191T46

FEL'dman, N. Kh.

USSR/Chemistry - Synthetic Pharmaceuticals Sep 51

"Synthesis of Aminosulfides and Aminosulfones. XI. Synthesis of 1,1,1-Trichloro-2-Hydroxy-Ethane-(n-Nitrophenyl)-Sulfide, Its Acetoxy Derivative and Sulfoxide," N. Kh. Fel'dman, T. L. Gurevich, All-Union Chemicopharm Inst imeni Ordzhonikidze

"Zhur Obshch Khim" Vol XXI, No 9, pp 1656-1659

Condensation of chloral with n-nitrophenylmercaptan yielded product of addn of 1 g-mole of chloral to 1 g-mole of mercaptan (without sepn of H_2O). In acetic anhydride medium acetylation of

191T46

USSR/Chemistry - Synthetic Pharmaceuticals (Contd) Sep 51

OH group also occurred. Nonacetylated product's mol was decompd upon attempts at acetylation or oxidation. Acetylated product was oxidized to corresponding sulfoxide. Both condensation products were decompd by heating or action of alkali solns.

191T46

FEL'DMAN, N.L., inzh.; KUTOVOY, Ye.A., inzh.

Direct water pumping at the "Novo-TSentral'naya" mine of the Stalinshakhtostroi Trust. Shakht.stroi. 4 no.2:24-26 F '60. (MIRA 13:5)

1. Trest Stalinshakhtostroy.
(Kuznetsk Basin--Mine drainage)

FEL'DMAN, N.L., inzh.; CHILIKIN, A.M., inzh.

Efficient work organization layout for mining inclined workings of considerable length. Shakht.stroi. 6 no.2:23-24 F '62. (MIRA 15:2)

1. Gornoprokhodcheskoye upravleniye No.13 tresta Donetskshakhtostroy. (Coal mines and mining)

FEL'DMAN, N.L., inzh.; CHILIKIN, A.M., inzh.

Reinforcing junctions and workings of large sections with arch-type pliable supports. Shakht. stroi. 7 no.4:27 Ap '63. (MIRA 16:3)

1. Stroitel'nyy uchastok No.13 tresta Donetskshakhtostroy.

FEL'DMAN, N. L.

"Comparative Toxicity for Cells of Diffused and Granular Dyes," Dokl. AN SSSR, 59, No.5, 1948

Lab. Cytology and Lab. Histology, Inst. Exptl. Med., AMS

FEL'DMAN, N. L.

"Problem of the Diffused Coloring of a Cell by Certain Basic Vital Dyes," Dokl. AN SSSR, 59, No.6, 1948

Lab. Cytology and Lab. Histology, Inst. Exptl. Med., AMS

FEL'DMAN, N.L.

USSR/Medicine - Cell Oct 48
Medicine - Pigments

"The Role of Coacervation in Depositing Granules of Basid Vital Pigments in a Cell," N. L. Fel'dman, Lab of Histol, Inst of Experimental Med, Acad Med Sci USSR, 3 3/4 pp

"Dok Ak Nauk SSSR" Vol LXII, No 6

Experiments with horse serum denatured by heating, which is incapable of coacervating pigments, proved that coacervation of pigment in native cells occurred during denaturation. This explains the native albumen injured cells to granulate since the native albumen

60/49757

USSR/Medicine - Cell (Contd) Oct 48

is produced only in living cells. Submitted by L. A. Orbeli 9 Aug 48.

60/49757

24309 FEL'DMAN, N. L. O raspredelenii osnovnykh vital'nykh krasiteley v kletke. Trudy Akad. med. nauk SSSR, T. III, 1949, S. 16-19.

SO: Letopis, No. 32, 1949.

CA

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Toxicity of dyes and their binding by natural proteins. A. D. Braun and N. L. Fel'dman. *Doklady Akad. Nauk S.S.S.R.* 66, 757-60(1949); cf. *C.A.* 43, 1073g.—Detn. of the threshold of sensitivity of frog muscle after immersion in aq. solns. of a variety of dyes in comparison with the binding of the dyes by myosin (detd. by diffusion of the free dye into gelatin from its mixt. with the protein, according to Braun (*C.A.* 43, 1073g) showed a close correspondence between the 2 properties. In Ph_3CH series toxicity declines from malachite green to crystal violet and further to fuchsin, which corresponds to the protein-binding power. In oxazine dye group, the order is: Nile blue hydrochloride, followed by the sulfate, followed by cresol blue. In azine dyes the order is: Tannin heliotrope, safranine, neutral red, while the thiazines are arranged: methylene blue, tolubline blue, and in the xanthene series the order is: Irisamine, pyronine, rhodamine; the latter compd. is exceptional in that with lowest toxicity it is the most readily absorbed member of the series. The binding by proteins is not limited to myosin, but occurs similarly with egg globulin and egg mucin. Generally, increase of no. of Ph groups increases toxicity and protein binding.

G. M. Kondapoff

Effect of protein denaturation on their coacervation with dyes. N. L. Fel'dman, *Doklady Akad. Nauk S.S.S.R.* 74, 1139–42(1950).—Expts. with frog or horse blood serum, serum albumin, and egg albumin in buffered systems (pH 6.5–8.0) at 0.1% protein concn., with 0.1% Acid Nile Blue or Neutral Red (*ibid.* 52, 817(1948) for technique) gave the following results in a study of denaturation factors. Me_2CO gave reversible coagulation in the cold, irreversible at room temp. and the protein showed no coacervation with the dyes, even on later addn. of H_2O; at 0° coacervation is restored on addn. of H_2O to the pptd. system. Heating causes loss of coacervation at 55–65° and usually at 60° the character of the ppt. changes; serum albumin ceases to display coacervation at 70°, although the soln. remains clear (pH 6.5–7), but at pH 7.5–8.0 it shows greater thermal stability. Ultraviolet light rapidly stops coacervation at room temp. or at 0°. Urea, in denaturing proteins, hinders their coagulation and in 4–8 *M* solns. coacervation ceases (horse serum is most stable). Possible significance in the changes accompanying living cell damage is discussed.

G. M. Kosolapoff

FEL'DMAN, N.L.

Causes of depression of granuloprecipitation of dyes in injury of cells. Doklady Akad. nauk SSSR 89 no. 2:345-346 11 Mar 1953. (CLML 24:1)

1. Presented by Academician A. I. Oparin 15 January 1953.

ФЕЛЬДМАН, Н.Л.

ALEKSANDROV, V.Ya.; FEL'DMAN, N.L.

Studying the increase in the resistance of cells as a reaction to high temperatures [with summary in English]. Bot. zhur. 43 no.2: 194-213 F '58. (MIRA 11:5)

1. Botanicheskiy institut im. V.L. Komarova Akademii nauk SSSR i Institut tsitologii Akademii nauk SSSR, Leningrad.
(Plants, Effect of temperature on)

LYUTOVA, M.I.; FEL'DMAN, N.L.

Investigating the ability of temperature adaptation in some marine algae. TSitologiia 2 no.6:699-709 N-D '60. (MIRA 13:12)

1. Botanicheskiy institut AN SSSR i Institut tsitologii AN SSSR, Leningrad.
(ALGAE) (PLANTS, EFFECT OF TEMPERATURE ON)

FEL'DMAN, N.L.

Influence of sugars on the cell resistance of some higher plants to heating and high hydrostatic pressure. Tsitologiia 4 no.6:633-643 N-D'62 (MIRA 17:3)

1. Botanicheskiy institut AN SSSR i Institut tsitologii AN SSSR, Leningrad.

FEL'DMAN, N.L.; LYUTOVA, M.I.

Investigation of the thermostability of cells of some sea grasses.
Bot.zhur. 47 no.4:542-546 Ap '62. (MIRA 15:8)

1. Institut tsitologii AN SSSR i Botanicheskiy institut imeni Komarova AN SSSR, Leningrad.
(Seaweed) (Plants, Effect of temperature on)

FELDMAN, N. L. and KAMENTSEVA, I. Ye.

"Heat Resistance and Cold Resistance of Cells of a Leaf of Yellow Star-of-Bethlehem at Different Phases of Development." pp. 76

Institute of Cytology of the Academy of Sciences USSR, Botanical Institute imeni V. L. Komarov of the Academy of Sciences USSR

II Nauchnaya Konferentsiya Institologii AN SSSR. Tezisy Dokladov (Second Scientific Conference of the Institute of Cytology of the Academy of Sciences USSR, Abstracts of Reports), Leningrad, 1962, 88 pp.

JPRS 20,634

FEL'DMAN, N. L.; KAMENTSEVA, I. Ye.

Heat and frost resistance of leaf cells of the yellow star-of Bethlehem at different stages of development. Bot. zhur. 48 no.3:414-419 Mr '63. (MIRA 16:4)

1. Institut tsitologii AN SSSR i Botanicheskiy institut imeni V. L. Komarova AN SSSR, Leningrad.

(Plants, Effect of temperature on)
(Yellow star-of-Bethlehem)

FELDMAN, N. L.

"Heat hardening undernatural and experimental conditions."

UNESCO - International Symposium on the Role of Cell Reactions in Adaptations of Metazoa to Environmental Temperature.

Leningrad, USSR, 31 May - 5 June 1963

TROSHIN,A.S., otv. red.; ARRONET,N.I., red.; BEYYER,T.V., red.; ZHIRMUNSKIY,A.V., red.; KUSAKINA,A.A., red.; PROSSER, K.L., red.; LOZINA-LOZINSKIY,L.K., red.; POLYANSKIY, Yu.I., red.; SUKHANOVA,K.M., red.; USHAKOV,B.P., red.; FEL'DMAN,N.L., red.; ALEKSANDROV, V.Ya., red.

[Cell and the temperature of the medium; transactions] Kletka i temperatura sredy; trudy. Moskva, Nauka, 1964. 303 p. (MIRA 18:1)

1. International Symposium on Cytoecology, Leningrad, 1963. 2. Institut tsitologii AN SSSR, Leningrad (for Troshin, Arronet). 3. Laboratoriya kosmicheskoy biologii Instituta tsitologii AN SSSR, Leningrad (for Lozina-Lozinskiy).4. Laboratoriya tsitofiziologii i tsitoekologii Botanichskogo instituta im. V.L.Komarova AN SSSR, Leningrad (for Aleksandrov). 5. Laboratoriya sravnitel'noy tsitologii Instituta tsitologii AN SSSR, Leningrad (for Zhirmunskiy, Kusakina, Ushakov). 6. Laboratoriya tsitologii odnokletochnykh organizmov Instituta tsitologii AN SSSR, Leningrad (for Sukhanova). 7. Botanicheskiy institut imeni V.L.Komarova AN SSSR, Leningrad (for Arronet).

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1. Botanicheskiy institut im. V.L. Komarova AN SSSR i Institut tsitologii AN SSSR. Predstavleno akademikom N.M. Sisakyanom.

BEBKO, V.G., inzh.; MEL'NICHENKO, G.I., inzh.; FEL'DMAN, N.M., inzh.

Protection of 10 kv. rural electric power distribution lines from single-phase short-circuits to ground using a search method. Energ. i elektrotekh. prom. no.3:10-11 Jl-S '64.

(MIRA 17:11)

FEL'DMAN, N.S., inzh.

The NKM-4 benching machine. Stroi.mat. 5 no.8:30 Ag '59.
(MIRA 12:12)
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FEL'DMAN, O.I.

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[Portugal; regional geography study] Portugaliia; raionno-geograficheskii ocherk. Sokr. perevod s frantsuzskogo IA.I.Serebrianskogo. Pod red. i so vstup. stat'ei A.V.Volkova. Moskva, Izd-vo inostrannoi lit-ry, 1952. 175 p. [Microfilm] (MLRA 7:10)

(Portugal--Geography)
(Geography--Portugal)

FEL'DMAN, O.I.

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[The crisis in U.S. agriculture and the condition of the farmer; a collection of articles. Translated from the English] Krizis sel'skogo khoziaistva SShA i polozhenie farmerov; sbornik materialov. Perevod N.I.Mnogolet i O.V.Kychakovoi. Moskva, Izd-vo inostrannoi lit-ry, 1955. 209 p. (MLRA 9:9)
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HANZELKA, Jiri; ZIKMUND, Miroslav; YEZHOV, V.D. [translator]; POTEKHIN, I.N., redaktor; RUBINSHTEYN, G.I., redaktor; FEL'DMAN, O.I., redaktor; NIKIFOROVA, A.N., tekhnicheskiy redaktor

[Africa of dreams and of reality. Translated from the Czech] Afrika grez i deistvitel'snosti. Perevod s cheshskogo V.D.Ezhova. Red. I.I. Potekhina. Moskva, Izd-vo inostrannoi lit-ry, 1956. 277 p. (MLRA 9:12)
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HANZELKA, Jiri; ZIKMUND, Miroslav; ROZOVA, S.I. [translator]; POTEKHIN, I.I., redaktor; RUBINSHTEYN, G.I., redaktor; FEL'DMAN, O.I., redaktor; NIKIFOROVA, A.N., tekhnicheskiy redaktor

[Africa of dream and of reality. Translated from the Czech] Afrika grez i deistvitel'nosti. Perevod s cheshskogo S.I.Rozovoi. Moskva, Izd-vo inostrannoi lit-ry. Vol.2. 1956. 314 p. (MLRA 10:3)
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BLAZHEK, Miroslav (Blažek Miroslav); AVDEICHEV, L.A. [translator]; ROZOVAYA, S.I. [translator]; RUBINSHTEYN, G.I. [translator]; MERGOYZ, I.M., red.; PIVOVAROV, Yu.L., red.; FEL'DMAN, O.I., red.; IOVLEVA, N.A., tekhn. red.

