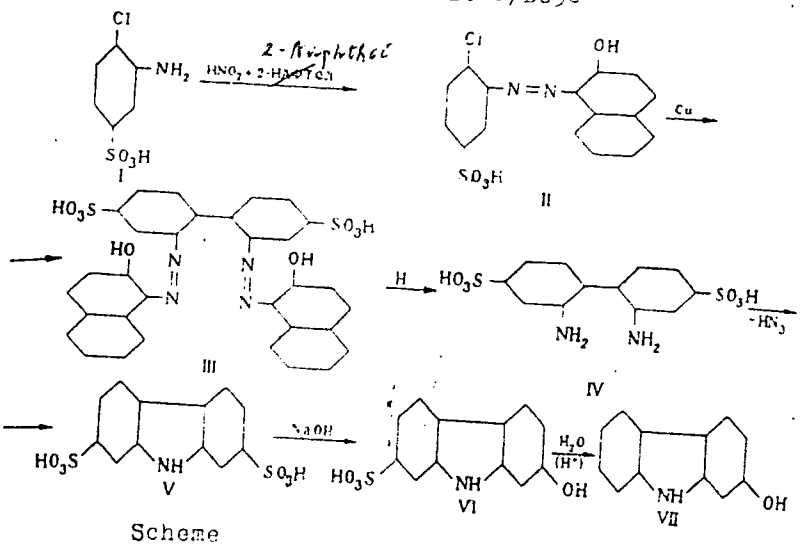
Card 3/4

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

S/153/60/003/003/023/036/XX
B016/B058

CT.1960
N 3.
p.480



Scheme

Scheme

Card 4/4

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDRASHEV, N.M.; YEVELENKO, Ya.M.

Counterbore for malleable cast iron. Mashinostroitel' no.11:14 N '61. (MIRA 14:11)

(Metal-cutting tools)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDRENKO, M.V.

Main fungus diseases in the parks of Novosibirsk. Trudy TSSBS no.3:57-64 '60. (MIRA 15:3)

(Novosibirsk--Trees--Diseases and pests)
(Fungi, Phytopathogenic)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDRENKO, M.V.

Species of house fungi in Novosibirsk Province, Trudy TSSBS no.8:192-195 '64.

Fungi of the parks and gardens of the towns of Novosibirsk Province. Ibid.:196-204 (MIRA 18:7)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDRENKO, M.V.

Materials on the mycoflora of Siberian pine. Trudy TSSRS no.10: 142-148 '65.

Species of the agents of fungous diseases of trees and shrubs in shelterbelts of the Kulunda Steppe. Ibid.:149-156 (MIRA 18:10)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

AMIYAN, V.A.; SHTYRIN, V.F.; KONEV, V.D.; NOZDREV, A.Ye.; KALICHENKO, B.V.; ZHETLUKHIN, Yu.I.

Determination of the nature of flooding of well IV in the Maeotic horizon of the Anastasiyevka-Troitskoye field based on the parameters of production performance. Neftepromy. del. no.8:3-5 '65. (MIRA 18:9)

1. Institut geologii i razrabotki goryuchikh iskopayemykh, Moskva, i Neftepromyslovoye upravleniye "Priazovneft'"

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V.F.; YASHINA, L.S.

Investigation of complex mixtures by the ulstaacoustic method.
Zhur. fiz. khim. 39 no. 1:230-231 Ja '65 (MIRA 19:1)

1. Moskovskiy oblastnoy pedagogicheskiy institut imeni N.K. Krupskoy. Submitted April 8, 1964.

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

L 04083-67 EWP(j)/EWP(k)/EWT(1)/EWT(m)/T RM

ACC NR: AR6023304 SOURCE CODE: UR/0058/66/000/003/H071/H071

58
B

AUTHOR: Kadyrov, G.; Nozdrev, V. F.

TITLE: Experimental investigations of the velocity of propagation of ultrasonic waves in binary and ternary liquid mixtures

SOURCE: Ref zh. Fizika, Abs. 3Zh497

REF SOURCE: Tr. 1-y Mezhvuz. nauchn. konferentsii po primeneniyu molekul. akust. k issled. veshchestva i v nar. kh-ve. Tashkent, 1964, 147-151

TOPIC TAGS: ultrasonic propagation, ultrasonic velocity, nonaqueous solution, acoustic diffraction, optic method

ABSTRACT: The authors measured the velocity of propagation of ultrasound in the following binary and ternary liquid mixtures: ethyl formiate - formic acid, - ethyl alcohol. The velocity of ultrasound was determined accurate to 0.5% by the method of visual observation of the diffraction pattern in the investigated liquid. With increasing amount of formic acid in the binary mixture, the velocity of ultrasound increased almost linearly. With increasing concentration of the ethyl alcohol in the ternary mixture the velocity passed through a maximum at small concentrations. L. Kikarev. [Translation of abstract]

SUB CODE: 20

Card 1/1

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDRIN, D.

People of the harsh Kamchatka. Mor.flot 24 no.4:3 S '64. (MIRA 18:5)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

CA

2

Velocity of ultrasound in liquids as a function of the temperature. P. Prosorov and V. Nosdrev. *J. Exptl Theoret. Phys.* (U. S. S. R.) 9, 625-9(1939).—Data are given for the liquids Me, Et and Pr alcs., H_2O, benzene and toluene, at temps. from −70 to +110°. Up to frequencies of 5 × 10⁶, dispersion is negligible; the ordinary hydrodynamic equation is applicable. F. H. R.

COMMON ELEMENTS

COMMON VARIABLES INDEX

OPEN

MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

AUTHOR INDEX

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

PROCESSES AND PROPERTIES INDEX

A study of the adiabatic compressibility of organic liquids to temperatures and pressures approaching critical ones. V. Nozdrev. *Compt. rend. acad. sci. U.R.S.S.* 53, 119-21(1946)(in English).—Adiabatic compressibility coeffs. of CCl_4, PhMe, MeOH, EtOH, and PrOH were detd. by the ultrasonic method, by use of the Debye-Circe effect. Calcd. coeffs. agreed with values obtained by the interferometer and piezometer methods. Data are given. I. E. Campbell

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V. F.

PA 55/49T110

USSR/Physics Nov 48
Ultrasonics

"The Speed of Ultrasonic Waves in Organic Liquids Which Are in the Critical Region," V. F. Nozdrev, Sci Res Inst of Phys, Moscow State U imeni M. V. Lomonosov, 3t pp

"Dok Ak Nauk SSSR" Vol LXIII, No 3

Experiments proved that in the transition from fluid to vaporous states, velocity of ultrasonic waves was not abruptly discontinuous but varied continuously and smoothly. In the critical region in fluid and gaseous phases there

55/49T110

USSR/Physics (Contd) Nov 48

was a sharp drop in velocity with increase in temperature and pressure. Submitted by S. I. Vavilov 1 Oct 48.

55/49T110

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

Doc Physicomath Sci

NOZDREV, V. F.

