ACC NR: AP6015539

zation. This confirms the assumption that retardation of polymerization by cis-stilbene is caused by rupture of chains and not by reduced rate of initiation. The author thanks Kh. S. Bagdasar'yan for his interest in this work and for the discussions of the results. The author also thanks A. L. Prokhod and L. I. Samokhvalov for their assistance in the work. Orig. art. has: 5 figures, 11 formulas, and 1 table. [JPRS]

SUB CODE: 07, 20 / SUBM DATE: 26Oct64 / ORIG REF: 005 / OTH REF: 005

Card 3/3

L 38700-66 EWT(m)/EWP(j) GG/FM
ACC NR: AP6017525 (A) SOURCE CODE: UR/0379/65/001/006/0796/0800

AUTHOR: Kardash, N. S.; Krongauz, V. A.

ORG: Physico-Chemical Institute im. L. Ya. Karpov, Moscow (Fiziko-khimicheskiy institut)

TITLE: Distribution of primary energy absorption during radiolysis and photolysis of solutions of acyl peroxides

SOURCE: Teoreticheskaya i eksperimental'naya khimiya, v. 1, no. 6, 1965, 796-800

TOPIC TAGS: gamma irradiation, UV irradiation, benzoyl peroxide, photolysis, chemical decomposition

ABSTRACT: Primary and sensitized photochemical and radiolytic decomposition of diacyl peroxides (β-naphthylpropionyl, naphthoyl, and benzoyl) in benzene was investigated. Radiolysis and photolysis were carried out on air-free solutions. Doses of γ-radiation from a Co^{60} source were equal to $4.2 \cdot 10^{18}$ v. The UV irradiation (λ = 303-313 millimicrons) was supplied by a PRK-2 mercury lamp. The dependence of irradiation efficiency upon solution concentrations and absorption and flourescence spectra is graphed. It was found that the effectiveness of the energy transfer is greater for peroxides containing aromatic groups than for dipropionyl

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L 38700-66
ACC NR: AP6017525

peroxide. This is explained in terms of the inductive-resonance energy transfer which is facilitated by the aromatic groups. An increase in the overall energy transfer of the dipropionyl peroxide in benzene resulting from addition of naphtoyl peroxides is attributed to the great stability of the excited naphthoyl peroxide molecules as well as to the contribution of the aromatic groups to the energy transfer. The authors thank professor Kh. S. Bagdasar'yan for interest in the work and discussion of the results and R. G. Matveyeva for assisting in the work. Orig. art. has: 2 figures, 1 table and 1 formula.

SUB CODE: 07/ SUBM DATE: 10Jun65/ ORIG REF: 008/ OTH REF: 003

Card 2/2

L 06517-67 EWT(m)/EWP(j) IJP(c) GG/RM
ACC NR: AP7000490 SOURCE CODE: UR/0020/66/168/001/0154/0157

SAMOKHVALOVA, L. I., KRONGAUZ, V. A., Physicochemical Institute imeni L. Ya. Karpov (Fiziko-khimicheskiy institut)

"Determination of the Radiation Yield of the Formation of Triplet Molecules in the Radiolysis of Benzene"

Moscow, Doklady Akademii Nauk SSSR, Vol 168, No 1, 1966, pp 154-157

Abstract: The benzene-sensitized reaction of trans-cis isomerization of stilbene was used to determine the radiation yield of triplet molecules under the action of gamma rays upon benzene. The radiation yields of the isomerization of stilbene was found to increase with increasing concentration of the solutions approximately up to 10^{-3} M; with further increasing concentration, the yields reached limiting values, and remained constant within the range of concentrations investigated (up to 0.1 M). The limiting radiation yield of the isomerization of trans-stilbene in cyclohexane was greater than that in benzene. The fact that isomerization of trans-stilbene occurs not only in benzene, but also in cyclohexane, which has no stable excitation levels, indicates that it is due substantially to interaction of stilbene with radicals formed in the radiolysis of the solvents. At stilbene concentrations less than 10^{-3} M, the reaction of primary free radicals with stilbene competes with their mutual recombination, whereas at higher stilbene concentrations, all the primary free radicals formed from the solvent cause isomerization of stilbene. Isomerization of stilbene induced by free radicals was inhibited by conducting the

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UDC: 541.143 - 541.15

0923 1205

L 06517-67
ACC NR: AP7000190

radiolysis of stilbene solutions in benzene and cyclohexane in the presence of additions of vinyl monomers: styrene and methylmethacrylate, which are effect radical acceptors. A comparison with the sensitized photolysis of benzene solutions of trans-stilbene in the presence of styrene and methylmethacrylate indicates that under the action of gamma rays, a substantial fraction of the triplet benzene molecules that induce isomerization of styrene are formed from higher excited states or in the neutralization of ions. This paper was presented by Academician S. S. Medeyedev on 17 August 1965. The authors thank Professor Kh. S. Bagdasar'yan for his interest in the work and for discussions of the results. Orig. art. has: 2 figures.
[JPRS: 37,023]

TOPIC TAGS: radiation chemistry, benzene, isomerization, free radical

SUB CODE: 07 / SUBM DATE: 29 Jun 65 / ORIG REF: 008 / OTH REF: 006

Card 2/2 LS

ACCESSION NR: AP4025090 S/0139/63/000/006/0090/0094

AUTHORS: Parfianovich, I. A.; Shuraleva, Ye. I.; Krongauz, V. G.

TITLE: On photostimulated luminescence in pure NaCl crystals

SOURCE: IVUZ. Fizika, no. 6, 1963, 90-94

TOPIC TAGS: optical flash, M-band absorption, x-ray tube, energy transmission phase, F-center, photostimulated luminescence

ABSTRACT: The optical flash from stimulated F- and M-band absorptions in pure natural NaCl crystals has been investigated. The specimens included one untreated NaCl, two heat-treated crystals at 300 and 760C, and another grown from a melt. Excitation was supplied from an x-ray tube BSV-2Cu (50 kv, 10ma) through a 0.1-mm thick aluminum filter at room temperature. It was found that the mechanism involved in the process of flashing is not only the general type but also involves a complex process, including the excitation energy transmission phase from F-centers to other electron centers. It is concluded that the presence of two photostimulated luminescence mechanisms is connected with nonuniform distribution in recombination centers and capture centers in the crystal volume. Orig. art. has:

Card 1/2

ACCESSION NR: AP4025090

4 figures.

ASSOCIATION: Irkutskiy gosuniversitet imeni A. A. Zhdanova (Irkutsk State University)

SUBMITTED: 18Jul62 DATE ACQ: 14Feb64 ENCL: 00

SUB CODE: PH NO REF SOV: 002 OTHER: 003

Card 2/2

L 13099-63 EWT(l)/EWP(q)/EWT(m)/BDS AFFTC/ASD WH/JD

ACCESSION NR: AP3003413 S/0051/63/015/001/0079/0082

AUTHOR: Vilutis, E.S.; Kronganz, V.G. 57

TITLE: Temperature quenching of the luminescence of Siberian diamonds 15 27

SOURCE: Optika i spektroskopiya, v.15, no.1, 1963, 79-82

TOPIC TAGS: luminescence quenching, diamond, light sun storage, luminescence mechanism

ABSTRACT: Investigation of temperature quenching of luminescence is of interest in that it helps understand the nature of the luminescence mechanism in crystal phosphors. Hitherto there have been few studies of temperature quenching of the luminescence of diamonds, and these have been concerned mainly with quenching of their photoluminescence. Moreover, the published data are often conflicting and contradictory. Accordingly, the authors studied quenching of the x-ray and photo stimulated luminescence of Siberian diamonds. The temperature dependence of the roentgenoluminescence was studied in the range from -196 to +200°. The emission was detected by means of an FEU-17 photomultiplier. Under x-ray excitation some diamonds store appreciable light sums at room temperature and glow-curve peaks appear at 90 and 240° (blue) and 80 and 230° (yellow). Some specimens also exhibit glow-curve peaks at low temperatures. On the other hand, some specimens (mainly spinel twins) do not store light sums. Luminescence versus temperature curves for

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L 13099-63
ACCESSION NR: AP3003413

storing and non-storing diamond specimens are shown; the curves indicate strong quenching. Under x-ray stimulation the emission drops to zero at 160-180°. Quenching is also observed in the case of photostimulation (filtered UV from a mercury discharge tube), but in this case the temperature of intense weakening is higher (250 to 400°) and complete suppression is not observed even at 500°. Interpretation of the experimental results is hampered by lack of a clear understanding of the mechanism of luminescence in diamonds. The possible mechanisms of light sum storage are discussed; it is suggested that in diamonds storage may occur without creation of free electrons and holes. The authors conclude that the differences as regards temperature variation of the luminescence brightness observed for different diamond specimens and under different forms of excitation may be explained by the fact that there occur in diamonds different processes leading to emission and quenching of luminescence. Orig.art.has: 1 figure.

ASSOCIATION: none

SUBMITTED: 23Jul62 DATE ACQ: 30Jul63 ENCL: 00

SUB CODE: PH NO REF SOV: 006 OTHER: 004

Card 2/2

ACCESSION NR: AT3002218

S/2941/63/001/000/0185/0189

AUTHORS: Parfianovich, I. A.; Sharaleva, Ye. I.; Krongaus, V. O. 63

TITLE: On complex mechanism of flash stimulated by F-band absorption in NaCl

SOURCE: Optika i spektroskopiya; sbornik statey. v. 1: Lyuminestsentsiya. Moscow, Izd-vo AN SSSR, 1963, 185-189

TOPIC TAGS: F-band, absorption, irradiation, optical flash

ABSTRACT: F-band absorption study was made of the change in optical flash brightness in pure crystalline NaCl after being stimulated by x-rays (50 kv 18 ma) at room temperature. The change in flash intensity and the absorption coefficient was obtained both by pulse stimulation and continuous irradiation. The results are depicted in Fig. 1 (see enclosure). The change in flash brightness is related to the presence of blocking centers in the crystal and to an intermediate process necessary for radiation recombination. The rise in optical flash brightness under pulse stimulation is also explained by the phenomenon of the thermal decay of these blocking centers. Orig. art. has: 4 figures.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 19 May 63 ENCL: 01

SUB CODE: PH NO REF SOV: 002 OTHER: 000

Card 1/2

S/051/63/014/004/010/026
E039/E420

AUTHORS: Parfianovich, I.A., Shuraleva, Ye.I., Krongauz, V.G.

TITLE: New data on the thermal and optical stability of M centers

PERIODICAL: Optika i spektroskopiya, v.14, no.4, 1963, 513-515

TEXT: The aim of the work is to obtain a more detailed elucidation of the connection of the first peak of the thermal luminescence curve with the M absorption band. A complex study of the optical and thermal disintegration of F and M centers is carried out in parallel with photo and thermal stimulation of luminescence in phosphors excited by X radiation. Pure NaCl crystals and NaCl-Ni and NaCl-Tl phosphors are used. It is shown that the first peak of the thermal luminescence curve is not connected with M centers but depends somehow on other centers which are noticeably less thermally stable than M centers. On the other hand it is evident that M centers always exist in crystals when F centers are present. This is understandable on the basis of H.Pick's model (Zs. Phys., v.159, 1960, 69) according to which M centers are formed from two F centers situated along the (110) axis. It is

New data on the thermal ... S/051/63/014/004/010/026
E039/E420

Known (B. Faraday et al, Phys. Rev., Letters, v.7, 1961, 57) that in crystals excited by X-rays at liquid nitrogen temperature and heated up to room temperature that the concentration of M centers increases almost 50 times on account of their formation from F centers. This process probably occurs when phosphors irradiated with X-rays at room temperature are heated up to 100°C. At this temperature the formation and destruction of M centers will occur simultaneously. There are 2 figures.

SUBMITTED: July 9, 1962

Card 2/2

PARFIANOVICH, I.A.; SHURALEVA, Ye.I.; KRONGAUZ, V.G.