[Economic geography of Czechoslovakia. Translated from the Czechoslovakian] Ekonomicheskaia geografiia Chekhoslovakii. Vstup. stat'ia i red. I.M.Maergoiza. Moskva, Izd-vo inostr. lit-ry, 1960. 476 p. (MIRA 14:5)
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Uvarkova, L. S., Meresminskiy, N. F., Orosney, Ye. I. and FEL'DMAN, O. S.

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SO: U-5240, 17 Dec. 53, (Letopis 'Zhurnal 'nykh Statey, No. 25, 1949).

FELDMAN, P.

USSR/Electronics - Radio receivers

Card : 1/1 Pub. 89 - 14/24

Authors : Pumpyansky, V. and Feldman, P.

Title : "Belarus' 53"

Periodical : Radio 6, 29 - 33, June 1954

Abstract : The new 14-tube superheterodyne receiver, "Belarus' 53", manufactured by the Minsk Radio Factory under the management of the Ministry of the Bielorussian Fuel Industry, is described in detail. The "Belarus" 53" is a class I receiver operating on long-, medium-, and short-wave bands. The main parameters of the receiver are: Nominal output power-4 wt; 135 wt (from an AC line). The amplifier's medium-frequency band-pass can be varied, in stages, between 5 and 12 kilocycles. Illustrations, showing the general view of the receiver, the high-grequency capacitor group, and the receiver circuit diagram, four illustrations in all, are shown. Also four tables giving data on coil windings.

Institution : ...

Submitted : ...

FEL'DMAN, P.

USSR/ Electronics - Radio equipment

Card 1/1 Pub. 89 - 13/30

Authors : Pumpyanskiy, V., Fel'dman, P.

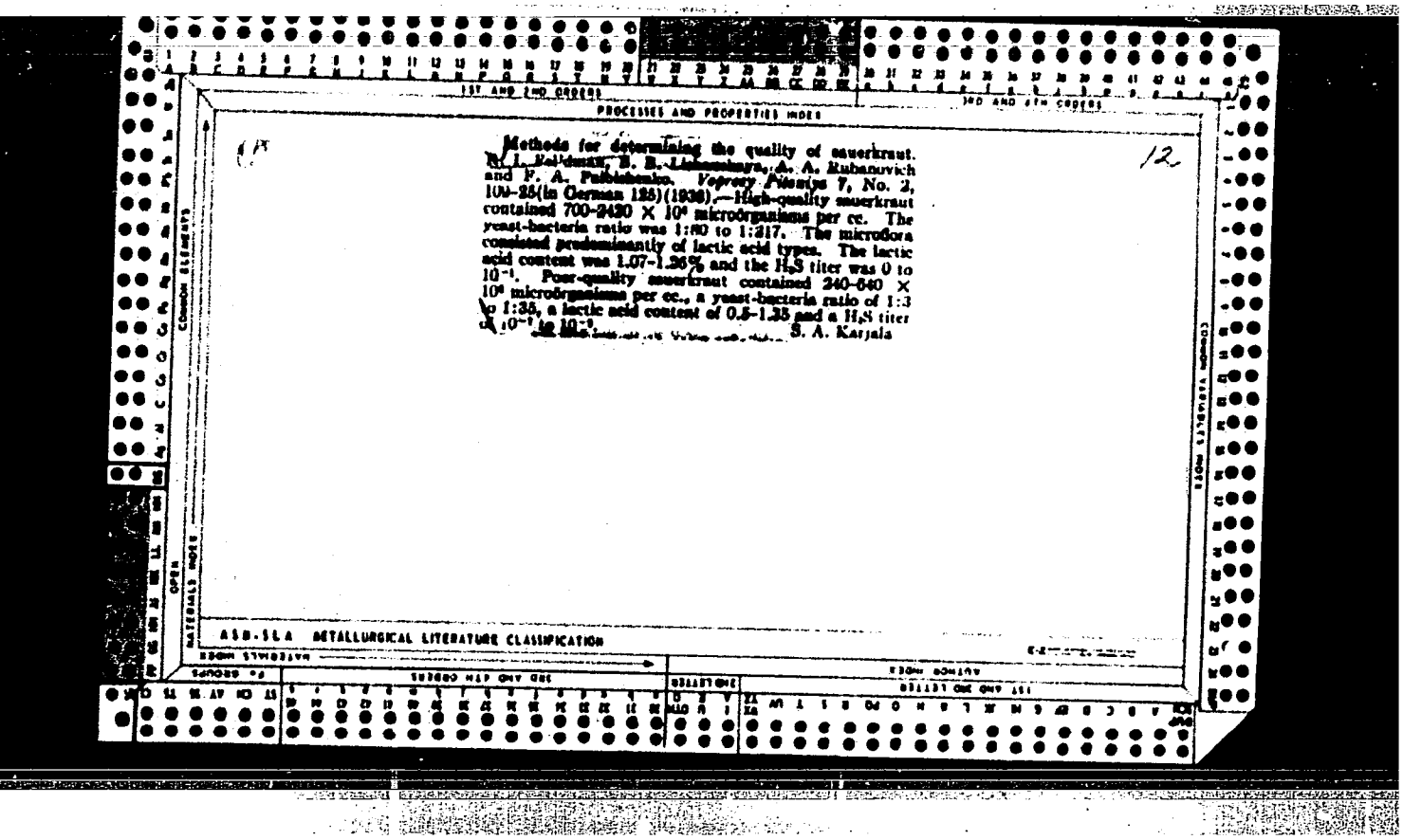
Title : The "Minsk R-7-55" combined phonograph and radio receiver

Periodical : Radio 3, 22 - 24, Mar 1955

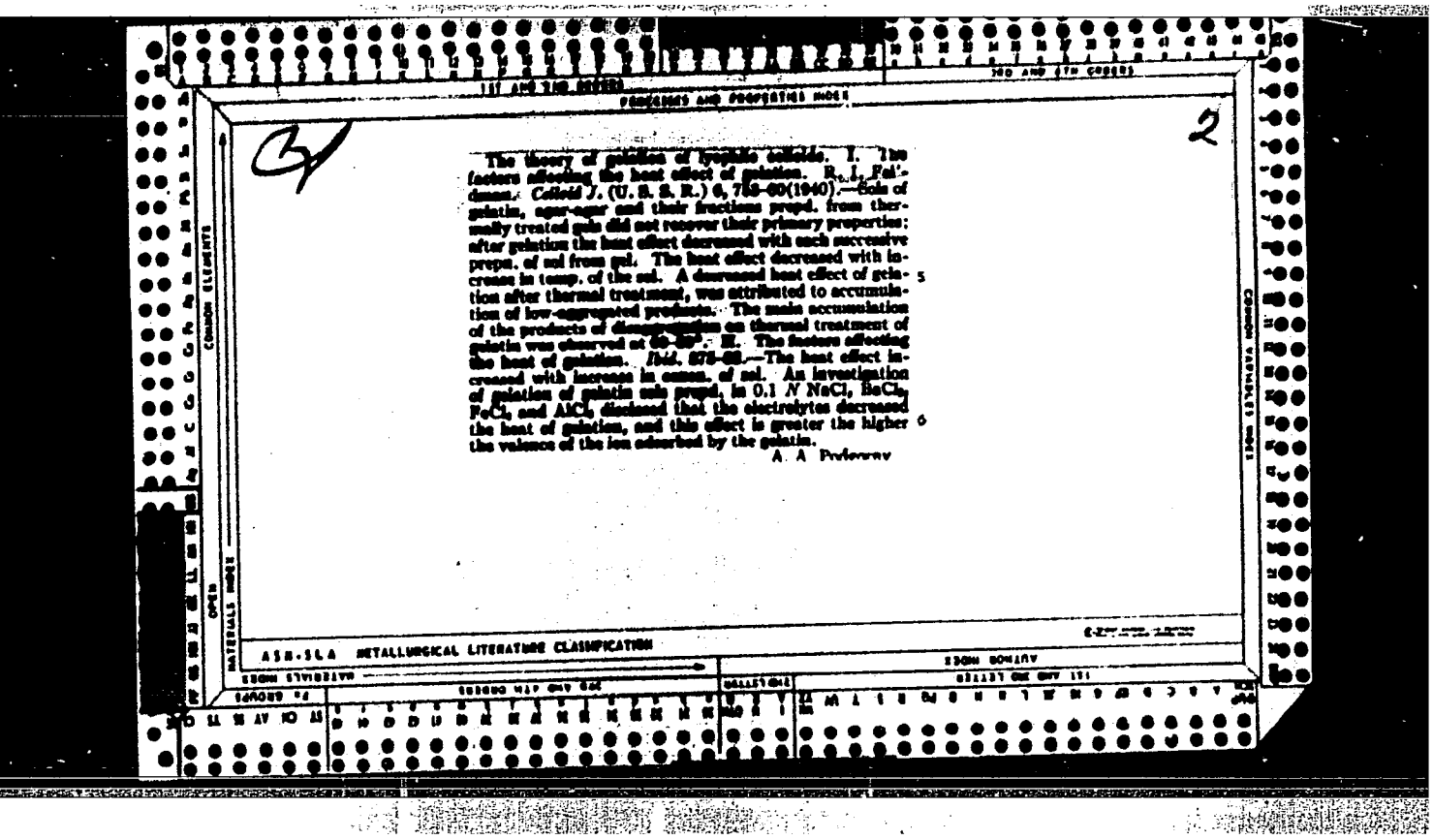
Abstract : A technical description is given of the "Minsk R-7-55" combined phonograph and radio receiver, in which provisions are made for the possibility of using an attachment in the form of a motorless magnetic-tape recorder for recording radio broadcasts, playing phonograph records, or recording by means of a microphone and reproducing what is recorded. Detailed specifications are given of circuits, technical parts and construction. Illustrations; diagrams; table.

Institution : .....

Submitted : .....

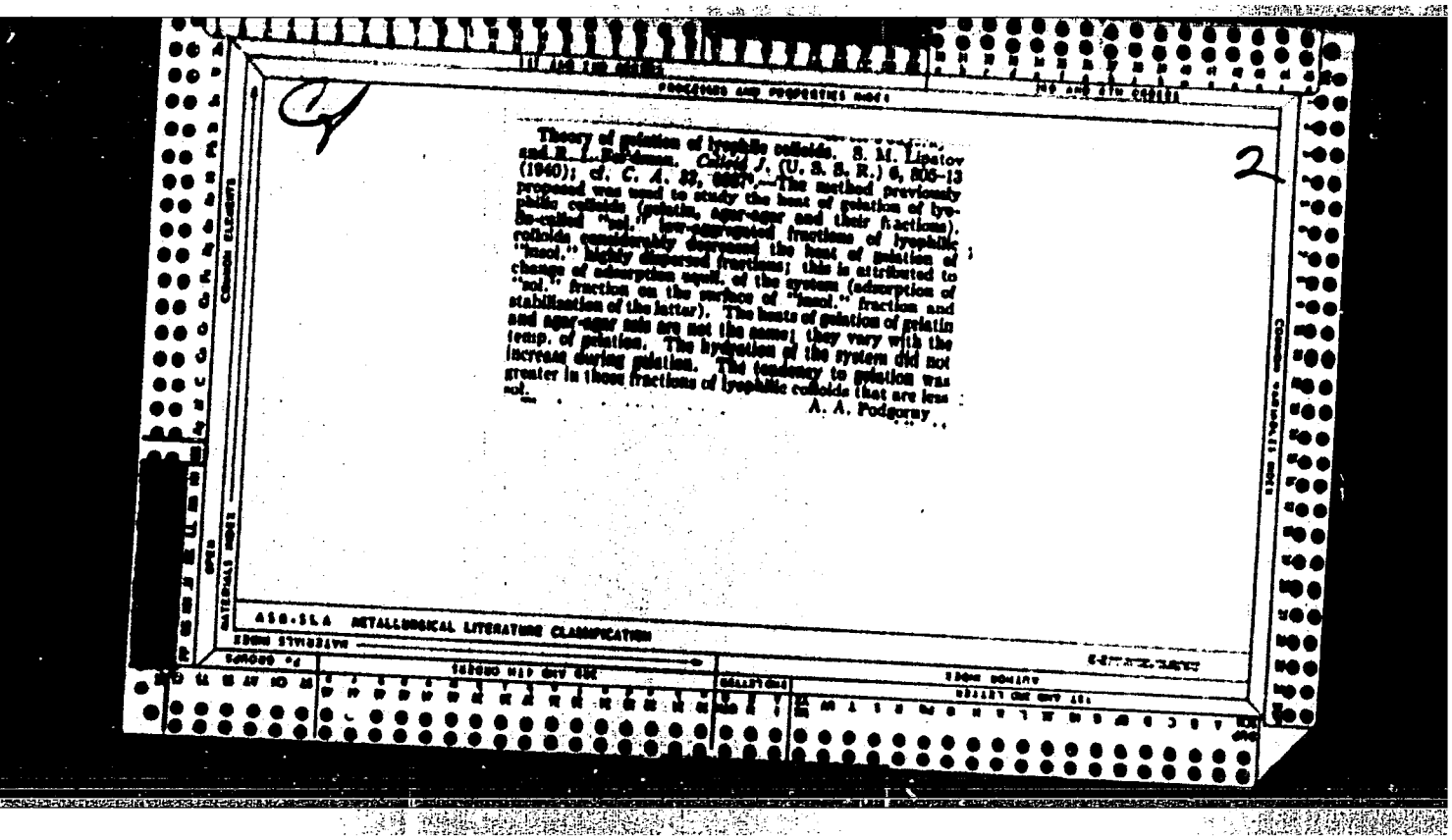


Methods for determining the quality of sauerkraut. M. I. Kaltman, B. B. Lishmanova, A. A. Rubanovich and F. A. Pukhlenko. *Voprosy Pitaniya* 7, No. 2, 109–25(in German 125)(1938).—High-quality sauerkraut contained 700–2420 × 10^6 microörganisms per cc. The yeast-bacteria ratio was 1:80 to 1:317. The microflora consisted predominantly of lactic acid types. The lactic acid content was 1.07–1.26% and the H_2S titer was 0 to 10^{-1}. Poor-quality sauerkraut contained 240–640 × 10^6 microörganisms per cc., a yeast-bacteria ratio of 1:3 to 1:35, a lactic acid content of 0.5–1.35 and a H_2S titer of 10^{-7} to 10^{-9}. S. A. Karjala