Dissertation: "Investigation of the Propagation of Ultrasonic Waves in Organic Liquids and their Saturated and Overheated Vapors."
1/7/50

Moscow Oblast' Pedagogical Inst

SO Vecheryaya Moskva
Sum 71

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V.F.

Propagation of supersonic waves in saturated vapors of organic liquids. Vestnik Moscow Univ. 7, No.12, Ser. Fiz.-Mat. i Estestven. Nauk No.8, 21-33 '52.
(CA 47 no.17:8517 '53)

1. Moscow State Univ.

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

V. F. REVIEWER

Aug 52

USSR/Chemistry - Ultrasound

"Review of B. B. Kudryavtsev's Book 'Application of Ultrasonic Methods in Practical Physicochemical Research,'" (V. F. Nozdrev, reviewer)

Zhur Fiz Khim, Vol 26, No 8, pp 1218-1220

B. B. Kudryavtsev's "Primeneniye Ul'traakusticheskikh Metodov v Praktike Fiz-Khim Issledovaniy (Application of Ultrasonic Methods in Practical Physicochemical Research), Gostekhizdat, 1952, is the first Russian-language work which completely reflects achievements in the field of ultrasonics as applied to the investigation of physical and physicochemical processes. It describes work done in the USSR and abroad. The book

263T13

of I. G. Mikhaylov (1949), "Rasprostraneniye Ul'trazvukovykh Voln v Zhidkostyakh" (Propagation of Ultrasonic Waves in Liquids), dealt only with the investigation of liquids and was therefore incomplete and one-sided. On the other hand, Kudryavtsev's book encompasses all the basic research, both theoretical and exptl, on the propagation of ultrasonic waves in gaseous, liquid, dispersed, and solid systems. It also includes a section on the application of ultrasonics in colloid chemistry.

263T13

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

231T10

USSR/Chemistry - Liquid Fuels
Solvents

May 52

"Adiabatic Compressibility of Liquids in the Critical Range," V. F. Nozdrev, Inst of Phys, Moscow State U imeni M. V. Lomonosov

"Dok Ak Nauk SSSR" Vol 84, No 2, pp 317-319

The coeff of adiabatic compressibility of n-hexane, n-heptane, isopentane, n-pentane, octane, methyl acetate, ethyl acetate, propyl acetate, butyl acetate, and ethyl alc were detd in a specially constructed autoclave by an ultrasonic

231T10

method. The results show an uninterrupted transition from liquid to superheated vapor through the crit range of adiabatic compressibility. As the crit temp is approached, the adiabatic compressibility of the superheated vapor increases sharply, but the adiabatic compressibility of the satd vapor decreases sharply. The changes in compressibility occur in such a manner that they all blend together at the crit temp. The same results were obtained for all 8 liquids. Presented by Acad A. V. Topchiyev 14 Jun 52

231T10

NOZDREV, V. F.

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

CA

General & Physical Chemistry

Velocity of supersonic waves in saturated vapors of organic liquids. V. F. Nozdrev (M. V. Lomonosov State Univ., Moscow). *Doklady Akad. Nauk S.S.S.R.* 85, 777-9(1952). Measurements of the supersonic velocity c were made by the optical diffraction method in satd. vapors between the boiling and the crit. temps., in the frequencies 940, 2000, and 3000 kilohertz for C_6H_6; 2000 for C_6H_{12}, AcOEt, AcOPr, AcOBu, and EtOH; 3000 for AcOEt; 465 for CCl_4, (940), 1010, and 2000, for toluene; and 600 for C_6H_{12}. With increasing temp., c falls firm slowly, then sharply as the crit. temp. is approached. In EtOH and AcOEt a very flat max. of c was observed. The coeff. of adiabatic compressibility β, of the satd. vapors, derived from the measurements of c, falls with increasing temp., within the temp. coeff. of β changing its sign in any instance. Application of Predvoditelev's formula $c^2 = [\gamma'(p_0 + a)/(v - b)] - (2a/v)$, where $\gamma' = 1 + R/C_v$, and a and b are van der Waals' consts., permits detn. of C_v/C_v, and hence of C_v, which is found to be const. over the whole temp. range exclusive of the crit. region. N. Thon

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V. F.

5

USSR.

534.22

3207. Dispersion of the velocity of ultrasound in superheated n-hexane vapours. V. F. NOZDREV. Dokl. Akad. Nauk SSSR, 85, No. 5, 1005–7 (1952) in Russian.

The velocities of ultra-sound have been determined by an optical method (described elsewhere) for temperatures between 180–330°C, pressures 2–26 atm., and frequencies 450–3050 kc/s; no dispersion has been observed down to $P = 8$ atm. Beginning with ~210°C, the velocities for $P = 5{\cdot}5$ atm. and $\nu =$ [illegible] kc/s and for $P = 8$ atm. and $\nu = 2800$ kc/s (in [illegible]er case, ν/P being = ~350 kc/s/P) coincide. The [illegible]persion phenomenon has been confirmed by the results of measurements at $\mu =$ const.

BB F. LACHMAN

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

24(8) PHASE I BOOK EXPLOITATION SOV/2609

Akademiya nauk SSSR. Otdeleniye khimicheskikh nauk

Termodinamika i stroyeniye rastvorov; trudy soveshchaniya... (Thermodynamics and Structure of Solutions; Transactions of the Conference Held January 27-30, 1958) Moscow, Izd-vo AN SSSR, 1959. 295 p. 3,000 copies printed.

Ed.: N. I. Shakhparonov, Doctor of Chemical Sciences; Ed. of Publishing House: N. G. Yegorov; Tech. Ed.: T. V. Polyakova.

PURPOSE: This book is intended for physicists, chemists, and chemical engineers.

COVERAGE: This collection of papers was originally presented at the Conference on Thermodynamics and Structure of Solutions sponsored by the Section of Chemical Sciences of the Academy of Sciences, USSR, and the Department of Chemistry of Moscow State University, and held in Moscow on January 27-30, 1958. Officers of the conference are listed in the Foreword. A list of other reports also read at the conference, but not included in this book, are given. Among the problems treated in this work are: electrolytic solutions, ultrasonic measurement, dielectric and thermodynamic properties of various mixtures, spectroscopic analysis, etc. References accompany individual articles.

Shakhparonov, N. I. Present Problems of the Thermodynamic Theory of Solutions of Nonelectrolytes 36

Skrigov, V. P. Fluctuation of Energy in Solutions and Their Relation to Heat Capacity 43

Fisher, I. Z., and V. I. Kuz'mich. Molecular Theory of Solubility 48

Krichevskiy, I. R., and N. Ye. Khazanova. Critical Phenomena in Binary Liquid Systems 49

Nudrov, V. P. Study of the Critical States of Individual Compounds and of Their Mixtures With the Aid of Ultrasonic Methods 56

Bartenev, G. M., and A. A. Nemilova. Phase Transitions in Simple Systems and Their Classification 67

Kudryavtsev, B. B. Use of Ultrasonic Measurements in the Study of Solutions 72

Sventoslavskiy, V. V., and K. I. Zemborak. Transformation of Binary Heteroazeotropes Into Homoazeotropes and Homozeotropes 79

Storonkin, A. V., and A. G. Morachevskiy. Applicability of Konovalov's and Vreveskiy's Laws to Ternary Solutions 87

Storonkin, A. V., and M. M. Shul'ts. Relation of Thermodynamic Properties of Saturated and Nearly Saturated Ternary Solutions to Their Composition 93

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NOZDREV, V. F.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V. F. Prof.