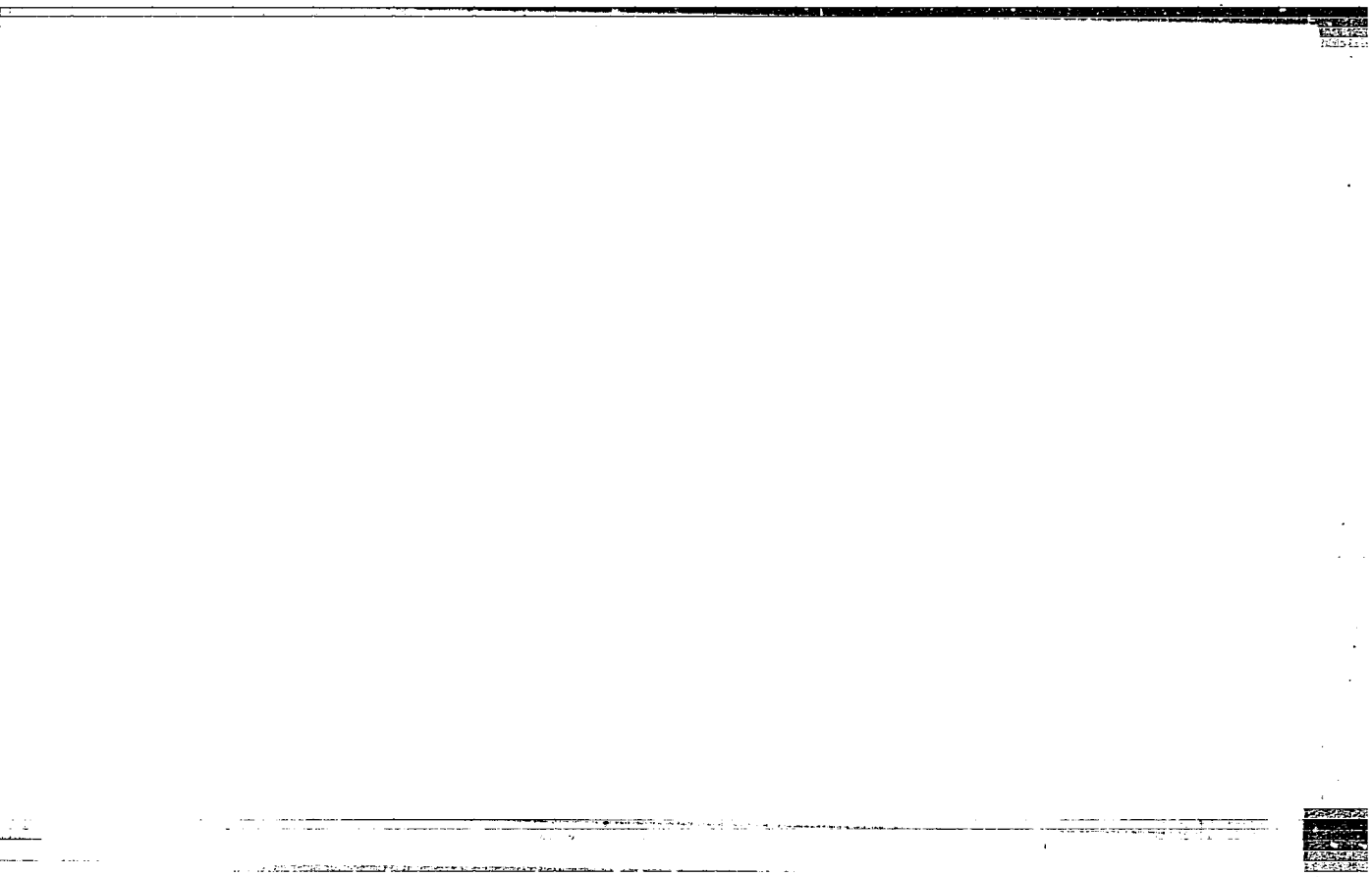
Stimulated photoluminescence of pure NaCl crystals. Izv. vys. ucheb. zav.; fiz. no.6:90-94 '63. (MIRA 17:2)

1. Irkutskiy gosudarstvennyy universitet imeni Zhdanova.

PARFIANOVICH, I.A.; KROIKGAUZ, V.G.; SHURALEVA, Ye.I.

Effects of the increase in brightness of optical flashes in pure NaCl crystals. Izv.vys.ucheb.zav.; fiz. no.3:66-70 '63.
(MIRA 16:12)

1. Irkutskiy gosudarstvenny universitet imeni Zhdanova.



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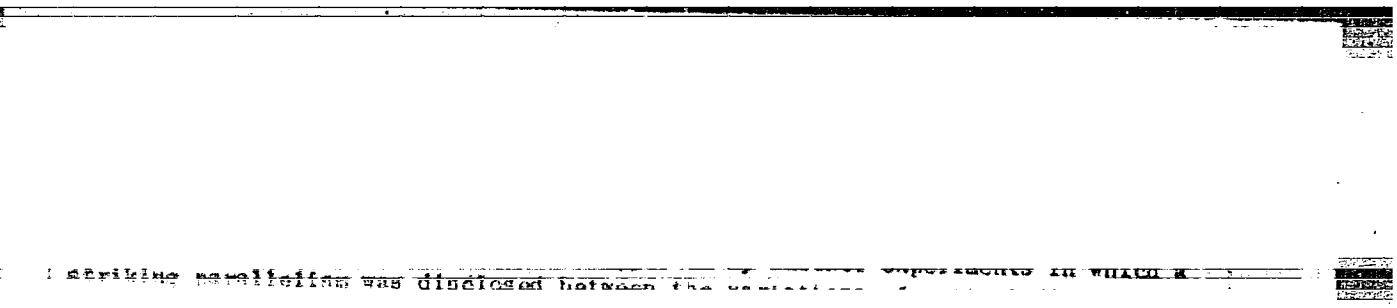

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APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826620017-9"

L 26495-66 EWT(1)/EWT(m) IJP(c) JD/JG

ACC NR: AP6013056 SOURCE CODE: UR/0048/66/030/004/0581/0589

AUTHOR: Parfianovich, I. A.; Shuraleva, Ye. I.; Penzina, E. E.; Krongauz, V. G.

ORG: Irkutsk State University (Irkutskiy gosudarstvennyy universitet)

TITLE: Roentgenoluminescence of and trapping levels in NaCl and KCl crystals activated by Ag and Cu /Report, Fourteenth Conference on Luminescence held in Riga, 16-23 September 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 4, 1966, 581-589

TOPIC TAGS: luminescence, thermoluminescence, luminescence center, sodium chloride, potassium chloride, crystal phosphor, ionizing radiation, roentgenoluminescence, activated crystal, temperature dependence, electron trapping

ABSTRACT: One of the outstanding problems in the physics of ionizing radiations is elucidation of the mechanism of roentgenoluminescence (RL). Accordingly, the purposes of the present study were to investigate the RL mechanism in Ag-activated NaCl and KCl crystals and to obtain new, comparative data on RL of like crystals activated by Cu, in view of the similarity of this activator to Ag. The work included determination of the temperature dependence of the stationary RL and recording thermostimulated and light-stimulated emission curves. The experimental data are presented mainly in the form of graphis: plots of build-up of RL, temperature dependences of the RL and glow curves, Ausleuchtung curves, optical flash curves, and absorption curves. At temperatures

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L 26495-66
ACC NR: AP6013056

above 100° C the RL spectra of all the phosphors have a principal peak associated with type I centers. In NaCl:Ag and NaCl:Cu also exhibit an emission identified with type II centers. The KCl phosphors, however, in addition to the type I center luminescence, emit visible bands that cannot be identified with type II centers. In general, the stationary RL is made up of two components - a short-lived and a long-lived one - which are characterized by different relative intensities at different temperatures. The experimental data are analyzed at some length and some hypotheses are proposed. It is noted that the characteristic green phosphorescence of KCl:Ag is also observed, although in weaker form, in the case of "pure" KCl crystals. In view of the temperature range in which this green afterglow is evinced it is inferred that this emission is due to recombination of free electrons with V_k centers, for holes are immobilized at low temperatures. However, holes may participate in other forms of green luminescence. In general, there apparently participate in the roentgenoluminescence of alkali halide phosphors several different types of centers (including oxygen centers), some of which are more active in one temperature range, and some in another; both electron and hole processes are significant (above the temperature of self-trapping of holes). Orig. art. has: 5 figures.

SUB CODE: 20/ SUBM DATE: 00/ ORIG REF: 009/ OTH REF: 011

Card 2/2

L 42899-66 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6018446 SOURCE CODE: UR/0051/66/020/006/1058/1062

AUTHOR: Parfianovich, I. A.; Krongauz, V. G.

63
B

ORG: none

TITLE: X-ray luminescence and optical flash on KJ-Tl phosphor

SOURCE: Optika i spektroskopiya, v. 20, no. 6, 1966, 1058-1062

TOPIC TAGS: phosphor, luminescence, recombination luminescence, x ray effect, electron hole, potassium compound, thallium compound, thermal activation, optic brightness / KJ-Tl phosphor

ABSTRACT: The authors investigated the dependence of x-ray and light-generated luminescence and optical flashes in KJ-Tl phosphor on changes in ambient temperature. The experimental data provide satisfactory evidence of the important role played by the position of the localized holes with respect to the thallium centers. In addition, the data confirm the electron hole mechanism of energy transport to the luminescence centers although they do not preclude the possibility of an exciton phase as the means of transfer, especially in the final stages of the investigated process. The experiments consisted of exposing specimens of KJ-Tl phosphor to x-rays and then observing the intensity of the optical flash after the termination of the excitation. The intensity of luminescence during the x-ray exposure was also recorded. The samples were

Card 1/2 UDC: 537.531 : 535.37

L 42899-66

ACC NR: AP6018446

exposed to x-rays for 15 minutes at a temperature of 105°K. After an initial rise, the intensity was observed to level off. A spontaneous optical flash followed a short time after the termination of excitation. The temperature of the specimen was then increased to 133°K. The intensity of luminescence was considerably higher during the subsequent irradiation, though it fell off rapidly to the level prior to the temperature rise. The intensity of the optical flash following the second x-ray exposure was somewhat higher. The temperature of the sample was increased to 133°K again. An x-ray pulse generated a luminescence pulse of an intensity comparable to that at the onset of the second excitation cycle. Finally, during the third cycle, the intensity of luminescence due to exposure to light in the *F*-band, decreased very rapidly from an initially high value to zero. Orig. art. has: 3 figures.

SUB CODE: 11/ 20/ SUBM DATE: 21Dec64/ ORIG REF: 005/ OTH REF: 001

Card 2/2

L 06256-67 EWT(l)/EWP(e)/EWT(m) IJP(c) WH

ACC NR: AP6031962 SOURCE CODE: UR/0051/66/021/003/0384/0386

AUTHOR: Krongauz, V. G.; Vilutis, E. S.

ORG: none

TITLE: Photostimulated luminescence of diamonds excited with x rays

SOURCE: Optika i spektroskopiya, v. 21, no. 3, 1966, 384-386

TOPIC TAGS: luminescence center, thermoluminescence, diamond, x ray irradiation

ABSTRACT: Considering that the study of photostimulated luminescence is of major importance for determining the mechanism of luminescence in general, the authors investigated this phenomenon by taking partially transparent diamonds from the Yakutsk deposit. The specimens, which emit a blue glow, were excited for 20-100 min with x rays from a BSV-2Mo tube (10 mA, 45 kV) at room temperature. The stimulating illumination was separated by means of a UM-2 monochromator, and the light source was a 400 W tungsten lamp. The stimulation spectrum of blue radiation, measured in the 520-1100 nm range, showed a peak at λ = 560 nm. Analysis of the temperature dependence of the brightness of photostimulated luminescence (measured with light impulses with λ = 600 nm) showed this brightness to remain constant in the 239-480°K range, and its decrease to be associated with a thermoluminescence peak having T_{m2} = 516°K. At the latter temperature, at which nearly one-half of the light sum liberated at this peak is emitted, the brightness of the photostimulated luminescence decreases by a factor of

Card 1/2 UDC: 539.37:539.12.04:546.26-162

L 06256-67

ACC NR: AP6031962

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two. Those facts show that photostimulated luminescence is due to the emptying of levels (called C-levels) responsible for the high-temperature peak of thermoluminescence. It was found also that the optical de-excitation of C-centers is associated not only with the luminescence of 415-centers, but also with the filling of levels shallower than C levels. Measurements performed by K. N. Pogodayev and V. S. Tatarinov in the authors' laboratory showed that x-ray irradiation of the diamonds studied caused an increase in photoconductivity, especially at 500-600 nm. It is concluded that in x-irradiated diamonds with a typical blue luminescence, the light energy generated during optical de-excitation is stored in deep local levels (C-levels). Thermal liberation of charges from these levels gives rise to the thermoluminescence peak with T_{m2} = 516°K. The C-traps are spatially separated from the luminescence centers, and the blue luminescence resulting from the liberation of charges from C-centers is recombinational in character. Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 22Jul65/ ORIG REF: 010/ OTH REF: 003

Card 2/2 egh

ACC NR: AP6032545 SOURCE CODE: UR/0139/66/000/004/0007/0011

AUTHOR: Parfianovich, I. A.; Krongauz, V. G.

ORG: Irkutsk State University imeni A. A. Zhdanov (Irkutskiy gosuniversitet)

TITLE: Recombination luminescence KI—Tl phosphor

SOURCE: IVUZ. Fizika, no. 4, 1966, 7-11

TOPIC TAGS: luminescence, recombination, recombination process, recombination luminescence, phosphor, phosphor luminescence, optical flash, x ray luminescence, flash brightness, electron hole, energy migration

ABSTRACT: A study was made of the x-ray luminescence and optical flash of several samples of KI—Tl containing different amounts of an activator, excited by x-rays at T = 105K. Pulse measurement of the temperature dependence between the brightness of the flash and x-ray luminescence were found to be complex, and a series of alternating increases and decreases in these values was observed between the temperatures 105—240K. At the same time a pronounced parallelism was observed in variations in brightness and x-ray luminescence within this temperature range. The increase in flare brightness and in x-ray luminescence

Card 1/2

L 09858-67

ACC NR: AP5032545

following the heating of excited samples from 105 to 133K is discussed. The regularities observed are explained, taking into account the redistribution of hole centers. The data obtained point to the importance of the electron-hole mechanism in the migration of energy from the basic substance to the centers of luminescence in KI—Tl phosphors. Orig. art. has: 3 figures. [Authors' abstract]

SUB CODE: 20/ SUBM DATE: 24Nov64/ ORIG REF: 005/ OTH REF: 001/

ACC NR: AP7004957 SOURCE CODE: UR/0048/66/030/009/1414/1415

AUTHOR: Parfianovich, I.A.; Krongauz, V.G.