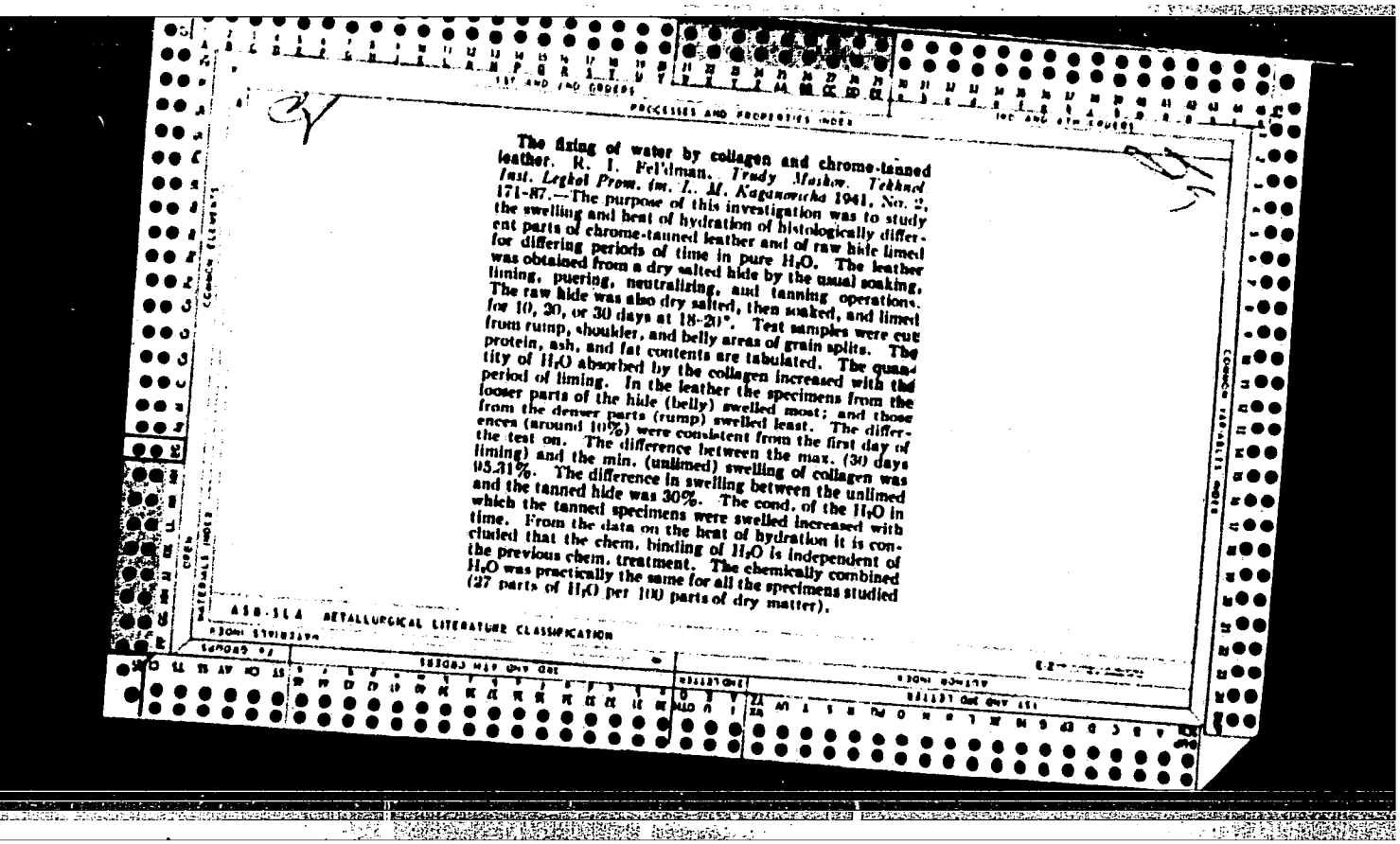
The theory of gelation of lyophilic colloids. I. Two factors affecting the heat effect of gelation. R. I. Feldman. *Colloid J.* (U. S. S. R.) 6, 783-90(1940).—Sols of gelatin, agar-agar and their fractions prepd. from thermally treated gels did not recover their primary properties: after gelation the heat effect decreased with each successive prepn. of sol from gel. The heat effect decreased with increase in temp. of the sol. A decreased heat effect of gelation after thermal treatment, was attributed to accumulation of low-aggregated products. The main accumulation of the products of disaggregation on thermal treatment of gelatin was observed at 60-80°. II. The factors affecting the heat of gelation. *Ibid.* 878-88.—The heat effect increased with increase in concn. of sol. An investigation of gelation of gelatin sols prepd. in 0.1 *N* NaCl, BaCl$_2$, FeCl$_3$ and AlCl$_3$ disclosed that the electrolytes decreased the heat of gelation, and this effect is greater the higher the valence of the ion adsorbed by the gelatin.

A. A. Prokunov

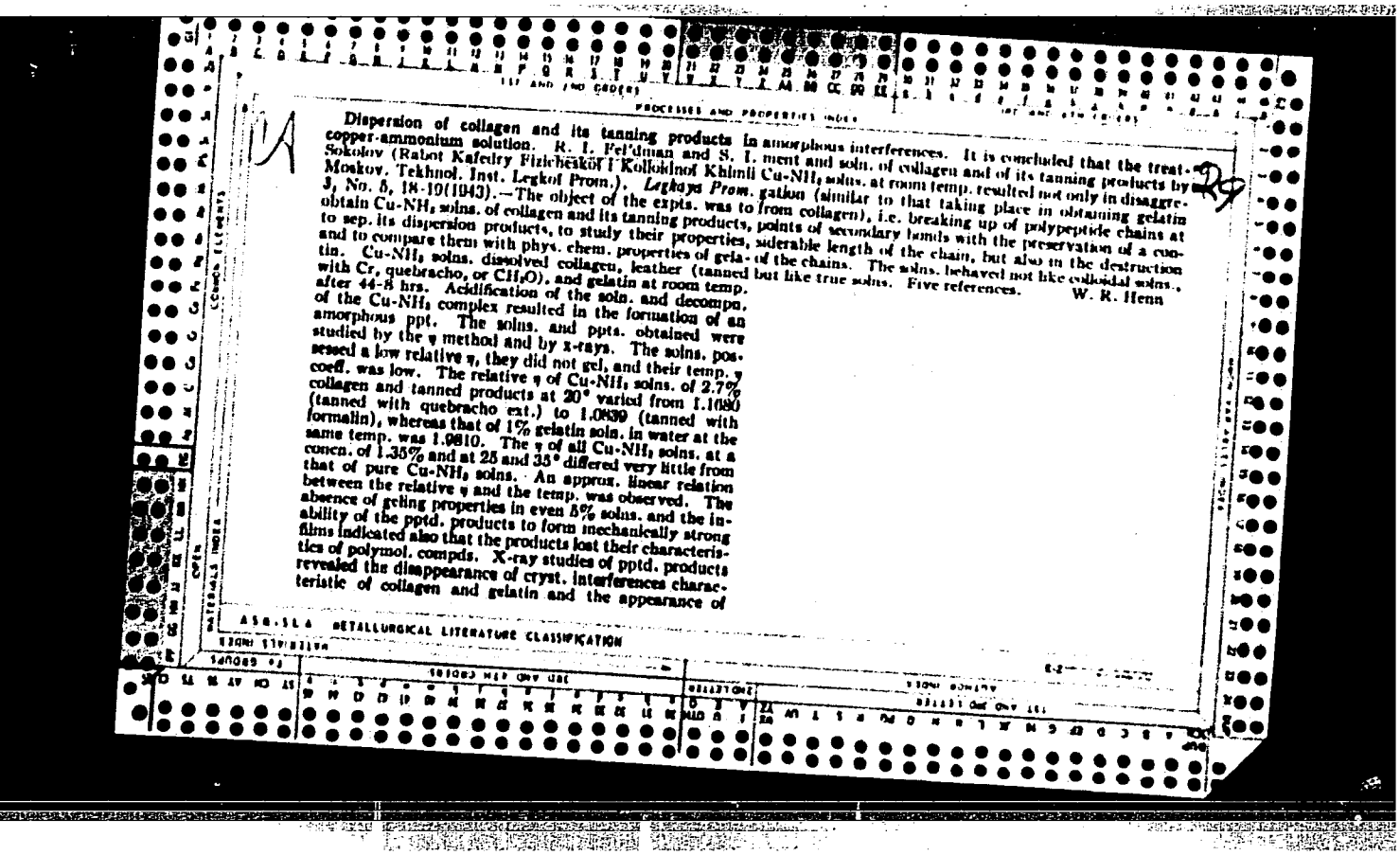


Theory of gelation of lyophilic colloids. S. M. Lipatov and R. I. Feldman. *Colloid J.* (U. S. S. R.) 6, 805-13 (1940); cf. *C. A.* 32, 9879.—The method previously proposed was used to study the heat of gelation of lyophilic colloids (gelatin, agar-agar and their fractions). So-called "sol," low-aggregated fractions of lyophilic colloids considerably decreased the heat of gelation of "insol." highly dispersed fractions; this is attributed to change of adsorption equil. of the systems (adsorption of "sol." fraction on the surface of "insol." fraction and stabilization of the latter). The heats of gelation of gelatin and agar-agar sols are not the same; they vary with the temp. of gelation. The hydration of the system did not increase during gelation. The tendency to gelation was greater in those fractions of lyophilic colloids that are less sol.

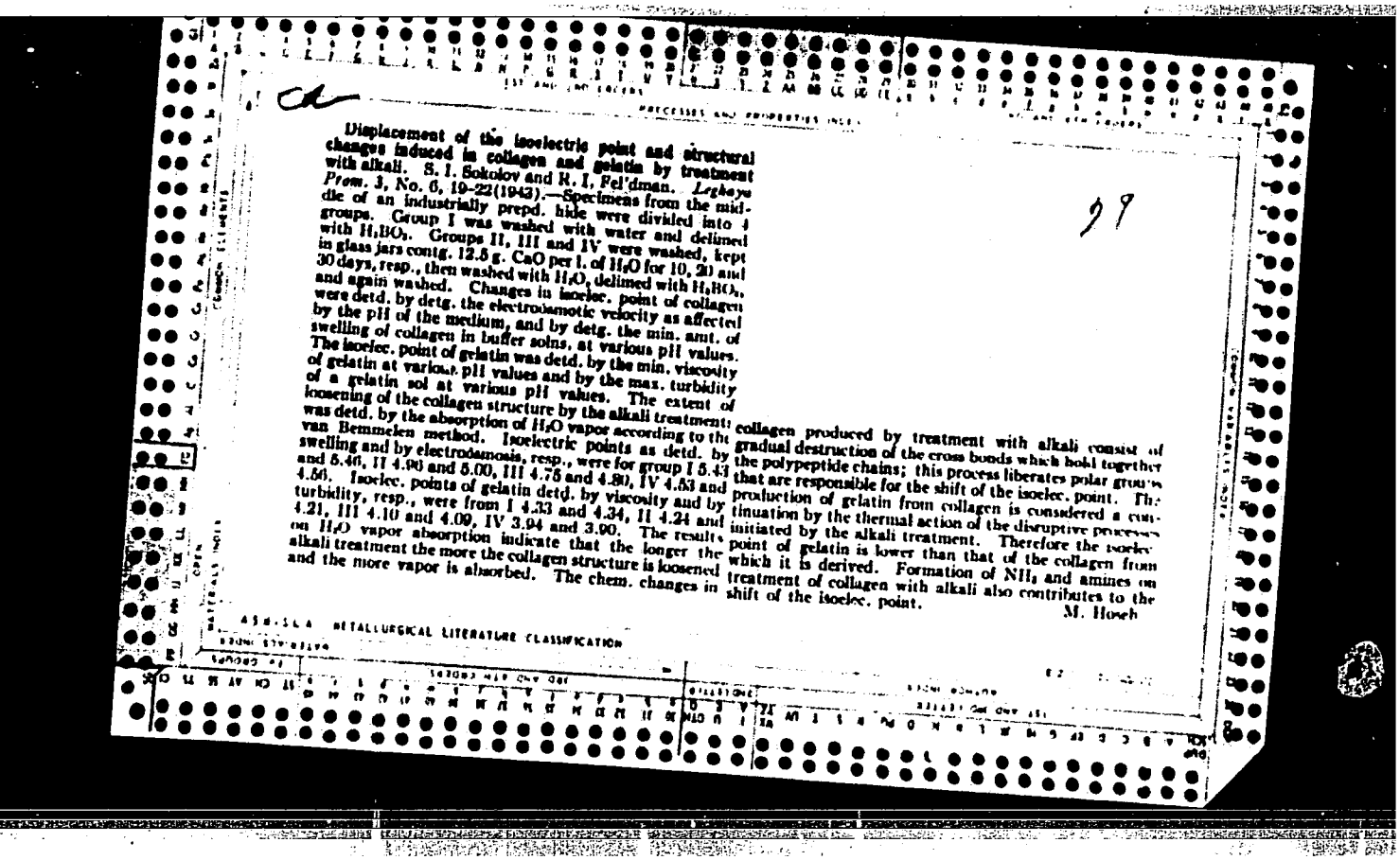
A. A. Podgorny



The fixing of water by collagen and chrome-tanned leather. R. I. Fel'dman. *Trudy Mashov. Tekhnol Inst. Legkoi Prom. im. L. M. Kaganovicha* 1941, No. 2, 171-87.—The purpose of this investigation was to study the swelling and heat of hydration of histologically different parts of chrome-tanned leather and of raw hide limed for differing periods of time in pure H_2O. The leather was obtained from a dry salted hide by the usual soaking, liming, puering, neutralizing, and tanning operations. The raw hide was also dry salted, then soaked, and limed for 10, 20, or 30 days at 18-20°. Test samples were cut from rump, shoulder, and belly areas of grain splits. The protein, ash, and fat contents are tabulated. The quantity of H_2O absorbed by the collagen increased with the period of liming. In the leather the specimens from the looser parts of the hide (belly) swelled most; and those from the denser parts (rump) swelled least. The differences (around 10%) were consistent from the first day of the test on. The difference between the max. (30 days liming) and the min. (unlimed) swelling of collagen was 95.21%. The difference in swelling between the unlimed and the tanned hide was 30%. The cond. of the H_2O in which the tanned specimens were swelled increased with time. From the data on the heat of hydration it is concluded that the chem. binding of H_2O is independent of the previous chem. treatment. The chemically combined H_2O was practically the same for all the specimens studied (27 parts of H_2O per 100 parts of dry matter).