"On the Question of the Investigation of the Critical Area of a Liquid-Vapor System by the Ultra-Acoustic Method," a paper gievn at the All-University Scientific Conference "Lomonosov Lectures", Vest. Mosk. Un., No.8, 1953

Translation U07895, 1 Mar 56

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V.F.

5

Use of the ultra-acoustic method for the investigation of the chemical structure of substances. V. F. Nozdrev (Moscow Univ.). *Vestnik Moskov. U[redacted] Ser. Fiz.-Mat. i Estestven. Nauk* No. 3, 69-79(1939).—N. investigated the limits of applicability of Raoult's law of corresponding states, $C^{1/3}(M/\rho) = V_m$ where C is velocity of sound, M is mol. wt., ρ is density, and V_m is mol. speed of sound, for both pure liquids and for mixts. The law of Lagentann (*C.A.* 43, 7283*h*), $(\Delta C/\Delta T)M^{1/3} = 39.0 \pm 2$ m.g.$^{1/3}$/sec. degrees, is derived from Raoult's law, and the limits of its applicability are discussed. Values for the atomic increments for the mol. speed of sound through a gaseous compd. thereof for C (10), H (92.5), O (74), Cl (227), Br (245), I (304), and CH_2 (195) as well as for the bond-increments of the following bonds are given: C-H, C-C, C-O, O-H, C-Br, C-Cl, C-I, C:C, C:O, Si-Cl, P-Cl, P:O, C-O (ether), N-H, C:N, C:N, C-S, Ti-Cl, Ge-Cl, Sn-Cl, P-Br, As-Cl, Sb-Cl, C-Si, Si:O, C:S, and C:N. Values for the speed of sound through hexane, heptane, toluene, CCl_4, MeOAc, EtOAc, EtOH, and PrOH over the temp. range 0-240° are given, as well as data on chlorobenzene, bromobenzene, nitrobenzene, octane, PrOAc, and BuOH over shorter temp. intervals. Franz H. Rathm[illegible]

Lab. Molecular Physics

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V. F.

The relation between the speed of sound and the physico-chemical characteristics of fluids. V. F. Nozdrev and L. P. Lependin (Moscow Regional Pedagogical Inst.). Fiz. Khim. 27, 1250-8(1953).—A theoretical discussion is given of the speed of sound in liquids from the standpoint of the laws of corresponding states and the mol.-kinetic theory of liquids. It is shown that the molar velocity of sound is proportional to the parachor. This method leads to generalized expressions from which the relative heat capacities of the liquid can be calcd. J. Roytar Leach

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V.F.

(2) Chem

7731* Investigation of Ultrasound Absorption by a Series of Saturated Hydrocarbons Using the Impulse Method. (Russian.) N. I. Koshkin and V. F. Nozdrev. *Doklady Akademii Nauk SSSR*, v. 92, no. 4, Oct.-1, 1953, p. 793-796.

Investigations in temperature range −60 to 50 C on N-hexane, N-heptane, and N-octane using frequencies of 11.96 and 15.10 Mc.

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V.F.

USSR

Temperature relation of the adiabatic compressibility of mixtures with associated components. V. F. Nozdrev and N. I. Larionov (Moscow Regional Pedagog. Inst.). *Doklady Akad. Nauk S.S.S.R.* 92, 991-4(1953).—The compressibility of alc.-water mixts. was detd. over a broad range of temp. and concn. (in intervals of 10%). The alcs. were MeOH, EtOH, PrOH, BuOH, *iso*-BuOH, and *iso*-AmOH. The coeff. of adiabatic compressibility, β_φ, was calcd. from the velocity of ultrasound, v, in the mixt. by means of the formula $\beta_\varphi = 1/(v^2\rho)$; ρ is the d. For concn. from 30-100% by wt. β_φ increases with increasing temp. At lower concns, the curve of β_φ *vs.* temp. passes through a min. This is attributed to assocn. processes that occur in the mixt. at low concn. J. Roytar Leach

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V.; SHULEYKIN, V.V., akademik.

Investigation of the critical conditions of liquid - vapor systems by ultrasonic method. Dokl.AN SSSR 92 no.6:1145-1148 O '53. (MLRA 6:10)

1. Akademiya nauk SSSR (for Shuleykin). 2. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova (for Nozdrev). (Critical point)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V. F.

USSR/Physics

Card 1/1

Authors : Yakovlev, V. F; Koshkin, N. I., and Nozdrev, V. F.

Title : Use of the impulse method in the study of ultra-sound adsorption in benzene and some of its halogen derivatives close to their solidification point.

Periodical : Dokl. AN SSSR 96, Ed. 2., 273 - 276, May 1954

Abstract : Report describes an impulse ultrasonic arrangement and the method of measuring the absorption in benzene and some of its halogen derivatives. This installation was successfully used for measuring the absorption close to solidification point. Results obtained through measuring the absorption of ultra sound in benzene, chlorobenzene and bromobenzene close to their solidification point are included. Six references; 4 USSR since 1949. Table, Graphs.

Institution : The Moscow Regional Pedagogical Institute

Presented by : Academician V. V. Shuleykin, March 22, 1954

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V.F.

USSR

Investigation of ultrasonic absorption in monatomic alcohols by the optical method using photoelements with an alternating-current booster. V. F. Nozdrev and V. I. Stremousov (Moscow Regional Pedagog. Inst.). *Doklady Akad. Nauk S.S.S.R.* 96, 477-80(1954).—The scheme of the app. used is provided. The arrangement is of such a nature that good temp. control is attained. The investigations were made at temps. from −70° to +100°. The low temps. were obtained with dry ice and EtOH. Absorption of ultrasonic waves in the following 10 homologous satd., monat. alcs. was studied: ethyl, methyl, propyl, butyl, hexyl, nonyl, *sec*-octyl, isopropyl, isobutyl, and isoamyl. Comparison of the results with classical theory showed that they give a qualitatively clear picture of the effect of temp. on the coeff. of absorption. Quantitatively the expti. results exceed the theoretical by a factor of 1.5–4. An analysis of the expti. data showed that in a series of normal primary alcs., the absorption increases on transition from lower to higher alcs. The data are presented in the form of absorption curves. Gladys S. Macy

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APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V. F. and SULTANOV, A.