ORG: Irkutsk State University (Irkutskiy gosudarstvennyy universitet)

TITLE: Effect of build-up of the F-flash and roentgenoluminescence in KI:Tl phosphors /Report, Fourteenth All-Union Conference on Luminescence (Crystal Phosphors) held at Riga, 16-23 Sept. 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 9, 1966, 1414-1415

TOPIC TAGS: luminescence, alkali halide, potassium compound, iodide, thallium, x ray irradiation, luminescence center

ABSTRACT: The authors investigated the roentgenoluminescence and the F-flash in thallium-activated KI crystals. The specimens were irradiated with x-rays for 15 minutes at 105° K and the intensity of the F-flash was recorded both before and after the specimen had been heated to 133° K and again cooled to 105°. The specimen was again irradiated with x-rays and the whole cycle was repeated several times. Heating the specimen to 133° and subsequently cooling it to 105° was found to increase the intensity of the F-flash as well as the initial intensity of the luminescence during the subsequent x-irradiation. When the specimen was irradiated with F-band light instead of x-rays, heating to 133° and subsequent cooling did not enhance either the F-flash of the x-ray flash. The observed effects of heating are ascribed to dis-

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ACC NR: AP7004957

sociation at 133° K of V_k centers and the entrapment of the holes thereby released in the vicinity of Tl^+ ions with the formation of Tl^+p centers. Orig. art. has: 2 figures.

SUB CODE: 20 SUBM DATE: none ORIG. REF: 006 OTH REF: 001

Card 2/2

ACC NR: AP7004959 SOURCE CODE: UR/0048/66/030/009/1420/1423

AUTHOR: Krongauz, V.G.

ORG: Irkutsk State University im. A.A.Zhdanov (Irkutskiy gosudarstvennyy universitet)

TITLE: Concerning the parallelism between the temperature dependence of the roentgenoluminescence and optical flash brightness for alkali halide phosphors /Report, Fourteenth All-Union Conference on Luminescence (Crystal Phosphors) held at Riga, 16-23 Sept. 1965/

SOURCE: AN SSSR. Izvestiya Seriya fizicheskaya, v. 30, no. 9, 1966, 1420-1423

TOPIC TAGS: luminescence, alkali halide, luminescence center, luminescent crystal, temperature dependence, F band, x ray irradiation, OPTIC BRIGHTNESS

ABSTRACT: The author has measured the temperature dependences of the roentgenoluminescence and the F-flash of Ni, Cu, In, Pb, and Tl activated NaCl, KCl, KBr, and KI phosphors and of an NaCl phosphor containing both Cu and Ni. The F-flash was elicited by illuminating the uniformly heated specimen with a pulse of light in the F absorption band. To measure the roentgenoluminescence the specimen was first excited by 15-min irradiation at 100° K with x-rays. The specimen temperature was then raised at the rate of 0.28 degree/min and the specimen was periodically stimulated by 1 sec x-ray pulses. The brightness of the thermoluminescence was subtracted from the total brightness during stimulation. Measurements were continued up to temperatures

Card 1/2

ACC NR: AP7004959

so high that the F-flash no longer appeared, (400 to 500° K). The results are presented graphically. The temperature dependences were found to be complex and to vary considerably from specimen to specimen, but there was a marked parallelism between the roentgenoluminescence and F-flash temperature dependences for a given specimen. At the temperature at which the F-flash intensity dropped rapidly and vanished, the roentgenoluminescence intensity also dropped rapidly with increasing temperature, although it did not vanish; this was the case not only in NaCl:Ni, but also in NaCl:Cu, in which there is a wide temperature range between vanishing of the F-flash and final disappearance of the F centers. The temperature dependences of the two luminescence effects were also parallel in the specimen containing two activators, but they differed considerably depending on whether they were measured in the 630 mμ Cu band or the 360 mμ Ni band. An explanation of the results is given on the basis of the hypothesis that the luminescence is due to electron recombination at "activator + hole" centers, the concentration of which is determined by the thermal dissociation of V centers. The author believes that it would be difficult to explain his results on the basis of an exciton luminescence mechanism. Orig. art. has: 2 figures.

SUB CODE: 20 SUBM DATE: none ORIG. REF: 006 OTH REF: 001

Card 2/2

SURMELI, D.D., kand. tekhn. nauk; MIKHAYLOVA, R.D., kand. tekhn. nauk;
RUSYAYEVA, S.D., inzh.; KRONGAUZ, V.N., inzh.

Bitumen emulsions. Stroi. mat. 11 no.2:9-10 F '65.
(MIRA 18:3)

L 46726-66 EWT(1) GW

ACC NR: AP6021982 (A,N) SOURCE CODE: UR/0006/66/000/003/0035/0038

AUTHOR: Ryukhlyuk, Ye. I.; Zebode, I. V.; Krongauz, V. Sh. Nikolayev, N. N.

ORG: none

TITLE: Line measurements along sequented courses using the AD-1 measuring device

SOURCE: Geodeziya i kartografiya, no. 3, 1966, 35-38

TOPIC TAGS: surveying instrument, distance measuring equipment/ AD-1 distance measuring equipment

ABSTRACT: The device consists of a calibrated disk with a mechanical counter and a braking mechanism mounted in a metal case containing two small reels of steel wire. The total weight of the device is 2.2 kg and its capacity is 1000 m. Line measurement is carried on using the following steps: 1) the steel wire is stretched along a line S; 2) the wire is passed through the reels and the disk; 3) two scales are fixed at the two ends of the wire; 4) the initial reading is taken after braking the disk. Twenty-five measurements of lengths varying from 81-346 m had square errors of 1:20000, 1:22000, 1:17000 under various conditions. A photograph of the device and an operational setup are shown. Orig. art. has: 2 figures, 4 formulas, 1 table.

SUB CODE: 14,08/ SUBM DATE: none

UDC: 528.512

Card 1/1

L 00000-66 EWT(m)/EWP(t)/ETI IJP(c) WW/RM

ACC NR: AP6013280 (A) SOURCE CODE: UR/0413/66/000/008/0079/0079

INVENTOR: Korshak, V. V.; Krongauz, Ye. S.; Rusanov, A. L. 15

ORG: none B

TITLE: Preparation of polyamides. Class 39, No. 180796

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 8, 1966, 79

TOPIC TAGS: polyamide, acid chloride, amino group, heat resistant polyamide

ABSTRACT: This Author Certificate introduces a method for preparing polyamides by polycondensation of dicarboxylic acid chloride a compound containing an amino group. To obtain heat-resistant polyamides, aminobenzoyl hydrazide is suggested as the compound containing the amino group. [LD]

SUB CODE: 11/ SUBM DATE: 25Jan65/

Card 1/1 MT UDC: 678.675' 4' 0

SAFONOV, A.P., kand.tekhn.nauk; KRONGAUZ, V.S., inzh.

Mechanical heat meters. Teploenergetika 8 no.9:25-28 S '61.
(MIRA 14:8)

1. Teploset' Mosenergo.
(Steam meters)

KRONGAUZ, V.Ya. (gorod Moskva).

Preparation of luminous compositions. Khim.v shkole no.6:61-62 N-D '53. (MLRA 6:11)
(Phosphorescence)

GOSTEV, M.M.; KRONGAUZ, V.Ya.; ROVKOVA, T.P., red.; SHCHERTEVA, T.A., tekhn. red.

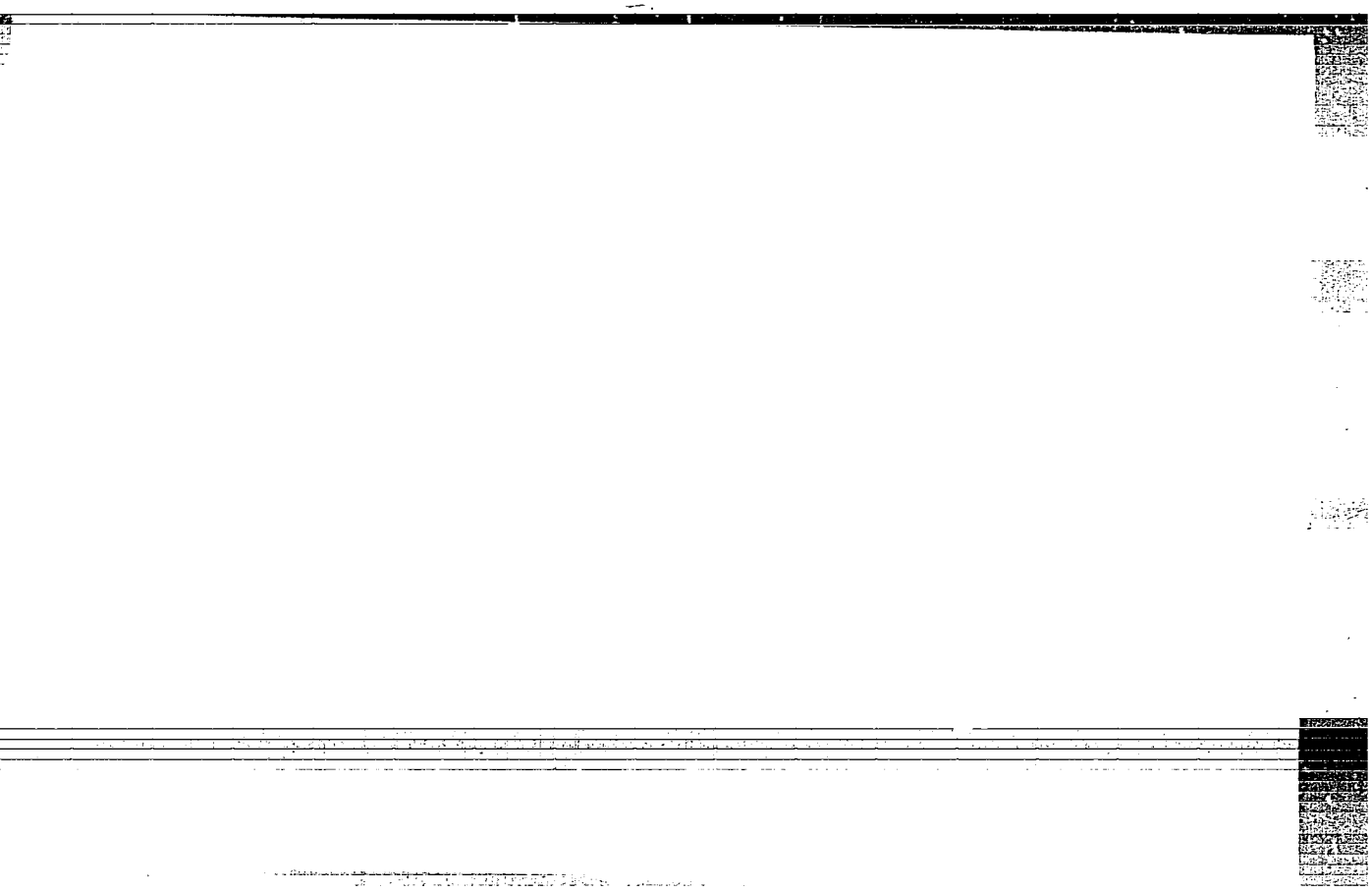
[Homemade chemical equipment] Samodel'nye pribory po khimii. Moskva, Gos. uchebno-pedagog. izd-vo M-va prosv. RSFSR, 1958. 101 p. (MIRA 11:9)

1. Russia (1917- R.S.F.S.R.) Glavnoye upravleniye shkol.
(Chemical apparatus)

KRONGAUZ, Ye. A.

"The Specificity of the Root=Zone Microbiological Processes of Various Species and Varieties of Wheat in Relation to Their Nitrogen Need." Cand Biol Sci, Moscow Agricultural Acad imeni K. A. Timiryazeva, Moscow, 1953. (RZhBiol, No 2, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (13)
SO: Sum. No. 598, 29 Jul 55



APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826620017-9"

SINYAGIN, I.I., red.; KRONGAUZ, Ye.A., red.; ZUBRILINA, Z.P., tekhn. red.

[Problems of plant feeding and the use of fertilizers; proceedings of a session of the Academy, April 2-5, 1957] Voprosy pitaniia rastenii i primeneniia udobrenii; materialy sessii Akademii (2-5 aprelia 1957 g.). Moskva, Gos. izd-vo sel'khoz. lit-ry, 1957. 275 p. (MIRA 11:11)

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk imeni V.I. Lenina. 2. Glavnyy uchenyy sekretar' prezidiuma Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk imeni V.I.Lenina, chlen-korrespondent Vsesoyuznoy akademii sel'skokhozyaystvennyk nauk im. V.I.Lenina (for Sinyagin).
(Fertilizers and manures)

SAMOYLOV, I.I., akademik, glavnyy red. [deceased]; BEREZOVA, Ye.F., doktor biolog.nauk, zamestitel' glavnogo red.; BYLINKINA, V.N., kand.biolog.nauk, red.; BERESNEVA, V.N., kand.biolog.nauk, red.; DOROSINSKIY, L.M., kand.biolog.nauk, red.; PROKHOROV, M.I., kand. biolog.nauk, red.; MAKAROVA, M.M., kand.biolog.nauk, red.; KRONGAUZ, Ye.A., red.; ZUBRILINA, Z.P., tekhn.red.

