13522-63 EWP(j)/EWT(m)/BDS AFFTC/ASD Pc-4 RM
ACCESSION NR: AP3001153 S/0190/63/005/006/0834/0836

59
58

AUTHOR: Frenkel', R. Sh.; Kuz'minskiy, A. S.

TITLE: The role of zinc oxide in vulcanization of rubbers by tetramethylthiuram-disulfide

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 5, no. 6, 1963, 834-836

TOPIC TAGS: vulcanization of rubber, free radical, zinc oxide, thiuram

ABSTRACT: Since the vulcanization of rubber by tetramethylthiuramdisulfide (TMTD) is due to its breakup into free radicals, it was assumed that zinc oxide was enhancing their formation. To prove this point the authors based their study on the property of the free radicals from TMTD decomposition to remove chlorine from carbon tetrachloride with the formation of $(CH_3)_2NC(S)SCl$, (CHNCSCl), the yield of which in the presence of ZnO could be used as an index of its performance. To this end, 3 gms of TMTD, 30 ml carbon tetrachloride, and 3 gms ZnO were heated for 3 hours in ampules at 135C, with the result that 90% of the entire TMTD underwent decomposition with the formation of CHNCSCl, 60% of the latter having entered into a reaction with zinc oxide to form zinc chloride. The control, without ZnO, did not reveal the presence of any new chlorine-containing compounds, while the heating of

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L 13522-63
ACCESSION NR: AP3001153

TMTD as such at 130-145C yielded some amines and carbon disulfide. Since the standard process of vulcanization results also in the formation of dithiocarbaminic acid, it was decided to find out whether this byproduct would react with ZnO. Comparative vulcanization tests in the presence of either ZnO or ZnS were set up, with only a slight difference in the quality of the resulting vulcanizate. Since ZnS is incapable of binding CHNCSCl, but it does enhance the breakup of TMTD into free radicals, the author concluded that the main role of ZnO consists of promoting the decomposition of TMTD. Orig. art. has: 1 chart and 1 table.

ASSOCIATION: Volzhskiy filial nauchno issledovatel'skogo instituta rezinovoy promy*shlennosti (Volga Division of the Scientific Research Institute of the Rubber Industry)

SUBMITTED: 17Nov61 DATE ACQ: 01Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 002 OTHER: 001

Card 2/2

LYUBCHANSKAYA, L.I.; DEGTEVA, T.G.; ANGERT, L.G.; KUZ'MINSKIY, A.S.

Method for rapid determining of guaranteed storage time of rubber. Kauch.i rez. 22 no.4:17-20 Ap '63. (MIRA 16:6)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.
(Rubber--Storage)

KUZ'MINSKIY, A.S.

AID Nr. 982-16 4 June

EFFECT OF MOLECULAR OXYGEN ON BACKBONE DEGRADATION IN POLYDIMETHYLSILOXANE RUBBER (USSR)

Kuz'minskiy, A. S., and Ye. A. Goldovskiy. IN: Akademiya nauk SSSR. Doklady, v. 149, no. 3, 21 Mar 1963, 606-608.

S/020/63/149/003/021/028

To determine the effect of molecular oxygen on backbone degradation in polydimethylsiloxane rubber (I), the "chemical" stress relaxation of I at constant strain was measured at the Scientific Research Institute of the Rubber Industry. The use of the stress-relaxation method to study the behavior of I during oxidation or heating in N_2 or Ar without specially induced cross linking was made possible by the formation of a three-dimensional network during oxidation. The rate of stress relaxation for preoxidized specimens of I heated in a stream of N_2 (<0.01% O_2) was found to decrease with an increase in the density of the three-dimensional network. Of three samples heated in a stream of Ar (0.05% O_2), preoxidized I had a higher rate of stress relaxation than either preoxidized.

Card 1/2

AID Nr. 982-16 4 June

EFFECT OF MOLECULAR OXYGEN [Cont'd] S/020/63/149/003/021/028

I preheated at 300°C for 24 hrs in vacuum or a radiation-induced I-vulcanizate. Of two samples heated in a stream of O_2, preoxidized vacuum-preheated I had a considerably lower initial stress-relaxation rate than preoxidized I, but this rate increased with time. These results suggest that on oxidation of I, active groups (not free radicals), probably ≡Si-OH groups, accumulate in I and contribute to the backbone degradation. These groups are at least partially deactivated on heating in vacuum. When I was heated in O_2, the rate of cleavage of CH_3 groups as a result of their oxidation was several orders above that in I decomposed thermally. At 278°C the ratio of the initial stress-relaxation rate of the preoxidized I in O_2 to that in N_2 was about 1.3/1. The number of degradation acts in preoxidized I heated in O_2 at 278°C was one order less than the number of side groups cleaved off as a result of oxidation. This confirms that the direct action of oxygen or free radicals formed by side-group oxidation plays no significant part in backbone degradation. It is concluded that the accelerating effect of oxygen on backbone degradation, to which the active groups contribute, occurs by a heterolytic mechanism. This is in contrast to backbone degradation by isomerization of the peroxide radical in hydrocarbon rubbers. [NI]

Card 2/2

L 18544-63 EPR/EWP(j)/EPF(c)/EWT(m)/BDS AFFTC/ASD Ps-4/Pc-4/Pr-4 RM/WW/
ACCESSION NR: AP3006767 S/0190/63/005/009/1417/1421 MAY

AUTHORS: Degteva, T. G.; Kuz'minskiy, A. S.

TITLE: Oxidative decomposition of Kel-F type fluorine-containing elastomer in the 250-360C temperature range. 1

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 5, no. 9, 1963, 1417-1421

TOPIC TAGS: oxidative degradation, elastomer, fluorine-containing elastomer, autocatalysis, activation energy, HFl, HCl

ABSTRACT: The elastomer under investigation was a copolymer consisting of 47% trifluorochloroethylene and 53% vinylidene fluoride, 2.5 gm aliquots of which were placed in the reaction chamber of an apparatus provided with a heating unit and an oxygen supply. The gaseous decomposition products of the elastomer were trapped in wash bottles containing an alkali solution, as well as by low temperature condensation by means of liquid oxygen. It was found that about 75 ml of oxygen were consumed during a 10-hour oxidation reaction at 300C, and after 40 hours of oxidation of the elastomer in a glass chamber at 250C there resulted a liberation of 0.3% HCl and 0.05% HF. Parallel experiments conducted in vacuum

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L 18544-63
ACCESSION NR: AP3006767

revealed that oxygen activates the process of HCl and HF liberation, as well as causing an increase in plastic flow of the elastomer. It was also established that in a glass chamber the kinetics of oxidation of type Kel-F elastomers can be recorded only for temperatures above 300C. Experiments conducted at 320-340C yielded HCl and HF in a mole ratio of 1:4. Taking into consideration the reaction of elastomer with the walls of the glass container, a platinum reaction chamber was used in a parallel series of experiments. These showed that the shape of the kinetic oxidation curves of elastomer Kel-F did not differ in any way from the oxidation curves of the corresponding hydrocarbons. It was also found that in a platinum container the liberation of HCl and HF proceeded at a nearly equal rate, while the activation energy of the reaction was significantly higher as compared with the one recorded for a glass reaction chamber. Orig. art. has: 6 charts.

ASSOCIATION: Nauchno-issledovatel'skiy institut rezinovoy promy*shlennosti (Scientific Research Institute of the Rubber Industry)

SUBMITTED: 13Mar62 DATE ACQ: 30Sep63 ENCL: 00

SUB CODE: CH NO REF SOV: 003 OTHER: 001

Card 2/2

DEGTEVA, T.G.; SEDOVA, I.M.; KUZ'MINSKIY, A.S.

Mechanism of the thermal degradation of elastomer of the type Kel-F (copolymer of trifluoroethylene with vinylidene fluoride) in the temperature range 200-380°. Part 4. Vysokom. soed. 5 no.10:1485-1490 O '63. (MIRA 17:1)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.

ANGERT, L. G.; ANDREYEVA, A.I.; KUZ'MINSKIY, A.S.

Aging of rubber made from methyl vinylpyridine compounds under conditions of static compression. Kauch. i rez. 22 no.6:13-17 Je '63. (MIRA 16:7)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.
(Rubber, Synthetic—Testing)

KUZ'MINSKIY, A.S.

Conference of the Council of Mutual Economic Aid on the aging and stabilization of rubber. Kauch. i rez. 22 no.7:52-53 Jl '63. (MIRA 16:8)

(Rubber research—Congresses)

ANGERT, L.G.; KHANIN, S.Ye.; KUZ'MINSKIY, A.S.

Thermal aging and protection of rubber based on natural caoutchouc.
Kauch. i rez. 22 no.10:19-23 O '63. (MIRA 16:11)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.

BOGAYEVSKIY, A.P.; GORELIK, B.M.; ZUYEV, Yu.S.; KUZ'MINSKIY, A.S.; NOVIKOV, A.S.

Some results of the research work conducted by the Scientific Research Institute of the Rubber Industry. Kauch. i rez. 22 no.11: 1-10 N '63. (MIRA 17:2)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.

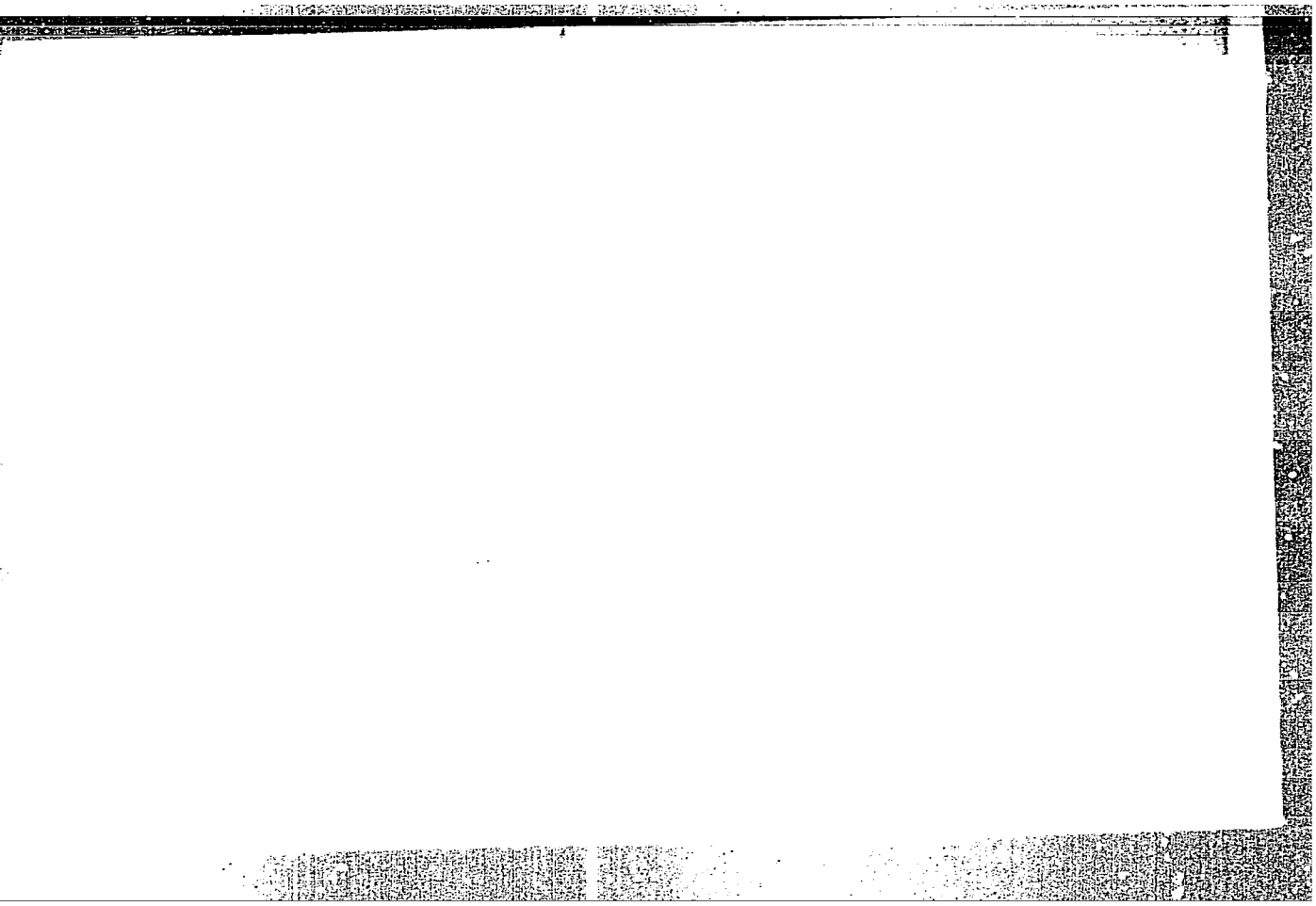
ANGERT, L.G.; KIRPICHNIKOV, P.A.; KUZ'MINSKIY, A.S.; SARATOV, I.Ye.

Synthesis of mixed esters of α-naphthylphosphorous acid and study of their inhibiting effect in the oxidation of crude and cured rubbers. Zhur. prikl. khim. 36 no.10:2270-2276 O '63. (MIRA 17:1)

KARGIN, V.A., akademik; NEYMAN, M.B., prof.; BUCHACHENKO, A.L., kand. khim. nauk; MIKHAYLOV, V.V.; MASLOVA, I.P.; LUKOVNIKOV, A.F., kand. khim. nauk; MATVEYEVA, Ye.N.; BERLIN, A.A., prof.; YANOVSKIY, D.M., kand. khim. nauk; POPOVA, Z.V., kand. khim. nauk; LEVANTOVSKAYA, I.I.; KOVARSKAYA, B.M., kand. khim. nauk; ANDRIANOV, K.A., prof.; KUZ'MINSKIY, A.S., prof.; SLONIMSKIY, G.L., prof.; MAKUNI, Ye.B., tekhn. red.