"Detection and Experimental Investigation of Two Regions of Anomalous Absorption of Ultrasound in Ethyl Acetate", a report presented at a conference of professors and teachers of the institutes of the Ministry of Education RSFSR and published in the "Application of Ultrasonics to the Investigation of Substances," Moscow, 1955.

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V.F.

Distr: 4E4j/4E4b

The propagation of ultrasonic waves in the critical range of a system liquid–vapor. V. F. Nozdrev. *Akust. Zhur.* 1, No. 3, 235–48(1955); *Referat. Zhur., Khim.* 1956, Abstr. No. 15518.—The speed of sound C was investigated in 15 liquids (carbohydrates, aromatic carbohydrates, acetates, alcs.) in the range close to the crit. point; the law of straight-line diam. applies to all these liquids (*C.A.* 52, 822*e*). For the wave resistance $r = \rho C$ (ρ-d.) the law of straight-line diam. is applicable over a large range of temps., including the boiling temp. From ultrasound data heat capacities C_p and C_v, as well as their relation at the crit. range, were calcd. for some of the investigated materials, and heat capacity C_v at the crit. point, on the basis of thermodynamic relations.

J. Mioszewska

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, U. F.

21

3

A method of determining sound velocity at the critical state. V. F. Nozdrev and T. S. Melkova. *Uchenye Zapiski Moskov. Oblast. Pedagog. Inst.* 33, 201-9(1956); *Referat. Zhur., Khim.* 1956, Abstr. No. 12316.—When the dependence of d. ρ on the temp. of a liquid and vapor in equil. is graphically illustrated, parabolic curves with a straight-line diam. are obtained, i.e. arithmetical means of the d. of the liquid and vapor are distributed on a straight line. Owing to considerable difficulties of direct detn. of sound velocity $C_{cr.}$ at the crit. point, it is preferred to apply the rule of the straight-line diam. and to det. $C_{cr.}$ by extrapolation of data pertaining to states close to the critical. By this method $C_{cr.}$ was detd. for hexane, heptane, MeOAc, EtOAc, PrOAc, iso-BuOH, and EtOH. "Sound inflexibilities" $\gamma = \rho C$ behave similarly, a fact that can also be used for calcn. of sound velocity. The 2 methods give equally accurate results and the agreement with exptl. data obtained by other methods is very satisfactory. Exptl. values for sound velocity comply well with the law of comforming states; this permits the detn. of $C_{cr.}$ values for any chosen material on the basis of $C_{cr.}$ values known for a single other material. The accuracy of the detn. of $C_{cr.}$ by the method of straight-line diam. depends on the no. of experimentally obtained points located in the vicinity of the crit. point.

J. Mloszewska

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

MOZDREV, V., SULTANOV, A.

Determination and sudy of two relaxation zones produced when ultrasonic waves pass through ethyl acetate. Dokl. AN SSSR 104 no.6:837-839 O '55. (MLRA 9:3)

1. Moskovskiy oblastnoy pedagogicheskiy institut. Predstavleno akademikom V.V. Shuleykinym.
(Ultrasonic waves)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V. F., KOVLOV, A. D., YAKOVLEV, V. F., KOSHKIN, N. I. and SHIRKEVICH, M. G.

"Impulse Method of Fixed Distances, Its Physical Basis and Practical Application". Abstracted for inclusion in the Second International Congress on Acoustics, Cambridge, Mass., 17-24, Jun 1956

Moscow State University

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V. F.

Acoustical Institute of the Academy of Sciences of the USSR, Moscow

"Investigation of Acoustic Properities of Organic Substances in the Critical Region" paper presented at 2nd International Congress on Acoustics, Cambridge, Mass., 17-23 June 1956.

So: B-100200

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

MOZDREV, V. F., SOBOLEV, A. M. SULTANOV, A. M. and FORMOSOV, U. N.

"Experimental Investigation of Relaxation Processes Arising when Ultrasonic Waves Pass through Liquids," paper presented at the Second International Congress on Acoustics, Cambridge, Mass., 17-23 Jun 56.

Acoustical Institute of the Academy of Sciences of the USSR, Moscow, USSR.

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, [redacted]fessor, redaktor; KUDRYAVTSEV, B.B., professor, redaktor.; ZHITOV, S.P., tekhnicheskiy redaktor.

[Application of ultra-acoustics to the analysis of materials] Primenenie ul'traakustiki k issledovaniiu veshchestva. Moskva, Izd. MOPI, No. 3. 1956. 211 p. [Microfilm] (MLRA 10:4)

(Ultrasonic waves--Industrial applications)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

USSR/Acoustics - Ultrasonics, J-4

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35564

Author: Bormosov, Yu. N., Nozdrev, V. F., Sobolev, V. D., Sultanov, A. M.

Institution: None

Title: Experimental Investigations of Relaxation Processes, Occurring Upon the Passage of Ultrasonic Waves Through Liquids

Original Periodical: Akust. zh., 1956, 2, No 2, 118-123

Abstract: Description of experimentally-observed relaxation processes in acetates and formates. The investigation was performed by pulse and optical methods at frequencies of 1 - 30 mc. In the temperature range from -40 to +30° several complete relaxation regions were observed in metal acetate, ethyl acetate, methyl formate, and ethyl formate. An investigation was made in ethyl acetate of the absorption of ultrasonic waves along the saturation line, including the critical region, and new relaxation phenomena were established and investigated. For each relaxation region a

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APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

Nozdrev, V. F.

USSR/Acoustics - Ultrasonics, J-4

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35575

Author: Koshkin, N. I., Nozdrev, V. F., Sobolev, V. D., Shirkevich, M. G., Yakovlev, V. F.

Institution: None

Title: The Fixed-Distance Pulse Procedure, Its Physical Foundations, and Practical Application

Original Periodical: Akust. zh., 1956, 2, No 2, 161-166

Abstract: A substantiation is given for a newly developed procedure for pulse measurements of absorption of ultrasonic waves. Unlike the present widely-used procedure, in which it is necessary to move the radiator and the reflector relative to each other, the radiator and reflector remain stationary in this method. This circumstance not only simplifies to a considerable extent the construction of the measuring chamber and accelerates the measurement process, but leads also to a more successful utilization of the pulse method in the

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NOZDREV, V. F.

USSR/Acoustics - Ultrasonics, J-4

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35570

Author: Nozdrev, V. F.

Institution: None

Title: Concerning the Problem of Employing Ultrasonic Methods for the Investigation of Organic Substances in the Critical Region

Original Periodical: Akust. zh., 1956, 2, No 2, 199-204

Abstract: It is shown that there are no hysteresis phenomena in the speed of propagation of ultrasonic in the critical region of a liquid-vapor system, and the problem of the possibility of employing ultrasonic methods for the determination of certain parameters of the critical state (T_c, ρ_c) are discussed. A verification is made of the diameter of the wave impedance using new data on the density. New theoretical investigations of the liquid and gas states are used to establish the diameters of the sound velocity and the wave impedance. It is shown experimentally that one of

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

534.22 : 536.44

3081. INVESTIGATION OF THE ULTRASONIC PROPERTIES OF ETHYLACETATE IN THE CRITICAL REGION V.F.Nozdrev and V.D.Sobolev.

Akust. Zh., Vol. 2, No. 4, 379-81 (1956). In Russian.