[Microbiology in the service of agriculture] Mikrobiologiia na sluzhbe sel'skomu khoziaistvu. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1959. 309 p. (MIRA 13:8)

1. Leningrad. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennoy mikrobiologii. 2. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk imeni V.I.Lenina (for Samoylov). 3. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennoy mikrobiologii (for Berezova, Dorosinskiy).
(Bacteriology, Agricultural)

RAUTENSHTEYN, Ya.I.; MISYUREVA, N.G.; KRONGAUZ, Yo.A.; FILATOVA, A.D.

Lysis of Bacillus megatherium caused by phages in the production of phosphorobacterin. Mikrobiologiia 29 no. 4:571-580 Jl-Ag '60. (MIRA 13:10)

1. Institut mikrobiologii AN SSSR i Pervyy moskovskiy zavod bakterial'nykh preparatov.
(BACILLUS MEGATHERIUM) (BACTERIOPHAGE)

MARKOVA, Z.S.; KRONGAUZ, Ye.A.; SHMYREVA, T.V.; GANDMAN, M.G.; BUDNITSKAYA, Z.S.

Non-germinating properties of the spores in a Bac. megatherium var. phosphaticum culture. Mikrobiologiia 31 no.1:103-110 Ja-F '62. (MIRA 15:3)

1. Moskovskogo otdeleniye Vsesoyuznogo nauchno-issledovatel'skogo instituta sel'skokhozyaystvennoy mikrobiologii.
(BACILLUS MEGATHERIUM)

[illegible] GA[illegible], Ye.[illegible]; [illegible], [illegible]; [illegible], [illegible]

Phases of spore germination of various cultures of Bacillus megaterium var. phosphaticum. Mikrobiologiia 34 no.1:65-72 Ja-F '65. (MIRA 18:7)

1. Moskovskoye otdeleniye Vsesoyuznogo nauchno-issledovatel'skogo instituta sel'skokhozyaystvennoy mikrobiologii.

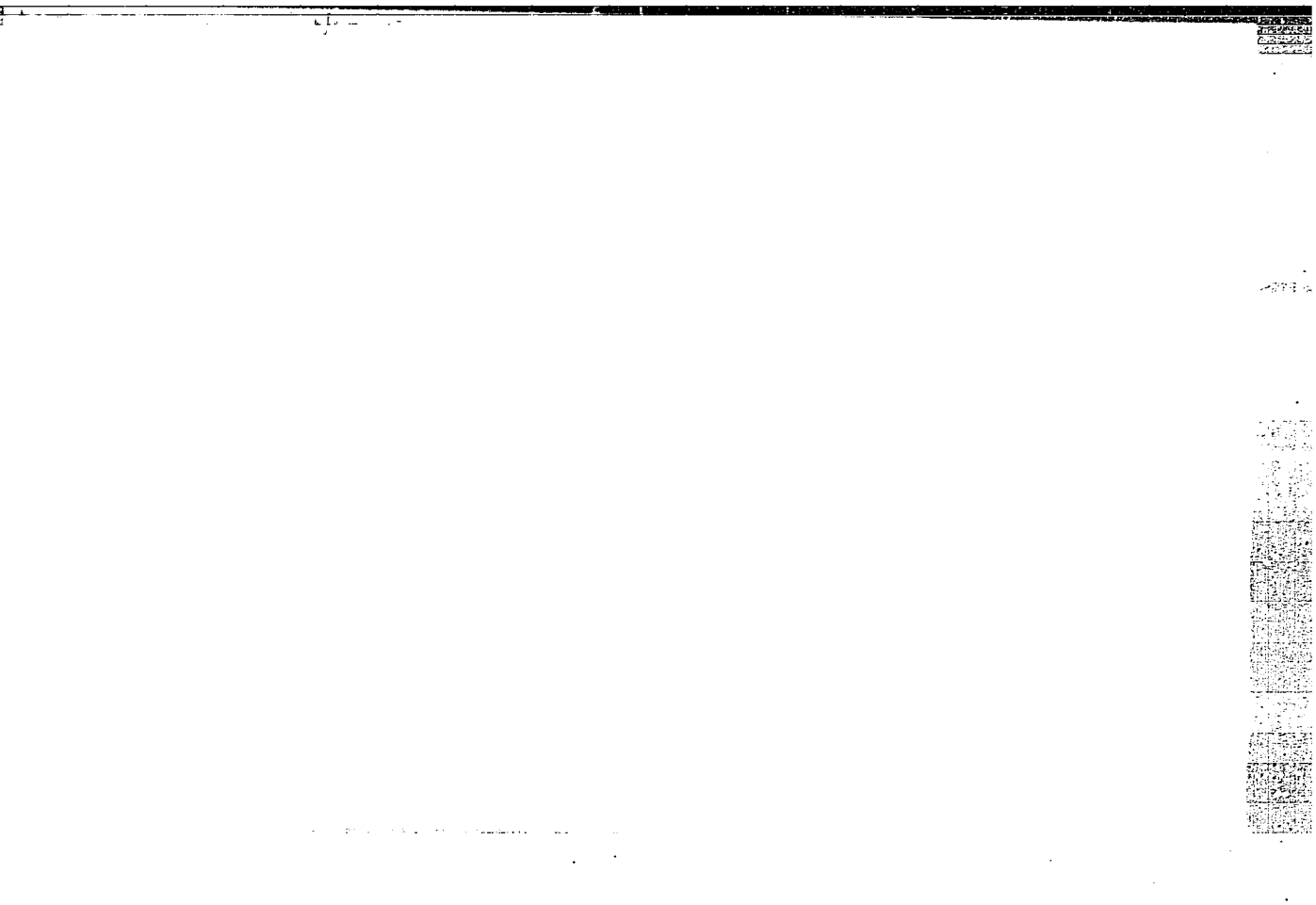
SUDAKOVA, L.V.; KRONGAUZ, Ye.A.; GANDMAN, M.G.; BELOVA, V.K.

Study of the effect of various contaminants on the growth of Bac. megaterium, var. ghosphaticum. Prikl. biokhim. i mikrobiol. 1 no. 6:717-721 N-D '65. (MIRA 18:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennoy mikrobiologii, Moskovskoye otdeleniye. Submitted May 20, 1965.

GENIN, L.S.; KRONGAUZ, Ye.L.

Distribution of the current density along the height of the electrode in an electrolytic bath. Khim. prom. no. 2:116-118 F '61. (MIRA 14:4)
(Electrolysis)



Krongauz, Ye.S.

AUTHORS: Korshak, V. V., Slonimskiy, G. L., Krongauz, Ye.S. 62-2-15/28

TITLE: From the Field of Heterogeneous Chain Polyamides (Iz oblasti geterotsepnykh poliamidov). Information 7: On the Thermal Destruction of Polyhexamethylenadipinamide (Soobshcheniye 7. O teplovoy destruktsii poligeksametilenadipinamida).

PERIODICAL: Izvestiya AN SSSR Otdeleniye Khimicheskikh Nauk, 1958, Nr 2, pp. 221-226 (USSR).

ABSTRACT: The considerable expansion of the field of application of high polymers during recent years required further investigation of the behavior of these polymers under various conditions, among them also in the case of their aging. This phenomenon may be caused by various external circumstances, the causes may be of a physical or of a chemical nature. Because of the immense variety of the aging-phenomena of polymers the authors considered it useful to investigate one of the simplest causes of the aging of these polymers -the thermal cause- especially carefully. As test object the authors selected polyhexamethylenadipinamide. The influence exerted by the heating of the molten polyamide upon its molecular weight was especially thoroughly investigated. In the case of isothermal heating

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a successive reduction of the molecular weight could be observed, where its very definite significance was determined at 300°~9000° (see figure 3). The processes of the growing of the chain take place simultaneously with the thermal destruction of the polyamide in the inner medium. As the decrease in the molecular weight takes place independent from the type of end-groups of the chain (and still more intensively in the high-molecular polyamide), it is concluded that the destruction-processes do not only take place at the ends but also at any places of the chain (figures 6-8). The experiment showed that a certain molecular weight in the molten polyamide of the above-described type (independent from the initial stage of polymerization) a certain molecular weight is obtained the quantity of which depends on the temperature of the heated polyamide. The special part played by the destructive--recombined equilibrium was emphasized in this connection, especially the part of the interchain-exchange reactions in the determination of the equilibrium value of the molecular weight of the polyamide on the given conditions. There are 8 figures, 1 table, and 12 references, 9 of which are Slavic.

From the Field of Heterogeneous Chain Polyamides. Information 7: On the Thermal Destruction of Polyhexamethylenadipinamide. 62-2-15/28

ASSOCIATION: Institute for Element-Organic Compounds AN USSR (Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR).

SUBMITTED: August 9, 1956

AVAILABLE: Library of Congress

1. Polyhexamethylenadipinamide-Thermal destruction
2. Polyamides-Analysis

Card 3/3

AUTHORS: Krongauz, Ye. S., Suprun, A. P. (Moscow) SOV/74-27-9-2/5

TITLE: Brief Survey of the Publications on Isotactic Polymers (Kratkiy obzor rabot po izotaktícheskim polimeram)

PERIODICAL: Uspekhi khimii, 1958, Vol 27, Nr 9, pp 1056-1083 (USSR)

ABSTRACT: In the beginning the authors point out that in the course of the last decades the interest of chemists has been directed to the investigation of the polymerization of unsaturated hydrocarbons (and their derivatives). This was mainly because important products had to be produced for national economies. The production of various polymers is discussed, beginning with the production of new stereoregular polymers of the α-olefines by Shil'dknekht and Natt. In the USSR the production of stereoregular polymers was initiated by the publications of Topchiyev and Krentsel' (Refs 3,4). The different polymerization reactions, especially the stereospecific ones, are discussed (Refs 28-36). In the next chapter the authors deal with the mechanism and the kinetics of the stereospecific polymerization (Refs 37,39). In this special chapter the isotactic polypropylene is discussed. In industrial practice those plastics are of especial interest which are made of products es-

Card 1/2

pecially rich in isotactic polymers. Recently the so-called fractionation method has been employed (to produce pure isotactic polymers); this has been done by direct polymerization (Refs 44-46). The authors then deal in detail with the block polymers (Refs 44-49) as well as with the stereoisomeric polymers of diolefines (Refs 20,44,50-54). The polyvinyl chloride produced by means of radical polymerization, the isotactic polybutene, and isotactic polystyrene are then discussed briefly. The synthesis and the properties of well crystallized α-olefines with ramified chain are dealt with in a special chapter. Finally the authors discuss the polymerization of acetylene, and the copolymers of the α-olefines (Refs 61,62,64). There are 20 figures, 12 tables, and 64 references, 12 of which are Soviet.

KORSHAK, V.V.; KRONGAUZ, Ye.S.; SLADKOV, A.M.; SHEINA, V.Ye.; LUNEVA, L.K.

Coordination chain polymers. Part 1: Preparation of polymers of bis-(β-diketones) and metals. Vysokom.soed. 1 no.12: 1764-1771 D '59. (MIRA 13:5)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Ketones) (Organometallic compounds) (Polymers)

15.8114 also 2209
11.2219

83814

S/190/60/002/005/004/015
B004/B067

AUTHORS: Korshak, V. V., Krongauz, Ye. S., Sheina, V. Ye.

TITLE: Investigation in the Field of Coordination Polymers. IV. Production of Polymers on the Basis of Aromatic Bis-(β-diketones) With Metals

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 5, pp. 662-672

TEXT: The authors describe the synthesis of bis-(β-diketones) with: 1) two directly connected benzene rings: 4,4'-bis-(acetoacetyl)diphenyl (1); 2) benzene rings separated by an oxygen atom: 4,4'-bis-(acetoacetyl)diphenyloxide (2); 3) benzene rings separated by a methylene group: 4,4'-bis-(acetoacetyl)diphenylmethane (3); 4) a single benzene ring and ramified structure: β,β,β',β'-tetraacetyldiethylbenzene (4); and 5) the bis-(β-diketone) of isophthalyldiacetophenone (5), which is isomeric to the terephthalyldiacetophenone (6) produced earlier. Coordination polymers with the following structure were obtained from these compounds:

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Investigation in the Field of Coordination Polymers. IV. Production of Polymers on the Basis of Aromatic Bis-(β-diketones) With Metals

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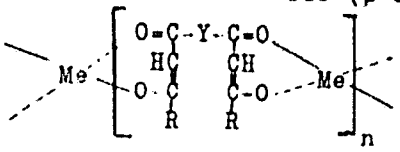
B004/B067



R = $-C_6H_5$, $-CH_3$; Y = $-C_6H_4-$, $-CH_2C_6H_4CH_2-$, $-C_6H_4C_6H_4-$, $-C_6H_4OC_6H_4-$, $-C_6H_4CH_2C_6H_4-$.