[Aging and stabilization of polymers] Starenie i stabilizatsiia polimerov. Moskva, Izd-vo "Nauka," 1964. 330 p. (MIRA 17:3)

1. Akademiya nauk SSSR. Institut khimicheskoy fiziki.
2. Chlen-korrespondent AN SSSR (for Andrianov).



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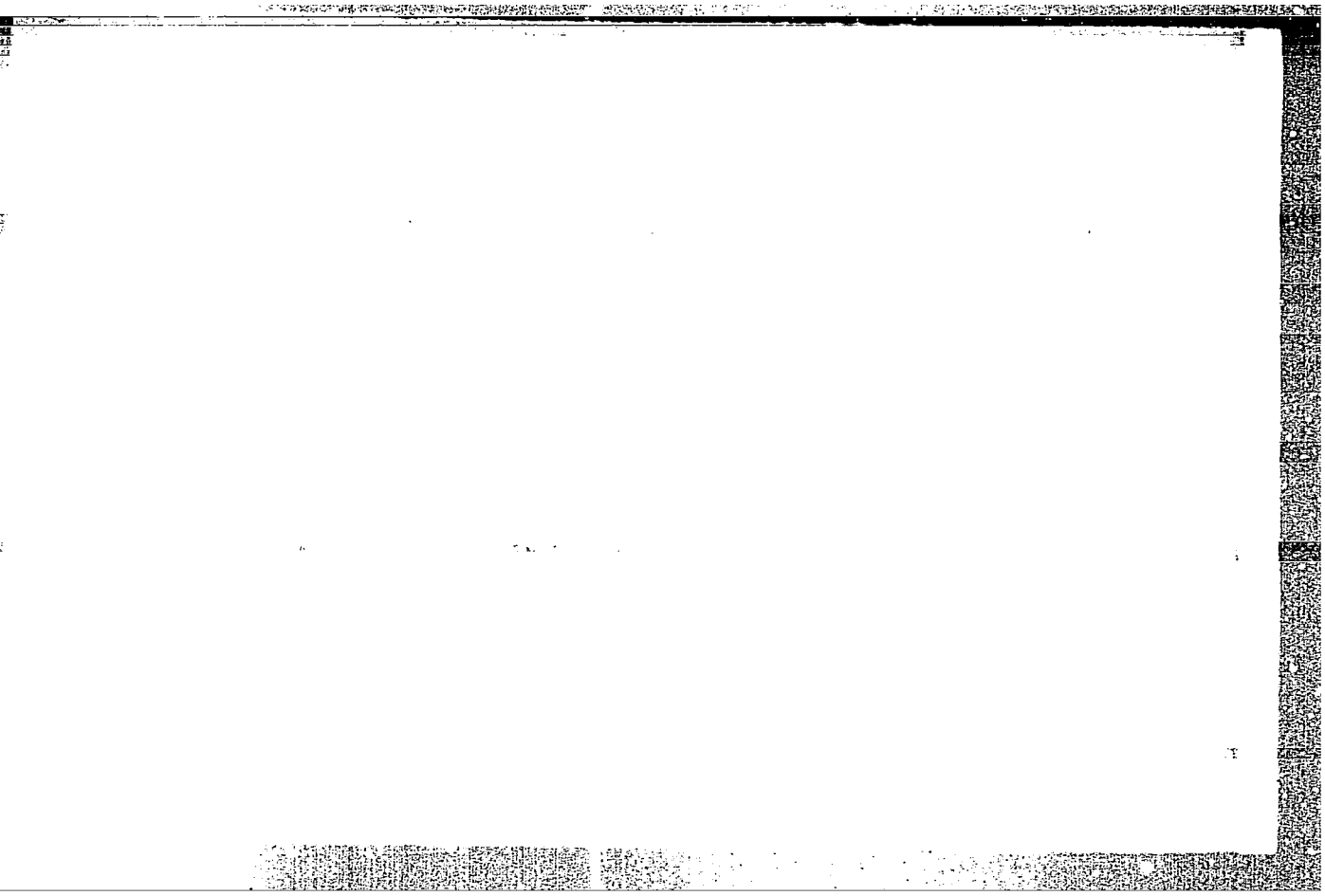

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000928110008-2"

SOURCE: Khimicheskaye svoystva i modifikatsiya [illegible] and modification of polymers), sbornik statey. Moscow, Izd-vo Nauka, 1964, 110-

ABSTRACT: The mechanism of the thermooxidative [illegible]

N NR. AT4049848

showed that from 0 to 360 mm at 340C, the rate [illegible] increases. Over a pressure range of 360-700 mm, however, the rate of degradation varies only slightly. An increase in the vinylidene fluoride content in the polymer from 35 [illegible] weight leads to an increase in the relative stability toward oxygen.

ACCESSION NR: AP4017634 S/0190/64/006/002/0241/0246

AUTHORS: Fedoseyeva, T. S.; Kuz'minskiy, A. S.; Neyman, M. B.; Buchachenko, A. L.; Lebedev, Ya. S.; Chertkova, V. F.

TITLE: Effect of three-dimensional network on free radical annihilation process in elastomers

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 2, 1964, 241-246

TOPIC TAGS: free radical, sodium-butadiene, thermal vulcanizate, EPR spectra, irradiated specimen, chain segment, activation energy, pre-exponential factor

ABSTRACT: The kinetic properties of free radicals formed in the γ-irradiation of thermally vulcanized sodium-butadiene of various degrees of cross-linkages have been investigated by the EPR method. The thermal vulcanizate was obtained by preliminary heating of the purified polymer in the press at 220C and under 50 t/cm^2 pressures from 5 to 60 hours. The specimen was irradiated in vacuum at -196C from a Co^{60} source of 25 Mrad dose. The EPR spectra of the irradiated specimen were obtained on the EPR-2 IKhF AN SSSR instrument at -196C in 20 to 100° intervals. It is shown that formation of a three-dimensional network prolongs the lifetime of the

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ACCESSION NR: AP4017634

captured radicals. The rate of annihilation of these radicals decreases with increase in the number of cross-linkages. The rate for the same network density is limited by the mobility of the various chain segments. Furthermore, the activation energies and pre-exponential factors for the annihilation of free radicals in "mobile" and "sluggish" regions of the chain have been determined. Orig. art. has: 5 figures and 1 table.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics AN SSSR); Nauchno-issledovatel'skiy institut rezinovoy promy*shlennosti (Scientific Research Institute of the Rubber Industry)

SUBMITTED: 13Nov62 DATE ACQ: 23Mar64 ENCL: 00

SUB CODE: CH NO REF SOV: 005 OTHER: 000

Card 2/2

KUZ'MINSKIY, A.S.; FEDOSEYEVA, T.S.; LEBEDEV, Ya.S.; BUNACHENKO, A.L.; ZHURAVSKAYA, Ye.V.

Nature of the free radicals formed in irradiated polydimethylsiloxanes. Vysokom. soed. 6 no.7:1308-1312 Jl'64(MIRA 18:2)

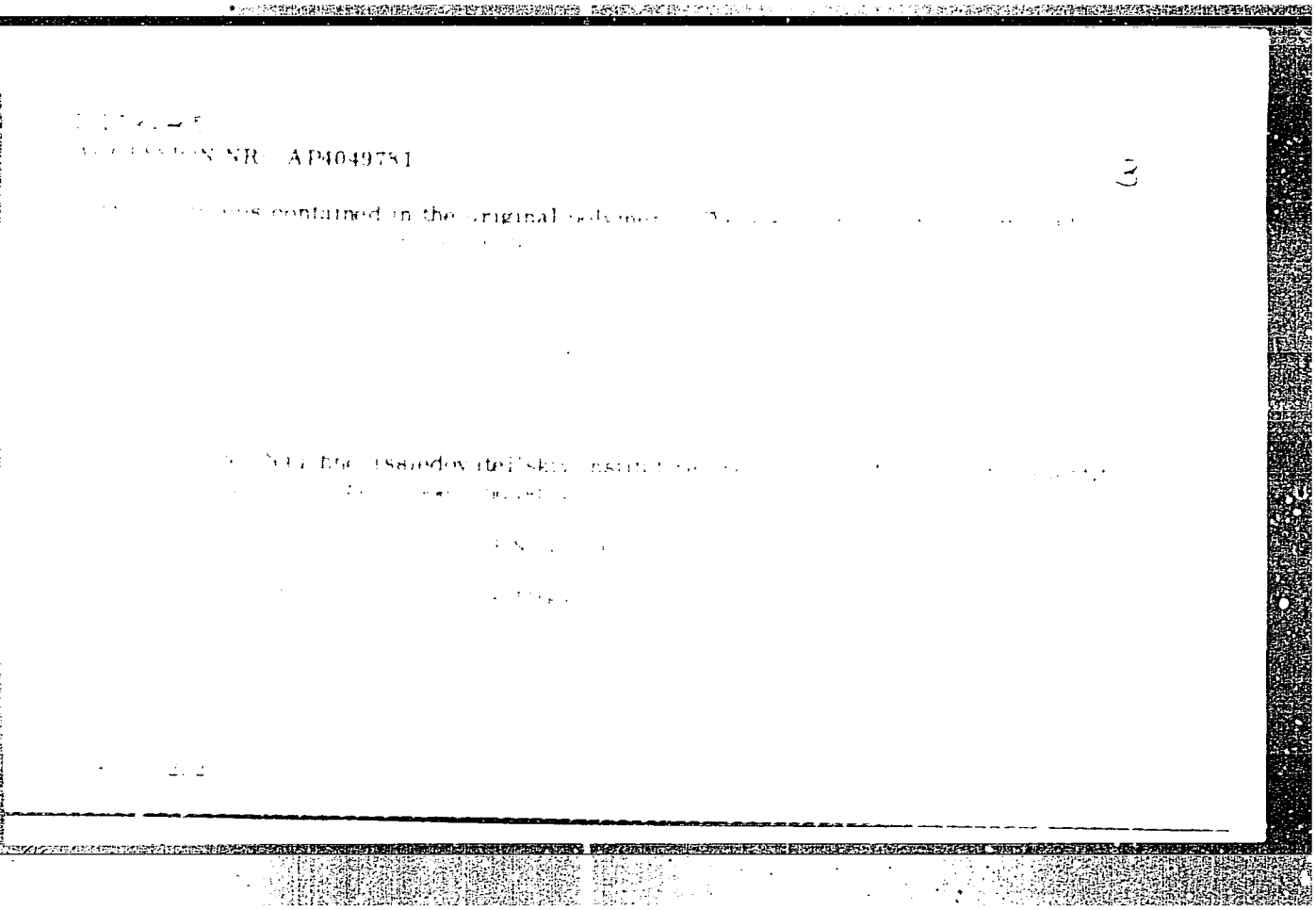
1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti i Institut khimicheskoy fiziki AN SSSR.

[illegible]sulfopolyethylene

[illegible], No. 11, 1963, [illegible]

TOPIC TAGS: chlorosulfopolyethylene, rubber structuring, thermal aging, chlorosulfopolyethylene aging, synthetic rubber, synthetic rubber aging, antioxidant

ABSTRACT: This work is an attempt to improve the thermal-aging resistance of rubber made from this polymer, which is operational only up to 120-130C. By means of qualitative reactions, it was established that molecular chlorine does not separate during heating [illegible]. The cleavage products [illegible]



DEGTEVA, T.G.; KUZ'MINSKIY, A.S.

Effect of ingredients on the separation of hydrogen halides from rubber and rubber compounds based on type Kel-F elastomers at high temperatures. Kauch. i rez. 23 no.2:11-17 F '64. (MIRA 17:3)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.

SMAGIN, Ye.N.; ZUYEVA, M.V.; MAKHLIS, F.A.; KUZ'MINSKIY, A.S.

Some elements of the technological flow sheet for the production of industrial rubber goods with the method of radiation vulcanization. Kauch. i rez. 23 no.6: 14-16 Je '64. (MIRA 17:9)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.

DEGTEVA, T.G.; KUZ'MINSKIY, A.S.; KHAMIDOV, Kh.A.

Effect of the ingredients on the separation of hydrogen fluoride from compounds and rubber based on type "viton A" elastomer at high temperatures. Kauch. i rez. 23 no.9:8-12 S '64.
(MIRA 17:11)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.

KUZ'MINSKIY, A.S.; FED'DSHTEYN, L.S.

Conference on the aging and stabilization of polymers. Kauch.
i rez. 23 no.10:55-57 O '64. (MIRA 18:2)

ANGERT, L.G.; KUZ'MINSKIY, A.S.

Aging of chlorosulfopolyethylene. Kauch.i rez. 23 no.11:4-10 N '64. (MIRA 18:4)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.

ACCESSION NR: AP4041458 S/0138/64/000/006/0014/0016

AUTHOR: Smagin, Ye. N.; Zuyeva, M. V.; Makhlis, F. A.; Kuz'minskiy, A. S.