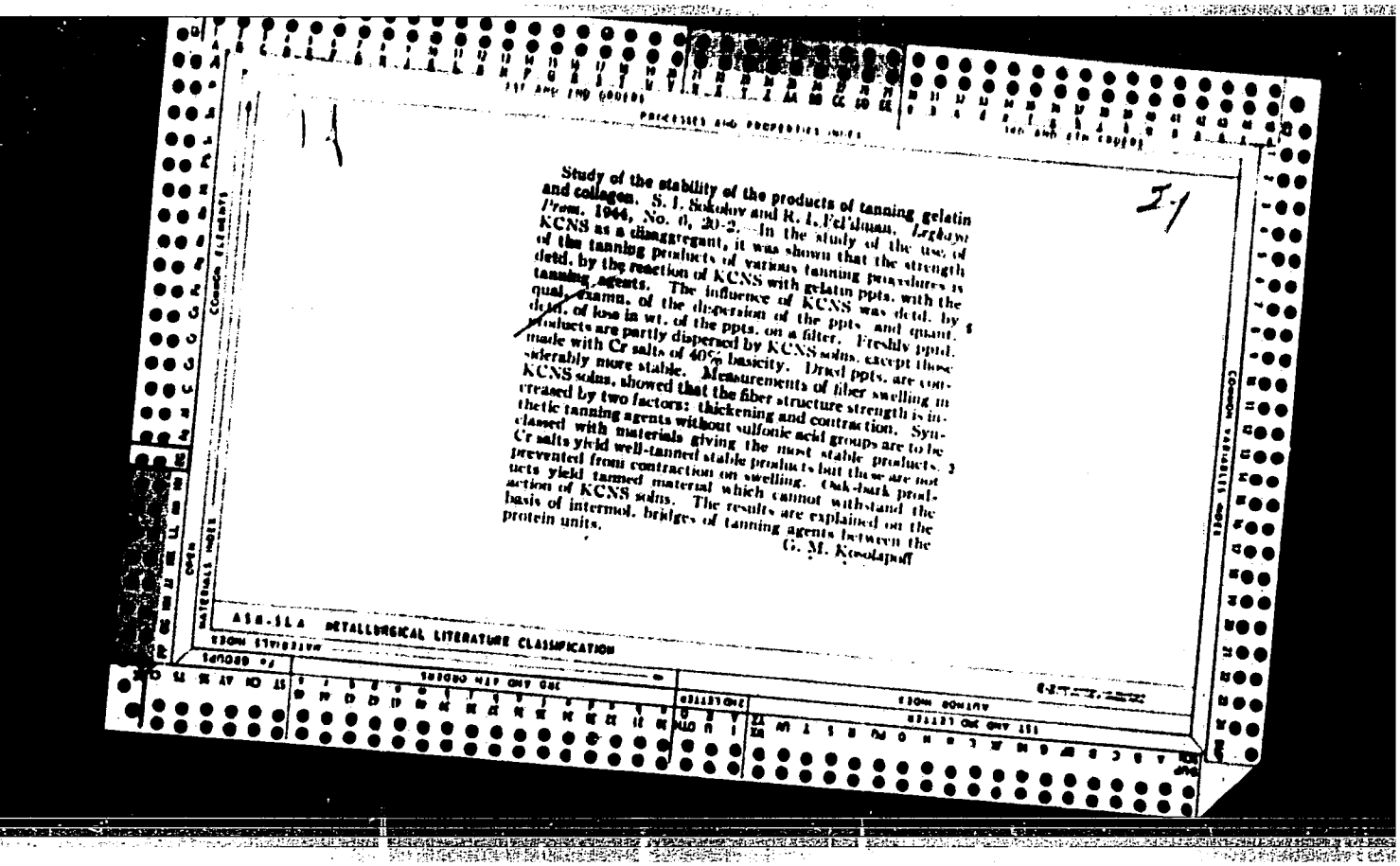


Dispersion of collagen and its tanning products in amorphous interferences. It is concluded that the treat-
copper-ammonium solution. R. I. Pel'dman and S. I. ment and soln. of collagen and of its tanning products by
Sokolov (Ralot Kafedry Fizicheskoi i Kolloidnoi Khimii Cu-NH_3 solns. at room temp. resulted not only in disaggre-
Moskov. Tekhnol. Inst. Legkoi Prom.). *Legkaya Prom.* gation (similar to that taking place in obtaining gelatin
3, No. 5, 18-19(1943).—The object of the expts. was to from collagen), i.e. breaking up of polypeptide chains at
obtain Cu-NH_3 solns. of collagen and its tanning products, points of secondary bonds with the preservation of a con-
to sep. its dispersion products, to study their properties, siderable length of the chain, but also in the destruction
and to compare them with phys. chem. properties of gela- of the chains. The solns. behaved not like colloidal solns.,
tin. Cu-NH_3 solns. dissolved collagen, leather (tanned but like true solns. Five references. W. R. Henn
with Cr, quebracho, or CH_2O), and gelatin at room temp.
after 44-8 hrs. Acidification of the soln. and decompn.
of the Cu-NH_3 complex resulted in the formation of an
amorphous ppt. The solns. and ppts. obtained were
studied by the η method and by x-rays. The solns. pos-
sessed a low relative η, they did not gel, and their temp. η
coeff. was low. The relative η of Cu-NH_3 solns. of 2.7%
collagen and tanned products at 20° varied from 1.1090
(tanned with quebracho ext.) to 1.0830 (tanned with
formalin), whereas that of 1% gelatin soln. in water at the
same temp. was 1.9810. The η of all Cu-NH_3 solns. at a
concn. of 1.35% and at 25 and 35° differed very little from
that of pure Cu-NH_3 solns. An approx. linear relation
between the relative η and the temp. was observed. The
absence of geling properties in even 5% solns. and the in-
ability of the pptd. products to form mechanically strong
films indicated also that the products lost their characteris-
tics of polymol. compds. X-ray studies of pptd. products
revealed the disappearance of cryst. interferences charac-
teristic of collagen and gelatin and the appearance of



Displacement of the isoelectric point and structural changes induced in collagen and gelatin by treatment with alkali. S. I. Sokolov and R. I. Fel'dman. *Legkaya Prom.* 3, No. 6, 19–22(1943).—Specimens from the middle of an industrially prepd. hide were divided into 4 groups. Group I was washed with water and delimed with H_3BO_3. Groups II, III and IV were washed, kept in glass jars contg. 12.5 g. CaO per l. of H_2O for 10, 20 and 30 days, resp., then washed with H_2O, delimed with H_3BO_3, and again washed. Changes in isoelec. point of collagen were detd. by detg. the electroosmotic velocity as affected by the pH of the medium, and by detg. the min. amt. of swelling of collagen in buffer solns. at various pH values. The isoelec. point of gelatin was detd. by the min. viscosity of gelatin at various pH values and by the max. turbidity of a gelatin sol at various pH values. The extent of loosening of the collagen structure by the alkali treatment was detd. by the absorption of H_2O vapor according to the van Bemmelen method. Isoelectric points as detd. by swelling and by electroösmosis, resp., were for group I 5.43 and 5.46, II 4.90 and 5.00, III 4.75 and 4.80, IV 4.53 and 4.56. Isoelec. points of gelatin detd. by viscosity and by turbidity, resp., were from I 4.33 and 4.34, II 4.24 and 4.21, III 4.10 and 4.09, IV 3.94 and 3.90. The results on H_2O vapor absorption indicate that the longer the alkali treatment the more the collagen structure is loosened and the more vapor is absorbed. The chem. changes in collagen produced by treatment with alkali consist of gradual destruction of the cross bonds which hold together the polypeptide chains; this process liberates polar groups that are responsible for the shift of the isoelec. point. The production of gelatin from collagen is considered a continuation by the thermal action of the disruptive processes initiated by the alkali treatment. Therefore the isoelec. point of gelatin is lower than that of the collagen from which it is derived. Formation of NH_3 and amines on treatment of collagen with alkali also contributes to the shift of the isoelec. point.

M. Hoseh



Study of the stability of the products of tanning gelatin and collagen. S. I. Sokolov and R. L. Fel'dman. *Legkaya Prom.* 1944, No. 6, 20-2. In the study of the use of KCNS as a disaggregant, it was shown that the strength of the tanning products of various tanning procedures is detd. by the reaction of KCNS with gelatin ppts. with the tanning agents. The influence of KCNS was detd. by qual. examn. of the dispersion of the ppts. and quant. detd. of loss in wt. of the ppts. on a filter. Freshly ppd. products are partly dispersed by KCNS solns. except those made with Cr salts of 40% basicity. Dried ppts. are considerably more stable. Measurements of fiber swelling in KCNS solns. showed that the fiber structure strength is increased by two factors: thickening and contraction. Synthetic tanning agents without sulfonic acid groups are to be classed with materials giving the most stable products. Cr salts yield well-tanned stable products but these are not prevented from contraction on swelling. Oak-bark products yield tanned material which cannot withstand the action of KCNS solns. The results are explained on the basis of intermol. bridges of tanning agents between the protein units.

G. M. Kosolapoff

I-1

A58-SLA METALLURGICAL LITERATURE CLASSIFICATION

FEL'DMAN, R. I.

Mechanism of action of plasticizers on the physico-mechanical properties of high polymers. S. I. Sokolov and R. I. Fel'dman (L. M. Kaganovich Tech. Inst. Light Ind., Moscow). *Mekhanizm Deistviya ... Doklady 6-oi Konf. Vysokomolekul. Soedinenii, Akad. Nauk S.S.S.R.* 1949, 320-23.—Examn. of polyvinyl chloride specimens plasticized by esters commonly used in such formulations (not described otherwise) is reported in graphical form. Tensile strength of the specimens declines rapidly with increase of the plasticizer concn. to about 4 mole %, after which the decline is considerably reduced but is still appreciable, leading to nearly 0 strength at 28 mole % of the plasticizer. Young's modulus also gave a smooth result, but data on total elongation at rupture were badly scattered. The results seem to indicate the correctness of consideration of the action of such plasticizers on colligative basis, i.e. on the relative no. of mols. introduced into the specimen, regardless of their nature. The work required for film rupture of plasticized specimens reaches a max. at about 4 mole % of the plasticizer, with sharp declines in both directions away from the max. This point corresponds to transition from a brittle state to a highly elastic one. At 14-16 mole % there is also observed a more shallow transformation with loss of strength and increased fluidity. Polyvinyl chloride films show elongation that is linear in respect to temp. at low temps., then undergo a transition after which the further progress shows a complex relation. Plasticizers displace this point to lower temp. and phthalates and phosphates give the same result. The heat effect of the transition is about 4200 kcal./mole. G. M. Kosolapoff

2-v

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APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000412830(

FEL'DMAN, R.I.; SOKOLOV, S.I.

State of aggregation of high-molecular compounds. Linear thermal expansion and physicomechanical properties of some polymers. Khim. i Fiz. Khim. Vysokomolekul. Soedineniy Doklady 7-oy Konf. Vysokomolekul. Soedineniyam '52, 159-67. (MLRA 5:7)
(CA 47 no.16:7860 '53)

1. Moskov. Tekhnol. Inst. Legkoy Prom. im. L.M.Kaganovicha.

USSR/ Chemistry - Physical chemistry

Card 1/1 : Pub. 22 - 24/44

Authors : Fel'dman, R. I.

Title : Effect of plasticizing additions on the mechanical properties of polyvinylchloride

Periodical : Dok. AN SSSR 97/6, 1033-1036, Aug 21, 1954

Abstract : The effect of quantitative ratios of components (plasticizers) in a given mixture of the physico-mechanical properties of plasticized polyvinylchloride, was investigated. The effect of the rate of deformation and change over from one state to another which are connected with the relaxation processes in material on the behavior of the polymer in the mixture, was determined. It was established that this effect is primarily determined by the molar ratio of the plasticizer and polymer and does not depend upon the molecular weight, composition and structure of the plasticizer. Four USSR references (1945-1952). Tables.