The Claisen reaction which the authors used at the beginning gave only poor yields of diketones (5%). Proceeding from Ref. 2 the authors developed a method of direct acetoacetylation of compounds containing several benzene rings by means of acetic anhydride and in the presence of boron trifluoride with a 20% yield. The reaction equation is written down for diphenyl oxide:

$$C_6H_5\text{-}O\text{-}C_6H_5 + (CH_3CO)_2O \xrightarrow{BF_3} CH_3CO\text{-}C_6H_4\text{-}O\text{-}C_6H_4\text{-}COCH_3 \xrightarrow[BF_3]{(CH_3CO)_2O}$$

$\longrightarrow CH_3COCH_2CO\text{-}C_6H_4\text{-}O\text{-}C_6H_4\text{-}COCH_2COCH_3$. Thus, compounds (2) and (3) were obtained. (1) could not be produced in the same manner. The

Investigation in the Field of Coordination Polymers. IV. Production of Polymers on the Basis of Aromatic Bis-(β-diketones) With Metals

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β-diketone of diphenyl was formed: $C_6H_5-C_6H_4-COCH_2-COCH_3$. (1) was synthesized according to Friedel-Crafts, (4) from xylylenedibromide and sodium acetyl acetonate. (5) and (6) were obtained by a method described in Ref. 1. By reacting alcoholic solutions of acetates of bivalent metals (Be, Cu, Ni, Co, Zn, Cd, Mn) with these bis-(β-diketones), or by heating the bis-(β-diketones) with the acetylacetonates of these metals at a stoichiometric ratio in the vacuum to 200 - 250°C, the coordination chain polymers were obtained, whose properties are compiled in Tables 1-6. These are colored powders, partly insoluble, and partly soluble in few organic solvents. Fig. 1 shows the thermomechanical curve for (2), Fig. 2 that for (4). These curves are characteristic of crystalline polymers. The molecular weight of the polymers was between 1000-2000. The authors found that the following rules govern the behavior of these polymers: With increasing content of phenyl groups, thermostability increases while solubility decreases. Solubility and meltability decrease when the ionic radius of the metal deviates too strongly from the radius of the chain-forming atoms. Beryllium compounds showed the highest and

Card 3/4

83814

Investigation in the Field of Coordination Polymers. IV. Production of Polymers on the Basis of Aromatic Bis-(β-diketones) With Metals

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B004/B067

copper compounds the lowest solubility. Thermostability, however, decreases in the series Cu > Be > Ni > Co > Zn > Mn > Cd. There are 2 figures, 6 tables, and 7 references: 2 Soviet, 4 US, and 2 German.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy (Institute of Elemental-organic Compounds)

SUBMITTED: January 9, 1960

Card 4/4

88908
S/026/60/000/011/005/009
A166/A026

5.3830

AUTHOR: Krongauz, Ye.S. (Moscow)

TITLE: New Data on Polymers

PERIODICAL: Priroda, 1960, No. 11, pp. 102 - 104

X

TEXT: The article compares methods of radical polymerization to produce atactic polymers and catalytic polymerization giving isotactic or syndiotactic polymers. The hypothesis is advanced that the catalyst must contain some solid orientating surface for alignment of the radical groups in the isotactic polymers, since soluble or highly dispersed catalysts usually resulted in a non-isotactic polymer. Final proof of the hypothesis is so far lacking. Subsequently it was found that isotactic polymers could be produced by stereospecific polymerization with other catalysts, e.g., 6-valent chromium compounds on alumosilicate or borium trichlorate. By varying the conditions of synthesis, polymers of various molecular weights and properties (elasticity and strength) could be produced. Stereospecific polymerization can produce unsaturated compounds with a structure similar to gutta percha or natural rubber. Prospects are good for the synthesis of olefine copolymers from ethylene or propylene by the new method.

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88908

New Data on Polymers

S/026/60/000/011/005/009
A166/A026

These would have good chemical stability and enhanced resistance to ageing. Keen interest has been shown in isotactic stereobloc polymers and research is now in progress in the USSR into stereospecific polymerization.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR (Institute of Elemento-Organic Compounds, AS USSR)

Card 2/2

KORSHAK, V.V.; SLADKOV, A.M.; KRONGAUZ, Ye.S.; ROGOZHIN, S.V.; RODIONOVA, Ye.F.; CHELNOKOVA, G.N.; MAKAROVA, T.A.; SOSIN, S.L.; LOSKUTOVA, I.P., red.izd-va; POLYAKOVA, T.V., tekhn.red.

[Chemistry and technology of synthetic macromolecular compounds. Carbocyclic compounds] Khimiia i tekhnologiia vysokomolekuliarnykh soedinenii. Carbocyclic compounds. Trudy Gorkovskogo soveshchaniia. Moskva, Izd-vo Akad.nauk SSSR, 19[illegible]. [illegible] p. illus. (Akademiia nauk SSSR. Otdelenie khimicheskikh nauk. no.8) (MIRA 14:11)

1. Chlen-korrespondent AN SSSR (for Korshak).
(Macromolecular compounds)
(Cyclic compounds)

11.2219
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26296
S/190/61/003/008/009/019
B110/B218

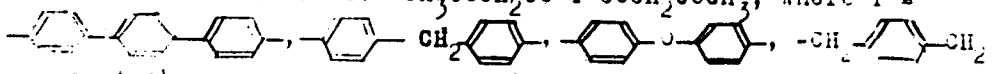
AUTHORS: Korshak, V. V., Krongauz, Ye. S., Gribkova, P. N., Basnev, V. A.

TITLE: Study in the field of coordination-chain polymers. V. Synthesis of metal-containing polymers of bis-β-diketones

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 8, 1961, 1203-1209

X

TEXT: In previous papers (Ref. 1: Vysokomolek. soyed., 1, 1754, 1959; Ref. 2: Ibid. 2, 662, 1960) the authors had shown that coordination-chain polymers were formed by interaction of bis-β-diketones and acetates (or acetyl acetonates) of bivalent metals. Bis-β-diketones of the following structure were studied: CH_3COCH_2CO-Y-$COCH_2COCH_3$, where Y =



Most of these polymers were unsoluble and had decomposition temperatures of between 300 and 400°C. It was the aim of the present work to produce

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Study in the field of coordination-...

polymers with flexible chains, which contained $-(CH_2)_n-$ or $-[O(CH_2)_2]_nO-$ groups between the benzene nuclei. For this purpose, three aromatic bis-β-diketones were synthesized: 4,4'-bis(acetoacetyl) diphenyl ethane (I); 4,4'-bis(acetoacetyl) ethylene diphenyl ether (II); and 4,4'-bis-(acetoacetyl) diphenyl diethylene glycol ether (III). Synthesis was made according to the author's certificate of the USSR, no. 126408, 1959, by acetoacetylating the aromatic compounds by means of acetanhydride in the presence of BF_3. As compared to Claisen's condensation, the reaction is one-staged and results in a high yield. To prevent formation of intermediates, a large excess of acetanhydride is necessary, molar ratio 1 : 20 - 30. I (melting point 147 - 148°C) was obtained in a yield of 10% referred to diphenyl ethane. The reaction temperature was 40 - 50°C. The infrared spectrum confirmed the structure of p-substituted bis-β-diketone of diphenyl ethane (for keto-enols, characteristic absorption at 1600 cm^{-1}, for 1,4-substituted benzene nuclei, characteristic absorption at 845, and 790 cm^{-1}). As a by-product (10%), diphenyl ethane-

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Study in the field of coordination-...

β-diketone (melting point 81.5 - 82.5°C) was obtained. II (melting point 169 - 170°C) was obtained in optimum yield (16%) at -10°C. The ethylene diphenyl ether, brought into reaction with acetanhydride, was synthesized in the autoclave (150°C, 50 atm) by reaction with natrium phenolate and 1,2-dichloro ethane. III (melting point 125.5 - 126°C, yield 7-9%) was obtained at a reaction temperature of from -5 to +5°C. Diethylene glycol diphenyl ether was synthesized as initial compound by reaction of Na phenolate with β,β'-dichloro diethyl ether (200°C, 50 atm). Since the compounds had not yet been described, the authors synthesized I also by Claisen condensation and found it to be identical with the compound obtained by direct acetoacetylation. Compounds II and III could not be produced according to Claisen. By reacting I, II, and III with acetates of bivalent metals, the authors obtained the compounds given in the Table. In this, they made the following observations: The solubility of the polymer depends on the ionic radius of the metal which forms the polymer chain. It was found that introduction of the groups $-CH_2CH_2-$;

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Study in the field of coordination-...

$-OCH_2CH_2O-$, and $-OCH_2CH_2OCH_2CH_2O$ between the benzene nuclei resulted in coordination-chain polymerization. The molecular weights, determined ebullioscopically, were at about 2000 - 3000. The films produced at 200 - 300°C and 50 atm were brittle. The thermomechanical curves and the X-ray picture of the beryllium compounds of II confirmed the crystal structure of the polymers. There are 3 figures, 1 table, and 6 references: 5 Soviet and 1 non-Soviet.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR
(Institute of Elemental Organic Compounds AS USSR)

SUBMITTED: October 18, 1960

Card 4/8

28176

15.8150

S/190/61/003/010/004/019
B130/B110

AUTHORS: Korshak, V. V., Krongauz, Ye. S., Sheina, V. Ye.

TITLE: Studies in the field of coordination polymers. VI Synthesis of coordination polymers of some bis-(β-diketones)

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 10, 1961, 1456-1461

TEXT: The authors synthesized aliphatic bis-(β-diketones): 1,1,2,2-tetraacetyl ethane (I), adipyl- (II), and sebacyl diacetophenone (III), and prepared and studied their metal polymers. They prepared I from a suspension of 0.5-mole Na-acetyl acetonate in ether by adding a solution of 0.5-mole iodine in ether at room temperature under vigorous stirring. The melting point was 185-186°C, the yield 27-30%. II and III were prepared according to V. V. Korshak et al. (Vysokomolek. soyed., 1, 1764, 1959). The melting point of III was 108-109.5°C (Yield 20-22%). The metal polymers of the bis-(β-diketones) produced were prepared by 3-hr heating in a vacuum of 2-4 mm Hg of their equimolecular mixture with the

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respective Me-acetyl acetonate at 150-210°C until no acetyl acetone was set free. To remove the remaining acetyl acetone, the resulting product was treated with hot water, boiled in alcohol, washed with ether, and dried to constant weight. The copper derivatives were obtained by reaction of the diketones with copper acetate in an alcohol solution. It was found that I with Be-, Ni-, Co-, and Zn-acetyl acetonates formed nonfusible powders which were unsoluble in ordinary organic solvents and had a high decomposition temperature. I formed no coordination compounds with Mn and Cd. The chemical analysis showed that the composition of the resulting metal compounds corresponded to the theoretical values. Also the metallic derivatives of II and III constituted colored powders. The Be-derivatives of III, and the Be-, Zn-, and Cd-derivatives of II, are soluble in chloroform, tetrachloro ethane, dioxane, bromo benzene, and dimethyl formamide, the Ni- and Co-derivatives only in dimethyl formamide and dioxane. The peculiarities of these compounds are explained according to Hammond, Borduin, and Guter (see below). In the interaction between tetraacetyl ethane and the metal ions, a coordination binding of the metal takes place between the keto groups of adjacent molecules of the

binding agent (Fig. 1). In II, and particularly in III, the formation of closed, monomeric complexes is probable because of the presence of a flexible methylene chain (Fig. 2). There are 2 figures, 2 tables, and 6 references: 2 Soviet and 4 non-Soviet. The four references to English-language publications read as follows: R. G. Charles, Organic Syntheses, 39,61, 1959; G. S. Hammond, W. C. Borduin, C. A. Guter, J. Amer. Chem. Soc., 81, 4682, 1959; G. A. Guter, G. S. Hammond, J. Amer. Chem. Soc., 81, 4686, 1959; G. J. Bullen, Acta crystallogr.,12, 703, 1959.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR
(Institute of Elemental Organic Compounds AS USSR)

SUBMITTED: October 25, 1960

Fig. 1. Model of a 1,1,2,2-tetraacetylene ethane complex with metal, • carbon, o --hydrogen, ○-- oxygen, ● -- metal.

Fig. 2. Model of a sebacyl diacetophenone complex with metal. Designations as in Fig. 1.

S/190/62/004/006/004/026
B110/B138

AUTHORS: Korshak, V. V., Krongauz, Ye. S., Gribkova, P. N., Vasnev, V. A.