TITLE: Some aspects of the technological system for making technical rubber products by the method of radiation vulcanization

SOURCE: Kauchuk i rezina, no. 6, 1964, 14-16

TOPIC TAGS: resin, rubber product, rubber, synthetic rubber, vulcanization, radiation vulcanization, dimethylsiloxane, fluororubber, butadiene-nitrile, cobalt 60, Gamma radiation

ABSTRACT: One of the promising variants of the technological system for making technical rubber products by radiation vulcanization is to use a flat irradiator containing Co^{60} as a γ-ray emitter. This technique is discussed in general terms and some preliminary data are presented. Data on the capacity of the irradiator for molds of various materials (iron, aluminum) and dimensions are tabulated. The advantages of the new device, having lighter weight and smaller dimensions compared to those used previously, are discussed. Radiation vulcanates based on rubbers for special purposes (dimethylsiloxane, fluoro-rubbers, butadiene-nitrile, etc.) have a higher thermal stability than the chemical vulcanates, but a lower strength. Since no vulcanizing agents or catalysts and no other ingredients

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ACCESSION NR: AP4041458

are added for radiation vulcanization, the consumption of raw material is reduced and the preparation of the mixtures is simplified. Molding is carried out at 100-200C (depending on the type of rubber) for 5-10 min., with subsequent cooling under pressure to remove the expansion stresses. The calculation of the irradiation dose in the mold is discussed, and it is concluded that special molds must be developed for radiation vulcanization to increase the capacity of the irradiator. Orig. art. has: 1 figure and 2 tables.

ASSOCIATION: Nauchno-issledovatel'skiy institut rezinovoy promy*shlennosti (Scientific Research Institute of the Rubber Industry).

SUBMITTED: 00 / DATE ACQ: 17Jul64 ENCL: 00

SUB CODE: MT NO REF SOV: 008 OTHER: 001

Card 2/2

L 45453-66 EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NR: AR6026776 (A) SOURCE CODE: UR/0031/66/000/008/S095/S095

34
B

AUTHOR: Angert, L. G.; Kuz'minskaya, A. S.; Mikhaylova, G. N.

TITLE: Effect of inhibitors on the development of mechanochemical processes in raw and cured rubbers

SOURCE: Ref. zh. Khimiya, Part II, Abs. 8S674

REF SOURCE: Sb. Sintez i issled. effektivn. stabilizatorov dlya polimern. materialov. Voronezh, 1964, 145-157

TOPIC TAGS: oxidation inhibition, mechanical property, secondary amine, natural rubber, synthetic rubber

ABSTRACT: Rubber oxidation inhibitors such as secondary aromatic mono- and diamines inhibit the development of mechanochemical processes in raw and cured rubbers. The effectiveness of the inhibition increases from monoamines to diamines and with increasing conjugation effect in the molecule of the series studied. The effectiveness of the amines during the fatigue of vulcanizates depends on their concentration. This relationship is described by a curve with a maximum. The action of amines on the fatigue process decreases with the temperature (in the 80-130° range). The inhibition of the mechanochemical transformations of raw rubber and vulcanizates by amines is based on their ability to inhibit the oxidative processes, which play a major part under

Card 1/2

L 45453-66
ACC NR: AR6026776 O

those conditions. M. Otopkova. [Translation of abstract]

SUB CODE: 07,11

Card 2/2

ACCESSION NR: AP4042191 S/0190/64/006/007/1308/1312

AUTHOR: Kuz'minskiy, A. S., Fedoseyeva, T. S., Lebedev, Ya. S., Buchachenko, A. L., Zhuravskaya, Ye. V.

TITLE: Nature of the free radicals formed in irradiated polydimethylsiloxanes

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 7, 1964, 1308-1312

TOPIC TAGS: polydimethylsiloxane, phenylene derivative, hydroxyphenylene derivative, irradiation, free radical, Gamma irradiation, electron paramagnetic resonance, EPR spectrum, polymer radiation effect

ABSTRACT: The mechanism of action of irradiation on polydimethylsiloxane and its phenylene- and hydroxyphenylene- containing derivatives during the formation of free radicals was investigated by subjecting the polymers to γ-irradiation (Co^{60} = 10000 g. equiv. Ra.) at -196C in vacuum at a dose of 25 Mrad. Electron paramagnetic resonance spectra showed that two types of radicals (singlet and triplet) are formed corresponding to

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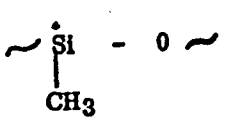
ACCESSION NR: AP4042191



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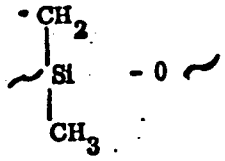
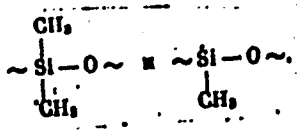
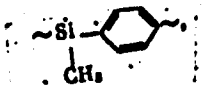


The formula for determining the relative concentration of both types of radicals in polydimethylsiloxane is given as:



In phenylene-containing polydimethylsiloxane, the radical



is found, the spectrum of which is determined by the interaction of the unpaired electron

Card 2/3

ACCESSION NR: AP4042191

with the ortho and meta protons of the phenylene ring. The kinetic properties of these free radicals were found to depend on the mobility of the polymer chain segments. "The authors wish to express their gratitude to A. L. Klebanskiy and S. E. Dolgaplosk for their continual attention and assistance in this work." Orig. art. has: 3 figures, 1 formula and 5 chemical structures.

ASSOCIATION: Nauchno-issledovatel'skiy institut rezinovoy promy*shlennosti (Scientific Research Institute of the Rubber Industry); Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics, AN SSSR)