Institution : The L. M. Kaganovich Technological Institute of Light Industry, Moscow

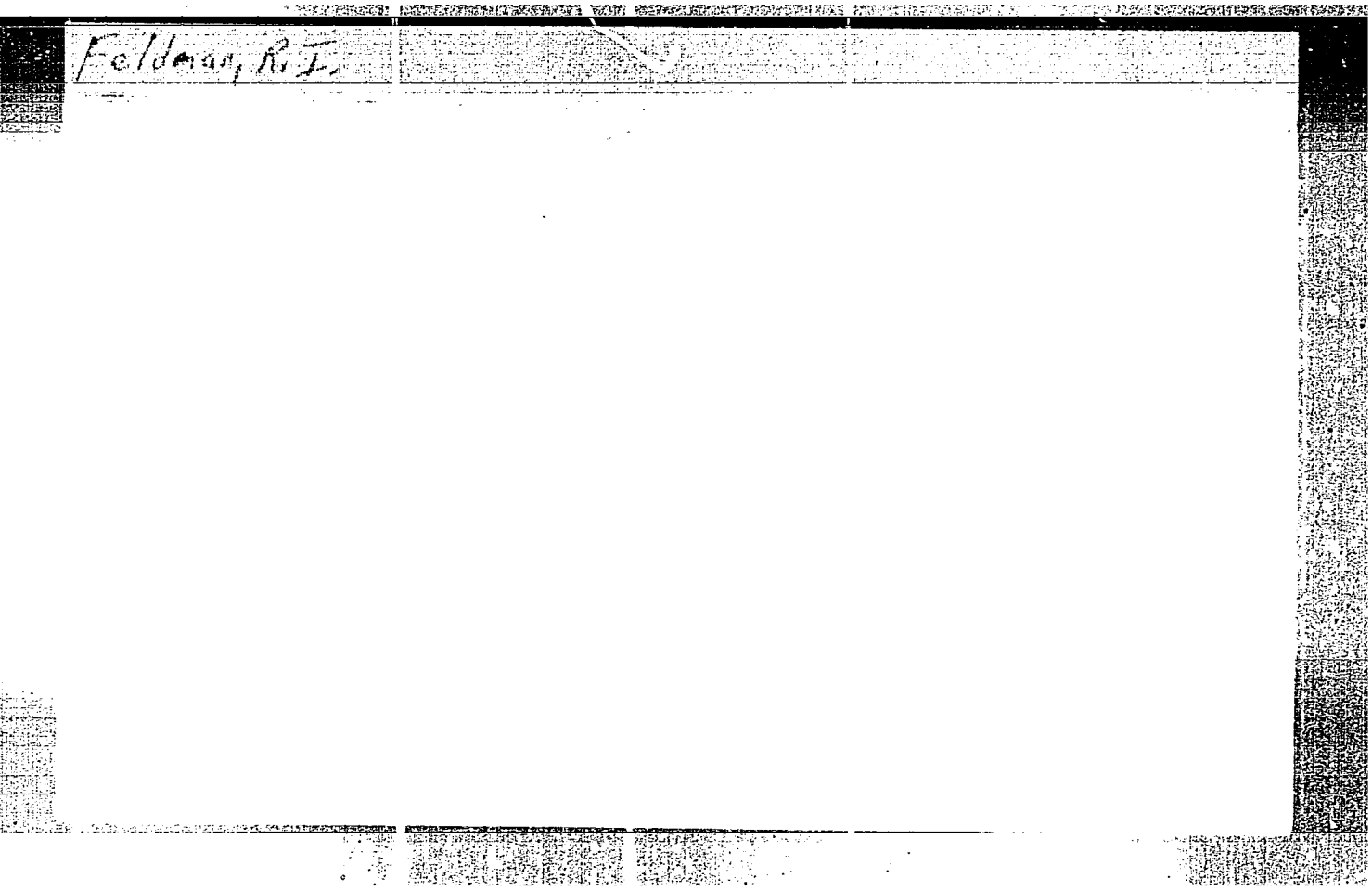
Presented by: Academician P. A. Rebinder, April 2, 1954

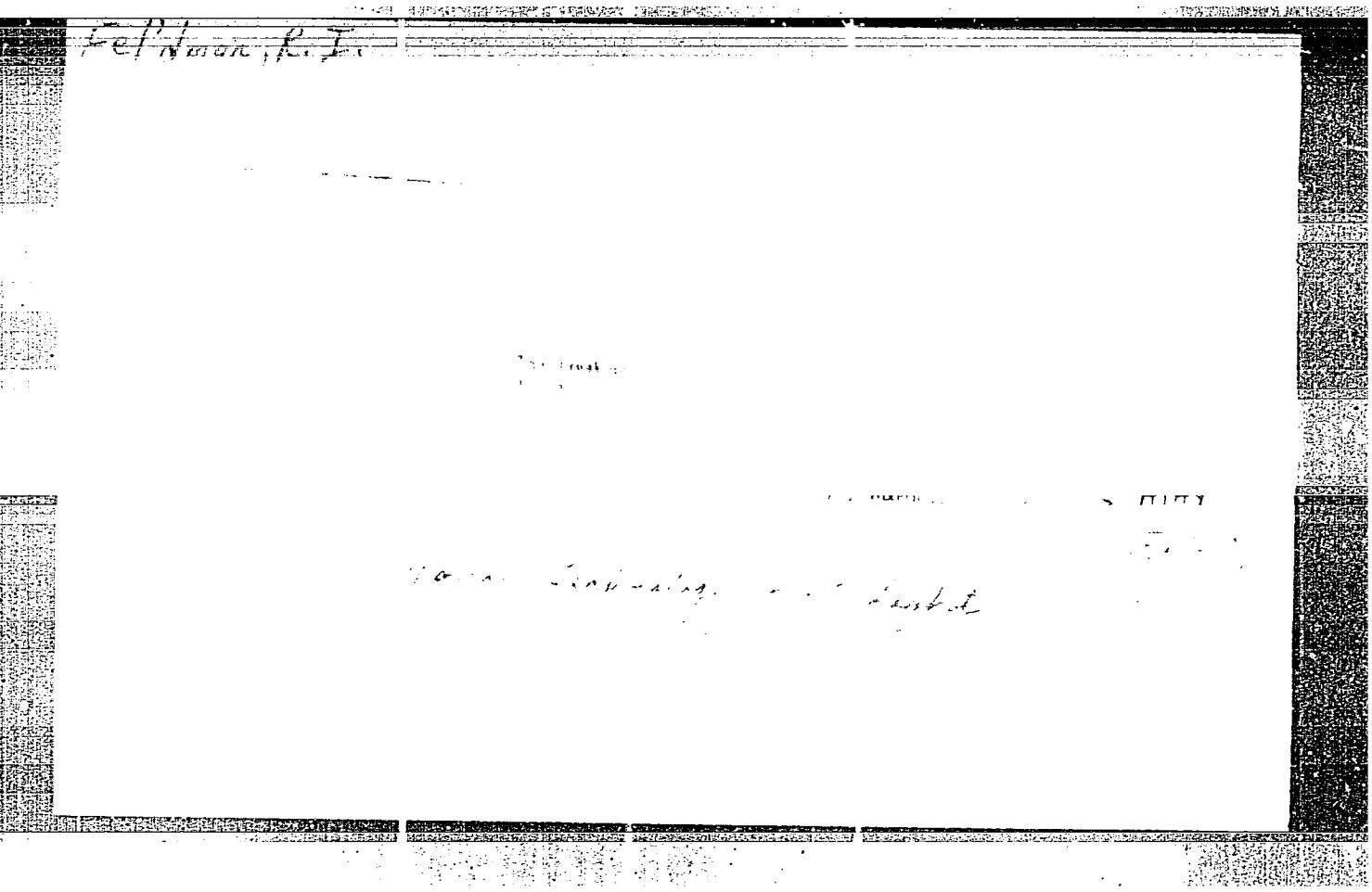
FEL' DMAN, R. I.

Change in the breaking strength of polyvinyl chloride dun to introduction of two plasticizers. R. I. Fel'dman an: A. K. Mironova (L. M. Kogunovich Technol. Inst. Light Ind., Moscow). *Kolloid. Zhur.* 17, 405-7(1955); cf. *C.A.* 49, 13088h.—If *k*, *m*, and *n* are the mole fractions of polymer, first plasticizer, and 2nd plasticizer, resp., the n the breaking stress σ of the polymer contg. the two plasticizers is σ_1^k, σ_2^m, σ_3^n; σ_1, σ_2, and σ_3 being consts. of the 3 substances, resp. This relation was confirmed for a polyvinyl chloride contg. 6–22 mole % of plasticizer consisting of all mixts. of $C_6H_6(CO_2Bu)_3$ and tritolyl phosphate at extension of 2 mm./min. at 20°. The material was in the highly viscous state, and for such materials, presumably, $\sigma = \sigma_1^k \ldots \sigma_i^l$, when *i* components are present.

J. J. Bikerman

(1)





AUTHORS: Fel'dman, R.I.; Mironova, A.K.; Sokolov, S.I. 69-20-1-15/20

TITLE: The Effect of a Plasticizer on the Mechanical Properties of the Copolymer of Vinyl Chloride with Vinylidene Chloride and Polyvinyl Chloride (Vliyaniye plastifitsiruyushchikh dobavok na mekhanicheskiye svoystva sovmestnogo polimera vinilkhlorida s vinilidenkhloridom i polivinilkhlorida)

PERIODICAL: Kolloidnyy Zhurnal, 1958, Vol XX, # 1, pp 106-109 (USSR)

ABSTRACT: The article is a continuation of the work published in the references 1 and 2. The substances under investigation were soviden and polyvinylchloride igelite-K. Soviden was obtained by copolymerization of vinyl chloride and vinylidene chloride in the ratio 77 : 23. It was shown that polyvinyl chloride needs a larger quantity of plasticizer to reach a high-elastic state than the copolymer. A comparison of the results of previous work shows the same dependence of the mechanical properties on the effect of the plasticizer.
There are 2 figures, 2 tables and 4 Soviet references.

Card 1/2

69-20-1-15/20

The Effect of a Plasticizer on the Mechanical Properties of the Copolymer of Vinyl Chloride with Vinylidene Chloride and Polyvinyl Chloride

ASSOCIATION: Moskovskiy tekhnologicheskiy institut lëgkoy promyshlennosti (Moscow Technological Institute of Light Industry)

SUBMITTED: January 7, 1957

AVAILABLE: Library of Congress

Card 2/2

AUTHOR: Fel'dman, R.I.

69-58-2-16/23

TITLE: The Aggregate States of High Molecular Compounds. 1. A Study of the Linear Expansion of Polymethylmethacrylate, Polystyrene, Polyvinylchloride and the Vinyl Chloride-Vinyl Acetate Co-Polymer (O sostoyaniyakh agregatsii vysokomolekulyarnykh soyedineniy. 1. Izucheniye lineynogo rasshireniya polimetilmetakrilata, polistirola, polivinilkhlorida i sovmestnogo polimera vinilkhlorida s vinilatsetatom)

PERIODICAL: Kolloidnyy zhurnal, 1958, Vol XX, Nr 2, pp 220-228 (USSR)

ABSTRACT: Aggregate states are very important for the investigation of high molecular compounds. For determining these states, special methods are used: specific volume, linear dimensions, heat capacity, mechanical, optical, other properties at various temperatures, thermography, etc. In this article, the linear expansion method is employed. In this method, isotropic materials give similar results, but in anisotropic materials the expansion coefficient depends on the direction of orientation. Experiments were carried out with a dynamometer of the Polyani type. The change of expansion is measured after a temperature change of 1°C. Industrially manufactured anisotropic strips of polymethylmethacrylate with

Card 1/4

The Aggregate States of High Molecular Compounds. 1. A Study of the Linear Expansion of Polymethylmethacrylate, Polystyrene, Polyvinylchloride and the Vinyl Chloride-Vinyl Acetate Co-Polymer

interior stresses were investigated. The test results after 5 cycles of heating and cooling are shown in Figure 2. The tests lasted 13.5 days. The length of the strips was reduced by 3.1 % at a temperature change from 85 to 16°C. Thermal processing increased the heat resistance of the material. Contraction started only at higher temperatures. The temperature curves for pressed industrial specimens of polystyrene are given in Figure 3. They indicate the transition to a more resistant stage. Thermal processing decreases the contraction value of the material. A temperature change from 98-103°C reduces the length of the specimens by 0.43 %. Polyvinyl chloride was tested in the form of films prepared on glass or mercury and dissolved in dichlorethane and chlorbenzene. The average molecular weight is 62,000. The form of the curve changes in relation to the preliminary processing of the specimen. The contraction shows that the polymer chains are relatively mobil and may be re-grouped. After 2 cycles of cooling and heating, the length of the specimen was reduced by 11 %. Preliminary

The Aggregate States of High Molecular Compounds. 1. A Study of the Linear Expansion of Polymethylmethacrylate, Polystyrene, Polyvinylchloride and the Vinyl Chloride-Vinyl Acetate Co-Polymer

heating reduced the lengthening of unstretched specimens by 25 %. In Figure 5, the temperature dependence of the relative lengthening is given for films of plasticized polyvinyl chloride. The films were prepared on rollers and then pressed. With the increase of the plasticizer concentration, the transition points are moved to lower temperatures and the hysteresis loops are increased. The coplolymer produced from 85 weight % of vinyl chloride and 15 weight % of vinyl acetate was tested in the form of anisotropic films prepared on glass. Thermal processing at 160°C removes the orientation. Lengthening during the tests is decreased from 22.5 to 9.9 %. The analysis of the cited facts shows that the coefficients of linear expansion and the temperature transition points are not very constant and depend in the first place on the foregoing treatment of the specimen and on the preliminary kinetic changes leading to the investigated state. The great number of transitional points proves the diversity of the aggregate states in high molecular compounds.

69-58-2 -16/23

The Aggregate States of High Molecular Compounds. 1. A Study of the Linear Expansion of Polymethylmethacrylate, Polystyrene, Polyvinylchloride and the Vinyl Chloride-Vinyl Acetate Co-Polymer

There are 11 graphs, 1 table, and 38 references, 20 of which are Soviet, 10 English, 7 German, and 1 American.