TITLE: Investigations in the field of polymers with coordination chains. XIII. Study of the laws governing polycoordination reactions in solution

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 6, 1962, 815-820

TEXT: The effect of experimental conditions on the molecular weight of polymers was also investigated. 4,4'-bis-(acetoacetyl)diphenyl oxide, whose polymer with Zn is soluble in dimethyl formamide, reacted with Zn^{2+} ions. The amount of reacted tetraketone and the molecular weight of the polymer were determined by titration of the terminal enol groups, using Na metnylate and thymol blue, as there is only one possibility for the terminal groups: Tk-Me-Tk-Me...Tk-Me-Tk, where Me = metal and Tk = substituted tetraketone. Synthesis takes place by: (1) reaction of alcoholic solutions of $Zn(CH_3COO)_2$ and I; (2) reaction of an aqueous $Zn(CH_3COO)_2$ solution with a benzene solution of I at the phase interface;

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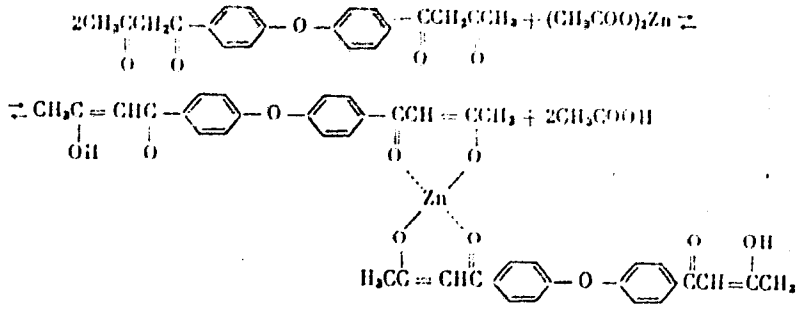
(3) condensation of an aqueous solution of acetic zinc ammoniate at the interface with solution I in n-xylene; (4) reaction of I with $Zn(CH_3COO)_2$ in dimethyl formamide solution. In the case of (1), 1 mole of alcoholic $Zn(CH_3COO)_2$ solution reacted with 1 mole solution of I at 20°C to ~80% of I during the first minutes, and to 85% after 1 hr. The molecular weight was 750 (dimer: Tk-Me-Tk). The dimer insoluble in methanol is precipitated and destroys the homogeneity of the reaction medium and the growth of the polymer chain. In the case of (2), polycondensation between the phases, the polymer chain grew more quickly. Interphase polycondensation produces polymers of higher molecular weight than equilibrium polycondensation. During the reaction of the benzene solution of I with the aqueous solution of $Zn(CH_3COO)_2$ at the interface

S/190/62/004/006/004/026
B110/B138



takes place. The acetic acid formed destroys the complex obtained. The destructive effect of acetic acid is stronger in the water-benzene medium than in methanol, owing to greater dissociation. In the case of (3) (ratio 1:2), I was almost completely polycondensed in a few minutes at 20 and 50°C, at a ratio of 1:1 and 20°C to about 85%. The trimer Tk-Me-Tk-Me-Tk with molecular weight 1150 was obtained, as equilibrium set in between the initial zinc ammonium complex and the polymer complex of zinc which formed with I, the instability constants of which were about equal.

Equimolecular amounts of I with the acetic zinc ammoniate in dimethyl formamide (N_2 atmosphere) at 140 - 150°C, after 0.5 hr, produced a polymer with 85 - 90% yield and molecular weight 1000 - 1100. The white product obtained after 7 hr was quite insoluble in dimethyl formamide. It was separated into: a fraction with molecular weight 750, soluble in chloroform; two fractions (mixture of trimer and tetramer), molecular weight 1200, soluble in dimethyl formamide; three insoluble, high-molecular fractions. Gradual growth of the polymer chain is assumed: high rate of polycoordination and formation of insoluble adducts in the first stage interrupt chain growth and cause formation of a low-molecular product. There are 2 tables.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR (Institute of Elemental-organic Compounds AS USSR)

SUBMITTED: February 28, 1961

KORSHAK, V.V.; KRONGAUZ, Ye.S.; BERLIN, A.M.

Organophosphorus polymers with P - N bonds. Izv.AN SSSR.Otd. khim.nauk no.8:1412-1416 Ag '62. (MIRA 15:8)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Phosphorus organic compounds) (Polymers)

SLADKOV, A.M.; KRONGAUZ, Ye.S.

Chemistry of organometallic compounds. Priroda 51 no.3:35-39 Mr '62. (MIRA 15:3)

1. Institut elementoorganicheskikh soyedineniy AN SSSR, Moskva.
(Organometallic compounds)

KORSHAK, V.V.; KRONGAUZ, Ye.S.; GRIBKOVA, P.N.

Preparation of a polymer from diphenylbenzylphosphine oxide by polyrecombination reaction. Izv.AN SSSR.Otd.khim.nauk no.9:1638-1644 S '62. (MIRA 15:10)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Phosphine oxide) (Polymers)

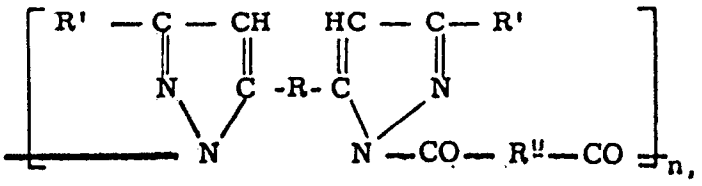
KRONGAUZ, YE.S.

AID Nr. 982-10 4 June

SYNTHESIS OF POLYPYRAZOLES (USSR)

Korshak, V. V., Ye. S. Krongauz, A. M. Berlin, and P. N. Gribkova.
IN: Akademiya nauk SSSR. Doklady, v. 149, no. 3, 21 Mar 1963, 602-605.
S/020/63/149/003/020/028

Four polypyrazoles (I) with alternating pyrazole rings in the backbone, of the type



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AID Nr. 982-10 4 June

SYNTHESIS OF POLYPYRAZOLES [Cont'd] S/020/63/149/003/020/028

where

No.	R	R'	R"	m.p., °C	Reaction temperature and pressure, °C/mm Hg
1	C_6H_4—O-C_6H_4	CH_3	$(CH_2)_4$	210-220	200-210/1
2	C_6H_4 $(CH_2)_2$ C_6H_4	CH_3	$(CH_2)_4$	218-225	209/10-4
3	$(CH_2)_8$	C_6H_5	$(CH_2)_4$	100-120	225-235/1
4	C_6H_4 $(CH_2)_2$ C_6H_4	CH_3		260-280	250/1

have been synthesized for the first time by the reaction of bis(diketones) of the type R' $COCH_2CO$-R-$COCH_2COR'$ (II) with dicarboxylic acid dihydrazides

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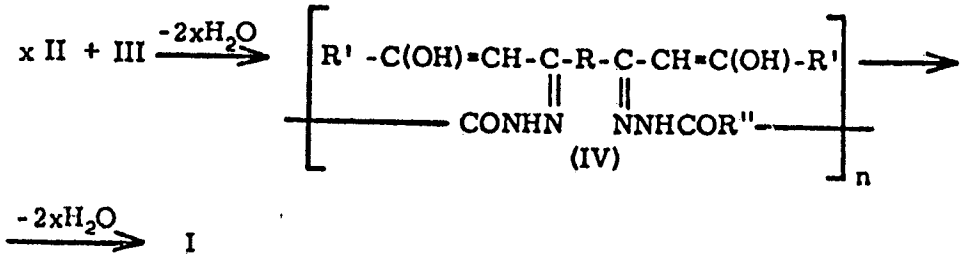
AID Nr. 982-10 4 June

SYNTHESIS OF POLYPYRAZOLES[Cont'd] S/020/63/149/003/020/028

of the type $NH_2NHCO-R''-CONHNH_2$ (III). Polymers I are formed as a result of pyrazole ring closure (polycyclization) which occurs in two steps as follows:



The first step is the formation of a polyhydrazone (IV) from an equimolar mixture of II and III in boiling absolute ethanol. Compounds IV are green powders soluble in common organic solvents and do not have a sharp melting point. The reduced viscosity of 0.5% IV in cresol was as high as 0.4. The second step of the reaction is the ring closure of IV to form I in quantitative

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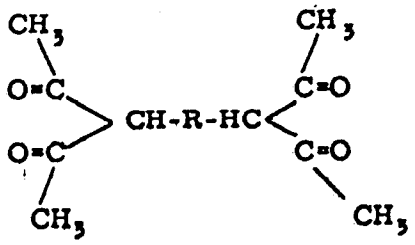
SYNTHESIS OF POLYPYRAZOLES [Cont'd] S/020/63/149/003/020/028

yields when IV is heated for 3 to 5 hrs at its melting point in an N_2 atmosphere under reduced pressure. Polymers I are yellow powders of mol. wt. 9200, soluble in cresol, dimethylformamide, concentrated H_2SO_4, and formic acid. Upon ring closure the polymer chain of IV decreases in length, causing a drop of reduced viscosity in cresol from 0.4 to 0.1. It is noted that the synthesis of I can be achieved in one step by the reaction of bis(4-acetoacetylphenyl) ethane with adipic acid dihydrazides in boiling benzyl alcohol. The structures of I and IV were determined by elemental analysis, IR and UV spectroscopy, and analysis of their alkaline or acid hydrolysis products. In the UV spectra of I and IV obtained from sebacyldiacetophenone, a bathochromic shift of 40 mμ was observed with respect to 4,4'-bis[3-(5-methyl-N-acetylpyrazolyl)]diphenylethane and 4,4'-bis(acetoacetyl)-diphenylethane acetylhydrazone. Prolonged

AID Nr. 982-10 4 June

SYNTHESIS OF POLYPRAZOLES [Cont'd] S/020/63/149/003/020/028

treatment of polymers I with concentrated H_2SO_4 yielded a mixture of unidentified sulfonated products. Basic hydrolysis of I or IV in an aqueous 25% KOH solution boiling for 12 hrs caused backbone degradation. Bis(diketones) of the structure



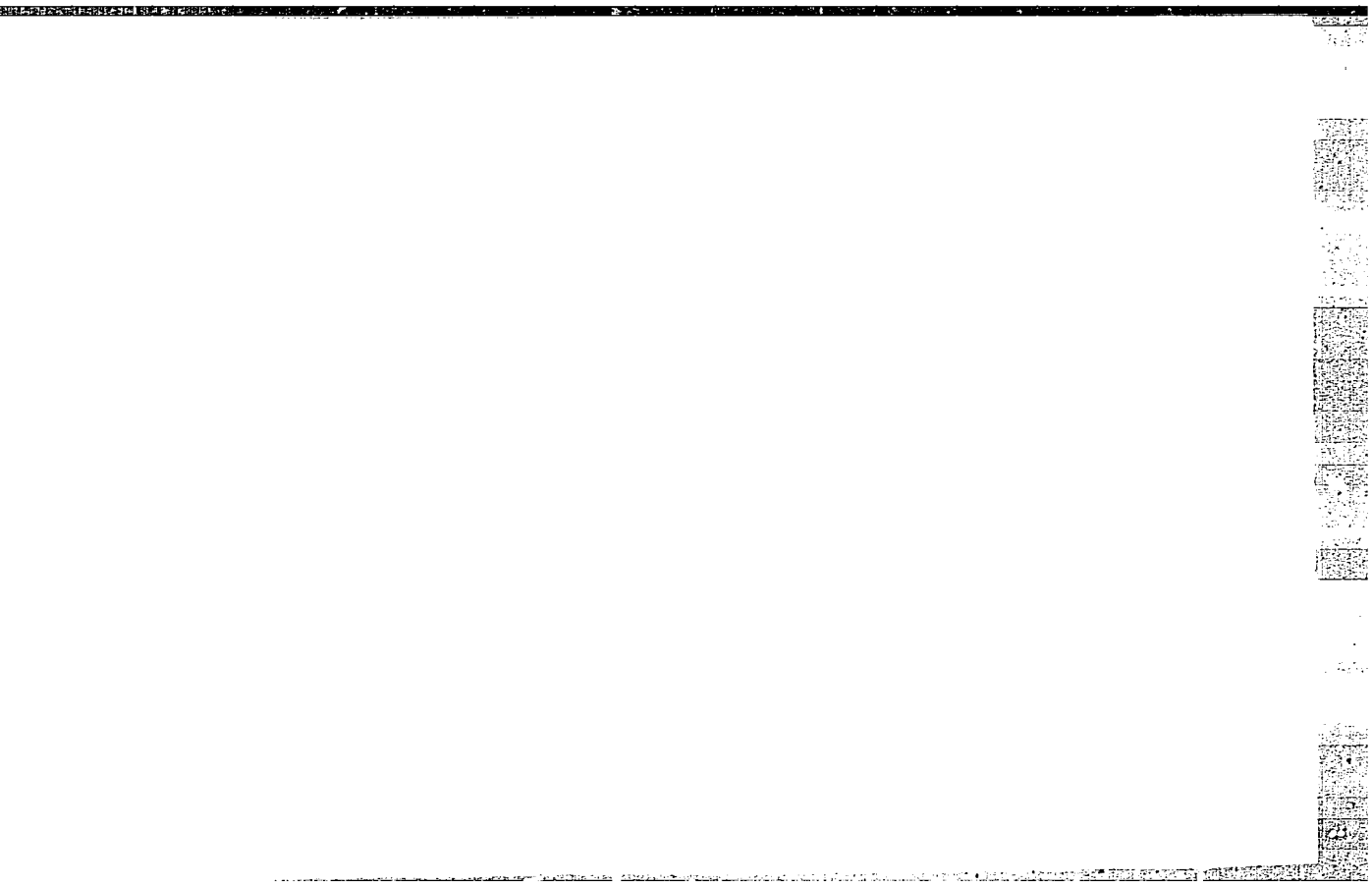
where R = -, or CH_2, form polyhydrazones which could not be converted to the polypyrazoles. [NI]

Card 5/5

KORSHAK, V.V.; KRONGAUZ, Ye.S.; BERLIN, A.M.