SUBMITTED: 28Aug63

ENCL: 00

SUB CODE: OC

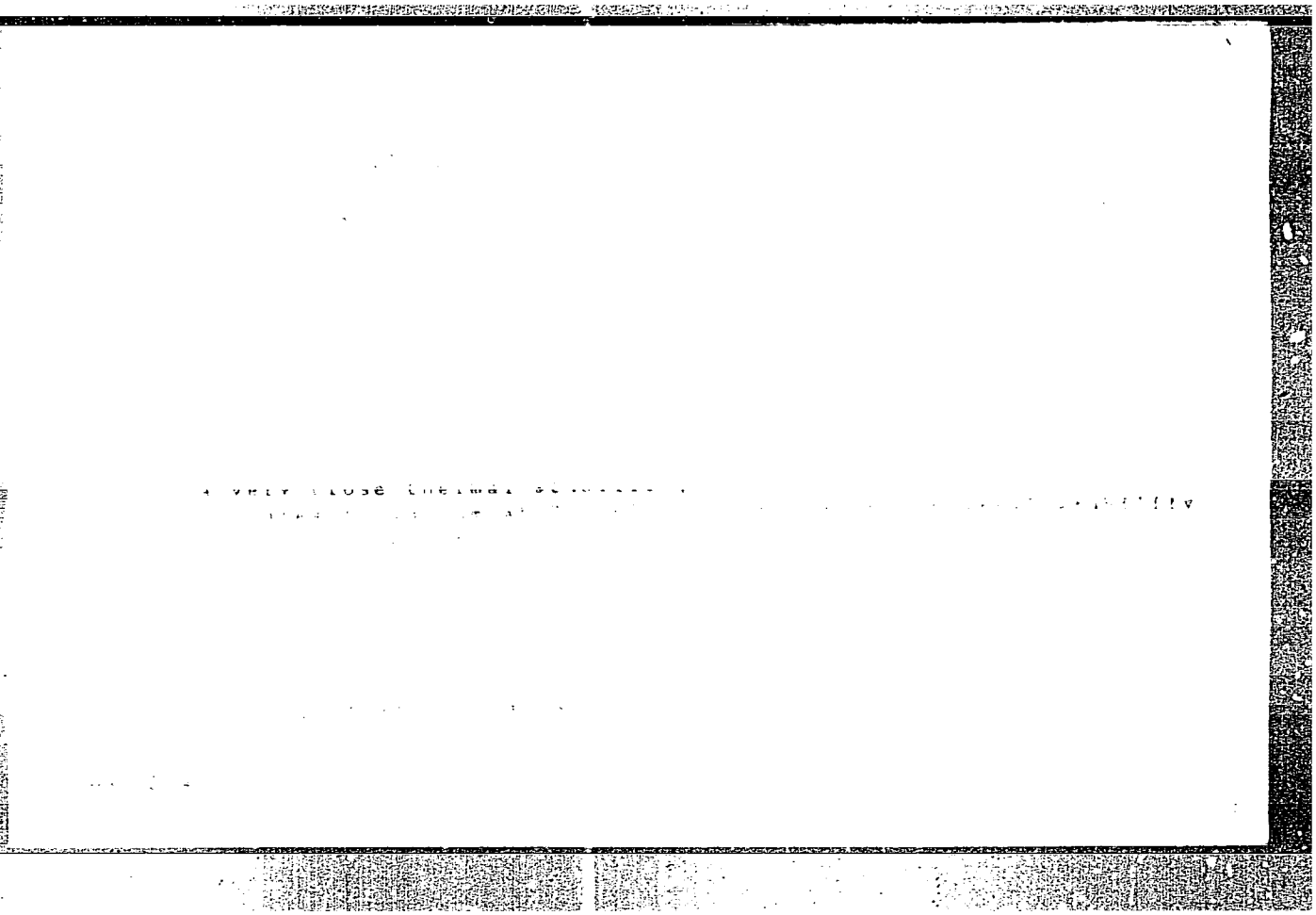
NO REF SOV: 002

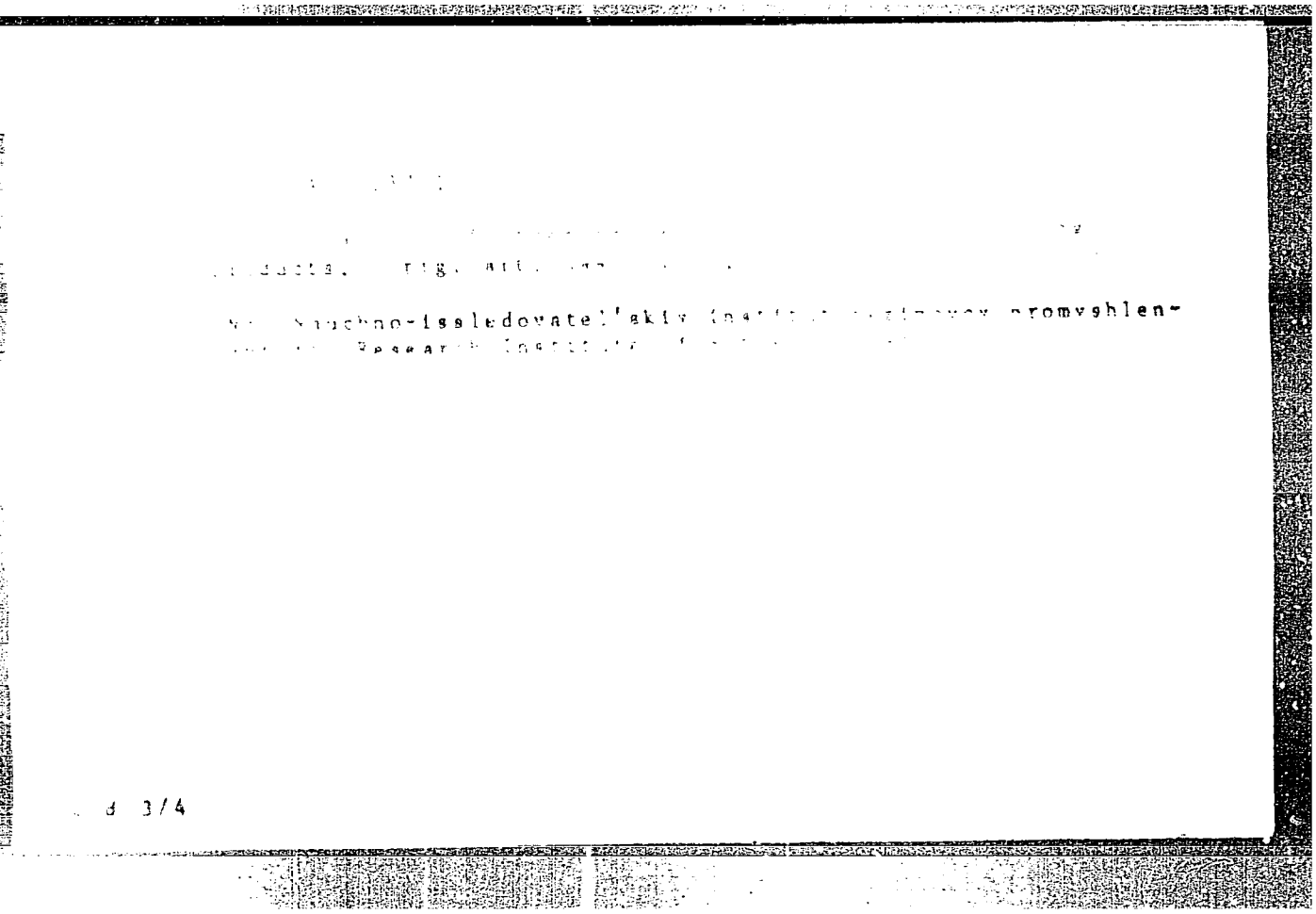
OTHER: 002

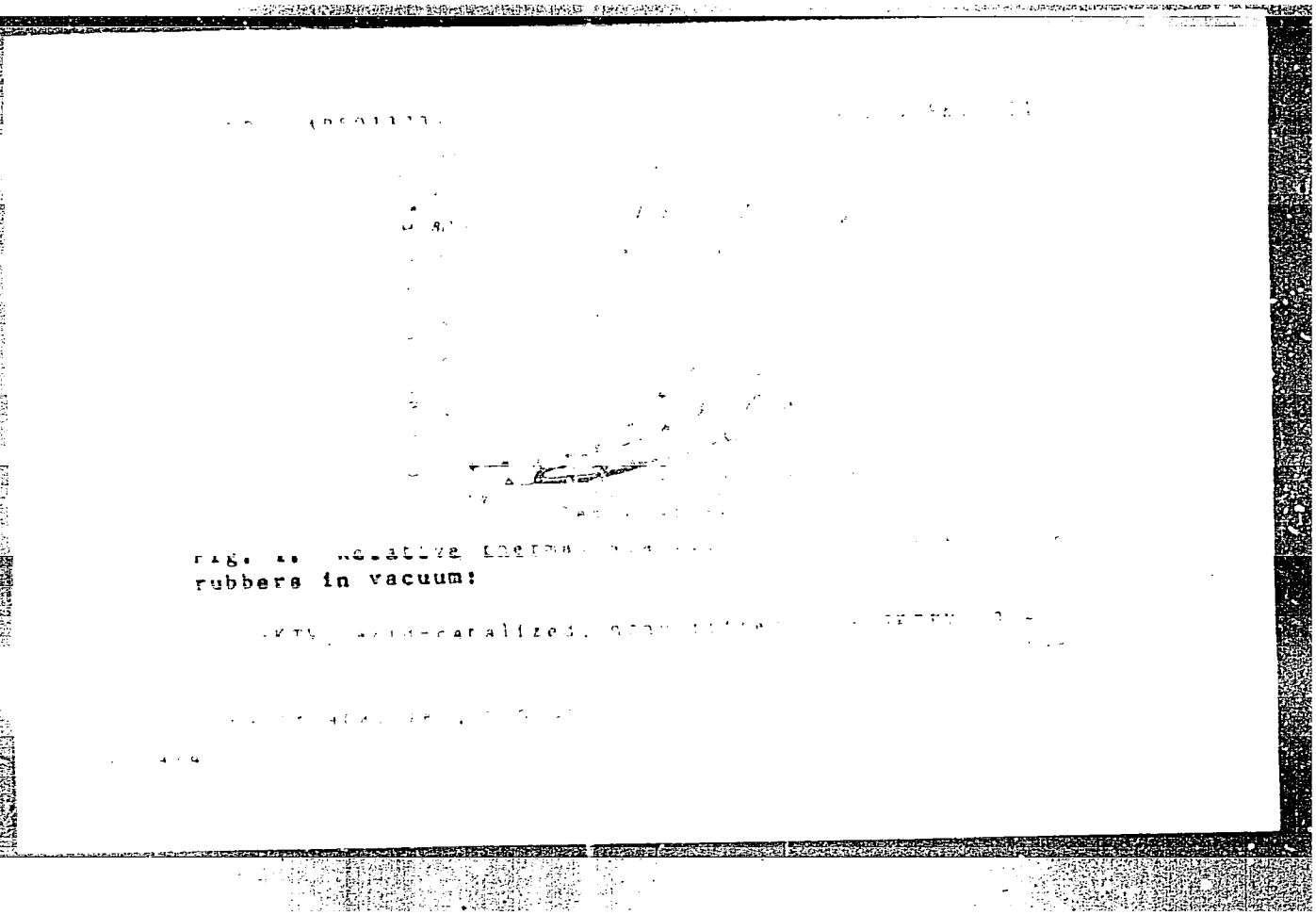
Card 3/3

SOURCE: Kauchuk i rezina, no. 3, 1963, 1-6

silicone rubber, silicone rubber mix, silicone rubber







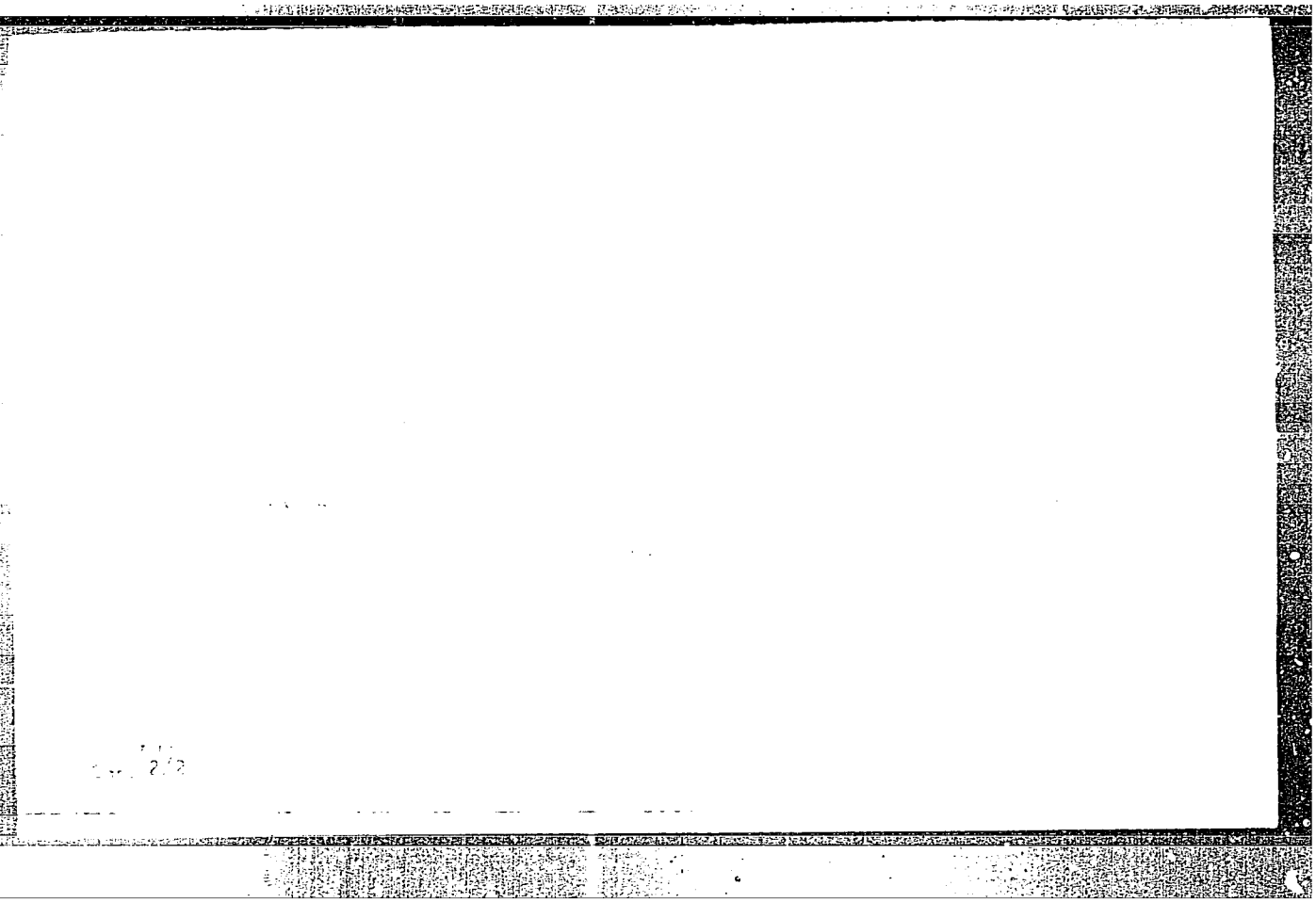
rubbers in vacuum:

GRUBER, V.N.; KLEBANSKIY, A.L.; DEGTEVA, T.G.; KUZ'MINSKIY, A.S.; MIKHAYLOVA, T.A.; KUZ'MINA, Ye.V.

Effect of supermolecular structure on the thermal stability of siloxane elastomers. Vysokom. soed. 7 no.3:462-467 Mr '65. (MIRA 18:7)

1. Nauchno-issledovatel'skiy institut sinteticheskogo kauchuka i Institut rezinovoy promyshlennosti.

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 5, 1965, 765-771



SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 7, 1965, 1196-1202

degradation

residue, three fractions are evolved. Infrared spectroscopic analysis revealed that

Card 1/2

L 61853-65

L 13524-66 EWT(m)/EWP(j) RM

ACC NR: AP6001854 SOURCE CODE: UR/0190/65/007/012/2015/2019

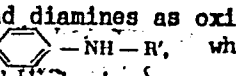
AUTHORS: Angert, L. G.; Mikhaylova, G. N.; Kuz'minskiy, A. S.

ORG: Scientific Research Institute of Rubber Industry (Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti)

TITLE: Effect of oxidation inhibitors upon development of mechanical and chemical processes in rubber

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 12, 1965, 2015-2019

TOPIC TAGS: synthetic rubber, oxidative degradation, oxidation inhibition, antioxidant additive / SKI polyisoprene rubber, UR 10 IR spectrometer

ABSTRACT: The effect of secondary aromatic mono- and diamines as oxidation inhibitors (p-phenylenediamine derivatives,  , where R and R' are various alkyl and aryl groups, and phenyl-β-naphthylamine) upon the oxidation and structural changes in polyisoprene rubber SKI during the rolling process was investigated at 30 and 130C. This work is a continuation of the study of chemical processes occurring in rubber during rolling, reported by the authors earlier (Vysokomolek. soyed., 7, 765, 1965). Chemical transformations were investigated by determining the amount of absorbed oxygen, using radioactive methods developed by L. V. Chepel', B. A. Chapyzhnikov, and B. I. Viting (Zh. analit. khimii, 18, 865,

Card 1/3 UDC: 678.01:53+678.41+678.76

1965) and by means of IR spectra using a UR-10 instrument. Structural changes were determined from changes in molecular weight, measured viscosimetrically. The data are summarized in Fig. 1.

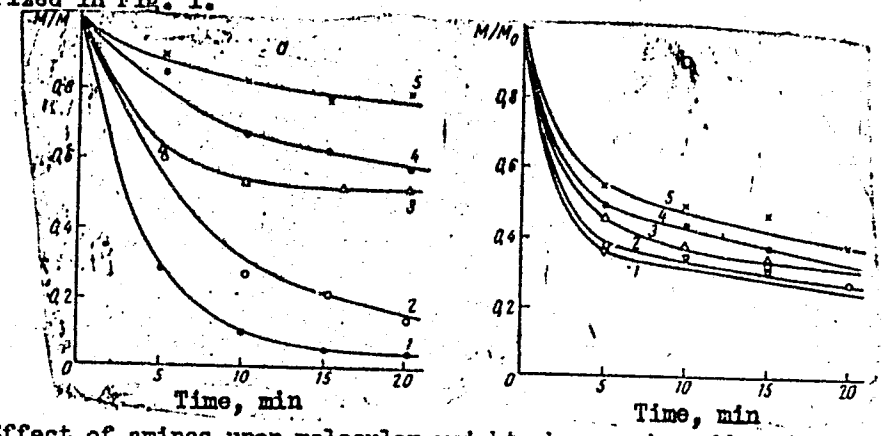


Fig. 1. Effect of amines upon molecular weight changes in rubber during rolling at 130C (a) and 30C (b): 1 - rubber alone; 2 - rubber with phenyl-β-naphthyl-amine; 3 - rubber with N,N'-di-(methylheptyl)-p-phenylenediamine; 4 - rubber with N-phenyl-N'-isopropyl-p-phenylenediamine; 5 - rubber with N,N'-diphenyl-p-phenylenediamine.

L 13524-66
ACC NR: AP6001854

2

It was found that: 1) at high temperatures, where oxidative processes are predominant, the inhibitors are most effective, with more highly conjugated diamines preferable; 2) at lower temperatures, the destruction of the rubber is mainly due to mechanical processes, and inhibitors are ineffective. Radioactive determination of oxygen was performed in the Physico-Chemical Institute, L. Ya. Karpov (Fiziko-khimicheskiy institut). IR absorption spectra were taken by N. K. Koslor. Orig. art. has: 4 figures.

SUB CODE: 11, 07/ SUBM DATE: 07Oct64/ ORIG REF: 014/ OTH REF: 004

Card 3/3 DK

L 22287-66 EWP(j)/EWT(m)/EWP(t) IJP(c) RM/JD

ACCESSION NR: AP6006492 SOURCE CODE: UR/0138/65/000/010/0026/0027

AUTHOR: Frenkel', R. Sh.; Kuz'minskiy, A. S.; Morozov, G. M.; Gorbunova, V. I.