Reports the measurements, by a pulse method, of the velocity and absorption of ultrasound in ethylacetate along the liquid, saturated vapour and superheated vapour lines. It was found for the liquid phase that the velocity decreases with rise of the temperature and is minimum at the critical temperature. A law of rectilinear diameters is found for the acoustic rigidity of the liquid and vapour phases of ethylacetate, which was established theoretically by Nozdrev (Dokl. Akad. Nauk SSSR, Vol. 92, No. 6, 1145-6, 1953).

(C.R.S.Manders)

Moscow Oblast Pedagog. Inst.

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V. F.

J-4

Category : USSR/Acoustics - Ultrasound

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 2162

Author : Nozdrev, V.F.

Title : Use of Ultrasonics in the Investigation of Generalized Critical Phenomena

Orig Pub : Primeneniye ul'traakustiki k issled. veshchestva. Vyp. 3. M., MOPI, 1956, 71-83

Abstract : Discussion of the use of ultrasonic measurements in the investigation of the generalized critical phenomena. Using liquid mixtures with a critical displacement temperature as an example, it is shown that the speed of sound (c) cannot be used as a general thermodynamic characteristic of critical liquid-liquid and liquid-vapor regions. Unlike the density and specific heat, the character of the variation of the speed of sound differs with the mixture. The behavior of the adiabatic-compressibility coefficient of liquid-vapor and liquid-liquid systems is also unique in the critical region of each system. In contradistinction, the specific heats and the sound-absorption coefficient (α) in the critical regions of the liquid-vapor system vary with the temperature in analogy with similar variations of the specific heat and of the sound absorption coefficient in the liquid-liquid system. It is necessary to take into account here the presence of relaxation phenomena in the critical region of liquid-vapor, causing the specific heat, computed by ultrasonic measurement, to

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

Category : USSR/Acoustics - Ultrasound J-4

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 2162

depend on the ultrasonic frequency. The derivative ($\partial \alpha / \partial T$) can be used as one of the characteristics of the generalized critical phenomena. It is noted that it is necessary to develop procedures and apparatus for precision measurement of c and α directly at the critical point and its vicinity. Bibliography, 19 titles.

Card : 2/2

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

Dokl.Akad.Nauk, 111, fasc.4, 808-810 (1956) CARD 2 / 2 PA - 1798

temperature of more than 300° was used. The absorption of ultrasound in ethyl acetate was measured from the absorption line at 7 frequencies in the interval of 5 - 15 kc.

From the data obtained the dependence of absorption on temperature and frequency was determined. α/ν^2 decreases sharply with an increase of frequency from 5 to 9 kc, and then decreases only slightly with a further increase of frequency. The frequency domain investigated here apparently comprises the domain in which a relaxation of spatial viscosity takes place and also the domain in which α/ν^2 is approximately constant. The frequency dependence of excess absorption found here confirms the existence of a relaxation process in ethyl acetate at temperatures of from 160 to 210°, which is shown by the existence of sharply marked maxima on the curves. This process is maintained up to the critical point. From the data obtained it was possible to compute also the characteristics of the found relaxation process. The relaxation time found in this way diminishes from $2{,}65 \cdot 10^{-8}$ to $2{,}12 \cdot 10^{-8}$ sec if temperature rises from 160 to 210° and is of the same order as the relaxation time in acetic acid. At present, ethyl acetate is carefully studied at the institute mentioned below by means of ultra-acoustic and spectroscopic methods.

INSTITUTION: Pedagogical Institute for the Moscow Area.

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V.F., prof., red.; KUDRYAVTSEV, B.B., prof., red.; ZHITOV, S.P., tekhn. red.

[Application of ultrasonics to research on materials; papers of the convention. No.4. No.6.] Primenenie ul'traakustiki k issledovaniiu veshchestva; trudy konferentsii. Pod redaktsiei V.F. Nozdreva i B.B. Kudriavtseva. Moskva, Izd. MOPI. No.4. 1957. 219 p. No.6. 1958. 239 p. (MIRA 11:10)

1. Vserossiyskaya konferentsiya professorov i prepodavateley pedagogicheskikh institutov. 4th.
(Ultrasonics) (Chemistry, Physical and theoretical)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

MOZDREV, V.F., prof., red.; KUDRYAVTSEV, B.B., prof., red.; ZHITOV, S.P., tekhn.red.

[Use of ultrasonics for research in matter; papers of the convention] Primenenie ul'traakustiki k issledovaniiu veshchestva; trudy konferentsii. Pod red. V.F.Mozdreva i B.B.Kudriavtseva. Moskva, Izd. MOPI. No.5. 1957. 161 p. (MIRA 11:4)

1. Vserossiyskaya konferentsiya professorov i prepodavateley pedagogicheskikh institutov. 4th.
(Ultrasonics)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V. F., Pedagog. Institute, Moscow USSR

"A Study of the Specific Heats of Organic Substances by an Ultrasonic method in the Critical and Suptracritical states,' a paper submitted at the Colloquium on the Optical and Acoustical Properties of compressed Fluids and Intermolecular Forces, Bellevue, France, 1-6 Jul 57.

B-3,087,136, 6 Sep 57.

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V.F

46-4-11/17

[illegible]: Nozdrev, V.F.

[illegible]: Internat[illegible] Optical [illegible] properties [illegible] Interacti[illegible] issl[illegible] z [illegible] shidkostey [illegible]

[illegible]DICAL: Akustic[illegible], [illegible], V [illegible].III, [illegible] ([illegible])

[illegible]TRACT: This is [illegible] the Internat[illegible] took place [illegible] Bellevue ([illegible]).

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Card 1/1 1. Compressed liquids-Conference-Report 2. Intermolecular interaction-Conference-Report

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V.F., professor.

Congress of acoustic engineers. Znan. sila 32 no.1:20-25 Ja '57. (MIRA 10:4)
(Sound--Congresses)
(United States--Description and travel)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV V.F.

24(1) PHASE I BOOK EXPLOITATION SOV/1627

Vsesoyuznaya akusticheskaya konferentsiya. 4th, Moscow, 1958

Referaty dokladov (Abstracts of Reports at the Fourth All-Union Acoustical Conference) Pt. 2. Moscow, Akad. nauk SSSR, 1958. 44 p. Number of copies printed not given.

Sponsoring Agency: Akademiya nauk SSSR.

Resp. Ed.: L.M. Brekhovskikh, Corresponding Member, USSR Academy of Sciences.

PURPOSE: These abstracts are intended for scientists and engineers interested in acoustics.