ASSOCIATION: Moskovskiy tekhnologicheskiy institut lëgkoy promyshlennosti (Moscow Technological Institute of Light Industry)

SUBMITTED: April 15, 1957

1. Molecular compounds--Phase studies 2. Polymthylmethacrylate --Linear expansion 3. Molecular compounds--Test methods 4. Molecular compounds--Test results

Card 4/4

AUTHORS: Fel'dman, R.I.; Sokolov, S.I. 69-20-3-21/24

TITLE: The States of Aggregation of High Molecular Compounds (O sostoyaniyakh agregatsii vysokomolekulyarnykh soyedineniy) 2. Study of the Linear Expansion of Gutta-Percha (2. Izucheniye lineynogo rasshireniya guttaperchi)

PERIODICAL: Kolloidnyy zhurnal, 1958, vol XX, Nr 3, pp 388-394 (USSR)

ABSTRACT: Gutta-percha exists in two principal modifications which have been detected by roentgenological and electronographical methods. These modifications are differentiated by the position of the various chain links and the chains themselves. Gutta-percha films on different supports have been studied according to their states of aggregation. For this purpose they were heated and cooled and their linear dimensions measured. A film of gutta-percha R (Figure 1) has been tested and measured. At a temperature of 58 - 62°C it became transparent, which means that this temperature is the melting point of the crystals and the transition point to the amorphous state. Figure 1 also shows the dependence of the length of a film of gutta-percha R, which had been heated in water to 80°C and then cooled to 15°C, on temperature. The two curves are similar, but the linear expansion is different.

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The States of Aggregation of High Molecular Compounds. 2. Study of the Linear Expansion of Gutta-Percha

The same curve for gutta-percha S is shown in Figure 2. This type of gutta-percha was in an unstable state with interior stresses. A contraction and expansion process was active in the sample at the same time. In the temperature interval of 27 - 42°C, these processes compensate for one another. The temperature dependence of gutta-percha which has been preliminarily extended close to the breaking point is very slight (Figure 3). The thermal treatment of the samples is regarded as influencing the molecular packing of the gutta-percha as well as the stability of the system.

There are 6 graphs, 1 table, and 25 references, 11 of which are Soviet, 8 English, 4 German, and 2 American.

ASSOCIATION: Moskovskiy tekhnologicheskiy institut lëgkoy promyshlennosti (Moscow Technological Institute of Light Industry)
Moskovskiy institut khimicheskogo mashinostroyeniya (Moscow Institute of Chemical Machine-Building)

SUBMITTED: April 15, 1957

Card 2/2 **1. Rubber—Test methods 2. Rubber—Test results**

MAKAROV-ZEMLYANSKIY, Ya.Ya.; FEL'DMAN, R.I.; REUTOV, O.S.; GOLDOVSKIY, Ye.A.

Chitosan as a substitute for food products and rubber. Leg. prom. 18 no.6:28-30 Je '58. (MIRA 12:10)
(Chitin) (Leather substitutes)

5(4) SOV/69-21-2-19/22

AUTHOR: Fel'dman, R.I.

TITLE: On the Aggregation Conditions of Highmolecular Compounds (O sostoyaniyakh agregatsii vysokomolekulyarnykh soyedineniy), 3. Synthetic Polyamides (Sinteticheskiye poliamidy)

PERIODICAL: Kolloidnyy zhurnal, 1959, Nr 2, pp 238-243 (USSR)

ABSTRACT: This article supplies data concerning crystallizing highmolecular systems, which due to their affinity to water and their hygroscopic qualities combine with variable quantities of water. The objects of the author's investigation were several kinds of polyamides, which under natural conditions can obtain 4-6% moisture. During heating and cooling processes he studied the behaviour of polyamide specimens (polycaprolactam and a product of polycondensation of hexamethylenediamine with adipinic acid) with different specific surfaces (rods, membranes, threads) with the aid of the linear dilatometric method. He has shown that the result of the influence of the temperature on the linear measures of the specimens is composed of normal thermal enlargement, ano-

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On the Aggregation Conditions of Highmolecular Compounds. 3. Synthetic Polyamides.

malous linear contraction as a result of the loss of previous orientation, a possible volume effect due to the shift from a non-equilibrated unstable state of the substance to a more stable condition and a change in the moisture content. The described phenomena, which prevalently refer to non-equilibrated states, directly concern the behaviour of these materials in industrial products under usual practical conditions. The author expresses his thanks to Prof. S.I. Sokolov and Engineer I. Shtern for their collaboration. There are 4 graphs and 11 references, 7 of which are Soviet, 3 English and 1 German.

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

SUBMITTED: December 15, 1957

FEL'DMAN, R.I.

States of aggregation of high molecular weight compounds. Part 4: Collagen, gelatin, and silk fibroin. Koll.zhur. 21 no.4:499-506 Jl-Ag '59. (MIRA 13:8)

1. Moskovskiy oblastnoy pedagogicheskiy institut im.N.K. Krupskoy.
(Collagen) (Gelatin) (Proteins)

5(4) SOV/69-21-4-20/22

AUTHOR: Fel'dman, R.I.

TITLE: On the States of Aggregation of High-Molecular Compounds 4. Collagen, Gelatine and Silk Fibroin.

PERIODICAL: Kolloidnyy zhurnal, 1959. Vol XXI, Nr 4, pp 499-506 (USSR)

ABSTRACT: This is a study of the behaviour of hydrophylic materials (collagen, gelatine and silk fibroin) at changing temperatures with the aid of the dilatometric method. The data is not to be considered as constants for these materials. It is intended for comparing under certain kinetic conditions the behaviour of materials differing in their hydrophylic properties, and for evaluating the behaviour of the materials in the ready produot under the real conditions of changing temperatures and changing moisture content. The experiments were carried out in parallel runs, in order to show separately the effect of temperature on the length (graphs 1,3,5 and 6) and the weight (graphs 2 and 4) of the

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On the States of Aggregation of High-Molecular Compounds
4. Collagen, Gelatine and Silk Fibroin

specimens. A comparison of the respective curves shows their mutual connection. It is evident, therefore, that the change of the measures of the specimens does not only depend on thermal enlargement, i.e. changes in orientation and closenness of molecule packing, but also to a considerable degree on moisture concentration. The rates of change of linear measures and moisture concentration are different, and depend on change in temperature. In this regard the behaviour of a massive piece of collagen, for instance, is similar to the behaviour of gelatine films and silk fibroin fibers. The autor explains this circumstance by the important role of the moisture concentration, and the specific structure of collagen. Graph 6 shows the length of a silk fibroin fiber in function of the temperature in additionally-moistened air (presence of liquid water in the working chamber of the dilatometer). The results were obtained at $P \approx 434$ g/mm^2. The change in the

On the States of Aggregation of High-Molecular Compounds
4. Collagen, Gelatine and Silk Fibroin

length of the fiber reached approximately 1.4% within a range of temperatures varying from 25 over more than 90 to 15°C. This proves that the behaviour of hydrophylic materials depends on many factors and appears as a complex phenomenon, which can be observed under varying as well as isothermal conditions. A third parallel series of experiments is illustrated by graph 7. The curve shows the temperature of mechanical destruction of a silk fibroin fiber in function of the values of different loads. On the whole, the experiments have shown that the dilatometric method proved suitable for the above-mentioned purpose. The change in the content of moisture sorbed or desorbed by the material plays an important role in the complex of phenomena, which determine the effect of linear extension and contraction of albumens. The changes in the state of agregation of the systems studied with the aid of the dilatometric method are characterized by transition temperatures, shrinkage values

On the States of Aggregation of High-Molecular Compounds
4. Collagen, Gelatine and Silk Fibroin

and typical hysteresis phenomena. This also applies to other high-molecular materials. The author expresses his gratitude for help to Professor S.I. Sokolov. There are 7 graphs and 20 references, 15 of which are Soviet and 5 English.

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

SUBMITTED: 29 January, 1958

S/081/60/000/018/009/009
A006/A001

Translation from: Referativnyy zhurnal, Khimiya, 1960, No. 18, p. 621, # 75995

AUTHORS: Fel'dman, R. I., Mironova, A. K.

TITLE: The Dependence of the Tensile Characteristics of Polyethylene and Polyisobutylene Mixtures on the Composition

PERIODICAL: Uch. zap. Mosk. ob. ped. in-ta, 1959, Vol. 84, pp. 181-185

TEXT: Tensile characteristics of polyethylene and polyisobuthylene mixtures, determined at 20°C and an elongation rate of 2 mm/min, depend on the composition. The rectilinear dependence of the logarithm of the conditional tensile strength value of the mixture on the composition, expressed in molar fractions, was used to establish that $\sigma_{mixt} = \sigma_1^{N_1} \cdot \sigma_2^{N_2}$, where σ_{mixt}, σ_1 and σ_2 are the corresponding strength values of the mixture, polyethylene and polyisobutylene, and N_1 and N_2 are the concentrations of polymers expressed in molar fractions.

The author's summary

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

Card 1/1

68707

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S/069/60/022/01/016/025
D034/D003

AUTHORS: Fel'dman, R.I., Sokolev, S.I.

TITLE: On the State of Aggregation of High-Molecular Compounds, 6. The Rupture Characteristics of Anisotropic Polycaprolactam Films

PERIODICAL: Kolloidnyy zhurnal, 1960, Vol XXII, Nr 1, pp 97-100 (USSR)

ABSTRACT: The authors report on a study intended to establish the ultimate elongation (ε) and the breaking stress (σ) of anisotropic polycaprolactam film specimens. The specimens were cut out from the film in different directions with an interval of 15°. The film was obtained with industrial methods by forcing the melt through a slotted die on a water-cooled drum, the mass being subsequently elongated by 300%. The molecular weight of the polyamide was ~14000. The specimens had a working

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68708
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D034/D003

On the State of Aggregation of High-Molecular Compounds 6. The Rupture Characteristics of Anisotropic Polycaprolactam Films

length of 25 mm, a width of 5 mm, and a thickness of 0.06 mm. The elongation curves were plotted up to the breaking point with the Polyan' dynamometer ("dinamometr tipa Polyani"). The elongation was carried out at a speed equal to 2 mm/min and at t = 20 ± 0.5°C. For the relative ultimate elongation (ε_x) and breaking stress (σ_x) as a function of the angle between the direction of the orientation and of the stretching force the authors obtained the following expression

$$\varepsilon x = \varepsilon_0 + (\varepsilon_{90} - \varepsilon_0) \left[1 - \sin(90^\circ - x)\right] \quad \text{and}$$

$$\sigma_x = \sigma_0 - (\sigma_0 - \sigma_{90}) \sin x$$

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68707

S/069/60/022/01/016/025
D034/D003

On the State of Aggregation of High-Molecular Compounds 6. The Rupture Characteristics of Anisotropic Polycaprolactam Films

(ε_0, σ_0, ε_{90}, σ_{90} - relative ultimate elongation (%) and breaking stress (kg/mm^2), when angle x equals 0 and 90° respectively). The correlations have been interpreted from the viewpoint of the flexural fold hypothesis of crystalline polymer chains that unfold on stretching. The authors express their gratitude for help to N.I. Fel'dman. There are 2 graphs and 1 Soviet reference.

ASSOCIATION: Moskovskiy institut khimichekogo mashinostroyeniya, Moskovskiy oblastnoy pedagogicheskiy institut im. N. K. Krupskoy (Moscow Institute of Chemical Machine Building, Moskovskaya Oblast' Pedagogical Institute imeni N.K. Krupskaya)

SUBMITTED: May 15, 1958

Card 3/3

FEL'DMAN, R.I.

States of aggregation of high molecular weight compounds. Part 7: Effect of temperature on the state of keratins. Koll.zhur. 22 no.3:351-356 My-Je '60. (MIRA 13:7)

1. Moskovskiy oblastnoy pedagogicheskiy institut im. N.K. Krupskoy.
(Keratins)

25888
S/069/61/023/004/003/003
B101/B215

15.9300

AUTHOR: Fel'dman, R. I.

TITLE: States of aggregation of high-molecular compounds. 9. Thermo-dilatometric study of polychloroprene and natural rubber

PERIODICAL: Kolloidnyy zhurnal, v. 23, no. 4, 1961, 475-481

TEXT: The properties of polychloroprene (PCP) and natural rubber (NR) (smoked sheets) were studied at various temperatures by a dilatometric method earlier described by the author (Ref. 8: Kolloidn. zh., 20, 220, 1958). The data obtained were compared with those the author obtained for gutta-percha (Ref. 7: Kolloidn. zh. 20, 388, 1958; Ref. 9: 21, 238, 499, 1958). 1) A commercial Soviet product of PCP was used. The films were made from a solution of PCP in dichloroethane on a mercury surface. The evaporation of the solvent in the dark at 15-20°C was gravimetrically checked. The thickness of the film did not exceed 0.1 cm. Stripes of 5-10 cm length and 0.5-1.3 cm width were used for the test. The following data were found at a load of $P = 2.3$ g/mm^2 and a temperature variation by 1°C in 3-5 min: The coefficient of linear expansion α between 0 and

Card 1/4

States of aggregation...