ORG: Volga Branch, Scientific-Research Institute of the Tire Industry (Volzhskiy filial nauchno-issledovatel'skogo instituta shinnoy promyshlennosti)

TITLE: Investigation of the effect of zinc oxide on the decomposition of the polysulfide bonds of vulcanizates

SOURCE: Kauchuk i rezina, no. 10, 1965, 26-27

TOPIC TAGS: zinc oxide, vulcanization, rubber, sulfide, chemical decomposition

ABSTRACT: The present authors showed earlier (Kauchuk i rezina, no. 10, 32 (1962); Vysokomolekulyarnyye soyed., 5, no. 6, 834 (1963)) that zinc oxide promotes the free-radical decomposition of disulfide vulcanization catalysts. This led to the assumption that zinc oxide will affect the free-radical di- and polysulfide bonds of vulcanizates in a similar manner. For the investigation of the effect of zinc oxide on the decomposition of the polysulfide bonds of a vulcanizate, the authors used the following compositions of a rubber mixture: (parts by wt.) SKN-26, 100.0, DFG, 1.0; sulfur, 5.0; furthermore, the following were added: ZnO (mixture 1), CaO (mixture 2), and BeO (mixture 3), 5.0. It is concluded that zinc oxide

Card 1/2 UDC: 678.028:541.12

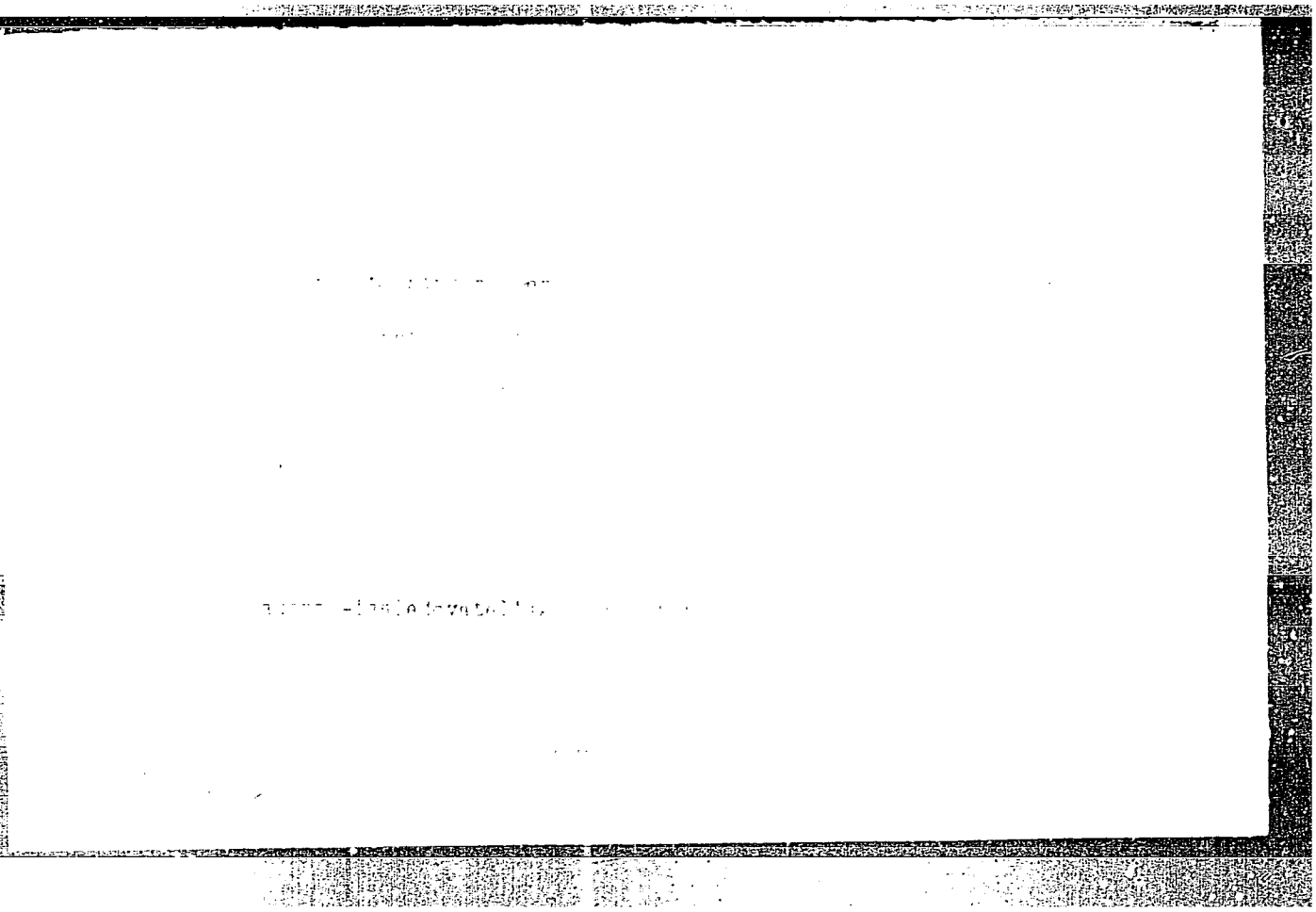
L 22287-66

ACCESSION NR: AP6006492

promotes the decomposition of sulfur-containing horizontal bonds of vulcanizate SKN-26, which leads in the process of vulcanization to an increase in the concentration of the horizontal bonds and to a reduction in the degree of sulfidity. Orig. art. has: 1 figure and 1 table.

SUB CODE: 07 / SUBM DATE: none / ORIG REF: 003 / OTH REF: 003

Card 2/2 nst



L 10183-66 EWT(m)/EWP(1)/T RPL WW/RM

ACC NR: AP5028492 SOURCE CODE: UR/0286/65/000/020/0066/0067

AUTHORS: Angert, L. G.; Kuz'minskiy, A. S.; Kovrizhko, L. F.; Piotrovskiy, K. B.; Rayevskiy, A. B.; Sotnikov, I. F.; Ivanova, Z. V.

ORG: none

TITLE: Method for obtaining synthetic rubber. Class 39, No. 175659 [announced by Voronezh Factory for Synthetic Rubber im. S. M. Kirova (Voronezhskiy zavod sinteticheskogo kauchuka)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 20, 1965, 66-67

TOPIC TAGS: rubber, synthetic rubber, polymer, copolymer styrene, butadiene

ABSTRACT: This Author Certificate presents a method for obtaining synthetic rubber via an aquo-emulsion copolymerization of butadiene with styrene or α-methyl styrene in the presence of known emulsifiers, initiators, regulators, and buffers and with the use of polymerization terminators. The latter are introduced into the system after obtaining the desired degree of monomer conversion. To increase the variety of polymerization terminators, oxyneozone is used as polymerization terminator. The polymerization process may also be terminated by using oxyneozone along with known polymerization terminators, e.g., sodium dimethyldithiocarbamate.

SUB CODE: 11/ SUBM DATE: 14Jul64

UDC: 678.762.2-134.622

Card 1/1

ACC NR: AP6000353 SOURCE CODE: UR/0286/65/000/021/0048/0048

INVENTOR: Bass, S. I.; Berlin, A. A.; Goldovskiy, Ye. A.; Kuz'minskiy, A. S.

ORG: none

TITLE: Method of stabilizing polyorganosiloxanes against thermal-oxidation aging. Class 39, No. 176067 [announced by the Moscow Institute of Fine Chemical Technology im. M. V. Lomonosov (Moskovskiy institut tonkoy khimicheskoy tekhnologii)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 21, 1965, 48

TOPIC TAGS: polysiloxane, stabilizer, oxidation inhibition

ABSTRACT: An Author Certificate has been issued for a method of stabilizing polyorganosiloxanes to prevent thermal-oxidative aging. To increase the inhibiting effectiveness of the stabilizer, polynuclear aromatic compounds are used, such as anthracene heat treated at 300—450C in vacuum. [SM]

SUB CODE: 07,11/ SUBM DATE: 23Jul64/ ATD PRESS: 4159

Card 1/1 UDC: 678.84.048:547.672.1

DEGTEVA, T.G.; GRUBER, V.N.; KUZ'MINSKIY, A.S.

Study of the behavior of various siloxane raw rubbers and rubbers on their base in a vacuum at temperatures ranging from 250°C to 500°C. Kauch. i rez. 24 no.5:1-6 My '65. (MIRA 18:9)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.

KUZ'MINSKIY, A.S.; FEDOSEYEVA, T.S.; BUCHACHENKO, A.L.

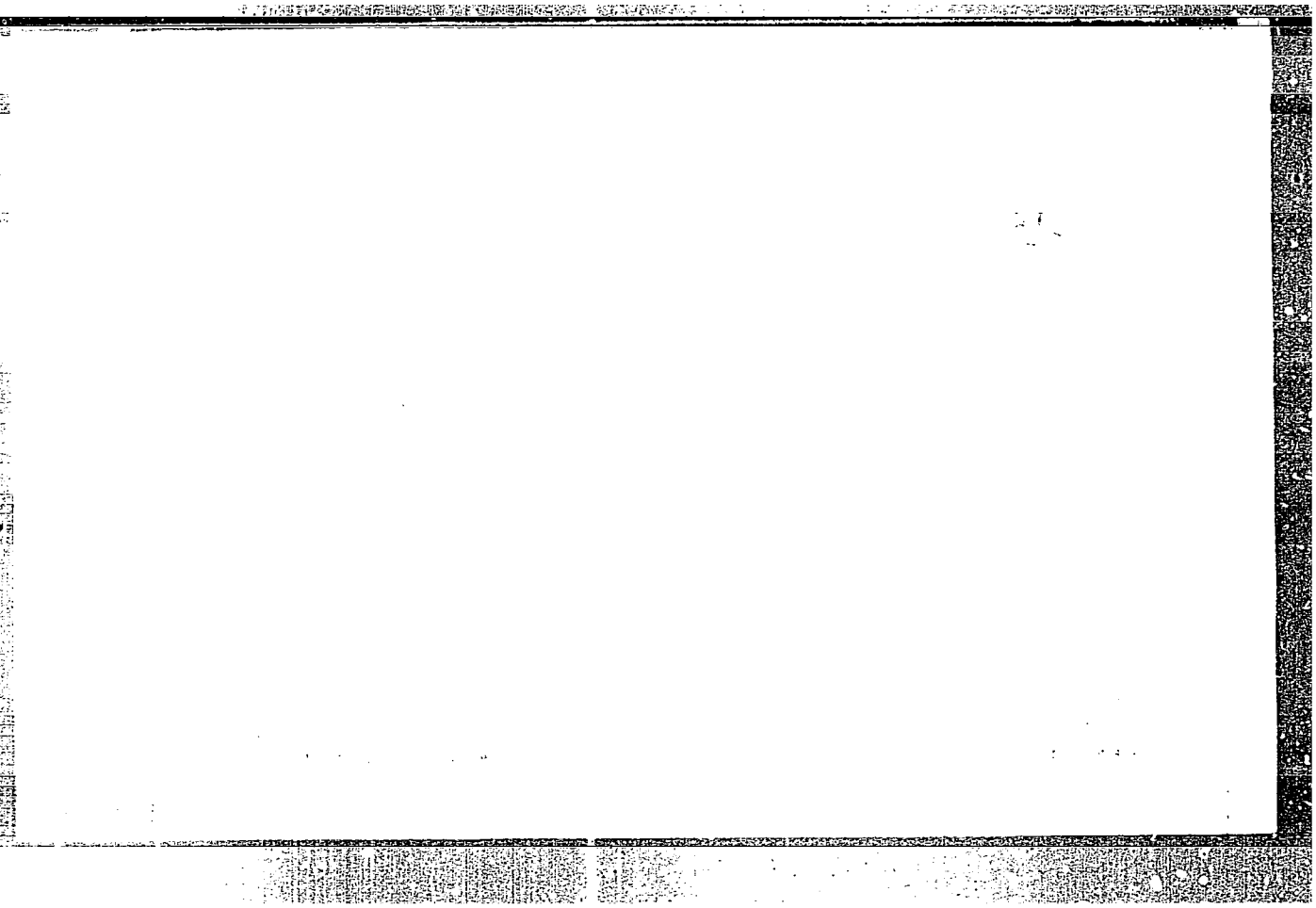
Application of the electron paramagnetic resonance method in elastomer chemistry. Kauch. i rez. 24 no.7:10-14 Jl '65.
(MIRA 18:8)

1. Nauchno-issledovatel'skiy institu rezinovoy promyshlennosti i Institut khimicheskoy fiziki AN SSSR.

LYUBCHANSKAYA, L.I.; TSAPINA, N.A.; KUZ'MINSKIY, A.S.

Studying the relationship between the chemical relaxation of stresses and the failure of rubber seals. Kauch. i rez. 24 no.9:13-16 '65. (MIRA 18:10)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.