COVERAGE: This is a mimeographed collection of brief abstracts of papers presented at the Fourth All-Union Acoustical Conference. The subjects covered are propagation of sound in nonhomogeneous media, nonlinear acoustics, ultrasonics, acoustic measurements, electroacoustics and architectural and structural acoustics.

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APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V.F.

24(1) 12 PHASE I BOOK EXPLOITATION SOV/3150

Vserossiyskaya konferentsiya professorov i prepodavateley pedagogicheskikh institutov

Primeneniye ul'traakustiki k issledovaniyu veshchestva; trudy konferentsii, Vyp. 7 (Application of Ultrasonics for Analysis of Substances; Transactions of the All-Russian Conference of Professors and Teachers of Pedagogical Institutes, Nr 7) Moscow, Izd. MOPI, 1958. 283 p. 1,500 copies printed.

Tech. Ed.: S. P. Zhitov; Eds.: V. F. Nozdrev, Professor, and B. B. Kudryavtsev.

PURPOSE: This book is intended for physicists, technicians, aeronautical engineers and other persons concerned with ultrasonics.

COVERAGE: The book contains twenty eight articles which treat ultrasonic phenomena in five general categories: 1) historical data on the development of ultrasonics in the Soviet Union over the past forty years; 2) the speed of sound in suspensions of varying concentration and number and type of components and the relationship between sound velocity and the compressibility of electrolytes;

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3) ultrasonic investigations of physical and chemical properties of materials and the determination of physical and chemical constants, e. g. density of aqueous solutions, adiabatic compressibility, molarity of solutions (with given temperatures), viscosity, surface tension, saturation pressure and also ultrasonic investigation of the carbon content and petrographic state of coal; 4) industrial applications of ultrasonics, e. g. emulsification of reagents, cleansing of textile fibers and enhancing the susceptibility of some synthetic fibers to dyeing, etc.; and 5) apparatus which produce ultrasonic waves. No personalities are mentioned. References accompany each article.

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24(1) PHASE I BOOK EXPLOITATION SOV/1211

Nozdrev, Vasiliy Fedorovich

Primeneniye ul'traakustiki v molekulyarnoy fizike (Application of Ultrasonics in Molecular Physics) Moscow, Fizmatgiz, 1958. 456 p. 5,000 copies printed.

Eds.: Suslov, B.N., and Ye.B. Kuznetsova. Tech. Ed.: Murashova, N.Ya

PURPOSE: This book is intended for post-graduate research students and students of advanced courses in the field of molecular physics and acoustics. It may also serve as an aid to engineers and techoicians in different branches of industry.

COVERAGE: This book deals with the physical principles of the optical and impulse methods of measuring the velocity and coefficient of absorption of ultrasonic waves in liquids and gases. Special attention is given to apparatus and methods of measuring the velocity and coefficient of absorption of ultrasonic waves in liquids and their vapors at high temperatures and pressures, including the critical region. Tables of acoustic properties, constants, and parameters of many substances are included. Research data from Soviet institutions, foreign institutions and individual scientists which have a dir-

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and B.B. Kudryavtsev for carefully reviewing the manuscript; and Candidates of Sciences N.I. Koshkin, L.F. Lepeshin, V.F. Yakovlev, N.A Dmitriyeva, post-graduate student V.M. Kovaleva, and L.G. Belinskaya for assistance in preparing the manuscript for publication. There are 280 references, of which 178 are Soviet, 1 Dutch, 64 English, 14 French, 21 German and 1 Scandinavian.

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NOZDREV, V. F.

"Investigation of Critical State by an Acoustic Method

report presented at the 6th Scientific Conference on the Application of Ultrasound in the aInvestigation of Matter, 3-7 Feb 1958. Moscow.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V.F.

MIKHAYLOV, L. G., KOSHKIN, N. I., LUTOVININ, V. S., NOZDREV, V. F. and STAROSTINA, O. A.

"Absorption of Sound in Acetates."

report presented at the 6th Sci. Conference on the Application of Ultrasound in the investigation of Matter, 3-7 Feb 1958, organized by Min. of Education RSFSR and Moscow Oblast Pedagogic Inst. im. N. K. Krupskaya.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V. E., KOSHKIN, N. I. and GORBUNOV, M. A.

"Study of Physic-Chemical Properties of Complex Thermodynamical Systems by Ultrasonic Methods."

paper presented at the 4th All-Union Conf. on Acoustics, Moscow, 2 May - 2 Jun 5 .

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V. F. and KALYANOV, B. I.

"Investigation of Ultrasonic Velocity and Absorption in Liquids of Constant Density by the Pulse Method."

paper presented at the 4th All-Union Acoustics Conf. Moscow, [illegible] May - [illegible] .

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V.F.; YAKOVLEV, V.F.; KOSHKIN, N.I.; GORBUNOV, M.A.

Certain new possibilities for using ultrasonic pulses for investigating substances. Izv. vys. ucheb. zav.; radiotekh. no.1:35-42 '58. (MIRA 11:4)

1. Rekomendovana kafedroy obshchey fiziki Moskovskogo oblastnogo pedagogicheskogo instituta.
(Ultrasonics) (Liquids)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V. F.

AUTHORS: Kal'yanov, B.I., and Nozdrev, V.F. 46-4-2-14/20

TITLE: Investigation of the Frequency-Temperature Dependence of the **Coefficient of Absorption of Ultra - sound of Methyl Acetate** in the Critical Region (Issledovaniye chastotno-temperaturnoy zavisimosti koeffitsiyenta pogloshcheniya ul'trazvuka v kriticheskoy oblasti metilatsetata)

PERIODICAL: Akusticheskiy Zhurnal, 1958, Vol IV, Nr 2, pp 197-199 (USSR)

ABSTRACT: Only one paper (Ref 1) reports the frequency dependence of the absorption coefficient α of ethyl acetate in the critical region. The present author extended this work to the frequency dependence of α in the critical region for methyl acetate. Frequency dependence of α for methyl acetate in the temperature interval -40°C to +40°C was reported in Ref 2. Measurements on methyl acetate (critical temperature 233.7°) were made at 9 frequencies in the region 5-14 Mc/s. The authors used a pulse technique (Ref 3) to measure the coefficient of absorption α. In this technique two reflectors are placed at different distances from a quartz generator. At temperatures 10-20° below the critical the pulse corresponding to the farther reflection disappears because of strong absorption and

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46-4-2-14/20

Investigation of the Frequency-Temperature Dependence of the Coefficient of Absorption of Ultra-sound of Methyl Acetate in the Critical Region

then the method of one fixed distance is used. The results of measurements in the form of dependence of α/ν^2 on frequency ν and on temperature in the critical region are given in Fig 1. The value of α/ν^2 depends greatly on frequency and the observed decrease of α/ν^2 with an increase of ν is characteristic of relaxational processes. This is also confirmed by the behavior of the product of the excess absorption and wavelength, $\mu = \alpha_{excess} \cdot \lambda$ (Fig 2). The maximum value of μ near the critical point decreases somewhat (Fig 3); the frequency corresponding to the maximum of μ is approximately 7.1 Mc/s. The results reported show that the frequency dependence of α/ν^2 which was first obtained for methyl acetate in the region -40°C to +40°C holds at temperatures up to the critical point. There are 3 figures and 5 Soviet references.