18°C was $\alpha_{0-18°C} = 2.91 \cdot 10^{-4}$. On heating from 0 to 26°C, elongation was approximately 17 %. For comparison, the following is given for "P" ("R"): $\alpha_{5-23°C} = 2.28 \cdot 10^{-4}$ at P = 10.9 g/mm^2. To study the effect of preliminary thermal treatment, the PCP films were heated at 130 or 160°C. The following results were obtained: At 130°C: $\alpha_{0-21°C} = 1.97 \cdot 10^{-4}$. Between 0 and 82°C, elongation was approximately 7.5 %; on heating up to 95°C, it was approximately 9 %; P = 4.1 g/mm^2. In films heated up to 160°C $\alpha_{0-20°C}$ was $2.65 \cdot 10^{-4}$, $\alpha_{20-52°C}$ was $5.77 \cdot 10^{-4}$, $\alpha_{64-82°C}$ was $6.04 \cdot 10^{-4}$, and $\alpha_{82-0°C}$ was $3.0 \cdot 10^{-4}$. The fact that thermally treated films had no yield point at 37°C, is explained by cross-linking. In all samples, the transition point remained unchanged at approximately 20°C, whereas the other transition points of thermally treated films were shifted toward higher temperatures. Examination of the specific volume of PCP also yielded a transition point at approximately 20°C, but the measurement of changes in length was more precise. 2) 0.65 mm films on glass plates were produced from smoked NR

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States of aggregation...

sheets by evaporation of their benzene solution. Between 0 and 60°C an elongation of 5.4 % was found at P = 1g/mm^2. Between approximately 10-40°C, such a transition range is similar to that of gutta-percha "C" ("S"). For NR, $\alpha_{1-10°C}$ was $3.96 \cdot 10^{-4}$ at P = 1g/mm^2. In gutta-percha "S", $\alpha_{8-27°C}$ changed from $1.6 \cdot 10^{-4}$ to $1.9 \cdot 10^{-4}$ at P = 19 g/mm^2. To study the effect of crystallization, stripes of NR were kept between -15 and -9°C for 33 days, and then dilated in one cycle (1°C→48°C→1°C) at P = 1.4 g/mm^2. On heating up to 4°C, elongation set in. Between 4~13-15°C the length remained constant. In the next cycle, the elongation increased steadily, and the beginning of the transition range was elevated from 4°C to 10°C (like in non-cooled rubber). In vulcanized samples, the length remained constant between approximately 11 and 16°C (P = 92.6g/mm^2). Between 16-30°C, shortening set in, and above 30°C elongation. These effects were explained by the superposition of several processes. A) Melting of regions crystallizing at low temperatures, and formation of new, oriented crystal regions at elevated temperatures. B) Destruction of crystal regions oriented in a direction other than that of stress. C) In vulcanized NR, also effect of the network which tends to return to its initial position, comes in play

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States of aggregation...

(entropy effect). The author thanks Professor S. I. Sokolov for his interest in the work. There are 3 figures and 12 references: 11 Soviet-bloc and 1 non-Soviet-bloc. The reference to English-language publications reads as follows: N. Bekkedahl, J. Res. Nat. Bur. Standards, 13, 411, 1934; Rubber Chem. and Technol., 8, 5, 1935.

ASSOCIATION: Moskovskiy oblastnoy pedagogicheskiy institut im. N. K. Krupskoy (Moscow oblast' Pedagogic Institute imeni N. K. Krupskaya)

SUBMITTED: February 18, 1960

Card 4/4

FEDOSEYEVA, Ye.G.; FEL'DMAN, R.I.; SOKOLOV, S.I.

Interaction between polymers and plasticizers. Part 1: Preparation and properties of poly(vinyl chloride)pastes. Koll.zhur. 23 no.6:749-755 N-D '61. (MIRA 14:12)

1. Nauchno-issledovatel'skiy institut kabel'noy promyshlennosti i Moskovskiy oblastnoy pedagogicheskiy institut imeni N.K.Krupskoy.
(Polymers) (Plasticizers)

DULITSKAYA, Rakhil' Abramovna, dots.; FEL'DMAN, Rakhil' Il'inichna, dots.; ALAVERDOV, Ya.G., red.; GARINA, T.D., tekhn. red.

[Laboratory work in physical and colloid chemistry]Praktikum po fizicheskoi i kolloidnoi khimii. Moskva, Gos.izd-vo "Vysshaia shkola," 1962. 338 p. (MIRA 16:3)

1. Farmatsevticheskiy fakul'tet 1-go Moskovskogo meditsinskogo instituta im. Sechenova (for Fel'dman, Dulitskaya).
(Chemistry, Physical and theoretical—Laboratory manuals)
(Colloids)

S/069/62/024/002/007/008
B110/B101

15.8010

AUTHORS: Fedoseyeva, Ye. G., Fel'dman, R. I., Sokolov, S. I.

TITLE: Interaction of polymers with plasticizers. 2. Gelatinization of polyvinyl chloride pastes and the properties of the films obtained from them

PERIODICAL: Kolloidnyy zhurnal, v. 24, no. 2, 1962, 230 - 235

TEXT: The following changes take place during the gelatinization of PVC pastes (20-40 min, 140 - 185°C): (1) the decrease in viscosity of the PVC suspension at 20 - 40°C is caused by the decrease in viscosity of the dispersion medium. Between 40 and 90°C, viscosity of the system increases rapidly on account of its gradual gelatinization, and above 90°C viscosity again decreases normally. (2) The change in the mechanical rupture characteristics depends on the gelatinization temperature and time; the conditions of gelatinization depend on the composition of the paste. Films made from pastes filled with chalk, titanium dioxide, barium titanate, kaolin, talcum, magnesium oxide, and litharge showed lower tensile properties and greater hardness. Addditional 30 days heat treatment at 120°C

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Interaction of polymers ...

increased the tensile strength from ~27 - 43 kgf/cm^2 to ~47 - 90 kgf/cm^2, changed the relative rupture elongation, and lowered linear strain coefficients. Study of the decomposition temperatures showed that lead compounds proved to be better stabilizers than compounds of other metals. (3) The changes in the electrical characteristics of PVC films were determined in: (a) electrical bulk resistivity (2000 v, direct reading compensation bridge), (b) dielectric permeability and tangent of dielectric loss angle (Schering bridge, 1000 v, 50 cps, 1 min), (c) disruptive strength (cylindrical electrodes dipped into tricresylphosphate, rate of voltage increase 1 kv/sec). The electrical characteristics depend on the quantitative ratio of polymer to plasticizer, on the physical and chemical properties of the plasticizer and on the paste ingredients. Graphite aided increases the film conductivity, and the bulk resistivity amounts to $\sim 10^3$ ohm·cm. A study of the dependence of the bulk resistivity on the component ratio showed that the curves ρ versus composition of the polymer systems PVC + tricresylphosphate, PVC + dibutylphthalate, PVC + dioctylphthalate coincide up to a plasticizer content of 45 - 55% by weight. (4) The change in water absorption with temperature and time shows a

maximum at 20 ± 1°C. The aforementioned mechanical, electrical and other properties of PVC films show that blocks, films, etc., having important properties for engineering can be obtained by gelatinization. There are 5 figures and 3 tables.

ASSOCIATION: Nauchno-issledovatel'skiy institut kabel'noy promyshlennosti, Moskva (Scientific Research Institute of the Cable Industry, Moscow) Moskovskiy oblastnoy pedagogicheskiy institut im. N. K. Krupskoy (Moskovskaya oblast' Pedagogical Institute imeni N. K. Krupskaya)

SUBMITTED: October 20, 1960

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S/069/63/025/002/009/010
A057/A126

AUTHORS: Fedoseyeva, Ye.G., Fel'dman, R.I., Sokolov, S.I.

TITLE: On the polymer-plasticizer interaction. 3. Investigation of stability factors and phase transitions in dispersions of polymer in plasticizers (pastes)

PERIODICAL: Kolloidnyy zhurnal, v. 25, no. 2, 1963, 247 - 252

TEXT: The present investigations were carried out, and the results presented already at the Fifth All-Union Conference on Colloid Chemistry. Stability factors and phase states of polymer dispersions in plasticizers are discussed on the example of polyvinyl chloride dispersion in dibutyl phthalate which is of interest as a two-component system. The preparation of pastes from these components indicates that a part of the polymer has a stabilizing effect. It was of interest to investigate the "lifetime" of such systems. The stability depends on the sedimentation, the particle size, and on the mutual dissolving (homogenization). The "lifetime" of dispersed systems depends on static and dynamic factors connected to the structure and properties of the polymer, the

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structure of globules obtained by emulsion polymerization, as well as to phase relations and the ability of the polymer to remain for a longer time in a non--equilibrated state. The process of paste gelatinization is a result of the dissolving stability (homogenization) of the dispersion. The surface layer of globules might be considered as a barrier which prevents the destruction of the globule. Only an increase of temperature will destroy this barrier effecting a subsequent quick dissolving. The process of paste gelatinization at elevated temperatures is discussed by the present authors as a complex of phenomena which effects a total homogenization of the system and the formation of a high-elastic gel by means of a mutual diffusion of polymer and plasticizer. There are 1 figure and 1 table.

ASSOCIATION: Nauchno-issledovatel'skiy institut kabel'noy promyshlennosti (Scientific Research Institute of the Cable Industry); Moskovskiy oblast'noy pedagogicheskiy institut im. M.K. Krupskoy (Moscow Regional Pedagogic Institute imeni M.K. Krupskaya); Moskovskiy institut khimicheskogo mashinostroyeniya (Moscow Institute of Chemical Machinery Construction)

SUBMITTED: December 30, 1961

L 37724-65 EPF(c)/EWP(j)/EWT(m) Pc-4/Pr-4 RM

ACCESSION NR: AP4023501 S/0069/64/026/002/0258/0262

AUTHOR: Fedoseyeva, Ye. G.; Fel'dman, R. I.; Sokolov, S. I.

TITLE: On the interaction of polymers with plasticizers. 4. Effect on rubber of plasticizers which migrate during contact with plasticized polyvinylchloride

SOURCE: Kolloidnyy zhurnal, v. 26, no. 2, 1964, 250-262

TOPIC TAGS: rubber research, plasticizer, polymer swelling, electric property

ABSTRACT: Mechanical and electrical properties and swelling were studied in various rubber + plasticizer systems. The purpose of the study was to determine the ability of plasticizers to penetrate into rubber at 25 and 145°C from polyvinylchloride layers in contact with rubber, as well as to evaluate the effect of plasticizers on the properties of rubber. Butadiene base TS-35 SK-50 rubber was tested. The following plasticizers were used: dimethyl phthalate, dioctyl phthalate, tricresyl phosphate, pentachlorodiphenyl, sebacic acid polyester, 2,2',2"-nitrile triethanol butyrate and shale oil. When the rubber specimens were swelled in plasticizers at 145°C for 1.5 hours and then kept at 25°C for 24 hours, the plasticizers "bled out." This indicates that the plasticizers migrate from the polyvinylchloride into the rubber mainly during vulcanization. Penta-

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L 37724-65

ACCESSION NR: AP4023501

chlorodiphenyl and shale oil were found to be the best plasticizers since they form a stable single-phase system with rubber which shows no tendency to syneresis. These plasticizers also show the least susceptibility to "bleeding." Rubber swelling was found to be more dependent on the limits of compatibility than on the coefficient of diffusion of the plasticizers. Changes in mechanical properties conform generally to the laws of molar and volume [illegible] rather than [illegible] determined by the weight content of the plasticizer [illegible] the tensile properties of the rubber samples showed deviations from the [illegible] law after [illegible] for several days at 100°C. Electrical measurements [illegible] the plasticizers on the resistivity and specific [illegible] of rubber [illegible] on the degree of polarity of the plasticizer [illegible] are [illegible] tables and 2 figures.

ASSOCIATION: Nauchno-issledovatel'skiy institut kabel'knoy promyshlennosti (Scientific Research Institute of the Cable Industry); Moskovskiy oblastnoy pedagogicheskiy institut im N. K. Krupskoy (Moscow Regional Pedagogical Institute); Moskovskiy institut khimicheskogo mashinostroyeniya (Moscow Chemical Machine [illegible]ing Institute)

Card 2/3

ACCESSION NR: AP4037179 S/0069/64/026/003/0362/0366

AUTHOR: Fedoseyeva, Ye. G.; Fel'dman, R. I.; Sokolov, S. I.

TITLE: Interaction of polymer with plasticizer
5. The adhesive properties of polyvinylchloride plasticates and their effect on rubbers in contact with them

SOURCE: Kolloidny*y zhurnal, v. 26, no. 3, 1964, 362-366

TOPIC TAGS: polymer plasticizer interaction, polyvinylchloride plasticate, rubber, resin, rubber vulcanization, rubber thermal aging, PVC film adhesion, polychloroprene, perchlorovinyl resin, nitrile rubber, rubber modifyer

ABSTRACT: In this series of studies the plasticizer was introduced into the rubber at swelling time or into the resin mix before vulcanization. Such systems may serve as models, since under these conditions the resin comes into contact not with the pure plasticizer but with plasticized polyvinylchloride (PVC) paste, films, etc. from which the plasticizer migrates into the resin. The composition of the PVC test pastes is tabulated. In the present work the influence of PVC pastes added with other compounds (dibutylphthalate, dioctylphthalate, etc.) and films

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ACCESSION NR: AP4037179

from these materials on properties of the rubbers TS-35 and SK-50 and the adhesive force between the boundary materials were studied. For the preparation of the specimens a 0.5 mm PVC paste layer was placed on top of the 2 mm thick resin mixture, the entire mass vulcanized in foil and subjected to thermal aging. The two layers were then separated and the rubber tested for mechanical properties and specific cubic resistance. The adhesion of paste to resin was determined with a dynamometer. The least amount of adhesion was found in pastes containing only PVC and plasticizer, best in those with PVC and perchlorovinyl resin or rubbers. Such contact did not change tensile strength appreciably, aging at 100C took place almost in the same way in the presence or in the absence of contact. The specific cubic electrical resistance somewhat diminished in the presence of polar plasticizers, whereas it increased during thermal aging of rubber in contact with polyvinylchloride plasticates containing polystyrene, polymethylmetacrylate and their monomers. The addition of modifiers to PVC pastes after vulcanization, had a favorable effect on the adhesion to rubber of films forming on gelation of the pastes. The best effect was produced by chlorinated polychloroprene, perchlorovinyl resin, polychloroprene and nitrile rubber. Orig. art. has: 1 figure and 4 tables.