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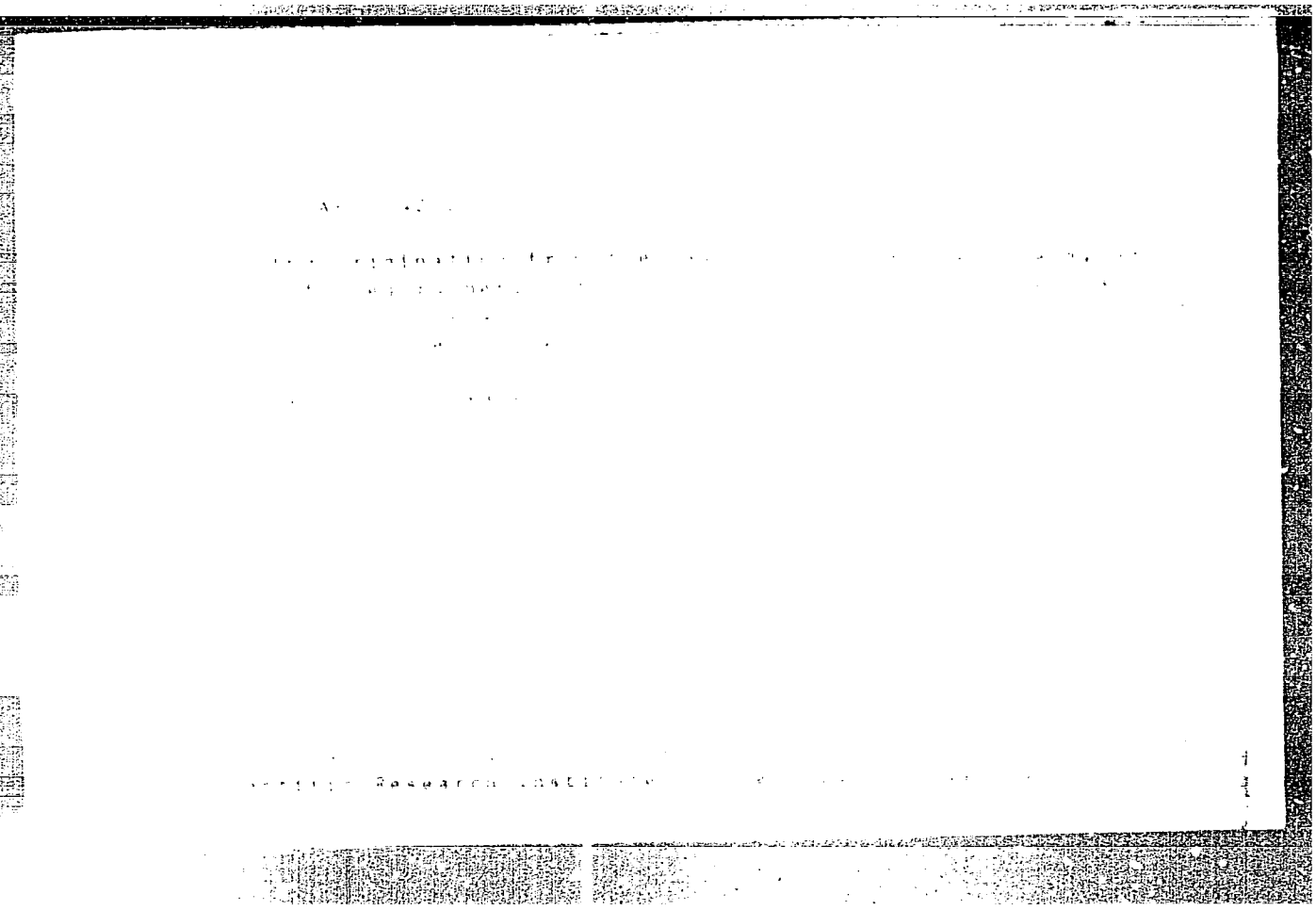
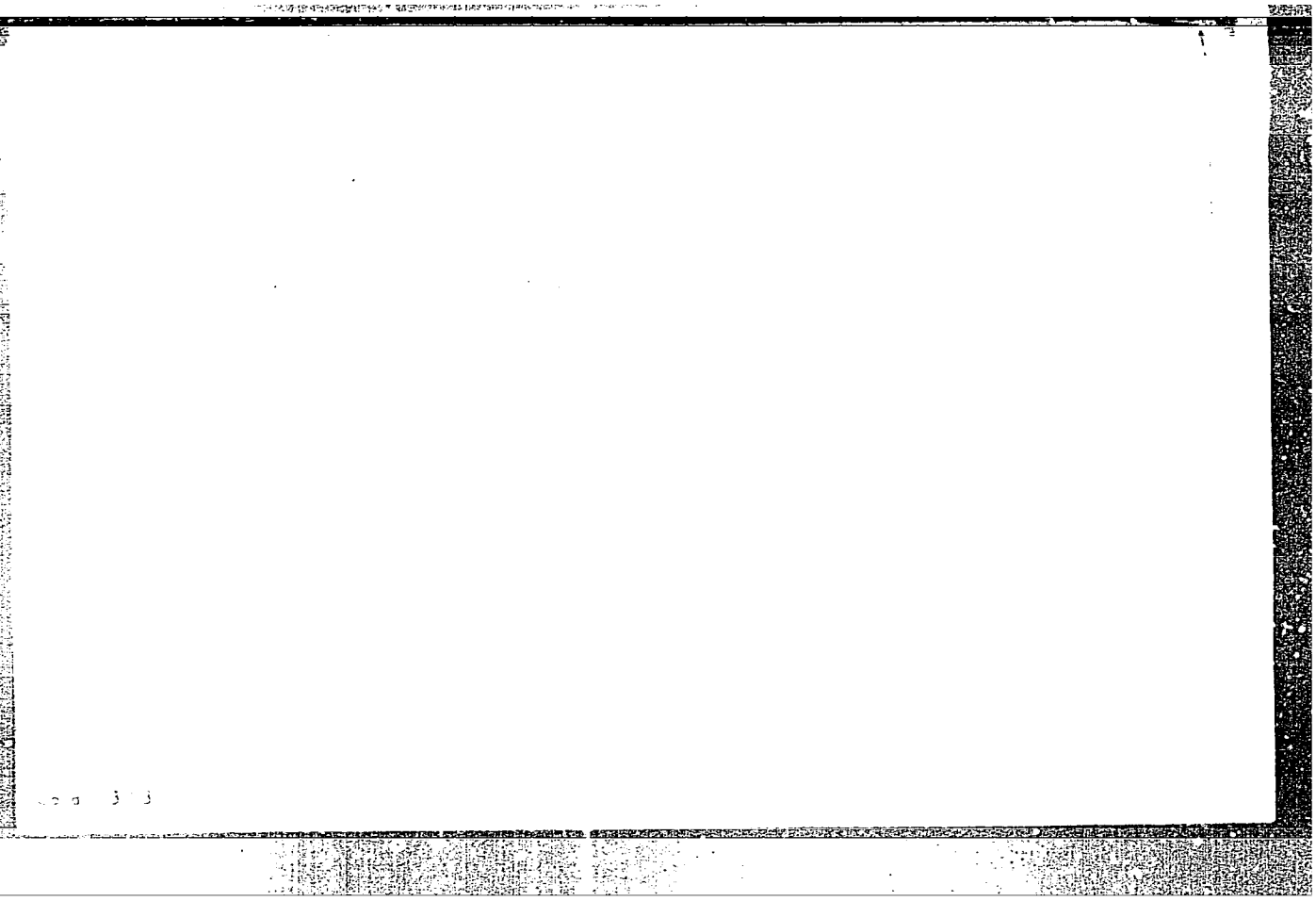




L 46173-66 EWT(m)/EWP(j)/T IJP(c) DJ/RM

ACC NR: AP6021206 (A) SOURCE CODE: UR/0138/66/000/003/0049/0053

AUTHOR: Chepel', L. V.; Chapyzhnikov, B. A.; Mikhaylova, G. N.; Zhuravskaya, Ye. V.; Kuz'minskiy, A. S.

ORG: Physicochemical Institute im. L. Ya. Karpov (Fiziko-khimicheskiy institut); Scientific Research Institute of the Rubber Industry (Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti)

TITLE: Radioactive method of determining oxygen in elastomers during their processing and aging

SOURCE: Kauchuk i rezina, no. 3, 1966, 49-53

TOPIC TAGS: oxygen, elastomer, radioisotope

ABSTRACT: A method has been developed for determining the oxygen content of polymers directly during their processing and aging, the sample being unaffected by the analysis. It consists in activating the nuclei of oxygen and carbon present in the polymer by means of gamma radiation, then identifying the radioisotopes formed. Since the radioisotopes O^{15} and C^{11} are formed simultaneously during the irradiation, in order to measure the activity of O^{15} against the background of C^{11}, a technique of discrimination involving the use of a laboratory scintillation analyzer was employed. The method was first applied to the study of the oxidation kinetics of raw and cured rubbers during rolling, vulcanization, and radiation aging, and then to the determination

Card 1/2 UDC: 678.4/.7:543:844:621.039.83

L 46173-66

ACC NR: AP6021206

3

of oxygen in an unfilled NK-base rubber at various stages of vulcanization in the press. The method can also be used to study the development of oxidation processes associated with wear and fatigue in rubbers. Orig. art. has: 4 figures and 1 table.

SUB CODE: 11/ SUBM DATE: 25May64/ ORIG REF: 003/ OTH REF: 002

Card 2/2 mt

32662-66 EWT(m)/EWP(j)/T IJP(c) WW/RM
ACC NR: AP6015060 (A) SOURCE CODE: UR/0190/66/008/005/0960/0961

AUTHOR: Goldovskiy, Ye. A.; Kuz'minskiy, A. S.; Goroknova, T. Ye.; Dolgoplosk, S. B.

ORG: none

TITLE: Effect of the structure of arylenesiloxane polymers on their thermal and thermooxidative stability

SOURCE: Vysokomo kulyarnyye soyedineniya, v. 8, no. 5, 1966, 960-961

TOPIC TAGS: ~~polymer,~~ molecular property, thermal stability, heat resistance, ~~arylenesiloxane polymer,~~ polymer structure, MACROMOLECULE, SILOXANE

ABSTRACT: The thermal and thermooxidative stability of high molecular polydimethylsilarylenesiloxanes has been investigated. The maximum heat resistance was observed for homopolymers containing diphenylenoxide. The maximum thermooxidation resistance was observed for the homopolymer containing meta-substituted phenylene groups. [NT]

SUB CODE: 11, 07/ SUBM DATE: 28Dec65/ ORIG REF: 001/ OTH REF: 001

Card 1/1 BLG UDC: 678.01:54+678.84

L 42091-66 EWT(m)/EWP(j) IJP(c) JWD/RM

ACC NR: AP6029026 SOURCE CODE: UR/0413/66/000/014/0026/0026

INVENTOR: Ryashentseva, M. A.; Minachev, Kh. M.; Geydysh, L. S.; Kuz'minskiy, A. S.; Angert, L. G.

ORG: none

42 B

TITLE: Preparative method for stabilizers of raw and vulcanized rubber. Class 12, No. 183763 [announced by Institute of Organic Chemistry im. N. D. Zelinskiy, AN SSSR (Institut organicheskoy khimii AN SSSR); Scientific Research Institute of the Rubber Industry (Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti)]

SOURCE: Izobret prom obraz tov zn, no. 14, 1966, 26

TOPIC TAGS: stabilizer, ~~raw~~ natural rubber, synthetic ~~vulcanized~~ rubber, ~~hydroquinone, paraphenylene-diamine, ketone alkylation~~, vulcanization

ABSTRACT: This Author Certificate presents a method for preparing stabilizers of raw and vulcanized rubber. The method involves alkylation of the hydroquinone—p-phenylene-diamine molecular compound at 150—180C and 110—160 atm. Such ketones as acetone or 2-butanone are used as alkylation agents. Alkylation is conducted in the presence of palladium sulfide and glacial acetic acid. [BO]

SUB CODE: 11/ SUBM DATE: 14Jun65/ ATD PRESS: 5062

Card 1/1 af UDC: 547.553.1'53'023.07

KUZ'MINSKIY, F.

TELEVISION

"Instrument for Television Alignment" by F. Kuz'minskiy and S. Sher, Radio, No 1, January 1958, pp 41-43.

The apparatus described in this article can be used for displaying the frequency characteristic of the amplifier circuits of the television directly on the screen of the kinescope of the television that is being repaired or aligned. The instrument consists of an fm oscillator, a modulator, a marker device consisting of a crystal oscillator, a multiplier and mixer, amplifier, and a mixing stage intended for visual observation of the frequency characteristic. The diagram of the equipment is given as is an external view and operating instructions.

Card: 1/1

KUZ'MINSKIY, I.S.

Operation of the Korostyshev Paper Mill. Bum. prom. 33 no.9:23 S '58.
(MIRA 11:10)

1.Nachal'nik bumzahnogo tsekha Korostyshevskoy bumazhnoy fabriki.
(Korostyshev--Paper-cutting machines)

SOURCE: Kauchuk i rezina, no. 9, 1964, c 12

TOPIC TAGS: elastomer, filler, hydrogen fluoride, dehydrofluorination, silica gel, [illegible] molybdenum glass, [illegible]

[illegible] order to extend the work previously [illegible] elastomer the

NR AP4045696

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000928110008-2"

KUZMINSKIY, M. I.

Geometry - Study and Teaching

Elements of logic in teaching geometry. Mat. v shkole No. 1, 1953.

Monthly List of Russian Accessions, Library of Congress, June 1953. Uncl.

DIKKER, G.L.; DRUZHININA, L.N., kand. tekhn. nauk, dots.; ISKENDEROV, A.A., kand. tekhn. nauk, dots.; KLYUYEVA, T.K., kand. tekhn. nauk, dots.; LOGOTKIN, I.S., kand. tekhn. nauk; MEL'MAN, M.Ye., kand. tekhn. nauk, dots.; MISNIK, I.A., kand. tekhn. nauk; RUSH, V.A., dots.; RUKOSUYEVA, A.N., dots., red.; KAFKA, B.V., prof., retsenzent; FERTMAN, G.I., dots., retsenzent; SOBOLEVA, M.I., dots., retsenzent; BUDNITSKAYA, R.S., kand. tekhn. nauk, retsenzent; VOLKOV, Ye.N., kand. tekhn. nauk, retsenzent; AREF'YEV, I.I., inzh., retsenzent; KHARITONOV, A.F., retsenzent; GUREVICH-GUR'YEV, Ye.S., retsenzent; KUZ'MINSKIY, M.M., retsenzent; INIKHOV, G.S., prof., retsenzent; KHOMUTOV, B.I., dots., retsenzent; BORODINA, Z.N., dots., retsenzent; BORISOVA, G.A., red.; MEDRISH, D.M., tekhn. red.

[Starch, sugar, honey, confectionery products, condiments, fats, milk, and milk products] Khrakhmal, sakhar, med, konditerskie, vkusovye tovary, zhiry, moloko i molochnye produkty. Moskva, Gos. izd-vo torg. litry, 1961. 750 p. (MIRA 14:7)

(Food industry)

KUZ'MINSKIY,N.I., [translator].