New method for the production of polypyrazoles. Dokl. AN SSSR 152 no.5:1108-1110 O '63. (MIRA 16:12)

1. Institut elementoorganicheskikh soyedineniy AN SSSR. 2. Chlen-korrespondent AN SSSR (for Korshak).



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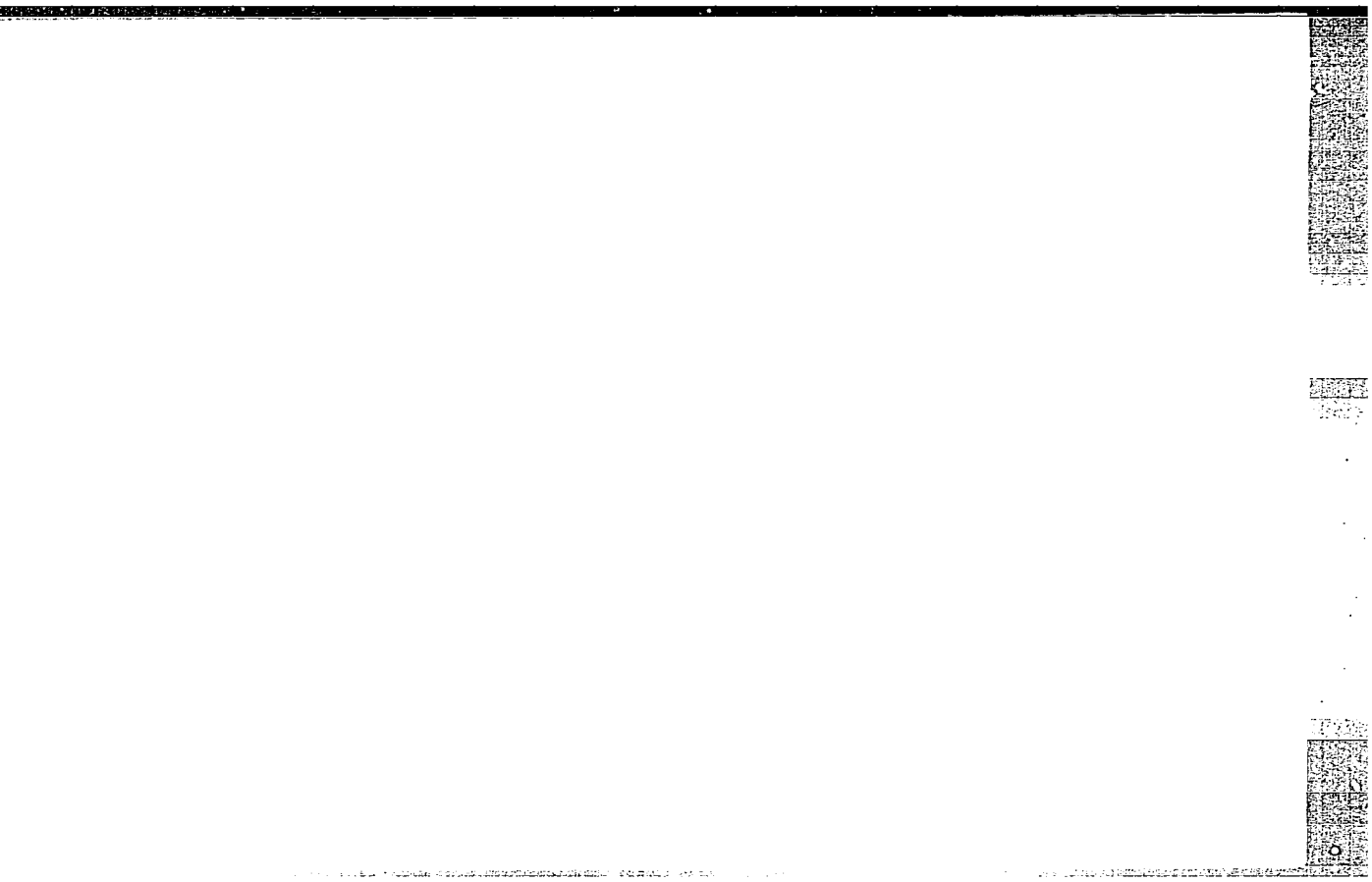

ACCESSION NR: AP4042875 S/0062/64/000/007/1281/1288

AUTHOR: Korshak, V. V.; Kronganz, Yq. S.; Berlin, A. M.; Gribkova, P. N.; Sheina, V. Ye.

TITLE: Synthesis of polymers for the polycyclization reaction. Communication 1. Polypyrazoles

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 7, 1964, 1281-1288

TOPIC TAGS: polymer, heat resistant polymer, polyhydrazone, polypyrazole, bis-(β-diketone), dicarboxylic acid dihydrazide, polycyclization reaction, polypyrazole structure, polypyrazole property

ABSTRACT: Polymers containing pyrazole rings have been synthesized in an attempt to produce new polymeric materials with improved heat resistance and chemical stability. Polypyrazoles were synthesized from bis-(β-diketones) of the $R'COCH_2CO-R-COCH_2COR'$ type and dihydrazides of dicarboxylic acids. The reaction, designated as polycyclization, proceeds in two steps: 1) formation of polyhydrazones by the reaction of the carbonyl oxygen of the ketone with the end amine

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ACCESSION NR: AP4042875

group of the hydrazide, which is accompanied by separation of water, and 2) formation of polypyrazoles by separation of a water molecule and closing of the ring. Polyhydrazones are prepared by heating equimolar amounts of the initial materials in absolute ethanol for 10—36 hr. Polypyrazoles are formed by heating polyhydrazones at 200—250C in nitrogen at 1—2 mm Hg for 3—5 hr. Polypyrazoles are yellowish powders soluble in cresol, dimethylformamide, and concentrated sulfuric and formic acids. They melt with decomposition at 220—260C, and thus do not exhibit the expected heat resistance. A polypyrazole was synthesized in one step by reacting 4,4'-bis(acetoacetyl)diphenylethane with the dihydrazide of adipic acid in boiling benzyl alcohol. Attempts to synthesize polypyrazoles in melts failed. From a study of the properties and structure of the synthesized polypyrazoles it was concluded that changes in the structure of the polymer backbone with the aim of increasing its rigidity will increase the melting point of the polypyrazoles. Orig. art. has: 2 tables.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Organoelemental Compounds, Academy of Sciences SSSR)

ACCESSION NR: AP4040487 S/0190/64/006/006/1078/1086

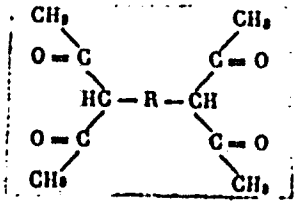
AUTHORS: Korshak, V. V.; Krongauz, Ye. S.; Berlin, A. M.

TITLE: Synthesis of polymers by the polycyclization reaction. 5. Polypyrazoles

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 6, no. 6, 1964, 1078-1086

TOPIC TAGS: polycyclization reaction, branched diketone, adipic acid dihydrazide, keto enol tautomerism, polypyrazole, polyhydrazone

ABSTRACT: This is a continuation of an earlier work by the authors and P. N. Gribkova (Dokl. AN SSSR,149,602,1953 [Abstracter's note: 19637]) on the interaction of bis-(β-diketones) with the dihydrazide of adipic acid (DAA). The present investigation differed from the previous one in that instead of linear diketones it involved branched diketones of the type



Card 1/3

ACCESSION NR: AP4040487

where the R is either absent or represents CH_2, $CH_2C_6H_4CH_2$, $CH_2C_6H_4C_6H_4CH_2$, or $CH_2C_6H_4OC_6H_4CH_2$. The synthesis of these monomers with DAA was conducted by heating equimolecular quantities of the reactants either in absolute ethanol or in a melt for periods up to 10 hours at 80-170C. The obtained polyhydrazones or polypyrazoles were analyzed and their melting point, viscosity (in cresol or sulfuric acid), and infrared spectra were recorded. It was found that the reaction of tetraacetyldiethylbenzol-, of 4,4'-bis-(2",2"-diacetoethyl)diphenyl-, and of 4,4'-bis-(2",2"-diacetoethyl)diphenyloxide with DAA yielded polypiperazoles, while the other diketones produced polyhydrazones. In the opinion of the authors, the composition reactivity of the end product of the reaction is determined by the keto-enol tautomerism of the original diketones and by their cis- or trans-configuration. The keto form led directly to polypyrazoles, the trans-onol configuration yielded only polyhydrazones, while the cis-onol form yielded polypyrazoles through the polyhydrazone intermediate stage. V. E. Sheina supplied the tetraacetylpropane and carried out its purification. Orig. art. has: 3 tables and 4 formulas.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR. (Institute of

Card 2/3

ACCESSION NR: AP4040487

Elementoorganic Compounds, AN SSSR)

SUBMITTED: 11Jul63 DATE ACQ: 06Jul64 ENCL: 00

SUB CODE: GC NO REF SOV: 003 OTHER: 008

Card 3/3

ACCESSION NR: AP4040488 S/0190/64/006/006/1087/1091

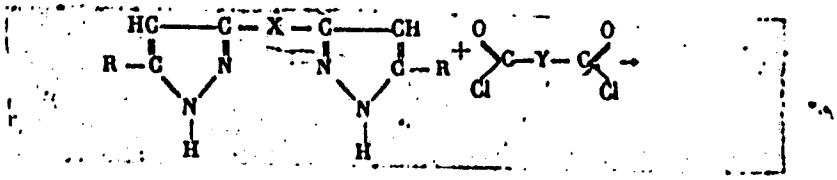
AUTHORS: Korshak, V. V.; Krongauz, Ye. S.; Berlin, A. M.; Travnikova, A. P.

TITLE: Synthesis of polymers by the polycyclization reaction. 6. Polypyrazoles

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 6, no. 6, 1964, 1087-1091

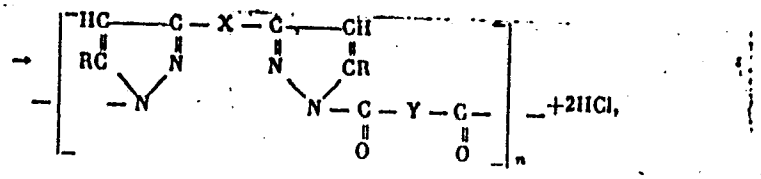
TOPIC TAGS: polycyclization reaction, polypryazole, bipyrazole polycondensation, dicarboxylic acid chloride, diketone polycyclization, dicarboxylic acid dihydrazide

ABSTRACT: The investigators attempted to synthesize polypyrazoles from compounds containing pyrazole cycles. The desired results were achieved by polycondensation of bipyrazoles with the chlorides of dicarboxylic acids according to the reaction



Card 1/3

ACCESSION NR: AP4040488



where X = $C_6H_4(CH_2)_2C_6H_4$; $C_6H_4OC_6H_4$; $CH_2C_6H_4CH_2$; $(CH_2)_6$; R = CH_3, C_6H_5; Y = $(CH_2)_4$, C_6H_4.

A total of 8 bypyrazoles were synthesized. Seven of them were new and represented: 4,4'-bis-(5-methylpyrazolyl-3)diphenyloxide, 4,4'-bis-(3,5-dimethylpyrazolyl-4) xylilene, 4,4'-bis-[(3,5-dimethylpyrazolyl-4)methyl]diphenyloxide, 4,4'-bis-[(3,5-dimethylpyrazolyl-4)methyl]diphenyl, 1,8 di-(5-phenyl-pyrazolyl-3)octane, di-(3,5-dimethylpyrazolyl-4), and 4,4'-bis-(5-methylpyrazolyl-3)diphenyldisulfide. The procedure was started by mixing 30-40 ml of pyridine with 0.1 mole quantities of one of the bypyrazoles. To these mixtures were added (dropwise) 0.1 mole amounts of adipic, terephthalic, or isophthalic acid chloride, dissolved in 20 ml of xylene. The contents of the flasks were stirred and cooled for several hours. They were then heated for a long time to 100-125C, and were allowed to stand overnight. The polypyrazoles so produced were identical with the polypyrazoles ob-

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ACCESSION NR: AP4040488

tained by polycyclization of bis-(β-diketones) with the dihydrazides of the corresponding dicarboxylic acids. The latter group was described in an earlier publication by the authors and P. N. Gritkova (Dokl. AN SSSR, 148, 602, 1963). Orig. art. has: 3 tables and 1 formula.

ASSOCIATION: Institut elementoorganichskikh soyedineniy AN SSSR (Institute of Elementoorganic Compounds, AN SSSR)

SUBMITTED: 11Jul63 DATE ACQ: 06Jul64 ENCL: 00

SUB CODE: GC NO REF SOV: 004 OTHER: 006

Card 3/3

ACCESSION NR: AP4042185 S/0190/64/006/007/1195/1202

AUTHOR: Korshak, V. V.; Krongauz, Ye. S.; Berlin, A. M.; Smirnova, T. Ya.

TITLE: Synthesis of polymers by polycyclization. Polypyrazoles. VII.