ASSOCIATION: Moskovskiy oblastnoy pedagogicheskiy Institut imeni N.K. Krupskoy (Moscow Regional Pedagogical Institute imeni N.K. Krupskaya)

SUBMITTED: November 10, 1957

Card 2/2 1. Methyl acetate—Sound—Absorption—Theory 2. Methyl acetate Temperature effects

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V. F.

46-4-2-17/20

AUTHOR: Nozdrev, V.F.

TITLE: On the Problem of Absorption of Ultrasonic Waves in Ethyl Acetate (K voprosu o pogloshchenii ul'trazvukovykh voln v etilatsetate)

PERIODICAL: Akusticheskiy Zhurnal, 1958, Vol IV, Nr 2, pp 202-204 (USSR)

ABSTRACT: In the Laboratory of Molecular Acoustics of the Moscow Regional Pedagogical Institute imeni N.K. Krupskaya, studies of absorption of ultrasonic waves in esters of carbonic and formic acids were carried out during the last few years. These studies showed both in ethyl acetate (Refs 1-2) and in methyl acetate (Ref.3) the presence of two closely spaced peaks on the α/ν curve in the 3-20 Mc/s region. This would indicate that two relaxation regions are present. It does not agree with the classical relaxation theory, according to which such closely spaced maxima cannot be resolved. In an attempt to shed further light on this problem the author repeated measurements on absorption of ultrasound in ethyl acetate by pulse and optical methods. In the pulse method the usual technique of a movable reflector was used. In optical measurements of the absorption coefficient an apparatus with a photo-element and a d.c. amplifier was used (Ref 6). Measurements

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46-4-2-17/20

On the Problem of Absorption of Ultrasonic Waves in Ethyl Acetate

were made at temperatures of +20°C, +2°C and -20°C at frequencies of 3-30 Mc/s. The conditions of experiment were very carefully controlled to minimise all possible errors. Ethyl acetate used had the following properties: density at 20°C was 0.9014, boiling point was 76—77°C and the refractive index at 20°C was n_D = 1.37209. The errors in the results obtained were 15-20% at low frequencies and 7-8% at 10-25 Mc/s. The results for 20°C are shown in Fig 1. The present results, shown by open circles, are in good agreement with the results obtained earlier by the present author and Sultanov (Refs 1-2), shown by crosses. The errors of measurement of the absorption coefficients at 1-6 Mc/s are so great that one can hardly regard them as reliable. Mikhaylov's results (see pp. 199-200 of this issue) are shown in Fig 1 as black dots. Mikhaylov used a piezo-quartz wedge as the sound source which complicates the experiment and increases the errors. The present author found that it is not possible to produce a uniform acoustic field using a quartz wedge. Fig 2 shows the field obtained using such a wedge at 4.5 Mc/s in toluene. New methods which would give an accuracy of 3-5% are required to measure absorption at low frequencies. In the author's laboratory a multiple-transmission pulse method is being developed and it is hoped that this method will

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On the Problem of Absorption of Ultrasonic Waves in Ethyl Acetate

be useful in the region 1-10 Mc/s. The author thanks O. Starostina, V. Lutovinin and V. Matveyev for their help in carrying out the measurements. There are 2 figures and 6 references, 4 of which are Soviet and 2 American.

ASSOCIATION: Moskovskiy oblastnoy pedagogicheskiy institut imeni N.K. Krupskoy (Moscow Regional Pedagogical Institute imeni N.K. Krupskaya)

SUBMITTED: March 17, 1958

Card 3/3 1. Waves--Absorption 2. Ethyl acetate--Applications

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

SOV/124 58 11 11980

Translation from: Referativnyy zhurnal Mekhanika 1958, Nr 11, p 6 (USSR)

AUTHOR: Nozdrev, V. F.

TITLE: Molecular Acoustics at the Second International Acoustics Congress (Molekulyarnaya akustika na Vtorom Mezhdunarodnom akusticheskom kongresse)

PERIODICAL: V sb.: Primeneniye ul'traakust. k issled veshchestva. Nr 6 Moscow, 1958, pp 11 25

ABSTRACT: Bibliographic entry

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

NOZDREV, V. F.

24(1) PHASE I BOOK EXPLOITATION SOV/3352

Vserossiyskaya konferentsiya professorov i prepodavateley pedagogicheskikh institutov.

Primeneniye ul'traakustiki k issledovaniyu veshchestva; trudy konferentsii, vyp. 8 (Application of Ultrasonics in the Study of Matter; Transactions of a Conference, Nr. 8) Moscow. Izd. MOPI, 1959. 170 p. 1,000 copies printed.

Tech. Ed.: S. P. Zhitov.

PURPOSE: The book is intended for physicists, particularly those specializing in the field of ultrasonics.

COVERAGE: This is a collection of 12 articles dealing with problems of acoustics, ultrasonics, and molecular physics. References are given at the end of each article.

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Predvoditelev, A. S. Dispersion of Acoustic Waves in Rarefied Gases. Article I. 19

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NOZDREV, V F.

05218
SOV/142-2-3-26/27

9(3,9), 24(1)

AUTHOR: Sokolova, Ye.S., Candidate of Technical Sciences

TITLE: A Scientific Conference on the Application of Ultrasound in the Investigation of Matter

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, 1959, Vol 2, Nr 3, p 386 (USSR)

ABSTRACT: From February 10-14, 1959, the Seventh Scientific Conference on the Application of Ultrasound for the Investigation of Matter was convened in Moscow at the Moskovskiy Oblast'noy pedagogicheskiy institut, imeni N.K. Krupskoy (Moscow Oblast Pedagogical Institute, imeni N.K. Krupskaya). About 500 vuz instructors from Moscow, Leningrad, Krasnoyarsk, Kaunas, Stalingrad, and scientists from the German Democratic Republic and Poland participated in the conference work. More than 80 papers were read at the conference. The following sections were organized at this conference: molecular acoustics, industrial application of ultrasound research methods, propagation of ultrasound in solid bodies, demonstration of acoustical phenomena in schools and vuzes. At the first plenary session, the paper of V.F. Nozdrev was read "Physical Principles of Tech-