[International petroleum cartel] Mezhdunarodnyi neftianoi kartel'. Per. s angliiskogo N.L.Kuz'minskogo. Predislovie K.N.Kozarez, A.A. Manukiana. Moskva, Izd-vo inostrannoi lit'ry, 1954. 470 p. (MLRA 8:4)

1. U.S. Federal Trade Commission.
(Petroleum industry)

KUZ'MINSKIY, N. L.

Jan 48

USSR/Medicine - Instruments
Medicine - Aspiration

"Doctor Lel'chitskiy's Aspirator," N. L. Kuz'minskiy, 2 pp

"Med Prom SSSR" No 1

This aspirator was the reason for Lel'chitskiy's appointment to the roster of Soviet inventors. Used in pneumothorax treatments, instrument is introduced through the chest walls.

2/49T59

KUZ'MINSKIY, N. L.

33516

Fil'tr Sal'nikova. Med. Prom-st' Sssr, 1949, No 5, c. 44-45

SO: Letopis' Zhurnal'nykh Statey, Vol. 45, Maskva, 1949

MIKHNEV, A.L.; KHOMAZYUK, A.I.; KOCHEMASOVA, N.G.; KUZ'MINSKIY, N.P.; SMIRNOVA, N.S.; NESHCHERET, A.P.

Disorders in circulatory regulation in experimental atherosclerosis in dogs. Trudy Inst. klin. i eksper. kar. AN Gruz. SSR 8:181 186 '63. (MIRA 17:7)

1. Ukrainskiy institut klinicheskoy meditsiny imeni akademika N.D.Strazhesko, Kiyev.

VOVCHENKO, Ye.M., kand.med.nauk (Kiyev, per. Kozitskogo, d.3, kv.32);
KUZ'MINSKIY, N.P.

Hemorrhage from the aorta caused by a foreign body in the esophagus. Klin.khir. no.11:72-74 N '62. (MIRA 16:2)

1. Otdel klinicheskoy khirurgii (zav. - dotsent A.L. Pkhakadze) Ukrainskogo nauchno-issledovatel'skogo instituta klinicheskoy meditsiny.

(AORTA—WOUNDS AND INJURIES) (HEMORRHAGE)
(ESOPHAGUS—FOREIGN BODIES)

KUZ'MINSKIY, N.V.

Modernization of the LU-17-3 rotary veneer cutter. Der. prom. 14 no.7:25 Jl '65. (MIRA 19:1)

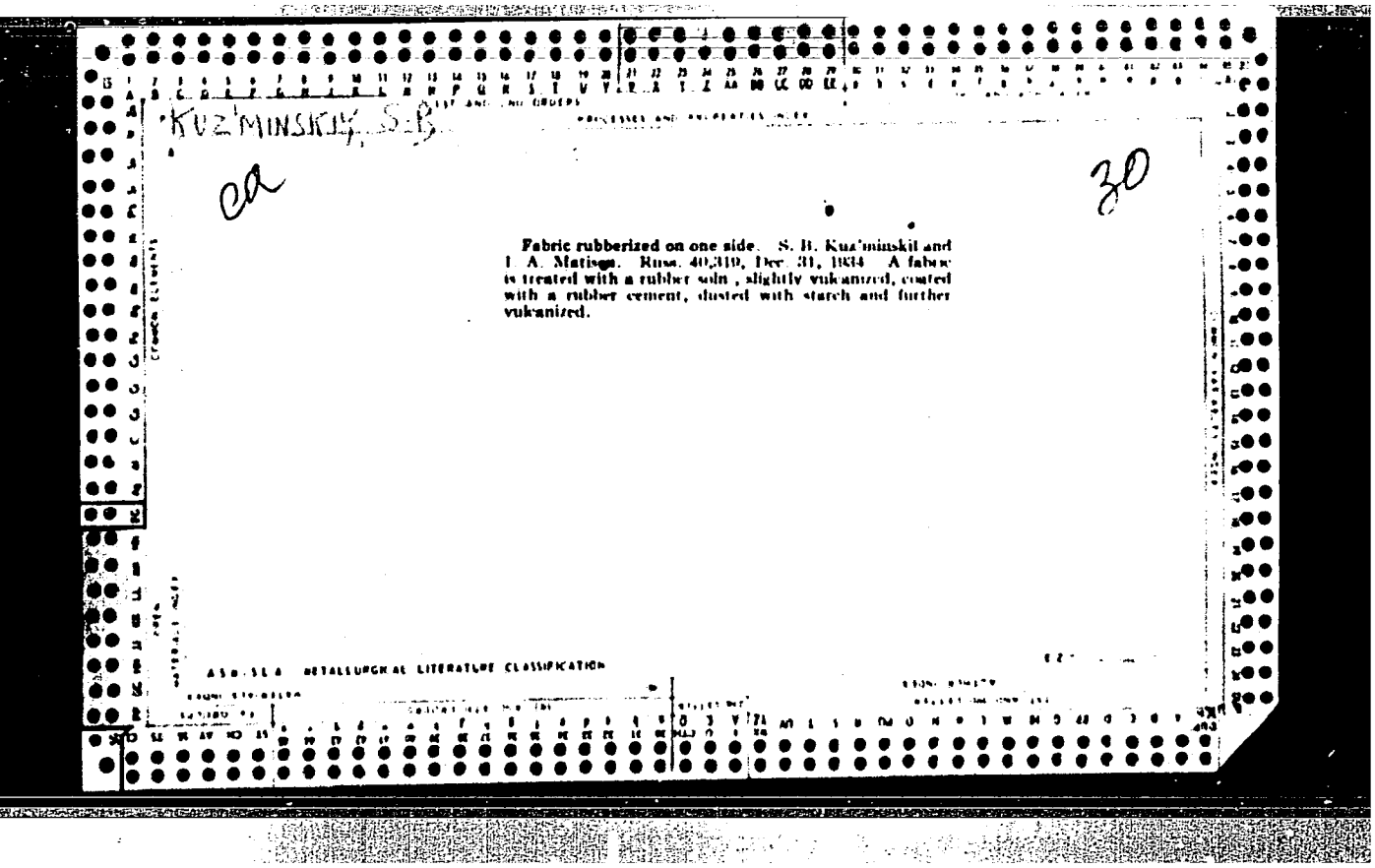
TKACHEV, Nikolay Ivanovich; GUL', V.Ye., doktor khim. nauk, prof., retsenzent; ROMANOV, A.N., kand. tekhn.nauk, retsenzent; KUZ'MINSKIY, R.V., inzh., retsenzent; D'YAKONOVA, V.P., inzh.-khim., spets.red.; MOROZOVA, I.I., red.; KISINA, Ye.I., tekhn. red.

[Plastics and their use in the bakery and yeast industry] Plasticheskie massy i ikh primenenie v khlebopekarnoi i drozhzhevoi promyshlennosti. Moskva, Pishchepromizdat, 1963. 222 p. (MIRA 17:1)

KUZ'MINSKIY, S.A., kand.med.nauk

Marginal and metaepiphyseal fractures of the distal end of the tibia. Ortop.travm. i protez. 20 no.2:7-11 F '59. (MIRA 12:12)

1. Iz TSentral'nogo instituta travmatologii i ortopedii (dir. - deyst-vitel'nyy chlen AMN SSSR prof. N.N. Priorov).
(TIBIA, fract.
marginal & metaepiphyseal of distal end (Rus))



KUZ'MINSKII, S.B.

ca

30

Fabric rubberized on one side. S. B. Kuz'minskii and I. A. Matisen. Russ. 40,319, Dec. 31, 1934. A fabric is treated with a rubber soln., slightly vulcanized, coated with a rubber cement, dusted with starch and further vulcanized.

ASD-SEA METALLURGICAL LITERATURE CLASSIFICATION

PAVLOVA, Ye.I.; KUZ'MINSKIY, S.B.

New types of footwear. Kozh.-obuv.prom. 2 no.4:31-32 Ap '60.
(MIRA 13:9)

1. Glavnyy tekhnolog rizhskogo zavoda "Krasnyy kvadrat" (for Pavlova). 2. Nachal'nik eksperimental'nogo uchastka rizhskogo zavoda "Krasnyy kvadrat" (for Kuz'minskiy).
(Boots and shoes)

KUZ'MINSKIY, S.I., kandidat meditsinskikh nauk

Osteosynthesis of spiral fractures of long bones with a wire. Ortop.travm. i protez. 18 no.3:64-65 My-Je '57. (MLRA 10:9)

1. Iz TSentral'nogo instituta travmatologii i ortopedii (dir. - deyatvitel'nyy chlen AMN SSSR prof. N.N.Priorov)
(BONES--SURGERY)

KUZ'MINSKIY, S.I., kand.med.nauk

Supracondylar brachial fractures and their treatment. Khirurgiia no.9:31-36 '61. (MIRA 15:5)

1. Iz TSentral'nogo instituta travmatologii i ortopedii (dir. - deystvitel'nyy chlen AMN SSSR prof. N.N. Priorov [deceased]) Ministerstva zdravookhraneniya SSSR.
(HUMERUS--FRACTURE)

KUZ'MINSKIY, S. I., starshiy nauchnyy sotrudnik

Surgical treatment of unknit fractures and pseudarthroses of the navicular bone. Ortop., travm. i protez. no.1:46-49 '62.
(MIRA 15:2)

1. Iz TSentral'nogo instituta travmatologii i ortopedii (dir. - deystvitel'nyy chlen AMN SSSR prof. N. N. Priorov[deceased])

(WRIST—FRACTURE) (PSEUDARTHROSIS)

KUZ'MINSKIY, Semen Pavlovich; LISHUTIN, B.G., gornyy inzhener, redaktor; KUZ'MIN, A.A., retsenzent; PARTSEVSKIY, V.N., redaktor; YEFIMOVA, A.P., tekhnicheskiy redaktor.

[Fudamentals of geodesy and mine surveying] Osnovy geodezii i marksheiderii. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1956. 207 p. (MLRA 9:6)
(Geodesy) (Mine surveying)

KUZ'MINSKIY, Semen Pavlovich; SHUBIN, Vladimir Grigor'yevich; RODIONOV, L.Ye., otv.red.; SLAVOROSOV, A.Kh., red.izd-va; LOMILINA, L.N., tekhn.red.

[Triangulation in mine surveying; principles of higher geodesy] Rudnichnaia trianguliatsiia; osnovy vysshei geodezii. Moskva, Ugletekhizdat, 1959. 287 p. (MIRA 12:8)
(Triangulation) (Mine surveying)

124-58-6-6686

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 6, p 54 (USSR)

AUTHORS: Kolton, A. U., Kuzminskiy, S. S.

TITLE: On the Selection of Basic Parameters for Curved Draft Tubes of Variable-pitch-blade Water Turbines (K voprosu o vybore osnovnykh parametrov izognutykh otsasyvayushchikh trub povorotnolopastnykh gidroturbin)

PERIODICAL: V sb.: Gidroturbostroyeniye. Vol 4.. Moscow-Leningrad, Mashgiz, 1957, pp 37-42

ABSTRACT: The results of experiments on a series of turbines of different specific speeds equipped with geometrically similar draft tubes of different heights are given. The relationship between the efficiency of a turbine and its height is determined. A turbine equipped with a curved draft tube is found to be less efficient than one equipped with a straight tube. The use of tubes with a variable angle of divergence appreciably increases the efficiency of a turbine as compared to tubes with a constant angle of divergence. This angle must be considerably greater in the inlet portion of the tube than in the outlet portion. Practical recommendations are advanced for the construction of hydroelectric power plants.

B. V. Aronov

Card 1/1 1. Turbines--Design 2. Turbines--Performance 3. Turbines--Equipment

ANOSOV, F.V., inzh.; KUZMINSKIY, S.S., inzh.; MALYSHEV, V.M., kand.tekhn.nauk

Research on the construction of hydraulic turbines at the Leningrad Metalworking Plant (22d Congress of the CPSU). Energomashinostroenie 11 no.3:3-8 Mr '65. (MIRA 18:6)

KUZMINSKIY, S.S., inzh.

Effect of some geometric characteristics of the runners on the speed of adjustable-blade hydraulic turbines. [Trudy] LMZ no.10:205-215 '64. (MIRA 18:12)

L 08751-67 EWT(1)

ACC NR: AT6032974 SOURCE CODE: UR/3227/63/001/000/0033/0036

57

AUTHOR: Kuznetskiy, S. S.

ORG: none

TITLE: A method for generating pulse trains

SOURCE: Tomsk. Institut radioelektroniki i elektronnoy tekhniki. Trudy, v. 1, 1963, 33-36

TOPIC TAGS: pulse generator, pulse coding, pulse code modulation, frequency divider, logic circuit

ABSTRACT: A method for generating pulse trains with both low and high pulse duration time is described. The method uses solid state triggered frequency dividers and logic circuits (AND, OR, and NOR gates). A clock oscillator feeds two parallel chains of triggered frequency dividers; square wave outputs of corresponding frequency dividers in each chain are 180° out of phase. Each frequency divider has two outputs that are 45° out of phase. The desired pulse train is obtained by applying various divider outputs to coincidence circuits composed of logic gates. The pulse train duration, pulse duration, and pulse spacing can be varied by changing the clock oscillator frequency and the interconnections between logic gates and frequency dividers. Time stability of pulses is also determined by the clock oscillator. Orig. art. has: 3 figures.