ASSOCIATION: Nauchno-issledovatel'skiy institute kabel'noy promy*shlennosti Moskva

Card 2/3

ACCESSION NR: AP4037179

(Scientific Research Institute for Cable Manufacture, Moscow); Moskovskiy oblastnoy pedagogicheskiy institut imeni N. K. Krupskoy (Moscow Region Pedagogic Institute); Moscovskiy institut khimicheskogo mashinostroeniya (Moscow Institute of Chemical Machinery Design)

SUBMITTED: 12Nov62 DATE ACQ: 09Jun64 ENCL: 00

SUB CODE: GC NO REF SOV: 003 OTHER: 000

3/3

Card

L 00987-66 EWT m)/EPF(c)/EWP(j)/T/EWA(c) RPL RM/WW

ACCESSION NR: AP5020233 UR/0069/65/027/004/0619/0623
541.64

AUTHOR: Fel'dman, R. I.; Sokolov, S. I.

TITLE: Aggregation states of macromolecular compounds. 10. Polytetrafluoroethylene

SOURCE: Kolloidnyy zhurnal, v. 27, no. 4, 1965, 619-623

TOPIC TAGS: polytetrafluoroethylene, aggregate state, crystallinity, linear expansion coefficient, thermal dependence

ABSTRACT: In view of the known temperature transitions in the crystalline and aggregate states of polytetrafluoroethylene (PTFE), the temperature dependence of the coefficient of linear thermal expansion of this polymer was studied in detail. This study is important from both the theoretical point for supplying new data for colloidal chemistry and for the theory of aggregate states of polymers, and from the purely practical point of using this polymer for technical purposes. The coefficient of linear thermal expansion α was plotted against temperatures; readings were taken at each degree centigrade up to 300C. The rate of the temperature increase or decrease (in the reversed cycles) was 3—5 min per degree centigrade. Some experiments lasted 52 days. Measurements were made by a dynamometer serving as dilatometer. The

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L 00987-66

ACCESSION NR: AP5020233

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method was previously described by the authors. It was found that the smoothness of the curve α vs t° was disrupted by several abrupt transitions: at 19—21, approximately 30 and 250—260C. The transition at 19—21C is considerable and should be taken into account as a cause of shrinkage in the industrial use of PTFE as a material for devices, gaskets, packings, and parts. Orig. art. has: 2 figures.

[BN]

ASSOCIATION: Moskovskiy oblastnoy pedagogicheskiy institut im. N. K. Krupskoy (Moscow Oblast Pedagogical Institute); Moskovskiy institut khimicheskogo mashinostroyeniya (Moscow Institute of Chemical Machine Building)

SUBMITTED: 19Feb64 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 010 OTHER: 006 ATD PRESS: 4068

Card 2/2

FEL'DMAN, R.I.; SOKOLOV, S.I.

States of aggregation of high-molecular weight compounds. Part 10: Polytetrafluoroethylene. Koll. zhur. 27 no.4: 619-623 Jl-Ag '65. (MIRA 18:12)

1. Moskovskiy oblastnoy pedagogicheskiy institut imeni N.K. Krupskoy i Moskovskiy institut khimicheskogo mashinostroyeniya. Submitted February 19, 1964.

VEDERNIKOVA, N.F.; SOKOLOV, S.I.; FEL'DMAN, R.I.; SHCHEGOLEVSKAYA, N.A.

Interaction of polymers with plasticizers. Part 6: Effect of plasticizers on the deformation birefringence of polymethyl methacrylate. Koll.zhur. 27 no.3:326-330 My-Je '65.
(MIRA 18:12)

1. Moskovskiy institut khimicheskogo mashinostroyeniya i Moskovskiy oblastnoy pedagogicheskiy institut imeni Krupskoy.
Submitted Dec. 28, 1963.

L 34517-65 EWT(m)/EWP(t)/T IJP(c) WW/RM

ACC NR: AP6010545 (N) SOURCE CODE: UR/0069/65/027/006/0806/0809

AUTHOR: Vedernikova, N. F.; Sokolov, S. I.; Fel'dman, R. I.; Shchegolevskaya, N. A.

ORG: Moscow Institute of Chemical Machinery (Moskovskiy institut khimicheskogo mashinostroyeniya); Moscow Oblast Polytechnic Institute im. N. K. Krupskaya (Moskovskiy oblastnoy pedagogicheskiy institut)

TITLE: Interaction of polymers with plasticizers. Part 7. Thermooptical characteristics of the effect of plasticizers on polymethyl methacrylate 47 46 B

SOURCE: Kolloidnyy zhurnal, v. 27, no. 6, 1965, 806-909

TOPIC TAGS: plasticizer, polymethylmethacrylate, double refraction, phosphate ester

ABSTRACT: In order to clarify the specificity of the optical effect of plasticization, the simultaneous influence of plasticizers and temperature on the birefringence of binary systems composed of a polymer and a low-molecular plasticizer was investigated. Thermooptical measurements were made in the two systems polymethyl methacrylate (PMMA)-dibutyl phosphate (DBP) and PMMA-tricresyl phosphate (TCP). The curve representing the temperature dependence of the optical birefringence coefficient C_f of polymethyl methacrylate (see Fig. 1 and 2) is shifted by the presence of the plasticizer in the direction of the temperature axis toward lower values, in conformity with the mole fraction rule, and in the direction of the C_f axis toward more

UDC: 541.64:535.551

Card 1/3

L 34417-66
ACC NR: AP6010545

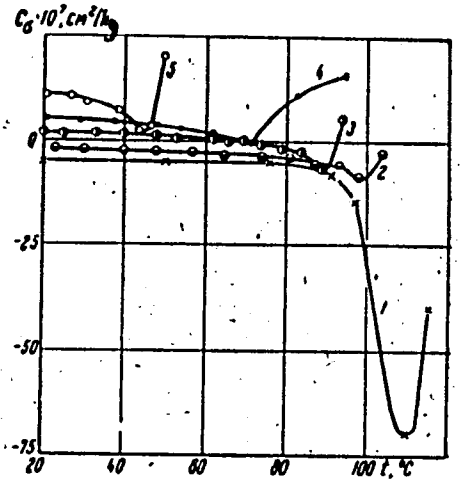

Fig. 1. Temperature dependence of C_σ of PMMA plasticized with TCP: 1 - PMMA; 2-5 - PMMA + TCP, N_2 equal to 0.014, 0.030, 0.062 and 0.113 respectively.

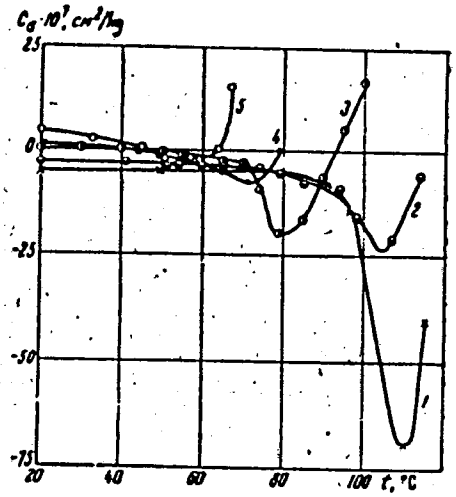

Fig. 2. Temperature dependence of C_σ of PMMA plasticized with DBP: 1 - PMMA; 2-5 - PMMA + DBP, N_2 equal to 0.011, 0.038, 0.056 and 0.097 respectively.

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positive values. The shift along the C_g axis depends on the composition and structure of the plasticizer molecules. It is concluded that the influence of the plasticizers introduced into PMMA is dual in nature: in some respects, it is related to a change in the state of aggregation of the polymer upon addition of the plasticizer, and is governed by known general rules established by studying the mechanical properties; in other respects, the plasticizer affects the optical properties according to its individual characteristics, which depend on the composition and structure of its molecules. Orig. art. has: 3 figures.

SUB CODE: 07/ SUBM DATE: 26Jun64/ ORIG REF: 004/ OTH REF: 001

Card 3/3 BLG

ACC NR: AP6037030 SOURCE CODE: UR/0069/66/028/006/0888/0893

AUTHOR: Fel'dman, R. I.; Fedoseyeva, Ye. G.; Sokolov, S. I.

ORG: Moscow Oblast Pedagogical Institute im. N. K. Krupskaya (Moskovskiy oblastnoy pedagogicheskiy institut); Scientific Research Institute of the Cable Industry (Nauchno-issledovatel'skiy institut kabel'noy promyshlennosti); Moscow Institute of Chemical Machinery (Moskovskiy institut khimicheskogo mashinostroyeniya)

TITLE: Properties of filled polymers. Part 2. Combined effect of fillers and softeners on properties of polyisobutylene

SOURCE: Kolloidnyy zhurnal, v. 28, no. 6, 1966, 888-893

TOPIC TAGS: polymer, ~~filled polymer~~, polymer physical chemistry, filler, polyisobutylene, molecular weight, tensile strength, hardness, plasticity, ELASTICITY

ABSTRACT: The results are presented of investigation on the combined effect of fillers and softeners on the properties of polyisobutylene with average molecular weights of 200 000, 150 000, and 100 000 estimated according to tensile strength residual and elongation at rupture hardness, elasticity at 70 and 130C, and

Card 1/2 UDC: 541.182:539.412

ACC NR: AP6037030

compressive strain. The dependence of tensile strength and (rupture and residual) elongation on the quality of the softener for a system composed of polyisobutylene, lamp black and mineral wax, passes through the maximum, while the values of hardness and plasticity both at 70 and 130C increased. The results obtained may be explained by the complex effect of softeners on the properties of a filled polymer. For systems composed of polymer, softeners, and fillers, complete additivity of the properties was observed on the plots of filler composition property diagram with respect to tensile strength, plasticity, and rupture and residual elongation, when the filler quantity in the compounds does not exceed the optimum value. Orig. art. has: 4 figures. [Based on authors' abstract] [NT]

SUB CODE: 11/SUBM DATE: 26Aug65/ORIG REF: 008/

Card 2/2

GOGOLEVA, T.Ya.; BOROMENSKIY, S.S.; Prinimali uchastiye: YEFIMENKO, L.Ya.; DEMENKO, Yu.V.; FEL'DMAN, R.L.

Thionaphthene distribution during the processing of the naphthalene fraction according to the drum-press flow sheet. Koks i khim. no.3:46-48 '64. (MIRA 17:4)

1. Ukrainskiy uglekhimicheskiy institut.

ACC NR: AP6021775 SOURCE CODE: UR/0413/66/000/012/0035/0035

INVENTOR: Adamovich, A. I.; Poznanskaya, E. M.; Fel'dman, R. M.; Sarenko, A. S.; Mikhaylova, N. P.; Tsirlina, S. S.

ORG: None

TITLE: A method for producing diethylaminoethyl ester of diphenylacetic acid (base of adiphenine). Class 12, No. 182715

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 12, 1966, 35

TOPIC TAGS: drug, ester

ABSTRACT: This Author's Certificate introduces a method for producing diethylaminoethyl ester of diphenylacetic acid (base of adiphenine). The technological process is simplified by interacting diethylaminoethyl chloride in an aqueous solution with an alkali metal salt of diphenylacetic acid.

SUB CODE: 07, 11/ SUBM DATE: 15Jul64

Card 1/1

UDC; 66.095.132;615.717

FEL'DMAN, R. O.

"Report on the Work Conducted in 1950 by the Stomatological Clinic of the 2nd Moscow Medical Inst. and of the Stomatologic Dept. of the 1st Moscow City Hospital," Stomatologiya, No.1, 1952

FEL'DMAN, R.R.

Dynamics of endotheliosis in chronic tonsillitis before and after tonsillectomy. Vop.pat.krovi i krovoobr. no.6:99-105 '61.
(MIRA 16:3)
(RHEUMATIC FEVER) (TONSILS --DISEASES) (MEDICAL TESTS)

POKOTINSKIY, I.S.; FEL'DMAN, R.R.

Compound therapy for metastasis of cancer of the breast. Trudy LPMI 31 no.2:136-138 '63. (MIRA 17:10)

1. Iz rentgenologicheskogo otdeleniya Ob"yedinennoy bol'nitsy imeni Kuybysheva, Leningrad i kafedry fakul'tetskoy terapii Leningradskogo pediatricheskogo meditsinskogo instituta.

FEL'DMAN, R.R.

Late observations of the dynamics of endotheliosis following tonsillectomy. Trudy LPMI 31 no.2:164-174 '63. (MIRA 17:10)

1. Iz kardiorevmatologicheskogo otdeleniya Ob"yedinennoy bol'nitsy imeni Kuybysheva i kafedry fakul'tetskoy terapii Leningradskogo pediatricheskogo meditsinskogo instituta.

OREKHOV, Vladimir Vasil'yevich; FEL'DMAN, Roman Vsevolodovich; KUZNETSOV, G.A., red.; ZAYTSEVA, L.A., tekhn. red.

[Repair of television receivers] Remont televizorov. Moskva, Vses. koop. izd-vo, 1960. 247 p. diagrs. (MIRA 14:9)
(Television--Repairing)

FELDMAN, S.

Excitability and projections of sensory pathways to the hypothalamus. Acta physiol. acad. sci. Hung. 26 no.1:161 '65

1. Hadassah University Hospital, Jerusalem, Israel.

FEL'DMAN, S.B., vrach (Moskva)

"Principles and technics of electrocardiography" by N.G. Nikulin. Reviewed by S.B. Fel'dman. Klin.med. 36 no.8:158-159 Ag '58 (MIRA 11:9)

1. Elektrokardiograficheskiy kabinet kliniki propedevtiki vnutrennikh bolezney I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M. Sechenova (for Fel'dman).
(ELECTROCARDIOGRAPHY)