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

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A Scientific Conference on the Application of Ultrasound in the Investigation of Matter

nological Application of Low-Amplitude Molecular Acoustics". B.B. Kudryavtsev read his paper "The Application of Ultrasound in Industry". The following papers were read at the plenary session: A.S. Predvoditelev "The Sound Wave Dispersion in Rarefied Gases"; Dr. Rothard, German Democratic Republic, "Ultrasonic Investigation of Silica Gel and Its Derivatives"; M. Kve', Poland, "The Application of the Molecular Kinematic Theory of Gases to the Problem of Waves with a Limited Amplitude"; V.S. Akulov, "The Theory of Roschell-type Salts", and a paper of Professor F. Kucher, Poland. Research in the field of ultrasound wave propagation in liquids was the subject of the papers of B.B. Kudryavtsev, S.A. Balyan, L.G. Belinskaya, O.A. Starostina, V.M. Zakharenova, V.D. Kasparyants, M.G. Shirkevich, L.F. Vereshchagina, N.L. Bryukhatova, and N.A. Golosova. The paper jointly produced by B.B. Kudryavtsev, V.F. Nozdrev, N.I. Koshkin and V.F. Yakovlev was devoted to the consideration of problems in the development of molecular acoustics. Dr Rothard delivered a report on the dynamic equation of the state of strongly viscous liquids. The ultrasonic oscillations were subject of the reports of Yu.M. Bystrov, A.N. Trofimov, A.I.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237620006-4

05218
SOV/142-2-3-26/27

A Scientific Conference on the Application of Ultrasound in the Investigation of Matter

Ryazanov, L.B. Pirozhnikov, L.F. Lependin, F.L. Lokshin, I.L. Cherchenko and others. The report of L.A. Ol'shanskiy, A.V. Mordvintseva and others dealt with the application of ultrasound in welding. In the sections of acoustic research methods, the papers of the following authors were read: B.I. Kal'yanov, V.F. Yakovlev, A.D. Zipir and V. Kovaleva. These reports dealt with pulse measuring methods of velocity and absorption of ultrasound. The propagation of ultrasound in solid bodies was the subject of the reports of L.G. Merkulov, V.S. Cherkashin, L.A. Yakovlev, A.I. Drokin, A.K. Matveyev and others. In the section dealing with acoustical demonstration at schools and vuzes, the following reports were delivered: M.A. Grabovskiy and V.P. Topolev, "Experimental Demonstration of Ultrasound"; S.I. Mel'nikov, "The Experimental Demonstration of Sound"; S.N. Prokof'yev, "An Acoustic Radiometer for Demonstration Purposes". The annual conference convened at MOPI showed the rising interest in problems of applying ultrasound to the investigation of matter. The number of participants and the number of subjects is rising steadily.

Card 3/3

SUBMITTED: April 13, 1959

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SOV/46-5-3-18/32

24(1)

AUTHORS: Kal'yanov, B.I. and Nozdrev, V.F.

TITLE: An Investigation of the Velocity and the Absorption Coefficient of Ultrasound in Ethyl Acetate at Constant Density (Issledovaniye skorosti i koeffitsienta pogloshcheniya ul'trazvuka v etilatsetate pri postoyannoy plotnosti)

PERIODICAL: Akusticheskiy zhurnal, 1959, Vol 5, Nr 3, pp 370-371 (USSR)

ABSTRACT: The velocity and absorption of ultrasound in ethyl acetate was measured in the frequency interval 10-33 Mc/s at constant density of 0.867 g/cm^3. The authors used a pulse technique with two fixed distances l_1 and l_2 between a quartz (radiating in two directions) and two reflectors (Ref 3). The time interval between two pulses which passed the distances l_1 and l_2 gave the ultrasound velocity and the difference in their amplitudes was used to deduce the absorption coefficient. The pressures developed at various temperatures under the conditions of constant density are given in a table on p 370. Measurements were carried out up to 160°C (~1000 atm). Fig 1 shows the experimental values of the ultrasound velocity in m/sec as a function of temperature; the dashed curve shows the velocity of ultrasound in ethyl acetate along the saturation line. Fig 1 shows that above 50°C the rate of fall of the velocity of ultrasound with temperature

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An Investigation of the Velocity and the Absorption Coefficient of Ultrasound in Ethyl Acetate at Constant Density

is decelerated, the velocity then passes through a minimum and finally starts to rise practically linearly with temperature. The main results obtained on absorption of ultrasound are listed in the table on p 370 which gives the values of $\alpha/\nu^2 \times 10^{17}$ (where ν is the frequency) as a function of temperature, pressure and frequency. Between 20 and 50°C the value of α/ν^2 rises with temperature at all frequencies, and the results in this range of temperatures are equivalent to those obtained in the study of the absorption coefficient along the saturation line. When ρ becomes const., between 60 and 160°C, the value of α/ν^2 falls with rise of temperature. At all temperatures the value of α/ν^2 decreases with rise of frequency: the frequency dependence is fairly accurately described by the well-known relaxation formula (Fig 2)

$$\alpha/\nu^2 = B + A/[1 + (\nu^2/\nu_0^2)]$$

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where $\nu^0 = 14 \pm 1$ Mc/s at ϱ = const. from 60 to 160°C. There are 2 figures, 1 table and 3 references, 1 of which is Soviet, 1 English and 1 French.

ASSOCIATION: Moskovskiy oblastnoy pedagogicheskiy institut im. N.K. Krupskoy (Moscow Regional Pedagogical Institute imeni N.K. Krupskaya)

SUBMITTED: February 25, 1959

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ZALIVCHIY, V.N.; KOSHKIN, N.I.; NOZDREV, V.F.

New possibilities of the pulse method of two fixed distances. (MIRA 14:6)
Akust.zhur. 5 no.4:493-495 '59.

1. Moskovskiy oblastnoy pedagogicheskiy institut imeni N.K. Krupskoy.

(Ultrasonic waves)

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PHASE I BOOK EXPLOITATION SOV/5469

Soveshchaniye po kriticheskim yavleniyam i flyuktuatsiyam v rastvorakh. Moscow, 1960.

Kriticheskiye yavleniya i flyuktuatsii v rastvorakh; trudy soveshchaniya, yanvar' 1960 g. (Critical Phenomena and Fluctuations in Solutions; Transactions of the Conference, January 1960) Moscow, Izd-vo AN SSSR, 1960. 190 p. 2,500 copies printed.

Sponsoring Agencies: Akademiya nauk SSSR. Otdeleniye khimicheskikh nauk. Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova. Khimicheskiy fakul'tet.

Responsible Ed.: M. I. Shakhparonov, Doctor of Chemical Sciences, Professor; Ed. of Publishing House: E. S. Dragunov; Tech. Ed.: S. G. Tikhomirova.

PURPOSE : This collection of articles is intended for scientific personnel concerned with chemistry, physics, and heat power engineering.

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Critical Phenomena and Fluctuations SOV/5469

COVERAGE: The book contains 24 of the 26 reports read at the Conference on Critical Phenomena and Fluctuations in Solutions organized by the Chemical Division of Moscow State University, January 26-28, 1960. The reports contain results of investigations carried out in recent years by Soviet physicists, chemists, and heat power engineers. The Organizing Committee of the Conference was composed of Professor Kh. I. Amirkhanov, A. Z. Golik, I. R. Krichevskiy (Chairman), V. K. Semenchenko, A. V. Storonkin, I. Z. Fisher, and M. I. Shakhparonov (Deputy Chairman). References accompany individual articles.

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