SUB CODE: 09, 14/ SUBM DATE: none

Card 1/1 bc

GUS'KOV, V.P., inzh.; RUZHINSKIY, M.B., inzh.; KUZ'MINSKIY, V.A.

Efficiency promotion and invention. Stroi. truboprov. 7 no.6:22 Je '62. (MIRA 15:7)

1. Stroitel'no-montazhnoye upravleniye No.6 tresta Nefteprovodmontazh, Chelyabinsk (for Gus'kov, Ruzhinskiy). 2. Proizvoditel' rabot stroitel'nogo uchastka No.14 Svarochno-montazhnogo tresta, g. Lyubertsy (for Kuz'minskiy).
(Pipelines—Buildings and structures)

KAL'BUS, Grigoriy Lavrent'yevich, kand. tekhn. nauk; KUZ'MINSKIY, V.G., kand. tekhn. nauk, red.; KOSOVSKIY, V.A., red.; POTOTSKAYA, L.A., tekhn. red.

[Principles of the operation of tractor hitching systems] Osnovy ekspluatatsii navesnykh sistem traktorov. Kiev, Izd-vo Ukrainskoi akad. sel'khoz.nauk, 1962. 210 p. (MIRA 15:10)

(Tractors)

KUZMINTSEV, V.N.

137-58-5-9568

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 106 (USSR)

AUTHOR: Kuz'mintsev, V.N.

TITLE: Hollow Forgings from Hollow Ingots (Kovka pustotelykh pokovok iz polykh slitkov)

PERIODICAL: V sb.: Progressivn. metody shtampovki i kovki. Khar'kov, Oblizdat, 1957, pp 82-92

ABSTRACT: A description is presented of investigations conducted by TsNIIT-Mash and NKMZ in making hollow forgings from experimental hollow model ingots of 600 kg weight and hollow ingots of 25 and 80 t weight. Macro- and microanalysis and tests of the mechanical properties of the forgings showed that a 50% deformation satisfied all technical specifications. Considerable economy resulted from the use of hollow ingots.

M. Ts.

1. Metals--Forging 2. Forgings--Mechanical properties
3. Forgings--Structural analysis

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S/123/60/000/011/002/002
A004/A001

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1960, No. 11, pp. 179-180, # 55934

18.5100

AUTHOR: Kuz'mintsev, V. N.

TITLE: The Technical and Economic Efficiency of Manufacturing Forgings From Tubular Ingots

PERIODICAL: Tr. 1-y Ekon. konferentsii TsNIITMASh, 1957, Moscow, 1958, pp.86-88

TEXT: The author describes a new technology of manufacturing blanks for drums, boilers, cylinders of accumulator stations and other big-sized hollow forgings from tubular ingots, which are cast with using internal coolers. The hollow of the ingot is produced by a thin-walled tube, while cores of special design and cylinders with running water were alternately used as coolers During the forging of the tubular ingot, its weight was reduced to 80 t and such operations as reducing ribs and edges, upsetting, broaching, preliminary drawing and several heatings were eliminated. M. G. N.

Translator's note: This is the full translation of the original Russian abstract.

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KUZ'MINTSEV, V.N.

PHASE I BOOK EXPLOITATION SOV/4944

Kamnev, P.V., Candidate of Technical Sciences, Docent, Ed.

Peredovoy opyt kovki (Advanced Experience in Forging) [Leningrad] Lenizdat, 1959. 246 p. 3,000 copies printed.

Ed.: Ye.V. Yemel'yanova; Tech. Ed.: I.M. Tikhonova.

PURPOSE: This collection of articles is intended for workers and engineers in die-forging shops and for personnel of affiliated branches in the machine industry.

COVERAGE: The articles deal with the advanced experience of a number of Leningrad plants in mechanizing and improving production methods in die forging. Recommendations are made concerning the specialization of forging shops, and the further development of open-die forging processes. Articles by operators-innovators in forging shops of the Novo-Kramatorskiy (New Kramatorsk) and Ural'skiy (Ural) machinery plants are included. The collection contains some of the papers which were discussed during the conference in June 1958 (P.V. Kamnev, Chairman) on open-die forging, called by the regional section for the pressworking of metals of the Leningradskoye Pravleniye nauchno-tekhnicheskogo obshchestva mashinostroitel'noy promyshlennosti (Leningrad Administration of the Scientific and Technical Society of the Machine Industry) and the Leningradskiy Dom nauchno-tekhnicheskoy propagandy (Leningrad House of Scientific and Technical Propaganda). The foreword includes a list of the participants who submitted papers to the aforementioned conference. There are no references.

AVAILABLE: Library of Congress

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S/182/60/000/001/005/008
A161/A029

AUTHORS: Dobrinskiy, N.S.; Kuz'mintsev, V.N.

TITLE: Selection of the Basic Parameters of Hydraulic Forging Presses

PERIODICAL: Kuznechno-shtampovochnoye proizvodstvo, 1960, No. 1, pp. 20 - 23

TEXT: The basic parameters of a hydraulic forging press are the nominal pressure effort P, the maximum travel H of the crossbeam and the maximum space between the table and the crossbeam. In the present USSR practice P, H and S are chosen in accordance with the maximum possible dimensions of ingots to be forged (Ref, 1), and the state standard ГОСТ 7284-54 (GOST 7284-54) requires dimensions and parameters of universal hydraulic four-column forging presses in accordance with this rule. The authors point out that the GOST 7284-54 has become obsolete and must be revised to decrease H and S and increase P, and presses chosen for the maximum ingot size left for a special case only - when there is only one universal press in a shop, or for reducing the ingot height. Facts are listed that led to this conclusion: the general trend to make the shape of ingots as near as possible to the shape of ready forgings, and even replacement of forgings by castings; new foundry methods giving metal with higher mechanical properties

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Selection of the Basic Parameters of Hydraulic Forging Presses

that requires less deformation in forging (smelting and teeming in vacuum, electric heating of lost head on ingots); the "group method" in production of large forgings that is coming into use (all forgings subdivided into classes, and classes into groups by the shape, production technology and suitable equipment and tools); specialization and cooperation of forging production. Production centers already exist for rolling stock axles, turbine wheels, die blocks, slabs, crankshafts, rolling mill rolls. At the UZTM crankshafts are produced on hydraulic presses by a combination method, i.e., forging in initial operations is combined with subsequent stamping of sections (Ref. 3). One other combination example: TsNIITMASh used a 1,300-ton press for stamping a turbine wheel blank by the "section method", whilst a 5,000-ton press is needed for stamping the same wheel in a single press run. The NKMZ uses "underlaid" (podkladnyye) dies (Fig. 2) for forging round or more complex parts; stamping of a disk is shown in (Fig. 3), with a lock in the upper and bottom die parts. Higher die making costs are compensated by economy of high-alloy steel even in production of a small lot of 12 - 15 parts. In "combination" technology large parts can be obtained by forging separate portions and joining them with each other, or with castings and

Selection of the Basic Parameters of Hydraulic Forging Presses

stampings, by electroslag welding. The NKMZ produced in this way a turbine shaft for the Kuybyshevskaya GES (Kuybyshev Hydro-Power Plant) (Fig. 4). The hollow cylindrical mid-portion and the flanges were cast separately. Metal consumption was cut by 41%, upsetting operation eliminated, and press power required for forging reduced to 3,000 - 3,500 tons from 9,700 tons that would be needed otherwise. Another example were welded gas turbine rotors of austenitic heat-resistant steel (Ref. 4). The old technology would have required a 40-ton ingot and a 25,000-ton press, but welded rotor design (Fig. 5) took a 10-ton ingot and a 10,000-ton press. There are 5 figures and 4 Soviet references.

S/182/60/000/002/012/012
A161/A029

AUTHORS: Zimin, A.I.; Kuz'mintsev, V.N.

TITLE: All-Poland Conference on Plastic Metalworking

PERIODICAL: Kuznechno-shtampovochnoye proizvodstvo, 1960, No. 2, pp. 47 - 48

TEXT: Information is given on a conference on November 25 - 26, 1959, in Poznan', organized by the Polish engineers and mechanicians union section for plastic metalworking. It is stated in introductory remarks that production of presses is new in Poland. It is concentrated in Chenstokhov, Poznan', at the Forging Machine Works at El'blot and Warsaw, Hydraulic Press Works at Krakov, Nissa and other towns. A Central Design Bureau exists in Warsaw, a Central Laboratory for Plastic Metalworking in Poznan', and an Iron and Steel Institute and a Design Bureau for Metallurgical Machines in Olivice. (All towns and personal names in Russian transliteration). More than 200 delegates from the USSR, Czechoslovakia, Hungary, East Germany, France and West Germany were present. Professor A.I. Zimin and Candidate of Technical Sciences P.V. Kamnev represented the Tsentral'noye pravleniye Nauchno-tekhnicheskogo obshchestva mashinostroitel'noy promyshlennosti SSSR(Central Board of the Scientific-Technical Association of the

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Machine Building Industry of the USSR). Nineteen reports were heard. K. Bosyatskiy, Director of the Polish Central Design Bureau for Presses, spoke in his report "Development of Industrial Hot and Cold Plastic Metalworking Methods" of the success of Polish specialists and outlined the planned ways in equipment design, stressed the necessity to use more extensively the new production processes (rolling, forging in horizontal machines and mechanical presses), electric heating of metal, mechanization and automation of work and to take measures for work safety. Professor T. Pel'chinskiy, head of the department of "Fundamentals of Pressure Working" of the Warsaw Polytechnic Institute, read a report on "Evaluation of Technological Plasticity of Materials". In cold pressing four properties must be known: resistance to deformation, resistance to compression, relative reduction of the neck cross section area and the nature of rupture. Docent V. Gashek (Czechoslovakia) reported on the investigation of the effect of elevated temperature on oxidation of metal and changes of metal structure in forgings. Professor P. Vashyunik of the Krakov Mining Academy gave practical recommendations for production of bushings in horizontal forging presses. The report by Engineer T. Rut (of Central Laboratory for Plastic Metalworking, Poznan') concerned blanking with the use of forging rollers. Two reports concerned the heating of metal: Professor P. Bukovskiy (of Warsaw Polytechnic Institute), "An In-

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vestigation of the Productivity of Forging Shop Furnaces", with practical recommendations, and Engineer Ts. Malak (Poznan', Central Laboratory for Plastic Metalworking), "High Productivity of a Forging Shop Furnace is a Source of Fuel Economy". Two reports read in the cold-working conference section were "Mechanical Presses for Stamping" by Engineer H. Schmidt, German Federal Republic, and "Machines for Sheet Metal Products" by Engineer T. Golatovskiy of the Warsaw Central Design Bureau for Presses. Process technology was treated in reports made by Engineers M. Ol'shevskiy (Central Laboratory, Poznan'), "Some Problems of Cold Welding of Metals", Engineer I. Gruin (Aviation Institute, Warsaw), on making and investigating tools made from plastics for stamping sheet metal, and Engineer L. Kushch (Iron and Steel Institute, Glivice), on lubricants for cold stamping. It is mentioned that many of the Polish technicians are using Soviet technical literature (e.g., works by N.N. Davidenkov, S.I. Gubkin, V.D. Kuznetsov) and some visited the USSR during scientific and technical missions. The Soviet delegation (Professor A.I. Zimin, Candidate of Technical Sciences P.V. Kamnev, Engineer V.N. Kuz'mintsev) participated actively in the conference. Professor A.I. Zimin, in his report "Some Problems of Metalworking by Pressure", outlined briefly the fundamentals of the forging machine designing and suggested to test and use some new principles. He informed on work in progress in this

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field at MVTU (development of a hydraulic press-hammer, of pulse hammer designs and presses utilizing the effect of hydraulic impact). Engineer V.N. Kuz'mintsev informed on research work at Otdel obrabotki metallov davleniyem TsNIITMASh (Section of Metalworking by Pressure of TsNIITMASh), and the basic results of works conducted by Ye.P. Unksov, B.N. Bagatov, V.N. Martynov, L.G. Stepanskiy, A. V. Altykis, V.A. Kuroyedov and himself. Kuz'mintsev stressed the necessity of investigations to find optimum compositions of lubricants and die steel. P.V. Kamnev, Chairman of the Sektsiya obrabotki metallov davleniyem Leningradskogo otdeleniya NTO Mashproma (Section of Metalworking by Pressure of Leningrad Branch of NTO Mashprom), reported on "The Modern State of Hot Stamping Technology", ✓ analyzing the foreign and Soviet experience. During three days after the conference, the Soviet delegation visited the Machine Plant im. Tsegel'skogo (imeni Tsegelski) in Poznan'. The Plant produces forging equipment, different metal cutting machine tools including automatic tools, ship engines of up to 6,000 hp and railroad coaches. At the Central Design Bureau for Presses and Hammers in Warsaw, it was noticed that Soviet and other foreign experience is utilized. The Bureau designs mechanical and automatic presses, forging and stamping steam-air hammers, horizontal forging presses and other equipment. It was founded 11 years ago and has completed 150 new forging equipment designs and published a book,

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"Forging Presses". At the department "Fundamentals of Pressure Working" of the Warsaw Polytechnic Institute, it was stated that extensive research work is being done. Soviet delegates visited also the Metallurgical Combine Novaya Huta im. Lenina and the Sheet Stamping Works "Artigraf" in Krakov specializing in the production of tin containers. Decision was taken that each delegation should apply to their respective administrations for organization of an international association of specialists of pressure working (like the exisiting associations of foundrymen, welding engineers and other).

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