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 7, 1964, 1195-1202

TOPIC TAGS: polypyrazole, polycyclization reaction, bis-(β-diketone), dihydrazine, hexamethylenehydrazine dihydrochloride, p-phenylene-hydrazine dihydrochloride, polypyrazole property

ABSTRACT: The authors have synthesized polypyrazoles (mp,. 200—300C) by polycylization of linear and branched bis-(β-diketones) with dihydrazides of dicarboxylic acids. In an attempt to develop polypyrazoles with a higher heat resistance, dihydrazides were replaced with dihydrazine, or amide groups were introduced in the polymers to form hydrogen bonds. Polycyclization of bis-(β-diketones) with hexamethylene- or p-phenylenehydrazine dihydrochlorides in boiling alcohol with alkali added to separate and bind HCl, or heating equimolar amounts of the initial materials in pyridine, yielded

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ACCESSION NR: AP4042185

polypyrazoles — powders with a mp of 80—265C and a molecular weight of 5000. Polypyrazoles containing amide groups in the backbone were synthesized by reacting dipyrazoles with diisocyanates in chlorobenzene or by melting the initial materials in nitrogen. These polymers are white powders with a mp of 208—276C and a molecular weight of up to 10,000. IR spectra indicate that they do not contain hydrogen bonds. Thus, the attempt to synthesize heat-resistant polypyrozoles failed. The presence of heavy pyrazole rings upsets the symmetry and loosens the packing density of the polymer chains, and, as a result, prevents the formation of hydrogen bonds. Orig. art. has: 1 figure and 2 tables.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR (Institute of Organoelemental Compounds, AN SSSR)

SUBMITTED: 11Jul63 ATD PRESS: 3068 ENCL: 00

SUB CODE: OC, GC NO REF SOV: 009 OTHER: 003

Card 2/2

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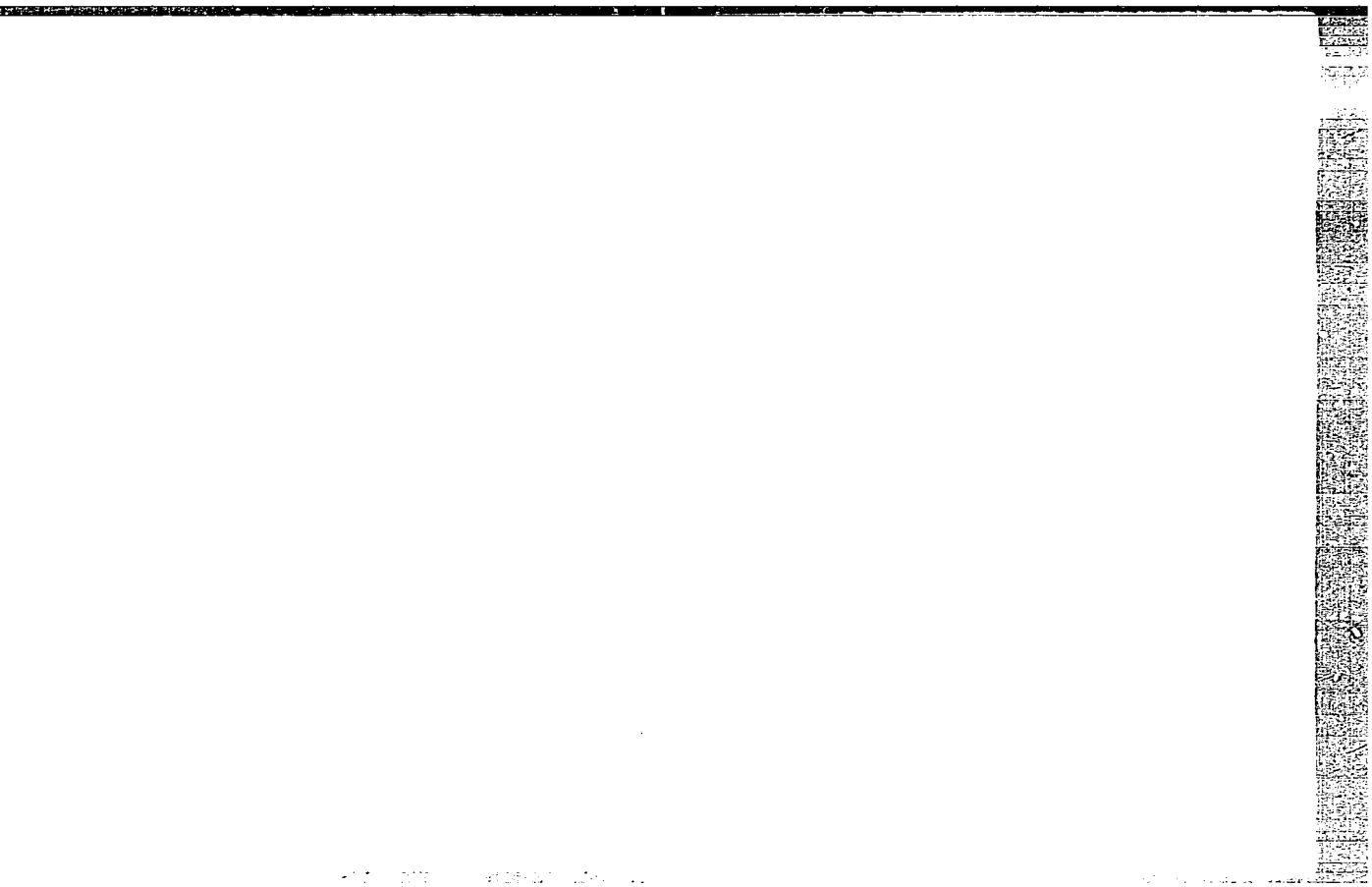

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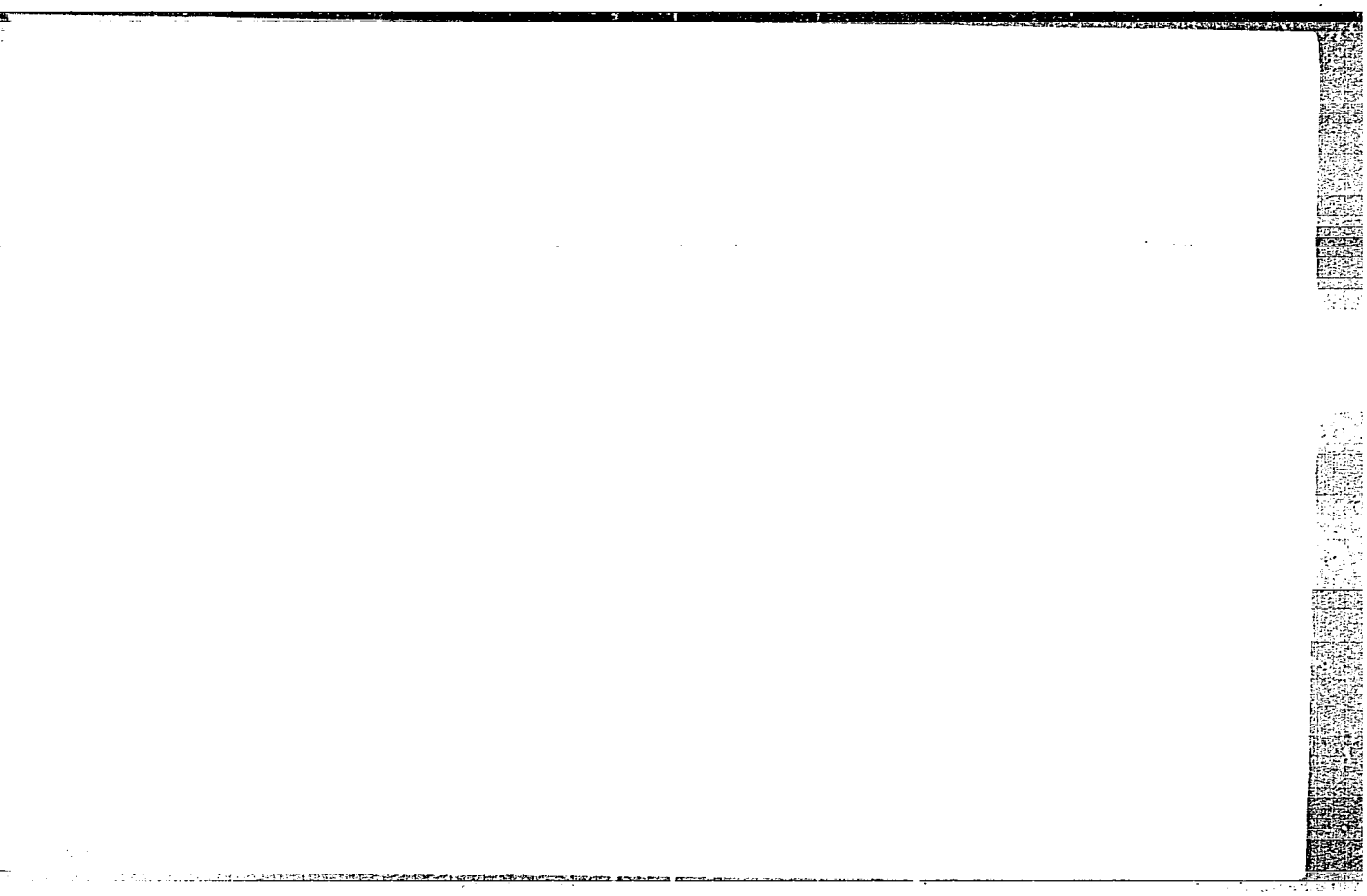

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L 10191-66 EWT(m)/EWP(j)/T/ETC(m) WW/RM

ACC NR: AP5028486 SOURCE CODE: UR/0286/65/000/020/0065/0065

INVENTOR: Korshak, V. V.; Krongauz, Ye. S.; Rusanov, A. L.

ORG: none

TITLE: Preparative method for polyesters. Class 39, No. 175652

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 20, 1965, 65

TOPIC TAGS: polyester plastic, heat resistant plastic

ABSTRACT: An Author Certificate has been issued for a preparative method for heat-resistant polyesters, involving the condensation of aromatic dicarboxylic acid chlorides with hydroxybenzoic acid hydrazides such as the 3- and 4-hydroxybenzoic acid hydrazides. [SM]

SUB CODE: 07,11/ SUBM DATE: 25Jan65/ ATD PRESS: 4159

Card 1/1 UDC: 678.673'1

KORSHAK, Vasiliy Vladimirovich; KRONGAUZ, Ye.S., red.

[Advances in polymer chemistry] Progress polimernoi khimii. Moskva, Nauka, 1965. 411 p. (MIRA 19:1)

L 26092-66 EWP(i)/EWT(m)/ETC(m)-6/T IJP(c) RM/WW

ACC NR: AP6015045 (A) SOURCE CODE: UR/0190/66/008/005/0804/0808

AUTHOR: Rusanov, A. L.; Korshak, V. V.; Krongauz, Ye. S.; Nemirovskaya, I. B.

ORG: Institute of Heteroorganic Compounds AN SSSR (Institut elementoorganicheskikh soyedineniy AN SSSR)

TITLE: Synthesis and investigation of poly-1,3,4-oxadiazoles

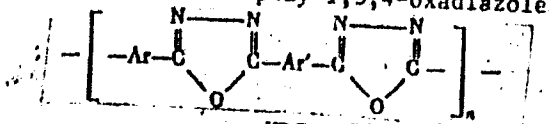
SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 5, 1966, 804-808

TOPIC TAGS: polyoxadiazole synthesis, polyoxadiazole property, heat resistant polymer

ABSTRACT: Fourteen high-molecular-weight polyhydrazides of the general formula

$$-[-Ar-CO-NH-NH-CO-Ar'-CO-NH-NH-CO-]_n-$$

have been prepared by low-temperature solution polycondensation of dihydrazides and dichlorides of aromatic dicarboxylic acids in hexamethylformamide. The polyhydrazides had softening points of 280—400C. Cyclodehydration of the polyhydrazides at 250—320C in vacuum yielded fourteen poly-1,3,4-oxadiazoles of the general formula



Card 1/2

UDC: 541.64+678.6

L 26092-66
ACC NR: AP6015045

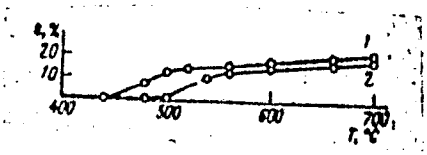
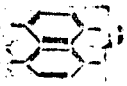


Fig. 1. Thermomechanical curves of two poly-1,3,5-oxadiazoles

1 - Ar and Ar' in Formula (B) are  ;
2 - Ar and Ar' in Formula (B) are  and , respectively.

The polyoxadiazoles had a softening point above 400C and were soluble without decomposition in concentrated sulfuric acid. Thermomechanical curves of the two most heat-resistant polyoxazoles synthesized are given in Fig. 1. Orig. art. has: 2 figures and 1 table.

[BO]

SUB CODE: 07, 11/ SUBM DATE: 03Apr65/ ORIG REF: 003/ OTH REF: 005/ ATD PRESS: 4253

Card 2/2

KRONGOL'D, Ye.S.

Determining the carrying capacity of casing-grouting pilings. Azerb. neft. khoz. 39 no.2:35-37 F '60. (MIRA 14:8)
(Oil well drilling, Submarine)

KRONGOL'D, Ye.S.; DADASHEV, A.N.

Calculation of the carrying capacity of combined casing-grouting pilings. Azerb. neft. khoz. 40 no.1:39-41 Ja '61. (MIRA 14:8)

(Oil well drilling, Submarine--Equipment and supplies)